

Project Paperclip

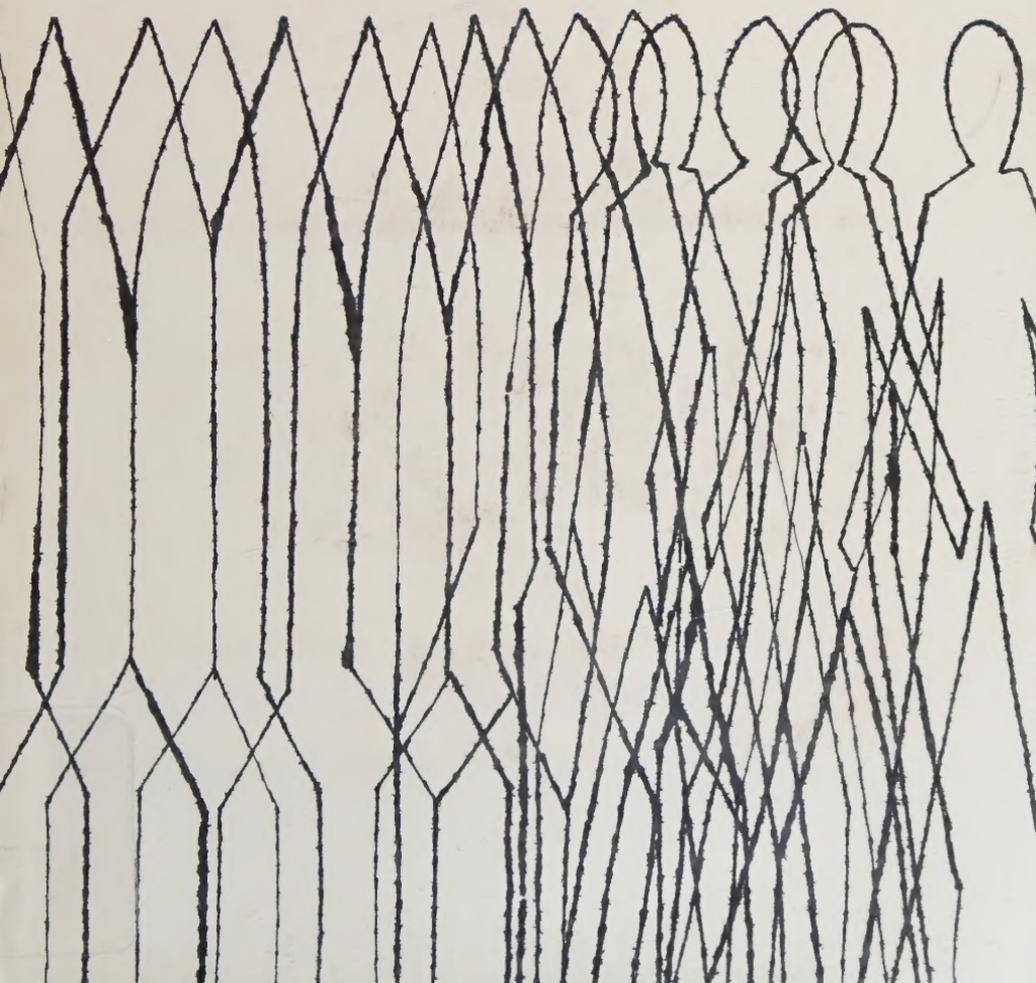
German Scientists and the Cold War

BY CLARENCE G. LASBY

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At the close of World War II, Premier Joseph Stalin was outraged to learn that his soldiers hadn't captured even one of the foremost German rocket experts. "This is absolutely intolerable," he complained to one of his generals. "We defeated German armies; we occupied Berlin and Peenemünde; but the Americans got the rocket engineers. What could be more revolting and inexcusable! How and why was this allowed to happen?" The answer to Stalin's question is the subject of *Project Paperclip*.

Amidst the chaos of the collapsing Third Reich, a host of American intelligence teams competed with their counterparts from England, France, and Russia in a race for "intellectual reparations"—including the roundup of German scientific experts. The United States acquired 642 of them. The resulting program, code-named "Project Paperclip," made only faltering headway while civilian and military authorities deliberated for seven years over the necessity,

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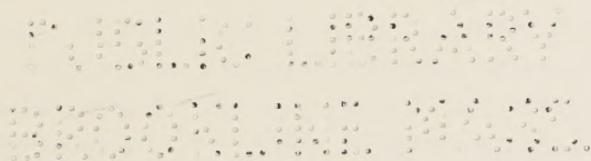
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CLARENCE G. LASBY

Project Paperclip

German Scientists and the Cold War

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In memory of my father

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Prefatory Note

SEVERAL YEARS AGO the eminent diplomatic historian Herbert Feis deplored the fact that scholars must depend on incomplete evidence for their knowledge of recent history. Barred from the full public record by the claims of "national security," they become "kindred to the ambulance chaser," avidly seeking truth in memoirs, rumor, gossip, and occasional unexpected disclosures in issues of the *Congressional Record*. "The historian all the while wonders," he wrote, "if it is really necessary that he be forced to wait a quarter century or so before he can inform himself adequately and reliably about affairs of our recent times, say of the 1945-1951 period, when the wartime alliance broke and the age of awful atomic weapons began." He forcefully resolved his own doubts: "Prolonged secrecy does not serve national security. It arouses suspicion and allows rumor or false report to harden into accepted fact." *

My experience in writing this book has reflected in most respects the misgivings of Professor Feis—and others—about the difficulties involved in presenting the full and authoritative record of recent events to the public. I began research on my subject in 1959 while a graduate student at the University of California at Los Angeles. The reaction to my initial request for access to classified materials was discouraging. The State Department referred me to the Defense Department on the

* Herbert Feis, "Speaking of Books: Unpublic Public Papers," *The New York Times Book Review*, April 21, 1968, pp. 2 ff.

grounds that the latter had promoted Project Paperclip; the Defense Department regretted that the pertinent data were "classified defense information" which could not be declassified at that time. The Department of the Army reported that the materials were classified and could not be made available for "unofficial" research. The Navy Department granted access to a limited amount of classified material with the requirement that I submit all notes taken from the records for review; they could not grant entry to the bulk of relevant information in the Office of Naval Intelligence files. Only the Air Force responded helpfully. They readily made available most of their files on Project Paperclip—which they had declassified in 1955—and granted access to their remaining classified documents with the stipulation that because the latter information was "sensitive," I submit it to the Department of Defense for security clearance and review prior to publication. In the months to follow the Air Force did everything possible to encourage my research at their various installations.

I used the large collection of unclassified Air Force materials, the small number of documents which the Navy had quickly and generously declassified for me, and forty boxes of pertinent information which I discovered by chance at the Commerce Department, to complete my doctoral dissertation in 1962. I then decided to make another assault against the protective bastions of "national security" and "sensitive information" which had kept me from the full official record. I hurriedly incorporated the classified Air Force materials I had collected into my dissertation, and sent the manuscript to the Defense Department for clearance in October 1962. My plan was to obtain their approval for "open publication," and then use their action as a lever to gain access to the classified Army and Navy records. Officials at the USAF Book Program informed me they expected clearance would take "approximately ninety days," but in response to my urging about the manuscript's disposition at the end of January 1963, could promise only that they would "needle" the Navy and Defense Departments daily. In April they informed me that

they were “running into problems” with the State Department. I continued to plague them throughout the summer of 1963, and in September by constant telephone calls and personal visits to the Pentagon. The military officers were sympathetic but were unable until the end of that month to induce the State Department to allow publication; one individual in the department was bitterly opposed to the release of any information on the subject. (Indeed, when the State Department did relent, it censored two paragraphs of the manuscript based on quotations from the *Congressional Record*, which was patently illegal.) Thus after eleven and one-half months, rather than the three months originally predicted by the Air Force, I had the lever which I hoped would open the other files.

With that lever, and inspired by having received the Mershon Postdoctoral Fellowship in National Security Studies at Ohio State University, I sent long applications to the Department of the Army and the Office of Naval Intelligence, pointing out that the Defense Department had approved the general topic as well as specific classified information for “open publication.” Both informed me that they would have to conduct a security review of my background prior to any decision concerning access; the Department of the Army estimated that such clearance “might take ninety days.” In February 1964, the Office of Naval Intelligence informed me that a review of their files had “resulted in additional information being made available.” The Army was less prompt. After persistent inquiries on my part and promises on theirs, I gained access to the central archives of the War Department General Staff late in April, completed my research in June, and submitted all notes for clearance. The five years’ search had ended in partial success.

After waiting five months for clearance of the notes, I approached the Army again. They promised to return the notes in five separate batches, with the first to arrive in January 1965 and the others at intervals of thirty days. They were able to send the first collection of forty-five pages of the least sensitive material on schedule, but nothing thereafter. In March, in the

hopes that I might alleviate their indecisiveness, I offered to send them a copy of the manuscript approved for publication by the Defense Department. They accepted the offer but noted that my case had "created numerous staffing problems." My subsequent inquiries brought no response until October, when they returned the bulk of the notes—approximately 135 pages of excellent material. They released the final sixteen pages of the most sensitive documents in the summer of 1968. During the process, the reviewers had deleted only twenty notes, most of which were taken from a short survey of Project Paperclip written by a Pentagon historian. Using them to full advantage, I submitted six copies of the book manuscript for a final security review in August 1969. The Directorate of Security Review, Department of Defense, coordinated the clearance, which was completed in February 1970. The final, cleared manuscript was completely devoid of censorship.

During this long ordeal—frustrating and costly—I found no evidence of conspiracy, malice, or antagonism on the part of the military officers involved. To the contrary, most of them offered encouragement, consolation, and humor, as with the Air Force officer who advised me to agree to the State Department's censorship of the *Congressional Record*, and then tell them to go to hell, or as with the naval officer who informed me that some documents had finally been "reviewed, *sanitized*, and released." I did discover, however, considerable caution with respect to my endeavor. At various times in the negotiations, officers raised the question as to whether I could cite key military and civilian personnel by name; recommended that I not use the word "exploitation" to describe the utilization of the foreign scientists—a word used liberally in the documents; and required that I delete the term "denial" (which had been used officially to describe the United States desire to import scientists in order to deny them to the Soviet Union), because the term was "still safeguarded as information involving the national security." They eventually conceded on all of these issues, but a more subtle kind of caution—the inclination to leave it to successors to release information

which might become controversial—seemed to me to be operative at all times as a deterrent. Only the State Department was truly obstructive. They would not grant access to their documents because they fell within their “closed period”—1944 and after; and they practiced the only real censorship, insisting to the end that I omit the name of their major policymaker in the program.

Thus despite my experience, which, to paraphrase Professor Feis, makes me wonder if the delays were really necessary, and despite my conviction that the prolonged secrecy regarding the German scientists has allowed rumor and false report to harden into fact, I wish to extend gratitude to the United States Air Force, Army, and Navy, and more particularly to Lieutenant Colonel James Sunderman, Chief, United States Air Force Book Program, who opened many doors to archives throughout the country; to Rear Admiral E. M. Eller, USN (Ret.) and Captain F. Kent Loomis, USN (Ret.), who guided me to many helpful sources through the Office of Naval History; and to Mr. Wilbur Nigh of the World War II Records Division of the National Archives, who made my search fruitful and pleasant.

I am grateful as well for the permission given by the American Institute of Public Opinion and the Roper Public Opinion Research Center to the information from their files.

I am also deeply indebted to many others who have freely granted assistance and encouragement. For their great helpfulness, I wish to thank Professor Theodore Saloutos of the University of California at Los Angeles, a remarkable teacher who suggested the topic and forever kept faith; to the Social Science Research Council, whose generous grant made possible a year of essential research and travel; to the Mershon Committee for National Security Studies at Ohio State University, whose post-doctoral fellowship gave me time to think and write; to the Research Institute of the University of Texas, which bore some of the cost in preparation of the manuscript; to Mr. John C. Green, Director of the Office of Technical Services, Department of Commerce, who gave me every possible direction; to Mr. Philip Brooks of the Harry S. Truman Library, who did likewise;

to his staff and those of the Air University Library, the Federal Records Center, and the Air Force Museum for kindness to a novice; to the many scientists, engineers, military officers, and civilians who through their interviews and letters gave me the benefit of their knowledge and ideas, and especially to Mr. Robert Staver for his many hours of explanations; to the 165 former Paperclip specialists who gave considerable time and thought to the completion of questionnaires, and above all to Dr. and Mrs. Berthold Weber, Mr. and Mrs. Dieter Huzel, Dr. and Mrs. Eric Groth, and Dr. and Mrs. Hans Hollmann for their gracious personal assistance; to Robert Zenowich and Patricia Irving of Atheneum, whose editorial suggestions were invaluable and whose patience was unending; to Miss Colleen Kain, whose skills as a typist are matched only by her congeniality; and to my wife, Geri, who suffered and enjoyed every page with me.

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Project Paperclip

Where the very safety of the country depends upon the resolution to be taken, no considerations of justice or injustice, humanity or cruelty, nor of glory or of shame, should be allowed to prevail. But putting all other considerations aside, the only question should be, What course will save the life and liberty of the country?

NICCOLÒ MACHIAVELLI

Prologue

ON THE FIRST DAY of May 1945, a small group of Americans entered the peaceful Bavarian village of Oberammergau. They looked like ordinary Army officers, but their uniforms, weapons, and accouterments of combat were deceptive. They were highly skilled civilian scientists and intelligence experts, members of the Naval Technical Mission in Europe. Their concern was not conquest but exploitation. They were searching for the secrets of German science and technology. The mission, organized late in 1944, had begun operations in Paris to exploit every "target" that might reveal information useful in the war against Japan. Through investigation of universities, libraries, and factories, they caught an occasional glimpse of the enemy's advanced technology. Yet the facts about the wonder weapons and, even more, the whereabouts of the men who created them seemed always to be somewhere beyond the lines. Logic, rumor, and the advance of the armies finally led them to the sanctuary—the Bavarian Alps.

The Navy team therefore drove with rising anticipation into Oberammergau. This Alpine village, encircled on three sides by a crescent-shaped barrier of mountains, had become a refuge for hundreds of the Reich's distinguished citizens, in flight before the relentless Allied assault. Among them was a group of scientists surrounding Professor Herbert Wagner, a colleague to whom they paid slavish respect. Wagner was the chief missile-design engineer for the Henschel Aircraft Company and the

creator of the HS-293—the first German guided missile used in combat, and near the top of the Americans' "black list" of important targets. The Navy was interested in Wagner because of the implications of his glider bombs for use in the Pacific war; the investigators were pleased to find him cooperative. After several interrogations, he escorted them to the Harz Mountains, where he unearthed seven enormous cases of blueprints and models, a testimony to his wartime accomplishments. From there he led them to the underground Henschel plant near Nordhausen, and displayed the plans and prototypes of his newest weapon, a radio-controlled antiaircraft rocket named Schmetterling, or Butterfly. The mission's intelligence officers cabled a request for his immediate evacuation. Fifteen days later, the scientist and two of his assistants, whose "knowledge, experience, and skills" were reportedly "unmatched anywhere in the world," arrived in the United States for exploitation* by various agencies concerned with the national defense.

Ensnared in a Washington hotel, under temporary contract and careful guard, the missile experts worked twelve hours a day to contribute to the defeat of Japan. The urgency of their effort ended with Hiroshima, but their usefulness remained. Inspired naval officials eager to expand postwar research programs were already planning for the scientists' "voluntary detention." They hoped to find an "ivory tower or a gilded cage where life would be pleasant, the guards courteous, the locks solid, and the bars thick—but not too obvious." Through the generosity of the Guggenheim Foundation they obtained a suitable site—a huge medieval castle, built by financier Jay Gould on a 160-acre estate at Sands Point, Long Island. Here the Germans began work on a secret project for the Navy's Office of Research and Inventions.¹

Dr. Wagner and his associates composed the vanguard of a

* Government officials used the term "exploitation" in reference to the importation program until December 1946, at which time they substituted the word "utilization." They conceived of the term in the military sense—to gain value from the personnel—rather than in its base connotation—to take selfish or unfair advantage of someone.

postwar movement of German and Austrian scientists and engineers to the military installations, industrial laboratories, and universities of the United States. Against the devastation and defeat of Germany, other intelligence teams joined with the Naval Technical Mission to foster a new concept of "intellectual reparations." Between May 1945 and December 1952 the United States government imported 642 alien specialists under several programs known collectively by the code-name "Paperclip."²

2

A nation remembers most easily the historical events of its past within the context of some significant period of challenge or crisis. For the last twenty-five years, the challenge and crisis have been the confrontation between the United States and the Soviet Union. The conflict has been so extensive in its scope, so ominous in its implications, and so irreconcilable, that it has provided a convenient framework for the explanation and evaluation of virtually every occurrence since 1945. It is in this context that Americans conceived of the importation of German scientists; they remember the undertaking as a natural, necessary, and, above all, disquieting concomitant of the Cold War.

Before the surrender at Reims, the victorious powers engaged in covert competition for the minds of the vanquished. The United States and the Soviet Union emerged as the chief competitors; but England, France, and even such smaller nations as Australia, Canada, Argentina, and Yugoslavia joined in the quest. Despite official silence regarding the rivalry, it did not escape public notice. In February 1946 the news analyst Edward P. Morgan reported that for months the Western Allies had been playing "a sinister game of hide and seek" with Russia for the outstanding scientists, and that during the clandestine operations the nations had behaved "far more like enemies than allies."³ By the end of that year, the military services had given considerable

publicity to their exploitation of specialists through Project Paperclip. The free world press had also described and deplored the Soviets' forcible removal of thousands of technical personnel from Eastern Europe. Thus even before the Cold War was seriously recognized, the public was aware of this particular expression of distrust between the two great powers.

Yet not for another decade did the utilization of the Germans assume any special significance. During the intervening years, Major General John Medaris recalled, it was fashionable to think of the Russians as "retarded folk who depended mainly on a few captured German scientists for their achievements, if any. And since the cream of the German planners had surrendered to the Americans, so the argument ran, there was nothing to worry about."⁴ But on October 4, 1957, the Soviets launched the first earth satellite, Sputnik I, and President Dwight D. Eisenhower quickly ascribed the feat to their talented captives. Experts familiar with the United States missile program were dismayed, and felt the weight of Nikita Khrushchev's query to a laughing audience at Minsk: "If Germans helped Russians, why don't Germans help the United States? After all, the American troops seized the chief designer of the V-2, took him to America, and now he builds rockets out there."⁵ On January 31, 1958, Dr. Wernher von Braun and his Peenemünde rocket team did place into orbit the first American satellite, Explorer I.

In the aftermath of these events it was obvious that the former enemies had become crucial elements in the arena of Cold War contention. Although the nation took pride in its own imported experts, they appreciated Bob Hope's ironic quip accounting for the Russians' ostensible superiority—that *their* Germans were better than *our* Germans. As the "race for space" became a frustrating reality, it was comforting to attribute the Sputniks to something other than Communist capabilities. With no specific evidence to the contrary, millions of Americans accepted the thesis that the Russians obtained not only better scientists but more of them. Many of them also concluded that the Truman administration had somehow been derelict in its importation

program. This was credible because as early as 1948 Republican congressmen publicly assailed the State Department for allegedly blocking the immigration of specialists. Partisan attack on the administration reappeared during the 1950's when critics accused the Army of abandoning enemy scientists to the Soviet Union during the crucial months after V-E Day.

These attitudes have lingered as popular legend, and to some extent, as history. The mere mention of German scientists still prompts the assumption that Moscow outwitted Washington in this contest for scientific supremacy. In the only current college textbook to discuss the subject, *The American Nation*, three distinguished historians have written that the Russians had "seemingly been more perceptive" than Americans about the importance of rocketry and missiles.⁶ The propaganda that high-level decisions and official shortsightedness ceded valuable human and technological booty to the Russians also became a useful component in the conspiratorial ideology that portrayed national policy toward the Soviet Union since 1933 as one of blunder, stupidity, and treason. A 1962 radio broadcast of the right-wing *Life Line* series, "Helping the Enemy," described the United States' supposed failure as one of many deliberate decisions to help the Communists.

This durable legend about German scientists,* couched in the phraseology of Cold War competition, is an unfortunate legacy of the importation program. Its major premise is untrue; the Russians did obtain more *technicians* than the United States but fewer and inferior scientists. The idea that the program was composed almost exclusively of rocket and missile experts is misleading; that group made up only 20 percent of the total personnel imported. Finally, its singular emphasis on the utilization of specialists by the military services, particularly the Army,

*I have taken some liberty in the use of the term "German scientists." Not all of the alien personnel were German, as I have explained in Chapter Eight. Many of them were also engineers and technicians rather than scientists, and where applicable in specific instances I have referred to them as such. But for literary purposes I have frequently used the more general terminology.

obscures the fact that Project Paperclip was a national endeavor. Military officers were the project's most fervid sponsors, but its success depended on the support of Secretary of State James F. Byrnes, Under Secretary Dean Acheson, Secretary of Commerce Henry Wallace, F.B.I. Director J. Edgar Hoover, and President Harry S. Truman. More significantly, the use of the phrase "Cold War" as the only basis for judging the actions and decisions of the early postwar years, when the Russian-American antagonism was still nascent, does an injustice to history. Its result is a gross oversimplification of the complex motivations, the divergent conceptions of the national purpose, and the uncertainties and difficulties that affected the policy process at the time.

3

To those responsible for policy, the prospect of deriving "intellectual reparations" from the defeated Reich posed a serious and agonizing challenge. For one thing, it was unique; no national precedent existed for the direct participation of the federal government in the enticement and persuasion of foreign scientists, *through contract*, to work in the United States. Much more controversial was the fact that the illustrious foreigners in question were Germans. Hating the enemy is the teaching and habit of war, and by 1945 the Americans' hatred of Hitler and his Third Reich had become a part of the national ethos. This hatred prompted President Franklin D. Roosevelt to state that he would "keep Germany on a breadline for the next twenty-five years." It affected basic policy in the initial occupation directive, which made it clear that the German people could not escape responsibility for what they had brought upon themselves. The hatred was virulent, as in the advice offered to the troops of the occupation by the Army's newspaper, *Stars and Stripes*: "Don't make friends with Hitler. Don't fraternize. If in a German town

you bow to a pretty girl or pat a blond child . . . you bow to Hitler and his reign of blood.”⁷ Most critically from the policy-makers’ point of view, it was lasting; the hate could not be absolved by momentary celebrations of victory, and it remained a potentially explosive source of opposition to any generous treatment of the enemy.

The synoptic world view of the American people also worked against the utilization of the scientists. Of the congeries of attitudes, assumptions, needs, fears, hopes, and illusions which made up the national perspective after the war, the desire for a lasting peace was the most overpowering. This yearning was not readily compatible with an action aimed primarily at the development of new weapons. It created its own conditions for statecraft, and not even the President, much less his subordinate advisers, could escape its restrictions and demands. Within this purview, policy was not a matter of edict but a process of evolution. The Joint Chiefs of Staff established the first importation project, “Overcast,” in July 1945. It envisaged the temporary exploitation of a maximum of 350 “chosen, rare minds” to increase our war-making capacity against Japan and aid our postwar military research. In the spring of 1946, largely in response to what they viewed as increasing Soviet intransigence, the State-War-Navy Coordinating Committee sponsored a revised military program called “Paperclip,” which President Truman approved six months later. It increased the maximum quota to one thousand specialists, provided for the transfer of their families to the United States, made an implicit offer of citizenship, and, above all, took cognizance of what the military termed “denial” value—forestalling the movement of scientists to other countries. Simultaneously, the Department of Commerce pushed for a program to bolster the national economy. Known as “National Interest,” the plan envisioned the immigration of approximately fifty preeminent specialists and their families for employment by civilian industries and nonprofit institutions of learning and research.

But the formulation of policy, however firm and decisive, does not ensure its successful implementation, and in this case the co-

ordination of purpose and procedure was unusually slow. Although events on the international scene exerted increasing pressure for a realistic pattern and an increased pace of exploitation, the Pentagon faced formidable barriers in its search for a feasible plan. The undertaking was controversial, and considerations of morality and justice confused the precepts of realism and logic. The issue of immigration loomed as a threatening obstacle. It entangled the military agencies in a frustrating network of federal laws and regulations for seven years. Other problems arose—legal, financial, professional, and personal—which had to be solved without benefit of precedent or prototype.

The Cold War did not arrive at a given moment as a full-blown condition of international politics; it became a reality to different men at different times as they perceived the breakdown of the wartime alliance and sought to deal with its implications. As a manifestation of those changing perceptions, Project Paperclip was not as momentous as the announcement of the Truman Doctrine, the initiation of the Marshall Plan, the organization of NATO, or the decision to fight in Korea. It affords, however, exceptional opportunity to study the strategic decision-making process in operation over a significant period of time. The importation program also had a value of its own. The acquisition of the valuable experience and specialized talents, and consequently the remarkable achievements, of more than 600 persons meant something in the delicate scales of the new international "balance of terror." For both of these reasons Project Paperclip deserves to emerge from myth into history.

CHAPTER ONE

“And Good Hunting to You All”

LATE IN 1934, as the spectacle of Nazi Germany began to assume threatening proportions, a committee of British scientists convened to study the serious problem of air defense. Out of their discussions came the first steps toward the crucial development of radar. Five years later, as the war raged in Europe, but before most Americans had become frightened about their own security, a group of refugee physicists used the prestigious name of Albert Einstein to acquaint President Franklin D. Roosevelt with certain facts about a new source of explosive power. Their action led to the epic construction of an atomic bomb. And in October 1941, shocked and desperate before the invasion of their homeland, twenty world-famous Russian scientists addressed an appeal to their colleagues abroad. “We Soviet scientists are employing all our knowledge and all our endeavor to secure the early defeat of Hitler’s hordes,” they wrote. “The scientists of the world must devote all their energies and all their knowledge to the fight against the most horrible tyranny history has ever known, against Hitlerism.”¹

These several incidents signaled the onset of the fateful and revolutionary application of science to warfare. Roused by the specter of a world controlled by Hitler, scientists forsook their traditional commitments to enter the laboratories in the interests of national defense. As patriots they were eager to offer their talents to protect their nation, and as professionals they were impelled to defeat a system that defied their values. Another

factor intensified their reaction: as members of the international scientific community, they were deeply aware of the danger posed by the enemy's use of science. With whatever dedication they pursued their own wartime activities, they could not exclude the knowledge that Hitler had at his disposal a reservoir of ability unequalled anywhere in the world. During the twentieth century, German universities had been the exciting centers of research; German scientists had been the most frequent recipients of the Nobel Prize; and on the very eve of war, German physicists had pioneered the discovery of nuclear fission.

Allied scientists therefore entered the "Wizard War," as Winston Churchill named it—warfare of a kind never before "waged by mortal men," whose "battles were lost or won unknown to the public"—in an effort to create new weapons in a race with the enemy. Their apprehension grew during the war as Hitler's propagandists uttered mysterious and malevolent allusions to wonder weapons, engendering an inordinate concern about the nature and extent of the Nazis' progress. The concern was in part a natural curiosity, a desire to separate the truth from the myth and mystery. It was also a basic military necessity. Information about weapons, matériel in use, manufacturing processes, and research was essential for the strengthening of our own arsenal, the anticipation of future enemy strategies, and the development of countermeasures. In practical terms, the need for information led to an acute emphasis on the collection of technical and scientific intelligence, a task for which the military services were unprepared. For approximately two years the United States had to rely substantially on the reports of British agents and on the study of equipment captured in the field. The dependence was not lasting. Late in 1943 Washington officials devised a procedure whereby specially trained intelligence teams would conduct investigations in Europe.²

The intelligence attack began on Liberation Day in Paris, August 25, 1944. For eighteen months thereafter, thousands of investigators spread like a giant fan across France, and finally, with vigor and daring, struck with the invading armies into the heart

of the Reich. Scientists, engineers, industrialists, linguists, doctors, scholars, soldiers, and seamen—the experts of science and the force to defend them—moved across the span of Europe in quest of documents, equipment, and personnel to chronicle every enemy advancement. The experts crowned their assault with the most thorough exploitation program in history. They ultimately studied and screened every item of scientific, engineering, and industrial knowledge seized, and shipped the valuable residue to repositories in England and the United States. This monumental transfer of knowledge provided the indispensable background and the initial inspiration for the importation of scientists. Numerous investigators, aware of the United States' backwardness in several fields of research, advanced the grandiose concept of "intellectual reparations." It seemed appropriate that the victors should claim the spoils of the "Wizard War."

1.

The inquest into the nature of German military technology began in England with a flurry of excitement in 1939. Prompted by Hitler's boastful reference to an unknown weapon at a Danzig rally, physicist Dr. R. V. Jones, chief of the Air Ministry's Scientific Intelligence Branch, made a two-month search of all existing records. His study disclosed sundry references to secret weapons projects, including bacterial warfare, new gases, gliding bombs, aerial torpedoes and pilotless aircraft, long-range guns and rockets, death rays, engine-stopping rays, and magnetic mines. Shortly after he had prepared a summary for his superiors, more menacing information arrived in London from Oslo. An anonymous German expert, in a letter to the British naval attaché, had described the development of long-range rockets, rocket shells, and radio-controlled rocket gliders at a large establishment at Peenemünde. The "Oslo Report" was

remarkably prophetic, but it was premature. During the next three years no further reports appeared to give credence to the existing evidence; the experts and strategists had no choice but to wait.

The silence lifted suddenly in late 1942. Disturbing information about a "large rocket" reached London from a Danish engineer, from two captured German general officers, and from British agents in France. The tempo of the intelligence effort increased accordingly, and in mid-April the Prime Minister appointed his son-in-law, Duncan Sandys, to undertake an extensive independent investigation of long-range rockets. At the same time the Air Ministry directed the RAF to aim its aerial reconnaissance at the entire German secret weapons complex. The concentration of resources and the intensification of effort brought direct results. Agents in diverse parts of Europe submitted proof of experimental activities in the Peenemünde area, and aerial photographs clearly outlined the railway spurs, the test stands, and the missiles themselves.

The Defense Committee quickly turned its attention from the inquest to the sentencing. Only one action—the destruction of Peenemünde—seemed appropriate to meet the danger of a rocket attack on England. On August 17, 1943, British bombers launched their famous moonlight raid against the rocket center. Their target priorities boldly emphasized the importance attached to scientists; heading the list were the housing estates. It was hoped that a ten-minute saturation of the residential area would kill the scientists and thereby cripple the project. But the raid did not destroy Peenemünde or its scientists. It did halt work for two months on what would eventually become infamous as the V-2, but neither it nor any subsequent countermeasures prevented the rocket's later emergence in the skies over London.

In the aftermath of the attack, another secret weapon—the flying bomb—occupied the primary attention of intelligence experts. The discovery of strange ski-shaped launching sites along the French coast, the belated detection of small winged aircraft

on photographs of Peenemünde, and the radar monitoring of actual test flights convinced English officials that a new form of attack was imminent. Early in December the British began to bomb the launching sites through a program known as "Crossbow." The operation increased to such proportions that by July 1944 it required more than 40 percent of the total bombing effort. In this instance, too, neither the bombs nor the numerous commando raids along the French coast were enough to prevent the indiscriminate terror of the V-1's.

The British intelligence attack against Hitler's secret weapons was thus only a partial success. Before the armies overran the last of the launching sites in March 1945, the Germans had hit England with more than 2,400 V-1's, killing some 6,000 people, and 1,000 V-2's, causing over 2,700 civilian casualties. The intelligence effort did have important subsidiary benefits. The air raids inadvertently delayed other weapons projects, especially the dangerous anti-aircraft guided missile Wasserfall, designed to destroy targets at an altitude of twelve miles and at a distance of thirty miles. Above all, the excellent photographs and the massive amount of data collected by the British analysts were indispensable for future target assignments. London became the preparatory school for the host of experts who subsequently marched across Western Europe.³

The United States shared very little of the apprehension, excitement, and responsibility of the intelligence campaign against the rockets. Not until October 1943 did Churchill inform Roosevelt that the problem was under study, and not until 1944 did American pilots join in the raids against "Crossbow" targets. But American officials did have to confront an equally ominous mystery—German atomic power. No one doubted the enemy's capability or desire to develop a nuclear bomb, and it was of great importance to the nation's own atomic research through the Manhattan Project to determine the extent of their progress. For two years officers in Army G-2* and the Office of Naval Intelligence worked closely and successfully with the traditional

* G-2 was the Army's intelligence branch.

British agencies, but the portentous implications of the Nazis' project demanded an equivalent response. In the autumn of 1943, General George C. Marshall decided to expand the intelligence effort by transferring major responsibility on atomic matters from the traditional agencies to General Leslie Groves of the Manhattan Project. This decision led to the establishment of the Alsos Mission, a cooperative venture of the Army, Navy, and Office of Scientific Research and Development (OSRD) to meet the unique requirements of nuclear intelligence.

Alsos was staffed with outstanding scientists under the leadership of an internationally known physicist, Samuel Goudsmit; and assisting him was a military contingent led by one of the Army's most dynamic officers, Colonel Boris Pash. Its objective was not merely to collect data but to enter active theaters of military operations to seize personnel, laboratories, and documents. As a favorite child of Washington, its members could rely upon cooperation from the highest echelons. In May 1944, several members flew to London, where they compiled lists of uranium mines, laboratories, and industrial sites, and composed a master list of the names and addresses of some fifty eminent German physicists. Shortly after the D-Day invasion, June 6, a team of eleven scientists and three officers landed on the Continent.

The hopes of the Alsos team centered on Paris and the laboratory of the foremost French nuclear physicist, Frederic Joliot-Curie. It was symbolic of their importance that they were among the first Americans to enter the city. The liberation of Paris was primarily a French operation, but tucked into the assault column behind the leading French tank was a jeep carrying Colonel Pash and three scientists. For most of the day the Alsos team remained with the French armor, sharing the spontaneous joy, relief, and frenzy of the liberation. That evening, in response to their queries, Joliot expressed doubt that Germany had completed any substantial work on an atomic bomb, although during interviews over the next several days he offered no substantive proof. The Alsos members scrutinized letters,

notebooks, desk calendars and searched the files of the many industrial concerns in the city. They found an occasional item to clarify a point of interest, but nothing definite. The German bomb remained a mystery.

After the unsuccessful foray in Paris, the Alsos members separated into teams that followed the armies. For several months they had to content themselves with collecting data from firms in France and the Low Countries, from prisoners of war, and from photo-surveillance of suspected enemy nuclear installations. On November 25, Colonel Pash entered the city of Strasbourg, where he captured seven German physicists and chemists. He learned nothing from interrogations; but Goudsmit arrived immediately to examine the papers of Professor D. F. von Weiszacker, and was jubilant. Although he found no actual research reports, he discovered information from private letters sufficient to conclude that Germany had no atomic bomb and was not likely to have one in any reasonable time.

The findings at Strasbourg were too meager to support an absolute conclusion, and the Alsos teams had to wait several months before engaging in final action across the Rhine. By that time, the military services and civilian agencies in Washington had come alive to the broad range of possibilities incidental to the conquest. To fulfill their own interests and responsibilities, they had organized new agencies to go beyond Alsos' search for the spectacular, and take advantage of the more mundane accomplishments of military and industrial technology. These latter agencies, both in purpose and function, reflected the inter-Allied, interservice, and civilian-military rivalries that were a part of the total war effort. When triumph in the Ardennes campaign in February 1945 finally enabled investigators to look toward Germany, exploitation had become competitive. As Professor Goudsmit bemoaned, "It became one of the mission's more painful tasks" to keep the unauthorized sleuths of the Army, Navy, and industry teams "out of the running."⁴

2.

The War Department had had some experience in sending technical missions overseas during the First World War, but discontinued the practice after 1920. As a consequence, military technical intelligence at the outbreak of World War II was very inadequate, not unlike that of Army intelligence in general, which, according to General George C. Marshall, was little more than what officers "could learn at a dinner, more or less over the coffee cups." After the tragedy at Pearl Harbor, and in part because of it, the military intelligence agencies improved markedly, but they still gave little attention to technical data. The Army's Ordnance Department made a move in that direction at the end of 1942, when they began sending specially briefed teams to combat areas to collect enemy equipment, specimens of which they would ship to Aberdeen Proving Ground in Maryland for study. These teams were useful—so much so that in early 1944 the commanding general of the Army Service Forces (ASF) organized Enemy Equipment Intelligence groups in each of the technical services.⁵

Following the invasion at Normandy, teams of the Ordnance and Signal Corps and the Chemical Warfare Service began their work in earnest, but proved inadequate before the exigencies in the field. The number and character of the targets—which included laboratories, records, and prisoners, as well as equipment—surpassed both the capabilities of their personnel and the scope of their mission. In July 1944, Supreme Headquarters of the Allied Expeditionary Forces (SHAEF) took action to meet the vastly expanded demands by creating special intelligence collecting units known as T-Forces. These units operated at Army Group level (Sixth, Twelfth, and Twenty-First Army Groups) to seize and safeguard every seemingly worthwhile target. They were composed of personnel trained in language and document procedures, of medical and signal detachments, and of combat troops. The Twelfth Army T-Force included an armored infan-

try battalion, a tank destroyer company, combat engineers, and ordnance bomb disposal squads. Wearing a large red "T" on their helmets, the forces operated separately and independently of troops engaged in ordinary combat, and entered specific areas under combat conditions within a few hours after resistance had ceased.⁶

The T-Forces had the capacity to capture and defend targets, but not to conduct highly technical exploitation. Recognizing the dilemma, SHAEF complained to Washington in early August that it was being deluged with requests to aid exploitation in which it had no immediate interest and for which it lacked the qualified personnel. Later in the month, the Combined Chiefs of Staff responded with the establishment of the Combined Intelligence Objectives Subcommittee (CIOS), an agency that was to plan and administer the broadest possible program for orderly exploitation. The cooperative purpose of CIOS was reflected in the participating agencies—for the United States: the War Department, Navy Department, Army Air Forces, State Department, Foreign Economic Administration, Office of Strategic Services, and Office of Scientific Research and Development; and for England: the Foreign Office, the Admiralty, the Air Ministry, and the Ministries of Supply, Aircraft Production, Economic Warfare, and Fuel and Power. It was intended that CIOS would serve as the control center for the collection of all information; it had the authority to compile a "black list" of targets of urgent military importance, to provide SHAEF with technical experts to visit them, and to process and distribute the resulting reports. On August 28, operating from headquarters in London, the subcommittee dispatched its first team to Paris, and by the end of the year, had sent 197 investigators into the field.⁷

Even before the CIOS teams were under way, there was ferment in Washington for a more comprehensive program to collect information of a specifically industrial nature. In August, Dr. Vannevar Bush, director of OSRD, suggested in letters to the Secretaries of War and Navy that they might form a com-

mittee, perhaps with a distinguished civilian chairman, to take charge of the accumulation of such material. Several weeks later J. L. Krug, chairman of the War Production Board, wrote to the secretaries arguing that industrial intelligence was of critical importance to the armed forces and of immediate value to American war plants. He proposed that the services establish a program with great urgency, and offered the full cooperation of the WPB in providing men with the necessary knowledge to make it effective. Correspondence on the subject was soon rife. The Secretary of the Navy expressed definite interest but disliked the idea of a special board. The Secretary of War referred the matter around his department, and received assurances from G-2 and the ASF that they would be happy to act as coordinators for all agencies. The Secretary of the Interior wrote that he would be pleased to take over in certain fields such as petroleum and synthetic oils. General H. H. Arnold of the Army Air Forces (AAF) stated that the military departments should be responsible for all intelligence information, and that the Alsos Mission could best fulfill that responsibility.

The issue of civilian versus military control was implicit in these discussions. Certain civilian leaders, especially those within the Foreign Economic Administration,* resented the military's seeming lack of appreciation for industrial information, and demanded a larger role than that of serving as a mere employment agency for SHAEF. The FEA director, Leo Crowley, a Wisconsin Democrat and long-time New Dealer considered by Roosevelt one of the most talented administrators in Washington, resolved the issue in October 1944 with the formation of the Technical Industrial Intelligence Committee (TIIC), empowered to receive, approve, and administer all governmental requests for information on processes, patents, inventions, and engineering "know-how" which might be of value to the Allies' war production programs or postwar economies. The

* President Roosevelt had created the FEA out of a conglomeration of agencies in September 1943. Known to Washington bureaucrats as the "problem agency," the FEA had as one of its many responsibilities the supervision of governmental activities in liberated areas.

committee was in large measure a concession to civilian control. Although it was under the ultimate jurisdiction of the JCS, the primary authority for its operation remained with civilian leaders. The TIIC chairman, Howland Sargeant, was dedicated and efficient. Believing that the United States had "missed the boat completely" after the First World War, he quickly organized subcommittees in the fields of rubber, metals and minerals, chemicals, building materials, war utilities, railroads, forest products, machinery, textiles, aeronautics, medicine, and communications. By January 1945, three hundred TIIC specialists, newly commissioned as Army officers, were awaiting shipment to Europe.⁸

A spirit of competition also led to the organization of two semiautonomous intelligence groups to serve the Navy and the Army Air Forces. The Naval Technical Mission in Europe owed its existence primarily to the zeal of Captain H. A. Schade, a naval architect from the University of California at Berkeley. Captain Schade had served as the Navy's representative on Alsos, which he considered too narrowly limited to scientific as opposed to technical intelligence. As for working under CIOS, Schade argued that the teams were oversized, slow moving, and unwieldy, and operated in too routine and systematic a fashion. He considered the Navy's interests too vital and comprehensive to be handled as a secondary adjunct to Army intelligence activity, and preferred his own teams, not dependent on SHAEF. Even more, the captain feared any arrangement whereby Navy personnel might fall under British domination. He conceived their major function to be the collection of information useful in the prosecution of the war in the Pacific—an American war, as he saw it—and viewed the Naval Technical Mission as a way to escape any external influences. In November 1944, Schade presented his sentiments to a sympathetic audience of naval officers in Washington, and soon became the director of yet another large and eager group of technical investigators.⁹

The Air Forces, already striving for separation from the Army, were surprisingly late in their demand for an independent role

in exploitation. Until April 1945 their officers were content to operate through CIOS and the internal Air Technical Intelligence units. When they finally expressed their desire for autonomy, it was with a fervor aptly described by the code name "Lusty." They gave their project a priority equal to that of military operations, and staffed it with a sophisticated array of officers, lawyers, scientists, research scholars, historians, and industrialists. In a period of six weeks, they dispatched several hundred mobile teams to make a complete and detailed study of aviation medicine, rocket and jet propulsion, air photography, radar, and communications systems.¹⁰

With the entry of the Air Forces into the lists, the exploitation program was essentially complete. Although it had the characteristics of an organizational maze, there was a certain crude logic to its division of responsibilities for the acquisition of different kinds of information. Alsos would operate with its own military contingent to examine purely scientific objectives, particularly those with relevance to atomic power. The T-Forces under SHAEF would capture and protect targets of every kind, and CIOS would send cooperative working parties to exploit them. The TIIC would allow American industrial experts to work through a special subcommittee of CIOS to conduct more leisurely examination of less critical objectives. And the military services would work through their representatives on all of the agencies to procure technical data on existing weapons, and could pursue their unique interests through the Naval Technical Mission, "Operation Lusty," and the Enemy Equipment Intelligence teams of the Army Service Forces. To ensure even more comprehensive exploitation, Washington on occasion sent individual groups to report on specific discoveries. Frequently, too, personnel of the Office of Strategic Services and the United States Strategic Bombing Survey examined targets. And London, alert to the proliferation of American agencies, created its own Industrial Objectives Subcommittee and the 30 Assault Unit, an equivalent to the Naval Technical Mission. Altogether it was a formidable army to send against the secrets of the enemy.

3.

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"Over the Rhine, then, let us go. And good hunting to you all on the other side." So wrote Field Marshal Bernard Montgomery to inspire his troops at the beginning of their colossal offensive across the river barrier on March 23, 1945. His personal message unintentionally expressed the sentiments of the intelligence teams poised expectantly along a 500-mile front on the west bank. Within the next several weeks, when the Allied armies had smashed open the entire Western front and were on a rampage along the routes to Berlin, more than three thousand experts crossed the bridges to the unknown opportunities beyond. They, more than the armies, would give meaning to the code name for the crossing, "Operation Plunder."

Almost momentarily the optimistic plans of Washington and London, which described exploitation with such adjectives as "orderly" and "systematic," gave way before the realities in the field. Most notably lacking was any semblance of authoritative coordination. CIOS tried valiantly to direct the activities of the various teams, but it was top-heavy with committees and light on supremacy. The investigators facetiously referred to it as CHAOS, and as if to verify their judgment, engaged in a scrambling, sprawling, disorderly, and competitive onslaught against their targets. There were simply too many teams with too much independence.¹¹

Much of the chaos had nothing to do with poor coordination; it was inherent in the situation. The armed forces necessarily had a monopoly on facilities and supplies, and were not unduly attentive to the needs of the teams. Combat headquarters had to meet the demands of their own troops as well as the growing requirements of the civil affairs units; they often resented the independent investigators from higher headquarters with interests of no immediate military value, and on occasion came to regard their own technical groups as parasitic elements giving little in return for their upkeep. The teams also had to function under generally adverse and occasionally hazardous combat con-

ditions; they frequently entered cities and factories with troops, and moved into countryside not yet cleared of hostile forces and mines. Communications were in a state of anarchy, and travel was slow and dangerous. All operations were hampered by the hundreds of thousands of displaced persons; suffering from the psychological malaise described by authorities as the "liberation complex," the D.P.'s were both exultant and vengeful. They looted and pillaged with abandon, expressing their pent-up hatred against anything German, including valuable equipment and irreplaceable documents.

The unexpectedly rapid military advance added to the difficulties because it made available a mass of targets almost at once. Colonel Holger Toftoy, in charge of the Ordnance Enemy Equipment Intelligence teams, expressed a sense of frustration in his report of activities for the first two weeks in April:

Operations since the crossing of the Rhine have increased to such proportions the teams and rear echelons are positively swamped. In spite of constant day and night effort, we cannot meet all of even the most important demands. . . . The pace which had been fast became killing. Information which would save the Ordnance Department years of research is available, but the time these rich areas will remain under U.S. control is very short; too short for complete coverage or even evacuation of all desired specimens.

"One thing not appreciated by those who are not engaged in these operations," the colonel added, "is that the installations are usually huge, many are underground with destroyed power plants, and require days to explore. Rubble and booby traps further hamper activities. Specimens are frequently most difficult to evacuate." ¹²

In addition, target material was difficult to locate. In March 1945, Hitler had decreed the destruction of all equipment and papers, but it was more usual for the custodians to hide them for posterity or bargaining. The investigators thus became involved

in activities that smacked of detective fiction. A staff member of the Naval Mission searching for the dismantled parts of a hydrogen peroxide engine traversed northern and southern Germany. He was ultimately successful only because of the chance discovery of a seemingly innocuous blueprint in a room that had been thoroughly ransacked by liberated slave workers. The blueprint led him to a German draftsman, who gave him sufficient information to unearth one part of the engine in the Harz Mountains, another in a junk pile near Bremen, and the third in a hideout in the Bavarian Alps. Sometimes the Germans were cooperative. Upon entering a small village near Halle, naval personnel spoke with the notorious U-boat skipper of World War I, Count Felix von Luckner, and learned of the existence of expensive electronic devices scattered in a malt warehouse and a dozen beer gardens. Luckner had prevailed upon the manager of the equipment to disobey his orders to destroy it, and suggested to the Americans that the German "is without any money and in a precarious position, [so] he is good for your information." The count went so far as to write a letter of introduction to the mission officers.

Locating documents was an even more advanced art. In one instance, an officer with CIOS noticed a small boy playing with some blueprints. Following the lead, he found papers of the Ruhr-Chemie Corporation near Essen at a country house surrounded by a massive wall and a picturesque moat. Hidden in the farm buildings and the hay ricks was a cache of documents that filled six rooms. An AAF group unearthed two large wooden chests buried at the rear of a home, containing the valuable documents of the Continentalmetall Company of Frankfurt. And Navy experts dug up a particularly important set of records concealed, in the best pirate fashion, in a forest hiding place—so many paces from a tall oak tree's shadow when the sun was at a certain height in the sky.¹³

In spite of the confusion and the difficulties, the achievement of the exploitation enterprise was immense. The teams ultimately investigated more than nine thousand targets, and ob-

tained equipment of impressive variety. The Army acquired prototypes of every conceivable weapon, an achievement climaxed by sixteen Liberty shiploads of V-2 parts from central Germany. The Navy shipped 9,400 tons of matériel, including a supersonic wind tunnel from Bavaria; a Walter submarine, the U-1406, scuttled at Cuxhaven; and a 2,500-horsepower turbine from Kiel. The Navy joined with the Air Forces to fly thirty-nine different planes to Cherbourg for transport by aircraft carrier. And in a high-priority project, the Air Forces returned 2,500 pounds of battered V-1 parts to Wright Field, Ohio, in order to manufacture the weapon for use against the Japanese. Within a year, the Republic Aircraft Company and the Ford Motor Company had delivered 1,391 of the missiles, renamed the "JB," but the project ended with V-J Day. In addition, the industrial teams shipped 700,000 pounds of equipment to the United States for testing and exhibition purposes, including an entire I. G. Farben pilot plant for the production of synthetic fuels. One expert estimated that the industrial program alone would save American industry billions of dollars and advance its research by several years.¹⁴

The captured documents proved to be even more valuable. By November 1945, CIOS had evacuated between 150 and 200 tons for study and storage in London, and prepared another 200 tons of aeronautical information for shipment to the Air Documents Research Center at Wright Field. In view of the problems involved in evacuating a great mass of material, England and the United States began a program whereby microfilm teams entered industrial plants, universities, and laboratories in the field. The program was so extensive that during 1946 the teams filmed 3,858,000 pages of material. When it ended in 1948, the most minute aspects of science and technology, complete with drawings, flow sheets, minutes of the meetings of research groups and business firms, doctoral dissertations, and 186,000 applications of the German Patent Office, were available to interested parties in the United States.¹⁵

4.

The information derived from equipment and documents, however consequential for the future, was less important at the time than that obtained through the interrogation of individuals. "The best way to get information," reported Colonel Leslie Simon, director of the Ordnance Department's Ballistic Research Laboratory, "is to question the scientist in the presence of his scientific reports and in his accustomed environment." All of the teams sought this ideal situation, but throughout the month of April 1945 they found few scientists. Most of them had fled their research establishments to join their families, to continue work elsewhere, or to go into hiding; and some had been imprisoned during combat operations. Their location entailed a massive and confused search that was fruitless in most instances until after the surrender on May 8.

There were exceptions. The Alsos Mission avidly followed the trail of the physicists, as much for the purpose of preventing their capture by the French and Russians as to get final proof that there was no danger from a German atomic bomb. Benefiting from excellent planning, the inspiration of individual members, and the courage and zeal of Colonel Pash, they bridged the gap of time and distance to attain an early success. Once across the Rhine they followed the U.S. Seventh Army into Heidelberg, where they located Professor Walter Bothe of the famous Kaiser Wilhelm Institute for Medical Research. Bothe refused to discuss war projects, but he confirmed Goudsmit's suspicions that the Germans had failed to make any meaningful progress toward a bomb. Documents also revealed that the two most important nuclear experts, Professors Otto Hahn and Werner Heisenberg, were working on an experimental pile at several small villages south of Stuttgart.

Colonel Pash took advantage of the information by initiating, on April 23, a long-planned, delicate operation named "Harborage." In a daring move, he rushed diagonally across the front of

the First French Army to the village of Hechingen, where the experts were reportedly gathered. There, and at two nearby hamlets, he captured the discoverer of uranium fission, Dr. Otto Hahn; the Nobel Prize winner Max von Laue; and several other scientists. At the same time he seized a physics and chemistry laboratory, and recovered two tons of heavy water from the cellar of an old mill and 1½ tons of uranium cubes from a plowed field. There were still key personnel missing, and Colonel Pash, operating boldly some twenty miles in front of the U.S. Seventh Army, moved on to Munich. He located Dr. Walter Gerlach, the plenipotentiary of nuclear research of the Reich Research Council, at the physics laboratory of the university; moved southwest to find Dr. Kurt Diebner, another member of the council; and finally picked up Heisenberg in the small Bavarian village of Urfeld. Also then interned the ten foremost nuclear experts in a series of prisons in Germany, France, and Belgium before removing them on July 3 to Farm Hall, a country estate in England.¹⁶

As Colonel Pash was venturing into Upper Bavaria, other teams were beginning their exploitation to the north. At Stuttgart, a CIOS team spent considerable time at the Graf Zeppelin Research Establishment interrogating the illustrious aerodynamicist Professor Georg Madelung and the creators of the "ribbon"-type parachute, Dr. Helmut Heinrich, Dr. Theodor Knacke, and Gerhard Aichinger. At the Aerodynamics Research Institute in Göttingen, they found Professor Otto Walchner, one of Germany's leaders in high-velocity ballistics; he had been conducting research on sweptback wings, and at one time had served as an adviser on the V-3, a fantastic artillery weapon with a 400-foot barrel constructed to shell London from the French coast. The most exciting find took place in late April at Brunswick, where Colonel Donald Putt, the officer in charge of "Operation Lusty," took command of the Hermann Goering Aeronautical Research Institute. Situated under the natural camouflage of a pine forest, the institute was one of the most magnificent scientific establishments in Germany; its more than twelve

hundred specialists had superb working facilities, including five wind tunnels, and they had made fundamental advances in ballistics and aerodynamics.

Colonel Putt placed a careful guard around the seventy laboratory buildings, collected and arranged documents and files, began the interrogations, and informed AAF headquarters of the exceptional possibilities at Brunswick. Within ten days members of the elite AAF Scientific Advisory Group, headed by Dr. Theodore von Karman, the former director of the Rocket Research Project at the California Institute of Technology, arrived at the institute. They were impressed with the outstanding personnel—Professor Theodor Rossman, director of the Weapons Laboratory; Dr. Ernst Eckert, an expert in jet motor fuels; Dr. Wolfgang Noeggerath, a specialist in rocket fuels; and, above all, Drs. Theodore Zobel and Adolf Busemann. Making good use of the wind tunnels, Zobel had developed a special interferometer for measuring the air flow around models; and Busemann, one of the foremost supersonics experts in the world, had proved that it was possible to reduce the drag at supersonic speeds by the use of sweptback wings. This latter development was of utmost importance to the American aircraft industry, which was at that moment considering the feasibility of a jet bomber. One member of the investigating group, George Schairer of the Boeing Company, was so excited that he sent an urgent cable to the United States explaining Busemann's discovery. Boeing and others immediately undertook studies that would lead to the swept wings of the B-47 and virtually all other aircraft.

May was the month of opportunity for all of the military teams, and their long-awaited chance to capture and interrogate their distinguished enemies had a galvanic effect: it intensified the confusion, competition, and excitement of exploitation. "The original plan was just to locate scientists who worked on war industries and find out what they knew," explained one surprised AAF officer. "Pretty soon we started this Russian zone grab and, by the way, we've swiped some from the British and

French zones. . . . For that matter we're even stealing them from ourselves; the competition is fierce. The Navy has almost two hundred people grubbing around the country . . . Ordnance, too. They have a big crew that's found von Braun." The officer's comments gave an apt description of the melee that took place during the month of the surrender, and nowhere was the action more lively than in the southernmost part of Germany and the eastern section of Austria, the Alpine region known to the military as the "National Redoubt." ¹⁷

5.

As the Allied armies swept relentlessly across central Germany toward Berlin, one shadow alone darkened the bright prospects for an early extinction of the Third Reich. To the south, in the Bavarian, Austrian, and Italian Alps, the "National Redoubt" loomed as a threatening enigma. Born in suspicion as early as 1943, and nurtured thereafter by countless rumors and occasional facts, the concept of an Alpine fortress had come of age as the armies massed to cross the Rhine. On March 11, an intelligence summary in Supreme Headquarters suggested that there, "defended by nature and by the most efficient secret weapons yet invented, the powers that have hitherto guided Germany will survive to reorganize her resurrection." With armaments manufactured in bombproof factories, with food and equipment stored in vast underground caverns, and with a select corps of young men trained in guerilla warfare, the report surmised, an entire underground army could rise to liberate Germany from the occupying forces. By April 15, when Lieutenant General William Simpson's troops faced the Elbe River, only sixty miles from Berlin, the specter of a mountain bastion exerted a strange magnetism, so compelling as to shape the strategic thinking of the American high command.

Out of intense concern and over vigorous British protesta-

tions, General Eisenhower diverted the main thrust of the Allied attack away from Berlin and toward the south. The Supreme Commander, in dedication to a lifetime of training, favored military over political considerations; in order to forestall a last-stand battle and save American lives, he chose to destroy the enemy's last vestige of military power. On April 17, the American Third and Seventh Armies and the First French Army began their plunge toward the center of the Alps. With fantastic speed and across difficult terrain, the combined armies smashed the enemy into total capitulation in an eighteen-day blitz. But as the troops made their way through narrow slumbering valleys and along winding mountain roads, they found little to give credence to the frightening prospects of an impenetrable fortress. There were no caverns filled with food and equipment, no bombproof factories, and only scattered groups of fanatic defenders. On May 5, with the capture of Hitler's private retreat at Berchtesgaden, it was evident even to the most apprehensive that the enemy had made no serious preparations for a *Götterdämmerung*.

To Winston Churchill, who ardently sought to “shake hands with the Russians as far to the east as possible,” the diversion of forces from Berlin was one of a cluster of mistakes which “played a dominating part in the destiny of Europe, and may well have denied us the lasting peace for which we had fought so long and hard.” For more than twenty years, the Prime Minister's judgment has haunted the historical debate over the origins of the Cold War; a succession of critics have portrayed the mountain citadel as the captious and costly mirage which it was in military terms. But the scientific intelligence teams of 1945 had no such misgivings; they welcomed Eisenhower's decision. They had been curious about Bavaria since 1944, when a German prisoner revealed that the entire Peenemünde wind tunnel operation was moving to a locality near Munich, and their curiosity turned to concern when they learned from captured documents that entire companies had dispersed to the area. Impatient to seize the “most efficient secret weapons yet

invented” and the men responsible for them, they followed closely on the heels of the U.S. Seventh Army. For them, the redoubt was anything but an empty and worthless prize. The Naval Technical Mission’s capture on May 1 of Dr. Herbert Wagner, inventor of the HS-293 glide bomb, marked the beginning of a series of events that would justify the costs as well as the hopes of technical exploitation.¹⁸

Bavaria was not known as a center of industry or research, and only one indigenous installation—the Bavarian Motor Works in Munich—was of interest to the investigators. BMW was famous before the war for its motorcycles and racing cars, and after 1939 produced long-range bombers and worked on jet and rocket engines. A Navy team visited the plant during the first three weeks of May and obtained some useful design information from its director, Dr. Bruno Bruckmann, and from the project chief for all reciprocating and rocket engines, Peter Kapus. Far more valuable, however, was the information obtained from individuals who had evacuated from other parts of Germany to the mountain villages of the redoubt. At Ainring, AAF Lieutenant Colonel John O’Mara took charge of the German Glider Research Establishment, which had moved with approximately 1,000 people from Darmstadt. The research was under the direction of several physicists—Dr. Werner Hohenner, Dr. Helmut Weickmann, and Dr. Hans J. aufm Kampe—and included projects for the V-1 and the Enzian and Wasserfall anti-aircraft missiles. Another Air Force team captured the leaders of the Luftwaffe’s Ernst Lecher Institute—Drs. Hans Plendl, Albrecht Herzog, and Hans Zschirnt—near Reutte in the Tyrol. The institute was formed in 1943 when Germany awakened to her inferiority in radar, and had a distinguished staff of eighty persons engaged in electronics and high-frequency radar research projects. For several weeks after the war, the group continued its work under the auspices of the AAF.¹⁹

By far the most important group of displaced persons were the V-2 experts from Peenemünde. In 1932 a young artillery captain, Walter Dornberger, had recruited an even younger sci-

entist, Dr. Wernher von Braun, to experiment on military rockets for the German Army. During the 1930's the two directed an expanding team of scientists in the development of a series of rockets, beginning with the A-1, a short projectile weighing 330 pounds, and culminating in the A-4 (V-2), a 50-foot-long, 13-ton projectile which seemed to be the ultimate in artillery weapons. After Germany went to war, they assembled upwards of 200,000 people for their project at the world's most advanced experimental station on the Baltic seacoast, and continued to perfect the A-4 through 65,000 modifications. But the war bedeviled their work. Shortly after the British raid of August 1943, Professor Albert Speer, Reichminister for Munitions and War Production, met with General Dornberger to prepare for the dispersion of functions throughout the Reich. The main assembly facilities went to a network of tunnels in the Harz Mountains in central Germany near the small town of Nordhausen. On New Year's Day 1944, with the benefit of ten thousand slave laborers and convicts under the control of the S.S., the Central Works produced its first three perfected V-2's.

At the end of January 1945, more than four thousand personnel still remained at Peenemünde, and due to the approach of the Russians, S.S. General Hans Kammler ordered their evacuation to the Harz Mountains. Kammler, brutal and treacherous, was an engineer who had to his credit the construction of numerous concentration camps, including Auschwitz, and had served as the dedicated tool of Heinrich Himmler to win control of all armaments programs. He was responsible for injecting slave labor into the rocket program; he was instrumental in the arrest of von Braun* for failing to make a clear distinction between space travel and weapons development; and, by virtue of sinister infiltration, he finally gained control of the secret weap-

* In March 1944 the Gestapo learned that von Braun had expressed in public a defeatist attitude about Germany's chances in the war, and a desire to design a spaceship rather than a weapon. Voracious in their demand for control of the V-2 program, the S.S. leaders used this information, together with a trumped-up charge that von Braun had Communist leanings, to imprison him for two weeks in a Gestapo cell in Stettin.

ons projects. His order to disperse was one of the few that met with the approval of von Braun and his staff; their preference, bolstered by the tales of Russian brutality told by the melancholy parade of refugees, was to surrender when necessary to the British or the Americans. General Dornberger quickly moved his headquarters to the village of Bad Sachsa; Dr. Kurt Debus, director of the test stands, took his team to Cuxhaven on the North Sea; and during February the entire organization moved with its documents and equipment to the cotton-mill town of Bleicherode, twelve miles from Nordhausen.

Under the code-name "Mittlebau Construction Company," the rocket experts made an attempt to install their laboratory equipment and continue their work, but conditions allowed for little more than meetings and discussions. Even those ended on April 1; in response to a rumor that American tanks were in the vicinity, Kammler ordered Dornberger and von Braun to hide the technical data and move with 450 of the best personnel to Bavaria. Von Braun entrusted the documents to an aide, Dieter Huzel, who buried them in an abandoned mine shaft in the mountains. Fearing extinction from the S.S. guards, most of the scientists scattered to nearby villages. Von Braun joined Dornberger at Oberjoch near the Adolf Hitler Pass, and on the rainy afternoon of May 2, the two leaders surrendered with five of their associates—Magnus von Braun, Hans Lindenberg, Bernhard Tessmann, Dr. Herbert Axster, and Dieter Huzel—to American authorities near Reutte.²⁰

During the next several weeks, the Americans assembled four hundred Peenemünde personnel for interrogation at the beautiful ski resort of Garmisch-Partenkirchen. After a preliminary interview, approximately half of them—designated by von Braun as of lesser importance—were released and returned to their homes. The others remained in detention for several months. The AAF officer in command, Lieutenant Colonel John O'Mara, provided them with technical lectures and an excellent library; the captives formed orchestral and theatrical groups for their own amusement; and numerous teams con-

ducted investigations. In view of the conditions, the questioning was necessarily brief and usually disorganized, but the Germans were noticeably eager to discuss their achievements. They spoke not only of the V-2, but of many other projects, some only concepts on the drawing board, others in the test stage. They mentioned the tiny rocket Taifun, only 75 inches long, designed for massive use against aerial targets, and the A9/10, a two-stage intercontinental ballistic missile which would reach New York from western France. They talked about their role in the development of the antiaircraft missiles—the Schmetterling, a subsonic weapon launched by two auxiliary rockets; the Rheintochter, a two-stage missile using solid fuel for the take-off and liquid fuel for flight; and the Enzian, propelled by a 3,530-pound-thrust Walter engine to an operational height of 8½ miles. They described a test in 1942 in which they fired rockets from a U-boat at a depth of 40 feet, and a more recent and very secret project to attack England and the United States with V-2's launched from a floating container behind a submarine. And they told of more wondrous possibilities for the future—a manned earth satellite, an observation platform in outer space, weather control by a space mirror, and a moon rocket.²¹

Meanwhile, Navy Lieutenant Commander Maurice Biot captured the former Peenemünde wind tunnel specialists, headed by Dr. Rudolph Hermann, who had moved in early 1944 to the lakeside village of Kochel, twenty-five miles south of Munich. At the Aerodynamics Ballistics Research Station, the staff of two hundred had installed their powerful wind tunnel, capable of testing the flight qualifications of missiles up to 4.4 Mach number (4.4 times the velocity of sound), and made all of the calculations for the V-2 and the Wasserfall. When Biot arrived, he found the installation in as unmolested a state as any in Germany; the scientists had conveniently disobeyed orders from the S.S. to destroy the equipment and documents.

Dr. Fritz Zwicky, a crusty and reflective physicist from the California Institute of Technology, led the exploitation at Kochel. For several months he played the role of a stern task-

master. "He got them to work at 8:00 in the morning," recalled a colleague, "and cracked the whip and made them finish up all the reports they were writing. They had buried most of their documents and he made them dig them up, and put the photographs back in." Zwicky was pleased with the "great efficiency" and the "unusual spirit of cooperation" displayed by the Germans, but as with many other investigators, he was discouraged by the problems involved in conducting exploitation under field conditions. "Our work was . . . greatly hindered," he complained, "by the troops guarding the place. Rather than guarding the equipment, they very often broke into the various labs, hunting for souvenirs and stupidly damaging much of [it]. We were also enormously bothered by literally dozens of teams of technical and military representatives who upset our systematic exploitation by demanding special favors in the acquisition of reports and equipment and by requesting the services of the German experts for their own edification. These machinations wasted much of the time of all the key men involved." ²²

Despite the difficulties, there was no lack of excitement about Kochel. Much of the equipment, as it was used on the wind tunnel—the nozzles, the electrical control devices, and the interferometer—was completely new and fascinating to the Americans. Even more impressive were the scientific leaders at the center—the director, Dr. Rudolph Hermann; the director of research, Dr. Herman Kurzweg; the business manager, Dr. Gerhard Eber; and the project specialists, Drs. Willi Heybey, Peter Wegener, and Ernst Winkler. After reading their 183 top-grade research reports, Zwicky concluded that they "did an outstanding job and were many years ahead of all other countries"; his colleague, Dr. Clarke Millikan, an investigator for the Navy, agreed. "It was a very extraordinary group," he later told a gathering of naval officers. "They had no geniuses as far as I could discover among them, but a large number of highly competent and qualified engineers and scientists. But . . . none of them being outstanding, they turned out what to my mind was the greatest volume and the finest supersonic wind tunnel work of any place in the world." ²³

At both Garmisch and Kochel, the Americans were very surprised at the ease with which the rocket experts changed from adherence to Hitler to willing cooperation with their captors. The phenomenon inspired speculation. Professor Zwicky believed their “lack of loyalty to any political doctrine” could be partly understood “when one begins to realize the severe lack of education, insight, or even interest of these scientists in both internal and international politics, sociology and economics. Almost to a man they had been completely fooled and impressed by Hitler’s apparent creation of a financial and economic *perpetuum mobile*. . . .” Millikan decided that they were primarily interested in science and technology, essentially disinterested in politics, and would work for anyone except the Russians. “They are all just scared stiff of the Russians,” he noted, “and say they want to work with us against the Russians.” A British observer attributed the unexpected spirit of cooperation to “the lead set by General Dornberger and von Braun, who take up the attitude that if they can convince the British and Americans of the value of their work, there is a chance that facilities may be offered in England or America for continuing it.”²⁴

For whatever reasons—political indifference, pride, personal expediency, or some combination of them—the scientists of Peenemünde shared their accomplishments. There was one staggering omission in their story: neither Dornberger nor von Braun revealed the location of the buried documents; they alleged, instead, that General Kammler had taken the files and drawings and might have buried them in a mine at Bleicherode. Their silence made no difference. By V-E Day other scientific sleuths were busy in the Harz Mountains.

6.

The site of the V-2 production facilities near Nordhausen was no secret to the Allied forces. On the last day of August 1944, a captured electrician who had formerly worked at

Peenemünde pointed out the general location of the Central Works, and aerial photographs soon confirmed the existence of the underground complex. The Combined Chiefs of Staff realized its impregnability from conventional air attacks, rejected a proposal to flood the tunnels with a combustible chemical mixture, and accepted the judgment of Sir Alan Brooke that there was only one way of dealing with the V-2's—to clear the area by ground action. The task fell to the Third Armored Division, an element of Lieutenant General Courtney Hodges' First Army. On April 11 an advance tank unit entered Nordhausen. Higher headquarters had alerted the division commanders to expect something unusual in the area, but they were not prepared for the horror of the concentration camps in the city and at nearby Camp Dora. Thousands of corpses were piled like cordwood across the compounds, in corners, and under stairways. Hundreds more who had survived General Kammler's production schedules and escaped his cremation ovens—Germans, French, Belgians, Hungarians, Poles, and Russians—were reduced by starvation to pallid skeletons, too weak to survive their liberation. Those who remained alive directed the troops to the place where they had worked on the assembly lines, to what was, in fact, the world's largest underground factory. The Germans had utilized two railway tunnels, running parallel for $1\frac{1}{4}$ miles through the Kohnstein Mountain, as the core of the factory, and had dug forty-six cross tunnels to create an immense subterranean vault. It was like a "magician's cave," declared the unit's intelligence officer, filled with precision machinery, the strange shapes of the V-1 and V-2 and Junkers jet engines. To the men of the Third Armored Division, it was only further evidence of the Nazis' inhumanity; they placed the facility under the protection of T-Forces and moved on.²⁵

In Paris, Colonel Holger Toftoy, chief of the Ordnance Department's Enemy Equipment Intelligence Service, was eagerly awaiting news of the capture of Nordhausen; he was preparing to launch "Special Mission V-2," a plan to obtain the components of one hundred rockets for shipment to the United States.

The mission was the culmination of an attempt within Army Ordnance to learn everything about long-range guided missiles. Throughout 1944 there was general confusion in Washington as to who should have responsibility for rocket development; various military projects were "running around loose and being furthered by anyone aggressive enough to take the ball and run." By the end of the year, a special committee had decided that the Air Forces should have responsibility for all missiles launched from aircraft, and the Army should concentrate on those launched from the ground. The latter included the V-2; in late 1944 the Ordnance Department contracted with the General Electric Company for a large and complex guided missile project under the code-name "Hermes," and established a firing range at White Sands Proving Ground where they hoped to provide the General Electric engineers with some captured V-2's for study and test firing.²⁶

The task was not easy. Hitler had ordered his best S.S. troops to make a desperate last stand in the Harz Mountains, and it was not until the end of April that Special Mission V-2 could enter the area. Since the rumor prevailed that the Russians would occupy the territory on June 1, time was a pressing factor. After reconnoitering the facilities, the leaders of the ordnance team—Major James Hamill, a physics graduate of Fordham University; Major William Bromley, an engineering graduate of Stanford; and Dr. Louis Woodruff, a professor of electrical engineering from the Massachusetts Institute of Technology—considered it critical. Many of the necessary parts were scattered and hidden and had to be located. The main tunnel of the factory was blocked and had to be cleared, and bombing had destroyed the key bridges and railways heading out of Nordhausen.

Major Bromley, in charge of the technical operations, quickly made a search for parts in the schoolhouses, beer halls, and barns of the surrounding villages; hired former slave laborers to clear a mile of the tunnel to make way for the flatcars; used a motor vehicle company from Cherbourg to move the components from the factory to the main railhead; and had a combat

engineer company build a bridge. Fortunately and ironically, the destruction caused by Allied bombers had stranded several hundred railroad cars in the vicinity, and German engineers were willing to operate them. On May 22, by authority of a secret priority cable from Headquarters Twelfth Army Group and verbal instructions from Colonel Toftoy, Bromley dispatched the first train from Nordhausen to Antwerp. Each morning for the next eight days another followed. By the end of the month, Special Mission V-2 had transported 400 long tons of disassembled V-2's to the sea, where they went by way of New Orleans to the White Sands Proving Ground in the New Mexico desert.²⁷

The V-2 rockets constituted the largest single shipment of enemy equipment from the European theater, and were utilized extensively in the United States missile program. Yet an even more valuable prize in the Harz mountain region was the cache of technical documents from Peenemünde, discovered as a result of the tireless effort and adroit interrogations of Major Robert Staver. No more spirited an individual was involved in the exploitation enterprise than Staver, a twenty-eight-year-old mechanical engineer from Stanford University. He became interested in new propulsion systems as a member of the Ordnance Department's Research and Development Service, and eventually served as liaison officer between its rocket development branch and the Jet Propulsion Laboratory at Cal Tech. His youth and background made him a natural choice for overseas investigation, and the opportunity arrived early in 1945 when the chief of Ordnance decided to supplement Colonel Toftoy's collection of operational equipment with a special team to concentrate on new weapons of the future.

The major arrived in central Germany on the last day of April amidst scattered enemy sniper fire. For nearly a week he worked with the Naval Technical Mission in an examination of the Henschel aircraft plant at Woffleben, and then assisted Special Mission V-2 in its collection of material. Following an intelligence tip on May 13, he made contact with two Peenemünde engineers, Dr. Eberhard Rees and Karl Otto Fleischer, and soon

after obtained the release of another, Dr. Walther Riedel, from a village prison where he had been interned for allegedly inventing a bacteria bomb. His daily interrogation of the prisoners yielded exciting information about rocket development but nothing about hidden documents. Only by chance, and from a fellow American investigator, did he learn of the latter.

Early in the morning of May 18, Dr. Howard P. Robertson, a Cal Tech physicist and scientific adviser to General Eisenhower, arrived in Nordhausen to transfer the Peenemünde specialists to Garmisch-Partenkirchen. Staver was hesitant about losing his captives, and pointed out that they were proving useful in tracking down the V-2 components. Robertson agreed to leave them behind; just before departing, he glanced through his pocket notebook and read aloud the following notation: "Von Ploetz said that Gen. Dornberger told Gen. Rossman that documents of V-weapon production were hidden in *Kaliwerke* at Bleicherode, walled into one of the mine shafts. Von Ploetz was G-2 to Gen. Kammler." Staver pondered the sketchy information throughout the day, and decided to attempt a ruse. Later in the evening, at the end of a discussion with the specialists, he casually remarked that American intelligence officers had talked with von Ploetz, Dornberger, Rossman, and Kammler, and that the German officers had told them of important drawings and papers buried underground in the mountains and implied that Riedel or Fleischer could help find them. "If I were successful," Staver recalled in his official report of the incident, "they would have to confess any knowledge of the cache of important documents; otherwise they would believe that any further silence in this regard to be contrary to the orders of their superiors and that the American officers might imprison them for withholding information which the German officials declared they knew."

The stratagem worked. Staver had fortuitously captured the one specialist among the thousands in the Nordhausen area—Karl Otto Fleischer—to whom Dieter Huzel had entrusted knowledge of the whereabouts of the material before his escape to Bavaria. On the following day, in a hushed and apologetic

tone, Fleischer confessed that he had not revealed everything he knew, but that in light of the new circumstances, he was free to tell all. There was a cache of documents in the Harz Mountains, he admitted. He knew its approximate location but would need permission to go hunting for it. On May 20 he located the mine near the village of Dornten, offered a bribe to the superintendent to divulge exactly where the documents were hidden, and had German miners in the locality begin excavation.

After a survey of the site, Staver instantly induced a fighter pilot to take him to Paris, where he arranged for two large semi-trailers to meet him in Nordhausen at the end of the week. He flew on to Ninth Army Headquarters at Brunswick, obtained enough men to place a twenty-four-hour guard at the mine, and returned to Dornten. By then the miners had removed 35 linear feet of rock to gain access to the cache, secreted in two small rooms at the end of a narrow tunnel some 990 feet from the entranceway. But the transportation had not arrived, and on May 26 Staver learned that British troops were to move into the area the following morning. He was able to get six 2½-ton trucks from the Ninth Army, and with the assistance of Colonel Bromley, removed 14 tons of documents to the American zone before the British had time to establish their roadblocks. Within a week, the papers were under American guard in Paris, their value estimated by German scientists at between \$400 and \$500 million.²⁸

At the same time Staver proposed another means of ensuring the supremacy of the United States in rocket development. He had listened earnestly as the specialists described their future plans. They would construct an "outer" station, useful for astronomers and for the launching of spaceships into the stellar regions. They would construct a large reflector for focusing the sun's rays onto the earth for power-generating purposes. The latter could be used as well for another objective, "which has been described as a terrible thing, a weapon which will enable the first country to achieve this undertaking to rule the world. The focusing of this reflector upon any living persons would kill them immediately. Ocean water would be instantly turned to steam; a

forest instantly kindled." Impressed by the Germans' advanced thinking, and receptive to their expressed desire to continue work in the United States, he urged in a recommendation to the chief ordnance officer in Paris that as many as one hundred of them be evacuated within thirty days. He went so far as to suggest that Specutie Island at Aberdeen Proving Ground be used for the men to complete the development of the Wasserfall and for subsequent long-range rocket research. Mixing a sense of vision with a sense of expediency, Staver surmised that the "present situation presents one of the most unique opportunities in history for one nation to benefit from the scientific prowess of scientists belonging to another major world power," but advised that the entire matter must be completed "before such time as the U.S. Navy or the British decide to do the same."

So enthused was the major that he tried to "sell" his ideas to several officers during his brief trip to Paris. He succeeded in winning the support of Colonel Toftoy and Colonel Joel G. Holmes, chief of the Ordnance Technical Division, and prepared a cable for Ordnance Headquarters in Washington outlining his plans. On May 25, following his return to Nordhausen, he learned from a special courier that Paris and Washington were working on the problem, and that he was to evacuate the technicians and their families from the Russian zone to an area under United States control.²⁹

7.

At the Yalta Conference in February 1945, after nearly two years of confused discussions, the Big Three formally accepted their zones of occupation. The projected division of Germany—with England in the northwest, the United States in the south, and Russia in the east*—was a design for peace and not a strategy for war. At no time had the Allies proposed, or in-

* France belatedly received an occupation zone at Yalta which was carved from the original American, and to a lesser extent British, zones.

tended, that the zonal boundaries should affect combat operations. As a result of their powerful thrust from the Rhine, the American armies pursued the enemy far into the central German states of Saxony and Thuringia. By V-E Day, they occupied an area some 125 miles deep and 200 miles wide inside the Russian zone.

The obligation for the armies to retire to their respective sectors was implicit in the Yalta agreement. Churchill nonetheless argued that Russia's actions and attitudes since the conference, particularly in Poland and the Balkans, had created an entirely new situation. "Surely it is vital now to come to an understanding with Russia," he wrote to Truman on May 12, "or see where we are with her, before we weaken our armies mortally or retire to the zones of occupation." On June 4 he repeated his "profound misgivings" at the "retreat of the American Army to our line of occupation in the Central Sector, thus bringing Soviet power into the heart of Western Europe and the descent of an iron curtain between us and everything to the eastward." Truman was unwilling to renege on the Yalta commitment; in fact, he hoped to fulfill it before the forthcoming meeting at Potsdam. With Churchill's reluctant concurrence, he proposed that the changeover take place on June 21, but, in deference to Stalin's request for more time to complete mine-clearing operations, agreed to begin the withdrawal on July 1.³⁰

This arrangement provided the technical intelligence teams with approximately two months in which to carry out their exploitation in the Russian zone. Working rapidly, often in response to rumors of an early withdrawal, they secured a rich harvest of booty and talent. At Dessau, the ancient capital of the Anhalt, several CIOS teams examined the Junkers Aircraft plant, and took into custody the entire staff of engineers, including the chief engineer, Dr. Anselm Franz; an outstanding metallurgist, Dr. Heinrich Adenstedt; and a jet engine expert, Heinz Moellman. Other teams found important personnel and equipment at the Technical Academy of the Luftwaffe in Bad Blankenburg, the Siebel Aircraft Company at Halle, the Telefunken

Electronics facilities near Eisenach, the Askania Aviation Works at Morsleben, the I. G. Farben factory in Bitterfeld, and the Leuna fuel plant at Merseburg. The most exciting discoveries were at the Thuringian city of Jena,* where all of the teams converged on the Zeiss Optical Works. Zeiss was the world's foremost center for the manufacture of optical and precision instruments, and, in addition to the Central Optical Works and the Schott-Genossen Glass Factory in Jena, had subsidiaries in Berlin, Dresden, Stuttgart, Göttingen, Saalfeld, Kassel, and Leipzig. During the war, the firm was not only of fundamental importance to the German military effort but also made continuous deliveries to Japan, at first by blockade runners and railroads across Russia, and later by submarine. The Americans found its laboratory equipment thoroughly exceptional, and its staff of six professors and eighty-three doctors of science individually outstanding. Chief among them were the director, Dr. George Joos, internationally recognized as a leader in atomic physics and infrared spectroscopy, and his laboratory directors, Drs. Werner K. Weihe, Alexander Smakula, and George Haas. Without hesitation, the officers decided to evacuate the personnel to American territory.³¹

At Nordhausen Major Staver directed the evacuation of more than one thousand technicians and their families. Assisting him in the selection of personnel were von Braun and Dr. Richard

* The official report of the exploitation at Jena—of documents, equipment, and personnel—gives a sense of the magnitude of the American coup: "CIOS assessed and investigated the plants from 18 April to 23 June. Radar and signal personnel evacuated a crystal growing-over and specimen plates of KRS 5 to UK. Air personnel exploited TSA bombsight. Naval Technical Mission made blueprints of drawings of synthetic training devices; Engineer Intelligence, UK Base, evacuated a Dahlta Theodolite to Mapping Branch of the Engineer Board. Other documents and equipment were evacuated. A 6-meter mobile antiaircraft instrument was found and evacuated to the U.S. by a naval officer. USSTAF reports evacuation of documents, personnel, and almost all types of equipment, including aerial cameras for use in Pacific and commercial records of Jap developments. Personnel evacuated from Zeiss plant are now in various places in Wuertemberg, those from the Schott plant including Dr. Berger, are in Heidenheim. 213 technicians evacuated by Seventh U.S. Army." [Eisenhower to Truman, "Russian Report," 1945. Federal Records Center.]

Porter, a young electrical engineering graduate of Yale and head of the G.E. Hermes project, who was in Europe at the request of Ordnance Headquarters in Washington. Porter later described his role in the operation:

I can say positively that we used no threats or force of any kind. We sent out hundreds of vehicles, each with a German on board who personally knew the people to be contacted, in order to explain the situation and ask the people to come. This went on around the clock for about twenty-four hours, but each family had only about fifteen minutes to decide and pack up what they could carry. Most of them came eagerly. A few stayed behind, mostly older people who were tired of running and some with close relatives in the Eastern zone. There were no guards on the train which we used for the final step of the evacuation, anyone could have disembarked at any time he wanted to. In fact, our problem was to keep the train from being loaded up with "ringers," i.e., Germans not associated with WA-11 who just wanted to get out, and to protect it from the thousands of D.P.'s who were then thronging along the roads and railroads, trying to get "back home." Although I was in charge of this operation, I carried no arms of any kind.

On June 20, the last of the Germans boarded the railroad cars for the trip to Witzhausen, forty miles to the southwest, just inside the American zone.³²

The removal of scientists in lieu of on-the-spot exploitation was the pattern of action throughout the Russian zone. It was prompted by the competitive desire to seize anything and anyone of scientific value, and supported by considerable evidence that the Japanese had already shared in the technical secrets. At Dessau, Dr. Franz reported that a Japanese delegation had studied Junkers' most advanced designs of turbines and compressors as late as March 5; and at Jena records showed that eighty-one Japanese visitors had received unrestricted access to

the Zeiss Works between 1938 and 1945. The evacuation also satisfied the Germans' desire to escape capture by the Russians. For years they had listened to Hitler's vituperative attacks against the Soviet Union, and could not ignore his warnings of the dangers that would follow a Communist victory. "It would not be only cities consumed in fire and monuments of culture destroyed which would remain as the worst consequences," he said in a typical outburst in 1943, "but the bestially butchered masses of people who would fall victim to this flood from the depths of Asia, as was the case once before, at the time of the onslaughts of the Huns and Mongols. . . ." Many of the scientists had already made personal decisions to leave Berlin; others had responded to Admiral Doenitz' call to move to the West; and nearly all were hopeful of joining the Western powers in a stand against the Bolshevik hordes.³³

The intelligence officers accomplished the removal of the personnel for the most part in a hurried and disorganized way, without coordination with Washington and sometimes without clearance through SHAEF. Colonel Richard Ranger of the Signal Corps recalled that his relocation of a large number of scientists from Thuringia "was one of those things that just came about because of circumstances," and was occasioned by considerable uncertainty about the legality of the operation.

Then we were chasing down the Bureau of Standards, and we found the whole establishment, but there again it became so involved that I felt that it was necessary for me to go back to Frankfurt and talk to the chief signal officer there so as to be sure to have the approval for such a large undertaking as to move these people out of the Russian zone. . . . So I went back to Frankfurt and I unfortunately did not find the chief signal officer there but a deputy of his. And our conversation was very interesting. I told him what I had done in getting these people all ready to move to Heidelberg, and we actually had the transportation all available through the local signal corps commander.

When I told him he looked at me with a sort of vacant stare and he said, "Do you know that you are fostering an international incident?" And I replied to him, "Yes, Sir. I appreciate that, so what do we do? Do we do it or don't we?" His reply was, "I have nothing to say."

Colonel Ranger decided to remove sixty specialists and their families to Heidelberg, and helped them resume their research activities in an empty schoolhouse.³⁴

The officers' uncertainty about the legality of the evacuations was understandable in view of the absence of well-defined policies to govern the first months of the occupation. The Big Three had agreed at Yalta to establish an Allied Control Council to define common policies, and subsequently appointed General Eisenhower, Marshal Zhukov, and Field Marshal Montgomery as members. But at the first meeting of the group on June 5, Zhukov insisted that the council could not function until the armies had retired to their respective zones. In effect, this left the commanders with absolute authority over the areas which they then occupied. Furthermore, the declaration to the German people which emerged from the conference gave implicit approval to the continued acquisition of military matériel; it ordered them, among other things, to surrender all research records and equipment to "the Allied representatives, for such purposes and at such times and places as they may prescribe." For the Americans, still at war with Japan, necessity demanded that they seize and utilize all matériel and personnel which might be of future military value.³⁵

They did so up until the last moment. During the first three days of July, the American forces withdrew to their zone of occupation. The First and Third Armies, as they rolled back along the highways over which they had fought some three months before, transferred several hundred industrial and academic experts to scattered locations in Greater Hessa. The Seventh Army removed twenty-three aircraft engineers from Halle to Darmstadt, and two hundred university professors to Zell-am-

See near Salzburg. The advanced guards of the Russian army, according to a prearranged plan, followed the American withdrawal at a distance of three to five kilometers. When the commander of the Soviet 129 Rifle Corps arrived in Merseburg, he learned that the Americans had given permission to Krupp to remove a synthetic fuel plant. He was in time to stop the removal of the equipment, but reported that "all the principal technical staff had been taken away." His experience was general. The Russians found the fertile countryside of Saxony and Thuringia plentiful with crops and cattle, but most of the men who had staffed its universities and industries were gone.³⁶

8.

The global wits of 1945 quipped that in the final determination of the zones of occupation, England received the industry, Russia the agriculture, and the United States the scenery. The scientific bonanza harbored within the cities and hamlets of the Alps was itself enough to belie this judgment; and the last-minute removals to the American zone made it preposterous. For with no especial concern about politics but with a great sensitivity for spoils, the technical intelligence officers had amassed a scientific treasure, and, in the words of one participant, "put it into good safe American territory for future distribution."

On June 28, as if in celebration of the achievement, Ordnance Colonel John A. Keck made the first public disclosure concerning the unique "war booty." At a news conference in Paris, he spoke with pride about the capture and interrogation of twelve hundred "top-line" scientists, and told his audience of some of their most fantastic projects: a "sun-gun" that might harness the sun's rays to demolish nations from a platform 5,100 miles in the sky; a cannon with a 400-foot barrel and a range of 82 miles; an apparatus that would fire rockets from under the sea.

After relating that "Hitler almost made it" in his attempt to raise warfare to a new scientific plane, he offered a glance into the future. "These men of extremely practical and keen minds," he reported, were "putting science ahead of nationality and volunteering to move to the United States and Britain to continue their work."

Among those present at the news conference was a staff correspondent for the *Baltimore Sun*, Philip Whitcomb, who was ending six years of continuous on-the-spot reporting of the war. Reflecting on Keck's disclosures, he acknowledged "how vital was the speed with which General Eisenhower drove his armies . . . until they made their most important capture of all—not of forts, guns, and soldiers, but of scientists." Yet as he pondered the broader implications, he deduced that the enemy's industrial potential, lack of remorse, and apparently unending crop of excellent scientists posed a "triple threat" to the peace. He was particularly concerned that the United States had no detailed plan to control scientists, and was convinced from his own experience that the military government was operating on a day-to-day basis. "We are certainly right in taking time to make up our minds," he warned the American people, "but we must not wait too long. While we are busy interrogating our 1,200 classified scientists, as Colonel Keck calls them, another 12,000 may be busily preparing new atomic bombs which can be made in grease-paint factories and which, when they are put into use by 80,000,000 unrepentant Germans, will make the V-2's as out of date as tomahawks."⁸⁷

These divergent viewpoints with respect to the enemy scientists—the colonel's excitement and the reporter's apprehension—had already found expression in Washington. For months the policy-makers had been deliberating about the scientists' future. By the end of June they were close to a decision.

No Place for Pride

IT MIGHT be a wise precaution after the war, wrote Major George Fielding Eliot, if “the leading men of science of Germany and Japan, who have devoted their lives to contriving new weapons and new methods of slaughter, were confined on some distant island—South Georgia, for example, down near the Antarctic Circle. . . .”

Major Eliot was not a crank, given to the outlandish or bizarre. For more than three years, as news analyst for the Columbia Broadcasting System and the military correspondent for the New York *Herald Tribune*, he had counseled his countrymen on tactics, strategy, and defense. His intimate knowledge of the art of warfare had earned him the respect of top-level military authorities and, together with a convincing vocabulary and determined voice, had placed him among an elite coterie able to explain a battle to the layman public. But it was April 1945, and to the renowned reporter, the details of yesterday’s battles seemed much less important than the elements of future warfare. In a serious article in the scholarly journal *Foreign Affairs*, he turned his attention to science and to its implications for the modern world. He envisioned a somber fate for the enemy.

Eliot did not share the springtime optimism of many Americans, who already sensed the certainty and nearness of victory. He was alarmed by the advent of new weapons—robot bombs, rockets, and jet-propelled aircraft—and apprehensive about a potential armaments race between the two great world powers.

Convinced that "a group of professors hidden away in a garret" would soon be experimenting with a death-ray or an atomic bomb, and that an "anemic professor in an underground chamber" would be able to "touch a button and kill a thousand men a thousand miles away," he argued for stringent restraints upon military science. Above all, he cautioned the peaceful nations to "preserve their wills unweakened by humanitarian influences" when they fashioned their plans to control enemy scientists. He doubted the effectiveness of traditional regulations. Keen and patient German minds were too skilled at evasion. But in such a place as South Georgia, they would be occupied with the mere problems of existence. They would have few facilities to continue their deadly work, and no opportunities to infect the younger generation.¹

Major Eliot was the first informed American to make a public inquiry into the enormous complexities posed by wartime science. For the most part his reflections were prophetic; they would be realized within a matter of months. On a New Mexico desert, the "anemic professors" would test their latest experiment in a blast of thunder and a burst of radiance, and awaken all men to a sense of peril. Inside the corridors of the Pentagon and the Kremlin, conservative soldiers would sponsor advanced weapons, and urge the utmost preparedness as the better part of safety. And from their secret enclaves within the Manhattan Project, troubled physicists would emerge to crusade for a new spirit of internationalism among men and nations.

But at the time, it was Eliot's pronouncement against enemy experts that was the most relevant, for it echoed the overwhelming sentiment in Washington. Government leaders had no sympathy for the men who had armed the Nazis and prolonged the war. They were committed to the absolute prohibition of military research in the vanquished nations. They had not considered so stark a proposal as an island exile, but their intentions were clear: German scientists would never again threaten the world with their secret weapons.

1.

The United States' formulation of policy for the occupation of Germany was a two-year exercise in confusion and indecision. The problem was awesome: it involved not only the treatment of a defeated nation and the stability of Europe but, because of its implications for great-power rivalry, the security of the world. Everyone in Washington agreed that Germany should be punished and weakened, but they differed radically with regard to ultimate objectives. Some viewed a permanently weakened Germany as insurance against World War III, others as an invitation to Communism.

President Roosevelt's personal revulsion against Hitler combined with his knowledge of history to foster a policy at once stern and grim. He would not starve the German people to death, he wrote to Secretary of War Henry L. Stimson, but "if they need food to keep body and soul together beyond what they have, they should be fed three times a day with soup from Army soup kitchens. . . ." He would not enslave the Germans, he told the American people, "but it will be necessary for them to earn their way back—earn their way back into the fellowship of peace-loving and law-abiding nations." Apart from these general attitudes and his more specific demands to destroy the nation's military capacity, punish its leaders, and deprive its people of uniforms and parades, Roosevelt remained noncommittal. On the larger issues at stake, he preferred to postpone decision.²

To his subordinates, the President's inclination to severity and his penchant for delay merely confused the policy process, already encumbered by seemingly insoluble problems. Lacking either prudent direction or consistent support, the departments engaged in an endless and acrimonious debate, through which they expressed their various needs, desires, apprehensions, and anticipations. The State Department accepted the popular insistence for denazification, demilitarization, and the punishment of war criminals, but blended it with a program that looked to-

ward eventual reconciliation with a new and democratized Germany. Its policy, well-conceived and moderate, faltered in 1944 before the influence of the President's Hyde Park neighbor and trusted friend, Secretary of the Treasury Henry Morgenthau, Jr. Certain that only drastic measures could prevent a revived and aggressive Reich, he remained adamant against any proposal inclined toward German reconstruction. Secretary Stimson, in the meantime, strained to isolate the War Department from political issues, but the urgent need for decision compelled its participation. Torn by its own internal dissension, his department shifted its support from one position to another, striving always to get some kind of policy in time.³

The discord over fundamental issues continued well beyond V-E Day. Strong political guidance, so indispensable to firm decisions, never appeared. To the contrary, one shock after another struck at the policy process—the retirement of Secretary of State Cordell Hull, the preoccupation of his successor with the United Nations, the declining influence of Secretary Morgenthau, and the death of the President. The final months of war and the early months of peace were a “deadly hiatus,” in the words of Winston Churchill. “The United States stood on the scene of victory, master of world fortunes, but without a true and coherent design.” What it had, instead, was JCS (Joint Chiefs of Staff) 1067, the interim occupation directive issued a week after the surrender to guide the Supreme Commander in his administration of the American zone.

The directive provided an elaborate system of restraints for the control of German research. It instructed the United States Group Control Council to abolish all laboratories and related institutions whose work had been connected with the building of the German war machine; to permit the resumption of scientific research only in specific cases where there was no potential threat; to regulate such research by frequent inspection and severe penalties; to provide for free disclosure of the results; and to exclude from further activity any persons who had previously held key positions in war research. These safeguards, the plan-

ners assumed, would clearly dictate the end of military technology in occupied Germany. Yet in spite of its acceptance by the contending departments and the approval of President Truman, the directive was deceptive. It was not a settlement but rather, as one official described it, "a pseudo-compromise containing elements of irreconcilable viewpoints inharmoniously blended to produce the greatest confusion among the greatest number." It also allowed unusual freedom of action; armed with its ambiguities, resourceful administrators could respond with their own solutions to the day-by-day exigencies of the occupation. Indeed, because of the confusion, they were forced to do so with regard to the future of German science and technology.⁴

2.

American authorities were giving additional attention and study to a closely related problem—the emigration of German scientific personnel to neutral nations and to Latin America. Their anxiety in this regard was part of a worldwide effort to forestall the extension of Nazi influence to the postwar world. In the summer of 1944, economic warfare experts had detected a new and unusual pattern in the enemy's activities; already anticipating defeat, German leaders were preparing to escape total extinction by seeking a "safe haven" abroad for substantial economic resources. They were exporting stolen loot, gold, and capital to purchase industrial establishments, financial institutions, and real estate, and were negotiating numerous commercial alliances. The State Department responded with the "Safehaven" program, which sought ways to check the covert economic penetration and thus destroy the Nazis' design for a resurrection of empire.

The revelation of secret documents, swept up by the conquering armies, added a new dimension. Records disclosed that in 1943 the prestigious electronics firm, Telefunken, had purchased

a factory in a neutral country, equipped it with the most modern research facilities, and as late as April 1945 was arranging to supply it with skilled scientists and technicians. More distressing were the notes of a top-level conference at the Hotel Rotes Haus in Strasbourg on August 10, 1944, where German industrialists—including representatives from Krupp, Messerschmitt, Rheinmetall, Volkswagenwerk, Brown-Boveri, and others—met with Nazi officials to discuss the creation of spearheads throughout the world. As a result of the meeting, government representatives promised to allocate large sums of money to establish industries in foreign countries, to staff them with German technical personnel, and to provide them with the latest documents and drawings of new weapons. It was obvious in the light of these actions, as Assistant Secretary of State William Clayton explained, that “the flight of capital is not of treasure alone; the brains and skills of men are also the subjects of German efforts to save potential strength for another war.” * 5

With its paramount objective—security against a renewed aggression—seemingly in jeopardy, the State Department acted quickly to incorporate into its Safehaven goals a ban against the emigration of German scientists. Their intent was to keep the specialists in Germany where they could be effectively controlled. In March 1945 they enlisted the support of other agen-

* Washington was inordinately sensitive about this prospect because of the scattering of technologists after World War I. In evasion of the Versailles Treaty, the Weimar Republic profitably transferred its rearmament activities to other countries. The Dornier, Fokker, and Junkers aircraft companies exported specialists to Switzerland, Holland, and Sweden. Other engineers found employment with the Skoda works in Czechoslovakia, the Oerlikon firms in Switzerland, and the Carl Zeiss subsidiary in Holland. The giant Krupp concern transferred patents and processes to Bofors in Sweden to continue the improvement and production of heavy guns; organized a subsidiary at Santander, Spain, where technicians designed submarines and torpedoes in King Alfonso's shipyards; and constructed submarines at a Dutch subsidiary. The German General Staff also made fruitful arrangements with the Soviet regime to provide the Russian factories with experts and machinery. There they developed, tested, and manufactured aircraft, artillery, submarines, tanks, and poison gas. [Foreign Economic Administration, TIDC Project 25, “Study of the FEA Drafting Committee on the Treatment of the Allied Activities Relating to German Assets, Economic Activities, and Industrial Personnel Outside Germany,” August 6, 1945.]

cies. The War Department General Staff immediately established a Safehaven Committee to coordinate activities. The Treasury Department became an eager ally; more than any other public official, Secretary Morgenthau held passionate views about German scientists. He bemoaned their perfidy during the interwar period when, under the guise of peace, they pursued research for war. He was appalled at the effect of their accomplishments during a visit to London, where he observed the destruction wrought by the V-2's. Above all, as a result of his careful studies of German industry, he considered them the handmaidens of aggression. Behind the panzer divisions, the Luftwaffe, the lethal gas chambers, and the deadly rockets, he perceived the contributions of devoted scientific experts. "The experience of the past," he deduced, "is that the sum of all the lives saved by German discoveries would represent but a tiny fraction of the lives expended in fighting the two world wars, to which German scientific genius contributed much more than it did to the arts of peace."

Morgenthau's aim, later expounded in his book, *Germany Is Our Problem*, was to destroy the nation's science as a complement to the enfeeblement of its industry. There was no way, he despaired, to prevent the insidious scientists from setting up laboratories in their homes or hiding them in their barns, but there were means to deprive them of opportunities for any meaningful work. He proposed to ban the importation of chemicals and scientific apparatus; to prohibit research laboratories, both university and industrial; to eradicate the centers of sympathetic research abroad; and to bar the travel of key personnel. There would remain to Germany only "her medical laboratories and the like," no substitute for the impressive facilities of the past. "The result may well be," he concluded, "that the world will have to wait for a few discoveries of benefit to its health and well-being until they are made by non-Germans." ⁶

The Foreign Economic Administration gave equally impressive support to the Safehaven objective through a series of studies in preparation for some time. In the fall of 1944 Roose-

velt had instructed the FEA administrator, Leo Crowley, to organize information "from the standpoint of what should be done after the surrender of Germany to control its power and capacity to make war in the future." Crowley established thirty-two Technical Industrial Disarmament Committees, each with the single responsibility of recommending measures to disarm a specific industry or element of the economy. The committees, staffed from government agencies, trade associations, universities, and private industry, conformed strictly to the President's instruction to assist in the task of "seeing to it that Germany does not become a menace again to succeeding generations."⁷

Constrained by this presidential limitation, the massive and detailed FEA studies were on the whole prosaic. They advocated a severe disarmament and decentralization program that would have reduced Germany to the pastoral economy envisaged in the Morgenthau plan. Their general attitude toward scientists was identical to that of the Safehaven program. The FEA authors proposed the formation of an Allied General Staff, which for generations would watch and out-wit the enemy and, among other things, prevent his technologists from going into hiding abroad, ready to emerge at some future moment as harbingers of aggression.

Two of the FEA committees—one composed of leading scientists and the other of senior military officers—went beyond the misgivings about potential scientific subversion to analyze the problem in broader terms. They too called for keeping specialists in Germany, but for unique reasons. A committee of the National Academy of Sciences, working under the auspices of the Office of Scientific Research and Development and the National Advisory Committee for Aeronautics, prepared a paper on the "Treatment of German Scientific Research and Engineering from the Standpoint of International Security." Its members were distinguished scientific and industrial leaders, headed by Dr. Roger Adams, chairman of the chemistry department at the University of Buffalo.* They believed that the sci-

* Other members were Dr. O. E. Buckley, president of Bell Telephone

entists' concern during the war was not with politics, or with victory, but with their future professional status, and pointed out that a few of them took great risks in opposing the appointment of party tools to university professorships and in protecting friends from party persecution. The majority were "as little influenced by Nazi teaching and doctrine as any group in the population"; indeed, they comprised "an island of nonconformity in the Nazified body politic," and withdrew during hostilities into "the traditional ivory tower which offered the only possibility of security." They could be expected in peacetime to gladly reenter the international guild of science, and "publish as freely, even as eagerly, as had been their practice in the past."

The committee members were lenient in their recommendations. They insisted it was necessary to debar military research, but urged the continuation of pure and applied science directed toward normal and peacetime activities. The occupation authorities should allow such investigations to expand to "a level commensurate with German recovery," and, even more, encourage those individuals whose sympathies were of a "healthy type." On only one issue did the Americans' clemency give way; they advised that if the Germans wished to enter freely into the international guild of science, they should not be allowed to do so through emigration. They offered a quaint rationale: because of the scientists' relatively objective and realistic attitude toward political and social problems, and because their social level and prestige before the war had been second only to that of the military, any wholesale emigration would interfere with the rehabilitation of their nation.⁸

A small group of representatives from the War and Navy De-

Laboratories; Dr. G. O. Curme, Jr., vice-president of Carbide and Carbon Chemicals Corporation; Dr. Hugh Dryden, chief physicist, Bureau of Standards; Dr. R. G. Harrison, professor emeritus of zoology at Yale University and chairman of the National Research Council; Dr. Zay Jeffries, vice-president of the General Electric Company; Dr. W. K. Lewis, professor of chemical engineering at the Massachusetts Institute of Technology; Dr. Isidor Rabi, professor of physics at Columbia University and Nobel Prize laureate; and Dr. R. W. King, assistant to the president of Bell Telephone Laboratories.

partments matched the scientists in the eccentricity of their argument. In response to a request by the FEA in February 1945, the services appointed four officers—Rear Admiral T. D. Ruddock and Captain Bruce G. Leighton of the Navy, Major General K. B. Wolfe of the Army Air Forces, and Brigadier General H. C. Minton of the Army—as an *ad hoc* committee to study the German armaments industry, with particular attention to the aircraft and secret weapons field. All of the men had broad experience in weapons development, but sought to strengthen their report by consulting with their internal research and development departments, by informally exchanging views with personnel of the State Department, the FEA, and the OSRD, and by sending a working party to Europe to gather firsthand information. Having documented the double-dealing of German experts after Versailles—experts who, under the cloak of loyalty to foreign concerns, purloined data to restore the war-making capacity of their fatherland—they had no doubts that close and constant surveillance, combined with the registration of all technical personnel, would be sufficient to prevent a second great deception.

The officers went beyond the call for controls to an impassioned disparagement of German competence in science. They described the nation's alleged superiority as a myth, and explained its excellence in certain classes of war implements as due to a prolonged concentration on weapons and the collation of the best technology from the rest of the world, not upon superior inventive or scientific genius. They deemed it important to future developments in Germany to destroy the myth of the "Great German Inventive Mind" for all time, and unanimously recommended that "the use by the United States of German scientists should be limited to extracting from them *in Germany* what knowledge they have for application to specific problems connected with an early termination of the present war. . . ." The committee did concede that those enemy experts with superior knowledge who could "contribute measurably" to the prosecution of the war against Japan should be brought to the

United States, but only for a brief sojourn and under careful military surveillance and guard.⁹

Thus from diverse sentiments about enemy scientists—the State Department’s fear that they might comprise a nucleus for future aggression, Henry Morgenthau’s hostility to their war-time activities, the FEA’s single-minded dedication to their control, the scientists’ confidence in their leadership qualities, and the officers’ denigration of their technical abilities—opinion converged on the central demand to keep them in their homeland. It was a demand that went unchallenged in the high echelons in Washington, and one that would have found few opponents among the American people. The very months in 1945—April, May, June, and July—that brought a consensus of official intent, also brought worldwide attention to German atrocities. From Belsen, Nordhausen, Buchenwald, and Dachau came a torrent of stories, photographs, and films—of the camps and their survivors, of the unprecedented brutality and fiendish slaughter, and of the grotesque medical research conducted in the name of science. The popular attitude, which as late as the winter of 1945 had favored a moderate economic, political, and social disposition of Germany, hardened perceptibly. The public opinion polls gave no evidence of generous feelings toward any group in the German population.¹⁰

Yet opinion does not automatically create policy, and during those bewildering months, no single agency or individual acted forcefully to channel it toward that end. The State Department was quick to point to the danger, but was too engrossed with issues of overwhelming importance to give more than peripheral attention to what was only a distant menace. The influence of Secretary Morgenthau declined steadily after Roosevelt’s death, and his proposals and opinions found little sympathy with President Truman. The FEA studies arrived too late to have any telling impact. As a consequence, neither the purposes of Safehaven nor the conclusions of the various study groups found their way into specific provisions to govern the occupation. What finally derived from the widespread apprehension about

the scattering of enemy experts was a mere intention to prevent it, and an assumption that restrictive action would follow in the logical course of events. But that intention could not survive the thrust for an alternative approach which appeared suddenly and unexpectedly shortly after the surrender.

3.

By early 1945 the services had accepted science as an indispensable element of military power. There were still a few older officers who scoffed at the talk of forthcoming "Buck Rogers" devices, but the majority had become devotees of research and development. In the Department of the Navy, a group of young officers known as the "Bird Dogs" had waged a vigorous and successful campaign to win support for a long-range research program, and were making plans that would culminate in the establishment of the distinguished Office of Naval Research. Within the Army Air Forces, General "Hap" Arnold was wholeheartedly in favor of scientific planning. In December 1944 he had established the Scientific Advisory Group to prepare a blueprint that would guarantee supremacy in airpower, and at their first meeting told them, "I don't want ever again to have the United States caught the way we were this time." The same spirit was pervasive throughout the Army. The hundreds of officers who worked with the civilian scientists were restive to push toward new frontiers of the weapons revolution. The experience of General William S. Styer, liaison officer between the ASF and OSRD and a novice in technology at the outset of his duty, was typical. "My wandering through wonderland while being led by your guiding hand," he wrote to Dr. Vannevar Bush, "has been most enjoyable. My rubbing elbows with the men of science . . . has enlarged my realms of thought and keenly whetted my imagination. I hope that the association between science and the military can be continued by men of vi-

sion after the war.”¹¹

It was this hope for an endless application of science to warfare that eventually upset the policy process. In the initial planning for the occupation, it seemed perfectly compatible with the national determination to control German research, and the Pentagon worked closely with the State Department toward that end. In January 1945, General Eisenhower appointed a Scientific Intelligence Advisory Section in his headquarters to outline methods for restricting enemy specialists, and two months later, in consonance with the Safehaven objectives, General Marshall directed the SIAS to prepare a list of 150 key personnel for internment. But among the technical investigators in the theater, face-to-face with the German scientists and their discoveries, the desire for exotic weapons inspired a novel resolution to the problem of control.

From their vantage point, the investigators looked askance at the possibility of preventing weapons research in Germany. Their skepticism was in part theoretical, and was well summarized by Lieutenant Colonel John O'Mara following the exploitation at Ainring in Bavaria. “Clearly German science must be curbed,” he wrote, “but how? The war of 1914–1918 was closed out with a peace treaty which sought to prevent the rise of German Air Power by forbidding powered flight. The result was as ludicrous as it was tragic.” He deduced that “the surest, in fact the only, defense against German scientists of the stature of the men at Ainring is to remove them. To exterminate them is politically impractical and to live is to think.”

The confusion surrounding the detention and exploitation of scientists supported these reservations. Late in April SHAEF arranged for the exploitation of experts at special detention camps, but could not dictate procedures to govern long-range control. Washington offered no direction except in JCS 1067, which was sufficiently vague as to mystify theater officials. Soon after reading the document, Eisenhower cabled the War Department that “restraint and control of future German scientific and technical investigations are clearly indicated, but this head-

quarters is without guidance on the matter and is in no position to formulate long-term policy. . . ." He then asked for advice as to the ultimate use and disposition of the scientists. Should they be placed under restriction? Should they be detained in custody indefinitely? In response, the department began to prepare recommendations as a "matter of urgency," but several months elapsed before they sent further instructions. The result was that many of the personnel were released, and wandered from place to place in search of family, friends, or employment.

The policy vacuum offered an irresistible opportunity to the investigators. Most of them were young, more impressed by their own experiences than by the lessons of history. They could not fully appreciate the concern about clandestine research after World War I, and were not alarmed, amidst the devastation and destruction of the Third Reich, by the specter of a new and aggressive Germany. They were also men with technical backgrounds, acutely sensitive to the emerging technology of their age, and discovered in the enemy's accomplishments the elements of their own aspirations. They looked upon the German scientists with excitement and anticipation, granted them an importance that transcended the strictures of sentiment, and argued that the best way to control them was to remove them from their homeland. "It is the belief of the majority of those who have been in closest contact with these Germans," Colonel O'Mara concluded, "that enough evidence now exists to screen the best hundred men, and to establish them in or near Allied research circles under conditions which would inhibit return to Germany or contact with the wrong elements in that country. There is a challenge here, but only this way lies full utilization of the world's scientific capital under United Nations direction as one of the fruits of victory." ¹²

Until a week after V-E Day, Washington officials were for the most part oblivious to the ferment in Europe, and the one glimpse they did get of the situation made no impression on their own policies. That glimpse came from Major General K. B. Wolfe, a member of the Joint War-Navy Committee study-

ing secret weapons for the FEA. On April 10, 1945, Wolfe left for London as leader of a party to make a preliminary survey of the character and amount of information available in Germany. The general approached his mission with enthusiasm. His interest in aircraft technology reached back to the Billy Mitchell days, and during the war he headed the B-29 Superfortress program at Wright Field. With one of the most dynamic records for development and procurement in the service, he looked forward to a progressive research effort after the war. On his arrival in London he discussed his project with several persons involved in the collection of technical intelligence. Dissatisfied with the lack of precise information, he flew to Paris, where he met with further disappointment. The intelligence agencies there, as with everyone else, were still concentrating on combat requirements, and had given only slight consideration to the collation of technical material. Even more, General Lucius Clay, deputy commander of the Group Control Council, expressed irritation at the swarms of agents overrunning occupied Germany, and, by implication, at Wolfe's mission as well. General Clay, besieged by the countless demands and chaotic conditions relevant to ending the war, and the burdensome complexities of planning for the peace, considered such efforts six months premature. He advised Wolfe that there was not enough information available or correlated to aid the committee, and suggested that no such other groups visit Europe in the near future.

Undaunted, Wolfe continued his survey during a three-day visit to German industrial installations, including the underground V-2 factories at Nordhausen. He returned to London on April 20 encouraged by the "illuminating and instructive" field trip—so much so that he immediately sent a letter to General Clay. He expressed agreement with Clay's stated position that the prevention of rearmament in Germany following the cessation of hostilities was not a problem of first importance; but he took issue with the commander's lack of concern for the procurement of technical information. Wolfe had been discouraged by what he had seen in the field: combat troops had raised

havoc with the records of research establishments; liberated foreign laborers were destroying many documents and items of equipment; and executive and supervisory personnel were dispersing. He urged that Clay take prompt action to ensure on-the-spot collection of information.

At the conclusion of his letter General Wolfe made a more startling suggestion. "An incident of this subject with latent possibilities for our national interest," he wrote, "concerns German scientists and engineers experienced in the field of research and development." He noted that some American aircraft companies had indicated a willingness to place such individuals in their laboratories and engineering departments, and added: "If steps to this end are taken, the double purpose of preventing Germany's resurgence as a war power and advancing our own industrial future may be served. Rapid action in this respect is necessary for it is likely that one or more of our Allies will adopt this measure."¹³

General Wolfe was the first to propose the removal of German scientists to the United States. He discovered upon his return to the capital that others, including his committee colleagues, did not share his inspiration. His proposal languished, a victim of bureaucratic consensus, but the idea remained alive and vibrant in Europe. Within weeks after his visit, others called upon Washington for action. By the end of May, their call had become a clamor.

4.

The Department of the Navy was the first to act. On May 4, in response to a recommendation from officers with the Technical Mission, the director of naval intelligence asked the War Department to have SHAEF arrange for the immediate evacuation of Dr. Herbert Wagner and two of his assistants. The urgency of the Navy's action reflected anxiety about the

implications of Wagner's newest weapon, the Schmetterling, a controlled subsonic anti-aircraft rocket which could operate at a height of 5½ miles. If the war lasted long enough the weapon might prove useful against the Japanese; more importantly, if the Nazis had sent plans of the missile to their ally, it was imperative that the United States develop countermeasures. SHAEF removed the Wagner group to London, and on May 19 they arrived in Washington.¹⁴

Two days before their arrival, several more experts unexpectedly fell into the Navy's hands with the surrender of one of the enemy's largest U-boats. On the evening of May 4, Admiral Karl Doenitz ordered every German warship at sea to cease hostilities and return to port; four days later, General Eisenhower directed all U-boats to surface, report their position, and await orders. Within a week, the 1,600-ton cargo submarine, U-234, displayed the black flag of surrender in the western Atlantic and proceeded with destroyer escort *Sutton* to the Portsmouth Navy Yard at Kittery, Maine. The U-234 carried Hitler's last valuable gift to his Axis partner: its passengers were several German scientists and two Japanese officers en route to Tokyo with technical information for the Japanese Navy. The two officers received permission from the skipper to commit suicide before the surrender, and forsaking the traditional *seppuku*, died slowly and ignobly from an overdose of Luminal. The members of the German technical mission, headed by electronics specialist Dr. Heinz Schlicke, were soon expounding their knowledge before the Bureau of Ships.¹⁵

Naval authorities also made early plans for the evacuation of additional scientists. At a meeting in the Office of Research and Inventions late in May, representatives of the Bureau of Aeronautics, the Bureau of Ships, the Bureau of Ordnance, and the Guided Missiles Panel of the JCS decided to remove the Kochel supersonic wind tunnel to the United States. The officials agreed that the bulk of the information about the tunnel was still in the form of general knowledge and experience in the minds of the German personnel, and that the foremost among

them were essential to its reconstruction. On June 2, the chief of naval operations dispatched orders to the Naval Technical Mission to procure and ship the wind tunnel and twenty of the specialists.¹⁶

As the Navy proceeded with its plans, the impetus for a general policy was rising within the War Department. On May 14 the director of intelligence of the United States Strategic Air Forces (USSTAF) requested a statement as to how his office might effect the return of scientists. On the same day, the director of intelligence of the ASF informed the War Department that several of the technical services wished to import selected personnel. Three days later, the energetic commander of the ASF, General Brehon Somervell, added his support. Somervell was a controversial, colorful, and influential personality in Washington. Bernard Baruch had once described him as a "free-running horse. When the gate goes up you don't have to hit him. You don't have to chuck him. He's ready to run." In a memorandum to the Chief of Staff, the general asked approval for a project to use "a considerable number" of German scientists in American laboratories. "It is not only possible but probable," he wrote, "that a number of these individuals possess knowledge and abilities which, if directed to the solution of our own problems, might aid materially in increasing our war-making capacity against Japan. It is also quite possible and probable that unless the United States makes suitable provisions for utilizing the abilities of these scientists that the Russians will take them over and use them." In his decisive fashion, Somervell offered to prepare a detailed program to afford maximum utilization.

The War Department General Staff (WDGS) reacted quickly and favorably to these initial inquiries. On May 21 it assigned responsibility to the Captured Personnel and Materiel branch (CPM) of the Military Intelligence Service to establish an organization to handle personnel for the Army and the Air Forces. The CPM was to arrange specifically for the acquisition and transportation of scientists from Europe to the Zone of

Interior, and attend to their quarters, subsistence, pay, security, and other pertinent necessities. The General Staff's decision was tentative, dependent upon the concurrence of other interested executive departments, and very general, directing only that the personnel were not to be treated as prisoners of war.¹⁷

Meanwhile, officers in the field, unaware that Washington was already planning a program, appealed to their superiors with convincing arguments for prompt action. One of the most forceful advocates was Colonel Donald Putt of "Operation Lusty." As a young pilot in the 1930's, Putt had joined the small team of enthusiasts who were pushing for the development of the Flying Fortress; indeed, he was the project's test pilot during the first important trial flight of the aircraft in 1935, and crashed during take-off. He remained at the center of the aircraft production program, and worked during the war on experimental projects at Wright Field until his duty in Europe. He considered the discoveries at Brunswick of such magnitude that on May 18 he wrote to General Wolfe at Wright Field that "there are five scientists here who would be of immense value in our jet engine and airplane development program, who I think should be sent to the U.S. However, it seems to involve policy on such a high level, that no one will move." He maintained that the five experts could expedite the nation's jet engine program by six to nine months, and save at least two years of research in other fields. "I have talked to all of these men and we can lay our hands on them at a moment's notice if someone will say the word. . . . If you could cable a request to SHAEF for the five men to be sent to the U.S., it would be applying pressure from all sides."

Putt received no reply, but he found an ally in Major General Hugh J. Knerr, Deputy Commanding General of the USSTAF, and a former colleague at Wright Field. On May 30, Knerr wrote to the colonel that he had read his proposal, and asked for ideas as to the most effective way of accomplishing the movement of scientists. Furthermore, he expanded his own ideas in a forthright and persuasive memorandum to his superior, General

Tooley Spaatz. "Occupation of German scientific and industrial establishments," he reported, "has revealed the fact that we have been alarmingly backward in many fields of research. If we do not take this opportunity to seize the apparatus and the brains that developed it and put the combination back to work promptly, we will remain several years behind while we attempt to cover a field already exploited." In the belief that "the scientific mind simply does not produce under duress," he proposed that the emigration of wives "would guarantee willing cooperation and maximum contribution," that the scientists should be paid a good salary, and that they should not be treated as prisoners or slave workers. For those who might be sensitive about the importation of recent enemies, he concluded with a note of realism: "Pride and face-saving have no place in national insurance."¹⁸

The Army had other realists, and none was more articulate than Major Staver at Nordhausen. After receiving permission to remove rocket specialists from the Russian zone, he continued to present arguments in support of his primary interest—to get them to the United States. On May 26 he reported that Russian agents were active in the area, and that a rumor had it that they had set up loudspeakers along the Elbe River asking scientists to cross over and continue their experiments. Several weeks later he confirmed that the Soviets were trying to assemble research personnel, and complained that one of his superiors had stated that he did not care whether they were successful. Staver's enthusiasm and logic had an effect in Washington and Paris. On June 1 the Pentagon asked him to submit the names of five technicians who could serve in the United States for six months as instructors in the test-firing of the captured V-2's. The following day, in a top-secret priority cable, General Eisenhower gave implicit support to the major's plan for the utilization of 100 scientists.¹⁹

As the excitement heightened in Europe, the War Department General Staff advanced the concept of importation. Its first move was to submit the pertinent information to the Under Secretary of War, Robert Patterson. A former Republican judge

of the Circuit Court of Appeals, Patterson had entered the War Department in 1940 as the key member of Henry Stimson's exceptional "team" of subordinates. He quickly became conspicuous for his dynamic leadership and rugged integrity, and as director of the Army's vast procurement program, became an advocate of weapons innovation. On May 28, he wrote to the Chief of Staff, "I strongly favor doing everything possible to utilize fully in the prosecution of the war against Japan all information that can be obtained from Germany or any other source," and agreed that the importation of German scientists was a step in that direction. True to his inclination to look carefully at all sides of an issue, he wrote of the need to eliminate certain dangers "inherent" in the project. "These men are enemies," he cautioned, "and it must be assumed that they are capable of sabotaging our war effort. Bringing them to this country raises delicate questions, including the strong resentment of the American public, who might misunderstand the purpose of bringing them here and the treatment accorded them." To avert any such adverse reaction, he recommended that the War Department import only those scientists whose particular work required their presence; that it keep them under strict surveillance; and that it return them to Germany as soon as possible. In his judicious fashion, and in consonance with the government's policy at the time, Patterson also noted that "taking such a step without consultation with our Allies, including the Russians, might lead to complications," and advised that the General Staff refer the problem to the Informal Policy Committee on Germany or the State-War-Navy Coordinating Committee before taking action.²⁰

Patterson's letter prompted the General Staff to call a Pentagon meeting the following week to formulate a general policy. A broad spectrum of the War Department was in attendance. Their recommendations envisaged the importation of "the minimum number of scientists necessary," none of whom could be a known or alleged war criminal, to be selected on the basis of their individual capabilities. They would enter the United States

without their families, who would remain under the protective care of the military in Germany, and would return to Europe upon completion of their exploitation. The officers clearly stated the dual purpose of the program—to “increase our war-making capacity against Japan and aid our postwar military research.” In the expectation that England would pursue a similar policy, they proposed that someone could coordinate United States action with that of “other United Nations.”

In view of the services’ unanimous decision to utilize German talent, the WDGS discussed the possibility with the State Department. Officials there insisted they could not issue visas under existing regulations, but agreed to allow the specialists to enter the country for a brief period under military custody without reference to the immigration laws. The General Staff then referred the project to the Joint Chiefs of Staff for consideration. For the moment, the fate of exploitation rested with four men: Admiral William D. Leahy, Chief of Staff to the President; General George C. Marshall, Army Chief of Staff; Admiral Ernest J. King, Navy Commander in Chief; and General Henry H. Arnold, Air Forces Chief.²¹

5.

The JCS deliberated for nearly a month, during which time there was rising turmoil at home and abroad. The mood in Washington was one of optimism; nearly everyone expected the military chiefs to approve an exploitation plan. There was already discord, however, about the “temporary” feature of the proposed program. Some officers in the technical services, especially at the lower echelons, made known their interest in permanent employment of the Germans. This idea was anathema to the majority of planners, especially those at the upper echelons. One Pentagon general telephoned a colleague at Wright Field that “the whole War Department is opposed to the tend-

ency on the part of some of our people to consider that the war with Germany is over, that there will never be another war with Germany, and therefore open our arms and bring in German technicians and put them in our laboratories and treat them as honored guests. . . ." He stressed that the State Department had said it would have nothing to do with permanent exploitation, and cautioned that "we've got to discourage people from thinking that this is a grand opportunity to sign some of the Germans permanently and take them into the Army Air Forces and make them American citizens." His friend agreed: "We don't want these birds to come over here and put John Stack out of a job down at NACA, for example." He gave assurances that no one at Wright Field had such a thought in mind.²²

The thought was very much alive in the Army Ordnance Department, which hoped to incorporate a significant number of the Peenemünde rocket experts into its own projected guided missiles program. General Gladeon Barnes, Chief of Ordnance, was convinced that the German developments would save the United States millions of dollars in the years to come, and asked the WDGS to consider the ordnance program separately from the broader importation plan. Seeking more latitude, he also asked that he be allowed to employ rocket experts as an integrated project group rather than as uniquely talented individuals. But he was aware of the hopelessness of gaining approval for his "long-range" intentions at that time.²³

Investigators on the Continent shared the general optimism about the likelihood of exploitation, and through their actions gave a liberal interpretation to the War Department's dictum to import the "minimum number of scientists necessary." At a schoolhouse in Witzenhausen, Major Staver and Dr. Richard Porter conferred with von Braun and other Peenemünde section leaders, and prepared a tentative organization chart of individuals to be transferred to the United States. Von Braun had recommended that the smallest possible unit should consist of 520 people; Staver and Porter decided that a group of 350 would be sufficient. By the first week in July they had completed their

selections, omitting some persons for reasons of personality. Their list included individuals who could form a balanced working group: scientists, engineers, machinists, technicians, and administrators. "Because of the numerous political and social difficulties that would certainly arise," wrote Dr. Porter, "it is recommended that no 'mass' transfer to the United States be made until the details of such an undertaking have been satisfactorily worked out. In the meantime, specific individuals or groups should be transferred as needed. It is suggested that Dr. von Braun and Mr. Riedel, who are now in Witzenhausen, be sent to the U.S. to discuss any long-range program and to recommend personnel for specific assignments."²⁴

Elsewhere in the theater officers were making preparations to take advantage of the expected favorable decision in Washington. Allowing no opportunities to escape them, they induced scientists to leave the French and British zones, as well as the Russian. Just prior to the French occupation of the Tyrol, the Office of Strategic Services evacuated a group of radar experts, a fair trade for the French Army's covert removal of a wind tunnel from Otztal in the extreme southern part of the Bavarian Alps. Air Forces authorities succeeded in persuading the most eminent specialists at Brunswick to depart for Bad Kissingen in the American zone, with assurances that they would soon go to the United States. In July, a committee of AAF flight surgeons made arrangements for a remarkable coup—the transfer of a dozen aeromedical scientists from Göttingen to Heidelberg. The scientists had left the Luftwaffe's Aeromedical Institute in Berlin in 1944 to join the Physiological Institute of the University of Göttingen. Their director, Professor Hubertus Strughold, was eager to cooperate with the Americans, and expressed the opinion that any assistance he could offer to hasten the defeat of Japan would be in the best interests of Germany. The research of the group in their different specialties was of the highest quality: Dr. Hans Clamann in the construction of low pressure chambers and high pressure cabins; Dr. Ulrich Luft in the adaptation of diet and breathing to high altitudes; Dr. Ernst

Opitz in the physiology of the coronary system; Dr. Otto Gauer in the physiological effects of acceleration; and Dr. Ingeborg Schmidt in physiological optics.²⁵

In the absence of a policy directive, the problem of what to do with captured specialists became serious. Their number increased rapidly; in addition to the groups who remained at their laboratories, hundreds of others in nearly every field of science and engineering surrendered individually to the armies. The list of captured aeronautical and rocket experts was particularly impressive. Among the guided missile personnel were Dr. Max Kramer, who designed the Fritz X, an air-to-surface missile used in the Mediterranean as early as August 1943; Robert Lusser, the chief engineer of the Fieseler Aircraft Company and the inventor of the V-1; Dr. Richard Vogt of Blohm and Voss, creator of the BV-246 glide bomb; Dr. Werner Rambouske, who developed a homing device for rockets at the Askania Works; and Dr. Richard Orthuber, director of a group of research scientists at Neustadt-bei-Coburg working on the application of infrared cells to the control of missiles.

The AAF eventually had in custody virtually every leading aircraft engineer, the foremost of whom was Dr. Alexander Lipisch of Messerschmitt, designer of the world's first manned rocket-powered plane, the ME-163. Others included the director of the Luftwaffe's imposing Institute of Aeronautical Research in Munich, Dr. Franz Neugebauer; the chief of aerodynamics at Messerschmitt, Dr. Waldemar Voigt; the director of the jet propulsion section of the German Air Force Ministry, Helmut Schelp; the supercharger expert at the German Experimental Institute for Flying, Dr. Werner von der Nuell; the young designer of Heinkel-Hirth, already distinguished for his work on turbojets, Dr. Pabst von Ohain; and the inventor of the tip-jet-powered rotor for helicopters, Friedrich Doblhoff.²⁶

The responsibility for the control of specialists was divided. CIOS operated two detention camps near Paris—Ashcan and Backporch—for about 50 top-level scientists, including the nuclear experts. The Navy supervised another 200 personnel at

Kochel; the Army 450 at Garmisch-Partenkirchen, 444 at Heidenheim, 200 at Zell-am-See, and 30 at a special holding center at Château du Grand Chesnay; and the Air Forces housed approximately 150 at the Hotel Wittelsbacher Hof in Bad Kissingen. In an attempt to give some sense of direction, SHAEF established a new administrative group, the Field Information Agency Technical, on June 1. FIAT had the authority to coordinate the exploitation of personnel. It established the Dustbin detention center near Frankfurt for high-priority personnel, arranged for interviews, and distributed reports of the results. Most importantly, it maintained a card file indicating the location of more than five thousand scientists, and granted clearance for their movement within and between Allied zones.²⁷

As with the military teams, FIAT was uncertain as to what to do with the scientists after interrogation. There had already been one notable failure on the part of the Americans with respect to the nuclear physicists detained by the Alsos Mission. "Perhaps our military experts did not know what to do with [them] after we found them," explained Professor Goudsmit, "and felt quite grateful when the British offered to take them over. As a result, the majority of the best German scientific brains is now in the British zone of occupation." Nor was FIAT able to bring order to the situation. Thousands of scientists, discouraged by the repetitive interviews by members of the various teams, simply took to the road or returned to their homes. The military did make an effort to integrate the most important captives into theater projects. The most extensive program was SHAEF's "Operation Backfire," which utilized nearly one hundred rocket personnel to clean, repair, test, and assemble V-2's for test firing at Cuxhaven on the Danish coast. The joint British-American enterprise grew out of a proposal made in November 1944, and ended in the successful launching of three rockets in October 1945.²⁸

These programs to make use of German talent *in situ* employed only a small proportion of the available personnel, and failed to solve the severe problem of control. The increasingly

chaotic conditions were well described by two members of an industrial team working for the TIIC, who began their investigations nearly two months later than the military. "This damn program is six months too late to really be in on the cutting of the cake," they reported. "It looks swell to sit here in London and read the assessment reports about this doctor and that engineer being here and there, even down to street addresses. But try and find the Kraut after ten other investigators have been through his plant and taken his documents and what material was good and maybe even the man, himself. Or if they didn't take him off, they might have questioned him and then turned him loose. The investigator goes up to Kassel or way points to interrogate him and finds that the Air Force has hauled him back to France the day before yesterday or he got tired of answering foolish questions and cycled off to Bavaria to see Aunt Emma, or whoever he sees down there." The TIIC members had only one consolation; they were confident that somehow all of the technical information would get to the United States.²⁹

6.

The policy discussions at home and the anxious waiting in Europe ended on July 6, when the WDGS circulated the principles and procedures which were to govern the "exploitation of German specialists in science and technology in the United States." The Joint Chiefs of Staff had approved the policy, the British Chiefs of Staff had agreed "in principle" to participate in it, and the Navy Department had expressed its concurrence and desire to cooperate under War Department administrative control. This procedure is in effect "a form of exploitation of chosen, rare minds whose continuing intellectual productivity we wish to use," the directive stated. It carefully spelled out the scope and intent of the program:

The specialists brought to the United States will be those whose exploitation to the fullest cannot be accomplished in Europe and whose presence here will enable them to fit in as a part of a definite program of activity of a continuing character. Careful selection will be made by the Assistant Chief of Staff, G-2, WDGS for those German specialists whose actual presence is indispensable.

No known or alleged war criminals should be brought to the United States. If any specialists who are brought to this country are subsequently found to be listed as alleged war criminals, they should be returned to Europe for trial.

To improve the chances of cooperation on the part of the specialists, protection should be afforded dependent members of their immediate families while the specialists are in this country. The specialists are to be paid a modest per diem from funds under the control of the Secretary of War.

The purpose of this plan should be understood to be *temporary* military exploitation of the minimum number of German specialists necessary. In these instances where exploitation is completed, the specialists will be returned to Europe.

The policy repeated Secretary Patterson's reservations when it proposed that "to avoid possible resentment on the part of the American public," the War Department should release a "suitable statement" to the press after the program went into effect. It also took notice of the Ordnance Department's desires by providing that "specialists will be brought to the United States in such cohesive related groups as will provide complete German knowledge on any particular development and facilitate exploitation."³⁰

The JCS assigned responsibility for general supervision over procurement, utilization, and control of the Germans to the Military Intelligence Division (MID) of the WDGS. The latter's cover letter to participating agencies took pains to emphasize the restrictions that were to prevail. It decreed that only in

“exceptional instances,” when “their actual physical presence is essential,” were specialists to be imported. To assure recruitment of only the “essential minimum,” each sponsoring agency was to show justification for the actual presence of the specialist. To ensure effective cooperation, the MID suggested that persons of equal or approximate prestige in any field of science or industry question the scientists, but cautioned that exploitation had to be conducted in such a manner that the Germans’ opportunities to become acquainted with United States knowledge and techniques be kept at a minimum. Finally, on July 20, the JCS tersely formalized the program through the assignment of a secret code name: Overcast.³¹

The statement of the JCS made no secret of the motives behind Overcast; the program was “to assist in shortening the Japanese war and to aid our postwar military research.” But was their decision to import scientists consciously directed at the Soviet Union? Was it a reaction to the exigencies of the emerging Cold War? The available evidence suggests a negative response; the difficulties with Russia had little effect upon the decision.

The significant fact is that Overcast was a military program, with no special relationship to the growing estrangement between the two great powers. That dissension, rising in the spring and summer of 1945 as it fed on the acrimonious disputes over Eastern Europe, the Italian peace treaty, the United Nations, and lend-lease, had aroused the civilian leaders in Washington. In the State Department the consensus held that the hope for Soviet-American accommodation was in jeopardy. President Truman, though he continued to search for a harmony of interests, shared the irritation over the Soviets’ behavior, and spoke of ending the “one-way street” of our relationships. Yet this hardening of spirit was divorced from the decision-making process that led to Project Overcast. The disposition of prisoners in wartime fell within the jurisdiction of the military, and before the Potsdam Conference President Truman was totally unaware of the capture or planned utilization of the Germans. Nor did the State Department reveal any understanding of the future

implications of the program vis-à-vis the Soviet Union. The department was willing to sanction the temporary entry of enemy aliens in deference to the military's requirements; it was otherwise disinterested.³²

There is no reason either to suspect that the JCS were pursuing an ulterior political motive. They were reluctant to sacrifice military to political ends, and had recorded that reluctance in their support of General Eisenhower's decision not to cross the Elbe River and race for Berlin. Prior to the ultimate victory, they remained chary of actions that would intensify the differences with Russia and risk the loss of her cooperation in the final assault in the Pacific. And, too, the provisions of Project Overcast were not designed to achieve any lasting advantage over a potential adversary. Had the military wished to obtain such an advantage by utilizing German scientists, they would not have provided for the importation of only a limited number of individuals, all of whom would return to Europe. Finally, the JCS had sufficient military cause for supporting an exploitation plan. The enemy scientists might make a contribution to their immediate objective, the defeat of Japan, and to their collective aspiration, the continued quest for superior weapons. They would have sought these ends even if Russia had been a close friend and a trusted ally.³³

This does not mean the military chiefs were unconcerned about scientific spoils. Their considerations were in full accord with the thoughts expressed in early June by David Sarnoff, chairman of the Radio Corporation of America, that "security for any nation henceforth depends . . . to a very large extent upon its place in the scientific sun. That sun may shine brightly for those who know, and it may be a total blackout for those who don't." The military would have sympathized, too, with the industrial leader's advice regarding German advancements—that "it is not only important that we get their scientific information, but that we lay hands on their scientists as well. If we do not find and remove them to a place perhaps on this side of the water where they can continue their scientific experiments

under our guidance and control, our Russian friends may do so first and in that event they may secure knowledge and advantages that I should like to see our own country possess."

Sarnoff went further, however, in his letter to the President's adviser, Samuel Rosenman. He supported the importation of enemy scientists on the grounds that "in addition to all the other bargaining points we may have to submit to Russia in the forthcoming conference of the Big Three, I should think that the prominence of the United States in the field of science and technology should make the strongest appeal to Russia." The JCS did not share this intent; they had not assumed the role of diplomats. Ironically, nonetheless, it was at the final meeting of the Big Three that the disposition of German science and scientists became a focus of diplomatic contention. In the poisoned atmosphere of the summer of 1945, every action of the great powers was held suspect by the others.³⁴

7.

The meeting of the heads of state at Potsdam (July 16 to August 2) took place in a setting that seemed to demand pleasantries. For the conference discussions, the Russians had chosen the beautiful Cecilienhof Palace, once the summer playground of Crown Prince Wilhelm. The two-story brownstone estate, nestled in a wooded area along the winding shores of Lake Griebnitz, had undergone solicitous preparation. The Soviet hosts had carefully groomed the courtyards and gardens, and graced the interior with furniture rushed from Moscow. As if to add brightness to the forthcoming debates, they had gone so far as to alter a dining room painting; with deft strokes of the brush, a dark cloud became a shining and symbolic star. But no amount of artistry could dispel the shadows of mutual fear, suspicion, and distrust that had already entered the minds of the victors. Germany, the catalyst of their earlier cooperation, lay

shattered and inert, and no compelling issue—not even the hope of enduring peace—could call back the erstwhile unity. The code-name of the conference, “Terminal,” took on a paradoxical meaning; it foretold the end of the war, and the end of the Grand Alliance as well. In staff sessions, at meetings of the foreign ministers, and at plenary gatherings at the giant round-table, the three great powers became determined rivals, and on no issue was the controversy more bitter and sustained than on that of reparations. It was within that context, as part of a pattern of charge and recrimination, that Truman and Stalin came to discuss the removal of German equipment and personnel from their respective zones.³⁵

At Yalta, Stalin had been tenacious in his demand that Germany pay \$20 billion in reparations in the form of industrial equipment, current production, and forced labor, half of which would go to the Soviet Union. Roosevelt reluctantly consented to the \$20 billion figure as a “basis of discussion,” but for thirty-five days in Moscow the Allied Reparations Commission was unable to reach any agreement. During the first several days at Potsdam, Stalin stood adamantly for the fixed figure, and the United States insisted as firmly that the Allies share a percentage of an unspecified total of reparations to be drawn from Germany *as a whole*. In the broadest sense, the American position reflected President Truman’s conviction that a Germany ravaged by reparations would become a “charity” case, as it had after the First World War. He wanted to deprive the German people of the capacity to make war but at the same time leave them with sufficient means to support themselves without extensive American relief. Above all, the Americans disagreed fundamentally with the Russians’ interpretation of “war booty” (or “war trophies”)—that German equipment and property which could be confiscated without reference to the reparations program. They defined booty as finished military equipment and supplies produced for and belonging to the German armed forces, and exclusive of production facilities. The Soviet Union maintained that “war booty” should include anything the

enemy had used to satisfy his military needs or that had served the military effort in any way.

It became manifest at Potsdam that the Russians had no sympathy for the Germans and that they fully intended to remove anything they wanted. Immediately after the fall of Berlin a skeleton staff of Soviet technical officers arrived from Moscow to direct the evacuation of the Kaiser Wilhelm Institutes. They precipitately cleaned out the Institute for Chemistry and induced the director, Professor Peter Thiessen, to head a similar organization in Russia. They gave even closer attention to the famed Institute for Physics. They hired its director, Dr. Ludwig Bewilogue, stripped the entire institute—the high-tension and Roentgen plants, the administrative archives and safes, the basic furnishings such as water faucets, washbowls, and doorknobs—and as if to demonstrate their efficiency, took even the sign reading “Max Planck Institute.”

The research laboratories fell within the Americans' definition of “war booty,” and caused no undue alarm. The same was not true of the Russians' removal of industrial equipment, the evidence of which was obvious to the most casual observer. On July 22 and 23 two members of the Reparations Commission motored through the various sections of Berlin to inspect the existing transportation facilities, and saw the Soviet dismantling procedure in action. The railroads out of Berlin to the south and southeast were largely inoperative, but the Russians had restored eight lines to the east. Those lines, together with the loading docks on the north side of the Spree River, teemed with activity. Everywhere swarms of highly organized Russian soldiers were joyfully guarding, crating, and loading everything movable. Machine tools and stamping mills, printing presses and molding machines, a disassembled turbine and the core of a dynamo, office furniture, band-saws, lathes and drills—all were at some stage in the process of shipment to the East. The quiet and wistful German spectators, who had seen Berlin razed by bomb, shell, and fire, could only watch as the industrial remnants of their city disappeared by rail and by barge, reduced ignomini-

ously to box, sack, bale, crate, and drum. "Everything is being taken," they told the Americans, but "we don't know where it is going." There was no doubt in the minds of the Americans, but they were appalled at the magnitude of the operation. "The process is wholesale, not retail," they reported.

Nor did the Russians discriminate as to the zones from which they made their removals. On July 26 Edwin Pauley, the California oil millionaire who represented the United States on the Allied Reparations Commission, visited industrial plants in Zehlendorf and Tempelhof in the American sector of Berlin. He was shocked to find that the Russians had completely stripped the peacetime industries engaged in the manufacture of electrical instruments, adding machines, cameras, and radios, and that they had brazenly continued their work right up to the moment the Americans took physical possession of the area. "What we saw amounts to organized vandalism," Pauley informed the Secretary of State, "directed not alone against Germany, but against the U.S. forces of occupation. . . . In the area which we captured and turned over to the Russians we made no removals except for a few samples of unique equipment." Several days later Pauley learned of the evacuation of virtually all of the equipment from the American-owned property of such companies as Anaconda Copper, I.B.M., American Radiator, Gillette Safety Razor, Ford Motor, National Cash Register, General Electric, and Paramount Pictures.³⁶

Early in the conference Secretary of State Byrnes had realized the impracticality of any cooperative reparations plan if the Russians adhered to their conception of "war booty." On July 27, cognizant of the large-scale removals of industrial equipment, he proposed to Foreign Minister V. M. Molotov that each country secure reparations from its own zone, and then exchange a percentage of industrial equipment from the West for agricultural goods from the East. Two days later Molotov agreed to the plan in principle, although he left open a decision on the percentage of material that Russia would obtain from the other zones. But having given some ground in the debate, the

Soviet Union suddenly launched a counterattack. Marshal Zhukov presented what purported to be an exposé of United States and United Kingdom removals from the Russian zone. In a lengthy and detailed report, he listed equipment, documents, property, and personnel which the armies had taken from thirty-nine cities in Saxony and Thuringia.

The Zhukov report referred almost entirely to military and scientific spoils, all of which were clearly within the definition of "war booty." His list was nonetheless imposing; it was a testament to British and American efficiency, and cast a shadow over the claims of Pauley and Byrnes that the Americans removed only a "few samples" of unique equipment. Among the alleged evacuations were all technical documents for new motors, the chief designer, a group of technical experts and their families from an underground plant of the Bavarian Motor Works in Unseberg; fifty turbines from ME-162 aircraft, engineers, technical experts and their families from Schonbeck; all technical documentation, all optical instruments, the laboratory, and technical experts with their families from the Siemens plant in the salt mine near Beendorf; twenty-eight engineers and a suitcase of platinum from the Leuna plant in Merseberg; twenty-four scientists, including the Nobel Prize recipient Emil Abderhaden, and the entire laboratory of the Physics and Technology Institute from Halle; twenty-six leading chemical engineers with their families from the Buna plant in Schkopau; twenty experts and a part of the laboratory of the Telefunken firm at Bad Blankenberg; thirteen experts, all supplies of radium and polonium, and all records and instruments from the Physical and Technical Institute in Weida; and a plant producing V-1 and V-2 weapons from Niedersachswerfen. The Russian investigators had not overlooked the city of Jena. They charged that the Americans had removed seventy-seven experts, including three professors and thirty-five doctors of technical sciences, all the original drafts of all kinds of optical mechanical production, twenty million Reichsmarks' worth of finished optical mechanical devices and ten laboratories from the Zeiss plant; and fifty

key experts, three million Reichsmarks' worth of finished production, and six laboratories from the Schott plant.

Upon receiving the Zhukov report, Pauley asked a committee of American industrialists and economists, most of whom had visited plants in East Germany, to evaluate its accuracy. The chairman, Dr. Robert Sproul, president of the University of California, judged that it was "probably largely correct," but pointed out that the alleged evacuations were "trivial" when compared to the Soviets' removal of industrial equipment from Berlin and elsewhere. The committee emphasized that most of the removals had to do with recent German technical advances which constituted "war booty," and that personnel evacuated were those suspected of being war criminals or of contributing to German war potential. Pauley concluded that the entire report was designed as a "smoke screen" to cover the Russians' unilateral shipment of plants from Germany; he sent his opinions to President Truman.

The charges and countercharges set the stage for a revealing exchange at the eleventh plenary meeting on the afternoon of July 31. No sooner had the discussions turned to reparations than Stalin made a concession: he would forsake his demand for a fixed amount of reparations from the West in lieu of a statement of percentages. Yet in the next breath he resumed the verbal offensive; he stated that he had received some new information documenting British and American removals of eleven thousand railroad cars from the Russian zone. Would the property be returned or would there be compensation? Truman replied that he favored a central transport administration to adjust the problem. Stalin, maintaining the role of the aggrieved, stuck with the issue. The Soviets had not removed railroad equipment from the American zone, he said, although the Americans had charged the Russians with taking everything. He was mentioning this fact, he added, to show that "not only the Russians had sinned but also the British and Americans." Truman did not reply, and for the next few minutes, Stalin and Bevin engaged in a tense debate over the percentage of reparations the Soviets

should receive. Stalin then forced the issue, demanding a larger percentage to offset the equipment removed from his zone. Suddenly Truman, as if still disturbed by the Premier's earlier charge, jumped back into the fray. He said that he had just been informed by Stalin that there had been unauthorized removals by the American Army; he wished to state that they were not made under instructions of the American authorities, that they "would be accounted for," and that Stalin need not worry about them. He then insisted that the American Army had removed no people, that "we have too many people to take care of now." In a parting shot, before moving to other problems, Stalin declared that everything in the Soviet document was true.³⁷

The discussions at Potsdam seemed strangely at odds with reality. At one of the first plenary meetings, the Big Three had agreed to share German scientific and technical facilities. Even as they spoke of cooperation, wind tunnels from Bavaria were on their way to the United States and entire research institutions were en route to Russia. Subordinates on each side, seeking to fulfill their national needs—the Americans to win a war and augment their military technology, the Soviets to rebuild a shattered nation—had unwittingly contributed to the atmosphere of mutual suspicion. By the end of the conference, both Truman and Stalin had questioned the sincerity and impugned the motives of the other. In this manner, German science and scientists had become an element of the Cold War.

CHAPTER THREE

Overcast: A Casualty of Peace

ON THE EVENING of September 1, 1945, President Truman informed the American people that the Japanese government had accepted terms of unconditional surrender. "From this day we move forward," he proclaimed. "We move toward a new era of security at home. With the other United Nations we move toward a new and better world of peace and international goodwill and cooperation." Free of the oppressive demands of war and the overriding exigencies of foreign affairs, the President quickly turned his attention to domestic matters. On September 6, a day which he later wrote "symbolizes for me my assumption of the office of President in my own right," he sent Congress a twenty-one-point message to cope with reconversion and expand the welfare programs of the New Deal. The nation was on its way to normalcy.¹

On the same day, intelligence officers in Europe were in the field presenting contracts to enemy scientists. Within two weeks, the first contingent of rocket experts arrived in Boston by plane. The seven men, headed by Dr. Wernher von Braun, had signed a six-month contract with the Army "to undertake such research, design, development, and other tasks associated with jet propulsion and guided missiles as may be assigned by competent U.S. authorities." By the time their contracts had expired, it was evident to them, as well as to their employers, that the importation program was wholly inadequate; it neither satisfied the personal and professional needs of the specialists nor suited

the expectations and requirements of the military services.

In a very real sense, Project Overcast was born to disappointment. Even before V-J Day, the cautious decisions which emerged from Washington had darkened the enthusiastic hopes which had burgeoned overseas. On July 25, five days after the formal announcement of the program, the War Department had cabled instructions to the Commanding General, United States Forces, European Theater, to "locate, screen, contract, and ship a maximum quota of 350 volunteer specialists; to afford protection for their families; and to obtain British concurrence to evacuate related equipment, documents, and records." The instructions struck the advocates of importation as an egregious example of "too little too late." They were "too little" because they provided for the exploitation of a mere 350 personnel; Major Staver and Dr. Porter at Witzenhausen were planning to import that many for the Ordnance Department alone. They were "too late" because they decreed that families of the volunteers must remain in Europe; military representatives had already promised otherwise.²

The latter was a special source of embarrassment and irritation. During the several months required by the Pentagon to determine policy, optimistic officers had assured their captives that it was likely that permanent residence in the United States would be possible; that their families would be allowed to accompany them; that the United States would carefully and generously arrange for the settlement and transfer of personal assets and property; and that facilities for an extensive research program would be available. When they finally presented a contract, it bore little resemblance to the oral assurances. It did not mention citizenship but provided only for exploitation for a three-month period which could be extended at the option of the employer for an additional nine months;* it did not permit the transfer of families but merely suggested that if scientists

* The contract with the rocket experts differed from the standard contract in that it provided for a six-month exploitation period which would be extended at the employer's option for another six months.

were employed for more than twelve months, and if conditions at that time made it practicable, the government would move them to this country; and it completely omitted consideration of the transfer of personal assets. The contract did provide an immediate approach to exploitation, but it ignored vital and abiding realities. It was not likely that substantial benefit could be derived from individuals burdened at one and the same time with separation from their families and prolonged uncertainty about their future.³

The victory over Japan gave rise to additional restrictions and further disappointments. The strongest impetus behind Overcast, and certainly the most convenient justification, was that it might contribute to the war effort. That possibility disappeared after Hiroshima, and on August 17 the Pentagon informed USFET that the cessation of hostilities would affect matters of general policy, although exploitation to strengthen research was expected to continue. On the morning after V-J Day, the War Department advised Eisenhower that it would "reassess requirements on V-J basis with a view to reducing requests to minimum number of key personnel in most essential fields." A week later, the WDGS clarified its intentions. Emphasizing that the original concept was to utilize only those persons whose presence was "indispensable to the successful accomplishment of the most vital military research programs," it prescribed that "each request be reconsidered for the purpose of deleting any and all whose importance cannot now be definitely established." Thus retrenchment at home, and discouragement among the hundreds of expectant volunteers abroad, was the first consequence of victory.

More subtle but even more significant was the effect of peace on the decision-making process. The JCS had conceived of the importation program as a military necessity in time of war, and, apart from coordination with the State Department regarding immigration, had exclusive jurisdiction in the determination of policy. At the same time, they considered Overcast an "interim" program, pending acceptance of a more liberal, permanent

project to enhance postwar research and development. Yet because the latter was not strictly "military" in character, they did not conceive of theirs as the appropriate agency to formulate policy. On August 25, on the grounds that long-range importation was a "government" problem, they submitted it for action to the State-War-Navy Coordinating Committee (SWNCC), organized in 1944 to deal with the politico-military problems anticipated in the occupation of Germany, and staffed by assistant secretaries in the respective departments. In practical terms, this meant broader participation in the policy-making process; greater concern for more numerous, and possibly competing, values, principles, and goals; and a likelihood of increased difficulty and delay in arriving at decisions.⁴

This transfer of responsibility virtually ensured the continuation, at least for the near future, of nothing more than limited, short-term exploitation. The German scientist program was no longer solely a matter of military necessity; it had moved into the nebulous realm of the national interest and purpose. And despite the President's efforts to provide movement and direction, the national purpose in the early postwar months was inchoate and vague. The domestic scene was one of unmitigated drift, as Democrats and Republicans, liberals and conservatives, soldiers and scientists, businessmen, farmers, and workers fought to fulfill their pent-up expectations for the peace. In foreign affairs the government inclined toward the conviction that Russia could not share its conception of a peaceful and cooperative world order, though it did so slowly, fitfully, and with a sense of shock. The citizens alone seemed to have a definite goal in demobilization, but their ardent clamor to "bring the boys home" was more akin to spontaneous pandemonium than to responsible or patriotic purpose. The President was nevertheless helpless before it, and perceived that "no people in history have been known to disengage themselves so quickly from the ways of war." It was not a perception designed to inspire a call for the permanent residence of enemy experts to create new weapons. Many lower-echelon military officers did utter such exhortations,

but for nearly six months the SWNCC declined to act. In the interim the participants in Overcast, Americans and Germans alike, labored in a labyrinth of confusion, indecision, and despair.⁵

1.

The military services emerged from the war with unprecedented prestige. Blessed by the nation's gratitude and graced by a coterie of heroes, they enjoyed the lavish attention of the people and the press, the exceptional respect of the Congress, and, for the first time in history, a close relationship with the business elite. They were not content, however, with adulation. They were concerned about postwar policy, and insisted more vocally than ever before on the right to participate in its direction. They had derived from their wartime experiences not only enhanced pride and power but, above all, purpose. They felt compelled to project their conceptions of the nature of society and to influence the crucial decisions that would ensure its security and salvation. Their prescription for the future was simple and clear: until the nation could be certain that another conflict would never again darken the world, it was imperative to press forward vigorously in the development of weapons vital to the national defense.

Their demand for continued preparedness was intimately linked with their desire to perpetuate the revolutionary wartime alliance with the scientific community. In October, during hearings before the Committee on Military Affairs concerning science legislation, spokesmen for the services testified to the abandonment of their traditional antagonism toward technological innovation. "Since the laboratories of America have now become our first line of defense," said Secretary of War Robert Patterson,* "I cannot make too strong, or too emphatic, the

* Patterson succeeded Stimson as Secretary of War on September 27, 1945.

interest of the War Department in the promotion of scientific research and development for new weapons." The Secretary of the Navy, James Forrestal, argued that "we won't have the breathing space we had this time for weapons if a next war comes," and cautioned that "you mustn't cut the military off from the free field of their own initiative to develop all the things they think are useful." General Arnold, injecting a note of urgency, asked that the scientific talents of the country be mobilized continuously and without delay. "Every day that goes by where we wait for something to happen deprives us and the Air Forces of that additional punch to give us the most advanced weapons quicker." ⁶

Not content, as in the past, to leave the initiative to others, the services moved quickly from argument to action. The Navy created a new staff division at the highest level—the Office of Special Weapons—with broad responsibility to develop nuclear energy, missiles, and all other devices which might serve their ends. The Air Forces rushed to complete a thirty-three-volume study entitled *Toward New Horizons*, designed to guide their activities. They also signed a contract with the Douglas Aircraft Company to establish Project RAND in order to retain scientific manpower for the study of intercontinental warfare. The War Department simultaneously had its lawyers draft a bill for the domestic control of atomic energy. Introduced into Congress as the May-Johnson bill, it provided for civilian control of atomic power through a nine-man commission appointed by the President. By proposing that four members of the commission be officers, it ensured the military continuing influence in the development of nuclear weapons. It specifically embodied the judgment of General Groves of the Manhattan Project that "we have to keep operating everything from the standpoint of having a sufficient supply of bombs on hand. . . ." ⁷

This exultant faith in continued research and development seemed auspicious for Overcast. For who knew better than the Germans the mysterious workings of the "wonder" weapons of the future? And what better way for the nation to obtain the "most advanced weapons quicker" than to utilize their talents,

especially when they were available at such a minimal cost? Yet the kind of security the scientists could offer was of little interest to a nation groping toward peace and goodwill. For the moment the Truman administration was in search of a less threatening approach to security in the atomic age.

American policy toward the Soviet Union in the six months after the Potsdam Conference was confused, but most American leaders became more doubtful about the peaceful intentions of the Russians. At the first meeting of the Council of Foreign Ministers in September, Secretary of State Byrnes clashed with them over their failure to allow democratic governments in the countries of Eastern Europe. Thereafter the suspicions grew stronger that the Soviet Union was seeking domination in every section of the world. In one of the most lucid portraits, Ambassador Averell Harriman reported from Moscow that the "endless, fluid pursuit of power is a habit of Russian statesmanship," and described the "flexible multiformity" of Russian policy in the Middle East. "Nationalism and irredentist sentiments are encouraged among the Armenians. Tribal revolt and autonomy is incited among the Kurds. The export brand of Stalinist ideology is sold to the Jews. . . . Tactics of cultural and religious ingratiation are used in Egypt. . . . Finally, toward Iran the U.S.S.R. has resorted to active and passive military intervention and internal political intrigue." ⁸

A growing number of government officials agreed with Harriman's interpretation. But the Soviet Union's behavior, however disappointing, was not enough to completely disabuse the United States of the belief that an accommodation over the long run was possible. The government considered it worth the effort to seek a settlement that would fulfill the wartime expectations of a world at peace or, perhaps more accurately, to get the Russians to accept the kind of world the Americans wanted without another war. Their search was marked by alternating reactions of hope and gloom, reaffirmation and anger. Most frustrating was the fact that no one could determine whether the calculated risk was having its desired effect. After the second

foreign ministers' conference in Moscow at the end of December, Byrnes saw reason for greater hopes for the new year; President Truman, on the other hand, decided that the success was unreal, spoke of the need for "an iron fist and strong language," and informed his secretary, "I'm tired of babying the Soviets." The fact remained, however, that the President's words were unreal; they expressed an attitude and not a policy. The Truman administration had still not recognized Russia as the new enemy. That reality was basic to the military services; they could not justify any extreme actions to avert a threat which officially, at least, did not exist.⁹

A vigorous program to acquire new weapons was even less germane to the government's emerging policy toward international control of the atomic bomb. President Truman had announced after Hiroshima that he would develop plans to make the bomb "a forceful influence for world peace," but as the weeks passed, no plans appeared. Finally on September 11, Secretary of War Stimson proposed that the President make an overture to Russia. "If we fail to approach them now and merely continue to negotiate with them, having this weapon rather ostentatiously upon our hip, their suspicions and their distrust of our purposes and motives will increase." Two weeks later, in a very persuasive letter, the Acting Secretary of State, Dean Acheson, gave a resounding second to Stimson's brief. Acheson assumed that the Russians could develop a bomb in about five years, that secrecy would appear to them as "unreasonable evidence" of an Anglo-American combination against them, and that any long-range understanding would be impossible under such circumstances. He concluded that the "advantage of being ahead in such a race is nothing compared with not having the race," and called for an "ultimate program of collaboration." Truman accepted the Stimson-Acheson approach on October 3, and announced to Congress his "promise of a quest for international control."¹⁰

During the following month, in the absence of any leadership from the White House to fulfill that promise, the lines of battle

formed within the Cabinet. Patterson, won over by the arguments of his predecessor, urged cooperation to prevent an arms race. But Forrestal expressed skepticism about turning the bomb over "to a piece of paper," especially one bearing a Russian signature. And Byrnes insisted that before any international discussions "we must first see whether we can work out a decent peace"; he was wary of the practicality of mutual inspection, believing instead that "it is childish to think that the Russians would let us see what they are doing." As the President showed signs of wavering in his commitment, the scientists' organizations, much of the liberal press, and the British government began a hard push for international control.

Finally, on November 3, the most influential and respected of the government's scientists, Dr. Vannevar Bush, cleared the air. He proposed a step-by-step plan to induce a "secretive and suspicious" Soviet Union into the "path of collaboration." Even though Truman and Byrnes were basing their hopes on quite an opposite approach—that their atomic monopoly would induce the Soviet Union into concessions—they did make an appeal for negotiations in late December, with a recommendation that the General Assembly of the United Nations establish a commission to study the problems. The Russians were agreeable, and at the first meeting of the General Assembly on January 24, Byrnes introduced a resolution to that end. No nation dissented from his declaration that "we who have fought for freedom must now show that we are worthy of the freedom that we have won."¹¹

Throughout the discussions on atomic energy, Secretary Patterson placed the War Department fully behind proposals for international control. At the same time, he was not so optimistic as to assume Russian cooperation, and through adamant support of the May-Johnson bill, tried to keep the door open for research on nuclear bombs. It was his, and the War Department's, undoing. With the suddenness and force of a summer thunderstorm, the nuclear scientists loosed a barrage of antimilitary criticism. They began with reasonable expressions of concern about the effect of the department's bill on freedom of

research; they continued with personal attacks on General Groves as a martinet intent upon operating a permanent Manhattan Project; and they ended with a campaign to exclude the services from the atomic energy field. By dramatizing the issue of civilian versus military control, the scientists roused the public's latent fear of a "military mind" incompatible with the scientific spirit and the peace of the world.¹²

The scientists' strident attack was a signal to the nation that a new elite was demanding a role in the cardinal decisions that would determine national policy. They entered the field with impressive credentials. In the public mind, they were no longer the impractical eccentrics of the 1930's; they were creative, imaginative, selfless individuals possessed of knowledge and skills of utmost relevance to the new age. Their motives might vary, explained Robert Oppenheimer to a congressional committee, and "in some cases they seem to resemble those of the poet or the priest," but their profound assurance is that their work is of value, and that their fellow men would "prosper and thrive because of it." After the war, their work or, better, their consuming passion, was peace, and not preparedness. Convinced that a new world had begun with the ashes of Hiroshima, and moved by alternating emotions of guilt and pride, gloom and hope, they were inspired to bring about a fraternity of nations. As "citizens of the world," they could resurrect the international brotherhood and extend it to encompass all humanity. "We call ourselves Americans and we are Americans by citizenship," said Dr. Harlow Shapley, director of the Harvard Observatory, "but our blood is cosmopolitan."¹³

There were skeptics within the government. Byrnes resented the overemphasis placed on the views of the scientists, and told Oppenheimer that while he had great respect and admiration for his scientific attainments, he did not believe he knew the facts or had the responsibility for the handling of international affairs. Patterson conceded that the top scientists and those with experience in public affairs were "all right," but decided that "the smaller fry partly through earnest conviction and partly

through the desire to sound off are restive. They are men who are less stable and in fact do not know what they want in the handling of atomic energy." But the scientists' vision of peace was for a time overwhelming. Patterson's position on domestic control served only to create a rift between the War Department and the President, and to contribute to a decline in military prestige. The scientists alone were confident in their cause; they renounced as impossible any alliance with the military, left the laboratories, and entered the forum.¹⁴

In these many ways, the larger policies and prevailing conditions of the early postwar period hindered the aggressive acquisition of new weapons. The scientists had given their blessing to the McMahon bill for domestic control of atomic energy, which specifically prevented the services from embarking upon an atomic production program, and which, though it eventually failed, seemed destined for legislative success in the winter of 1945. The commitment to international control did even more by implication; President Truman's public policy was to "eliminate from national armaments atomic weapons *and all other major weapons adaptable to mass destruction.*"* And the government's broad policy toward the Soviet Union offered no openings for an opposite approach. Even Forrestal, who for eighteen months had issued constant warnings of the Russian threat, found it necessary, or expedient, to curb his official forebodings. In early February 1946 he wrote a telling comment to a member of the Cabinet: "There is today, fortunately, no prospective enemy." Under these circumstances, the Secretaries of War and Navy could not prudently seek any liberalizing changes in Overcast or sponsor a long-range exploitation program. In the highest councils of the government, the importation of enemy scientists was not yet at one with the national interest.¹⁵

* Italics mine.

2.

The civilian secretaries, deeply engrossed in the top-priority issues of national and international policy, also had virtually no time to devote to the implementation of *Overcast*. The task fell to subordinates who were at great odds among themselves because of the unification controversy. "Ever since V-J Day the gloves had been discarded," noticed the *New York Times*, "and what is happening on Capitol Hill is but the beginning of what will be a brass-knuckle fight to the finish." The fight was characterized in part by the Army Air Forces' inexorable drive for autonomy, and in part by the struggle of each service to define the nature and importance of its role in the peacetime military establishment. The resulting personal and institutional rancor had a debilitating effect on all interservice relations. The most prominent aspect of the struggle—the intense rivalry between the Air Forces and the Navy—found early expression in a dispute concerning the personnel and wind tunnel equipment in Bavaria.¹⁶

Late in May 1945 the Navy's Office of Research and Inventions had discussed the disposition of the Kochel supersonic tunnel with Army officials. The Army relinquished any claim because they had a ballistic tunnel at Aberdeen, Maryland, and agreed that the Bureau of Ordnance should have cognizance of the equipment and personnel for its own research program. On June 2 the Chief of Naval Operations (CNO) dispatched orders to the Naval Technical Mission to secure and ship the tunnel and twenty Germans to the United States. The mission indicated in a return dispatch that the AAF wanted the tunnel, and requested that the CNO ask the War Department to issue orders to SHAEF giving priority to the Navy. SHAEF sent the orders on June 20, but the AAF remained intractable. The issue then went before AAF General J. F. Phillips, Deputy Chief of Staff for Materiel, who personally decided that the tunnel and the Germans should go to the Navy, and sent orders to that

effect to Europe. But AAF personnel in the field persisted in getting the tunnel for Wright Field. They brought the matter to the attention of General Arnold, who rejected the decision of General Phillips, and met with all other parties to the dispute at the Pentagon on July 13. The Navy stood adamantly behind the policy that "the Kochel tunnel and personnel be considered a closed issue and any reallocation should come from the Secretary's office." The AAF chief still did not agree. A week later an arbitration board representing the Army, Navy, and the National Advisory Committee for Aeronautics ruled in favor of the Navy. The feelings aroused by the dispute lingered for nearly two years, during which time the AAF kept trying to obtain the transfer of some of the personnel for their own guided missiles research.¹⁷

On no other occasion did interservice rivalry have the same accentuated application as it did in the wind tunnel controversy. It continued nonetheless to shape the context in which officers approached every issue, including Overcast. It expressly discouraged close liaison, and thereby inhibited collective action to effect changes in policy. For the most part, the Navy, the Army, and the AAF conducted their exploitation programs independently. The fact that there was no consensus within each of them further heightened the indecisiveness of action. Despite the generalization of the nuclear scientists, there was no such thing as a "military mind," monolithic in attitude and intention, at least not with respect to the importation of enemies.

The Navy Department, first in the field by virtue of its capture of Professor Wagner, proceeded with mixed enthusiasm and success. In the summer of 1945 the Bureau of Ordnance (BuOrd) sent personnel to Europe to prepare the Kochel tunnel for shipment to the Ordnance Laboratory at White Oak, Maryland, and to interview the Germans. By January they had imported ten specialists and had placed orders for six others. The ORI was likewise active. In August it transferred Dr. Wagner, Dr. Heinz Schlicke, and their four assistants to the former Gould estate on Long Island, where the department was recon-

ditioning the castle to serve as a center for rocket research. In December it imported four additional personnel—three of them experts on the Wasserfall, the other on guided-missile training devices for attacking submarines. Although by that time neither BuOrd nor ORI had made any significant progress beyond that of having specialists write reports, they were definitely committed to an extensive, long-term effort.

The opposite was true of the Bureau of Aeronautics (BuAer), which strongly opposed the utilization of enemy aliens. On September 10 the chief of the bureau explained his reservations in a long memorandum which repeated verbatim the earlier conclusions of the FEA's Joint Army-Navy Committee to study German aircraft and secret weapons. To employ Germans would perpetuate the idea of a "super race," contribute to the myth of the "Great German Inventive Mind," and endanger the future security of the United States. The chief did not object to the limited use of scientists by other agencies for specific projects, but he placed BuAer on record in favor of restricting exploitation to Europe.

BuAer's opposition was significant because of the unprecedented prominence of the aviators within the Department of the Navy. They had gained ascendancy as a result of the war, enjoyed the special favor of Secretary Forrester, and represented the Navy of the future. The reasons for their opposition were likely more obscure than those stated by their chief. The aviators were enthusiastic about research and development, but of a particular kind; they wanted advanced aircraft and not guided missiles. "While the guided missile was pushing with determined effort to make its presence felt in naval operations during the war," wrote a naval historian, "the old-time aviators were not impressed. The airplane had come to stay in the Navy after bitter years of political warfare and acrimonious debate; and its pioneers would not readily accept a rival in its element. If an air operation had to be performed, the airplane and its human pilot would do it. Surrender of this well developed and effective principle to an insensible device, a robot, was unthinkable." Antago-

nism to the guided missile, the perfection of which the Germans promised, and not to the scientists themselves, may have accounted in part for BuAer's reservations about Overcast. Whatever the reasons, the aviators held to their position for the next six months.¹⁸

Within the War Department, two agencies—Army Ordnance and the AAF—maintained their interest in the scientists. In July, Ordnance Colonel Holger Toftoy engaged in lengthy discussions at the Pentagon to gain approval to import 300 rocket experts; he obtained permission for 100. On his return to Germany he found it impossible to organize a cohesive group under such a limitation, and decided to contract 127. Toftoy's freedom of action reflected the privileged position granted the Ordnance Department in exploitation. That position rested on the universal awareness that next to the atomic bomb, the V-2 rocket held more future meaning, or menace, than any other weapon developed during the war. In his September recommendation for international control of atomic power, for example, Dean Acheson warned that "sober scientists contemplate the possibility of explosives which, when combined with the rocket principle, will be capable of the mutual destruction of vast areas which employ it against one another." Thus while the War Department supported the search for control, it did not ignore the potential importance of guided missiles. To that end, the WDGS waived its general requirement that agencies select only "outstanding" scientists, submit each selection for approval, and reduce the number to a minimum. The Ordnance Department used its advantage; by January 1946 it had an integrated team of 107 rocket experts in the country, with 20 others under contract in Europe.¹⁹

The Air Forces were less successful because of a certain hesitancy at the headquarters level. Henry "Hap" Arnold, Commanding General of the Air Forces, was determined to capitalize on German advances. A stocky, broad-shouldered West Point graduate and former aide to General Billy Mitchell, Arnold had been the most devoted partisan of airpower through-

out the 1930's. He was also a visionary, and was fortunate to find a man who appreciated his new concepts for air warfare in Professor Theodore von Karman, a Hungarian Jew who in 1929 had left the directorship of the Aeronautical Institute of Aachen, Germany, to assume the same position at the Aeronautical Laboratory at Cal Tech. In 1939 Arnold contracted with von Karman to construct a 40,000-horsepower wind tunnel, the first of its kind, and to develop rockets to assist the takeoff of heavy aircraft. In September 1944 he called upon his ally again, this time to prepare a blueprint for air research for the next twenty to fifty years. When he addressed the scientist's advisory group, he asked them to free their imaginations. "I see a manless Air Force," he said. "I see no excuse for men in fighter planes to shoot down bombers." Unlike the aviators in the Navy, Arnold had no fear of novel weapons. In May 1945 he had sent von Karman on a special mission to study the Germans' latest developments, and when his own officers proposed the exploitation of the enemy scientists through *Overcast*, he approved.

But this time his old friend and adviser had reservations. Von Karman had initially supported the importation of a small number of aerodynamics experts, but he had been annoyed in Europe at the "wholesale roundup" at which representatives of the military "behaved like buyers in a slave market." He feared the overall "raiding program" would delay what Germany needed most—the revival of its science and education. In a long memorandum to Arnold in October, he advised that "the present method of using German scientists in the U.S.A. for a short period without plans for the future is a temporary measure and not a solution to the problem." He then listed what he considered to be the numerous disadvantages and dangers of such an approach. The scientists might work faithfully in the hope of finding permanent employment in the country, but knowing that such employment was not contemplated, would cease contributing anything of value and return to their homeland with new knowledge obtained here. Since the contributions they could make would be only very little beyond those obtained

through interrogations, evacuation could be justified only for those whose advice was indispensable for the installation and use of captured equipment. In addition, it was undesirable to have German groups of ten to thirty persons working together in "close formations" in the United States; it was more important to systematically build up our own knowledge and train our own personnel than to design new weapons in a hurry with the aid of former enemies; and, above all, it was imperative to suppress by every possible means the suggestion that the United States would use German talent for future war.

Von Karman proposed as an alternative that Arnold establish a special board of scientists and industrialists to recommend policy directed toward two ends. In order to prevent the organization of clandestine activities in Germany, they should suggest steps that could be taken in the theater to ensure there the absorption of scientists into universities and industries engaged in nonmilitary research. And to safeguard the AAF's most vital interests at home, they should select a few very outstanding Germans, fit and willing to become good Americans, for permanent employment. After studying the report, Arnold referred it to his deputy commander, General Ira C. Eaker, with the notation: "Just what action we can take for the moment I do not know. My thought is that you have some of your staff go into the matter very carefully so that we will be sure that we are taking full advantage of the opportunities offered and not overlooking any bets." Eaker and his staff concluded it would be more fruitful and less difficult to exploit scientists in Germany than in the United States.

The circumspection in AAF headquarters was not acceptable to General Hugh Knerr and Colonel Donald Putt, the Commanding General and Deputy Commander of the Air Technical Service Command at Wright Field. They were unwaveringly committed to a total research effort on jet engines, and were consequently tireless in their effort to obtain more scientists. They were forever armed with proposals to improve and expand Overcast, and fully confident that they could overcome any ob-

stacles in the process. When asked about the security danger—that the scientists might acquire American defense secrets and take them back to Germany—General Knerr replied in characteristic fashion: “I cannot agree to the cry of ‘Wolf’ in the presence of these scientists as leading to a resurgence of German military power. If our government has gone this far in the defeat of international autocracy and is unable to control a handful of smart Germans within our own borders, it is high time that we faced that fact and did something about it. . . . I am certain that I can control them within my jurisdiction.” The zeal and logic of the two officers did not prevail; by the end of January 1946 the AAF had imported only thirty scientists.²⁰

The indecision at the lower echelons, combined with that of every policy level in Washington, had wide repercussions. In statistical terms, it served as a restraint: the JCS had approved the importation of a maximum 350 scientists, but after *Overcast* had been in operation for six months only 160 had left Germany. In practical terms, it imposed severe burdens on those striving to make the limited program effective. This was patently true in Europe, where officers were trying to recruit some scientists and control others.

3.

In a vivid dispatch shortly after V-E Day, English journalist Alan Moorehead reported on conditions in Germany: “All around us are things too monstrous to grasp. Starvation. Fifty great cities in ruins. Ten million people roaming helplessly through the countryside without homes, their relatives lost, and all normal hope gone out of their lives. For the next year the prospects are the starvation of anything up to five million people, the spread of disease. . . . I have tramped through twenty towns where the debris of three-year-old bombings has long since returned to its original dust: locomotives and

churches and city halls lie tossed aside in the streets. That is the normal background of life here now." By V-J Day, the physical and psychological conditions were scarcely better, and in camps throughout the American and British zones, hundreds of German scientists, many of whom had been in detention for more than four months, looked forward eagerly to their escape to the New World. Because of complications in Washington, London, and Berlin, the trip for most of them was slow in coming, or never came at all.²¹

The changeover from war to occupation in the theater had a crippling effect on Project Overcast in that it destroyed much of the organizational machinery which had kept the program going. SHAEF disbanded on July 24, and with it the two Allied intelligence agencies, CIOS and TIIC. The military's autonomous agencies—the Naval Technical Mission, Special Mission V-2, and Project Lusty—all of which had been so ardent in pursuit of their quarry, disappeared soon after the end of hostilities, and most of their staff went on to new assignments or back to civilian life. When the prime movers of importation left, no group with equivalent dedication arrived to take their place.

The military presence continued in the American zone through the United States Forces, European Theater (USFET), commanded by General Eisenhower until November 1945, and thereafter for sixteen months by General Joseph T. McNarney; and through the United States Air Forces, Europe (USAFE), under the command of General John K. Cannon. The focus of activity shifted, however, to the Office of Military Governor, United States (OMGUS), where Eisenhower exercised supreme authority but where General Lucius Clay, the Deputy Military Governor, had the overwhelming responsibility. Clay, a West Point graduate and an engineer, had served during the war as Byrnes' assistant in the War Mobilization Board. He had not asked for the seemingly impossible assignment in Germany, but having once accepted it, carried it out with feverish efficiency. Clay was not opposed to the German scientist program, but neither was he enthused about it. His single-minded attention was

to the tasks of economic reconstruction, financial stability, denazification, reeducation, and the welfare of millions of people; he had little time or inclination to satisfy the demands of a privileged scientific elite. On occasion, when the exigencies of building a democratic state clashed with the needs of *Overcast*, he was less than enthusiastic.²²

The same was more true of some of the individuals who administered the reorganized program for exploiting documents, equipment, and personnel in Europe. In late September, the JCS established a new instrumentality in Washington—the Joint Intelligence Objectives Agency (JIOA)*—to replace CIOS and TIIC. In both membership and function, the JIOA reflected the government's shift of emphasis to the acquisition of knowledge which would benefit American industry. Its membership was basically civilian, composed of representatives from the Treasury, Justice, Interior, Commerce, and Agriculture Departments, the War Production Board, the Office of War Mobilization and Reconversion, and the OSRD. The JIOA had no responsibility for the importation program until December, but its operating arm in the American zone, FIAT, could not avoid becoming involved. FIAT had come into existence in June to coordinate the multifarious activities of the intelligence teams, and continued to do the same for the JIOA investigators. It also served as the principal advisory body on science under General Clay at OMGUS. In that capacity it had the critical task of interpreting the provisions of JCS 1067 which called for the prevention of military research by the Germans. The chief of FIAT's scientific branch, Dr. Howard P. Robertson of Cal Tech, was sure that the first requirement was to keep them in Germany. To that end, he was willing to subvert Project *Overcast*.²³

Robertson began his tour of duty in Europe in March 1945 as a member of the Alsos Mission, and soon after became head of a

* The JIOA actually operated under a charter from a subcommittee of the JCS, the Joint Intelligence Committee, whose members were the Director of Intelligence, WDGS; the chairman, CNO; the Chief of Air Staff, Intelligence; and a special assistant to the Secretary of State.

Scientific Intelligence Advisory Section under SHAEF. In August he joined General Eisenhower's USFET headquarters as a scientific adviser, and began planning for the conversion of German research from an instrument of war to an adjunct of peace. The problem, as he saw it, was to encourage the scientists to undertake fundamental research in the fields of agriculture, medicine, public health, and the natural sciences. He conveniently classified the personnel into three groups: those who were true scientists and had stood against Hitler; those who were true scientists but who had generally supported the Nazis; and the engineers who had been an integral part of the German war machine. He believed the first group was absolutely essential to the resurrection of German science, and he looked upon them with generosity. In May he tried to obtain the release from an American prison of Professor Max von Laue, a Nobel Prize recipient who had opposed the Nazi regime. His feelings toward the second group were divergent; he wanted to "render them harmless" by means of denazification procedures and severe controls, but he expected them to return eventually to peacetime activities. For the third group, the military engineers, he had no sympathy. He considered them "hostile to the Allied cause," and recommended that military government authorities watch them carefully, and if necessary, detain them indefinitely.

After joining FIAT, Robertson became incensed at the proposals to utilize rocket experts. He thought the exploitation of the group in the theater had been ineffectual, and that to move them to America would constitute a threat to national security. "In allowing the Peenemünde boys to continue their development, we are perpetuating the activities of a group which, if even allowed to return to Germany or even to communicate to Germany, can in fact contribute to Germany's ability to make war—and it is the avowed principal aim of the Allied powers to prevent just this from occurring." He was unable to interrupt the process, as he admitted with irony several weeks after V-J Day: "The exploitation in the United States of the technical group from Peenemünde would seem to be a project which has

been decided upon in higher quarters, presumably on the ground that this group has technical information and abilities which can be used to further weapons development in the States for use against the Japs!"

He was more successful in foiling the plans of the AAF. Early in November General George C. McDonald reported from Headquarters USAFE that he had encountered difficulties in contracting scientists in aeronautics, electronics, optics, and nuclear physics. He had learned from discussions with von Karman that Robertson had bluntly stated his intention to obstruct the project. "It now becomes apparent," he informed officials at Wright Field, "why difficulties have been raised in the return of scientists that have been selected by Don Putt and various investigators sent from the States. Dr. H. P. Robertson and his group have been in a position to interfere when the necessary clearance and contracts have been presented to the German scientists. . . ." It was the general's belief, based upon the attitude of the American scientists in Europe, that they had raised objections out of fear that "the return of a number of eminent scientists may jeopardize their own professional status in the institutions and future development programs of the United States." ²⁴

The general's recognition of the scientists' obstructive tactics was altogether correct, but his assessment of their motives missed the point. Robertson and his colleagues were putting into practice the attitudes of their profession. They looked forward to a world at peace, to a time when there would be no need for research on weapons. If that need ever should arise, American scientists, and not foreign engineers, would make the appropriate contribution. Their views continued to plague the importation program and endured long after. In 1960 Robertson still believed that the specialists who were willing to leave Germany were not "worth a damn," and regretted only that he had not been able to "interfere" enough to stop the program. The suspicion of the military officers likewise survived. In his memoirs, written twenty years after the event, General Curtis

LeMay recalled: "It so happened that an effective majority of our scientists didn't want [the Germans] around. Not so unbelievable as it seems. Frankly I think that many of our scientists were frightened by their own deficiencies. They didn't welcome any German competition."²⁵

Whatever his motives, Professor Robertson's actions were finally ineffective. But the military's recruitment of scientists met another more resolute adversary—the British. On September 22, USAFE reported that negotiations with United Kingdom agencies for the return of scientists to the United States had been unsuccessful since the termination of hostilities. The Air Ministry had specifically rejected AAF requests for sixteen Germans originally selected for evacuation by the von Karman Mission at the Kaiser Wilhelm Institute in Göttingen and the Hermann Goering Research Facilities at Brunswick, both in the British zone. To justify its stand, the Air Ministry had stated that no concurrence could be expected pending detailed discussions by the Combined Chiefs of Staff (CCS) on the exchange of personnel. The British, intent on obtaining their fair share of the scientists, were prepared to move quickly toward a suitable arrangement. Three weeks after V-J Day, they submitted a CCS proposal whereby the two powers would pool the experts, make an allocation on the basis of "approximate equality," and exchange the results of all work done by the specialists without reservations or time limit. In the belief that both the United States and the United Kingdom should develop their own military potential at Germany's expense, they went so far as to offer their thoughts on how they could succeed in such a sensitive project. To avoid domestic criticism of the employment of former enemies, they would make it "quite clear" to Englishmen that in no case would the government employ Germans in positions which might otherwise have been filled by British subjects. On a more troublesome issue, that of security against the loss of defense secrets, they would disclose only the minimum information necessary to the effective utilization of the specialists, and accept the risks involved.²⁶

The JCS were not willing to enter into any precipitate agreement. Their caution was to some extent a surprise. The investigation of German science had begun as a cooperative venture through the CIOS organization, and cooperation continued throughout the summer of 1945 and culminated in October with the joint firing of V-2 rockets under Operation Backfire. The JCS had also remained true to a spirit of unity in their planning for Overcast. Working through the CCS, they obtained British concurrence "in principle" for the program, and gave subsequent attention to finding means to allocate the scientists. But their unwillingness to work closely with their ally was not without basis; it was symptomatic of the United States' reluctance to collaborate fully in a more significant scientific area—atomic energy.

Of the copious expressions of Anglo-American discord during the war—strategic, diplomatic, and personal—none was more longstanding and intense than that which accompanied the development of the bomb. The initial, cordial contacts in 1941 quickly turned to misunderstanding and distrust. The Americans, although they appreciated the early contributions of the British, became increasingly convinced that their own science, industry, and money were responsible for the extensive progress. They were unwilling to serve what they conceived to be England's primary goal—a postwar commercial advantage; and they were unwilling to rely upon the British security system. Whenever possible they restricted the exchange of technical information and postponed definite agreements for the future. Their sentiments, simmering at the end of the war, found a new focus of danger in the peace: complete collaboration with the British might prejudice negotiations with Russia concerning international control. President Truman accepted this possibility; his policy remained one of holding off the British in their request to share the secret of the bomb.²⁷

A similar ambivalence toward England had always been present with respect to the exploitation of enemy science. The official cooperation could not conceal the strong feelings of sus-

picion and competition that existed among intelligence investigators in the field. Major Staver, for example, was convinced that Backfire was a British attempt to steal rocket experts from United States custody, and AAF officers successfully induced scientists to leave the British zone to work for them. The resentment among some officers increased when the British refused to yield their captives to Project Overcast. The most outspoken was AAF General Knerr, one of the earliest and most dedicated advocates of importation. In a candid letter to Robert Lovett, the Assistant Secretary of War for Air, he wrote that "the suggestion for a pooling of brains and the resulting product follows the pattern of Empire control. . . . It was my observation, both as a staff officer in England and as a commander on the Continent, that the United States was received as a colony entitled only to such aeronautical cooperations as suited the interests of the British Empire. This was demonstrated time and again in the division of German scientific 'spoils' and in the maneuvering for control of postwar air routes and foreign aeronautical industries . . . Here again it appears that what is best for the British Empire is the compelling motive." The general also sensed a more sinister English motive—that of keeping the United States involved in Europe by "thrusting" her between their own and Russian interests. "Her constant endeavor will be to inveigle us into arrangements, such as this proposal," he advised, "that will excite Russian suspicion and antipathy. . . . I am quite sure that we can live in the same house with Russia. I am equally sure that we cannot with Britain present."

Much as they resented the attitudes of the American scientists during the war, and much as they suspected their ally of trying to cast them aside for their own advantage, the British were unable to "go it alone" on the bomb. But they were not in the same position of weakness regarding exploitation. By November they were moving ahead with plans to establish an aeronautical institute in the vicinity of Bedford, where they intended to install the vital equipment removed from Göttingen and Brunswick and return the Germans to their research. Simul-

taneously their section of the Group Control Council was devising a policy to utilize additional scientists in the British zone. In December they notified the JCS of their intention to initiate a long-range program. They would move specialists and their families to England, utilize them in both military and industrial capacities, and consider some of them for citizenship.²⁸

The "undesirable scrambling" for scientists, bemoaned by the two allies, became a reality. For the most part the Americans had their way over the division of the rocket experts simply because they had them in custody. After all the "shouting and bloodshed," Colonel Toftoy chose the 127 he wanted. The British did win a token victory: over the protestations of von Braun, they convinced their ally to relinquish any claim on General Dornberger; they considered him a "menace of the first order" who deserved to be "left on the dustheap." As one Englishman explained to his American friend, the military commander of Peenemünde "will ever have in mind the desirability of returning to a resurrected Reich carrying with him the knowledge accumulated by the German rocketeers while working under Allied patronage." The Americans were not anxious to import the enemy general. After listening to monitored conversations between Dornberger and fellow inmates of detention centers, they concluded he had an "untrustworthy attitude in seeking to turn ally against ally" and that he would be "a source of irritation and future unrest" among the Germans if he were sent to America. One American general quipped that "we may trade him to the Russians for a dish of caviar." But His Majesty's government had plans of their own; they imprisoned him for two years hoping to find some legal basis to place him in the dock at Nuremberg. Only upon his release in 1947 was Dornberger free to accept a contract under Project Paperclip—which led eventually to the directorship of Research and Development at the Bell Aircraft Company.

The British had greater success in exasperating the AAF. In November, Headquarters USAFE reported that "persistent bargaining" to bring about the release of the leading scientists had

been to no avail, and suggested the United States might have to accept highly skilled assistants in their place. "I realize that this solution is a compromise," wrote General McDonald, "but if the objective of securing an eminent German scientist in each field in which Air Forces has a major interest is to be realized, such a compromise will have to be accepted." Collaboration thereafter did not cease entirely, but it ceased to be very effective.²⁹

The officers in USFET suffered a similar ineffectiveness in their collaboration with individual specialists, most of whom were at first unwilling to sign contracts. Their reasons varied. Some were unhappy with temporary exploitation; they realized that after a few months in the United States they would have to seek a new career in Europe, and might have missed some opportunities during their absence. Others believed they could make a better arrangement with England, France, or Russia. But most of them were simply not prepared to leave their families behind to face the desperate conditions in Germany.

In view of their refusal to accept the American offer, General Eisenhower cabled the War Department on September 3 for a basic revision of policy. "It seems to me," he argued, "that the success of the whole project depends on having these scientists in the proper frame of mind to do the creative work we hope for. If our dividend from them is to be what we expect, it is worth the trouble of sending their immediate families back with them, considering that their stay in the United States will be about a year." He pointed out that procurement of food, fuel, and shelter would be difficult and even uncertain during the winter; that preferential treatment for the families might call attention to the project, result in requests by displaced persons for similar treatment, and cause dissatisfaction and resentment among other Germans; that security for the families would be difficult and costly; that less than a thousand persons were involved, all of whom were willing to live in reduced circumstances in America, even in tents; and that the services of the scientists "is about the only material dividend we are likely to get from the war."

The War Department replied that until the formulation of long-range policies, protection of families in the theater would appear to be more feasible, less complicated, and less expensive. It would also save the department the embarrassment of having to refuse the same transportation privileges to families of veterans. The dependents should be moved, it directed, "only as a last resort if there is no alternative to success of the project." This firm stance settled the issue. On September 11, Eisenhower asked the commanding general of the Eastern Military District to provide accommodations for 750 persons "equivalent in comfort and conveniences to private German residences, with reasonable quality and quantity of furniture; adequate bathing, cooking, plumbing, and heating facilities; located in an area where sufficient indigenous food stocks* are available for proper feeding."³⁰

By late September military government officials had established a housing project at Landshut, forty miles northeast of Munich, which came to be known as Camp Overcast. In the knowledge that the American Army had made preparations to care for their families, most of the specialists accepted the contract. They thereby agreed to "undertake such research, design, development, and other tasks connected with scientific developments as may be assigned by competent U.S. authorities," and to work for forty-eight hours per week for a period of at least three months. The specialist would receive a per diem of six dollars from the time he left the theater until his return; housing and subsistence in the form of temporary construction similar to that furnished junior officers, and at the same price; free medical care; annual leave and sick leave; and a tax-free salary.

* The matter of food stocks was important to the scientists because the contract provided that when a diet of 2,300 calories per person of "reasonable variety" was not available, the employer would issue a supplement. Although the promised diet did not approach that enjoyed in the United States of about 3,300 calories per day, it was far above that distributed by OMGUS to the ordinary German consumer. Looking forward to the occupation, SHAEF had stored 600,000 tons of grain for the American zone, but it was far too little. The July ration of 950 calories for the Germans rose during the winter to 1,550, but in February 1946 it resumed a downward trend which reached a low point in May of 1,180.

The United States agreed to pay the salaries on a bi-weekly basis in Germany to a dependent or a bank named by the employee. They were not exorbitant. The War Department had stipulated they could not exceed ten dollars per day for 312 days per year, payable in marks at an exchange ratio of ten to one. To determine the salary, USFET considered the employee's position, experience, professional standing, and 1944 tax reports, and placed it within a scale with an annual maximum of \$3,120.* By the end of January 1946, they had contracted 160 persons.³¹

The first group of employees left Paris by air on September 17; their colleagues followed each month by sea. They were under careful guard from the outset of their voyage and arrived in the United States under stringent security precautions. Their arrivals went unannounced but not always unnoticed. On November 17, a *New York Times* reporter disclosed that eighty-eight scientists, reputedly with war secrets, had disembarked from the transport *Argentina*. Intelligence officers, under special orders from Washington, had not allowed interviews or photographs, so his description of the newcomers was understandably brief: they were shabbily dressed and carried old and patched-up baggage or duffel bags.³²

4.

The six aeronautical specialists who arrived at Wright Field in September received a set of instructions designed to explain their position and guide their activities. "We would like you to know and to appreciate," they read, "that you are here in the interest of Science and we hope that you will work with us in close harmony to further develop and expand upon various subjects of interest to ourselves as well as to you." An expression

* As it developed, the salaries were much better than they appeared. The American-issued mark actually brought about four times the value of the regular exchange in the American zone. Thus the maximum salaries were, in reality, as high as \$12,480 per year.

of understanding followed the call to cooperation. "It is true that you have been separated from your families and therefore do not have many conveniences and comforts of home; however, we have tried to make you comfortable in the quarters assigned to you and we shall try to make you equally as comfortable here in the office where you will work."

One after another the succeeding paragraphs tried tactfully to allay any apprehensions that might arise in light of the unusual circumstances. Specialists would have to remain within a certain area during the first week or ten days, but only "in order that we may first become acquainted with one another and thus learn to know your wishes in this respect." All personal letters would have to pass through a routine inspection, a procedure "which shall be a mere formality and is in no way intended to check or censor your mail to your folks at home." There could be no discussion with unauthorized persons of one's work or reasons for being in America, but such restrictions applied to all civil service employees in whom the War Department placed its confidence. The directions even tried to detract from the guard at the gate and the policeman in the vicinity: "We want you to know that these people are there: NOT TO CONFINE YOU but to protect United States Government property and to prevent undesirable intruders from disturbing you at any time." Finally, the instructions advised: "Do not think of yourselves as under restrictions while here. . . . You are not POW's but are more in the category of employees of the U.S.A., and will therefore be accorded corresponding courtesies and privileges as far as it is possible in keeping with your own security."

The anonymous officers who composed the "Instructions to German Scientists" meant what they had written. They approached Overcast with high expectations and looked upon the Germans with honest respect. The war was over, and men of science could work together in mutual benefit: the United States could turn the enemy's talent to its own profit, and, in doing so, offer new hope to shattered lives. If the officers could not promise friendship, they could assure comfort and conven-

ience. In their statement of that assurance, their diplomacy was not always subtle, but it was sincere. Their good intentions, however, were not enough to surmount the forthcoming problems of morale and administration. Within a month, they had come to look upon Overcast as a case study in misfortune. Their alien employees emphatically agreed.

The Germans arrived at Wright Field already disappointed. In May, when the Americans first approached them with an offer to leave Europe, they were pleased and excited. In the assurance that their families would go with them and their personal property would be safe, they quickly disposed of their household effects and moved to Bad Kissingen in the American zone. It was then that their discomfiture began. They were under the impression that they would cross the Atlantic in a few days, but three of them—Drs. Rudolf Edse, Wolfgang Noeggerath, and Theodore Zobel—remained there for thirteen weeks, entirely dependent on official care and subject to numerous conflicting orders regarding their fate. Another, Dr. Gerhard Braun, received notification that he was to be on loan to the British for a week; after an initial interview in London, he spent more than a month behind barbed wire at Wimbledon, ironically at a salary of ten shillings per week. When the group reached Paris in September, finally en route to their destination, they were shocked by the contract they were asked to sign; it differed markedly from the “curbstone opinions” rendered by the investigators in the field. They signed, nonetheless, in the anticipation that it was only a preliminary document that would be replaced in the United States by a more meaningful arrangement. When no new agreement appeared, they grew bitter about what they considered to be a breach of honor.

The scientists had no serious complaints about their living arrangements. Well before their arrival, General Knerr, who had earned the reputation in the 1930's as a man of action, had proposed to set aside a block of houses for them, “rather than scatter them in the community or by having them locked up like caged animals.” Post officials had decided to house them at a

former National Youth Administration Camp at sufficient distance from the laboratories to ensure isolation and security. The local Officers Club advanced \$5,000 to refurbish and furnish three cottages and five one-story barracks, and to employ a civilian couple to do the cooking and housekeeping chores. Still, the "Hilltop," as the settlement came to be called, never approached the comforts of home. The buildings were of temporary construction and New Deal vintage, to which the faulty plumbing and heating facilities often gave proof. And the single dirt road to the residence area, which carried the heavy traffic of vans, trucks, tractors, and cranes to a salvage dump beyond, changed with the weather from a street of dust to a sea of mud. But only one development—the dismissal of their civilian caretakers—caused the specialists any great concern. The decision from Washington left them to do their own housekeeping and forced them to eat at the enlisted men's mess. In response to their outspoken protests, one officer suggested they had been "spoiled." But the Pentagon approved the establishment of a prisoner-of-war subcamp in the area, and made some of their less fortunate countrymen available to serve as cooks and orderlies.³³

Nor were the specialists unduly perturbed by the restrictions placed on their daily activities. They understood and accepted the necessity for segregation—the fence around the residential area, the gate which was closed and locked between 5:00 P.M. and 7:00 A.M., and the officer on duty at their quarters during the same hours. The limitations on their freedom of movement were sometimes irritating but never repressive.* Their Wright

* To one of the observers of *Overcast*, the conditions appeared inordinately restrictive in retrospect. In his memoirs, General Curtis LeMay recalled his initial impression of the program: "Well, that was a crying need in my new job: rescue those able and intelligent Jerries from behind the barbed wire, and get them going in our various military projects, and feed them into American industry, and so on. Mind you, they weren't in any disciplinary camps. No, they were Prisoners of War. So of course they had to be put in jail. Somebody's bright idea. . . . Think of that, and it really makes you sit up and take notice. Wonder where we'd be today, if we'd let those people languish in the pen."

Field passes, stamped with a large green "S," prevented their departure from the base but permitted them to attend movies, purchase items at the post exchange, and take walks without an escort. Intelligence officers also took them on weekly treks to the Y.M.C.A., Saturday shopping tours to Dayton, and occasional visits to the theater. On Sundays they could attend special church services in the post chapel; since most of them were Roman Catholic, the authorities obtained the services of a German-speaking priest from Cincinnati.³⁴

The scientists were able to contend with conditions in the United States much more successfully than they could control the anxiety about their families overseas. Their frustration was greater because of administrative complexities that kept them waiting for news from home. The contract provided for the exchange of mail, but the War Department issued security instructions which for six weeks prevented any communication between enemy aliens and German civilians. At the end of October the department revised its regulations to permit specialists to send letters, but they included exasperating restrictions. They allowed the enclosure of pressed flowers and snapshots (of the specialists only) but no money; and they placed a ban on the shipment of packages so absolute as to preclude the mailing of small Christmas gifts. The unconscionable delay in the service was even more unsettling. The letters traveled a circuitous route to Europe with stopovers at three different locations for censorship. Under this procedure, mail dispatched from Dayton in November did not reach Camp Overcast until January. The time-lag had an especially serious effect on the payment of salaries to dependents. The first distribution, covering the pay period from mid-September to December, did not take place until Christmas Day. A more efficient system eventually reduced the delay from ten to six weeks, but the German families, some of whom had no other source of income, found the improvement small cause for elation.³⁵

Other grievances, real or imagined, had an adverse effect upon the scientists' peace of mind. They were discouraged by the government's unwillingness to take preventive measures to protect

their bank deposits against inflation, or to issue supplemental food and fuel rations to those dependents who chose to reside elsewhere than Camp Overcast. They were angered by stories from recent arrivals about mistreatment of their families. In one flagrant instance, the officer in charge of the transfer of fifteen women and children from Bad Kissingen to Landshut required them to ride in an open truck for ten hours. Upon their arrival, he removed candy, sugar, and cigarettes from their lodgings, divided three K rations among them, and left them to sleep on bare floors without covering. Many of the tales of neglect were exaggerated or unwarranted. At Camp Overcast, the Third Army built a chapel and a recreation hall for the dependents, and in December opened a school which provided the first four grades of elementary and the first three grades of secondary education. Yet there was a lack of dedication and diplomacy on the part of those entrusted with Overcast in Europe. An Air Forces inquiry in January 1946 concluded that they were "in most cases new in their jobs, did not have the complete picture, were short of personnel, did not particularly care to look into various problems, and were easily provoked with various demands made upon them by families of scientists."³⁶

The same was not true of the administrators at Wright Field. Months before any aliens arrived, General Knerr had warned that the "intangibles of a scientist's daily life directly affect the quality of his product." He and his subordinates at the Air Technical Service Command were consequently responsive to the specialists' complaints. They beseeched the War Department for more lenient regulations; they sent a special courier to deliver a batch of letters to Landshut; and they tried to impress upon officers in Europe the importance of their cooperation. Although they could not convince Washington of the need for any fundamental change, they did succeed in alleviating some of the causes of discomfort. They were less successful in obtaining revisions to those regulations which governed the actual procedures of exploitation, and thereby the potential value of the entire effort.

As early as July officers in the engineering division devised an

elaborate three-step program to exploit the personnel. They would first require each specialist to write a comprehensive report of his former and anticipated research. After the reports were translated and distributed, they would hold a roundtable discussion where engineers from the various laboratories could ask for more detailed explanations on specific points of interest. Finally, they planned to conduct a technical seminar which would include representatives of contractors, research organizations, and educational institutions having secrecy agreements with the AAF. In August they sent a form letter of invitation to the prospective participants, and in September they put the specialists to work writing their reports.

The seeming foresight of the organizers fell victim to unanticipated difficulties. One problem had to do with an acute scarcity of bilingual personnel for use as interpreters, translators, clerks, and stenographers; efforts were made to procure twenty suitable individuals in New York City, but ended in the recruitment of only two. A far more critical situation developed as a result of decisions at higher levels regarding security procedures. It was accepted at the outset that specialists would be allowed access only to that classified material necessary for their fullest exploitation. The initial War Department directive was unusually vague, noting it would probably be necessary to interpret restrictions very broadly on the basis of "calculated risk." A policy statement in October was equally general but more disturbing, for it required the using agency to take measures to keep the specialists "properly segregated from persons not directly concerned with their exploitation." The engineering division quickly dispatched a representative to the Pentagon to seek clarification; the statement seemed to imply that there should be a prohibition on contracts between German specialists and civilian contractors. To the chagrin of those at Wright Field, such was the intention of the WDGS; its Plans and Strategy Board ruled that there could be no association between scientists and "outside activities."³⁷

The Pentagon ruling nullified the seminar program, and to a

considerable extent undermined the larger purpose of exploitation. In contrast to many of the other service branches, the AAF made use of civilian research and development agencies as an indispensable part of its engineering projects. The exclusion of those agencies from *Overcast* could not help but diminish its ultimate usefulness and its chance of success. In a progress review at the end of two months, Colonel Putt pointed out that the cost of transporting scientists to the United States could not be repaid unless they and their reports were made available to industries that could assure their maximum use, and reported that the project was "doomed to ultimate failure" unless the War Department removed its restrictions. Two months later he urged a revision of existing regulations on the grounds that institutions such as Cal Tech and the National Advisory Committee for Aeronautics were doing nearly all of the research on rocket motors and fuel. He added that new procedures would likewise "bolster the morale of the German scientists and eliminate their complaints of having to live in a 'scientific desert' which is occasioned by a complete lack of contact with people on the same scientific level."

No change in policy was forthcoming, and the administrators were left to their own resources. The engineering division studied the reports of the specialists, employed them as consultants in the evaluation and analysis of captured equipment, and arranged for interviews between them and the laboratory personnel. They eventually resolved to attempt a more daring scheme; they assigned the Germans to the various laboratories to work on specific projects. This approach created further difficulties. For one thing, the laboratories were not sufficiently equipped to utilize their services; one scientist, to everyone's embarrassment, was forced to set up highly sensitive and fragile measuring instruments and reflectors in the corner of a warehouse, with empty cartons and crates as mounting platforms. More threatening was the appearance of antagonism on the part of lower-echelon employees. Many, and perhaps even most, of the native Americans were embittered by the use of Germans,

and it was sometimes impossible to find suitable project officers to supervise their work. Only in isolated cases were there overt manifestations of animosity. Yet the air inspector concluded in January 1946 that "the mere mention of the German scientist situation is enough to precipitate emotions in Air Corps personnel ranging from vehemence to frustration." He deplored the situation as "seriously nonconducive to the success of the project." Another problem of human relationships arose when additional scientists, some of whom held differing political views, joined the original six at the "Hilltop." The personal animosities within the group surged with such intensity that only the intervention of Americans could settle their disputes.³⁸

The developments at Wright Field displayed Project Overcast at its worst. The two other major using agencies—the Navy's ORI and the Army's Ordnance Department—had to contend with the same larger problems stemming from the separation of families, the inadequacy of the postal service, the loss of personal assets, the concern about the welfare of dependents, and the prevailing uncertainty. But because of particular circumstances, they did not encounter the steady decline in morale and the rising sense of distrust which were rampant among the Germans at the Air Technical Service Command. At Port Washington the Navy spent \$60,000 reconditioning the Gould castle and were thereby able to provide an excellent mess and magnificent quarters, the latter complete with marble bathtubs. They also permitted their employees the luxury of unescorted, diversionary trips to New York City. At Fort Bliss Colonel Toftoy was fortunate to have the confidence of Wernher von Braun, who had held his team together through many years of adversity. His leadership provided the catalyst for unity and patience. The specialists chafed at some of the restrictions but with a sense of humor and with confidence that they could rely on the honesty and the expediency of the United States government.

The rocket experts were more content for another reason. They had arranged their capture and sold their talents to the Americans for a definite purpose: they wanted to continue their

exploration of outer space. "We despised the French, we were mortally afraid of the Soviets, we did not believe the British could afford us," said one of them, "so that left the Americans." Their future, as they saw it, was in the United States. It was different with those specialists who had nothing more to offer than their individual talent; they were less confident about the possibility of remaining in this country, and could not avoid wondering about the wisdom of their choice. They did not believe every rumor that crossed the Atlantic, but they did know that many of their colleagues, together with their families, were leaving the American zone to accept promising opportunities with the British, the French, and the Russians. That knowledge merely served to magnify the dissatisfaction of the men at Wright Field. In December they informed the appropriate officials that they did not wish to renew their contracts. Their decision was an ominous postscript to the great expectations which had given rise to Project Overcast.³⁹

5.

In mid-September Robert Lovett, the Assistant Secretary of War for Air, arrived for a visit at Wright Field. Lovett had distinguished himself as a naval pilot in World War I, retained an avid interest in aviation while serving in World War II as an assistant to Henry Stimson, and at one time in April had expressed an interest in the utilization of enemy scientists. His visit had nothing to do with the scientists, but it provided an exceptional opportunity for Colonel Putt, another former pilot and aircraft enthusiast, to relate his misgivings about the long delay in the initiation of Overcast. He asked Lovett to inquire in Washington as to explanations for the delay. The secretary looked into the matter and replied that the principal reasons were "inertia and some fumbling in G-2,"* and concern

* G-2 was the intelligence branch of the WDGS; it handled most of the administrative details of Overcast.

about political and security complications. He asked Putt for the benefit of his views as to methods the government might employ to meet those problems. The colonel interpreted the invitation liberally. During the next four months he sent one long memorandum after another to the Air Staff in the Pentagon. His office at Wright Field became a veritable center of protest. He was unwilling to accept the collapse of a project which he had helped pioneer.

In his crusade for change, Putt began with the assumption that only a more "realistic" attitude on the part of the War Department could save the program. The policy of temporary employment and other restrictions, he wrote to the Assistant Chief of Air Staff, "reflects a Prisoner of War attitude toward the scientists, which they are not, and it is extremely short-sighted, unrealistic, and not consistent with the benefits which might be derived from the complete utilization of German scientists under a more favorable and reasonable policy." He complained frequently about the ban on cooperation between the Germans and civilian institutions, and eventually proposed that the government arrange for industries to employ the personnel on a permanent basis in order to protect the national security. From the beginning he maintained that "since we are competing with the British and Russians for the voluntary services of these people, we are now in a very poor bargaining position." He continuously issued warnings of ultimate failure. "Although it is difficult for the American mind to have much sympathy for the personal problems or difficulties of the German personnel," he argued in late November, "cognizance of them is necessary in the treatment of Germans if we are to realize the fruits of their brains. Although the scientists desire to remain in the States with a view to permanent citizenship, if this is forever denied them, they are most desirous of returning to Germany at the earliest possible date. . . . To hold them in the United States against their will under these conditions will not net much of benefit to us." ⁴⁰

To the extent that any colonel can agitate the policy process,

Colonel Putt did so. He obtained no immediate satisfaction, and, for the most part, succeeded only in rousing a latent opposition within the Air Forces. At a high level, Lieutenant General Ira Eaker, the Deputy Commander of the AAF, had doubts about the possibility of coping with the numerous administrative problems, particularly that of immigration. He considered it more realistic and potentially more fruitful to exploit the scientists in Europe. When he put his staff to work to prepare a comprehensive report for higher authority, all kinds of criticism emerged. Most of it emphasized the deficiencies in *Overcast*: the problems of housing, food, postal service, and care for dependents; the breakdown of morale; the lack of facilities to pursue advanced research. But the criticism also revealed a deep anti-German sentiment left over from the war. One argument was that the Germans would soon "be calling for all their kindred aunts, uncles, and cousins to either be brought over here or receive a high degree of preferential treatment in Germany." Another, more to the point, stressed that former enemies would never become more than semiloyal citizens: "If at some later time policy would be such that these scientists would be granted United States citizenship, they by their ingratiating ways and by their technical abilities would worm their way into United States industries and might possibly achieve leading positions in the technical field. Foreigners in such positions without a fundamental loyalty to this country are considered a grave danger to the national safety."

This antipathy, in itself, was no obstacle to Colonel Putt. Yet it did reflect the larger national reluctance about a long-range program against which the exhortations of any officer would have been futile. The imposing reality was that the SWNCC was not prepared to act; until it was, any activity at the lower levels was certain to confront an impenetrable barrier. An example of such was the abortive flash of interest within the Joint Intelligence Objectives Agency. The JIOA had no role in *Overcast*, but in connection with its administration of the exploitation program in Europe, it asked for and received permis-

sion from the JCS to prepare an "interim procedure" for the "coordinated exploitation" of specialists in the United States. At the second meeting of its advisory board in October, the State Department representative informed his fellow members that from his point of view there were numerous impediments to any long-term program to exploit German nationals. He mentioned as merely one the fact that no basis existed for granting visas to alien Germans to enter the country. The outcome was a recommendation that the JIOA replace the WDGS as the administrator for Overcast. The JCS approved, and forwarded the "interim procedure" to the SWNCC. The using agencies, who had long awaited this step in the policy process, discovered to their dismay that nothing had changed except the locus of responsibility. They still had no answers to their own needs or problems.

In this manner, all of the early efforts to liberalize the importation procedure failed. Colonel Putt, however, through his search for support, had a fortuitous influence on the development of an entirely different program that was to bring reciprocal benefits. Early in November, as a part of his strategy, he informed Washington that Robert Lovett was sympathetic to his plans, and had even assisted in getting scientists out of the British zone. "It also appears that Mr. John C. Green, Director of Publications Branch, Department of Commerce, is exerting some influence in connection with the project," he wrote. "It has not been definitely determined whether his influence is favorable or unfavorable; however, during his visit to the Air Forces Fair, Wright Field, he evidenced keen interest and inquired as to reaction of industry towards the possible employment of some of the German scientists." The colonel was not one to let a possible ally escape. He directed his office to send to Green copies of letters which he had received from the AiResearch Manufacturing Company, the Dow Chemical Company, and the Aircraft Industries Association of America, all expressing a wish to employ enemy scientists. Mr. Green and the Commerce Department were definitely interested.⁴¹

6.

The Department of Commerce was curious about the exploitation of Germans as a corollary to its distribution of scientific and technical information to American industry. A month after V-E Day, President Truman issued an executive order which required the public dissemination of all unclassified research data and the results of experimentation carried on by government agencies during the war. The order placed major responsibility for the enterprise with the director of War Mobilization and Reconversion, and established in interdepartmental Publication Board to assist and advise in the release of information.* Two months later Truman issued another order broadening the function of the Publication Board to provide for "prompt, public, free, and general" dissemination of all unclassified "scientific, industrial, and technical processes, inventions, methods, devices, improvements, and advances" acquired by American missions in Germany. The President took a keen personal interest in the matter. He hoped the release of enemy data would make a significant contribution to reconversion by creating new methods, new products, and greater employment opportunities. He named Henry Wallace, Secretary of Commerce and vice-chairman of the Publication Board, to supervise the task.

Wallace quickly launched a gigantic "library operation" to collect, declassify, and distribute the enemy data. He created the Office of the Publication Board (OPB) in his department, which worked in close cooperation with the military services to mimeograph the reports of CIOS, FIAT, and TIIC investigators, and dispense them to industry at a nominal price.† In the

* The members of the Publication Board were the Attorney General and the Secretaries of the Interior, Agriculture, Labor, and Commerce. The Secretaries of War and Navy, the director of the OSRD, and the chairman of NACA were invited to attend meetings and participate in discussions of the board.

† In January 1946 the OPB issued its first "Bibliography of Scientific and

same month the Commerce Department became involved in the collection of technical industrial intelligence when it assumed control of the TIIC. Together with the War Department it prepared to launch a renewed program to send hundreds of industrialists to Europe to exploit enemy knowledge and techniques for peacetime purposes.⁴²

The Commerce Department had no relationship to Overcast, but the young executive secretary of the Publication Board, John C. Green, reasoned that a "logical and liberal interpretation" of the President's executive order warranted the exploitation of the "specialized knowledge locked up in the minds of the German scientists and technicians." Late in September he asked representatives of the War Department for their informal opinion on his plan to import persons on a permanent basis; he received encouragement but no promise of any definite assistance. In his capacity as Commerce Department representative on the JIOA advisory board, Green was in a good position to advance his ideas, and he did so at the first meeting on October 8. The JIOA reacted by including a new provision in the "interim procedure" it was preparing to submit to the SWNCC; through it, the Publication Board would be able to exploit industrial experts in a manner identical to that of Overcast. It was not what Green had in mind; the Commerce Department had no facilities to take custody of specialists and care for them.

During the following week he wrote an elaboration of his views. He proposed that the Publication Board accept requests from governmental, scientific, and industrial bodies for scientists of "international repute," all of whom should have demonstrated their opposition to Nazi principles. If the board found them acceptable, it would ask them and their families to enter the United States under a long-term contract which held open the possibility of immigration. The Commerce Department, for its part, would take action to ensure that the fruits of their research would become "fully and freely" available to science and

Industrial Reports," with a brief abstract of all material available on microfilm.

industry, conceivably through a nonprofit foundation. After finishing a preliminary draft, Green submitted his proposal to the director of the JIOA, with a comment that any plan to bring men to America on a "hostage" basis appeared unsound; he then circulated it among other agencies for comment. Only two responded. The War Department thought the plan was feasible with the possible exception of transporting the scientists' families to this country. The Assistant Secretary of the Interior registered his interest in exploiting the enemies, but took issue with the distinction between Nazis and non-Nazis; his department was interested only in their temporary use, and would never extend any recognition or responsibility to them. The scheme met a more frigid reception at the second meeting of the JIOA advisory board in late October. Dr. Lincoln Thiesmeyer of the OSRD announced his skepticism about the value of utilizing foreign technologists, and the State Department made known its doubts about the likelihood of immigration.

Green remained optimistic. He was in very much the same state of mind as the military officers who had first considered exploitation some five months before. He was convinced of the need for superior scientists, and knew through his contacts with American businessmen that they were favorably inclined toward hiring them. He was also excited by the reports from industrial experts working in Germany. One of them, written by two members of the TIIC's aeronautics subcommittee, was very pertinent; it noted that the Army and Navy were evacuating personnel and called for someone to take the lead in promoting a policy that would allow industry to do the same. "It is possible that we may all come to the conclusion that the difficulties of establishing a working and living arrangement for these individuals may be found to be too great in a democracy such as ours," they wrote, "and we may not desire to have any of those people returned to the States for the benefit of industry. However, we believe that the time to make the decision is now. Our aircraft industry is one of the armament industries which is in a different position from industry in general in that the Germans are

not permitted to engage in aircraft and other armament production. Therefore, if their leading scientists are not evacuated their talent will be wasted. On the other hand, if they are all evacuated by our Allies, the relative position of our scientific research compared with that of other countries will be impaired." Green also determined that it was time for a decision. On October 24 he submitted his plan at the secretary's meeting in the Department of Commerce. He finally prevailed. Henry Wallace agreed to sponsor requests for a limited number of scientists; he thought that "approximately fifty" would be appropriate.⁴³

The support of the secretary was consistent with his visionary blueprint for postwar America. In the autumn of 1944, when Roosevelt had called for a peacetime employment of sixty million jobs, Wallace was exuberant. "I glory in your daring," he telegraphed to Soldier Field in Chicago, "and, as you say, America can do the seemingly impossible." A year later, with the President gone and the war past, he had called upon the people to justify that faith. He chose *Sixty Million Jobs* as the title for his new book and the symbol for his new cause. Into both went the same passionate idealism, the same penchant for statistics, and the same sense of mission that had characterized his performance as Secretary of Agriculture during the New Deal. He presented "chapter and verse" of the policy that would lead to a "fuller life for all," that would meet the challenge of an impending world where all men would work, produce, live, and play abundantly. And he pledged himself to safeguard the "People's Peace" against the enemies within, who, servile to the twin evils of disunity and defeatism, did not share his aspiration.

Had it not been for the experience of the war, Wallace might have seemed merely the same old prophet in a new position. But he, like the military, had been inspired by the astonishing advances in science and technology. "Through the veil of wartime secrecy," he wrote, "we have had an occasional hurried glimpse of the marvels of tomorrow." It was that prospect—of forthcoming miracles, of vast opportunities, of technological bounties and emerging industries—that would "keep open the American ap-

proach to the peace of abundance." And it was that prospect that led him to contemplate the use of former enemies, "whose contributions, if added to our own, would advance the frontiers of scientific knowledge for national benefit." Fifty German scientists could contribute to his sixty million jobs.

Wallace stressed his theme in a letter to President Truman on December 4. He declared it "wise and logical" to transfer "scientists of outstanding attainments who can make a positive contribution to our scientific and industrial efforts." He listed a number of men available at the time: Dr. W. J. Reppe, a leading figure in acetylene chemistry, whose services had already been requested by the American Chemical Society; Hellmuth Hertz, a promising young physicist from a famous scientific family, wanted by the University of Chicago for its Institute for Nuclear Research; Dr. Georg Joos, the world-renowned physicist from the Zeiss Works, "who could make a real contribution to the furthering of optical factories in this country"; Dr. O. Graff, a universally respected expert on concrete and road construction who designed the "auto bahns" and could "assist in our peacetime road program"; and Dr. Otto Hahn, recipient of the Nobel Prize for discovery of the nuclear fission process.

Wallace also informed the President that many of the better scientists, including two Nobel Prize winners, had already gone to Britain and Russia, and described his program as essentially "intellectual reparations," which "may well be the most practical and enduring national asset we can obtain from the prostrate German nation." The guiding principles were simple: the men would be volunteers, carefully screened for antidemocratic sentiments, and would receive honorable and fair treatment. "If you agree that the importance of a selected few (approximately 50 in number) would be an asset to our economy," he concluded, "I suggest that you declare this to be U.S. policy."⁴⁴

Wallace's letter apparently never reached Truman's desk. Six weeks later he contacted the President's secretary to point out that he had received no reaction, and wondered whether any was forthcoming. Truman, in the meantime, had learned of the

scope of the proposal from another direction. Early in the new year, the president of the Tennessee Eastman Corporation, James C. White, informed Senator Kenneth McKellar that his and other industries were vitally interested in obtaining German personnel at the earliest possible moment to aid as "consultants in conversion." He complained that no agency of the government had the authority, or would accept the responsibility, to establish a satisfactory importation procedure, and thought a presidential directive would be necessary. McKellar asked Truman for his views on the subject, and the President replied mistakenly that "some effort is being made on the part of our scientists in this country to obtain the services of some of the German scientists." He then conceded: "I don't know how far this has progressed, as it has not been directed to my attention."

On the same day, January 17, Truman referred the correspondence to Dr. Vannevar Bush, his close scientific adviser, asking if he knew of any activity on the subject. Bush took the opportunity to expound his views at some length. He advised correctly that the Publication Board had the authority to import scientists, but erred in stating that it had already done so. He took issue with White's desire to stimulate the immigration of Germans and questioned the desirability of providing employment in American industry. The safe scientists, those sufficiently trustworthy and denazified, were needed in Germany to build a peaceful and nonaggressive nation. The proper cure for the United States was to release young men with technical training from their nontechnical responsibilities in the armed services, and resume the intensive training of promising young people. "The replacement of qualified American scientists and technicians . . . by imported German scientists and technicians," Bush concluded, "seems to be decidedly unwise." President Truman wrote what was probably an unintentional but nonetheless devastating reply: "I was morally certain that our home boys would not want any competition."

The Secretary of Commerce was thus unable to get a commitment from the Chief Executive. He had, however, caused a

stirring within the Cabinet. In early December he had also solicited the assistance of Robert Patterson, and found him congenial. The Secretary of War forthwith counseled the Secretary of State that in those areas where German accomplishments are "conspicuously in advance of our own," there rests an obligation to "transplant these increments of progress, fitting them into our own scientific, technical, and industrial structure," and at once. He assured Byrnes that his staff had carefully considered the security threat and judged that the practical benefits would greatly outweigh any possible danger; and that the War Department was ready to give its full support to such an undertaking. A month later Patterson asked James Forrestal to notify the State Department of his support. The Navy Secretary wrote to Byrnes that the acquisition of industrial experts would have "the double advantage of allowing the United States to utilize their talents and also of eliminating the potential threat of continued work by such scientists in Germany or elsewhere outside the United States." ⁴⁵

Although he was unable to achieve his own objective, Wallace had revived the discussion about German scientists in the highest council of the government. His advocacy had another significant implication: it gave a certain respectability to the concept of permanent residence and citizenship for the enemy aliens. Coming from military officers or their proponents, the concept smacked too much of an insensitivity to the political backgrounds of the Germans, of a cold-blooded arrangement to acquire weapons at any price. No one could accuse Henry Wallace of such insensitivity. For many years he had recorded his violent hatred of Hitler, and in one speech had called him Satan seven times. There was still a great difference between the purposes of the Secretary of Commerce and the friends of *Overcast*, between wanting to import scientists to construct roads and to build rockets. But Wallace, in the name of the "national interest," had sanctioned the principle of permanent employment; even more, he had inspired the Secretaries of War and Navy to give their official support to that principle. And in the turbulent

months after World War II, the requirements of the "national interest" were very susceptible to change.

James Forrestal had hinted at one such changing requirement in his letter to the Secretary of State. He repeated the accepted reasons why the United States should import scientists: to gain the benefit of their talents and to eliminate the potential threat of their continuing work in Germany. But he added a new argument—the need to prevent such scientists from proceeding with their research "elsewhere outside the United States." By the winter of 1945-46 that need had begun to exert a pressure of its own, for an increasing number of Germans were choosing to work for the Soviet Union.

7.

The movement of scientists out of the American zone during the autumn and winter of 1945 grew from a small trickle to a steady stream. The underlying reason for the exodus was obvious: the individuals were unable to obtain employment with the United States. On September 15, the leader of twenty-three men evacuated from Halle informed FIAT that "our situation today is very difficult as we had to leave our homes under loss of our whole property. Therefore we are enforced to look for temporary employment, until the promises of the American authority will be realized." With Washington intent upon limiting Overcast to the minimum number of scientists vital to the national security, there was no chance whatever for the fulfillment of those promises. The intelligence teams had simply removed far more personnel from the other zones than they were able to use.

There were also very few opportunities for employment within the American zone. Military government officials were scrupulous in their application of JCS 1067, the occupation proviso, which directed them to close all laboratories and research

institutions with the exception of those necessary to the protection of public health. They were also severe in their interpretation of its denazification provisions; a zonal law of late September prohibited members of the Nazi Party, whatever the character of their membership, from working at anything other than ordinary labor. The result of these "negative" policies was the creation of a large body of idle, resentful, and dissatisfied technical personnel. The compulsions of the approaching winter—the need for food, clothing, and shelter—impelled them to seek their livelihood elsewhere.

The Germans' departure from the American zone was easy because of the virtually complete absence of restrictions on their activities. In this respect, JCS 1067 was exceedingly vague. The policymakers did have the foresight to grant permission to the armies to detain those persons of interest to their technological investigations, but they said nothing about what should be done with them when the investigations ended. As early as May, General Eisenhower had cabled the Pentagon for a clarification of the issue: in the meantime he held the scientists in various detention camps and granted them small relief payments. In August, in the absence of any further instructions, General Clay informed Washington of newspaper criticism stemming from the fact that some of the V-2 experts had never been placed under arrest; he admitted that many of them were free and asked for advice. The next month, still without direction, Clay notified the theater agencies that his headquarters was not prepared to accept responsibility for the detention of any scientists after October 10. FIAT then circulated a list of the evacuees from the Russian zone, and warned the agencies that unless they had arrived at a decision regarding their employment by October, they would be turned loose, "and many of them, so far cooperative, will wish to return to their former homes."

Shortly before that happened, the Joint Chiefs dispatched their own requirements. They directed Eisenhower to detain personnel only for the purposes of conducting technical and counterintelligence investigations, unless they were already selected

for Overcast or were eligible for arrest as war criminals or for specific security reasons. The Commanding General of USFET was also to refuse interzonal travel permits to scientists who were not in detention, and require them to report periodically to prevent their unauthorized flight from the zone. Recognizing that the personnel would have to find some means of support, the JCS gave permission to theater officials to incorporate them under close supervision into research activities in German schools and universities.⁴⁶

Upon learning of the new measures, the State Department's political adviser in Germany, Robert Murphy, asked Secretary Byrnes to agree to more lenient restrictions. He could see no reason for special discriminations against persons possessing advanced technical education, or those skilled in developing, making, or using missiles. Byrnes chose not to jettison the restrictions; he concurred in the JCS policy pending a decision on the general problem of the emigration of the Germans. These policy deliberations concerning particular methods of restraint actually made no difference. It required no unusual resourcefulness for a scientist to move surreptitiously across a zonal boundary if he wanted to do so. Within weeks after V-J Day it was clear that many of them had such intentions. A small number, usually those who had been lured away previously by American promises, returned to the British zone. A group of twelve, employed by USAFE at the Bavarian Motor Works and already approved for Overcast, gave in to the inducements of French agents and escaped to Kressbronn on Lake Constance. Most of the scientists who left, however, headed east toward the Russian zone.⁴⁷

The broad policy of the occupation looked toward cooperation between the United States and the Soviet Union in the exploitation of industrial, technological, and scientific knowledge. Yet from the outset, both powers were cautious about ceding anything of special value. The Americans did not press for blanket permission to examine plants in the Russian zone because, as Dr. Clarke Millikan of Cal Tech explained, "if we did we would have to no doubt grant free exchange, and the area

which we hold happens to have about 90 percent of all the really valuable research and technical information. . . . The U.S. and Britain are exchanging everything freely . . . but the Russians have been pretty ticklish about it.”

In November the Soviet Union suddenly became agreeable to reciprocal visits, and remained so until the following February. During that time several such exchanges took place. Neither power gained extensively from the investigations, but the Americans probably had the edge. A civilian member of FIAT, who spent New Year's Day at Wolfen in the Russian zone, gave a sense of the casual nature of the visits in a letter to his chief:

Our Russian friends have taken care of us quite well so far. We are lodged in a large commodious house with servants and our own mess. . . . We have done a little investigating at Leuna, Dec. 30, Jan. 2 and 3. . . . There is a lot to see and learn, and the technical staff of Russians and Germans have given us everything we have asked for.

Our chief difficulty has been the well known Russian hospitality. Life seems to be just one banquet after another and one bottle of vodka after another. On two occasions we have gone to a colonel's house for a brief lunch which lasted till close to bedtime. This phase of the work we will charge off to promotion of good will. You have in this party excellent diplomatic talent, and the honor, if not the dignity, of FIAT, and in fact the whole U.S.A. is being upheld with bended elbow.

We have really made a haul here, and should pay back in kind. . . . The Russians will undoubtedly ask for a return trip to the U.S. zone. We observe a high degree of efficiency and intelligence in the way the Russians are running things in their zone. Comparisons with our zone are interesting and instructive. . . .

There was never any possibility that the cooperation would extend as far as the sharing of scientists. The United States had won a great advantage in the number and quality of its captives,

and had no reason to give it away. The Russians, on the other hand, were dedicated to regaining some kind of balance. In August they had begun a reorganization of the rocket establishments in East Germany and intensified their efforts to recruit employees. On the tenth of the month, Major Robert Staver received a report at Witzenhausen from Karl Otto Fleischer, who had previously helped him locate the Peenemünde documents:

We have the following news about the Russian organization of rocket affairs in Germany.

The Russians have organized three groups: first in Bleicherode, second in Mittelwerke, third in Peenemünde. They name all these groups together "Institution Rabe." . . . The Bleicherode group consists of about 50 people. . . . They try to rebuild and reproduce parts of A-4 and other rocket developments. They get the double German rations and are paid.

A few days later another German engineer revealed to Staver that the Russians were willing to invest liberally in the success of the project:

I had been for several days in Russian occupied zone around Bleicherode to pick up my baggage, which had been left there. At this occasion I spoke to an old collaborator, whose name I give for internal use only, in order to prevent him from personal difficulties by the Russians. He told me, that the Russians intend to develop a big rocket for a normal range of 3,000 miles and that they are needing specialists with knowledge of the theory of flight-mechanics and control equipment. He told me that the Russians set big prices for getting over to Russian area Prof. v. Braun and Dr. Steinhoff.

At the end of August, a Russian agent arrived in person in Witzenhausen to enlist Germans for "Institution Rabe." Prior to his expulsion by the Counter-Intelligence Corps, he promised

them good food, salaries, and treatment. But the Americans could not expel the many emissaries who continued to recruit in their zone. Nor could they dispute the fact that the Soviets were living up to their promises. In October, an intelligence officer with FIAT reported that according to reliable information, the working and living conditions in the Russian zone were satisfactory, the food rations generous, and the salaries very high. He predicted that the voluntary movement of German personnel into the territory would increase as the winter progressed, and made a final important point: "It is well known that aside from such pressing considerations as food and shelter, scientists as a group are eager and determined to continue their research. In order to do so some will adopt even extreme measures." ⁴⁸

There was no knowledge among the Americans as to how many Germans had taken such an extreme step. Most of the intelligence reports described the movement in general terms, and spoke of a "considerable number" who had left. But it was obvious that the Russians were meeting with success in their active recruitment, that they were putting the scientists to work in well-equipped laboratories, and that they were showing special interest in nuclear experts. A civilian investigator in Austria said that he had information indicating they were trying to hire some of the group held by the Americans at Zell-am-See, and were offering unbelievably high salaries. An officer in Berlin presented a list of persons who, out of "compulsion or choice," had moved to Russia. Several of the individuals were known to have volunteered their services as early as the Potsdam Conference. Some of the other names were new: Dr. Nikolaus Riehl, a brilliant young chemist and director of uranium production for the Auer Company, who had chosen to work in Moscow in June; Professor M. Volmer, a physical chemist at the Technical University in Berlin who made the same choice in July; Professor Timofeef-Ressovsky, former director of the Kaiser Wilhelm Institute for Genetics and Biophysics, who was summoned to Soviet Headquarters in Berlin in early September, and left for Russia the same day; Dr. Stenbeck, former director at the Siemens Com-

pany engaged in the development of the "Roentgen Blitz," who was arrested a few days after the fall of Berlin and disappeared; and a young physicist, Dr. Mic, who disappeared at the end of August after a Soviet staff car called for him at his home.

For many months the American authorities gave no special attention to the Russians' growing scientific corps, or, as in the case of the civilian scientific advisers in FIAT, dismissed it as of no consequence because of the United States' superiority in science. But in January, Lieutenant General John Cannon, the Commander of the Air Forces in Europe, testily recommended that USFET provide the scientists with employment suitable to their previous training and make a constant check upon their daily activities. In the light of the military government's precise interpretation of JCS 1067, it was impossible to incorporate the scientists into any meaningful research activities. The authorities did attempt the alternative. In January the AAF sent orders to its troops to prevent specialists from leaving the American zone, and a month later the War Department followed. Yet no one accepted the orders as a viable means to prevent dispersion. "The period of inactivity which has confronted this personnel during the past nine months," General Cannon had himself deduced, "has engendered a desire in them to associate with kindred scientists of other countries in order that the products of their creative minds will be recognized." It was a desire that could not be checked by anything short of internment.

On February 22 the wife of an Overcast specialist residing in Bad Kissingen gave poignant evidence that Project Overcast was collapsing abroad, as it was failing at home. In a letter to her husband at Wright Field, she described the local conditions:

Because our men do not know what to do with themselves, they are now "taking to the road" . . . The people simply cannot afford to wait because of economic conditions. Therefore, they are compelled to accept employment with the Russians. . . . It is almost a year now since the cessation of hostilities and still the men are not able to ap-

ply their abilities. So much could be developed! . . . The people here are depressed because nothing has been started.

She also expressed her bewilderment at American policy: "One questions why it all takes so long, for if America is really interested in the best manufacture, then it is incredible that she should let the Russians snap up all the best engineers." Her judgment was timely. Many of the leaders in Washington had come to believe that the nation's total policy toward the Soviet Union was incredible. In their search for a new approach to Russian-American relations, they did not ignore the competition for scientists and engineers. After seven months of indifference, they took a new look at Project Overcast.⁴⁹

Paperclip: One Kind of Containment

ON WASHINGTON'S BIRTHDAY 1946, the State Department received the now-famous long telegram from its Counselor of Embassy in Moscow, George F. Kennan. Analyzing the Kremlin's "neurotic view of world affairs," Kennan traced its roots to a "traditional and intuitive Russian sense of insecurity," and advised that its expression in the future would come in the form of an aggressive challenge to the capitalist United States. He warned his government to look for a no-holds-barred Soviet effort to weaken the influence of Western powers in colonial areas to prepare for their own penetration; a worldwide subterranean movement to dominate international organizations and national associations, aiming at the creation of an "operating directorate of world Communism"; and a development of Russian armed forces to a maximum point. "We have here," the scholarly diplomat summarized, "a political force committed fanatically to the belief that with the U.S. there can be no permanent *modus vivendi*, that it is desirable and necessary that the internal harmony of our society be disrupted, our traditional way of life be destroyed, the international authority of our state be broken, if Soviet power is to be secure."

For more than a year Kennan had been explaining his concept of the nature of the Soviet phenomenon, but as far as official Washington was concerned, "it had been to all intents and pur-

poses like talking to a stone." This time it was different. "The effect produced in Washington by this elaborate pedagogical effort," he remembered, "was nothing less than sensational. . . . If none of my previous literary efforts had seemed to evoke even the faintest tinkle from the bell at which they were aimed, this one, to my astonishment, struck it squarely and set it vibrating with a resonance that was not to die down for many months." That the authorities were so receptive to their chargé's communication—Secretary Forrestal, for one, had it reproduced for distribution to hundreds of officers—was not a matter of caprice. A number of developments gave special significance to the months of February and March in the evolution of the Cold War, and incidentally gave new life to Project Overcast.¹

On February 9 Stalin gave an "election" speech in which he called upon his people to sacrifice for a new Five Year Plan of industrial and military expansion to guarantee "against any eventuality," and predicted that violent upheavals within the capitalist camp would lead those countries into war. He did not explicitly threaten the capitalists, but most Americans interpreted his speech as sinister; Justice William Douglas described it as "The Declaration of World War III." During the next two months the Soviets seemed determined to verify the Americans' mistrust. They refused to honor their agreement to withdraw troops from Iran, and finally did so only after a stiff rebuke from Byrnes. They were tardy in their evacuation of troops from Manchuria, and then timed their movement so as to give material benefit to the Chinese Communists. They brought charges in the Security Council against British repression in Greece, and soon after praised what the Communist press called the "persecuted democratic citizens" whose actions had carried that nation into a ravaging civil war. They rejected the American offer of a \$1-billion loan which they had sought for fifteen months, refused to join the World Bank and the International Monetary Fund, and formally announced the initiation of their Five Year Plan.²

Almost as unsettling was the revelation from Ottawa in mid-

February that Canadian authorities had arrested twenty-two persons for alleged disclosure of secret information about atomic energy. Within several days it was clear that some "bomb secrets" had reached the Soviet Embassy, and soon thereafter rumors had spread about atom spies in the United States—rumors that found support in statements like that of the chairman of the House Un-American Activities Committee that "we are not on a cold trail by any means." The public, faced with only fragmentary information, responded with an elemental fear that subsided quickly when no sound evidence of internal subversion came to light. The government, privy to more extensive information, suffered a more permanent shock. On February 21 General Leslie Groves testified in executive session to a Senate committee that the traitor was British physicist Alan Nunn May. An employee of the Canadian project and an occasional visitor in 1944 to the Chicago Metallurgical Laboratory, May had provided Russian agents with notes on the theory of atomic energy and with samples of uranium. Although the experts were certain that he could not have stolen enough material to endanger American security, his treason had serious implications. It exposed the lengths to which the Russians had already gone to procure evidence about the bomb, including wartime espionage against the most generous of their allies, and in doing so, cast a haze of suspicion over both the quality of their friendship and the sincerity of their commitment to international control.³

The seeming truculence and obvious deceit of the Soviet government brought forth a strong vocal reaction in Washington. Republican critics, who had been urging the administration to "get tough" with the Russians as early as the London Conference, were especially outspoken. Late in February their influential leader, Senator Arthur Vandenberg, gave a climactic presentation of the rising concern when he insisted that the government speak with candor to the Soviet Union, sustain the national purposes and ideals with vigor, and "assume a moral leadership which we have too frequently allowed to lapse." The senator's reproach was directed primarily at the Secretary of

State, and in a speech the following day, Byrnes gave him satisfaction. Even as he repeated his conviction that there was no reason for war between any of the great powers, he declared the intention of the United States to "act to prevent aggression," and to "be able and ready to provide armed contingents that may be required on short notice." And in an obvious reference to the Russians, he warned that "we cannot allow aggression to be accomplished by coercion or pressure or by subterfuge such as political infiltration." President Truman, ordinarily sensitive to partisan attack (and to his Secretary of State as well), had no quarrel with these particular affirmations. He had already informed Admiral Leahy the week before of his wish to harden the stance against the Soviet Union, and at once.⁴

Many of the elements were therefore present in the second month of 1946 to support a dramatic reversal of policy toward the Kremlin. Important Republicans were impatient; the Secretary of State was perturbed; the President was angry; and George Kennan had provided a synoptic view which proclaimed the nettlesome antics of the Soviets a mere harbinger of things to come. Yet the basic ingredient for change—a sense of crisis—was missing. Even Kennan, despite his perceptive analysis of the potential danger of Communism, believed that "we may approach calmly and with good heart [the] problem of how to deal with Russia," and noted that the Soviets were still by far the weaker force. It was this latter reality, manifest in the monopoly of atomic bombs, which apparently impressed the President. He had hoped even before Hiroshima that the new weapon would give him "a hammer on those boys," and the subsequent expert opinion—that it would take Russia between five and twenty years to match our accomplishment—seemed to place the bludgeon in his hands for an indefinite duration. Indeed, so certain was he of American superiority that he expressed his belief to Robert Oppenheimer that the Soviets would "never" be able to build the bomb. Thus he could be angry at the Russians, but not fearful. Confident that time was still on his side, and mindful that he needed time to meet the pressing challenge of strikes

and inflation, he was unwilling to issue a White House trumpet-call to action or to arms. His primary objective remained the same—to seek a negotiated settlement of the divisive issues.⁵

From all outward indications, the President's approach was acceptable to the American people, even to the erstwhile critics. Indeed, the great swirl of exasperation found a satisfactory outlet in the brief flourish of "hard-line" rhetoric, and faded away. Yet in the privacy of many of the executive offices, a radically different attitude toward the Soviet Union had taken hold. In the months that followed, at the diplomatic level Byrnes demonstrated a much greater inclination to accept deadlock as a substitute for compromise, and spoke far more frequently about American principles and far less often about the need for patience, trust, and understanding. At the Pentagon, the change of viewpoint was profound. For nearly a year the services had looked upon Russia as an emerging threat, only to have the national quest for peace and cooperation forestall a more specific definition. After the events of February and March, it was finally possible, even imperative, for them to focus upon the Soviets as the new potential enemy. That recognition was a turning point. For the military leaders the Cold War had become a reality.

This did not mean that the services acquired a greater freedom of action overnight. It was still impossible for them, in view of the President's disinclination to rouse the public, to reverse the rapid pace of demobilization. Nor could they use what power they had as a political deterrent, as Forrestal learned when he proposed to send the Atlantic-based Eighth Fleet toward the Middle East, only to have the President veto the plan as provocative. But the clear recognition of Russia as the new enemy did allow greater leeway in making plans for the future, especially if they were inexpensive and discreet. No set of circumstances could have been more auspicious for the German scientist program. It was one small area in which the military could move at very little cost or attention against their adversary. They did so, spurred by mounting evidence that Project

Overcast, burdened by its limitations, had not only reached a moment of crisis at home but was in great jeopardy abroad.⁶

1.

Several days after Stalin's speech, the Assistant Chief of the Navy's Office of Research and Inventions, Rear Admiral Luis de Florez, called upon Congress to provide more funds for military research. As an important part of his argument, he revealed that the Russians were establishing four hundred technical schools and staffing them with all the German scientists they could get. In contrast, the United States had made "virtually no effort" to import specialists, and could take a lesson from Russia by also "robbing the brains of Europe" in order to "learn the other fellow's ideas and methods." The admiral's lament, publicized through an official news release, was symptomatic of a rush of private rumblings about the growing disparity between American and Soviet interest in new weapons.⁷

There were sound reasons for the officers' misgivings about the vitality of their own programs. The nation's civilian leaders, sitting atop the bomb with Buddhalike serenity, were not dedicated to weapons research. Their commitment was to economic entrenchment, a commitment which automatically ruled out any substantial long-range projects. Equally disheartening was the fact that a shortage of qualified personnel threatened even modest efforts. The conclusion of a War Department study of early February that "it is virtually impossible under present procedure to fill vacancies with the most capable of available men" gave official recognition to a developing trend that was to become a lasting plague. Part of the shortage was a result of injudicious wartime policies, especially the failure to defer science students. In one significant area alone—the production of doctorates in the sciences—the loss sustained during the war was approximately ten thousand, which in historical terms was a

number equivalent to all such degrees granted between 1898 and 1927. Aggravating this loss was a peacetime exodus of scientists from government laboratories to universities, industries, and foundations. Many left to resume their normal pursuits, some in search of greater opportunities, and others because they believed the Civil Service placed a "premium on mediocrity" and trapped the finest minds "in a blind alley." The effect was the same. In the first two postwar years, government laboratories lost nearly 20 percent of their personnel.⁸

These bleak realities on the domestic scene—a lethargy of spirit, a lack of money, and a loss of personnel—were themselves enough to highlight the importance of German scientists to military research. But what made the expansion of Overcast suddenly critical were the indications that the Soviets were increasingly active and competitive in their pursuit of both weapons and scientists. Their interest in one area, atomic power, had been amply documented by their removal of scientists from Berlin, and their intentions, according to a December prediction from the embassy in Moscow, were open to suspicion: "The U.S.S.R. is out to get the atomic bomb. This has been officially stated. The meager evidence available indicates that great efforts are being made and that super-priority will be given to the enterprise." But it was not until the Canadian spy case that the military expressed any concern about its lead in nuclear technology. Four days after the incident, General Groves joined the chorus in support of long-range exploitation. Well aware that "strong opposition will be encountered in placing these men in American institutions best fitted to exploit their efforts," he nonetheless asked for the importation of most of the leading figures in the German atomic project—Professors Otto Hahn, Max von Laue, Walter Gerlach, Werner Heisenberg, Paul Harteck, Carl-Friedrich von Weizsacker, Fritz Houtermans, and Drs. Karl Wirtz, Erich Bagge, Kurt Diebner, Frederick Weygand, Werner Maurer, and Rudolph Fleischmann. "It is extremely important," the general stressed, "that these persons be prevented from giving their services to a potential enemy of the U.S." ⁹

Far more ominous was the apparent Soviet drive for supremacy in the guided missile field, an area in which they were definitely competitive, and could conceivably attain superiority. The first sound of alarm came from within the Navy Department, hitherto a somewhat cautious and silent partner in Overcast. Following a trip to Europe in late December, Lieutenant Commander J. H. Marchant of the Bureau of Aeronautics registered shock at the success the Russians were having in their procurement of guided missile and ram-jet data and personnel. Within a week he had convinced the Under Secretary of the Navy, H. Struve Hensel, of the need for high-level action. In a memorandum to the Secretary of War, Hensel wrote: "I understand that representatives of Russia are today seeking to induce certain key German technical men in the United States Zone of Occupation to emigrate to Russia. . . . The Navy Department will be very glad to cooperate in working out any program for the transfer of German scientific personnel, for we regard this program as of paramount importance." Patterson was sympathetic but not optimistic. He advised the Navy to repeat its feelings to the Secretary of State.

Commander Marchant was not deterred. He carried his evidence, together with a proposal for a joint Navy-Air Forces recruiting campaign, to the Deputy Commander of the AAF. There the response was galvanic. General Eaker's office had previously harbored the most forthright critics of Overcast, but in less than a month had prepared a thorough study to refute every reservation. The importation of foreigners might create dissatisfaction among American scientists, but "true scientists are generally more interested in achievement than in competition." The Germans might ultimately achieve high positions of responsibility and thereby constitute a risk to national safety, but careful screening and countermeasures could offset the danger, and "due to language handicaps and prejudice, which will naturally surround a former enemy alien, there will only be a rare few who actually rise to high positions." Low morale among the scientists was a problem, but should not "tax our ingenuity." The real problem, as the general saw it, was the lack of a high-level policy

whereby the United States could compete with the more far-reaching programs of the other Allied powers. He specifically asked his superiors for instructions to forestall the absorption by the U.S.S.R. of specialists in all new and revolutionary fields, and for a policy to allow military and private industry to advance attractive offers, including the promise of continued residence and eventual citizenship.

War Department officials were well aware of the new developments that were troubling Army and Navy officers. The February issue of their *Scientific Intelligence Review* presented a lengthy summary of Soviet progress in rocket technology, and concluded that they had at their disposal "all the elements required to undertake an extensive guided missile program." They had begun theoretical calculations before the war; they had engaged in the operational use of rockets as early as 1941; and their latest models compared favorably with those of the United States, Great Britain, and Germany. Their competence and experience were matched by their vast natural resources, which made them self-sufficient in the production of materials necessary to construct missiles. And they had revealed their intentions by resuming the operation of rocket installations in Germany, by moving others to Russia, and by using every inducement to secure the services of enemy experts. The department was also very sensitive to the requests for action, and on February 19 directed USFET to prohibit the departure of all important scientists and technologists from the American zone, and to forbid further interrogation of any who had worked on guided missiles or ram-jets. They frankly admitted, however, that their order was only a "stopgap" measure. And their authority to do more—to provide for long-range exploitation based on citizenship—simply did not exist. The fact was that only the State-War-Navy Coordinating Committee could initiate a program of such national proportions, and they had declined to do so since the JCS presented such a proposal the previous August.¹⁰

Yet the circumstances were decidedly different at the end of February 1946. The Pentagon's renewed request for an ex-

panded Overcast was no mere gust of desire. It was a whirlwind of distress that swept through every service and at every echelon, carrying with it the documentary evidence of a threat to the nation's safety. And much as Kennan's long telegram sent shock waves throughout the government, proof of the Russian surge for weapons intruded into the deliberations of the SWNCC. Fear, distrust, and suspicion of the Kremlin finally combined as a catalyst for change. On the last day of the month, the three assistant secretaries approved two papers to facilitate entry of German and Austrian scientists to the United States. One fulfilled the plans of Henry Wallace to import experts of value to the "national interest." The other sanctioned the military's need for others in the name of "national security."

The heart of the SWNCC's proposals had to do with immigration. The original Overcast specialists had entered the country under circumstances which were most unusual, and which represented a substantial breakdown of national regulations. The State Department had allowed their entry in order to assist the military, in exchange for a promise that they would be carefully controlled and would remain for only a short time. The scientists comprised, in essence, "a privileged group of prisoners of war." The new program would legalize their entry by one of two methods—an immigration visa, issued on a quota basis and leading to citizenship, or a visitor's visa, issued on a nonquota basis and which normally would not permit a term of residence in excess of six months. The "national security" cases sponsored by the services—together with their families—were to have priority for citizenship. This arrangement was cause for elation. It promised the beginning of a new life for the scientists, and an end to the old worries of their hosts.¹¹

There remained one problem that required attention before any promises could be fulfilled—that of converting the SWNCC's proposals, which were only advisory, into firm governmental policy. In view of the fact that the Secretaries of State, War, and Navy had approved the plan in advance, the prospects were excellent. Byrnes, serving as coordinator,

promptly obtained the concurrence of Henry Wallace, who in turn won the backing of the influential Business Advisory Council of the Department of Commerce. The Secretary of State also sought the approval of the Justice Department, which had responsibility for the final security clearance of all prospective immigrants. After two months of study, the Attorney General joined the ranks of those in support of the new approach.¹²

For their part the Joint Chiefs of Staff hastened preparations to take full advantage of the forthcoming opportunities. They had the services prepare lists of the scientists and technicians they wished to exploit, and directed USFET to prepare a roster of those available. Their instructions differed from those of the past in that they asked for the inclusion of a new category of specialist. Whereas the old Overcast program had required the selection of persons on the basis of their positive merits—what they could do for the United States—the revised plan called, in addition, for the choice of persons primarily for a negative reason—to “deny” their talents to a foreign power. In the novel terminology of the Cold War, officers were to recommend specialists on the basis of their “denial” value as a means to thwart the scientific advance of the Russians.

The Joint Chiefs also moved to provide more efficient management in the acquisition of the experts. At the end of April they reorganized their subsidiary, the Joint Intelligence Objectives Agency, which had formerly been responsible for the collection and distribution of intelligence data from Europe. In its new role, the JIOA was to serve as an official sponsor of those immigrants desired by the War and Navy Departments. As a preliminary function, it was to collect requests for specialists, establish interservice priorities, and conduct a security check using its own files and those of the F.B.I. It would then forward lists of approved names to the Justice Department for ultimate clearance, and to the Department of State for transmission to consuls overseas. Finally, it would instruct theater commanders to arrange for transportation, and inform the sponsoring agencies as to when and where they could meet their guests. For

specialists of interest to nonmilitary departments and agencies of the government, the Commerce Department would assume the role of sponsor, with authority to call upon the services for security checks in Europe and for transportation.¹³

By early May the arrangements were complete, and the officers were optimistic. "When [the JIOA] finishes its job," explained one general, "it is believed there will be scientists enough for all vital purposes." The various branches had prepared their lists of names, and USFET had promised a roster of one thousand prospects within two weeks. The program had even acquired a new code-name. The term "Overcast" had been compromised in Bavaria, where the specialists' dependents had used it as the name of their housing camp. Army ordnance officers proposed a substitute. They recalled that when they were selecting rocket experts at Witzenhausen, they had attached a paperclip to the folders of those whom they wished to employ. In this manner, "Project Paperclip" became the secret designation of the new program, and the symbol of a new purpose and a new hope.

Above all, Paperclip was symbolic of a *national* commitment. In the spring of 1945, when the military imported their first volunteers, they had done so without enthusiastic support from their civilian colleagues, and with some trepidation about the reaction at home. "Everyone wanted a piece of the cake," a naval officer observed, "but nobody wanted to hold the platter." A year later, five members of the Cabinet were willing to "hold the platter" in the service of the national interest. And yet, to their astonishment and dismay, they discovered that neither their authority nor their prestige was sufficient to fulfill the expectations. There were still some within the government who doubted the value and the legality of exploitation. At the very moment of apparent triumph, the real fight for Paperclip began.¹⁴

2.

The newly reconstituted JIOA began daily discussions to ease the entry of Paperclip specialists during the last week of April. The military representatives on its governing board, savoring the nearness of success, moved for quick action to expedite the importation of as many as 800 persons. This was a considerable increase over the maximum 350 allowed under Overcast, and the 165 who were in the country at the time. To their consternation, their counterpart from the State Department did not share a sense of urgency. In his view, it was no simple matter to accord the privilege of American citizenship to the Germans and their families. After a week of fruitless debate, the Army, Navy, and Air Forces officers came to the realization that their program, so long delayed by problems of policy, might well become a victim of procedure.

The State Department representative clarified his reservations on May 2 at an informal conference in the Office of the Assistant Secretary of War. He focused his concern on the possible danger of Paperclip to the national security, less in the immediate future than some ten or fifteen years hence. Assuming that the Germans would seek close association for conspiratorial purposes—namely, to plan for rebuilding science and technology in their own nation's cause—he stressed the need for safeguards to minimize the security risks. His remedy, presented in an unsigned analysis, "German Scientists—Legal Problems," was for the sponsoring agencies to explore new methods of surveillance and control. It might be possible, he surmised, by means of the immigration visas, the employment contracts, an injunction or a bond, or if necessary, congressional legislation, to impose special restrictions on the specialists' associations, communications, and travel. Whatever the case, the program required closer scrutiny because of its relationship to many other elements of public policy.¹⁵

The military officers emerged from the conference with mixed

feelings. They were exasperated at the sudden appearance of so many legal entanglements, and disappointed at the prospect of another long delay. Yet they also had some reasons for hope. Perhaps the SWNCC had already considered the various difficulties and resolved them favorably. Or perhaps because the State Department had not presented them formally and through proper channels, they were inconsequential. And too, since Secretary Byrnes had personally approved Paperclip, could it be that the opinions expressed at the meeting were those of only one man, and he a subordinate?

The speculation ended and the hopes dissolved some five weeks later when the military met with members of the State Department again, this time formally. For the most part the latter assumed the roles of prosecutor and judge. They asked the officers about the kind of security measures in use, and questioned their effectiveness. They expressed disapproval of the lack of surreptitious surveillance of the specialists at Wright Field, in particular the absence of secret wiring of quarters. They pointed out that their department would lose control of the scientists as soon as they obtained visas, and implied that the results would be unfortunate. And they decreed that the policies of the War and Navy Departments were totally inadequate, too vague and too general. They were accommodating on one point: they would specify in detail the information they needed to issue visas.

They did so in a long memorandum of June 19, submitted officially by their representative on the JIOA. The requirements were imposing. As a general dictum, the sponsoring agencies would have to convince the consuls and the department that each applicant met the provisions of laws and regulations in effect as far back as 1918, none of which could be waived or varied. They were to sponsor no applicant until he had completed at least six months of continuous observation, surveillance, and interrogation under military jurisdiction in the United States; submit proof that the entry of the applicant would not be "prejudicial" to the interests of the country; and

show reason why a temporary visa would not be sufficient to satisfy the national security. More specific provisions placed a heavy burden on the services. As part of the personal history of each individual (and each member of his family), they would have to conduct a full and complete counterintelligence investigation in Germany showing his association with every political, scientific, industrial, or economic organization, and his relation to Pan-Germanism as well as to Nazi ideology. As evidence of his value to the nation, they would have to submit a certificate, signed by a Cabinet officer, attesting his preeminence in a particular field; written estimates of his work and professional standing by American observers; a detailed description of the projects on which he would work; and an estimate of the length of time needed to fully exploit his abilities.

The applicant himself would also have to satisfy the consuls and the department that he sincerely, and in good faith, desired to enter the country. Voluntarily and in his own handwriting, each specialist was to prepare a statement giving the reasons why he wished to become an American, an account of the circumstances under which he decided to apply for citizenship, and a preview of the connections he expected to maintain with persons, enterprises, institutions, or organizations in Germany. In this regard, the instructions cautioned the sponsoring agencies against permitting the applicant to misrepresent, however innocently, the state of his mind on the subject. Such mental reservations were important, not only for visa purposes but to satisfy the laws and regulations "concerning other forms of alien attachment and subversive purposes in the United States." Finally, the department prescribed that the applicant be "thoroughly interrogated and observed under controlled conditions," and reserved for itself the right to require supplemental investigations, or to rely upon its own inquiries at any time.¹⁶

On no occasion, either orally or in writing, had anyone within the State Department expressed an intention to delay or obstruct the long-range exploitation of scientists. Yet the effect of the official position was the same. It consigned the Paperclip

policy, impressively affirmed by the signatures of giants, to the lowly morass of vexing entanglements and voluminous red tape. The military, unprepared for the result, were suspicious about the cause. Officers had come away from the early meetings of the JIOA in the belief that the State Department's representative was *personally* unsympathetic to their cause. How else could one explain the marked difference between his abiding pessimism and the encouraging approval of his superiors, Secretary Byrnes and Under Secretary Dean Acheson? Their initial suspicions fed upon certain of the representative's statements and intimations—that the services should build up American techniques and knowledge to remove the dependence on Germans; that temporary visitors' visas would be preferable to citizenship as a means of exploitation; that the government should not accord unjustifiable preferential treatment to Germans over non-Germans; and, above all, that Paperclip was not consistent with existing national policies. For many years thereafter, officers close to Paperclip held to the opinion that this "one man"* in the State Department was using delay as a tactic, while he practiced a sort of sabotage.¹⁷

They may have been correct. It would not have been unusual for a government official to strongly resent, or subtly oppose, the immigration of former enemies so soon after the war. Yet whatever the personal motives of this "one man"—which, as with the private thoughts of most men, remain indiscernible—his position can be explained on other grounds. Both his seemingly independent behavior and his particular complaints were rooted in the circumstances of the time. For one thing, conditions in the State Department fostered confusion. The department had

* At the request of the State Department I have omitted the name of their one-time representative on the JIOA. I acceded to the censorship with few misgivings in that the "one man" was a minor figure whose name would mean nothing to the reader. I also sympathized with the Department's intent. During the McCarthy period several congressmen charged the JIOA representative with having "blocked" Paperclip, thereby giving the Russians a great advantage in the development of weapons. Their simplistic, erroneous, and unjustified attack caused him great distress. I believe history now owes him privacy, if only in name.

become a huge, sprawling bureaucracy, sheltering a host of administrators whose perspectives were as varied as their procedures were venerable. Over them, the Secretary exercised at best a limited mastery. When he was able to develop a unity of effort directed toward a primary goal, as was the case during the Second World War, he could expect his decisions to be fulfilled. But when he could not provide even a "basic score," a fundamental direction for policy, as was true in the spring of 1946, he could not hope to prevent the many bureaus, offices, and individuals from improvising their own plans of action. At the ethereal top echelon, he could decide on individual policies and approve those of others; but he could not be sure they would emerge unscathed from the wilderness of parochial interests—and policies—below. Within this context the "one man" allegedly replied to his critics that Paperclip might be the policy of the President and the Secretary of State, but it was not his policy.¹⁸

The dissonance of American goals also allowed for great diversity of opinion on such issues as the German scientists program. The primary thrust of policy in 1946 was directed at Russia, and sought to forestall the rising power of Communism—as through Paperclip. But there was a simultaneous and powerful sentiment in the State Department and Congress which demanded a final blow at the lingering virus of Fascism everywhere in the world. The diplomatic expression of this demand sought an end to Nazi influence in Argentina. Throughout the war, under the guise of a so-called neutrality, Argentina had not only refused to move convincingly against Axis activities but had allowed the German embassy in Buenos Aires to become a center of espionage for the entire hemisphere; as late as June 1945 her government was protecting 104 firms which had served as spearheads of Axis penetration. The United States, sympathetic to the militant stance of Ambassador Spruille Braden, felt bound by principle to see that Argentina purge herself of Nazi ties. In February 1946 Braden released the famous "Blue Book," an eighty-six-page chronicle of Argentine perfidy, specifically

damning the dictatorship of Juan Perón. Based almost entirely on captured German documents, the study denounced the country for having given aid to the enemy in time of war, for having supported subversion against neighboring republics, and for continuing to feed the Fascist infection. In April, this time in the pages of the *Atlantic Monthly*, the ambassador decried the “bare dictatorship of uniformed men” which refused to close out the German business houses “harboring Nazi agents of every kind.” It was absolutely essential to “root out” Germans during the war, he recalled. “What is essential to our continued survival is the eradication of both the will to kill and the means—both the ideology that requires military action, and the machinery and materials for making the weapons of war.”¹⁹

The Argentine policy* involved the United States in a paradox: it deplored for others what it claimed for itself. The anti-Fascist movement in Congress was more direct: it sought the permanent exclusion of all potential subversives—Fascists and Communists—from the United States. The movement was a revival of efforts during the 1930’s to guarantee that all immigrants would be loyal and patriotic, and its high point, insofar as it centered on Fascists rather than Communists, came early in 1946 under the leadership of Representative Ed Gossett of Texas. After viewing the movie *Hitler Lives*, Gossett argued that “any adult who has ever felt or believed as these people feel and believe cannot become a good American citizen.” He sponsored his own feelings in a bill to exclude all persons who had served in the armed forces of any country at war with the United States, or who had at any time been a member of the Nazi Party or any of its auxiliaries. The bill had the backing of the American Legion, the Veterans of Foreign Wars, the Polish-American Congress, the Sons of Italy, and the American Federation of Labor; if it passed it would exclude the majority of Paperclip specialists from entering the country.²⁰

* American policy toward Argentina changed officially in the summer of 1947 when anti-Communism became the touchstone of government action. The government “induced” Braden to resign, and arranged a mutual security pact with the unrepentant Perón.

The "one man" in the State Department was alert to the implications of this residual anti-Fascist sentiment. In one of his earliest comments he informed the military that the government had committed itself to the suppression of German scientific and military resurgence, within and without the country. The State Department would therefore have to justify exploitation in the light of that commitment. He also warned the proponents of Paperclip that "should the Gossett bill* pass Congress, as seems likely, additional prohibitions may be placed on immigration which may categorically prevent a number of applicants from obtaining visas."²¹

Finally, the State Department's representative could legitimately refer to other realities, some of a venerable cast, which challenged Paperclip. One was the tradition of vigilance with which the government had administered the immigration laws. At least since the inauguration of Franklin Roosevelt, the Executive Branch had been exceedingly careful not to rouse the congressional fear of "flooding" the nation; and the consuls, vested with the sole authority to issue visas, had looked scrupulously at every applicant's qualifications, including such factors as his "mental make-up." Caution had become a watchword in matters of immigration—so much so in the response to the refugee problem during the depression and the war, according to one critic, that the American people and their government had become "bystanders to genocide." There were legal complications as well. The Immigration Act of 1924 required each applicant to furnish a police certificate of good character for the previous five years, which in the case of Paperclip specialists from the Russian zone was generally impossible. And, too, there was a moral problem. President Truman had made clear his intention to give preference in immigration to the displaced persons uprooted by war. Yet progress toward that end had been very slow, and the prospects were not promising. Could the government, then, in justice, extend visas to Paperclip specialists in preference to so

* The Gossett bill passed the House of Representatives in July, but died in the Senate in August.

many who had suffered at the hands of Germany, and who were still awaiting *their* chance for a new life? ²²

The disagreements over exploitation were therefore a matter of differing perspectives and priorities. The advocates, their eyes turned primarily toward Russia, were convinced that conditions demanded a broad interpretation of the rules and a greater solicitude for the national interest. Yet in the summer of 1946 they confronted a seemingly adamant bulwark—a rigid construction grounded solidly in complex regulations and strengthened by postwar manifestations of morality and fear. For the Commerce Department, caught in a position of asking for selective immigration which was at the time illegal, the problem seemed insuperable. “Unless [the] State Department changes [its] attitude considerably,” one official admitted, “it is doubted whether any entries [will be] obtained.” As for the military, knowing that Paperclip would fail unless it could offer citizenship, their frustration reached a new level of intensity. And the news from Europe brought no relief.²³

3.

While Washington officials were struggling with the complexities of policy-making, hundreds of other Americans were still scrambling to complete the exploitation of Germany. Throughout 1946 one phase of exploitation, that of German industry, gained momentum through a joint effort of the Commerce and War Departments. Early in the year the Commerce Department assumed the overall supervision of the program, and through its new Office of Technical Services sent approximately 250 scientists, engineers, and documents analysts to Europe. The investigators, who made the trip at the expense of their own company or university, directed a gigantic microfilm project and prepared individual reports which were later sold to all interested American firms. The War Department handled

the physical necessities through the FIAT organization, which had been attached to the Office of Military Government.

The prospect of dividends from industrial exploitation had a great appeal. Congress, after listening to the testimony of the Commerce officials, supported the undertaking with a \$3,800,000 appropriation for Fiscal Year 1947, and industry responded by spending approximately \$1,250,000 to finance trips for its personnel. With this generous financial backing, investigators scrutinized every field of German activity, though they gave primary attention to the nation's largest international industry—chemicals. At eight different I. G. Farben plants, they microfilmed 587,000 pages of material on the manufacture of synthetic rubber, plastics, dyestuffs, and synthetic fuels. Another very active group concentrated on metallurgical developments, especially at the Krupp Works in Essen, a mammoth storehouse of information on ferrous metallurgy, continuous steel casting, and aluminum production. The most excited group was the Optical Unit, which discovered a bonanza at the Ernst Leitz Company in Wetzlar, and photographed 198,000 pages detailing the manufacture of Leica equipment, highly advanced color film, and the magnetophone. Even before the enterprise ended in 1948, there was unanimous agreement that the benefits had far exceeded the costs, with one expert estimating that American industry had saved billions of dollars and advanced its research by several years.²⁴

By whatever standards, the industrial exploitation program was an unqualified success and stood out brilliantly in comparison with the futile efforts to continue the investigation of weapons technology. The contrast had its basis in the fact that the Commerce Department was essentially concerned with physical evidence—dissertations, drawings, charts, and patents—whereas the military had to rely on individuals, both for information about the past and ideas for the future. Thus they had to cope with what had become their enduring problem—that of keeping the scientists in the American zone.

In some ways the occupation policies drove the specialists

away. General Clay was far more serious about denazification, for example, than were the French, British, or Russians. Dr. Roger Adams, an eminent chemist serving as an adviser to OMGUS, complained both publicly and privately of the effect of that policy on the need to put more people to work on meaningful projects. "Severe denazification in one zone and not in all will not give the final results we all hope for," he wrote. "Many of the scientists who had the reputation of being tinted with Nazism and who would have been arrested by the authorities immediately went over to the Russians where they were given good jobs." General Clay was also troubled about the legality of exploitation in Europe in the light of the Potsdam agreements, and took to heart the expressed intent of the Allies to prohibit war research in Germany. In a personal interpretation of the new Control Council Law 25 on scientific research, promulgated in May, he ruled that any research conducted in Germany by a branch of the Army would be regarded as military research and would be forbidden. His determination hampered and finally ended the very successful employment of Professor Strughold's group at the AAF Aero-Medical Center in Heidelberg.

General McNarney and General Clay were skeptical as well about the Pentagon's directive to prevent the departure of scientists—either by surveillance or special treatment—as a first step in the "denial" program. Upon receiving the February order, McNarney replied that OMGUS was already providing special privileges to the evacuees from the Russian zone, and that any large increase in the number receiving preference would impose serious burdens on his office. The fact was that under the dire conditions in Germany, OMGUS was unable to provide adequate care for the scientists. On May Day one of the latter described the status of several hundred of his colleagues and asked for an increase in welfare or relief payments. At the time of the evacuation, he explained, "they had to give up their positions and lodgings from one day to another. Being not allowed to carry with them more than some small luggage, they lost practically all their private property and a great deal of their

working equipment. The American authorities promised them well paid employment in the United States or in the U.S. zone of Germany, adequate rations, and quarters, as well as full compensation of the lost property." At present, he complained, the scientists are "living in rather poor conditions mostly in small places throughout Greater Hessa . . . without engagement and income. They are lacking clothes and shoes, household utensils and necessaries. The financial situation of many of them is most difficult. With American approval the German authorities granted certain relief payments during the first few months, but later on the evacuated people were dependent on their own small resources. At the time they left Middle Germany, it was impossible to get more than a few hundred marks' cash from the bank accounts. So many of them evacuated are now practically without means and have to be supported by the public welfare." ²⁵

By July the problem had become disconcerting, and General McNarney, suspecting that "some of the factors may be unknown in Washington," sent a long cable of clarification. He stressed that it was becoming increasingly more difficult to prevent interzonal movement, and would become more acute because of plans to relax travel restrictions. Extensive employment of those on the list of Paperclip prospects was no solution, because there was "a large number of former Nazis and mandatory unemployables" among them who "cannot now or later" be hired except in the common labor category. The establishment of a "favored group" through the allocation of special privileges was against the military government's policy, and was in any event no sure deterrence to interzonal movement or indirect contact with other nations; the issuance of extra rations, fuel, and clothing could not compete with the rumored pay scales and fringe benefits offered by France and Russia. And, too, there was a question as to the wisdom of evacuating a large group of scientists; Germany would need a number of the non-Nazis to establish an economic balance and staff its school system. The obvious conclusion, as General McNarney saw it, was that only

detention under military guard or evacuation could deny the scientists to the Allied powers. His recommendation followed logically: the Pentagon should abandon the overall denial program in the American zone, and immediately remove those persons (and their families) who had attained unusual military significance in fields which might be detrimental to the nation's security.

The "long cable" added to the vexation of Pentagon officials. At the same time the State Department was telling them that denial could not be achieved by removing the scientists and their families to the United States, OMGUS was saying that it could not be achieved in any other way. They did not question the veracity of General McNarney's description of conditions in Germany. Other investigators had already reported that the American zone was "literally crawling" with French and Russian agents, and that many specialists were accepting their offers because they ignored previous membership in the Nazi Party. But the Paperclip policy-makers were not willing to forsake their plans. The Director of Intelligence of the War Department General Staff proposed to General Eisenhower that "military expediency" warranted instructions to McNarney that "he will employ every practicable inducement in order to contract scientific, technical, and intelligence specialists, and to care for families which may not be brought to the U.S. until some time after the evacuation of specialists." The new Chief of Staff, already an accomplished politician, declined to act on the suggestion. The War Department merely informed OMGUS that the exploitation and denial programs were under reconsideration, and that their proposals would be taken into account.²⁶

The stalemate in Washington was even more disturbing because of the overwhelming evidence that it did not extend to Moscow, Paris, or London. To the contrary, the "Allies" stepped up their recruiting activities in the spring and summer of 1946. The Russians, in the angry words of Colonel Putt, were contracting on a large scale, unchecked by the reputed "freeze" order, and "facilitated by the sorry fact that the German scien-

tists have received no clearcut, positive offers from this country.”

As Colonel Putt implied, the omnipresent Soviet agents usually found their task easy. The Germans, desperate after a year's inactivity, succumbed to tempting offers and persuasive assurances. On other occasions the Russians induced their new employees to contact former colleagues, as in the following letter from a scientist in Berlin to his friend in Heidenheim: “Since about three weeks I have to work again in the firm for a Russian professor who is especially interested in our former line. This group wants to employ former experts as yourself. I have already written to Mr. ———, fulfilling the wish of the professor and I have asked if he doesn't want to work with us. We are told and high officials guarantee that everything will be all right. But everybody of the group must watch that no political activists join. I am sorry that I cannot write to your other colleagues as I don't know their addresses. The pay is normal nearly the same as formerly. You see everything has been taken care of. If you are willing to take such a job I ask you to tell me, that I can do the necessary.” When salesmanship failed, the Soviets were not averse to using guile and trickery. A favorite artifice was to lure the dependents of scientists into the Eastern zone in order to hold them as hostages until the scientists appeared.²⁷

Some of the Germans were obviously immune to Russian offers. A specialist at Bad Kissingen rejoiced in July that his men in Berlin had been able to “resist and remain loyal to us.” But there were other tempters. “A new and much more serious danger, already threatening the Kissingen group has appeared,” he continued. “The French have become very active. Those individuals having a distaste for the Russians are ripe for the French.” His warning was not an exaggeration. From the end of hostilities the French had been luring specialists into their zone, with no particular sensitivity to the feelings of their liberators. Intelligence reports claimed that by April they were using hundreds of Germans at Lindau for research and testing of jet aircraft, at Friedrichshafen on radio-controlled torpedoes and

one-man submarines, and at Rickenbach on statics and aerodynamics. They eventually became bold enough to engage in competitive contracting in the American zone. Early in June they approached a group under the leadership of Dr. Bruno Eckert, who had assembled at Stuttgart to consider arrangements with the United States. The contracting officer had to leave the city for ten days, and learned upon his return that Dr. Eckert and his entire staff had departed illegally for Turbomeca in the Pyrenees.

The French were competitive because they allowed families to accompany the scientists, offered citizenship after a trial period, granted royalties for new developments, and placed no limitations on personal freedom. A naval investigator who interviewed two of their most exceptional employees at Chantillons near Paris—Dr. Eugen Sanger and Dr. Irene Bredt, former students of supersonics at the Glider Research Institute in Ainring—reported that they “are treated very well by the French. They live essentially like French citizens, without discrimination. . . . They live in private apartments and are not required to live in compounds, as they understand, is the case in the U.S. Their salary is adequate for normal living and their rations are the same as those of corresponding French citizens. Only their work is restricted, probably because of budget restrictions.”²⁸

Somewhat the same leniency prevailed in England. As early as December 1945 the British had conceived a plan to utilize German talent, and during the following month moved a small group of submarine experts to the Vickers-Armstrong shipyard in Barrow. The initial reception of both the Germans and the program was cool. Labor unions and city officials resented the lodging of the scientists in Rock Lea, a fifteen-room mansion adorned with beautiful gardens and new luxury furniture, and expressed “horror and indignation” at the government’s “ill-advised” willingness to trust such recent enemies. The public reaction stalled the policy for a time, but by the late spring of 1946 the occupation authorities were making new demands. They were alarmed at the movement of specialists out of their

zone, and predicted that within a few months nearly every scientist would accept employment with the Russians and the French. After preparing a list of fifteen hundred personnel considered important to their national security, they persuaded the government to support a two-part program to deny them to the Russians.

One scheme was to put the scientists to work in the British zone on a "retainer" system which paid a salary of four hundred Reichsmarks per month, allowed the highest category of food rations, and provided living accommodations in special "hotels" located as far as possible from the border of the Russian zone. The other was to offer temporary and permanent employment in England. Under the permanent arrangement specialists could look forward to citizenship after five years' residence, the immediate removal of their families across the channel, and employment in industry as well as with the military. By the end of the summer, forty-two specialists had accepted permanent contracts, and fifty-nine had taken advantage of the short-term opportunity. The British were prudent in the management of their program; they provided escorts for persons visiting the continent after learning that a radar expert had been arrested within three hours after his arrival in the Russian zone. They were also expedient. As one American observer noted: "The Board of Trade handles all scientists coming here and has little interference from anyone. Once it is decided they want a man, he is brought over and put to work. How he parts his hair, how many hairs fall to the right or left of center, whether he is lily-white, and any other such considerations do not worry them too much. If any man can be of assistance in realigning a segment of their economy which is out of adjustment, they try to get him."²⁹

By late summer conditions in the American zone had reached their nadir. A Washington visitor to the Heidenheim camp found that the specialists were crowded, idle, and dejected; there had been several suicides and escapes. Many of those who remained at the camp were frauds. They classified themselves as mechanical engineers and industrial experts but were only auto-

mobile mechanics and stonemasons. They claimed to have escaped from the Russian zone but had only "hopped on the band wagon" in order to "make a good thing of the situation." The superior scientists were under great temptation; they knew that the option of returning to work was always open to them. A constant flow of correspondence extolled the virtues of the Russians and told of colleagues who were comfortably settled and continuing their research in the Eastern zone. With freedom to travel, they could "merely walk" to the border and give themselves up. The visiting officer warned that "wholesale flight" was a "serious threat."

Faced with that possibility, the OMGUS leaders had become despondent. The Pentagon had not acted on the recommendations of their "long cable" and was seemingly indifferent to their acute administrative problems and the deterioration of morale. The Director of the Economics Division, Brigadier General W. H. Draper, was so impatient that he prepared a new message, insisting that the time had come to work out a permanent solution. He asked for authority to release those scientists who were unemployable or who had no contract with the United States in order that they could seek employment "anywhere" in Germany. The cable never left the theater. The Chief of FIAT, Colonel Ralph Osborne, advised that it would be "much wiser" to follow directions and prepare plans for the movement of personnel than to "further complicate the Washington thinking on this subject at the present time." General Clay, with a sense of futility, made the final decision: "We have told Washington this story and it seems to me we are pushing it too much for the moment; that Washington needs a little more time."³⁰

In fact, time had almost run out in Washington because of the demoralization of the scientists already in the country. The managers of Paperclip had been able to remove some of the minor irritations of their existence. In February they had obtained a "green light" for outside interviews, and during the next five months organized more than eighty conferences between the specialists and representatives of research and indus-

trial organizations. In June they arranged a relaxation of mail restrictions. Each person could thereafter send one parcel per week—restricted to nonperishable foods, clothing, soap, and medicines—to his dependents in Germany. There was no simple expedient, however, to remove the one factor that most visibly affected the scientists' morale—the general insecurity about the welfare of their families.

The sponsoring agencies were unable to prevail upon overseas authorities to issue extra rations to the families who did not reside at Landshut; they could only urge that all dependents transfer there. They could not quiet rumors and fears that the Russians might kidnap or otherwise gain control of members of the families; they could only advise the dependents to be careful. Nor could they begin preparations for the arrival of dependents. The War Department's Director of Service, Supply, and Procurement had expressed "complete opposition" to the expenditure of funds to rehabilitate quarters for that purpose; there were already too many married soldiers who had to live under conditions which were a discredit to themselves and the Army. As early as June the AAF predicted that the situation had reached a "critical stage," and that unless constructive action followed soon, "the whole project might conceivably fail." Within two months failure was imminent. The first arrivals announced unanimously that a full year's separation from their families was all they could bear. They would not renew their contracts in September. One of them requested an early release and returned to Germany. His letter of resignation epitomized the failure of Paperclip: "I am willing and ready to offer my services to the United States again, if a definite offer is made, assuring the future of myself and family in the U.S.A." ³¹

The many months of planning for exploitation and denial had finally come to this: the German scientists were not only leaving the American zone, but the United States as well. Still there was no inclination on the part of proponents to surrender to the forces of disruption and delay. Colonel Putt, for whom a year of work and hope were about to crumble, kept up his indignant

barrage: the “responsible-minded authorities of the War Department should have no doubts as to what is happening in Germany, and what should be done next, and immediately.” The department’s “responsible-minded” Director of Intelligence agreed, and insisted that the “international situation” together with the breakdown of “established” governmental policy made it extremely urgent for the SWNCC to formulate additional interim policy and procedure. Above all, the Secretary of War was uncharacteristically angry.

4.

“Judge” Patterson had reacted in various ways to the importation program from its inception. When the initial proposal came before him, he was cautious; he foresaw many complications and believed the United States should act only after consultation with each of its Allies, including the Soviet Union. When the relations between the two great powers began to shatter in early 1946, he supported “denial” as well as exploitation, and became one of the sponsors of the long-range plan. When the very survival of that policy came into question, he emerged as its most outspoken champion.

One of Patterson’s nicknames—the favorite of Stimson—was “Old Thorough,” which connoted his habit of doing his homework prior to a passionate defense of his opinions. In June, “Old Thorough” asked for a complete report from the Director of Research and Development of the General Staff, Major General Henry Aurand. “It seems clear to me,” he informed the general, “that the War Department should . . . do everything possible to clear away obstacles that may be raised in the State Department.” The truth about those impediments shocked him, and he indicated in “no uncertain terms” that he would vigorously support a revision of policy to save Paperclip. “More than a year has elapsed since the German surrender, and the

obstacles placed in the way of carrying out this program are for practical purposes insuperable," he complained. "I believe that this program, and the present conditions, should be called to the attention of SWNCC and taken under prompt consideration on a high level in that agency. The program is important, and no progress will be made if impossible requirements are insisted on. The provisions of the law must be complied with, but regulations and administrative rulings have not the force of law and can be treated with more flexibility in an effort to achieve something."

During the last two weeks in July the secretary moved quickly to achieve his goal. He had two aides—his assistant secretary, Howard Petersen, and his special assistant, Dean Rusk—write an "interim" policy to serve as the basis for high-level deliberations. He then arranged for Petersen to present the plan to Major General John Hilldring, the State Department chairman of the SWNCC. Hilldring revealed that the matter had been the subject of discussion with Secretary Byrnes, and expressed regret that administrative procedure within his department had thus far "blocked the effective implementation of the agreed SWNCC policy." Since it would take some time to revise procedures to accomplish the common purpose, the State Department would concur in the "interim" program whereby scientists and their families could enter the country under "temporary military custody." The assistant secretary justifiably rejoiced that "this represents a real but tardy forward step." During the month of August the State Department joined with the military in a reaffirmation of purpose and a refinement of the new policy.³²

Patterson's intervention succeeded not only because of his forceful leadership but because it came at a time when the most influential statesmen in the government were absorbed in a reappraisal of Soviet-American relations. Earlier in the summer President Truman had asked his aide, Clark Clifford, to prepare a comprehensive study of the present realities and future prospects of that relationship. Throughout July and August Clifford

conferred with and solicited reports from the Secretaries of State, War, and Navy, the Attorney General, Fleet Admiral William Leahy, the Joint Chiefs of Staff, Ambassador Edwin Pauley, the Director of Central Intelligence, and other specialists in the field, including Harriman and Kennan. Their "simultaneous definition" of the Russian problem led to a paper of nearly one hundred thousand words. More than any single document after 1945, it presented what was soon to become the historical understanding, the source of policy, indeed the *Weltanschauung*, of an entire generation. It was the American prospectus for the Cold War.

The "Clifford report" drew heavily upon the insights of George Kennan for its explanation of the origins of Soviet policy. It continued with a detailed history of the numerous Russian violations of agreements with the United States. When it turned to the present, it deduced that the Soviet leaders "appear to be conducting their nation on a course of aggrandizement designed to lead to eventual world domination," a goal "in direct conflict with American ideals." Generalissimo Stalin and his associates, acting in the fundamental belief that "peaceful coexistence of communist and capitalist nations is impossible," and having shifted their emphasis from Great Britain to the United States as the principal "enemy," were preparing for the inevitable clash by every possible means.

They were rapidly developing new "offensive capabilities"—a mechanized army, a strategic air force, a submarine fleet, atomic weapons, and guided missiles. Simultaneously they were acting "to weaken the military position and to destroy the prestige of the United States in Europe, Asia, and South America." In the American zone of occupation, they had interfered by kidnapping scientists, by recruiting jet propulsion experts, and by illegally collecting documents on atomic research. Finally, they were "actively directing espionage and subversive movements in the United States." One of their foremost objectives was to "capture the labor movement"; another, to subvert the armed forces. "A definite campaign, in the making at present, is being

sponsored by the Communist Party to indoctrinate soldiers to refuse to act in the event the United States Army is called on to suppress domestic disturbances, to take over essential industries, or to operate public utilities."

The "top secret" study concluded that the major aim of American policy should be to convince the Soviet leaders that there was no future in "aggressive military imperialism." Yet it expressed skepticism about attaining that objective through "mutual understanding." Unless the nation was "willing to sacrifice its future security for the sake of 'accord' with the U.S.S.R. now," it should use the "language of military power," the "only language which disciples of power politics understand." The proper response was preparedness, including a readiness to wage atomic and biological warfare. Military strength, combined with scientific supremacy and generous support to countries outside the Soviet orbit, was the "only sure guaranty of peace." When the Soviets learned that the Americans were "too strong to be beaten and too determined to be frightened," they might change their minds. But that change would come "primarily by what we do rather than by what we say, and it will not happen suddenly."³³

The deliberations that formed the basis for Clifford's memorandum created a perfect setting for a favorable decision on Project Paperclip. Many of the same men who were calling for a more realistic policy toward Russia were at the same time considering the merits of importation, and the congruity was obvious. One aspect of the program—exploitation—could make a definite contribution to preparedness and the "language of military power." The other—denial—could serve to some degree to "prevent," "check," "restrain," "confine," or, as Kennan put it as early as September 14, "contain" the military power of the Soviet Union. The SWNCC was so confident of these virtues that it not only confirmed its previous action but decided to seek the blessing of the President. On August 30 Dean Acheson placed the fate of the German scientists in the hands of Harry Truman, with a reminder that many of them "may be lost to

us" unless steps were taken quickly.

Four days later the President gave his official sanction to what proved to be an expanded version of military and civilian exploitation. The government, lest it "endanger the national security," would import as many as one thousand German and Austrian specialists under "temporary, limited military custody," and ensure them suitable salaries and working conditions. It would not employ ardent Nazis, but neither would it discriminate against those who had been "nominal" party members or who had received awards or honors under the Nazi regime. Finally, it would promote the citizenship of the scientists and move their families to the United States as rapidly as transportation and housing allowed. There is no documentary record of the reasons for Truman's decision. He had not read the Clifford report (it was submitted officially on September 24), but it did not require any clairvoyance to know "to whom" the scientists might be lost. Truman recalled years later that he was not in the least reluctant to approve Paperclip; that because of relations with Russia "this had to be done and was done." He insisted only that the Germans should always have an American "boss."³⁴

In this rather anticlimactic fashion, some sixteen months of frustrating indecisiveness came to an end. The presidential signature made everyone more secure and more complaisant. Before the end of the year the State Department had assured the SWNCC that it would cooperate in every way possible to facilitate the issuance of visas, and its Visa Section advised the JIOA that it would accept the latter's investigations and security reports as final. The Attorney General had likewise informed the Secretary of State of his desire to expedite the program, and acknowledged that he would grant the necessary waivers under the law to permit admission as an immigrant without the normal one year's residence. The services completed a new contract that allowed individuals who had served in the country for six months to enlist for another year, with the government holding an option to renew the contracts for up to five years. The "long-

range" contract also provided for salaries up to a \$10,000 maximum and for the prompt removal of families to the United States.³⁵

By Christmas of 1946 the number of specialists in the country had increased to 292, and the dependents of approximately twenty of them had already moved into the barracks-style "homes" on the military posts. For the first time in nearly a decade the families could look forward to a relatively stable and normal life. That prospect was particularly meaningful in the light of recent news from Europe. The Russians, like the Americans, had become very serious and businesslike in their approach to exploitation. They had decided to "allow" their German scientists to spend Christmas Day in Moscow.³⁶

5.

Late in the night of October 21, Russian secret police had surrounded the homes of thousands of scientists and technicians in East Germany. Taking advantage of the helpless sense of terror that thrives in darkness, they roused the inhabitants of each house and told them they were leaving at once for the Soviet Union. Two days later, in a letter to her family in Heidelberg, the wife of one of the more fortunate technicians described what had befallen the city of Jena:

Dear Parents, dear . . .

I want to inform you in brief what terrible things are happening here. The Russians deported the skilled workers of Schott and Zeiss with their whole families. The plants are being dismantled and everything down to the smallest nail and light bulbs etc., is transported to Moscow, Leningrad, Charkow, Kiev, or Stalingrad. . . . The night before yesterday we had an awful night. In front of many houses of the neighborhood big trucks halted and the people were

told to pack everything within 3 hours. Terrible were the screams of help of men and women in the night. It was entirely impossible to flee because Russian police watched the house and practically stuck to the men's heels. . . . These are real Russian measures. Within 3 hours they are transported off and then they stand 24 hours maybe still now, at the station. . . . Up till now 300 families are gone, more will surely follow. We do not know whether we are among them. What can we do? We made up our minds as follows: If my husband has to go for 5 years as it is written in the "contract," I go with him because it is too long a time and who knows whether one meets each other again. If he has to go for reconstruction for 1 or 2 years only I do not join him. Most men took their families with them (at first it was compulsory), of some families only the husband left.

If my husband escapes I will be imprisoned. Consequently we must keep still. Now I think if they deport again, they will not come at night, for now every skilled worker counts on that. The Russians wanted to prevent escape. In Saalfeld and Gera they knew before and crossed the Bavarian border at S[aalfeld] in hundreds. Also from Nordhausen, Soemmerda, Hall, Bitterfeld, etc., the skilled workers were displaced. All railroad transportation has come to a standstill. . . .

We will hope now that they do not need my husband. It is better to stay here and clear rubbles but at least be at home.³⁷

The Russians had not acted hastily. For more than a year they had been utilizing the specialists in construction bureaus organized in factories and research institutions. But this arrangement had several disadvantages. Too many of the scientists were responding to the enticements of the British and French, even though "a Damocles sword was suspended over their heads in the form of a paper which they had to sign . . . that if they

arbitrarily left the Russian zone, reprisals would be made against their families." Too many of those who remained were slow to share with their new employers; in order to lengthen the time during which they could enjoy special privileges, they were rationing their knowledge and experience. And leaders in the Kremlin were too uncertain about the ability of their own people to reestablish the assembly-line production systems without the experience of the Germans. In August they had decided to eliminate all risks and problems by deportation. They began their preparations in great secrecy, and covered them with subterfuge. When rumors of the transfer arose, they began repairing the construction bureaus and the living quarters and spoke of their intention to remain for several years. When "X-Day" arrived, they were able to remove approximately thirty to forty thousand persons with "no fuss, no noise, no bother."³⁸

The initial reaction of those who were saved from deportation was one of sadness, fear, and confusion. The young woman in Jena philosophized to her parents: "Now we recognize how little we Germans have to expect. It is likely to be so for a life time. You must not think of the future." Others were unwilling to accept such a fate, and were quick to make plans for their future. A chemist in Kronberg asked his former colleague: "Did you ever meet Dr. ——— who is developing an artificial filtering agent? He recently arrived from the Russian zone where things got too hot for him. He did quite well as long as he was distilling brandy for the Russians, but when the Russians found out that he also knows how to do other things, they closed in on him, so that he beat the usual retreat under cover of the night." Some, however, were less certain that employment with the Soviets was reason for alarm or despair. In a long letter to his brother in the United States, a specialist in West Germany surmised:

It is quite possible that one fine day or night the Russians will call on me and fetch me, just as they did other scientists in the English and American zone. In my case they would not have to use force. . . . Perhaps I may get an

offer from the Western powers. I would prefer this. . . . Looking at it objectively, the Russian business is not at all as bad as it is mostly painted, and I am convinced that in the case of the "mass removal" of engineers to Russia three quarters of those concerned went voluntarily. . . . The German scientists in Russia are doing quite well. In the way of food everything is free, also for the Germans. One receives ample funds. . . . The Germans in Russia live in colonies, but they are perfectly free. . . . The best part of the whole thing is that the family can come along at once; the furniture is also taken along. This was even done at the time of the "removal by force." . . . I shall just string along as far as I have to, so that there will be no danger. I did the same under Hitler and got along all right. . . . I am convinced that there is going to be a war with Russia within the next five years.³⁹

Yet as the months passed, the news filtering in from the East gave rise to a generally negative impression of life with the Soviets. A scientist in Stuttgart wrote that "my colleagues, who formerly sent such optimistic news, are forcibly detained in Russia and are very homesick." A professor learned from well-informed friends in Wurzburg that "all of those who were brought to Russia by force, with bag and baggage, are very unhappy. They are supposed to be free, but at a respectful distance, a soldier followed them with a gun. The food is good as far as the scientists are concerned, but not in the case of the workmen." A subsequent visitor to the Eastern zone noted that "everybody lives under a panicky fear of terrible things that could happen to them, but it is vague and mysterious. This fear even grips members of the Socialist Unity Party who apparently try hard not to annoy the Russians." Perhaps the most appropriate comment was that of a professor in Bamberg. "Some time ago we received a letter from ———. Since that time we didn't hear a thing. RUSSIA, that explains everything." ⁴⁰

The removals caused a month-long crisis among the Allies.

American officials in Berlin, where the Soviets spirited away more than four hundred persons before daybreak, were angry. Robert Murphy, the political adviser for Germany, wired Byrnes that "though apparently not formally prohibited by any existing agreement these deportations seem to be particularly inhumane . . .," and Colonel Frank Howley, the American commandant, joined the British in protesting the action as a violation of human rights. At a meeting of the Coordinating Committee on October 29, the Russians rejected the charges as anti-Soviet propaganda, and asked why the issue had not been raised in a businesslike manner rather than in the press. They regarded as "quite normal" the American and British removal of technicians, despite the fact that, unlike the Soviet Union, they had taken specialists for purposes other than repairing damage done by the Germans. General Clay then asked the Russians to explain whether the Germans had free choice, how many were removed, and how long they would be in Russia. He went further and referred to the Nazis' deportation of civilians for forced labor as one of their most heinous acts, a crime for which Fritz Sauckel was condemned and hanged at Nuremberg. The Russians would not accept the comparison with the Nazis, and after Clay's remarks, refused to continue the discussion.

The next day Marshal Vassily Sokolovsky, the chief of the Soviet Military Administration in Berlin, asked Murphy for a private meeting. During the conversation he betrayed unusual anxiety and annoyance. He felt no obligation to explain or excuse the Soviet action and promised that if newspaper criticism continued, he would retaliate through the press not on the basis "of an eye for an eye but a jaw for every eye." He alluded bitterly to Clay's "provocation," and could not understand why the United States should concern itself with the issue when "as everyone knows they forcibly removed large numbers of German scientists" when their forces withdrew from Thuringia at the end of the war. Murphy replied that he doubted the truth of the statement, and argued that in any event the United States had not questioned the reported large-scale Russian removals of Ger-

mans at the same time. Sokolovsky vehemently denied that his government had removed any Germans prior to October 21, 1946, and concluded by asking what good could come of the press attacks which, if they continued, the Soviet Union would meet "blow for blow and give twice and more than it received?"

Washington was not impressed with the marshal's case. On November 2 Byrnes wired Berlin that the government approved the protest against "forced deportation of German labor," and considered the removals not only a flagrant violation of fundamental human rights, but also contrary to general principles of international law existing prior to and reaffirmed by the Nuremberg judgment. The Secretary urged his political adviser to take a firm position in subsequent discussions at the highest level—the Allied Control Council. Murphy did so, but in reality the Russians had the better argument. The Americans had not used force, but they *had* removed large numbers of scientific personnel; the Russians *had* used force, but they could cite legal justification. In a proclamation of September 1945, the Allied governments had directed the German authorities to provide equipment, materials, and personnel *for use in Germany or elsewhere* as the Allied representatives might direct. Indeed, the French as well as the Russians questioned the right of German workers to refuse to leave Germany.

Thus when the subject arose in the Allied Control Council, according to Colonel Howley, it "was dropped like a hot rock when Russians unexpectedly turned on the Americans and British, accusing us of removing technicians under similar circumstances. The Russian general silenced demands for further information by saying bluntly, 'I am not asking the Americans and British at what hour of the day or night they took their technicians. Why are you so concerned about the hour at which I took mine?' Unfortunately, nobody could think of a reasonable answer." Colonel Howley did register a significant protest in his diary: "The whole thing reminds me of the tragic foreign policy of Russia, which has . . . converted the American admiration and love, which was built up during the war by their

magnificent resistance, to a hatred of their stubborn, uncompromising greed.”⁴¹

In addition to heightening distrust among the Allies, the deportation caused a furor in the world press. A Reuters dispatch denounced the “kidnapping” of seven thousand skilled technicians, and the *Washington Times Herald* raised the estimate to a hundred and fifty thousand. The Communist papers in Berlin charged that the press had distorted the mass transfer, and countered that the Americans and British had already removed hundreds of experts, including fifteen Nazis. *Newsweek* and the *New York Times* then learned from “authoritative” sources in Germany that the United States intended to import up to one thousand persons and offer them citizenship under a program named “Operation Paperclip.” These unauthorized reports gave new incentive to officials to implement a policy which they had been considering for some time—that of giving the public a more thorough account of their program. They did so in early December.⁴²

6.

The men who shaped the importation plans were under no illusions regarding the sensitive moral and political implications of their handiwork. At the beginning of Overcast they presumed that the public would look askance at the use of Germans, and decided to exercise extreme caution in the release of information. Other compelling factors supported an inclination toward brevity: any elaboration might arouse suspicion or disapproval among the Allies, and specific information about individuals might jeopardize the safety of their families in Europe. Therefore the War Department’s Public Information Office arranged with theater officials and the editor of *Stars and Stripes* to “play down” news of the project, and directed the using agencies to refrain from discussing it. Yet in order to fulfill the

request of the JCS to release a "suitable statement" for the press, the department ruled out absolute censorship. On October 1, 1945, it issued a cryptic announcement that the Army and Navy would bring certain "outstanding scientists and technicians" to America on a voluntary and temporary basis to take advantage of those German developments "deemed vital to our national security."

The desire to veil Overcast had not been a complete success. Newsmen pressed for details at home and abroad, and even appeared at the docks to get stories on the arrival of specialists. An Arkansas reporter, working through the office of Senator William Fulbright, was able to inspire the Secretary of War to reveal in February 1946 that 130 scientists were in the country and that approximately 140 others would arrive in the near future. Continued pressure from the news media, combined with the fact that reporters had already described the competitive struggle taking place in Europe, led Patterson to issue a more informative announcement in March. The 160 scientists in the country were working on projects including rockets, buzz bombs, jet-propelled planes, and aerodynamic research instruments. The largest group was comprised of V-1 and V-2 experts who had helped the Army develop rockets more effective than those which the Nazis had used against London. Only volunteers who were not alleged war criminals were in the country, and all were under strict supervision "while here."⁴³

A new kind of threat to minimum publicity appeared in July when the New York *Herald Tribune* and the Pittsburgh *Press* published critical accounts of the long-range program still under discussion. There had obviously been a "leak," and since the articles repeated nearly every argument put forth by members of the State Department against the project, there was presumptive evidence as to the source. Patterson remained silent, but his subordinates, Howard Petersen and Dean Rusk, began considering ways to combat possible future criticism. They decided that greater public awareness would enhance rather than jeopardize the security of the project, and in light of the President's ap-

proval of importation asked the General Staff to release more explicit data before additional "adverse and unauthorized publicity breaks in the papers." Rusk suggested that the department permit *Life* and *Time* representatives to photograph the specialists at work on Army and Navy projects. His idea gained credibility as a result of the controversy over Russian deportations, and blossomed into a plan to hold an "open house" at Wright Field for members of the press. Late in November the writers and photographers had their first opportunity to interview a select group of specialists, to visit their laboratories, and to study a lengthy official statement explaining the background and value of exploitation. They agreed in advance to submit their stories and pictures for security review before publication.⁴⁴

The Army censors worked rapidly, and beginning on December 4 the major newspapers and weekly magazines printed a collection of relatively informative articles on "Operation Paperclip." They frankly described certain features—the number of specialists involved, the movement of families, the plans for citizenship, and the security arrangements. They repeated the pragmatic arguments assembled by the War Department in behalf of the program: the Germans had been working under contracts which offered a top annual salary of \$3,120, and yet had saved the American taxpayers a minimum of \$750,000,000 in basic rocket research alone. Since industry would soon be able to utilize them through the Department of Commerce, other untold benefits could be expected to follow in such fields as fuels and lubricants, diesel and turbo-jet engines, optics, aerial photography, geography, and applied physics and chemistry. The articles also introduced some sixteen specialists to the American people. *Newsweek* wrote of Dr. Hans Mayer, a director of the Siemens and Halske research laboratories; Dr. Ernst Eckert and Dr. Henry Schmitt, fighter-engine specialists; Dr. Theodore Zobel, aerodynamicist of the Hermann Goering Institute; Drs. Rudolph Hermann, Ernst Steinhoff, and Martin Schilling, all from the V-2 project; and Fritz Doblhoff, inventor of a jet-propelled helicopter. *Life* spoke of Dr. Alexander Lippisch, designer of the

ME-163; Dr. Anselm Franz, a director at the Dessau Aircraft Company; Dr. Philip von Doepp, a wind tunnel specialist from Junkers Aircraft; Theodor Knacke, a parachute expert; and Eugene Ryschkewitsch, an eminent ceramicist. And the *New York Times* added Dr. Rolf Ammann of the Bavarian Motor Works; Dr. Gottfried Guderley, a leading aerodynamicist; and Dr. Bernhard Goethert, a wind tunnel specialist.⁴⁵

The publicity was finally very matter-of-fact in tone. With the exception of a comment in the *Daily Worker*, which insidiously noted that Dr. Hermann “had helped design the German V-bomb that strafed England” and was back “at his old game,” the articles were devoid of editorial comment. Yet the War Department learned all too quickly that it had not only failed to forestall criticism with candor but had called forth the voices of anger. The halcyon days for Project Paperclip ended abruptly.⁴⁶

The “Profound Concern”

OVER THE PORTALS of Cornell University is the slogan “Above All Nations.” At the time of its inscription it was a fitting epitome of one of the cardinal themes in the code of science, which had served for centuries to make science not only a calling but a community—a community whose bonds were friendship, respect, and trust, and whose boundaries extended beyond the aspirations of nations to the hopes of the world. It was so universally shared as to inspire Benjamin Franklin, at the height of the Revolutionary War, to seek freedom of passage for Captain James Cook to explore the Pacific Ocean, and to prompt Sir Humphry Davy, during the Napoleonic Wars, to accept a research award from the inveterate enemy, France. “Some people say I ought not to accept this prize,” wrote Sir Humphry, “. . . but if the two countries or governments are at war, the men of science are not. That would, indeed, be a civil war of the worst description: we should, rather, through the instrumentality of the men of science soften the asperities of national hostility.”

This spirit prevailed during many wars and myriad rivalries, but it could not escape the constriction of trust and communication that accompanied World War II. The men of science did engage in “civil war,” and they, like other men, could not escape its legacy. In America, when peace resumed, the majority of influential scientists continued to voice the rhetoric of internationalism, and many of them, with sincere devotion, worked to

refashion the bonds of friendship and collaboration. But no amount of words and no amount of effort could belie the fact that the war, if it had not broken the fraternity of science, had left it badly shattered.

The emotional impact was dramatically evident on the cold evening of January 29, 1947, at a meeting of the Associated Scientists of Cornell University. Mathematician Mark Kac, a Polish emigré of 1938, began the session with a brief report on the military's efforts to place "Nazi scientists" in American universities and industries. He continued by reading from a letter written by Dr. William R. Sears, director of the graduate school of Aeronautical Engineering, to Representative W. Sterling Cole of Bath, New York, and printed in the *Ithaca Journal*. "I met many of these German technicians in Europe in 1945," Dr. Sears had written, "and I can state flatly that only a negligible percentage of them are really first-class scientists of the caliber that this country needs. What is more important, they are without exception unscrupulous characters who have not only cooperated with the Nazis for many years but have been leaders in carrying out the Nazi program. They have distinguished themselves in Germany, usually by intrigue and political machinations, so as to gain the favor of the Nazis and rise to positions of authority in the fields of research and development. At best they are dangerous opportunists; at worst they are the perpetrators of the Nazi terror weapons." The letter ended with a statement of angry disbelief at the Army's generous treatment of the Germans: "To give them our highest honor, American citizenship, would be an insulting and heartbreaking blow to anti-Nazis now starving in Europe and to the political refugees who escaped to this country and served us so faithfully in the war. I cannot believe that Americans are so insincere in the ideologies over which the war was fought that they now wish to reward the scientists and technicians who cooperated so well with the Nazi gang."

Professor Kac then described the torture of one of his close friends by the Nazis, and read a "Resolution on German Scien-

tists." "The fact that these men were directly or indirectly linked with a regime whose infamous record included, among other things, the most brutal persecution of free science," the resolution said, "must fill every citizen, and in particular every scientist, with deep apprehension." It protested that the War Department was giving the Germans preferential treatment for citizenship solely on the basis of their usefulness, without having given the American people any clear assurance that they were not active members of the Nazi Party and supporters of the Hitler regime. It recommended that the military services employ them only in their special installations and return them to Europe upon completion of their work; and advised universities to make thorough and independent investigations before granting employment to such persons. The session ended when the fifty-two scientists in Rockefeller Hall voted unanimously in favor of the resolution, and empowered their delegate to the Federation of American Scientists to seek immediate action on its contents.¹

The protest at Cornell University was only one manifestation of a more extensive reaction against Project Paperclip that erupted suddenly in the first half of 1947. It signified to the military services that what they had long feared had become a reality. Yet at the time it was wholly unexpected. The officials had anticipated that their detailed disclosures would win friends and not enemies. In requesting the release of additional information on the research activities of the scientists, the War Department's intelligence chief had assured the Commanding General of the Air Forces, and the Chiefs of the Ordnance, Quartermaster, Engineer, Chemical, Signal, and Transportation Corps that their cooperation would even facilitate exploitation by "gaining support of the program from both industry and the general public." It was not easy to understand why, almost overnight, the program had come under attack, and with a vehemence that proclaimed it cruel, insensitive, insulting, and somehow contrary to the nation's avowed concern for peace and justice.

The military's miscalculation was due in large part to the fact that there had been no opposition to Project Overcast. Robert Patterson had warned in May 1945 that bringing the scientists to the United States could incur the strong resentment of the American public, "who might misunderstand the purpose of bringing them here and the treatment accorded them." But the reaction never came, and the silence was misleading. What the officials overlooked was that Overcast had a certain elementary appeal that defied criticism: after an extremely costly war, which gave little promise of reparations, the nation could benefit from the temporary use of German talent. Such a reward was well deserved, a token atonement for the enemy's sins. Paperclip had no such virtue, and the virtuous showed no tolerance. Alarmed particularly by the offer of citizenship to "enemy aliens," men of different persuasions—scientists, clergymen, educators—set forth a scathing and consentient indictment. With arguments often inspired by the memories or visions of Nazism, they denounced the moral compromise and the political risk. To their countrymen, they posed the ironies and incongruities of importing former enemies. For the policy-makers, they created another challenge to a program already heavily encumbered by legal, technical, and financial entanglements.²

1.

It is impossible to assess precisely either the extent or the nature of the opposition. There are some suggestive characteristics. It was relatively short-lived, restricted to the year 1947, and in its significant public expression, to the winter and spring of that year. It was widespread in sentiment but limited in impact, partly because many of the organizations made their protests to governmental authorities without publicity. As to its political orientation, it was almost exclusively an outburst of American liberalism. In many ways it was also closely akin to

traditional American nativism. It contained more than a hint of war-heightened nationalism; it strongly expressed a fear of disloyalty, and vividly limned the potential threat to the nation; it comprised, in short, an intense opposition to an alien group on the basis of its "un-American" connections. It differed from the earlier reactions in a significant respect: it substituted an anti-Nazi theme for the anti-Catholic, anti-Semitic, anti-Oriental, and anti-radical themes of the past. Despite the repeated and emphatic official statements that none of the Paperclip personnel were ardent Nazis or alleged war criminals, the critics assumed the Fascist nature of their past behavior and affirmed their guilt. This basic assumption characterized the spirit and molded the pattern of the domestic opposition.

In the only expression of national opinion, a Gallup poll of December 11, 1946, the American people disapproved of the general concept of importation. The questionnaire asked: "It has been suggested that we bring over to America one thousand German scientists who used to work for the Nazis and have them work with our own scientists on scientific problems. Do you think this is a good or bad idea?" The respondents considered the proposal a "bad idea" in a ratio of about ten to seven. There was a definite correlation between their replies and educational background. Those who had the greatest amount of formal education—at least some college training—favored the plan by a substantial majority. In contrast, those with an elementary school education, or less, lined up heavily against it. There was also a split along urban-rural lines. Cities with a population over 500,000 were in favor by a great majority; farm areas and towns of under 2,500 people disapproved by a great majority. Two sections of the country—New England and the Pacific Coast—gave their strong endorsement to the program; the South, which would eventually gain the most benefit from it, registered its disapprobation by a vote of two to one.

The opponents in the poll believed that the Germans were still Nazis and could not be trusted; that they might influence our people to think as they did; that they might gain knowledge

from us and use it against us someday; and that the nation did not need them. Those in favor said the United States could profit from their ideas and research; that Germans are leaders in science; that such an arrangement would contribute toward better understanding between the two nations; and that it was better to have the scientists here than in Russia. The vast majority of those who said "yes" to importing the Germans also thought the government should make it possible for them to become citizens.³

Although most Americans apparently disliked the idea of using enemy experts, their antipathy was not active. At the end of December 1946, however, a group of forty distinguished individuals including Charles S. Bolte, Evans Clark, Albert Einstein, Rev. John Haynes Holmes, Philip Murray, Richard Neuberger, Dr. Norman Vincent Peale, A. Philip Randolph, Dr. Rufus B. von Kleinsmid, and Rabbi Stephen S. Wise recorded their "profound concern" in telegrams to President Truman and Secretaries Byrnes and Patterson, the text of which they released to the press:

We hold these individuals to be potentially dangerous carriers of racial and religious hatred. Their former eminence as Nazi Party members and supporters raises the issue of their fitness to become American citizens or hold key positions in American industrial, scientific, and educational institutions. If it is deemed imperative to utilize these individuals in this country we earnestly petition you to make sure that they will not be granted permanent residence or citizenship in the United States with the opportunity which that would afford of inculcating those anti-democratic doctrines which seek to undermine and destroy our national unity.

Other protests appeared in the liberal press. Joachim Joesten, an experienced writer on foreign affairs and a long-time contributor to the *Nation*, wrote a February "memo to a would-be war criminal," in which he denounced in bitter terminology the in-

congruous treatment accorded politicians, military officers, industrialists, and scientists: "If you enjoy mass murder, but also treasure your skin, be a scientist, son. It's the only way, nowadays, of getting away with murder. It isn't safe any longer to be a warmongering politician. If you lose, they'll hang you. If you are a general and lose, they'll shoot you. If you are an industrialist, you'll go to jail. If you are a scientist, you will be honored regardless of who wins. Your enemies will coddle you, and compete for you, no matter how many of their countrymen you may have killed." Some months later in the *New Republic*, feature writer Seymour Nagan denounced "Project X" as a "great and growing threat to national security" by making our most vital defense secrets available to the eyes and ears of Nazis. Furthermore it had done a disservice by antagonizing American scientists at the very time when the military services were trying to "coax" them into their laboratories. Quoting the opinion of two physicists that the Germans were equivalent to high-class radio hams, or at best to clever military engineers, he relayed their resentment at having to work alongside such people "who they looked down on as scientists and despised as men."

In one of the most angry statements, Saul Padover, a former psychological warfare officer who had served in Germany in 1945, deplored the scientists' expedient willingness to serve their conqueror-masters. He had been irked by a *New York Times* article which stated: "What spurs them on, we are told, is the hope for an ultimate revenge on Russia." Writing in the *New York PM*, the high-minded liberal tabloid, he discussed the brutality of the German regime, especially against the Russians. "And now *they* want revenge! Now they sit in American laboratories, working on weapons that would, they hope, bring more destruction on the Russians. The Nazis haven't had enough, it would appear." After noting that the Soviet Union was also employing Nazis, he concluded that neither power would have any difficulty with them: they would obey the orders of any power, as they had for centuries.* But he censured the United States

* In an accompanying cartoon by Eric Godal, a sly, evil-looking person

government's use of them as an example of its unjustified hysteria toward Communism, and, incidentally, for granting the Germans the satisfaction to "know their day is coming." ⁴

Those Americans with a primary interest in the imposition of a hard peace upon Germany added their voices to the swell of protest. The most voluble such expression came from the Society for the Prevention of World War III, an organization of several thousand members founded in 1944 and dedicated to the prevention of all future wars by "whittling down Germany's war potential in all fields of activity." The society's advisory council included some of the nation's best-known writers, scholars, and members of the "intellectual" community: Emil Ludwig, Clifton Fadiman, Mark Van Doren, Christopher La Farge, Douglas Freeman, Lewis Mumford, Allan Nevins, Louis Nizer, Quentin Reynolds, William Shirer, Darryl Zanuck, Walter Johnson, and Walter Wanger. Convinced that there was no distinction between "Nazis" and the "German people," and that the German determination to conquer the world was an eternally dangerous force, it advocated a postwar platform which included such features as the permanent separation of East Prussia, Silesia, the Ruhr, the Rhineland, and the Saar from Germany; abolition of all heavy industry; reparations in kind; conscription of German labor to rebuild the free nations; and relief for the people of Germany only after relief was accomplished for all of the liberated countries.

As early as July 1946, having learned that a long-range exploitation plan was contemplated, the society protested to the Secretary of Commerce the "tragic irony" of placing ourselves in a position under which the Germans could invigorate their fifth column activities in our country, and recommended that the government obtain their knowledge without "fanfare and de-

sits at a desk with the name-plate "Nazi Scientists." In his right hand he is holding a "Secret Blueprint for US War Department" on which is written "supersonic weapons, guided missiles, atom power, jet propulsion, bacteriological warfare." In his left hand he is holding the identical list headed "Secret Blueprints for Russian War Department." The smiling "Nazi" says: "Anything I can do to help you kill each other?"

lay," and return them to Germany where they should be held for investigation in connection with their share in the preparation and execution of plans for world conquest. In January 1947, after reading that Washington had proceeded with its plan, the society's journal—*Prevent World War III*—exhorted Americans to contact the War Department in order to obtain the return of the specialists, whom it depicted as follows:

These German "experts" performed wonders for the German war effort. Can one forget their gas chambers, their skill in cremation, their meticulous methods used to extract gold from the teeth of their victims, their wizardry in looting and thievery?

As late as May, the society was calling upon citizens to protest in order to "prevent the resurgence of a German fifth column. . . ."

Opposition to Paperclip out of concern over a German revival also appeared at a meeting in March of approximately fifty prominent citizens convened as the "National Conference on the German Problem." The group met at the Waldorf Astoria Hotel in New York City at the invitation of Mrs. Franklin Delano Roosevelt and Edgar Ansel Mowrer, a liberal internationalist who had been very active in the fight for the United Nations. Many of its sponsors were also members of the Society for the Prevention of World War III—La Farge, Ludwig, Mumford, Nizer, Shirer, Van Doren—but there were important new faces: Henry Morgenthau Jr., Sumner Welles, Albert Einstein, and Helen Gahagan Douglas. The "conference" formulated a program that looked toward crippling the German economy, reducing her territory, and punishing a "great mass" of war criminals. It advised the United States government to suspend the immigration quotas from Germany for twelve years, excepting victims or exiles from the Hitler regime, and recommended that it send those scientists already here back to their homeland as soon as possible.⁵

A number of organizations involved in the struggle on behalf

of civil rights and against domestic Fascism also took action. In April the American Jewish Congress presented a thorough study of Paperclip to Senator Homer Ferguson of Michigan in an attempt to enlist his support for a congressional investigation. The report argued that "all of these men actively participated in the Nazi war effort," and that "all have been exposed to the un-American propositions of 'master race' and 'Aryan superiority' which they have absorbed in varying degrees." It claimed that many of the United States' eminent scientists looked upon the Germans as minor technicians who had little or nothing to contribute, and that the danger of their learning defense secrets was great. Finally, it recommended a congressional determination of policy rather than self-initiated, secret, executive agency action.

At the same time, Rabbi Stephen S. Wise, the revered president of the American Jewish Congress, informed Patterson and other officials that the wife of one of the specialists at Wright Field was a former official of the Nazi Party *Frauenschaft*, or women's subsidiary, and therefore automatically a "major offender" under the denazification laws. This "particularly outrageous aspect" proves that the "War Department 'screeners' are entirely incapable of performing this important task," he wrote. But Rabbi Wise's anger was directed less at the woman at Wright Field than at the men in the nation's capital. "This operation is all the more deplorable at a time when officials of our government find every possible reason for failing to fulfill the declared policy of President Truman to rescue as many victims of the Nazi terror as our immigration laws permit. . . . As long as we reward former servants of Hitler while leaving his victims in D.P. camps, we cannot even pretend that we are making any real effort to achieve the aims we fought for."

A variety of other organizations, each with its particular interest in the civil rights or civil liberties field, supported the general effort to wreck Paperclip. The Council Against Intolerance in America, devoted to "combating prejudice by calling attention to American ideals, heroes, and traditions," organized opposition to the program, and its president, James Waterman Wise,

spoke in a number of cities to kindle the wrath of the local citizens. Other dissidents were the Committee of Catholics for Human Rights and the Methodist Federation for Social Action, both unofficial advance guards in social affairs for their respective churches; the Friends of Democracy, an anti-Fascist, anti-Communist group which published a news summary of totalitarian activities, and sought to expose the antics of demagogues and hatemongers; the Southern Conference for Human Welfare, which had been struggling since 1938 to rid the South of Jim Crow laws, the poll tax, and the Ku Klux Klan; and the Progressive Citizens of America, a collection of many progressives and some Communists who were battling for supremacy of the liberal movement with the Americans for Democratic Action, and who had gathered around Henry Wallace.⁶

Although these disturbed liberals made known their dislike of Paperclip to the American public and its officials, they exerted little influence on either. Most of their countrymen could not share their fear of native Fascism, nor of a resurgent Germany overseas. And, too, their efforts lacked persistence. Largely as a result of demands upon their time and energies by postwar problems of greater import, they did not press the issue; for the most part, they protested and lapsed into silence. But they did have allies within a distinctive group of American scientists; the latter were more concerned, more determined, and more influential.

2.

The reaction of American scientists against the importation of their wartime competitors was fashioned almost entirely by their conviction of the moral turpitude of those who worked for the cause of Hitler and the Third Reich—a conviction greatly accentuated by the mere presence of highly respected refugee scientists. There were, to be sure, other ingredients: a virtually unanimous denigration of their scientific preeminence

and technical abilities; a skepticism about their value to the nation and their dedication to peace; a prevalent distaste at the prospect of working with them; and an honest concern for security. But the nexus of their response was a keen sensitivity to the meaning of guilt, and a reluctance to condone such ironic retribution as that envisaged by Paperclip.

The outcry sprang from the small but exceptionally prestigious Federation of American Scientists (F.A.S.), organized in the autumn of 1945 by that group of atomic scientists who fought the military's May-Johnson bill for domestic control of atomic energy. During the next year the F.A.S. expanded to site associations across the country and a membership of approximately three thousand. It extended its commitment to the international control of the atomic bomb, the promotion of studies of the long-range implications of atomic power, the education of the public to the dangers of atomic warfare, and the creation of a new spirit of international cooperation that would lead ultimately to world government. The federation was unique among scientific associations. Its members had a deep and urgent sense of social responsibility, and a dedication to transfer that responsibility into political action. Throughout 1946 they educated, they pleaded, they lobbied in Congress; they became preachers and then politicians. They courted public attention through the news media, through Hollywood, through books and articles, projects and conferences, and through their unofficial organ, the *Bulletin of Atomic Scientists*, which by 1947 was dispatching its high-level discussions to sixteen thousand readers. They failed, however, in bringing about international control of the atomic bomb. In December 1946 the Soviet Union indicated its displeasure with the United States plan, and in March 1947 rejected it outright. The Soviet action deprived the F.A.S. of a definite program and a sense of direction, and led to pessimism, uncertainty, disagreement, and waning enthusiasm among its members. It was during this time of crisis and reappraisal that they came to consider the merits of Project Paperclip.⁷

The federation took account of the importation program following the War Department's publicity campaign in November 1946, and its delegates at a general business meeting deferred action. But they could not ignore the ferment within the scientific community. At the annual meeting of the American Association for the Advancement of Science in December, participants denounced the military's "unbalanced" sense of ethical values and their exaggerated buildup of mere "technicians." On the day before Christmas six faculty members at Syracuse University protested the military's attempt to place the Germans in academic institutions. In a letter to the *New York Times*, they wrote: "We object not because they are citizens of an enemy nation but because they were and probably still are Nazis. . . . We consider it below the dignity of scientists to work together with willing servants of Hitler, Goering, and Himmler." This letter was the spark that mobilized the F.A.S. On January 8, the federation's executive secretary, William Higinbotham, solicited the advice of the chapters.

The excitement suddenly quickened among the members of the site association in Washington, most of whom were government employees. A committee of social sciences and humanities began collecting information and invited outside speakers to lead forums on "The Hiring of German Scientists." Dr. Francis Joseph Weiss, a natural and social scientist who had left Austria just ahead of the arriving German army, warned that a mass importation of such conscienceless persons would be equivalent to placing "intellectual atom bombs" throughout the country. They would mix freely with the university population, who, lacking political indoctrination, would easily fall prey to their subtle techniques. But Dr. Douglas M. Kelley of the Bowman Gray School of Medicine at Wake Forest College, and an official psychiatrist at the Nuremberg trials, cautioned that the only way to make sound judgments about any group of people was to study each member individually. To support his point he reported on the different psychotic and neurotic conditions of some of the Nazi leaders whose cases he had studied: "Rosenberg and Strei-

cher were probably paranoid personalities; Hitler was neurotic, not psychotic, and had conversion hysteria in his stomach; Goering was a frustrated extrovert; Himmler was a sadist; and Goebbels had an inferiority complex, which he compensated by viciousness." In closing, he stressed that only psychiatrists, cultural anthropologists, and sociologists were competent to judge whether the Germans were dangerous to our culture.

The study group at Washington ignored Dr. Kelley's teaching.* For them the issue had become a cause; they prepared a letter for the F.A.S. National Council, meeting in New York City on February 1, which asked President Truman to deny citizenship to the Germans, keep them out of the industrial and academic institutions, and return all of them to Europe as soon as possible. "Certainly not wishing to jeopardize the legitimate needs of national defense, and not advocating a policy of hatred and vengeance toward our former enemies," the letter assured, "we nevertheless believe that large-scale importation of German scientists . . . during this critical postwar period of national and international adjustment is not in keeping with the best objectives of American domestic and foreign policy." The letter defined the program as a "drastic step in the search for military power" which compromised the fundamental principles of America's democratic society and cast doubt on the nation's sincerity toward the United Nations. The National Council approved the letter and sent it to Higinbotham for disposition to the President and the press.⁸

The executive secretary, however, had second thoughts. Higinbotham was an accomplished politician with experience in many legislative battles. A friendly, easy-going person, he had an exceptional feel for politics—and for prudence. He was aware

* The emotional feeling against the Germans among certain members of the Washington Association of Scientists was very strong. Pencil on the file copy of a questionnaire asking for information about the specialist is the statement: "The German scientist is a stupid bestial individual who speaks a harsh, guttural language." One member, unable to attend a meeting of the Study Group, sent his opinion to the Executive Secretary: "Certainly any person who can transfer loyalties from one idealology [sic] to another upon the shifting of a meal ticket is not better than Judas!"

that the abrupt action of the F.A.S. Council did not represent the unanimous desire of the membership. He determined, too, that the federation could be "tremendously more effective" if it prepared case studies to point up the inconsistencies of Paperclip. To that end he sent a questionnaire to the member associations requesting data on individual German specialists. "Accurate information of this type, carefully obtained by reliable persons," he explained, "is indispensable in formulating and implementing policy on this important, and potentially explosive, issue." He also wanted more information himself, and wrote to the State, War, and Navy Departments asking for clarification of policy. In the meantime he mailed the letter of protest to the White House, but withheld it from the press.⁹

While Higinbotham delayed, nuclear scientists discussed the importation program in the *Bulletin of the Atomic Scientists*. Dr. Hans Bethe, a 1933 refugee from Germany and a brilliant contributor to the Manhattan Project, joined with his Cornell colleague, Dr. Henri Sack, to ask his fellow scientists a series of questions about Paperclip. Was it wise, or even compatible with our moral standards, to make this bargain, in light of the fact that many of the Germans, probably the majority, were die-hard Nazis? Did the fact that the Germans might save the nation millions of dollars imply that permanent residence and citizenship could be bought? Could the Army put any trust in them when they would have in mind the interests of a nationalistic Germany? Could the United States count on them to work for peace when their indoctrinated hatred against the Russians might contribute to increase the divergency between the great powers? Had the war been fought to allow Nazi ideology to creep into our educational and scientific institutions by the back door, to antagonize American scientists and poison the atmosphere of friendly cooperation? Finally, asked Bethe and Sack, "do we want science at any price?"

The opposition of Hans Bethe was important in that he was highly respected, not only for his exceptional abilities as a scientist but also for his objective and dispassionate approach to all

issues. His protest was qualified; he admitted it was difficult to get an exact picture of the situation, that it was not wholesome to "have rumors going around," and asked his colleagues to request, above all, an end to the mystery. It was consistent with the standards of the *Bulletin* that the editor tried to dispel some of the rumors by printing a companion letter by Samuel Goudsmit, the former chief of the Alsos Mission. Goudsmit knew more about the motives and activities of the Germans than any American scientist, and he had more right than most to judge them—his parents had died at the hands of the Nazis. He advised that the problem was more complex than the opponents seemed to realize; that it was immaterial that the so-called scientists were only specialists; and that it would serve the nation's best interests to use their skill and knowledge. After discussing the issue in a "rather cold materialistic way," Goudsmit turned to its "human side." He cautioned that the majority had been in agreement with their nation's imperialistic aims, and commented that "it is sad indeed to observe that the few surviving victims of Nazism are mentally and morally starving in Displaced Persons Camps, while these 'Heil' shouting scientists are offered privileged positions in our country." But he gave precedence to his knowledge over his feelings, and concluded that the Germans could fill a need, and if absorbed gradually, would be quite harmless.¹⁰

When the F.A.S. National Council met on March 15, the protest movement was in disarray. The member associations had failed to submit any objective data, while at the same time the government had dispelled the vision of Nazis flocking easily into the country. The War Department wrote Higinbotham that the Germans would be subject to the immigration laws as would any other aliens, and Dean Acheson assured him that "no commitment has been made to permit any of these scientists to remain in this country indefinitely." * But the National Council did

* Acheson was technically correct in that no scientist had received his "first papers" for immigration. The military and the State Department, however, had made a moral commitment regarding citizenship.

not alter its position, and on March 24 the executive secretary issued the letter of protest to the news media. Throughout the nation the American people read that the most distinguished body of scientists in their country disapproved of Project Paperclip.¹¹

By publicizing their discontent, the F.A.S. Council released much of the tension that had built up among certain of the physicists. They did not succeed in creating a wave of resentment against the War Department. At the national meeting in May, Higinbotham reported to the contrary that there had been unfavorable reaction from those within the organization who looked upon the statement as a contribution to reviving wartime hatreds and an expression of fear of foreign competition. On the following day, in a pensive letter to a colleague, he offered some observations on the politics of the entire episode. Noting that there was disagreement and confusion among scientists on all subjects directly related to national foreign policy, he opined that the federation might be representing the views of its liberal wing as against the broader membership. "Leadership tends to fall into the hands of a certain type of individual who makes time for group activities," he admitted. "This group tends to be nonrepresentative of the whole in one direction or another. The agreement of the council on the German scientists letter and the misunderstanding by many members shows the dangerous position we may get into if we are not careful."

If the letter to the President did not precisely represent the views of the F.A.S. membership, it probably reflected even less accurately the attitudes of the country's many other scientific organizations, only one of which—the twelve-hundred-member American Association of Scientific Workers—tendered its endorsement. The federation, in the aftermath of all the meetings, the resolutions, the questionnaires, and the study sessions, stood alone, racked by internal discord and doubt. The National Council chose at its meeting in May to be politic; it voted to drop the issue.¹²

3.

From December through March the military services felt the sting of public reaction in different ways. At Wright Field several cranks sent threatening letters to the specialists. At Boston University a persistent reporter kept digging for critical information concerning a Paperclip employee, optical expert Dr. Claus Aschenbrenner. In Washington Democratic Representative John Dingell of Michigan complained that scientists of terror were being "feted and treated." From London a news report wondered why the British government did not demand punishment for the rocket "criminals" living in luxury near sunny El Paso. And everywhere editors found the subject newsworthy; they published their own comments and letters from their readers as well as the views of the domestic critics. The military reacted by prohibiting any further interviews, photographs, or "open houses"; by tightening the security surveillance for specialists living outside military installations; by requiring the using agencies to warn the Germans that they would not tolerate the "mere appearance of anything suspicious" (a reference to rumors that they were accepting gifts and favors from contractors); and by ordering copies of the *New York Times*, the *Washington Times Herald*, the *El Paso Times*, and the *Dayton Daily News* in order to keep their finger on the pulse of the opposition.¹³

The War Department was quick to recognize that it faced a "very live" public relations problem. In what was probably his understatement of the year, the chief of the Intelligence Section, who had previously assured the using agencies that benefits would flow from publicity, conceded that the December press reports were "inadequate in answering and counteracting the criticism directed at this project." He asked for a more liberal approach to the release of information, and in late March the WDGS made plans to engage in a "frank and factual" program of information. Their intention was to emphasize that Paperclip

was a State, Navy, and Commerce Department concern as well as their own, and to release additional data regarding the screening process, the safeguards taken to ensure protection of classified material, the importance of individual technicians in the scientific world, and the procedures followed regarding application for citizenship. They were nevertheless determined to safeguard information about the specific projects on which the scientists were employed, the surveillance techniques, and, above all, the "denial" of personnel to other countries.

It was clear that the General Staff proposed to engage in a publicity program that would be factual but hardly frank. Their approach was so cautious, in fact, that it led to dissension in their own ranks. There was a growing inclination on the part of many officers to respond to the critics with a straightforward presentation of the reasons for Paperclip. They were especially eager to speak out about the "denial" factor; they were not ashamed of what they took to be a realistic contribution to national security. Robert Patterson expressed as much in his initial reaction to the F.A.S. letter: "The fact is, of course, that a great many German scientists had been taken by the Russians, and their protest makes no mention of this fact." The internal debate reached a climax in June when a public information officer prepared a lengthy press notice which stated candidly that the War Department had accorded preferential treatment to certain specialists; inferred that the American public, certain "pressure groups," and even the department itself deserved censure for allowing a lack of funds to limit the importation plans; and went into considerable detail about the competition with the Soviet Union and the methods used by the latter to import its own specialists.

The WDGS vetoed the "provocative" press release. With regard to the "denial" aspect, they considered it unwise to defend their program through an attack on the exploitation methods of the U.S.S.R., and thought it "preferable not to make Project Paperclip a battleground for controversies between the U.S. and Russia." As to a complete airing of the project, they realized

that certain of its inherent controversial issues could not be dispelled by any amount of information. They also feared that to practice the utmost candor would only provide more "cannon fodder" for the critics. The uproar at home had occasioned a reappraisal of the program and brought out the fact that the backgrounds of some of the specialists could not survive a searching scrutiny. A cable from USFET in early March advised that some major offenders and ardent Nazis might have been shipped to the country in the early days of Project Overcast due to the unavailability of records, particularly for those evacuated from the Russian zone. A subsequent investigation by the intelligence division showed that prior to January 1947 there had been no uniform procedure or standard for screening the personnel, and that there might be some in the country "whose ultimate immigration is doubtful and, at the same time, whose retention here for an extended period exposes the War Department to a security and public relations problem."¹⁴

Those in charge of Paperclip could see no advantage in fomenting further controversy by being absolutely honest about the errors or oversights of the past. They insisted instead on future strict adherence to the standards and procedures outlined in SWNCC policy, and remained silent. There was little risk involved in their discretion, for by the summer of 1947 the issues were dormant. Almost as quickly as it had appeared, the opposition to the German scientists had withered away.

4.

The protest movement proved to be ephemeral—for all intents and purposes it was dead after April 1947—for numerous reasons. It was to some extent a victim of indifference. The American people were simply not excited about an issue that did not touch their lives in any crucial sense. Even those scientists who might ordinarily have shown a deep concern, according to

one opponent, saw it "as a minor issue, dwarfed by the great problem which the bomb had ignited for physicists in the U.S.A. . . . Let the generals have their prizes, they would think; worse things are being done every day." Contributing to the indifference was the fact that the outcry against the immigration of the Germans was not altogether in character with the very groups from which it came. At the same time that the president of the Council Against Intolerance in America was berating the importation plans, he was advising young Americans through the organization's "Monthly Educational Guide" that "all peoples and all races and all faiths not only are permissible in the upbuilding of a country such as ours, but are indispensable to its upbuilding and to the fulfillment of its national destiny." And while F.A.S. members at Cornell, Washington, and New York were lobbying against Paperclip, others at Cambridge, Berkeley, and Pasadena were continuing to work through the Committee for Foreign Correspondence to reestablish the free intercourse of knowledge and goodwill that existed before the war.¹⁵

The movement suffered as well because some of the arguments of its proponents were dubious and unconvincing. Those who warned that the Germans would form the nucleus of a fifth column to help resurrect a Nazi state disregarded the complex historical circumstances which had given rise to the Third Reich, and the immense disparity between American power and anything that Germany could conceivably attain within the foreseeable future. Those who charged that the specialists would indoctrinate credulous Americans in the precepts of Nazism displayed an incredible lack of faith in their countrymen, and ignored the dissimilarity of their companion argument—that the personnel were expedient opportunists who would gladly obey the orders of their new masters in order to further their own careers. Those who insisted that the Germans would jeopardize national security by acquiring secret information which they could carry back to their homeland at the same time showed no qualms whatever about insisting on the repatriation

of those who had been in the country for eighteen months, and who might supposedly have already obtained such sensitive data. Those scientists who maintained that the specialists could make no significant contribution to military defense because they were merely engineers and technicians knew better; many of them had given several years of their lives to work as "applied" rather than "pure" scientists to construct the greatest weapon of all time.

The critics also placed themselves in a position of weakness with their unsupported assumption that all the specialists were Nazis. They would have been correct to claim that a majority of them had been members of the Party; although there are no exact statistics available on the percentage, it was certainly more than 50 percent and perhaps as high as 80. But instead they made a blanket indictment, a charge which was especially in consonant for the members of the F.A.S. In their previous contributions to the debate over public policy, the scientists had built their cause on their special competence, and most often on incontrovertible facts; when they made their foray against the Germans, they were armed with very little objective data and a considerable amount of opinion. They learned the cost of the abandonment of professional standards as a result of the bizarre unfolding of the situation at Cornell University.

The furor at Cornell, which provided much of the original impetus for the larger protest, was based upon a rumor that the War Department was negotiating to place a German on the faculty. The rumor was true, but as one of the professors explained to a colleague, the conclusion drawn from it was a disaster:

Two or three items: The Nazi scientist deal. You heard the Cornell story: plenty of outside pressure behind appointing a man who turns out OK. Was chief of a big German industrial lab, has friends here. Worked in a concentration camp, head shaved, wearing prison dress, since 1943 on electronics research. Or so the Gestapo thought. He seems

to be an anti-Nazi . . . Cornell may appoint him on a trial basis.

The scientist in question was not only an anti-Nazi but so outspoken in his political beliefs that he was unable to work in harmony with some of the Paperclip employees who had been members of the Party. It was for that reason that the War Department sought and obtained a position for him at Cornell—where he worked for several years without poisoning the friendly atmosphere of the laboratories.¹⁶

Equally vulnerable was the conviction of the opponents—and this was the crux of their dissent—that any scientist or engineer who had belonged to the Nazi Party was tainted with unpardonable sin.* A fair and realistic assessment of guilt was actually

* The Paperclip specialists explained their membership in the Nazi Party in long letters. The following is a representative account: "In the Germany of the years until 1933 there were about 50 different political parties, which alternately did make promises, none of which were kept, much less was anything improved. Out of this multitude of parties two, the Communistic and the National-Socialist Parties, had arisen and in the year 1932 were fighting for power. Both promised the people to improve the conditions radically. . . . The mere desire to prevent Communism from spreading in Germany and to bring to an end the economic and political chaos made me join the NSDAP and some of its organizations. . . . I only held administrative, but never ideological or political offices of any kind. . . . My desire having been to prevent Communism and to help bettering the conditions in Germany. . . . I found my hopes fulfilled in the development after 1933. A great many things had been improved in Germany and the living standard of the population was rising. Unemployment vanished and most people seemed to have become happier than they had been in the years before. Until 1939 I, therefore, had no reason to consider my decision of 1932 a possible mistake. Certain excesses did happen that in my opinion could and should have been prevented. I considered them temporary, never participated in them and was convinced that in the long run they would level off again. I considered the improvement of the living conditions in Germany, compared to the years before 1933, of greater importance. . . . As to Hitler's striving for world power and war, these ideas were known neither to me nor to the majority of the German people. . . . When in the year of 1939 the war against Poland and the various campaigns against France, Norway, etc., broke out, the general government policy and propaganda in radio and press was such as to make the German people believe that war had been imposed on them and that they had to act in self-defense. . . . It is fundamental law in every nation that every citizen abide by the law. High treason and conspiracy against the government are considered felonies in every country. Of course I did learn more and more during the war that there had devel-

extremely difficult, as those who dealt with the denazification problem in Europe quickly learned. They realized that of the kaleidoscopic variety of motives which prompted men to join the Party, self-interest—the desire to earn a living or win a promotion—was foremost. They recognized, at the same time, the cynical malignity of the Nazi Party as it extended its hold over the life of a community and a nation, its lack of toleration for those who tried to limit their activities to “nominal participation,” and the methods of punishment it reserved for those who incurred its displeasure. They knew, too, that a scientist who refused to accept the honors or appointments thrust upon him by the Nazis was risking peril for himself and his family. It was that knowledge that guided the administrators of Paperclip in their evaluation of “Nazi” specialists. They judged each case individually after having sifted the apparent motives for membership and the degree of political dedication. They rejected those who were war criminals, ardent believers in National Socialism, and profiteers from and notorious supporters of the Party. They did not reject those who were “nominal” members or who had accepted rewards for their scientific contributions to the war effort.¹⁷

Most of the opponents, on the other hand, gave no credence to the human dilemma of those who lived under the Nazi dictatorship. They established resistance to Hitler—and possible martyrdom—as the standard for judgment, and denounced those who had failed to meet its requirements as unworthy of American citizenship. Their criterion could not withstand the

oped conditions in Germany, mainly by the influence of the Party, that had to be opposed and thus had to be changed. I, therefore, was convinced that after the emergency time of war—provided Germany would have won it—a great political sweep and reorganization of Party and government was a must. . . . After the war was lost . . . as in 1932 I had again the choice between disorder and communistic disintegration or a future peaceful and orderly world. As I had done in 1932 I disapproved of Communism and chose peace and order. Out of these grounds, I applied for immigration into the U.S. I am willing to fulfill all my duties in accordance with the law or given orders.” [Letter, German Scientist to Chief, Ord R & D Div., January 26, 1949. Army Intelligence File, 1941-1948.]

enlightenment that came in 1948, in part as an aftermath to the claim of Cornell professor Philip Morrison that the community of science would be long delayed in welcoming the "armorers of the Nazis," who "worked for the cause of Himmler and Auschwitz, for the burners of books and the takers of hostages." One of those who helped explain the realities was German physicist Max von Laue, who had become a hero of sorts among his American colleagues for having openly defied the Nazi hierarchy. In a rejoinder to Morrison, the Nobel laureate pointed out that "if one or other among the German scientists found it possible during the war to avoid being drawn with his work into the maelstrom, it is not allowable that it was so for all." Frederic Lilje, in his study of universities in the Third Reich, made another contribution to clarity when he described in basic human terms the failure of the German professors:

To protest individually, in the absence of united resistance, required more courage than the ordinary man possesses anywhere. Some had such courage. . . . But more typical was the lot of those who, sensitive but weak, could not decide the conflict between duty to their families and loyalty to their consciences. Pitiable and unheroic, they demonstrate the fate of scholar, scientist, and educator in the modern dictatorial state which, once it is established, inexorably grinds down all human substance. It is necessary to understand their tragedy, if only to guard against self-righteousness on our own part and against that lack of psychological realism out of which has been born the slogan of collective guilt.

By 1948 there was ample evidence to suggest that Germany would once again be accepted into the community of nations. There were indications that her talented outcasts might also be reaccepted into the community of science. In a characteristic expression, Eugene Rabinowitch, editor of the *Bulletin of the Atomic Scientists*, issued a plea for tolerance: "We cannot and should not justify the supine failure of German scientists to ac-

cept their obligations to humanity and free science; but rather than carry the grudge against them until time wears it down, should we not better take this failure as a lesson and warning to ourselves?"¹⁸

The indifference, the oversimplification of issues, the revelation of the frailty of men in the face of tyranny—all of these weakened the case against the importation program. But it was the growing acknowledgment of the existence of a Cold War that overwhelmed it. Project Paperclip had come to life out of the apprehension about such a conflict; it became wholly acceptable when it conformed to the reality. And it was at the high point of the protest movement that the conflict between the United States and Russia came into focus as an imminent danger. On March 12, 1947, the President delivered the message which came to be known as the Truman Doctrine; and on June 5, at Harvard University, General Marshall outlined the concepts that grew into the Marshall Plan. This period of several months constituted a critical turning point in the government's attitude toward the Soviet Union. By implication, President Truman in his famous speech to Congress declared that nation to be the "enemy." It was hardly conceivable that responsible officials would return the German scientists to Europe, and thereby place them at the enemy's disposal.

The effect of the change in policy was not lost upon the military services. Early in 1948 the Air Force* induced Senator Harry F. Byrd of Virginia to present their defense of Paperclip in an article in *The American Magazine*. The senator's argument was subtle. Using information provided by the Air Force, he first sought to disarm the critics. He explained that most of the specialists had been Nazis, that "their German arrogance" reasserted itself once they had been fed, and that fortunately their "native German vanity" caused them to reveal their secrets to any enemy. "Our Germans, when they first arrived," he quoted an officer close to the personnel as having said, "were contemptuous toward American democracy, culture, institu-

* Prior to the National Security Act of 1947, the Army Air Forces.

tions, even housing. Some of them, no doubt, still are, though most have become more tolerant. . . . At least 90 percent of them would return gladly as citizens of a restored Germany, especially a Germany which could hope to become a world power again." Byrd then moved to his major point—that the imported Germans "were revolutionizing the entire character of warfare," and that they were working diligently for the Russians, whose "scientific harvest" was "as big as ours or bigger. . . ." The question, as he saw it, was "not whether we like or hate the Germans . . . or whether we want or don't want them in this country. It's a question of what and how much these particular Germans can contribute to our scientific progress in a highly scientific age. . . . In my opinion, we are entitled to exploit these talents to our best possible advantage."¹⁹

The reaction against the German scientist program could not compete with Senator Byrd's call to expediency. Even the strongest and most convincing argument—that it was unfair, even un-American, to grant citizenship to former Nazis while at the same time denying that blessing to the victims of Hitler—could not prevail. For it was a part of the American tradition, as with other nations, to give priority to security and defense, and sometimes at the cost of justice and fair play.

5.

The final public denunciation of the German scientist program appeared in two articles in the *Nation* in July 1949. Morton Hunt, a participant in Project Lusty and subsequently an editor of *Science Illustrated*, drew from his personal recollections and from interviews with Paperclip specialists to sketch the course of American expediency. It had its beginning, he alleged, in a remark made by a colonel in St. Germain which served as a guide for the recruiting efforts of the intelligence teams: "If they're anti-Nazis and they're small stuff scientifi-

cally, drop them. If they're going to be useful to us but are politically dirty, don't worry about it." It reached an apogee, among other places, on the campus of an American university, where a former Nazi described his anomalous reception: "The F.B.I. didn't care about my being in the Nazi Party. I think they understood about that. What they wanted to know was whether perhaps I was a Communist. It is funny, is it not? I, a Communist?" The author saw nothing humorous about the utilization of Nazis, but his denunciation was less significant than his recognition of the fact that the "minor flurry of interest" provoked by the press announcements in 1946 "soon subsided, leaving no trace."

The distaste for the importation of the Germans did not disappear completely. There would always be a trace of suspicion and sorrow in the private thoughts of those who lived with the memory of the crimes of the Nazi state. In 1960 a Jewish scientist who had been working with the specialists for fifteen years revealed his personal impressions in a letter to a close friend. He distinctly remembered the initial shock that an enemy would be imported and placed in a security-conscious atmosphere and, as the younger men arrived in large numbers, the discomfort of many Jews in a German atmosphere where English seemed to be a secondary language. He granted that those "who yelled the most and could not stand all those Nazis" were almost invariably "more-or-less inept and were blaming the Germans for their own nonadvancement." He believed that on the surface, at least, the specialists had fit into the "American way of life," and he expressed understanding about their tendency to "gravitate into a clique." But he could not entirely accept their claim that they were as unaware of the atrocities as the average American was of the true conditions in Sing Sing. "I don't know," he concluded, "I kind of yet see blood on their hands." ²⁰

*“What Is True Today Could
Very Well Be False Tomorrow”*

AT THE BEGINNING of 1947, before opposition to the German scientists had gained cohesion or momentum, the Paperclip policymakers had good cause to look forward to a truly New Year. For the first time since its inception, it appeared that they could “complete” their program. They had won the blessing of the President; they had secured commitments to ease the ordeal of immigration; they had removed the first families from Europe; and they had plans under way to transfer some of the specialists to civilian concerns. Their one source of dissatisfaction was the lack of progress in the theater, and they decided to send an Army colonel to investigate and “vitalize” the efforts there. He found a general complacency at all levels. There was “sympathetic lip service” at the higher echelons but an absence of aggressive personal supervision; there were too many overstuffed headquarters “steeped in red tape” with poor liaison among them; there were insufficient numbers and “mediocre” personnel operating in the field; and there was a lack of understanding and wholehearted support from other agencies. Beyond that there were the continuing realities: OMGUS was finding it hard to locate scientists and impossible to effect denial without “confinement of characters under guard.”

In his report to the Pentagon, the special investigator made two recommendations: the government should import all spe-

cialists on the "denial list" and give them some innocuous assignment in the United States, and it should seek out and support young scientists in order to get an option on their future services. He also took the occasion to comment on the broader program, and advised his superiors to be chary about the prevailing optimism. Even though they were currently surmounting some of the obstacles, they would have to overcome many "angles and ramifications," many public laws and regulations in order to fulfill their expectations. "Caution must be taken against the tendency to oversimplify implementation of the program," he warned.

The colonel was unerringly correct in his forecast. The complexities of policy and administration blocked the completion and reduced the effectiveness of the program for another five years. Against the background of events, that Paperclip should have suffered such a fate seemed a bizarre aberration, for these were the very years when the outlines of the "Clifford report" merged with the reality of international politics. Through subversion in Greece, blockade in Berlin, a coup in Czechoslovakia, an atomic explosion in Siberia, and supported aggression in Korea, the Soviet leaders convinced Washington that their aim was world domination. The President's first response in March 1947 was dramatic; he promised aid to Greece and Turkey, held out the same promise to future beleaguered nations, and in the words of Senator Vandenberg, "scared hell out of the American people." Thereafter, rejecting the more limited and temperate goals of Kennan's "containment" policy, he turned his commitment into a crusade. Year by year, forsaking his previous reliance upon economic and political persuasion, Truman answered the Communist challenge with various accents of the "language of military power," first with military aid, then with an airlift, wherever possible with alliances, and finally with men.¹

Military power was the special idiom of the German scientists, but it was not until 1951 that their promise of future and esoteric weapons was appropriate to the needs of the moment. Prior to that time the President felt entirely secure in the quality

of his armaments; he was still bearing the greatest weapon somewhat ostentatiously on his hip, ready to use it if necessary. The great and numerous crises also overshadowed the competition with Russia for a few scientists; Project Paperclip lost its relative value in the scales of the Cold War. The nation's leaders, busy and intent upon other matters, were less eager and able to cope with the old entanglements which lingered on, and the new ones which sprang forth. And the American public, slow to recognize that the growing threat abroad was serious enough to affect them, gave their attention to inflation, taxes, politics, and peace. When they realized the need for a crusade, they launched it against alleged subversives at home.

Under these circumstances, the momentary optimism of the friends of Paperclip gave way to the old uncertainty. On the last day of February 1947 an AAF officer warned that "the governing regulations are extremely fluid, and what is true today could very well be false tomorrow." The program, caught in the storm of domestic issues, stumbled from one pitfall to another, with its progress, or lack of it, marked by surprise, paradox, and one gigantic irony.²

1.

For more than a year after the war the advocates of Overcast and Paperclip gave little attention to the wellspring of all their endeavors—the budget. The drop in military appropriations from the wartime high of \$80 billion in 1945 to \$11.4 billion for Fiscal Year 1947 (the year ending June 30, 1947) was precipitous, but it did not interfere with their activities. The costs of exploitation—salaries, travel, and care for dependents—were relatively low and could be charged to the general and flexible Finance Service Army funds. Congress had also made a promising commitment for the future in its generous appropriations for research and development—\$96 million for the Army,

\$185.5 million for the AAF, and \$250 million for the Navy. The House Committee members, still captivated by the mystique of wonder weapons, "held the firm opinion that America must not lag behind in this tremendously important field." But the managers of the projected long-range program enjoyed no such detachment from the tyranny of the budget. On August 2, 1946, President Truman announced his intention to economize on defense spending for FY 1948 and ordered a stretchout of military expenditures, including those for research and development. He sanctified his frugality in his State of the Union Message, and affirmed his desire to give fiscal priority to the extension of social welfare, reduction of the \$275 billion national debt, and achievement of a balanced budget.

The President was a hard money man whose mind was immune to the sophisticated teachings of John Maynard Keynes. Convinced that the economy would collapse if the government were to spend more than a fixed amount for defense, he placed a \$15 billion ceiling on annual military expenditures. Congressmen on both sides of the aisle cheerfully approved his "peacetime" budgets. The Democrats were content to leave all responsibility for military preparation in his hands, and made their escape to what they considered the more important issues of agricultural stabilization, labor-management relations, internal security, and partisan politics. Waiting in the wings were the newly elected Republicans, avid after fourteen years of frustration to take vengeance on "high-spending" programs of the New Deal; they were already shouting for lower taxes and an even smaller federal budget. The military, who had vowed never to return to the armaments depression of the 1930's, were surprisingly complaisant. They knew the hopelessness—and the price—of dissent. Under these conditions the appropriations remained small; for FY 1948 through FY 1951, Congress voted, in billions: \$9.7, \$10.5, \$12.9, and \$13.3.* These expenditures reflected only a crude and accidental relationship between the na-

* This FY 1951 figure does not include supplemental appropriations caused by the Korean War.

tion's commitments and its ability to meet them.

The New Year parsimony of the President and Congress inadvertently caused havoc with the military's plans. In January the consequences struck home when the chief of the War Department Budget Division ruled that all expenses arising from the contracts would be charged to research and development funds, rather than the more plentiful general service funds. The using agencies were in a dilemma. The money available for research and development would be less in FY 1948, yet the costs of exploitation—higher salaries for the specialists, and travel and housing expenses for their families—would be considerably more. They had to choose between research projects and German scientists; they chose the former, and withdrew requests for 166 personnel, including 34 who were already under contract and awaiting transportation from Europe. As if to certify the retreat, the War Department General Staff asked each agency to submit a final list of all the specialists they desired.³

By early March the prospects looked gloomy. The restrictions of the budget remained firm, the domestic critics were at the height of their outcry, and the State Department had thus far refused to cooperate in the issuance of visas. It was in this atmosphere that General Eisenhower, who had served as the War Department's Chief of Staff since his return from Europe, called for a thorough review of the project. During the week of March 10 he met with the Secretary and Assistant Secretary while subordinates briefed them on the history, background, and policy of Overcast and Paperclip. Two fundamental decisions emerged from their meeting. On the last day of the week Patterson directed all participating agencies to complete their procurement of specialists prior to the end of the fiscal year (June 30, 1947). A few days later the department confirmed that they would have to charge all expenses to research and development funds. The government was definitely going to "complete" Paperclip, but at lower levels and quickly.⁴

The sponsoring agencies hurried to finish their procurement by the target date but with mounting difficulty. Some of the

scientists they wanted most they could not locate, and some were in the French and Russian zones. More discouraging because it was so unexpected was the fact that many of them refused to sign contracts. The reasons, according to theater officials, were due in part to the recent and abrupt cancellation of contracts, which had been unfair to the individuals, had reflected unfavorably upon the integrity of the government, and had created serious resentment throughout German scientific and intellectual circles. Upon learning of this reaction, the agencies reordered thirteen of the thirty-four specialists whose contracts they had revoked, and paid the others for the short period of their employment. But there was nothing they could do to overcome the growing belief among many scientists that conditions would soon improve in their own country. This gave rise to a renewed sense of patriotism, and together with pressure from native sources, induced them to remain in Europe in order to devote their talents to an early rehabilitation of the fatherland.⁵

The Air Forces, frustrated by their inability to contract scientists before the deadline and disappointed over the collapse of their expectations, made an attempt in July to check the process. They prepared a study of the effect of "possibly reduced funds" on Project Paperclip, hand-carried it to the director of the JIOA, and asked that he present it to members of the SWNCC. For a cost of only \$1,912,720 in FY 1948, they would be able to import their desired 233 scientists, and exploit them to the fullest extent. Under the proposed budget limitations they would be able to utilize only 140 scientists at a cost of \$880,782. Their preference was clear, but the SWNCC gave them little satisfaction. They did extend the final date for the procurement phase to September 30, and approved an "escape clause" whereby agencies could order "exceptional cases" after that time if they could present sufficient justification to the Joint Chiefs of Staff. Otherwise the SWNCC had little room in which to maneuver. By then Congress had cut an additional \$2 billion from the administration's meager proposals for military spending, and, unlike the previous year, extended their economy to research and

development. Friends of the military were left with only one small victory; at the insistence of Representative George Mahon of Texas, they restored some money to procure military aircraft. During the debate Representative Mendel Rivers of South Carolina charged that the country was already lagging behind Russian "know-how" in guided missiles and jet-propelled airplanes, and Representative John Rankin of Mississippi reminded his colleagues that they were "faced with the greatest crisis in world history," that Communism was "making war on the United States," and that they were "dealing with a savage force that does not recognize anything on earth but force, or power." The feelings of the large majority of congressmen, however, were closer to those expressed by Representative Charles Plumley of Vermont in response to critics of the sharp cuts in naval spending: "Now, you can kick and buck and haul as much as you want to, but you are sunk."

By extension the same was true of Project Paperclip. It was not quite "sunk," but it was listing heavily from then on. At the end of 1947 the government had 480 specialists under contract. By recourse to the "escape clause" they raised that number to 504 in 1948, 523 in 1949, 522 in 1950, 530 in 1951, and 573 in 1952. But Congress, in its dedication to a "peacetime" budget, had determined that they would never import the maximum one thousand scientists allowed by President Truman. Almost simultaneously, other developments had ensured that even those scientists in the United States would have to remain for some time in "limited military custody." Citizenship was not costly, but it remained controversial.⁶

2.

When Dean Acheson submitted Paperclip for the approval of President Truman, he explained: "It is contemplated that at a later date selected persons would be granted regular

status under the immigration laws." When the policy came out of the White House it required the War Department to "cause the best information available concerning the specialists and their families to be assembled" to meet the provisions of those laws. The long-range contract assured the Germans that if their personal conduct and political background justified it, the government would "make immediate efforts to obtain an immigration visa" for them and their families. Before the end of 1946 the State Department expressed its willingness to cooperate in every possible way to facilitate immigration, and its visa division agreed to accept the military's background investigations and security reports as final. Yet in spite of these conspicuous avowals, not a single specialist obtained a visa in 1947.⁷

The delay was not due to any laxity on the part of the services. As early as October 1946 the AAF submitted immigration dossiers on several of its specialists to the JIOA, and two months later they were in the hands of the State Department. The JIOA also arranged with the State and Justice Departments to hasten the process through the use of two special administrative procedures, preexamination and reentry. By preexamination an immigration inspector of the Justice Department would review the application, question the specialist, and rule on his eligibility to become a legal resident without his leaving the United States. After favorable action, the specialist would appear personally before a consul in a contiguous nation—Canada or Mexico—obtain his visa, and reenter the country as a citizen, free from military custody. In March 1947 the JIOA issued a long "Standard Operating Procedure" explaining every step in the process, with the warning that "no scientist will be recommended for immigration if there is any reason to question his past record or future intentions." Nothing happened. The State Department had reneged on its commitment.⁸

The reasons for the turnabout, and for the department's continuing opposition to citizenship, differed from those of a year before. One of their considerations was public opinion. They were sensitive to the reaction against Paperclip, especially since

it came at the very time when Truman had called for emergency legislation to "fulfill our responsibilities to these thousands of homeless and suffering refugees," the displaced persons. With such critical issues as the Greek-Turkish aid bill and the reconstruction of Europe at stake, the department could not afford to alienate influential groups of Americans. Much more important to their position was the President's newly initiated loyalty program. Truman had been under relentless pressure during 1946 to take some action regarding internal security, especially after a Canadian Royal Commission reported in June on extensive Soviet atomic espionage. Following the Republican congressional victory in November, the President appointed a Temporary Committee on Employee Loyalty to study the existing procedures. The committee reported that there was need for improvement: "The presence within the government of any disloyal or subversive persons, or the attempt by any such persons to obtain government employment, presents a problem of such importance that it must be dealt with vigorously and effectively." On March 22, 1947, Truman acted vigorously with an executive order establishing loyalty boards in each agency of the government. One of their principal tasks was to tighten the hiring procedures for federal employees.⁹

Within the State Department the Office of Controls had ultimate authority in matters of immigration, and for its own investigations deemed that "a former course of conduct or holding of beliefs will be presumed to continue in the absence of positive evidence indicating a change, both in course of action and conviction, by clear, overt and unequivocal acts." When it applied its security procedures to the German scientists, it overruled the earlier decision to accept the military's investigations as proof that they had changed in their convictions. In April it required the agencies to provide a list giving names of at least five reliable persons who were acquainted socially and professionally with each specialist in Germany, and a signed, sworn statement explaining his membership in the Nazi Party. In October it asked for a list of references for each of the dependents eighteen years

of age or over. In addition the office questioned the legality of Paperclip in view of an act of June 1941 which placed wartime restrictions upon the travel and admission of aliens. Since the United States had not signed a peace treaty with Germany, the scientists were still legally classified as enemy aliens. The act required that each of them demonstrate that his entry would be of positive benefit to the nation, and would not jeopardize its security.¹⁰

By the summer of 1947, the reservations of the Office of Controls had placed the sponsoring agencies in the same position as a year before, when the activities of the "one man" had blocked their plans and jeopardized their program. And in much the same way as then, intervention at a higher level prompted the State Department to change its mind. Early in July the Under Secretary of the Navy, John L. Sullivan, conferred with General John Hildring, the Assistant Secretary of State for Occupied Areas and the influential chairman of the SWNCC. Hildring was a forceful individual (friends jibed that he could dispense with the telephone and obtain the same effect by projecting his drill-field voice from his office window) and a friend of the military. He had intervened on behalf of Paperclip in the summer of 1946, and did so again. Out of anxiety to achieve some results, he agreed that the State Department would not require completely documented dossiers, and would accept recommendations by the service secretaries as a final basis for granting visas. The new Secretary of State, General George C. Marshall, supported this procedure. He asked the Attorney General, Tom Clark, to use his discretionary power to amend the wartime regulations so as to exempt certain aliens on the condition that the secretaries or the JCS certify that their admission was "highly desirable in the national interest."

The expectations of the two State Department generals were premature. Clark was not agreeable, and at a late September gathering in the Justice Building, representatives of the interested parties argued to another impasse. The Commissioner of Immigration stated his willingness to issue visas immediately

under present laws upon approval of each case by the State Department. Members from the Justice Department noted that the Attorney General and the director of the F.B.I. were responsible for the internal security of the United States, and unless the Department of State could declare in each instance that the Germans did not constitute a security threat, they could not approve the applications. The representatives from State mentioned that the War Department had failed in many cases to furnish sufficient information on the background of applicants, especially those who had formerly lived in the Russian zone or Russian occupied territory in Poland. The existing laws, they insisted, would not permit them to approve any applications for Germans who "were connected with the Nazi Party at one time, or with the German war machine."

The hard-line positions taken at the conference reflected a persisting skepticism about the Paperclip specialists, and perhaps an unwillingness on the part of the State and Justice Departments to take a risk on a very sensitive issue. But they could not ignore the pressing need for a solution; their statements were the last frustrated expressions in the face of a disagreeable choice. If the services could not prevail upon them to so interpret the federal regulations as to make Paperclip possible, they would have to ask Congress to change the laws. The alternative, with its possibilities for furor and delay, was far more hazardous. So within a week the parties met again in the Justice Building, and tentatively agreed upon a procedure. The Secretary of the newly independent Air Force, Stuart Symington, would certify that in three "test cases" the applicants would not be a security threat, and that their entry was desirable both from the point of view of national security and the national interest. If the State and Justice Departments rendered a favorable opinion on their admissibility, they would establish a precedent for subsequent applications. By November the Air Force had made arrangements for the trial run.¹¹

The services were not prepared for another long delay, and after two months of waiting they became impatient. In Febru-

ary 1948 Sullivan complained to Marshall that nearly two years of voluminous correspondence and numerous meetings had failed to produce any tangible results, and asked that he use his good offices to "alleviate the longstanding unsatisfactory condition." He proposed to his fellow secretaries, Kenneth Royall and Stuart Symington, that they write letters of a similar nature "to emphasize the importance of rectifying this situation and to show the concern felt by all of the armed services." In the case of the Air Force his plea was unnecessary; officers had already become exasperated by what one general called the "procrastinating and trifling obstacles raised by the Department of State." In March Symington added his voice to the concerted effort to correct the "serious situation."¹²

The attitude of the military was restrained in comparison with a tempest that was building against the State Department within a congressional subcommittee—a tempest inspired by the rising concern about subversion. During 1947 the congressional search for Communist influence in the country had proceeded with gusto. The House Un-American Activities Committee, braced by Republican leadership, had explored the activities of alleged subversives in labor unions, liberal organizations, and in Hollywood, where actor Adolphe Menjou expressed the general tenor and emotions of the proceedings: "I would move to the state of Texas if [Communism] ever came here because I think the Texans would kill them on sight." But the committee did collect enough information to make some congressmen eager to conduct the search for subversives closer to home. In February 1948 conservative Republican congressman Fred Busbey of Illinois charged that the director of the Office of Controls lacked the qualifications for his position, and in view of "certain facts" should have been removed many months before. Busbey was a member of a subcommittee of the Committee on Expenditures to investigate the executive departments, and appealed to its chairman for an open hearing. On March 10 and 12 the group met to hear the congressman's "facts," the most notable of which was that the director's second cousin was a Communist,

and the implication of which struck State Department officials as defamatory. The subcommittee members agreed and ended the hearings. Busbey resigned.

On March 25 the outraged congressman inserted a statement in the *Congressional Record* entitled "What's Wrong With the State Department?" He repeated his attack on the Office of Controls and included a long section designed to expose their handling of the German scientist program. He charged that he had obtained the facts despite the refusal of officials to release information on the grounds of national security, and challenged the department to deny his story. His account was precise in its documentation of the official role of the "one man" during 1946—there had obviously been a "leak" of classified information, possibly from military sources, though in view of the nature of the evidence, more likely from dissidents in the State Department. But his conclusions were overdrawn. The "one man," he judged, had an obsession with displaced persons. He had personally arranged for the entry of five hundred through Mexico and another thousand from Germany, but he could not arrange for even one scientist to come to the United States. He had used his authority to "delay, obstruct, and confuse" the program, and had even gone so far as to state that "this may be the policy of the Secretary of State and the President," but it was not his. Even after he left his position on the governing board of the JIOA, his "line" guided the actions of the Office of Controls, who created "confusion, agitation and turmoil" with respect to the scientists.

Busbey released his report on the same day to the popular NBC commentator, Ned Brooks, who described it in his "Three Star Extra" as "another chapter in a story of how a few minor officials in the State Department have succeeded in blocking a program of high military importance." In this manner the Congress and the public first learned of the conflict over citizenship for Paperclip specialists. What they heard was an oversimplification: it ignored the many competing forces, relevant decisions, existing regulations, and understandable concerns that had

caused the delay, and left the impression that a few men for questionable reasons had interfered with the national defense. As a first thrust in the search for simplified explanations for the nation's discontents it turned out to be a "flop," in the opinion of subcommittee member Representative John McCormack. But it would survive in the mythology of those who believed that the greatest threat to the nation came from disloyal Americans rather than aggressive Russians. Under the tutelage of Senator Joseph McCarthy, they would carry legitimate concern for internal security to excess and question the loyalty of two Presidents and their administrations, the churches, colleges and courts, and the United States Army.¹³

The controversy ended at the time for two reasons. On April 7, 1948, the first "test case," Air Force jet-engine specialist Dr. Heinz Schmitt, obtained his visa at Niagara Falls, Ontario. His entry established the long-awaited precedent. The services also came to realize that the roadblock in the State Department had shifted after October 1947 to the Department of Justice. The JIOA had forwarded seventy cases for clearance, but the F.B.I. was intent on conducting an extensive investigation of each specialist, and approved only three during a period of six months. The War Department had reason to believe that J. Edgar Hoover himself attached great importance to the fact that most of the scientists were former members of the Nazi Party, and that he would continue to conduct extremely thorough reviews unless he became fully convinced of the importance of the project and the thoroughness of the military's preliminary investigations. The WDGS decided to face the problem directly. It arranged a meeting for May 8 between the director of the F.B.I. and their own director of intelligence, Lieutenant General Stephen J. Chamberlin.

General Chamberlin had been at the center of the storm over Paperclip from the beginning, and assiduously prepared his case. During the conference he described the remarkable wartime accomplishments of the Germans, and by reference to confidential designs of guided missiles and ram-jets plus a photostat of a su-

person's wind tunnel, stressed their contribution to the United States. Making use of a chart to indicate the international competition for their talents, he predicted that if they returned to Germany they would be "shanghaied" by the Russians, who would then obtain the benefit of their own research secrets and those of the United States. He conceded that some of the specialists had been affiliated with the Nazi Party, but stated that none had been active in Party or political activities, and guaranteed that the services would not recommend them for immigration until they had determined their fitness. He then made his plea: the irregular status of the specialists had reduced their usefulness; the State Department was now facilitating the progress by issuing visas; cooperation of the F.B.I. was necessary to expedite clearances; and because the military services were newcomers to the field, they would also appreciate the suggestions of the Bureau as to custody and surveillance.

As he followed the presentation, Hoover readily agreed that the program appeared to be of the greatest importance to national security, and assured the general that he would complete the clearances as rapidly as possible. He was so cooperative, in fact, that he instructed one of his subordinates while the conference was in session to put Paperclip investigations in the highest order of priority and to cut all possible red-tape. He also volunteered to speak with the Attorney General in an effort to avert all time-consuming procedures. During the conversation Hoover indicated that he would not welcome the immigration of Nazis. He recognized, nonetheless, that the real threat at the present came from Communism, and understood the need to decide the cases on the basis of the national interest, namely, whether they would do more damage in the United States or in the hands of the Russians.

General Chamberlin left the meeting convinced that Hoover "is very definitely on our team in this matter and is willing to cooperate to the maximum extent." His impression was correct. A progress report in October showed that the Justice Department had approved seven specialists for the Army and at least

one for each of the other services within the past month; it assumed that the acceleration would continue at a satisfactory pace. It did. By 1950 more than four hundred German scientists had obtained their first papers for citizenship.¹⁴

There was one significant statistic, however, about the hundreds who walked across the bridges at Niagara Falls and Juarez. Very few of them owed their opportunity to the Department of Commerce. The "national interest" program barely survived the bitter controversy over visas. The hopes of Henry Wallace for fifty eminent scientists never materialized.

3.

"Last Call for Germany." With these words John Green of the Commerce Department opened his 1947 campaign to convince American industrialists of the benefits of exploitation in Germany. Victory had "opened the doors and files of German factories and laboratories," and for a trivial cost the businessmen could still send their engineers to give new meaning to the old adage, "To the victor belong the spoils." The Commerce officials were waiting to get them to Europe, the military government was waiting to help them with billets, food, transportation, and a hundred other things, and the "priceless data" were there for the taking. "Never in history" had there been such a program and such an opportunity, but it was up to the businessmen to decide quickly! It would be a "national tragedy" if preoccupation with other matters allowed "the door to shut before we have added all of the best of Germany's technological knowledge to our own."¹⁵

The young lawyer who had sparked the industrial exploitation program in 1945 was once again a success as the supreme booster of the open door to Germany. The corporations and the Congress responded, and another group of investigators left to acquire secrets in the British and American zones. But he had no

such profuse anticipations about his companion project to import top-flight experts for science and industry. His message to would-be employers was to wait. The long-range Paperclip plan had granted Commerce the right to nominate scientists, but it had not answered the knotty questions regarding "national interest." How could civilian concerns employ individuals who were under "limited military custody"? And would the State Department consider their contributions sufficiently important to justify special privileges in the matter of visas? Green was cautious for another reason. Henry Wallace, who had sponsored the program as part of his grand vision for the postwar economy, had left the Department of Commerce. He had incurred Truman's displeasure in September 1946 by advocating a policy of accommodation with the Soviet Union. The President fired him, and replaced him with Averell Harriman, the former ambassador to Moscow and London and a "hard-liner" toward Russia. Harriman had won a reputation as a brilliant troubleshooter in international affairs but, unlike Wallace, had no faith in the invigorative powers which a small number of German scientists might have for the American economy.

It was only a short wait until the new Secretary of Commerce was called upon to make a decision on more practical grounds. The War Department disliked the "national interest" concept because it placed the responsibility and expense for transportation, surveillance, and administration of the scientists on them, while industry got the benefits. In March, Howard Petersen met with Harriman to propose that the government reject importation in the category of "national interest," and bring to the country only those individuals who could qualify by virtue of their importance to "national security." This meant, as Green impressed on the Secretary, that American companies would not get the men they wanted to improve the national economy. Harriman accepted the military's position as more realistic. He reserved a two-fold role for Green's Office of Technical Services: they would reexamine the persons already requested by industry to see if they could qualify for entry in the "national security";

and they would assist in finding employment for those Germans the armed services wanted in the United States for security or denial reasons. He also agreed that if a company did import a scientist, it would pay for his transportation.¹⁶

This arrangement led to a difference of opinion during the next four months. Green's staff had hoped the military would use a broad interpretation when they certified scientists for the "national security," that is, that they would approve some whose skills and talents did not relate directly to implements of warfare. They apparently extended their expectation to industry; the services, in any event, gained the impression that they had led the business community to believe they could employ the Germans. Once again Harriman assured the War Department that the scope of his participation would be to assist the military, though he felt that the latter might well give a broad definition of security when they made their decisions. They did not. By September 30, the last day of the "procurement phase," they had approved only twenty-eight scientists for American industry.¹⁷

The disappointment over this limited success was keen among some members of the Commerce Department. Raymond Hicks, a special assistant to Green, felt that even the employment of the suggested one thousand specialists would have been insufficient in meeting the existing national needs. His enthusiasm led him to contend that the program could be readily reestablished if Harriman would merely alter his position. And in a small way he sought to effect the change: he admitted that when he answered the many inquiries of businessmen, he tried "to think up some reply that might encourage the inquirer to go to work on the appropriate agencies." But someone within the department had recourse to a more traditional method of generating support—the "leak." An October article in *Iron Age* explained that many people had believed that after the Army dropped its program, the State Department would ensure continuation by granting visas to those scientists desired by industry. But the department, through its "dilly-dallying tactics" and its "stub-

bornness," had become the latest "fly in the ointment." While other government departments were "sold on the idea," State had refused to budge, despite White House orders on two occasions to "iron out the differences." Neither this quaint explanation, the influence of the White House, nor the deluge of complaints from businessmen succeeded in changing the program. Only twenty-one Germans, all certified in the "national security," entered the United States as immigrants to work in industry.¹⁸

Despite the failure of its independent program, the Commerce Department remained very active in Paperclip. For two years it performed the important function of arranging the transfer of scientists from military agencies to private industries and universities. In order to save money and relieve the critical housing shortage, the services preferred to release certain specialists after they had completed their military projects. In April 1947, having learned that the Germans were doing their own job-hunting among contractors, the WDGS established a general procedure to place them with civilian concerns. When an agency wished to release a specialist, it would notify the JIOA, who would "shop" his name and qualifications to other government agencies. It then referred the information to Commerce, who publicized the specialist's availability and supervised the preparation of a new contract with the employing firm. Until he received an immigration visa, the specialist remained under the custody and surveillance of the commanding general of the appropriate Army district; otherwise he had no further relationship with the military. By 1949 the department had placed specialists at three educational institutions—Cornell University, Pennsylvania State University, and North Carolina State College; and at numerous companies—R.C.A., Bausch & Lomb, AVCO Manufacturing, Graflex, Heintz Manufacturing, Hydrocarbon Research, North American Aviation, Blaw-Knox, Prym Manufacturing, and Dow Chemical.¹⁹

A greater opportunity for the department to serve industry arose in 1948 when the "national interest" concept reappeared

in a new form. Following the end of the procurement phase of Paperclip, Commerce officials worked to gain State and Justice permission to bring specialists to the country by means of visitors' visas. They were unsuccessful until June, when Congress passed the Displaced Persons Act and instructed the State Department to resume normal consular services in the American, British, and French zones of Germany and Austria. Almost immediately the Office of Technical Services developed and won approval for a "streamlined procedure" to acquire specialists in the "national interest." If a corporation wished to employ a specialist living in Germany, it informed Commerce, who then checked as to his availability. The firm then applied to the immigration authorities for permission to offer a contract, negotiated directly with the scientist, and provided him with an affidavit to the effect that they had extended a bona fide offer and would pay his travel expenses. The specialist then applied to the combined travel board in his zone for an exit permit. If the Bipartite Committee on Scientific and Technical Personnel ruled that his departure would not harm the German economy, he was free to apply to the consul for a visitors' visa. Within a year 178 companies had made their initial requests.

"What once appeared to be a more or less routine, dwindling-off program," exclaimed Ray Hicks in 1949, "has now become involved and perplexing with no end in sight until such time as the immigration laws are modified by Congress, or Germany and Austria regain world recognition." Before that time the streamlined "national interest" scheme had processed 159 specialists to work in the United States. By removing them from Germany, even for as short a period as six months, the program gave indirect assistance to the military as they coped with the other aspect of Paperclip—denial. As with procurement, the continuation of denial was debatable; in contrast, the opposition came from overseas, and had little effect.²⁰

4.

With the exception of President Truman, no American occupied a more demanding position in the postwar period than General Lucius Clay. Under perfect conditions it would have been exacting to realize the universal vision of a demilitarized, denazified, decartelized, democratized, reoriented, reeducated, stable, and peaceful Germany. But the existing conditions were those of political and economic chaos and spiritual depression, and the general vision quickly became the particular fancy of a host of interested parties. Each of the Allies, all of the Germans, the White House, War Department, State Department, Congress, and the American people looked upon the nation as a laboratory in which they could test their diverse and often illusory hopes. General Clay was caught in the whirlwind of their intentions, subject to a procession of plans, directives, pronouncements, press visits, official studies, and congressional resolutions. He had to determine priorities. He had done so in one instance in July 1946 when he advised the Pentagon to abandon its denial program and remove all important scientists to the United States. Early in the occupation he noted that planners often led a "cloistered and academic life" and never got out into the "mud." Out in the "mud" of the American zone, denial appeared to be impossible.²¹

The Pentagon was quietly addicted to its program, however, and after a seven-month delay informed the military government that it was essential to continue denial until after the completion of Paperclip. They went further. They asked for recommendations as to the advisability of continuing denial even longer, "bearing in mind U.S. policy of extending civil liberties in Germany as well as military security." After five months of consideration, Clay replied in June 1947 that denial was still impractical. The Dustbin internment center was filled to capacity, there were no other suitable housing facilities for the detention of specialists and their families, there were no funds or materials available for the construction of new facilities, and there

was not enough money to provide guards without seriously affecting police functions in the zone. In more forceful words than ever before, he took issue with the War Department. "I should like to point out the illegality and impracticability of the detention of a scientist or any other individual solely because of his scientific knowledge, ability, or preeminence in his field," he wrote. "The indefinite detention of all or any of the scientists on your denial lists for these reasons is undemocratic and illegal under present laws." Military security was inconsistent with civil liberties; further efforts toward denial would definitely jeopardize his instructions to establish a German government based on democratic principles.

The War Department remained unmoved; they would not forsake denial. On this occasion their stand was in harmony with the shifting trends in Washington's larger policy toward Germany during 1947. After the failure of the Moscow Conference in March to achieve four-power agreement on basic issues, administration spokesmen began to blame the years of disappointment on Soviet obstructionism. By fall their opinion had coalesced with the purposes of the Truman Doctrine and the incipient Marshall Plan: the Soviets were determined to spread into Western Europe; in order to block their penetration the United States would have to support the rehabilitation of Germany as the key to general European recovery. Thus the American interest in holding the line against Communism overshadowed—though it did not completely replace—the previous emphasis on such goals as denazification and democratization. Within this context General Clay's basic argument was less persuasive, and the Pentagon prevailed. In October they cabled that they had no plans to remove all the scientists to the United States or the United Kingdom, but that the interests of the government would be protected if those persons remained in the American and British zones. Attractive employment commensurate with the scientists' capabilities and consistent with occupation policies, they suggested, would go far toward achieving that end.²²

By 1948 the denial phase of Paperclip was secure, its wisdom

certified by the grim Soviet actions in Prague and Berlin. In several different ways OMGUS took action to prevent the movement of personnel to the Russian zone. In lieu of incarcerating the scientists they made periodic checks on their location and activities. In order to placate the bitter and resentful evacuees from central Germany, they continued to offer preferential treatment and made payments on approximately nine hundred of their claims for the loss of real or personal property—including furniture, bank balances, and negotiable stocks and bonds. In the manner of the British they began to hire the Germans as consultants. Pleased by the distinction and the retainer of 700 to 1,050 marks per month, the scientists reacted enthusiastically. Some became dissatisfied when they discovered that as consultants they did not consult, and that the limited facilities did not allow for the development of their potentialities. They nevertheless took the money, and through their professional contacts and academic friendships formed an invaluable “high-level informant net” for intelligence on the Soviet Union. The authorities were satisfied, and by the autumn of 1950 were retaining 125 of these so-called “consultants in the interests of national security.” Altogether there was a change of attitude among officers in the theater; they came to look upon the scientists more as an investment than an irritation, and to show them more understanding. During the Berlin blockade, when some of the best of them displayed concern about their ultimate future, the intelligence director of the European command wrote: “I don’t feel that they will let up in their work, nor is their objective mercenary; the problem is just plain psychological, and naturally we want them to continue to keep a keen interest on our behalf.”²³

As the months passed denial took on such paramount importance that authorities weighed every decision affecting the specialists in terms of making them content. In a sense the Russian border had become a symbolic battle line, with victory or defeat measured by the number of scientists who crossed it to the East. In 1949, in order to protect their right flank, the Americans gave more attention to the contest in Austria. An intelligence report

late in the year portrayed the desperate conditions in that nation renowned for its scientific supremacy. Many of her scientists were unemployed, and those fortunate enough to work were underpaid in low-level positions. The Russians, by ignoring Nazi leanings and with offers of high salaries, unlimited facilities, and professional independence, had adroitly exploited their eagerness to emigrate. They seldom had to resort to physical coercion, but were known to have kidnapped recalcitrant scientists of unusual interest—only recently an explosives expert, Dr. Karl Schmid. Self-isolated from the stream of scientific advancement in the Western world and handicapped by limited research facilities, the Soviet government had already engaged in a technical armaments race, one which might become a decisive factor in the East-West balance of power.

The headquarters of the United States Forces in Austria asked Washington to initiate a comprehensive denial program for employment of all scientists susceptible to offers in undesirable countries, and flexible enough to include refugees who had fled from Iron Curtain countries. In a preview for the 1950's, they suggested that denial should become more aggressive. Americans should ascertain where the Russians were indirectly supporting research projects in Austria, and divert or otherwise upset those projects. They should screen and remove or otherwise neutralize Communist agents holding sensitive positions in the country's research institutions or industries. Finally, they should extend aid and encouragement to persons anxious to defect from the adjacent satellite countries through the natural corridor provided by Austria.²⁴

With these thoughts the concept of denial took on a new dimension. It would not only prevent the departure of scientists from the American zone but would lure others from behind the Iron Curtain. The fact remained, nevertheless, that any denial program in Europe was by its very nature imperfect; the only means of positive denial was the removal of specialists to friendly territory. The various schemes in the theater only mirrored the nation's unwillingness, or inability, to take such action. And

that still worried some officers. What would happen to the remaining fifteen hundred preeminent specialists in Germany and Austria in the event of an outbreak of hostilities? Distressed by the probabilities, the officers drafted a plan at the end of 1949 to assemble them at a central point for shipment to the United States in the case of war. They had no specific site in mind, except that it should be as far as possible from the Russian border and at a point where the military could remove them by air or sea, possibly in England or North Africa. But the notion that the Russians might sweep across Western Europe was too hypothetical. The Germans remained in Europe and the plan went into the files—for the time being. Denial remained a policy of prevention and espionage, and not evacuation.²⁵

5.

It is natural for all men to take stock of their achievements and anticipations at the beginning of a new year. A War Department officer did so on January 4, 1950, and found everything satisfactory and auspicious regarding Paperclip. The “progressive development of policy” had made available selected, preeminent specialists; it had made possible their retention as American citizens; it had gained their increased support; and it had created a high morale within their ranks. In this way the “far-sighted” policy had left “a definite imprint on the achievement relative to the national defense.” World affairs being what they were, the officer proposed that “policy considerations remain objective in advancing the program which since 1945 has proven itself fully.”

Yet 1950 was not a year for objective and steady advances in any aspect of the Cold War. At home the conviction of Alger Hiss in January was followed in a little over two weeks by Senator McCarthy’s charge that the State Department was riddled with Communists. Abroad, the North Koreans moved across the

38th parallel behind Russian tanks. "The attack upon Korea makes it plain beyond all doubt," said President Truman, "that Communism has passed beyond the use of subversion to conquer independent nations and will now use armed invasion and war." War and subversion were the overriding issues of the year, and both affected Paperclip.²⁶

Less than three weeks after the North Korean attack the Air Force Intelligence Center at Wright Field proposed to revitalize the program through a "mass procurement effort." The plan was similar to the one they had unsuccessfully put forth in 1949, and appeared more realistic in the light of events in Korea. Russian intentions were still not clear, but if they chose to they could rapidly overrun the continent and seize all remaining specialists. The "accelerated Paperclip" would reduce the numbers in their path in the event of such aggression. The JCS approved the plan in November and assigned it a special code name, "Project 63." It was still identified with Paperclip, but it differed in a basic sense. Its primary aim was denial through evacuation on a large scale; utilization and ultimate employment were secondary. The Department of the Army would negotiate short-term contracts, ship the specialists and their families to an initial assembly point in the United States, and then allot them to whichever service needed or wanted them. Project 63 was slow in getting started; it was not until the summer of 1951 that contracting teams were in the field searching for volunteers. And it did not succeed; it faded away at the end of 1952 after having imported nineteen scientists. When the Korean War failed to expand into a general conflagration, the achievement of denial through evacuation lost much of its logic. Thereafter the military returned to contracting only exceptionally qualified individuals. The JCS would not sanction indiscriminate recruiting.²⁷

Nor would the government. By 1950 Congress had become terrified by the thought that subversives were responsible for the success of the Communists throughout the world, and paradoxically devastated Paperclip. In the perfect setting of the Korean War, the Senate Judiciary Committee under Nevada's Pat Mc-

Carran and the House Un-American Activities Committee led by Georgia's John Wood prepared legislation to require the Communist Party and its various front organizations to register with the Justice Department. On the premise that the Party was composed largely of immigrants, they added a section to exclude all alien Fascists and Communists from admission to the United States. Thus when their Internal Security bill passed Congress in September it satisfied two prevalent desires: it fulfilled the postwar movement to control persons suspected of disloyalty, and it ended the long quest of nativists (championed in 1946 by Representative Gossett) to bar from entry all persons presumed to have such inclinations.

On the advice of the State, Justice, and Defense Departments and the CIA, and out of his own convictions, President Truman vetoed the bill. "Instead of trying to encourage the free movement of people, subject only to the real requirements of national security," his message read, "these provisions attempt to bar movement to anyone who is, or once was, associated with ideas we dislike, and in the process, they would succeed in barring many people to whom it would be to our advantage to admit." Whether the President was speaking of war brides or scientists mattered not; Congress was not listening and overrode his veto. The all-inclusive severity of the act, which made no distinction between active or nominal members of totalitarian parties, but excluded both, struck hard at Paperclip. It not only prevented further importation, but halted the process of citizenship for all specialists who had belonged to the Nazi Party. They had obtained their first papers, but they were not eligible for naturalization.²⁸

Insofar as it affected Paperclip, the Internal Security Act embraced a colossal irony, for several of its most avid supporters continued to denounce the Truman administration and the State Department for blocking the importation of scientists. A month before he voted for the bill, Senator Styles Bridges of New Hampshire promised his colleagues that he would tell them at some future time "how the program of President Truman

and our military leaders, aimed at bringing over one thousand German scientists to the United States after World War II, was scotched by one man in the State Department. The program was less than one-fourth effective." Eight months after he cast his affirmative vote, Senator Bourke Hickenlooper of Iowa charged that one man's activities in the State Department "stopped" the program; he "blocked" it in 1946 and 1947, and permanently thereafter. The senator held in his hand a document alleging proof—a memorandum indicating that even Assistant Secretary Hilldring was unable to cope with the preventive measures "thrown in the way" of the plan. And in May 1952, Congressman Busbey once again introduced his "What's Wrong With the State Department?" into the *Congressional Record*. "What has developed in connection with the infiltration of Communists into the State Department since that time," he advised, "should be ample proof that if I had been permitted to pursue my investigation and interrogation of witnesses, in all probability the United States of America would not be in the mess it is in today, due to the bungling of a misguided foreign policy." Obviously there had been a supreme misunderstanding. Perhaps as President Truman suggested, the senators voted for the act in too great an atmosphere of "emotion and excitement." More likely the secrecy surrounding Paperclip—which had from the beginning kept Congress, the American people, and sometimes the President largely unaware of the workings behind the program—led to the dilemma.

The military were in any event unhappy about the consequences. The Attorney General removed some of the pressure by his immediate ruling that nominal Nazi Party members could continue to enter the country in a temporary status by means of the Ninth Proviso of the Immigration Act of 1917, which was intended originally to ensure an adequate supply of agricultural laborers and railroad workers. More helpful was the success of a group of liberals in March 1951 in amending that section of the act defining membership in totalitarian parties. The group insisted that by excluding nominal Nazis, the act would bar the

innocent as well as the guilty—especially young Germans who had married American soldiers—and that it ignored the principle of redemption. “It was felt that grave injustice was done to many people who could become worthy citizens,” explained Senator Herbert Lehman. The liberal congressmen won enough conservative support to pass Public Law 14, which in effect forgave Party affiliation for those persons who had joined by operation of the law or in order to obtain employment, food rations, or other essentials of living. But there was no certainty as to the longevity of the reprieve; Public Law 14 was merely a stopgap measure pending a comprehensive revision of the immigration laws scheduled for debate in 1952.

To obviate any further interference, the Department of Defense entered that debate and made a strong plea before the joint hearings of the House and Senate Judiciary Committees for qualification of the term “membership.” Speaking in its behalf the director of naval intelligence, Rear Admiral C. F. Espe, declared that the Internal Security Act had forced the department to curtail its recruitment of specialists and made it likely that some of those in the country would never be eligible for citizenship. He explained that the program had saved the nation millions of dollars and was of “utmost importance” to the future, and submitted an amendment to the pending legislation that would allow entry of an alien who, since termination of his membership in the Nazi Party, had not advocated its doctrine, program, principles, or ideology. Congress was amenable. The omnibus bill which they passed over the President’s veto in June 1952 did not exclude nominal members of the Party; it would admit those former members who for five years since the termination of their membership had *actually opposed* its doctrine and ideology, providing in addition that their entry was in the “public interest.”²⁹

The passage of the new immigration act—known as the McCarran-Walter Act—removed the distinguishing characteristic of Project Paperclip, the importation of scientists without reference to normal immigration proceedings. By the end of 1952

only twenty-eight specialists remained under "limited military custody"; 516 others and 1,063 of their dependents had obtained citizenship, thereby losing their peculiar status. But the act did not make it easy for the services to import additional scientists. A month after the legislation went into effect an Air Force officer expressed the military's frustration in a letter to a friend: "The channels through which all this has to flow, as you well know by now, is damn full of blockages and detours. There have been at least thirty things changed since you left in the entire procedure, and they have had to be settled one by one. . . ." That frustration served to deter further recruiting.³⁰

Changing conditions in Europe also dictated a radical slow-down in the recruitment of scientists. West Germany's economy had come alive, and could absorb large numbers of scientific and technical personnel. By 1954 her industries were in the market for chemists, physicists, geologists, and all types of engineers. Along with economic expansion went a burgeoning patriotism which deplored the overseas drain on native talent. In 1870 the German government had ejected American labor agents from the country; in the 1950's they had no such option, but they and their people did not hide their resentment. A publication in 1955 insisted that "we cannot sell our scientists like many German princes sold their sons in former times." It also praised those who had a sense of obligation to their homeland—Otto Hahn, Werner Heisenberg, and especially Dr. H. C. Reppe, who even while interned in prison refused "to have the door of his dungeon opened by a call to the U.S.A.," and later returned to his laboratory in Ludwigshafen. The military were alert to these "audible rumblings" about their activities, and preferred to recruit only if the German government did not object.

The lower level of migration also owed much to the fact that the Germans were no longer as eager to leave for the United States. In 1947 a scientist who had failed to get a contract wrote to a colleague at Wright Field that "perhaps after all, opportunity will come to us who are left behind with broken

wings." A year later a new impression was taking hold—that it was perhaps not such a great opportunity to go to America. The newspaper *Kieter Nachrichten* reported that "among the German scientists [who left in 1946] were some who wept with joy at their departure, because they were going to the richest country on earth. Today their joy has faded." This impression was based on accounts from Paperclip specialists and repatriates about their experiences in the country. It grew stronger every year as it merged with a reviving nationalism. After a visit to America in 1949, Professor Max von Laue, the Nobel laureate, wrote that Paperclip specialists did not live much better than prisoners, received the rations of an unskilled worker in the Ford plants, and still needed special permission to travel. The following year another physicist boasted in the highly respected *Physikalische Blatter* that he had rejected an offer from the United States. He would not allow the Army to lock him up "with all military honors into an American fort" and permit him to "go on an excursion only occasionally and according to the whim of some officer." When an American scientist replied that he had been scared off by rumors and all kinds of falsehoods about "officers as prison wardens," "starvation wages of \$6.00 per day," talk of "national honor," and "violation of one's pride and station in life," he held to his belief that scientists could live better at home.

The administrative impediments at home and the antipathy toward recruiting abroad signified the symbolic end of Project Paperclip. After 1952 the project limped along, but in name only. The military continued to contract approximately thirty exceptionally qualified individuals a year, and the CIA maintained a "Paperclip desk" in Berlin to lure others from behind the Iron Curtain. But the scope and purpose of the program had changed. The military's primary concern thereafter was to effectively utilize the veteran Paperclip personnel. This, too, was a challenge. In 1948 the German economist Gustav Stolper had described the "dissipation of the brains" as nearly fatal to his nation. "The scientists and engineers whose education was the

product of centuries of cultural revolution are scattered to the four corners of the globe." There was sorrow in his words, and also pride. "History alone can tell what fruits this transplanting of German genius to foreign soil will bear," he wrote.³¹

Plucking Their Brains

IN HIS ANNUAL REPORT to the nation in 1945, General Hap Arnold informed the American people that the Air Forces were "plucking" the brains of their German counterpart. "Whatever the Germans had of worth, we shall have," he pledged. "Whatever they hoped to develop, we shall know about." To the extent that Overcast envisaged the mere exploitation of Germany's wartime accomplishments, the services were able to honor that pledge. From the study of tons of captured documents and thousands of the specialists' reports, in countless personal discussions and many seminars, they came to know the scientific secrets of the Third Reich.

Yet knowledge alone was not power, as one of the scientists understood. "We wrote at first reports what we had done in Germany, then we worked out projects which seemed interesting to us," he remembered, "but all this was just paper. . . . In 1946 I worked out a project about celestial navigation, and I believe it contained many useful ideas. It was printed, I got no copy. I proposed to form a group of able German scientists and to carry out the project, no comment. Heaven knows what happened to my proposal." The fact was that nothing happened to his and to most of the other proposals that looked toward the development of future weapons. There was too little money for national defense, much of it unwisely distributed. There were too many regulations governing the project, some of them unduly restrictive. And there was little in the work or environment

of the specialists to generate enthusiasm. The managers of Paperclip spoke of "utilization," but for nearly a decade the term had only a peripheral relevance to their program.¹

External factors over which the lower-echelon officers had no control worked against the effective use of the Germans in the area of their greatest strength, research, and in their specialty, rocket and missile technology. This was preeminently true of budgetary limitations which devastated research and development until the Korean War. The prevailing military strategy had the same effect. The preoccupation of the services was being ready for total war, and their principal postwar goals—"universal military training" for the Army, seventy groups for the Air Force, and the flush-deck supercarrier for the Navy—were aimed at preparation for another World War II. Thus nearly all of their planning and funds went into the attainment of a minimum readiness for momentary and traditional missions. As late as 1949 a member of a special committee to investigate the Air Force research program significantly concluded: "I feel that the time has come to make some sacrifice from today's continuing emergencies in order to prepare for tomorrow's eventualities—to jar loose some funds, some competent personnel from the daily requirements in order to prepare for tomorrow's requirements." General Putt observed amidst the furor caused by the committee's report that it demanded "a new concept, a new religion, on the part of those people who are in the top positions that have been making the final decisions which have vitally affected research and development in the Air Force." In short, most military leaders were latecomers as patrons of new weapons.

The lack of vision of certain American scientists may have confined Paperclip even more. Dr. Vannevar Bush, a titan of innovation in World War II and extremely influential thereafter, expressed annoyance in 1945 at those persons who were writing about "a 3,000-mile high-angle rocket, shot from one continent to another, carrying an atomic bomb . . ." and added, "I say, technically, I don't think anybody in the world knows how to do such a thing, and I feel confident it will not be

done for a very long period of time to come." Four years later Bush was still berating "some eminent military men exhilarated perhaps by a short immersion in matters scientific," who had asserted that high-trajectory guided missiles spanning thousands of miles to hit a target were feasible. His judgment was almost certainly reflected in the unimpressive expenditures for all military missile programs until the Korean War: 1946, \$70 million; 1947, \$58 million; 1948, \$81 million; 1949, \$98 million; 1950, \$135 million; and finally in 1951, \$984 million.

While the administrators had to operate with little financial or official support, they also had to contend until the 1950's with an accentuated security problem. The scientists were former enemies, some with indeterminate backgrounds whose loyalty was open to question. In a broad sense they were security risks, and the War Department was not disposed to trust them completely. Various developments in Europe seemed to justify their suspicions—a report from a French general that the Germans were working in his country only for the reemergence of their homeland; a plot discovered in England to smuggle fifteen of their Germans to South America; and ample evidence that repatriates were spreading distrust of the United States among specialists awaiting shipment. Nor was the department willing to risk an incident that would lead to embarrassment; the public outcry in 1947 proved the danger of unfavorable publicity. As a result, they gave meticulous attention to surveillance and control—and, in doing so, lowered morale and made utilization more difficult.

The department's security regulations placed certain responsibilities upon both the specialist and his custodian. The latter had to maintain a security dossier, make frequent checks on the whereabouts of his charge, submit a monthly report on the method and result of surveillance, and provide an escort whenever the specialist went on temporary duty. For his part the scientist had to obtain prior approval for any absence in excess of seventy-two hours, see to his dependents' behavior, attend semi-weekly roll calls, and certify on Mondays and Fridays that he

and his family had observed the "Code of Conduct." The code, which every person signed upon arrival, carried a threat that any violation might result in a return to Germany. These regulations, however necessary, involved a costly and inefficient use of personnel by the using agencies, and a lack of confidence among the specialists. They were not designed to provide an atmosphere for free and creative research.²

That the services did achieve some success in view of these handicaps was due primarily to the leadership of the military officers at the local level. Two of them, Army Colonel Holger N. Toftoy at Fort Bliss and Air Force Colonel Donald Putt at Wright Field, were especially effective. Their persistent arguments in behalf of more liberal and logical arrangements provided the groundwork for favorable policy decisions, and their sincere concern for the German personnel had a saving effect on morale.

1.

The Department of the Army imported 210 Paperclip specialists, of whom 29 returned to Europe prior to immigration. The Ordnance Department utilized 132 at Fort Bliss, Texas; the Signal Corps 24 at its engineering laboratories in Fort Monmouth, New Jersey; and the Corps of Engineers, Chemical Corps, Quartermaster General, and Medical Department fewer than 10 each at their various installations. The 24 Signal Corps specialists—including physicists Drs. Georg Goubau, Gunter Guttwein, Georg Hass, Horst Kedesdy, and Kurt Lehovec; physical chemists Professor Rudolf Brill and Drs. Ernst Baars and Eberhard Both; geophysicist Dr. Helmut Weickmann; technical optician Dr. Gerhard Schwesinger; and electronics engineers Drs. Eduard Gerber, Richard Guenther and Hans Ziegler—were of more exceptional caliber than any single group imported under Paperclip. They were selected after a survey of thousands

of experts in communications, and were outstanding in the realms of equipment design and development and pure science. As early as 1948 the chief signal officer reported some of their accomplishments. Three of them—with knowledge unequaled anywhere in the country—had developed a special shutter and a camera which, when ejected from a V-2, oriented itself in seven seconds. General Electric had rejected a contract to design the camera platform alone, indicating that if time and personnel were available they could complete it for \$750,000. Professor Brill had advanced fundamental knowledge in solid-state chemistry and physics by eighteen months. Dr. Ziegler had saved approximately \$300,000 through his work on permanent magnet generators. And Dr. Goubou's research on microwave techniques had saved at least two years. Had his investigations been made by commercial contract—and none could be found with sufficiently diversified knowledge—the government would have had to expend two to three million dollars. By the 1960's, the Signal Corps members had attained high positions at Fort Monmouth; Dr. Ziegler had become chief scientist, three had become division chiefs, and three others branch chiefs.³

It was the so-called "von Braun team," however, that comprised the majority of the Army's German personnel, and their spectacular accomplishments—beginning in America with the "Jupiter-C" and continuing with Apollo 11—overshadowed those of all other Paperclip immigrants. The integration of the group into the nation's missile program began inauspiciously at Fort Bliss, Texas. They survived the irritations of "limited military custody" with more humor than the scientists elsewhere, in part because of their isolation, and in part because of the understanding administration of Colonel Holger Toftoy and Major James Hamill. They had adequate housing facilities in a former hospital annex, ate at the same mess hall with native Americans, and met with no hostility. Yet the team was a lightning rod for domestic critics, and their very presence challenged and baffled the War Department's security officers for more than two years. Because of the symbolic meaning of the V-2, the entire Paper-

clip project could be harmed through a breach of security, unfavorable publicity, or subversion. The result, as Major Hamill stated correctly, was that the specialists "were probably as closely observed, more carefully watched, than any group of civilians have been in the history of the world." ⁴

Washington's deep concern about conditions at Fort Bliss began in January 1947. An emissary from the WDGS visited the base and was "forcibly struck" with the need for a thorough investigation of the security procedures and the scientists' loyalty, especially the possibility of their receiving orders from organizations in Germany. Hamill explained that nothing significant had developed during the past fifteen months, but conceded that the installation of sound apparatus would be advisable if the War Department would undertake the activity. Several months later the intelligence officer at Fort Bliss stressed to Washington that a majority of citizens in El Paso, including leading and prominent persons, had welcomed the specialists. His own "reliable sources" had revealed only that the Germans "are establishing relations with persons in El Paso who were born in Germany or are of German descent and are using ——'s [a German's] grocery in El Paso as a gathering place; that several German scientists and technicians have been known to cross the border into Juarez, Mexico; and that the Germans keep very late hours in local beer gardens. . . ."

In the meantime the War Department had enlisted the Fourth Army to make a security survey. They did so with assiduous thoroughness; they reported on weather in the area—temperatures, relative humidity, precipitation, sunshine and surface wind and thunderstorms. They described the surrounding countryside in detail—the mountains to the north, south, and west, and the rolling sand dunes covered with sagebrush and cactus to the east. "The mountains which surrounded the installation," they concluded, "offer excellent refuge for any group that might care to operate within the area. Enemy or subversive groups could set up observation posts in the mountains and observe the entire project and its activities." The investigation might have

rested there had it not been for two unexpected developments. At 7 A.M. on May 29 the experts fired a V-2 over the Organ Mountains to a testing spot in the desert. It veered to the south, crossed the Rio Grande and landed in a cemetery near Juarez. While a junior officer joked about being the first outfit to fire a guided missile into foreign territory, others worried about possible sabotage. A month later another blow struck when Representative John Dingell of Michigan charged that the Germans were being "feted and treated" as heroes by a "collaborating" Army whose leaders were "nuts." The nation did not need the "Nazi killers," he added, and it was a shame to hire and house them when they "ought to have been hanged."⁵

The public relations men went to work in the wake of the congressman's assault, and denied that the Army was "feting" anyone. The El Paso *Herald Post* gave assistance with a three-part series about the specialists which told of German parents spending \$2.25 a week to "Americanize" their children; of polite and well-disciplined German children who liked to recite the Pledge of Allegiance and sing the "Eyes of Texas"; and of German mothers who went to class to learn English, American history and customs, and how to market. Meanwhile the Chief of Ordnance was explaining to Washington that he could not utilize the scientists without permitting them access to certain technical information on new developments unknown to them before.

The War Department acknowledged in November 1947 that the security threat in El Paso was not overwhelming, and admitted that they had been somewhat unrealistic. They had a lingering anxiety, nonetheless, about the leakage of information to German scientists working in Russia or the Iron Curtain countries, and about adverse publicity. An April 1948 memorandum from Washington noted that certain individuals, such as "those who have suffered directly at Nazi hands (bereaved parents, disabled veterans, refugees, et al.) are a potential source of pressure for the discontinuance of the entire Paperclip Project." The security situation at Fort Bliss was in fact potentially serious.

In view of the simultaneous difficulty the War Department was having in obtaining visas, any unfortunate incident could have been disastrous. But from the point of view of the operating unit, the stringent regulations were harmful. It was not until the summer of 1948 that Washington agreed that "the employing agency should be able to determine at what point restrictions begin to adversely affect morale and productivity," and allowed them discretion in order that "research and work may be fruitful." Until then the rocket experts were in the position described by Tom Lehrer:

*Midst the yuccas and the thistles
I'll watch the guided missiles
While the old F.B.I. watches me!
Yippee! ⁶*

They still had certain missions to accomplish, however. One was to answer technical questions posed by Army, Navy, and Air Force contractors. In this regard, according to Colonel Hamill, the Germans "did one of their greatest services. They were able to tell people what blind alleys not to go up because they had been up all the blind alleys in guided missile research, and they were able to save us not only money but time." A second assignment was to continue their work on a new weapon known as the Hermes II, a two-stage missile that used a modified V-2 as a booster. Although facilities were below the bare minimum essential, a few advancements followed in the fields of ram-jet propulsion, tracking methods, stabilized platforms, and guidance and control systems. But the scientists did very little advanced research. In one important instance, higher headquarters disapproved a research plan formulated by Hamill and von Braun in 1947 to develop a 200-ton-thrust rocket motor. There was not enough money and no official requirement for large rocket motors.

The final and perhaps most important mission of a small number of the team was to assist in the firing of captured V-2 rockets, and to participate in projects accomplished by the Army

together with other agencies. The most important of these was the "Bumper" project, which set altitude and velocity records in 1949 by using a two-stage missile composed of a V-2 with its nose cone modified to accommodate a "Wac Corporal." In 1947, the Germans also worked with the Navy to launch a V-2 from the aircraft carrier U.S.S. *Midway*, and with the Air Force to make plans for giving a primate a ride in a V-2 at White Sands.

Despite these limited attainments, the Chief of Ordnance reported in 1948 that the Germans' "experience, whole-hearted cooperation, and ability are saving this country many years of costly development effort—presently estimated to be ten years' time and \$500,000,000." The rocket experts were less satisfied. More than any other Paperclip group they considered their abilities to have been largely wasted. There was almost unanimous agreement that "Project Icebox," as they described their efforts, was "too slow in developing, insufficiently financed, and ill-defined in policy." There was also disappointment at the lack of team projects. One wrote, "General attempts to 'pick our brains' were made, and they may have resulted in some progress on the part of others. There was, however, no organized and consolidated use made of the 'team' as such. We were pretty much 'put on ice' and merely held in abeyance." 7

The years of thwarted desire created no bitterness among the specialists; they properly ascribed them to political and economic factors rather than to their being former enemies. Several of them did express dismay that there was not an earlier awareness of the necessity for missile and space advancement, as in the following perceptive comment:

In the light of the then prevailing opinions and political thoughts (hopes?) it was a remarkably courageous thing by the U.S. Army and the Administration to establish a missile group in Fort Bliss and put it to work on the general advancements of missiles. Manpower, funds, and general resources were pitifully small, and just barely adequate to keep the group together and explore the next logical steps of

rocketry; i.e., define the problems in basic research and technology that had to be resolved before long-range ballistic reentry and space flight could be tackled.

For these and some other reasons, you may say that the Paperclip group was adequately used.

If you say, however, that the *general* military thinking should have earlier assessed ballistic missiles as to their true significance (some lonesome voices were heard all the time) and that the public should have let itself be convinced earlier and faster that space could be opened to mankind, then, of course, the answer to your question is "no." If the Fort Bliss group together with research institutes and the U.S. industry had been given the resources to proceed on a broad basis, we could be three to five years ahead, depending on the field of endeavor.*

2.

The United States Air Force sponsored the largest number of Paperclip specialists. Between 1945 and 1952 they imported 260, of whom 36 returned to Germany and 1 reemigrated to Argentina. They contracted primarily in the fields of aeronautical research, such as supersonics, jet and rocket engines and fuels, ceramics, and aviation medicine, in which American technicians had little or no experience. They utilized approximately 30 persons at the School of Aviation Medicine at Randolph Air Force Base, Texas, and most of the others at the Air Materiel Command at Wright Field, Ohio.⁸

There was never any question about the benefits gained from the utilization of scientists at the School of Aviation Medicine in San Antonio, Texas. For sixteen months prior to their arrival

* The specialists' evaluations throughout this chapter are taken from their replies to a questionnaire in 1960 and 1961. For an explanation see below, page 271.

in the United States, the group led by Professor Hubertus Strughold had demonstrated their competence at the AAF Aero-Medical Center in Heidelberg. During the hectic months after the end of hostilities, the Air Forces Surgeon in Europe, General Malcolm C. Grow, conceived the ambitious plan to publish the thousands of captured documents. For nearly a year the scientists translated documents and continued investigations on thirty-five uncompleted research projects. But General Clay's decision that activities of the center were in conflict with his prohibitions on military research ended their usefulness in Germany.

In March 1947 approximately thirty of the scientists moved to Texas. They were a distinguished group: Dr. Hans Clamann, Ulrich Luft, and Kurt Reissmann in physiology; Professor Paul Cibis and Dr. Heinrich Rose in ophthalmology; Dr. Ingeborg Schmitt in physiological optics; Dr. Juergen Tonndorf in otolaryngology; Professor Konrad Buettner in climatology; Professor Helmut Beinert in enzyme chemistry; and the two brothers, Drs. Heinz and Fritz Haber, in physics. And because they were latecomers, they suffered few of the burdens of the early arrivals. A few of the scientists labored for a short time to edit the compilation of significant wartime findings of fifty-seven of their colleagues; the Air Force published it in 1950 as *German Aviation Medicine in World War II*. The others moved quickly into the various laboratories of the School of Aviation Medicine, and pioneered studies in space medicine. In 1949 Dr. Strughold began an inquiry into the medical problems involved in flights outside the atmosphere, and within two years his and the others' work had grown to such proportions that the Air Force formed a Department of Space Medicine. Strughold became the director (and the world's first professor of space medicine), and astrophysicist Heinz Haber its first staff member.

The department grew slowly into the nation's foremost center for such studies, but still did not allow adequate opportunity for the intellectually aggressive Germans. One of them felt—and it was a feeling shared by preeminent personnel at all government

establishments—that the Air Force was too slow in trusting Paperclip scientists in executive positions: “After, let me say, three years there was little question of loyalties in most of us, and there was no apparent reason why excellent scientists were supposed to work under department chiefs vastly their juniors in age and competence. It took them a little too long to realize that we had outgrown the original Paperclip eggshells. This policy was a career loss of some three to five years for many of us.” Yet the contributions of the group, then and later, were remarkable. Nineteen of them, for example, had written 31 percent of the articles listed in the 1958 edition of H.E.W.’s *Bibliography of Space Medicine*.⁹

In their recruiting for other laboratories the Air Force sought two types of individuals—the superlative expert in his field, considered to be the best available in the world, and the basic engineer, equal in ability to the foremost native talent.* Among their leading specialists were physicists Dr. Johannes Plendl, Dr. Wolfram Kerris, Dr. Carl Traenkle, Dr. Werner Rambaucke, Dr. Heinz Fischer, Dr. Otmar Steutzer, Dr. Walter Wessel, Dr. Max Nagel, and Dr. Gottfried Wehner; biophysicists Dr. Ernst Franke and Dr. Henning von Gierke; geophysicist Dr. Rudolf Penndorf; mathematicians Dr. Karl Guderley and Dr. Hans Oestreicher; ceramicists Dr. Berthold Weber and Professor Wilhelm Buessem; aerodynamicists Dr. Ernst Eckert, Dr. Friedrich Weinig, and Dr. Gerhard Braun; physiologist Dr. Otto Gauer; meteorologist Dr. Heinz Lettau; chemist Dr. Erwin Weise; aeronautical engineers Dr. Helmut Heinrich, Dr. Anselm Franz, Professor Rudolf Edse, Dr. Bodo Wolfframm, and Dr. Albrecht Herzog; and General Walter Dornberger.

Those specialists who arrived at Wright Field after 1946 found the circumstances relatively pleasant. The long-range program had removed the basic problems which had so disturbed their predecessors at the “Hilltop”—anxiety about families, un-

* Of the first 150 specialists contracted in Europe for all the services, 10 were listed as professors or doctors, 33 as senior doctor engineer, 44 as junior doctor engineer, 45 as engineer, 28 as skilled laborer or master mechanic.

certainty about the future, and mail and salary delays. Indeed, apart from the confusion regarding immigration, they had only one continuing complaint—the lack of family housing. Their contracts stated that the government would provide quarters when available, and when not available would take every proper step to arrange for suitable civilian housing. Officials at Wright Field asked for an allocation of \$200,000 to construct family units, but learned that they would have to transfer it from research and development funds. They considered establishing a trailer park on the base, but the judge advocate ruled that it was illegal. They were left with the responsibility of locating civilian housing, but demurred out of fear of adverse public criticism. This left fifty-five specialists to acquire their own housing in a city with a housing shortage.

The limitations on their work were far more discouraging. In December 1946 the Chief of the Analysis Division observed that “we are not obtaining the maximum benefit from the 100-odd German scientists we have at Wright Field. For one thing, too little actual design and development work is done here, most of it being done by contractors, and that is the work these scientists are fitted for and strongly desire to carry on. For another thing, the Civil Service people here are allergic to having these foreigners around, much less collaborating with them.” He saw as the solution the transfer of the specialists to the Air Force contractors who could benefit immediately from their knowledge. But the criticism of the program during the next several months made it necessary for a military escort to accompany each specialist making such a visit. This procedure was too costly to follow on a large scale, especially with respect to “loans” for less than thirty days. Authorities did begin to transfer personnel from the Intelligence Department, which was concerned with exploiting their previous knowledge and experience, to the engineering division, which was interested in using them on basic research projects looking to the future. Their objectives, outlined in March 1947, were noble: “To test, under most favorable conditions and with the best available guides, the more

promising designs and theories which have existed until recently only in the minds, personal notes, and secret memoranda of the cooperating scientists; to expedite the results by immediate use of proven techniques; and to speed all related phases of the research and development program which may affect the national security." ¹⁰

Yet in the opinion of the specialists, fifty-three of whom later recorded their sentiments, the command never achieved its objectives. In a ratio of two to one, they considered the operation inefficient. As one wrote:

No use at all was made of my abilities during the first nine to ten years. We had intended to work as groups on special problems, which would have been given to us, or according to our own initiative, but all groups were split up and no initiative was permitted. After one year with the Intelligence I was transferred to the Power Plant Lab but did not have any opportunity to work on any engines. In 1948, I was transferred to the Armament Lab, and later to the Office Air Research which is now Aeronautical Research Laboratories, where I became a designer for instrumentation and chief of a small design group consisting of Paperclip scientists. It was mostly small unchallenging work.

The scientists attributed the inefficiency to a number of factors, but most often to the supervisory personnel. An engineer explained:

The Paperclip program was poorly organized. Utilization of personnel was mostly left to supervisory personnel who frequently did not know how to handle this problem, especially since we had no clearance and did not know the routine procedures. I believe that the policies regarding the utilization of the Paperclip scientists, as established by General Putt, were sufficient to utilize the full capabilities of the personnel. However, it appeared that they were not en-

forced or even followed up. Correspondingly they were "watered-down." During the first years in many cases supervisors did not know what to do with the additional personnel, especially in view of the RIF [reduction in force] action prior to the Korean War.

Another described in a more explicit sense the influence, for good or bad, of the supervisors:

You probably heard that the German jet power plant group was "put on ice," as we used to say, because the trend at Wright Field at that time was toward radial flow turbines as developed by the British, contrary to axial flow turbines as developed by the Germans. This assumption was wrong as is documented by the fact that all large jet aircraft today use axial flow jet turbines. The group that had done advanced work in recovery and parachute application was fully utilized from the very beginning, mainly due to the attitude of supervisory personnel and our advanced knowledge in recovery.

Several believed that the disorganization resulted from an absence of any policy whatsoever, and deplored the lack of interest and support from the government: "Here, it took years before decisions could be made," wrote one. "In Germany: enthusiasm and willingness to sacrifice; here: complacency and the trend to 'take it easy.'" Several others believed that little could be expected of government employment under any circumstance; as one expressed it, "Under military guidance, never conditions for a creative research atmosphere will exist." And nearly all indicated that they could have accomplished more had they not been "frustrated by being kept in desk jobs surrounded by clusters of compatriots."

But the Air Force itself, in a series of official studies, gave a much higher rating to their utilization program. In 1946 Colonel Putt explained to Stuart Symington that in only four days three of his scientists had prepared a report on the design of the

guided missile "Chowhound," which represented more information than an American research facility had obtained over a long period of time and at considerable expense. In 1947 a preliminary review based upon 9 percent of the assignments of specialists established the total savings at \$1,572,000 and 269,160 manhours. In addition, North American Aviation had reported savings of approximately \$40,000 through an interview with a scientist on supersonic wind tunnel design, and General Electric had predicted possible savings of as much as \$1,000,000 through consultation with another.

A more detailed report later in the year estimated the approximate savings to "present and future" Air Force development programs at \$30,000,000. One small group of Germans had saved the country at least five years in supersonic wind tunnel research, and several others would save \$6,000,000 on rocket-engine projects and \$1,200,000 on the development of long-range reciprocating engines. Savings of many millions of dollars should flow from the work of individual specialists; \$50,000 a year from a physicist working on high-temperature alloys; \$75,000 a year from a ceramicist; \$250,000 and ten years of research from an optical expert; \$100,000 a year from an engineer in the development of parachutes; \$250,000 from a metallurgist working on jet-turbine blades; and \$20,000 a year from an engineer employed in development of oxygen equipment. A subsequent estimate placed the ultimate savings at nearly \$2 billion.¹¹

3.

Naval officers ended World War II with a conviction that they would have to support an elaborate and continuing research and development program. Led by the young "Bird Dogs," they formed close working relationships with civilian scientists and engineers, and in 1946 established the Office of Naval Research, which won universal plaudits for its dedication

to science. In a congressional investigation in 1949, civilian scientists of the highest repute praised the Navy time and again as the one service that had done the most to advance a wide variety of basic research programs since the war. It was in this general atmosphere that the Navy selected its 111 Paperclip specialists; and to a greater degree than the Army and Air Force, they emphasized the procurement of outstanding scientists alone.

The Navy utilized the scientists differently as well, in that they scattered them widely throughout the country. Very seldom were as many as ten of them working together at any one laboratory. The Naval Ordnance Laboratory, which installed the Kochel wind tunnel at White Oak, Maryland, at a cost of \$2,500,000, employed a group including physicists Dr. Egon Hiedemann and Dr. Frank Matossi, and chemist Dr. Karl Gruenewald. The Bureau of Ordnance also utilized Drs. Peter Wegener, Ernst Winkler, Eva Winkler, Gerhard Eber, Hans Snay, and Richard Lehnert, all in physics, ballistics, and thermodynamics. The Bureau of Aeronautics employed Drs. Friedrich Ringleb, Herman Schwan, Edgar Kutzscher, Adolf Busemann, and Heinrich Benecke in laboratories in Philadelphia, Pensacola, Lakehurst, and Johnsville; and utilized several others at its Air Missile Test Center in Point Mugu, including Drs. Werner Hohenner, Hans Hollmann, and Otto Schwede. The Bureau of Medicine employed an exceptional group at the Naval Research Institute in Bethesda and the Submarine Base in New London, Connecticut—Drs. Georg Madelung, Charlotte Kitzinger, Karl Schaefer, Theodor Benzinger, Hermann von Schelling, and Dietrich Beischer.

Apparently because of their separation into small groups, the Navy specialists enjoyed greater freedom from security regulations and assimilated more easily than their compatriots at Wright Field and Fort Bliss. For that reason, too, their contributions are essentially immeasurable; they were impressive as individuals rather than as a team. In a "reasonable appraisal" of its role in Paperclip in 1949, the Navy did offer a general evaluation: "It is probable that no program has ever paid such

rich dividends. It is not only the direct savings in time and money . . . it is also the acquisition for this country of some of the finest technical brains in the world—invaluable additions to the nation's resources.”¹²

4.

In November 1952 an aircraft executive wrote to Dr. Wernher von Braun suggesting the formation of an advisory panel from industry, the universities, and the federal government to sponsor a large program for the development of rockets and missiles, much as an earlier group had spurred the construction of the atomic bomb. Von Braun replied that “in view of the imminent change in administration it might be wise to wait with big ideas until the dust has settled. I am quite confident that our general plan of approach has many friends who might have a lot of influence after Ike has taken over the reins.”

Nineteen fifty-two was a year when such confidence and optimism were rife among the veteran Paperclip scientists. The McCarran-Walter Act had virtually assured their citizenship, and thereby freed them to seek new opportunities. Throughout the decade they dispersed to such universities as Yale, Michigan State, Wisconsin, Oregon State, Minnesota, M.I.T., Louisville, Kansas, Washington, Chicago, and Ohio State. And they entered the corporations—Boeing, AVCO, Lockheed, Dow Chemical, Raytheon, Convair, General Electric, Bell, Northrop, RAND, Math & Metrik, Curtiss-Wright, Dresser Dynamics, Ramo-Wooldridge, Martin, Westinghouse, R.C.A., and Fairchild—frequently in executive positions. Conditions were also better for those who remained in military employment. The Joint Chiefs of Staff arranged their transfer to Civil Service status, and the comparatively massive infusion of research and development funds opened new projects. The Wright Field contingent of 148 specialists moved to the new Air Research and

Development Command, whose purpose it was to revitalize the technical program. Within two years the ARDC had separated them into smaller groups to work at the Missile Development Center, Holloman, New Mexico; the Flight Test Center, Edwards Air Force Base, California; and the Cambridge Research Center in Massachusetts.¹³

The mid-1950's were also far more congenial to research on guided missiles. Larger budgets in 1951 made it possible for the Army to work seriously on the Redstone, a direct descendant of the V-2, and for the Air Force to renew development of the ATLAS, the first American ICBM. Three years later a report by a group of nuclear scientists and missile experts headed by the famous mathematician John von Neumann predicted it would soon be possible to build nuclear warheads light enough for delivery by missiles. This likelihood dictated the highest priority for ballistic missiles programs. Yet Wernher von Braun had to wait five years for his opportunity. With his rocket team at a new location in Huntsville, Alabama, he improved the Redstone and proposed in 1954 to launch a satellite through Project Orbiter. The following July "Ike" approved a plan for a small earth satellite as part of the United States' participation in the International Geophysical Year, but in a complex and notoriously bad decision, the Department of Defense chose the Navy's Vanguard for the honor.

While the Army specialists fumed in disappointment and anger, the Russians seized the satellite initiative. On October 4, 1957, they launched Sputnik I, and a month later a much heavier Sputnik II with a canine passenger. Suddenly there was a "space race" in addition to an "arms race" with Russia, and the first American entry, Vanguard, was an acute embarrassment. On December 6, before a national television audience, it exploded and collapsed into the sands of Cape Canaveral. In the meantime the von Braun team had obtained Defense Department authorization to revive Project Orbiter. They hurriedly converted their Jupiter-C, an elongated Redstone, into a satellite launcher. On the evening of January 31, 1958, they were prepared for the launch. "Floodlights were turned on and the

missile stood like a great finger pointing to heaven—stark, white, and alone on its launching pad,” wrote Major General John Medaris in his description of the event. “The air in the blockhouse seemed literally charged with electricity. As the missile started its slow, majestic rise you could hear almost every voice in a chorus that sounded like a prayer, saying, ‘Go, baby, go!’ It did! Up and up. Faster and faster.”¹⁴

In Huntsville the citizens quickly changed the signs entering the city from “The Missile Center of the U.S.A.” to “Space Capital of the Universe,” and in Washington, Senator Mike Mansfield extended his personal congratulations to the von Braun team. “Their success means much to the United States and the whole free world,” he said. But the shadow of Sputnik clouded the victory. The American people were proud of their German scientists, but they believed that other and better ones had helped the Russians; President Eisenhower himself attributed Sputnik to events of 1945 “when the Russians captured all the German scientists in Peenemünde. . . .” Within a year Senator John Stennis was complaining that the American people should disabuse themselves of such a simplistic explanation. “I get that in my mail, I get it when I go home, I find it on the street corner everywhere. They think that a few German scientists have done all this—or some achievement like that.” In the irrational atmosphere of the time, with Sputnik “mocking” the people with its “beep-beep,” as John Foster Dulles put it, undermining their pride and prestige, they did not. Instead, would-be historians scrutinized the American program to import and utilize the Germans, and declared it a Cold War failure. They condemned those who had made Paperclip possible, from the recruiting officers in the American zone to Harry Truman in the White House.¹⁵

The indictment had a long and partisan history, stretching back to Congressman Busbey’s 1948 attack on the State Department. In 1951 Senator Bourke Hickenlooper explained that we did get a few German scientists at first, “but most of them had to go back home. . . . The German brains went to Russia. Now the Russian tanks have impenetrable armor.” In the same

year Congressman Carroll Reece charged that "a large part of the formidable Russian militarism of today was clearly marked 'made in America' or 'donated by America from Germany.'" And in 1954 Senator Joseph McCarthy declared that "criminal negligence" on the part of American authorities after the war was enough to account for the Soviet missile threat. None of these early charges had much effect, but Sputnik made them attractive. Three weeks after the Russian feat a subcommittee of the Senate Judiciary Committee met to investigate "Soviet Kidnapping of Space Scientists," and revived a story that had caused a ripple in 1954. A Russian defector, Captain V. L. Sokolov, had testified that the chief designer of the Heinkel Aircraft Company, Siegfried Guenther, had offered his services to an American officer in 1945, only to be refused. The officer called him an impostor and charlatan, according to Sokolov. "Some intelligence officers were stupid enough to think that their engineers were far better than the German engineers, just because their country had defeated Germany." The Russians then hired Guenther, who eventually designed the MIG fighter. The subcommittee also "discovered" that American occupation forces had "gratuitously" turned over to the Russians the V-2 headquarters at Nordhausen with all its personnel, a belief that likewise endured. "German scientists who tried desperately during the last days of the war to surrender to the West were refused," decried a *Life Line* radio broadcast in 1962. "The great majority were purposely permitted to fall into Soviet hands. Thus there was presented to the Communists the space development plan originally worked out by German scientists, including a program for rocket and space travel."¹⁶

While Russian defectors were disclosing the blunders of the Army, Republican politicians were denouncing the folly of Truman. They took a comment of von Braun—that "the United States had no ballistic missile program worth mentioning between 1945 and 1951," which was true—and turned it to partisan advantage. The leadership, Senator William Knowland and Representative Joseph Martin, charged that the Truman administration would have to accept the blame for Russian superi-

ority. Congressman Elford Cederberg claimed that America could have had a 100-ton rocket in 1946, but "Truman in his folly stopped all long-range missile projects. . . ." Forgetting the nearly unanimous bipartisan support for small military budgets in those years, he exclaimed, "At no time did the Truman Democrats take the missile search seriously. Only the Republican leadership faced the facts."¹⁷

The first public evaluation of Paperclip in the scales of the Cold War was harsh, and wrong. The Russians did obtain great benefits from the Germans—their first generation of jet fighter planes, their entire air defense system, the prototypes for most of their guided missiles, much of their submarine technology, and some of their nuclear competence. And they did employ some outstanding personnel, including Siegfried Guenther from Heinkel; Dr. Adolph Betz, an authority on swept-wing aircraft; B. C. Baade, an air-frame designer from Junkers; Professor Gunther Bock in aeronautics; and Professors Fritz Vollmer, Gustav Hertz, and Peter Thiessen in nuclear physics. Yet there was a basic difference in the quality of those selected. For the most part the Russians had available only engineers, technicians, and laborers.¹⁸

More significant with respect to the relative value of the scientists' contributions is that the Russians merely drained the Germans of their knowledge and then gave them a three-year "cooling-off" period before returning them to Germany. What the American people did not consider—or know—in their early appraisal of Paperclip was that the Germans who had gone to Russia had long since returned home, while the rocket team and most of the other specialists had become Americans. That awareness came when the flight of Apollo 11 restored American pride and prestige. It was an Englishman who inadvertently made the point. Duncan Sandys, who had planned the massive 1943 air assault against Peenemünde, hoping to kill the scientists, sent a cable to von Braun: "Warmest congratulations on your great contribution to this historic achievement. I am thankful that your illustrious career was not cut short by the bombing raid in Peenemünde twenty-six years ago."

CHAPTER EIGHT

“The Deeper Meaning”

THE GERMAN SPECIALISTS were not merely contributors to an expedient American enterprise but human beings who chose to leave their homeland to seek a more promising future. They were unique in comparison to the millions who preceded them to the “New World” because of their special attributes and the peculiar circumstances of their migration. They nonetheless confronted some of the same difficulties of adjustment to a new society. The degree to which they were able to make that adjustment was of great significance, not only for themselves but for the nation as well. In the final analysis, their success determined that of Project Paperclip.

One of the most striking characteristics of the “waves” and “tides” of migrants who for centuries have sought America is their kaleidoscopic variety. They came, as Carl Sandburg expressed it, “from six continents, seven seas, and several archipelagos,” and they carried with them a congeries of ideas, values, and customs. Yet the Paperclip specialists, as an immigrant group, were unlike any previous newcomers. Their numbers were small, comprising hardly a ripple when viewed against the sea of historical migration. They were also remarkably homogeneous. The places of birth of the 475 who were in the United States in early 1948 were as follows: Germany, 428; Austria, 16; Czechoslovakia, 7; Poland and Russia, 5; Switzerland, Estonia, and the Free State of Danzig, 3; Hungary, 2; Belgium, Italy, and Yugoslavia, 1. There was even less diversity with respect to their

professional backgrounds. The very nature of the movement deemed that all of them be skillful in some field of science and technology.

They were extraordinary for another reason. "It might not be an exaggeration to say," wrote one of them, "that the Paperclip program was the first in American history where an entire group of immigrants were far above average in their intellectual capacity and mental heritage." This is not to say that they overshadowed other groups in the individual quality of their intellect and talent. In fact, among the thousands of their countrymen who preceded them to the United States as refugees from Nazism, there were many—mathematician Albert Einstein, physicist Hans Bethe, chemist James Franck, psychologist Kurt Lewin, architects Walter Gropius and Mies van der Rohe, composer Paul Hindemith, conductor Bruno Walter, painter Hans Hofmann, and theologian Paul Tillich, to name only a few—whose accomplishments surpassed those of any single Paperclip specialist. Yet taken as a whole, the group's level of education and degree of skill were unprecedented in the chronicles of immigration.¹ There is very little in the public record, however, that describes the movement from the immigrants' point of view. Only two of the specialists—Wernher von Braun in numerous speeches and articles, and Dieter Huzel in his autobiography, *From Peenemünde to Canaveral*—have written of their experiences, and both were members of the "rocket team." It is perhaps only natural that scientists and engineers, and especially those employed in sensitive positions, should have neither the time nor the inclination to serve the needs of Clio. Yet 165 of them did take the time in 1960 and 1961 to offer their thoughts and opinions in response to a questionnaire. Their comments provide some insight into the more personal elements of immigration and assimilation which were of such great importance to the development of Project Paperclip.*

* I sent the questionnaire to 403 specialists, of whom 165 (41 percent) replied. The response was exceptionally high, and would have been greater had it not been for the decision of officials at one military installation that

1.

Very few of the Paperclip specialists would have voluntarily transferred their abilities, and eventually their allegiance, from their native land to the United States had it not been for disastrous economic, psychological, and political conditions in postwar Germany. The prospect of employment in America had a magnetic appeal essentially because of the "push" factors operative at the time.

For at least three years after the war Germany was a physical wasteland, a nation of rubble marked by extreme economic deprivation. This appeared to most Americans in the abstract, but for the German people it meant that the elemental fact of their existence was hunger. And the hunger was nearly universal. A representative from the Rockefeller Foundation who toured the country in the autumn of 1947 to investigate the status of the universities was stunned to learn that faculties had to spend much of their time either raising or foraging after food. At a medical institute in Freiburg he discovered that the director allowed his staff to take every other weekend to go into the countryside on a "calorie hunt," and concluded that the notable lack of energy of the professors was "simply a matter of lack of calories."² For this reason alone, many of the specialists were eager to accept employment elsewhere. "In April 1948, when the American liaison officer contacted me," wrote an engineer, "I was at the very bottom of my existence, three times bombed out

a reply was not in the best interests of the service. The "study group" of 165 nevertheless represents 25 percent of the total number of 642 Paperclip specialists in the country as of 1952. In that I was able to conduct extensive follow-up interviews with only five of the respondents, I make no claim for the account as a precise scientific study, although on several occasions I have made generalizations based upon statistical deductions in order to describe central trends or patterns. My intent, however, is to give a representative collection of the specialists' own impressions and opinions. Toward that end, and in order to give some indication of their facility in the English language, I have made no changes in the spelling or grammar of those excerpts quoted. All of the quotations, unless otherwise cited, are taken from the questionnaire replies.

with 5 hungry motherless children (my first wife died in a bombing raid), and without hope for a professional future. Therefore I accepted his offer without hesitation, although there was a rumor that the German Paperclip specialists merely were 'laid on ice.'"

The basic importance of food as a motive for emigration was likewise evident in some of the letters mailed (through the censors) by specialists in the United States to their families in Germany. One very disgruntled person who wanted to return to Europe as soon as possible informed his wife that his stay would not have been in vain, because he would "send so many food packages from this rich country" that they would be able "to master conditions in Germany and keep their beautiful apartment." Another told his wife that the only reason he signed a contract was because of the opportunity to send food packages home, and that a number of other specialists thought "on the same line."³

The "flight from hunger" was closely related to the disillusionment of the specialists about their future. An anthropologist who interviewed more than fifteen hundred Germans between December 1945 and June 1946 found them to be lonely, self-centered, pessimistic, confused, without hope, and convinced that prewar standards could not be achieved within their lifetime. They can only "work on in despair," he reported, "hoping that in some way or other outside forces will provide assistance. . . ." The outlook for technical personnel was especially bleak. The authorities had prohibited research of a military nature, and the severe damage to laboratories, estimated at an average 61 percent total destruction, placed a limitation on non-military employment. Overcrowding in the American zone aggravated the already dismal situation, and left individuals idle or forced them to seek employment outside their professions.⁴

Opportunism with respect to their careers therefore became a primary inducement for specialists to accept employment abroad. One engineer described his plight and his decision as follows:

I could find a job only as an unskilled laborer with a vegetable gardener. One days pay could buy just a few cigarettes on the black market. I could not find work as a mechanical engineer, what I am from profession. Therefore I followed gladly an invitation of the American government to come to this country to work in my profession.

A supersonics expert decided, in essence, to follow his life's work to America:

Considering that the wind tunnel installation at which I had worked for almost nine years was moved to the U.S.A. it was quite naturally to accept the offer given to me by the U.S. Government giving me the opportunity to continue work in a field in which I had accumulated so many years of experience and in which I had made major original contributions. Furthermore I felt that living conditions in the U.S. were much more favorable for rebuilding a well-founded and stable existence than in any other European country.

And the director of research for a large company in Berlin signed a contract because he saw no hope that he would be able to work in his former position for many years. "Two plants of the company, one in Berlin and one in Mecklenburg," he recalled, "were dismantled by the French and Russians, respectively. The third plant in Düren (Rheinland) was nearly destroyed."

Although hunger and unemployment were the major factors in the specialists' desire to leave Germany, the migration cannot be explained solely in terms of economic motivation. In various ways the scientists' considerations regarding the Soviet Union prompted them to leave. Some were apprehensive that Europe might become a future battleground, a possibility which an American observer noted was being discussed with "a mixture of dread and fascination" by most Germans as late as 1947.⁵ One specialist, though not convinced that war would come, was nevertheless worried:

I was somewhat afraid of the political situation in Europe, particularly in regard to the growing tensions between Russia and the United States of which most Europeans became aware much sooner than the average U.S. citizen. At that time I was almost convinced that a possible future war between Russia and the United States would be the end of all civilization in Europe.

Much more important was the profound fear of Russia, engendered by Hitler's tirades against the country and supported by vivid stories of happenings in the Eastern zone. A scientist explained the reasons for his fear:

After the destruction of my Institute in Berlin-Dahlem, my family and I were in a rather hopeless situation. The Russians tried several times to "invite" me to come to the East zone of Germany, and to accept work for their military administration. Later they became urgent sending me higher officers and scientists from the Academy of Sciences in Moscow who made big promises to me, if I would make up my mind to join them as several of my scientific friends in Berlin-Dahlem had already done. I was happy enough to delay the negotiations until I had contact with my American friends who invited me from their side. The FIAT organization helped me a lot to escape the offers from the Russian side, until I could be in safety in West Germany. The Russians then changed their policy and threatened members of my family, partly with arms in hand. It was absolutely necessary to also withdraw my family from Berlin, and to bring them to southern Germany in the American zone.

For a few of the specialists, such as the distinguished ceramist Dr. Berthold Weber, the fear of the Soviets was based on firsthand experience. Dr. Weber chose at the end of the war to continue in his position as chief chemist at the Siemens Schuckert Porcelain Works in Neuhaus, Thuringia. Everything went well until he had a "collision with Russian soldiers" in July 1946:

One day, when driving home in my car from Neuhaus to Sonneberg after business hours as I used to do every day, I happened to notice, at a short distance from the Russian turnpike, a marching column of Russian soldiers. We were having a thunderstorm with heavy downpours. At a sudden shower, the soldiers, protecting their heads with their uniforms and without looking where they were, came running up to the road just into my car. On this occasion, one of the sergeants was hurt. His comrades, seeing this, rushed at me, dragged me out of my car, gave me a thrashing and trod on me with their feet in a most cruel manner and finally locked me up in a barn adjoining the Russian headquarters. Without listening to the explanations I was about to give them, the soldiers came back to the barn several times, dragged me out again in the road and beat me anew, leaving me bleeding from several large wounds on my head and my hands and consciousness. One of the soldiers, who was obviously drunk, shot at me with his pistol without however hurting me. Subsequently I was kept a prisoner, during three days and nights, in the cellar of the Frontier Headquarters, whence I was finally released through the intervention of my firm.

While recuperating in the hospital from blood poisoning, Dr. Weber learned that the Soviets were searching for a ceramics expert to work in Moscow. He immediately departed the area, leaving all of his property and belongings behind. "Today, July the 25th, 1946," he informed the American authorities, "I crossed, together with my wife and my daughter, the border between the Russian and the American zones, in order to escape further Russian persecution. . . ." He asked for a temporary residence permit in order to look for employment with the Siemens Works in Bavaria. He accepted a contract to work at Wright Field instead.⁶

Finally, many of the scientists chose to place their services at the disposal of the United States in the belief that it was the nation most able to preserve Western civilization. One of them

was certain that "the historic struggle" would continue. "I wanted to aid and add my share for the defense of Western civilization," he wrote, "the main representative of which now the U.S. is." Another explained how he arrived at the same conclusion:

After the surrender of Berlin . . . I had to work for a commanding general of the Russian Air Force, whose efforts were concentrated on securing my services for the U.S.S.R. Then, i.e., in May 1945, it became fully evident that long-range plans for action against the Western world, especially the U.S.A., were being studied. Knowing the Communistic philosophies to be unacceptable, I decided to make myself, i.e., my engineering capabilities, available to the preservation of a strong "Western World." Accepting the contract offered by the U.S. War Department under Operation Paperclip appeared a good possibility to do so.

Despite the predominance of economic and political factors, the specialists' decisions were usually based on a composite of different hopes, fears, beliefs, and desires. One physician listed the following: "Hunger, desire to continue work in my field (medical research), loss of most friends through death or imprisonment, little hope for Germany's fast economic recovery, disgust of postwar political activities, and prosecutions in Germany, fear of Communism." He concluded with a statement that would likely have been agreeable to most of his colleagues: "I would have left for most any other country (except for countries behind the iron curtain) just to get away from the misery at home."

2.

The first several years of an immigrant's life in a new country are the most difficult. It is then that he must make initial adjustments—finding a job, learning the language, making

friends, and orienting himself to a strange environment. The Paperclip immigrants never experienced these normal tribulations because of their peculiar status as wards of the United States government. Various agencies accepted the responsibility of providing housing and employment, and for sheltering them through semiisolation from the potentially hostile citizens. "Adjustment was made most easy by giving us four years to live in a group of about one hundred German families," a research chemist remembered. "So contacts were gradual and smooth. After four years we felt well prepared to live by ourselves among natives." Perhaps this was "pseudo-adjustment within limited environment," as one of his colleagues preferred, "like a flower might adjust itself to a life in pot filled with German soil." In any event it was novel, and probably advantageous.

The specialists did encounter difficulties inherent to the program, the most overwhelming of which was separation from their families. They despaired at what they considered the unnecessary length of the separation. They chafed at the postal restrictions and the policy of having "One's private family mail censored by young lieutenants living in the same camp." They denounced the slow payment of salaries which led to hardship for their dependents. Those with families residing outside the Landshut housing project feared constantly for their safety because of the rumors that thieves and Russians were abroad in the American zone. And for a few, the months of separation were less bearable because of the dissatisfaction of their wives. "Do you think your adventure would be a success even if you were 'permitted' to remain in the U.S. under such sad conditions," wrote one from Berlin, "whereas in Germany you could be the manager of a plant? Even with the Russians, in fact even in Russia, it would be better than living the way we do. . . . Do you intend to go on working for \$6.00 a day? We don't get any salary here, and what you were trying to tell me about salary lists is sheer nonsense and fraud. Mr. ———, who should know it, having had many years of experience, says that the Americans cannot tell the truth." 7

Aside from the long estrangement, the "study group" men-

tioned language most frequently as an obstacle to their adjustment. Yet only 14 percent considered it a problem, and for understandable reasons. One of the distinguishing features of the Paperclip migration was the unusually large number of specialists who arrived with some knowledge of English. Many of them had studied the language for years and were quite fluent upon arrival; a young rocket specialist, for example, was competent enough to offer classes to his colleagues and their families. Twenty of the "study group" had previously spent time in the United States, twelve on vacation and eight as students or foundation fellows. In most instances, knowledge was limited to reading, but it provided a background for early facility in speaking.

Other factors such as a high level of intelligence and strong motivation hastened the learning process. Some took classes offered at the various installations, while others did everything possible to learn by themselves. An engineer at Wright Field "learned very quickly" because he attended movies daily. Equally significant was the emphasis placed upon the use of English in the laboratories by military officers who were trying to prevent adverse reaction to the group. Their protestations to the scientists sometimes continued for several years. A memorandum to specialists at Fort Bliss on October 13, 1949, read as follows:

Major Hamill makes an urgent appeal to abandon the use of the German language *completely* while on duty. This project is established for about four years and we are still caught in a language dilemma.

Just recently misunderstanding and ill feelings came up in this organization and especially at W.S.P.G. because of the use of the German language. The general attitude on this question has been lax, but this is expected to be the last appeal concerning this vital and touchy subject.⁸

Although they quickly acquired a working knowledge of English, some of the specialists expressed uneasiness about their understanding of the colloquialisms, the speech of the "com-

mon people," and the "finer shades of meaning." An electronics engineer summarized their feelings:

It is interesting to note that discussions among a German-only assembly of old Paperclip people tends to be more relaxed and lively than in mixed company. Incidentally, in spite of my relatively good command of the English language, after fifteen years in the U.S.A. I still feel a definite handicap in conversation if I desire to describe the situation in as much color and with as much animation as I would do in German. Often during sentences I race at tremendous speed mentally through my vocabulary to find the proper expression (the equivalent of which I would possibly use in German even though this process has nothing to do with translating) only to arrive at the conclusion that I have to circumscribe. This I do without break and the other party never knows the difference. I, however, regret that my sentence is only a feeble expression of what it might have been.

I have still extreme difficulties following fast jokes (such as in cabarets) and there are still occasional movies where it takes me half an hour before I can really understand the talk (particularly British films).

These handicaps are possibly permanent with many immigrants, most of whom will possibly never admit them.

Others were quick to realize that even with their shortcomings, they were not too "maladjusted." An engineer decided that there "actually need not exist that peculiar feeling of embarrassment from which I suffered because of lack of sufficient knowledge of the 'new' language, especially since many Americans are no masters at all over their own language."

Twelve percent of the "study group" believed that military restrictions adversely affected their adjustment. The problems they mentioned were diverse. In some instances they stemmed from a sensitivity to confinement, as with a physicist:

Things had a tendency to be not too clear and we wrongly suspected unfriendly intentions. We worried actu-

ally without justification, felt very unhappy about being put into a guarded camp, not being allowed to move freely. Later we understood that nobody could and wanted to take the responsibility to turn us loose. Formally we were first classified "secret" matter and had to be kept under closure.

Because they were "classified secret matter" they were unable to make friends outside their profession, and a rather large number bemoaned the lack of normal social contacts. A mechanical engineer explained his regret:

Church (Protestant) was willing, but we were regularly referred to earlier German immigrants of the group. These, although willing to, could not introduce us to American ways and thinking. They were mainly interested to try their rusted German again, and reminisce over times twenty years ago. Somebody should have told us early, that there are excellent public lectures in Y.M.C.A. and other associations.

The lack of money was also a problem for most of the specialists. It was "unfair to pay us considerably less than corresponding U.S. scientists," one complained, "if we were not considered 'reparations.'" Low salaries were humiliating and discouraging, and led to predicaments such as that outlined by a textile engineer:

My main problem during the first two years was to provide adequate housing for my family on the basis of the low salary (\$6 per day for 12 months, \$5,000 annually for the following years). Building a house, operating an automobile, and providing the family with adequate supply on basis of current income, no credit other than Sears-Roebuck installment buying imposed problems on us which we did not anticipate in Germany during the "hiring negotiation."

A multitude of less serious concerns made the process of adjustment less pleasant. The uncertainty about the future was frustrating. A physicist feared "being caught in some kind of big

machine of world politics where everything might happen—such as losing freedom for a long time.” Others were apprehensive that authorities would send them back to Germany, as they had some of their colleagues. And for some it was not easy to become accustomed to a classless society, to learn how a democracy works, or to master the “unwritten laws of conduct that are different in two cultures, which are learned unconsciously during the process of growing up.”

Yet what is most striking about the specialists' impressions from the vantage point of a decade later is that they remembered few problems that were overwhelming and none that might be called tragic. This is indicated not only by the fact that 39 percent of the “study group” claimed to have had no difficulties at all, but also by the nature of those considered “most difficult” by others. A rocket scientist listed, for example: “Adjustment to small water heaters in rented rooms. In Germany we used flow heaters which were inexhaustible but slow in delivery, but in the U.S.A. the next person had only cold water.”

This is, in a sense, deceptive. The official records show that dissatisfaction was at one time so intense and widespread as to threaten the program. There is some truth in the comment of a repatriated scientist that “it is psychologically understandable that those German scientists who are now American citizens cannot be interested in stressing the negative side of the really quite difficult first years in your country.” But it is more likely that the answers of 90 percent of the specialists reflect the belief that they were treated well during the procurement phase and the first years in the country. The problems made less an impression because they felt that administrators were doing everything possible to correct them. One of the Army's rocket experts expressed the following sentiment, which is representative of those of a large number of his compatriots:

The first years, spent in Fort Bliss, Texas, near El Paso, will always be highlights in my memory. Even today I have

very treasured friends still living in El Paso. The commanding officers not only gave us fair treatment but did their very best to make our stay in the U.S. a pleasant one. General Toftoy, Colonel Hamill, and their staff did not act as bosses but as leaders and friends.

In some instances, very close personal friendships developed between the immigrants and the Americans with whom they were associated in the project. None could have been more so than that described by one professor:

It is in a mood of deepest thankfulness that I start answering your different questions, and think of the persons from this country with whom I came in contact since the sinister time after World War II. Is it not a very sad feeling I must have that just on the same date of your letter I must lose my best friend . . . who in August 1945 was my first American interrogator, and with whom I was bound by a most sincere friendship since those times? Yes, it is hard for me to have lost with him really my best friend, thinking over all those days. How he would have enjoyed your inquiries, and have participated with a warm heart in my answers! I lost much with him who gave me the first impression of the deeper meaning of Project Paperclip, and it is in honor of his memory that I answer your questions.

Thus the scientists' faith in the good intentions of their superiors served to assuage many of their suspicions and their disappointments. They also found assimilation easier because of the friendliness of most other native Americans.

3.

Since the Paperclip specialists entered the country as former enemies at a time when anti-German, and especially anti-

Nazi, feelings were strong, it would have been natural for cultural antipathy to have reached the point of overt expressions of hostility. According to the "study group," this was not the case. Only five stated that they had encountered personal animosity, and only on a few occasions. A larger group of twenty-five mentioned that although they had not experienced such reactions themselves, they were aware that a general hostility existed.

Their interpretation of the nature of that hostility differed. An engineer believed that his American co-workers "talked to you very friendly, but being out of the door, they turned around and used phrases like these: 'Why the hell do we talk to these God-damned Germans.'" Another recalled "some press campaign against our presence," which "came ironically from a 'League against racial intolerance.'" An engineer was sensitive to what he read and heard: "I ran into the tail of the war propaganda in newspapers and movies, which gave me some bad taste, presumably since it vilified without distinction everything that came from Germany." A few suspected a more covert type of opposition:

I felt fairly treated in general, yet it often struck me that obvious adulation was more appreciated than frank criticism. I did not encounter open hostility, rather in some instances a cool reserve which lasted for years and delayed making friends. However, it hardly affected my work. On the other hand, an apparently very cordial attitude often proved to be quite superficial. Obviously it was meant to make one feel better. In the beginning even this is accepted with gratitude.

While those who were suspicious were not always grateful, they were seldom resentful. They attributed the unkind feelings to an "understandable Jewish hatred," or to refugees who were displeased at "the fine treatment which we received compared to the difficult times these people had in many cases before they got their feet on the ground in the U.S." Some regarded the aversion as natural "considering our previous positions as

'Nazis' and 'arch-enemies,'" or "taking into account that we had fought an unjustified war against the U.S.A. and that we had not legally immigrated."

The vast majority (82 percent), however, stated that they had encountered no personal hostility whatever, and were amazed at the generous and human treatment they received. There were numerous statements similar to the following:

Treatment was extremely fair by our military sponsors, civilian co-workers, and personal acquaintances which were made soon after arrival. I never encountered any hostility because of my origin nor of my work during the war. I encountered curiosity with regard to "How was it on the other side" and learned soon to appreciate friendly and good-hearted teasing always coupled with the statement "we are glad you are now with us." I also was ever more grateful during the first two years about the numerous friends I met who tried to help me in my mental adjustment to a sometimes baffling but more and more wonderful environment.

A medical research scientist was more specific in giving credit to the "generosity, helpfulness, and encouragement" of "many kind neighbors and Navy officials" who were not even affiliated with the program: "One of us was offered the money to buy a house, by a Navy Commander; our milkman sent packages for thirty dollars a month to German prisoners; the neighbors brought in shoes and clothing for our friends at home; the Gray Ladies collected food packages for scientists in Germany; complete strangers signed for a mortgage for me, and so on."

Of the reasons the specialists suggested for the absence of hostility, the foremost was the respect and appreciation of native Americans for the accomplishments of German science. One wrote that "people would rather express admiration for the German technical achievements than taking offense that it was a hostile effort." Another found that to be German was an "undeserved asset," and that many professional and nonprofessional people expressed great admiration for "German efficiency" and

confidence in any work the "Paperclips" were doing. "This created a friendly, sometimes embarrassing atmosphere," he concluded, "insofar as achievements of outstanding German scientists were projected on us." A rocket scientist suggested another reason for the generous treatment:

In all these early and later years, there were some few cases where I heard that an unfriendly, not even hostile, remark was made by isolated individuals to some members of the group. This has always puzzled me.

I can only opine that—in contrast to the Europeans—Americans have a basically friendly and tolerant, even inviting attitude, toward strangers and foreigners who want to become citizens. This attitude was conditioned in the pioneering days and by the multinationality composition of the population. Americans still consider newcomers as welcome helpers in doing things. Europeans run a "closed shop" and resent newcomers as unwelcome competitors for what they believe to be limited resources and crowded living space.

Expressions such as these are not an altogether accurate reflection of the antagonism that did exist, especially at Wright Field* and other military installations. Major General John Medaris, Commander of the Army Ballistic Missile Agency, wrote that as late as 1956 a "very real" problem was the "subtle and sporadic, but nevertheless persistent criticism" of the German scientists who were part of the Army's team. The "sniping" was so abiding, in fact, that he initiated a campaign to correct the situation.⁹ The more sanguine outlook of the specialists is not likely a matter of poor memories, however; it merely attests to the fact that hostility was covert: Americans vented their antipathy to other Americans and not to the Germans. In any event the specialists believed they were well treated, and that belief had a positive influence upon their assimilation, both socially and economically.

* See above, pages 123-124.

4.

The Paperclip personnel were nearly all disappointed in the failure of the military services to utilize their abilities during the "lean years" of the "ice-box policy" when they were in "cold storage." They were able to rationalize their predicament to some extent because of the strong postwar demand for demobilization and the sensitive nature of the program. Yet they were never wholly convinced that their employers could not have done better. "I think that the well intentioned American approach was psychologically weak," an electrical engineer maintained. "It was neither based on 'open force,' or if you want, 'crude persuasion' as the U.S.S.R. did quite successfully, nor was it based on an invigorating atmosphere of creative scientific or engineering work. Entirely missing was the nonmaterial incentive, something that the European academically trained mind needs like the daily bread. To my rather limited experience it was something of a lame crossbreed between above intimated extremes: we were well taken care of, but far from happy."

They were much happier when the policies changed to allow them to compete on an equal basis with native Americans. Their skills were easily transferable to private industry and perhaps as many as two-thirds of them eventually left their patrons to seek greater opportunity and professional fulfillment. Those who remained in military laboratories did so primarily because of a desire to continue working together. A member of the "von Braun team" explained his choice:

Those of us who have forsaken better positions did so because the binding forces that exist between the members of a scientific and technological team of long standing usually become so strong that they cultivate working processes of extreme economy, efficiency, and confidence. Combine this fact with the opportunity to satisfy professional curiosity, to be challenged and be permitted to meet it with rea-

sonably adequate means, and you have the essential ingredients that cannot be compensated by higher pay.

Wherever they chose to work, the specialists found a receptive atmosphere. The shortage of scientific and technical personnel placed a premium on their educational achievements,* and the burgeoning armaments industry had a continuing need for their specialized experience. There are various indicators of their "success." In reply to the question—"Have you been able to attain the level of financial security and social and professional standing which you expected when you decided to become a citizen?"—they answered in the affirmative at a ratio of approximately six to one. By 1960, 126 of the total group had attained the distinction of being listed in *American Men of Science*. The contributions of the "study group"—30 books, 1,260 articles, 1,315 *unclassified* technical reports, and 734 patent applications—also attest to a remarkably high degree of occupational adjustment. And many of them wrote with pride of their personal triumphs: "What have I accomplished for the U.S.A.," asked an electronics scientist. "I have created three new companies, and over 750 people were employed in the newly created jobs. The capital invested in these industries totals more than fifteen million dollars. And I can truthfully say that in all my work I considered the well-being of the company first and not myself."

Forty percent of the "study group," however, were not content with having attained material, social, and professional success. They believed that even after the early years they had not had an opportunity to fully utilize their talents and engage in the type of work they enjoyed. Some attributed this to personal factors such as not having sufficiently mastered the language, or

* Of the "study group," 102 (62 percent) had completed the Ph.D. or the equivalent (M.D. or Dr.Eng.), and 44 (27 percent) the Dipl.Eng., an approximate equivalent to the M.A. Of the remaining 19, 15 had earned the equivalent of the B.A. in engineering. The educational background of the "study group" is possibly somewhat higher than the total group, but at least 50 percent of the latter had attained a doctoral degree.

of having only a limited number of working years because of advanced age. Others blamed the system that prevailed in government laboratories which allowed nontechnical personnel to hold important management positions:

. . . military superiors often assume authority in regard to technical matters, due to their position and assignment. One said: "I am in the guided missile field since I became seventeen years old. I launched, at that time, a rocket on our football field." The assumption, that a boy who played with a toy automobile became, with increasing age (but not with study and experience) an expert, and now is an old-timer in automobile design and testing, is made by many people—too many, I would say.

Nearly one-third of the "study group" explained their "failure" in terms of the native Americans' fear of competition. They usually did not elaborate, but a few held very strong feelings:

Looking into a smiling face and feeling the knife in the back—that was an experience usually encountered only when our experience, scientific drive, and activity disturbed and off-set the influence-sphere of people who, most certainly, had the ambition but not the absolute leadership and academic ability to push ahead.

This disenchantment, or lack of complete satisfaction in their work, may reflect nothing more than a human inclination to hold to unrealistic expectations. But the comments of the Paperclip immigrants strongly suggest something more nebulous. They were disappointed in certain attitudes and values of the postwar American culture. Indeed, they acknowledged that integration in this respect was much more difficult than learning the language or achieving economic security. For many of them cultural assimilation was a matter of degrees, and not an absolute.

5.

An immigrant's view of his new country is often affected by traditional stereotypes transmitted within his own culture. For most of the nineteenth century the Germans thought of America as a land that was far away and fabulous, a country of the "wild west" and unlimited possibilities. Another image—that of a materialistic America—grew stronger after the turn of the century, in part as a reaction to the boastful emigrants who had succeeded overseas. That concept and others became fixed during the 1920's. Most of the books and reports on the United States published at the time fashioned a stereotype of a place dominated by the dollar, filled with gangsters and crazy people, and sadly lacking in civilization and culture. The Nazis not only confirmed that portrait but fostered it in their anti-American propaganda. At various times Hitler described the nation as one peopled by "millionaires, beauty queens, stupid records, and Hollywood," a "decayed" but "most luxurious sty," with "everything built on the dollar." "I could not for anything in the world live in a country like the United States," he said, "whose concepts of life are inspired by the most grasping materialism and which does not love any of the loftiest expressions of the human spirit such as music."¹⁰

This national point of view of the 1930's (which was shared by many other Europeans and many Americans as well) had a strong influence on the Paperclip specialists' descriptions of the things they "liked least" about life in the United States. One or another of them mentioned each of the images. An engineer who entered the country in 1948 admitted that he and his family had refused a contract three years earlier "since we did not like to risk our lives among gangsters with six-shooters." A professor conceded that "maybe there is also an American civilization, but one has to be an American to find it." A scientist complained of the "ever-present background noise of radio and television which kills the art of conversation and the concentration

on more worthwhile subjects, such as good music or classical plays." And a very large number bemoaned the "dollar craziness (which does not understand the true values of life)"; the "fast buck, and everything what is connected with it"; the "hunting for the almighty dollar"; the "keeping up with the Joneses"; the "general public philosophy of selfish 'pursuit of Happiness' by 'making' not 'earning' money"; in short, "the all-dominant (at least seemingly so) materialism judging human affairs in the light of economics, making man a servant of economy instead of the reverse."

The specialists' belief that American society was marked by a "lack of idealism toward aims beyond money or security" caused them to feel somewhat alienated in at least two specific ways. A significant number disliked the culture's "lack of interest of having job well done"; its lack of appreciation for "the spirit of work for its own sake"; its deemphasis on individual accomplishment in the name of teamwork. An even larger number deplored the "laxity of the majority toward strengthening the national defense." Most of the specialists, perhaps reflecting their personal background and experiences or the nature of their work, were strong advocates of military preparedness. They could not understand what they conceived to be the unwillingness of the American people to sacrifice in order to meet the "coming historic test" with the Soviet Union. A scientist decried the "lack of motivation which does not care about the future of this country and cares for the next day only." And an engineer described what happened to him when he became a spokesman for preparedness:

I saw it coming that such a development could not end to the good of this country and tried to talk to people. A cousin of my wife, he was an official in the Far East during World War II, threatened to throw me out of the car if I continued with politics.

Neither the fixed stereotypes nor the personal values of the specialists completely governed their perceptions of the new

country. On the one hand, they discovered along with native Americans other weaknesses in the society, above all, the "lousy" educational system; the conformity and "general regimentation of thoughts, habits, even food"; the "shallow" entertainment "shaped for teenager's intellect"; the shortcomings of television ("Did you ever hear WONE of Dayton? Then judge yourself"); and of commercials ("mixture Mozart and salad dressing"); the crime, the bigotry, the hypocrisy, and the over-emphasis on "thrill instead of virtue."

But far more significantly they learned that America did not in many ways conform to their negative images. They were far more emphatic about the things they liked than those they disliked. And they were numerous. The specialists listed as most appealing about living in the United States (in order of frequency mentioned): individual freedom, friendliness of the people, beauty and spaciousness of the country, high standard of living, informality, and opportunity. Most of them listed a combination of what was attractive to them, as in the following three representative summaries:

A feeling of hospitality, neighborliness, and "belonging"; less pronounced class-consciousness and social stratification than in Europe; therefore, more emphasis on individual capabilities and accomplishment than on heritage, extraction, etc.; conveniences and comfort of everyday life.

The strength of this country's armament, its natural borderlines, its strong economy; the politeness, helpfulness, and sense of humor of its people, especially in public and professional contacts; the amount of free space around, the free choice of housing, food, and friends, and the almost complete absence of political pressure.

As regards people, I love the intelligent young generation with its honest enthusiasm for learning and the real values of life. It is pushing the maturing process of the still young nation, knowingly or unknowingly, ahead. This young generation is the best guarantee not only for future freedom and justice but also for the development of a more

reasonable relationship among the nations of this shrunken planet. I like the lack of conventionalism in dealing with others in my profession. I like the beauty of the land and its wide open spaces which did and always will inspire the feeling for freedom and greatness.

Many of the scientists also compared the more optimistic, easy-going life in the United States to the more pessimistic, tradition-burdened outlook in Germany. "Practically everyone is not as narrow as is quite frequently found in Europe," wrote an engineer. "The definition of narrow in this case is to be considered not only in the physical, but also in the spiritual and human relations sense." The dislike of "narrowness" in all its manifestations was one of the major reasons that a very large percentage of the immigrants chose to make America their home, or their "second homeland."

Approximately 550, or 85 percent, of the total group of Paperclip specialists elected to become lifelong citizens. Many of them never seriously considered returning to Germany simply because they preferred to live in America. A university professor wrote regarding possible return to Europe: "Never. Not for a moment. I feel at home here; my children, my friends, my interests are in this country. Visits to Europe have strengthened the feeling that, by now, I would be a stranger there." Others decided that it was too late in their lives to begin again in a different country, or as one aptly put it: "Life is too subtle a mechanism to be reversed." Still others recognized that as parents they did not have a completely free choice:

I have never considered return to Europe. I realize that I might have obtained the same position socially and financially, however . . . I could never convince my children to go back to Europe; they have grown up in the United States and are entirely Americans.

And some of those who did consider promising offers from Europe rejected them because they had become too "Americanized":

About seven years ago I did [consider returning] because I got a tempting job offer, but when it came to a final decision I felt that I had become so much Americanized, that I could not live in Europe any more and enjoy it. Even considering that the social status of a senior scientist (or any scientist for that matter) is much superior in Europe to that in U.S.A. Social status does not have an overriding priority in my book.

The distinguishing characteristic of the much smaller number of those who did reemigrate was age. Because they were older, they found less opportunity in the United States and felt a greater attachment to Germany. The attachments were sometimes economic, as in the case of pensions which they could obtain only as German citizens; professional, especially for professors who missed the higher status and salary in the old country; and sentimental. "My wife and I having been born in a village surrounded by a romantic castle," wrote a repatriate, "very much like to walk in nature and to see romantic places (castles, old villages, etc.)." Some of the younger men also returned to accept better positions, frequently with their old firms. And some others, like this electronics engineer, were still considering repatriation following retirement:

For life after retirement it appears almost impossible to live with Civil Service pensions in relative comfort and enjoy cultural achievements of mankind. Big cities where one may find culture are too expensive. Retirement-state Florida offers cheap living but little culture. Europe, not necessarily Germany, offers both within shorter distance. Life in Europe is more quiet and peaceful without being complacent. It is easier to find groups of well mannered people appealing to one's liking. Behavior and manners of youth toward older people is considerably better. People are judged by their behavior, not by their income level or car they drive. In addition, the American retirement-dollar buys more in Europe than in the U.S.

6.

The decision to become a naturalized citizen represents a renunciation of previous loyalties, which for most immigrants is a deeply complex and emotional process. It was doubly so for the Paperclip specialists, who had to make their choice in mid-life. It left scars, as with an aeronautical engineer who stayed in the United States because the "country of the parents" becomes that of the children. "It is necessary to make decisions, i.e., you have to burn your ships when you have arrived in a new country," he reflected. "You cannot live being burdened with sentimentality, although you will always have the pain in your heart." Perhaps it was impossible, as another reasoned, for those over forty to become thoroughly assimilated, that "a profound change of countries, language, and customs is bound to have some affect. . . ." But his appraisal—"I feel the price I paid was not too high"—was one with which his compatriots agreed. They were able to live meaningful lives in a new nation, and thereby fulfill the hopes of those who first struggled to transplant the technology of their defeated homeland. In this sense the Paperclip experience transcended its setting of war and Cold War, of laboratories and weapons, of old and new hatreds and fears. It was about people.

In the sum of all, I feel very happy to have this opportunity to express how wonderful this experience was for me to have found a "new way," from extreme disaster and misery. I have to be thankful for the graces of the Almighty first, but also to the good will of so many friendly persons who have been His messengers in the Project.

CHAPTER NINE

“Russia. That Explains Everything”

HISTORY IS OFTEN IMPROVISATION; it was so with the evolution of Project Paperclip. The project came to life in the aspirations of those who looked upon the German wartime developments as “technically sweet,” to use the phrase with which Robert Oppenheimer described the excitement over the construction of an H-bomb. It gained support from the fear of those responsible for the war against Japan, who expected a long and costly conflict. And finally, in the spring of 1946, it won credibility because of a new force—the Soviet Union. Thereafter the military conceived of it in the terms of Machiavelli: “What course will save the life and liberty of the country?”

As they put “all other considerations aside,” and struggled to effect a realistic program, they received few signs of encouragement. President Truman gave his approval to the long-range program, but typically gave little attention to clearing the obstacles to its success. Congress, with the exception of a few individual members, avoided the issue. Nor were there many leading citizens or statesmen who ventured forth as advocates of such a delicate undertaking. Its fate was left largely to the military officers, who had to cope with the disdain and denunciation of its opponents, and the delay and restriction of its objectives.

Those who sponsored Paperclip nevertheless felt vindicated by the course of events. They had based their actions on certain assumptions, widely shared by the most knowledgeable men of

the time. In September 1945 George Kennan had warned that it would be "highly dangerous" to our security if the Russians were to develop the use of atomic energy or any other radical and far-reaching means of destruction. "There is nothing—I repeat nothing—in the history of the Soviet regime," he wrote, "which would justify us in assuming that the men who are now in power in Russia . . . would hesitate for a moment to apply this power against us if by doing so they thought that they would materially improve their own power position in the world." The military and their civilian allies sympathized with that judgment, and through their utilization and "denial" of scientists acted accordingly. Russia did become—whether because of her own legitimate interests, the paranoia of Stalin, or the failure of American statesmanship—an implacable antagonist.

History may eventually prove their judgment wrong. Project Paperclip does lend some support to those revisionists who are now assigning responsibility for the origins of the Cold War to Americans as well as Russians. American officers in 1945 *were* aggressive. While their government spoke of peace, they prepared for a future war. With the greatest weapon in history at their command, they sought others. They were looking for a potential enemy, and they found one quickly. They covered their designs with such secrecy that it bedeviled their own President; at Potsdam he denied their activities, and undoubtedly enhanced Russian suspicion and distrust. The military, together with most Americans, may also have misread Russian intentions. Yet the future historian, if he gains access to Soviet archives, is more likely to find the record of a comment allegedly made by Joseph Stalin to Colonel-General I. A. Serov when he learned that his soldiers had not captured a single foremost rocket expert. "This is absolutely intolerable," the Premier said. "We defeated Nazi armies; we occupied Berlin and Peenemünde; but the Americans got the rocket engineers. What could be more revolting and more inexcusable? How and why was this allowed to happen?"¹ The answer should have been "Project Paperclip."

Notes

Key to Abbreviations Used in Note Citations

- ABMA Public Information Office, Army Ballistic Missile Agency, Huntsville, Alabama
- AFM Air Force Museum, United States Air Force, Wright-Patterson Air Force Base, Ohio
- AIF Army Intelligence File, 1941-1948, Modern Military Records Division, Washington, D.C.
- AUL Air University Library, United States Air Force, Maxwell Air Force Base, Alabama
- DKH Dieter Huzel personal collection, Los Angeles, California
- FRC Federal Records Center, St. Louis, Missouri
- HADN Historical Archives, Department of the Navy, Alexandria, Virginia
- HPR Howard Robertson personal collection, Pasadena, California
- HSTL Harry S Truman Library, Independence, Missouri
- OCMH Office, Chief of Military History, Department of the Army, Washington, D.C.
- OTSDC Office of Technical Services, Department of Commerce, Washington, D.C.
- RS Robert Staver personal collection, Palo Alto, California
- RSI Research Studies Institute, Air University, United States Air Force, Maxwell Air Force Base, Alabama
- RPP Robert Patterson file, Modern Military Records Division, Washington, D.C.
- UCL Department of Special Collections, University of Chicago Library, Chicago, Illinois
- WVB Wernher von Braun papers, Library of Congress, Washington, D.C.

PROLOGUE

1. "Paperclip: Part I," *The ONI Review* (February 1949), 22-23; HADN; Herbert A. Wagner, "Guidance and Control of the Henschel Missiles," *History of German Guided Missiles Development*, ed. T. Benecke and A. W. Quick (Brunswick, 1957), 8-23.
2. JCS, "Statistical Report of Aliens Brought to the United States under the Paperclip Program," December 1, 1952, OTS.
3. *New York Times*, February 15, 1946.
4. Maj. Gen. John B. Medaris, *Countdown for Decision* (New York, 1960), 53.
5. Quoted in Albert Parry, *Russia's Rockets and Missiles* (New York, 1960), 111.
6. John D. Hicks, George Mowry, and Robert Burke, *The American Nation* (New York, 1963), 772.
7. Cited in Eugene Davidson, *The Life and Death of Germany* (New York, 1949), 7, 54.

CHAPTER ONE

1. Quoted in Margaret Gowing, *Britain and Atomic Energy 1939-1945* (New York, 1964), 88.
2. Winston Churchill, *Their Finest Hour* (Boston, 1949), 381.
3. This account is based upon the excellent study by David Irving, *The Mare's Nest* (Boston, 1964).
4. For the Alsos Mission see Leslie E. Groves, *Now It Can Be Told* (New York, 1962), Chaps. 13 and 15; David Irving, *The German Atomic Bomb* (New York, 1967), 243-262; and Samuel A. Goudsmit, *Alsos* (New York, 1947).
5. Senate Hearings on S. Bill 758 (April 30, 1947), 493; and Constance M. Green, H. C. Thomson, and P. C. Roots, *The Ordnance Department: Planning Munitions for War* (Washington, 1955), 262-263.
6. SHAEF Intelligence Directive No. 17, July 27, 1944, Subj: "T Force;" Ltr, Hqs 12th Army Group, Aug 20, 1944, Subj: "T Force"; Memo, Hqs "T" Force Twelfth Army Group, March 24, 1945, Subj: "Organization of 'T' Forces for Third Army and Ninth Army Areas"; and 12th Army Group, *Final After Action Report of Operations*, June 1944-July 1945, RSI.
7. For the activities of CIOS, see *Report of the CIOS*, 1944, OTS; Doris S. Canham, *History of AMC Intelligence, T-2* (Wright Field, Ohio, 1948), 5-8; Ltr, Director, Office of International Trade Operations to Henry Wallace, Nov 26, 1945, OTS.
8. JIC 220/6, Oct 12, 1944, Subj: "Acquisition of German Technical Information of an Industrial Nature," OTS; Memo,

Acting Deputy Dir, TIIC to Chief of Operations, TIIC, December 15, 1944, Subj: "Meeting of WPB Representatives on Technical Industrial Intelligence Committee," OTS; Asst Dir, FEA to William Stone, FEA, American Embassy, Oct 20, 1944, OTS; Basic Directive, TIIC, December 20, 1944, OTS.

9. *World War II Administrative History, Office of Naval Operations: Technical Mission in Europe* (Washington, no date), HADN.

10. *History of Operation Lusty, 1944-1946* (January 1946), RSI.

11. Montgomery cited in John Toland, *The Last 100 Days* (New York, 1965), 268; Fritz Zwicky, "Report on Certain Phases of War Research in Germany" (October 1, 1945), 173, AFM.

12. Holger Toftoy, "Report of Activities, ETO Ordnance Technical Intelligence," April 1 to April 15, 1945, OCMH.

13. *Ibid.*; "Public Information News Story on Naval Technical Mission Europe," Appendix A to *Technical Mission in Europe*, HADN; Office of War Information, Press Release on Germany's Secrets, August 26, 1945.

14. Christopher Gerould, "Target Germany," *Federal Science Progress* (April 1947), 6; *New York Times*, March 18, 1947; Lester Walker, "Secrets by the Thousands," *Harper's Magazine* (October 1946), 329; "Developments in the Chemical Industry," *Chemical and Engineering News* (September 10, 1945), 1516-1522.

15. Ltr, Secy of War to Secy of Commerce, November 27, 1945, OTS; Summary of Overseas Operations, TIID, November 20, 1946, OTS.

16. Leslie E. Simon, *German Research in World War II* (New York, 1947), 8; Groves, *Now It Can Be Told*, 231-249.

17. CIOS XXV-22, "Aerodynamische Versuchsanstalt and K. W. Institut Göttingen, July 6, 1945; CIOS XXX11-89, "Luftfahrtforschungsanstalt Braunschweig, May 6-11, 1945; Harold Mansfield, *Vision: A Saga of the Sky* (New York, 1956), 259-260; Morton Hunt, "The Nazis Who Live Next Door," *The Nation*, 169 (July 16, 1949), 58.

18. Chester Wilmot, *The Struggle for Europe* (New York, 1952), 690; Rodney G. Minott, *The Fortress that Never Was* (New York, 1964).

19. CIOS XXVI-30, "Gas Turbine Development by B.M.W.," May 30, 1945; CIOS XXX-80, "Bavarian Motor Works, a Production Survey," May 1945; CIOS XXII-66, "German Glider Research Station—Ainring," no date; and CIOS XXXI-37, "Instituts of the Bevollmaechtigter Fuer Hochfrequency," no date.

20. Irving, *The Mare's Nest*, 143-145, 204-206; Ernst Klee and Otto Merk, *The Birth of the Missile: The Secrets of Peenemünde* (New York, 1965), 69, 103, 109; Dieter Huzel, *From Peenemünde to Canaveral* (Englewood Cliffs, 1962), 127-188.

21. *Peenemünde East: Through the Eyes of 500 Detained at*

Garmisch, no date, AFM; Huzel, *From Peenemünde to Canaveral*, 189-199.

22. Simon, *German Research in World War II*, 140-154; Zwicky, "Report on Certain Phases of War Research in Germany" (October 1, 1945), 175; Dr. Clark Millikan, "Report on Informal Conference Between Dr. Clark Millikan and Officers of the Bureau of Aeronautics (July 7, 1945), 13, AFM.

23. Zwicky, "Report," 174; and Millikan, "Report," 4, AFM.

24. Zwicky, "Report," 175; Millikan, "Report," 14; C. Miller, "German Rocket Development 1929-1945," no date, AFM.

25. Irving, *The Mare's Nest*, 273-274; *Spearhead in the West 1941-1945: The Third Armored Division* (Frankfurt am Main, 1945), 144-150.

26. James McGovern, *Crossbow and Overcast* (New York, 1964), 151-155; Green, Thomson, and Roots, *The Ordnance Department*, 234.

27. Memo, Hqs, Communications Zone, ETOUSA to Office Chief Ordnance Officer, June 1945, Subj: "Evacuation of the V-2 Missiles from Nordhausen, Germany, OCMH."

28. Robert Staver, "Report on the Location and Recovery of the Scientific Documents Belonging to the German Army Rocket Research Station of Peenemuende," May 23, 1946, RS.

29. Memo, Robert Staver, Ordnance Technical Intelligence Team No. I to Office Chief of Ordnance, May 19, 1945, Subj: "Evacuation of Important Research Personnel," RS; Memo, Hqs, Advance Section Communications Zone, Office of the Ordnance Officer to Major Bromley for Major Staver, May 25, 1945, Subj: "Evacuation of German Technicians and Their Families," RS; Telegram, Col. Quinn to Maj. Staver, June 1, 1945, RS; Cable, Hqs, U.S. Army, Paris, to War Department, June 2, 1945, RSI.

30. U.S. Department of State, *Foreign Relations of the United States. The Conference of Berlin, 1945*, Vol. I (Washington, 1960), 9, 92, 107. Hereafter noted as Foreign Relations.

31. CIOS XXXI-36, "Junkers Aircraft and Engine Facilities," 1945; CIOS XXXII-54, "Remote Control System for Bomber Gun Turrets," 1945; CIOS XXXIII-51, "Report on the Firm of Carl Zeiss, Jena," 1945.

32. Personal letter, January 19, 1962.

33. CIOS XXXI-36; CIOS XXXIII-51; *Hitler's Words*, ed. Gordon W. Prange (Washington, 1944), 272.

34. Personal letter, August 12, 1960.

35. Foreign Relations, *European Advisory Commission; Austria; Germany*, 1945, Vol. III (Washington, 1968), 212, 323-330.

36. Foreign Relations, *The Conference of Berlin, 1945*, Vol. II (Washington, 1960), 907.

37. *New York Times*, June 29, 1945; *Baltimore Sun*, June 30, 1945.

CHAPTER TWO

1. George Fielding Eliot, "Science and Foreign Policy," *Foreign Affairs*, Vol. 23, No. 3 (April 1945), 378-387.

2. Cited in Paul Y. Hammond, "Directives for the Occupation of Germany," in Harold Stein, ed. *American Civil-Military Decisions* (Tuscaloosa, 1963), 355, 395.

3. For the formulation of German policy I have relied on the superb study by Hammond, *ibid.*

4. E. F. Penrose, *Economic Planning for the Peace* (Princeton, 1953), 268; Beate Ruhm von Oppen, *Documents on Germany under Occupation* (London, 1955), 31, 131-134.

5. David L. Gordon and Royden Dangerfield, *The Hidden Weapon: The Story of Economic Warfare* (New York, 1947), 164-180; Henry Morgenthau, *Germany Is Our Problem* (New York, 1945), 73-75.

6. Chief, Policy Staff, WDCS, to G-2, March 16, 1945, Subj: "ECLIPSE Memorandum No. 7—Change 1," AIF; Morgenthau, *Germany Is Our Problem*, 73-75, 175-179.

7. Hammond, *op. cit.*, 379, 393.

8. FEA, Project 25, pg. 9, 25; FEA, Project 3, August 6, 1945.

9. FEA, Project 4, July 10, 1945, Subj: "Post Surrender Treatment of German Engineering and Research in the 'Secret Weapon' Field," July 10, 1945.

10. For the shifting attitudes of the Americans see John Gimbel, *The American Occupation of Germany, Politics and the Military 1945-1949* (Stanford, 1968).

11. Henry H. Arnold, address to Scientific Advisory Group, January 9, 1945, cited in Thomas A. Sturm, *The USAF Scientific Advisory Board* (Washington, 1967), 2; General Styrer cited in John D. Millett, *The Organization and Role of the Army Service Zones* (Washington, 1954), 239.

12. SHAEF to WD, May 15, 1945, AIF; Colonel John O'Mara, CIOS XXXII-66; AC/SG-2 to Chief, MIS, May 16, 1945, Subj: "Long-Range Policy on German Scientific and Technological Research," AIF.

13. Memo, Major General K. B. Wolfe to War-Navy Ad Hoc Interdepartmental Committee to Handle FEA Projects, May 14, 1945, in FEA, Project 1.

14. Memo, Dir of Naval Intelligence to AC/S, G-2, May 4, 1945, Subj: "Evacuation of Dr. Wagner to U.S.," HADN.

15. Samuel Eliot Morison, *The Atlantic Battle Won*, (Boston, 1957), 360.

16. Chief BuOrd to CNO, May 15, 1947, HADN.

17. Ltr, AC/AS Intelligence to Dir of Intelligence USSTAF,

May 28, 1945, RSI; Dir of Intelligence, ASF to AC/S, G-2, May 14, 1945, Subj: "Employment of German Scientists in Furtherance of the War Effort Against Japan," AIF; CG, ASF to Chief of Staff, May 17, 1945, AIF; Memo, Hqs AAF to AC/AS, Intelligence, May 21, 1945, Subj: "German Civilian Technicians," RSI.

18. Ltr, Col. D. L. Putt, USSTAF to Maj. Gen. K. B. Wolfe, May 18, 1945, RSI; Memo, Deputy CG, USSTAF to Col. D. L. Putt, May 30, 1945, RSI; Memo, Deputy CG, USSTAF to CG, USSTAF, June 1, 1945, RSI.

19. Ltr, Maj. Robert Staver to Col. Quinn, May 26, 1945, RS; Ltr, Maj. Robert Staver to Chief, R & D, Technical Division, June 17, 1945, RS; Telegram, Col. Quinn to Maj. Staver, June 1, 1945, RS; Cable, Hqs, U.S. Army, Paris to WD, June 2, 1945, RSI.

20. Memo, Patterson to Secy, General Staff, May 28, 1945, Subj: "German Scientists," RSI.

21. Memo, Hqs, AAF to AC/AS, Intelligence, June 7, 1945, Subj: "Proposed WD General Policy on the Temporary Exploitation of German Scientists in the United States" RSI; Memo for Dir of R & D, WF, March 22, 1948, Subj: "Utilization of German Scientists by U.S.S.R.," RSI.

22. Transcript of telephone conversations between Washington and Wright Field, June 22 and 23, 1945, RSI.

23. Memo, Chief, R & D Service, Ord Dept to Ord Service Hqs, ETOUSA, June 23, 1945; Gen. Barnes to WDGS, June 30, 1945, Subj: "Transfer of German Guided Missiles Projects to the United States," AIF.

24. Memo, Hqs, USFET, Chief Ord Office to Technical Branch, R & D, USFET, July 7, 1945, Subj: "German Personnel for Rocket Research"; Memo, Dr. R. W. Porter and Lt. Col. Williams to Col. H. A. Quinn, July 9, 1945, Subj: "Transfer of German Nationals to the United States," OCMH.

25. CIOS XXVII-1, "Neuropathology and Neurophysiology in Wartime Germany," July 1945.

26. CIOS XXVI-30; CIOS XXXII-66; CIOS XXX-80.

27. Zwicky, "Report"; Memo, Hqs, USFA to AC/S, A-2, June 21, 1946, Subj: "Retention of Scientists in Austria under U.S. Supervision," RSI; Dr. Charles A. Johnson, "History of the Air Research and Development Command," RSI.

28. Goudsmit, *Alsos*, 132-133; Monthly Status Report No. 12, AAF Aero-Medical Center, September 30, 1946, RSI; Memo, ATSC Engineering Division. "Report of Travel in European Theater," November 9, 1945, AUL.

29. Ltr, Lt. Col. Donald Springer and T. G. Haertel, TIIC to G. Dunlap Taylor, Aeronautical Subcommittee, August 20, 1945, OTS.

30. Memo, AC/S, G-2 to CG, AAF, July 6, 1945, Subj: "Exploitation of German Specialists in Science and Technology in

United States," RSI.

31. Memo, JCS to AC/S, G-2, WDGS, July 20, 1945, Subj: "Code Designation for German Scientist Exploitation Center," RSI.

32. For a discussion of this period see Herbert Feis, *Between War and Peace* (Princeton, 1960).

33. For insight into the thinking of military officers during this period see Rodney Minott, *The Fortress That Never Was* (New York, 1964).

34. Ltr, Sarnoff to Rosenman, June 4, 1945, HSTL.

35. For the Potsdam Conference, see Feis, *Between War and Peace*.

36. *Ibid.*, 159-163, 253-265; Foreign Relations, *The Conference of Berlin, 1945*, Vol. II, 162, 323, 420, 428, 834, 850-853, 888-892.

37. Foreign Relations, *The Conference of Berlin, 1945*, Vol. II, 514-517, 532, 904-912.

CHAPTER THREE

1. Harry S. Truman, *Memoirs* (New York, 1955), Vol. II, 463.

2. Cable, G-2, WD to CG, USFET, July 25, 1945, RSI.

3. Memo, Col. L. S. Wirak, GSC for Col. Jones, September 7, 1945, Subj: "German Scientists," RSI.

4. Cable, WD to Eisenhower, August 17, 1945, RSI; Cable, WD to Eisenhower, September 3, 1945, RSI; G-2, WDGS to CG, ASF, September 10, 1945, Subj: "Exploitation of German Specialists in Science and Technology in the United States," AIF.

5. Truman, *Memoirs*, Vol. 1, 501.

6. Senate Subcommittee of the Committee on Military Affairs, *Science Legislation Hearings* (Washington, 1945), 229, 243, 357.

7. Senate Special Committee on Atomic Energy, 79th Cong, 1st Sess (1945), 32.

8. Foreign Relations, *Russia 1945* (Washington, 1967), Vol. V, 907.

9. See Richard D. Burns, "James F. Byrnes," in *An Uncertain Tradition: American Secretaries of State in the Twentieth Century*, ed. Norman A. Graebner (New York, 1961), 234-235.

10. Foreign Relations, *General: Political and Economic Matters, 1945*, Vol. II, 42, 48-50.

11. *Ibid.*, 56, 59, 62, 69-73.

12. Lawrence K. Frank, "Can We Curb the Irresponsibles?," *Science*, CIII (March 22, 1946), 350.

13. *Science Legislation Hearings*, 58, 302, 327.

14. Foreign Relations, *General: Political and Economic Mat-*

ters, 1945, Vol. II, 62.

15. Forrestal cited in Vincent Davis, *Postwar Defense Policy and the U.S. Navy, 1943-1946* (Chapel Hill, 1966), 186.

16. *New York Times*, October 20, 1945.

17. Memo, Chief BuOrd to CNO, May 15, 1947, HADN.

18. Memo, Capt. H. W. Boesch; AC, December 6, 1945, Subj: "Report on Trip to Port Washington to Coordinate Overcast with Navy"; Memo, Chief, BuAer to Judge Advocate General, September 10, 1945, Subj: "Legislative Authority for the Navy Department's Employment of Aliens," HADN; Adm. D. S. Fahrney (Ret.), "The History of Pilotless Aircraft and Guided Missiles," unpublished manuscript, Department of the Navy, 1960.

19. Foreign Relations, *General: Political and Economic Matters, 1945*, Vol. II, 48-50.

20. Theodore von Karman and Lee Edson, *The Wind and Beyond* (Boston, 1967), 294-295; Von Karman to Arnold, October 16, 1945, Subj: "Disposition of German Scientists," RSI; Ltr, Knerr to Lovett, October 15, 1945, RSI.

21. Moorehead quoted in Brian Gardner, *The Year That Changed the World, 1945* (New York, 1963), 175.

22. For the occupation see Gimbel, *The American Occupation of Germany, Politics and the Military, 1945-1949*.

23. Ltr, Dir, Office of International Trade Operations to Secy of Commerce, November 25, 1945, OTS.

24. H. P. Robertson, "Control of Research," address before Military Government Conference, August 28, 1945, HPR; Robertson to AC/S, G-2, May 14, 1945, Subj: "Detention of Professor Max von Laue, HPR; Robertson to Dir of Intelligence, FIAT, HPR; Robertson to Col. Zornig, Technical Branch, FIAT, September 25, 1945, Subj: "OVERCAST and General-Major Dornberger," HPR; Ltr, McDonald to Maj. Gen. Hugh Knerr, CG, ATSC, WF, November 3, 1945, RSI.

25. Personal interview, Pasadena, California, July 28, 1960; Curtis LeMay and McKinley Kantor, *Mission with LeMay* (New York, 1960), 397.

26. Cable, CG, USAFE to WD, September 22, 1945, RSI; Ltr, Lovett to Knerr, October 4, 1945, RSI.

27. Richard G. Hewlett and Oscar E. Anderson, Jr., *The New World 1939-1946* (Philadelphia, 1962), 455-459.

28. Ltr, Knerr to Lovett, October 15, 1945, RSI; Memo, Deputy CG, Hqs, AMC to CG, AAF, November 4, 1946, Subj: "Exploitation of German Scientists in England," RSI.

29. Ltr, M. Payer to H. P. Robertson, September 15, 1945, HPR; Ltr, McDonald to Knerr, November 3, 1945, RSI.

30. Cable, Eisenhower to WD, September 3, 1945, RSI; WD to Eisenhower, September 5, 1945, RSI; USFET to CG, Eastern Military District, September 11, 1945, RSI.

31. Col. R. D. Wentworth, GSC, USFET to Col. J. L. Walker, G-2, WD, January 24, 1946, RSI.
32. Col. R. D. Wentworth, GSC, USFET to Col. J. L. Walker, G-2, WD, January 24, 1946, RSI; *New York Times*, November 17, 1945.
33. "Instructions to German Scientists," RSI; Memo, Maj. R. S. Fanning to Col. D. L. Putt, September 28, 1945, Subj: "Report on Events and Conditions which Occurred During the Procurement of Men to Work in the USA," RSI; Memo, Deputy CG, USSTAF to Col. D. L. Putt, May 30, 1945, RSI; Col. J. L. Walker, GSC to CG, AAF, March 21, 1946, RSI; Edna Jensen, *History of USAF Participation in Project Paperclip, September 1946-April 1948*. Unpublished manuscript, Wright-Patterson Air Force Base, Ohio: Historical Office, AMC, 1948, 94-99, RSI.
34. Jensen, *Project Paperclip 1946-1948*, 78-82, RSI. *Mission with LeMay* (New York, 1965), 398.
35. *Ibid.*, 84-94, RSI.
36. Memo, Deputy CG, Intelligence, Hqs, AAF to AC/AS-2, December 5, 1945, Subj: "German Scientists," RSI; Memo, Chief, Foreign Exploitation Section, Intelligence, WF to Deputy CG, WF, February 26, 1946, Subj: "Coordinating Overcast with USAFE and G-2, USFET," RSI.
37. Jensen, *Project Paperclip 1946-1948*, 47, 57-66, RSI; Col. Putt to CG, AAF, November 6, 1945, Subj: "German Technicians in This Country," RSI; Memo, WDGS to CG, AAF, September 26, 1945, Subj: "Detailed Security Instructions," RSI; Col. A. G. Bunker to CG, ATSC, November 27, 1945, Subj: "German Technicians in This Country," RSI.
38. Col. D. L. Putt to CG, AAF, October 16, 1945, RSI; Col. D. L. Putt to CG, AAF, January 23, 1946, Subj: "Research & Development of Solid Fuel Rockets," RSI; Jensen, *Project Paperclip 1946-1948*, 67, 68, RSI.
39. Capt. H. W. Boesch to WF, December 6, 1945, Subj: "Report on Trip to Port Washington to Coordinate Overcast with Navy," RSI; Rocket expert quoted in letter, Dr. Richard Porter to author, January 17, 1962.
40. Lovett to Knerr, October 4, 1945, RSI; Putt to Knerr, November 28, 1945, Subj: "Exploitation of German Scientists in the United States," RSI.
41. Memo, Col. H. G. Bunker to CG, ATSC, December 17, 1945, Subj: "Disposition of German Scientists," RSI; Memo, Executive Officer to Deputy Commander AAF, February 1, 1946, RSI; JIOA, Minutes of Meeting of Advisory Board, October 25, 1945, OTS; Memo, Putt to CG, AAF, November 6, 1945, Subj: "German Technicians in This Country," RSI.
42. Ltr, Wallace to Forrestal, November 9, 1945, OTS; Ltr, Wallace to Patterson, November 9, 1945, OTS; JIOA 3, December

13, 1945, Subj: "Collection of Technical Industrial Intelligence in Germany and Austria," OTS.

43. Ltr, Green to Wallace, September 26, 1945, OTS; Preliminary Draft, JIOA 1, October 12, 1945, Subj: "Interim Procedure for Coordinated Exploitation of German Specialists in Science and Technology in the United States," OTS; Green to War Department and Interior Department, October 17, 1945, Subj: "Policies Controlling Importation of German Scientists (or Physical Equipment) to This Country," OTS; Ltr, G-2 Representative, JIOA to Green, October 22, 1945, OTS; Ltr, Asst Secy of the Interior to Dir, JIOA, October 22, 1945, OTS; Minutes of Meeting of Advisory Board, JIOA, October 25, 1945, OTS; Memo, European Representative, Aeronautics Subcommittee to Steering Member Aeronautics Subcommittee, October 16, 1945, Subj: "Evacuating Enemy Personnel to U.S.," OTS; Ltr, Green to JIOA, October 29, 1945, OTS.

44. Henry A. Wallace, *Sixty Million Jobs* (New York, 1945), 9, 74, 121; Ltr, Wallace to Truman, December 4, 1945, OTS.

45. Ltr, Wallace to Matthew J. Connelly, January 18, 1946, HST; Ltr, James C. White to Sen. Kenneth McKellar, January 7, 1946, HST; Ltr, McKellar to Truman, January 15, 1946, HST; Ltr, Truman to McKellar, January 17, 1946, HST; Ltr, Truman to Bush, January 17, 1946, HST; Ltr, Bush to Truman, January 22, 1946, HST; Ltr, Truman to Bush, January 24, 1946, HST; White House Staff Memo, February 6, 1946, Subj: "Secretary Wallace's Proposed Importation of German Scientists," HST; Secy of War to Secy of State, December 11, 1945, AIF; Ltr, Forrestal to Byrnes, January 29, 1946, HADN.

46. Ltr, Forrestal to Byrnes, January 29, 1946, HADN; Ltr, Albrecht-Wolf Mantzel to FIAT, September 15, 1945, Subj: "List of Scientists and Engineers Evacuated from Halle and Environs by American Authority," OTS; Foreign Relations, *European Advisory Commission; Austria; Germany, 1945*, Vol. III, 976; Ltr, Eisenhower to WD, May 15, 1945, AIF; Cable, Clay to WD, August 16, 1945, RSI; Clay to WD, September 15, 1945, RSI; Memo, USGCC, Office of Dir of FIAT, September 23, 1945, Subj: "German Scientists and Technicians," OTS; Memo, Hqs, USAFE to CG, Military Government for Bavaria, January 18, 1946, Subject: "Scientific Papers and Personnel," OTS.

47. Foreign Relations, *European Advisory Commission; Austria; Germany, 1945*, Vol. III, 979-987; Memo, AC/S A-2, USAFE to American Embassy, Paris, February 14, 1946, Subj: "Unauthorized Departure of German Scientists, From American to French Territory of Occupation," RSI.

48. Millikan, *Report*, 11, 17, AFM; Ltr, Bob MacMillin, FIAT to Ted Haertel, Industrial Br, FIAT, January 6, 1945, OTS; Robert Staver, Ord Dept to Office, Chief of Ord, December 17,

1945, Subj: "The Future of Ordnance in Jet-Propulsion," RS; Lt. Karl Olsen, USNR, Industrial Br, FIAT to Chief, Industrial Br, FIAT, October 17, 1945, Subj: "The Current Movement of German Scientists into Russian Territory," OTS.

49. Ltr, T. M. Odarenko, FIAT to Chief of FIAT, October 26, 1945, Subj: "Problem of Displaced Scientists Now Residing in the American Zone of Austria," OTS; Lt. Karl Olsen, USNR, Industrial Br, FIAT to Chief, Industrial Br, FIAT, October 17, 1945, Subj: "The Current Movement of German Scientists into Russian Territory," OTS; Hqs, USAFE to CG, Military Government for Bavaria, January 18, 1946, Subj: "Scientific Papers and Personnel," OTS; Lt. Gen. John Cannon to CG, USFET, January 14, 1946, Subj: "Supervision of German Scientists;" RSI; Ltr, Bad Kissingen to WF, February 22, 1946, FRC.

CHAPTER FOUR

1. George F. Kennan, *Memoirs 1925-1950* (Boston, 1967), 293-294, 547-559.

2. James F. Forrestal, *Forrestal Diaries*, Walter Millis ed. (New York, 1951), 134-135; Walter LaFeber, *America, Russia, and the Cold War* (New York, 1967), 30-32.

3. Hewlett and Anderson, *The New World*, 501; Walter Goodman, *The Committee* (New York, 1968), 191-192.

4. Burns, "James F. Byrnes," *An Uncertain Tradition*, ed. Graebner, 234-236; Bernard J. Bernstein and Allan Matusow, *The Truman Administration: A Documentary History* (New York, 1966), 212-213.

5. Kennan, *Memoirs*, 558; Nuel Pharr Davis, *Lawrence and Oppenheimer* (New York, 1968), 260.

6. Davis, *Postwar Defense Policy and the U.S. Navy*, 224.

7. *New York Times*, February 12, 1946.

8. WD Committee on Scientific Personnel, February 6, 1946, Subj: "Status of Scientific & Technical Personnel in the War Department," FRC; William B. Plank, "The Lost Generation of Engineers," *Journal of Electrical Engineering*, 35 (May 1945), 495-498; *The Production of Doctorates in the Sciences, 1936-1948*, Manpower Br, Office of Naval Research (Washington, 1951), 35-37; John R. Steelman, *Manpower for Research* (Washington, Government Printing Office, 1947), 142. See also Clark D. Ahlberg and John C. Honey, "The Scientists' Attitude Toward Government Employment," *Science*, 113 (May 4, 1951), 505-510.

9. Foreign Relations, *Russia 1945*, Vol. V, 934; Memo, Maj. Gen. Leslie Groves, WD to CG, ASF, February 20, 1946, Subj: "Plans for Extended Exploitation of OVERCAST Personnel," AIF.

10. Memo, AC/AS-4 to CG, AAF, January 18, 1946, Subj:

"Exploitation and Employment of German Scientific and Technical Personnel," RSI; Ltr, Hensel to Patterson, January 2, 1946, RSI; Ltr, Patterson to Secy Navy, January 7, 1946, AIF; Memo, Lt. Gen. Ira C. Eaker for Asst Secy of War for Air, March 29, 1946, Subj: "Exploitation and Employment of German Scientific and Technical Personnel," RSI; "Russian Developments in Field of Guided Missiles," *Scientific Intelligence Review*, No. 2 (February 28, 1946), 33-35, RSI; Cable, AGWAR to USFET, February 19, 1946, AIF.

11. Memo, JIOA to ONI, G-2, AAF, March 6, 1946, Subj: "Advance Instructions on Exploitation of German Specialists," RSI; Memo, AC/AS-2 to Deputy Chief of Air Staff, May 8, 1946, Subj: "Utilization by the Aircraft Industry of German Specialists," RSI; SWNCC 257/15, May 24, 1946, "Policy and Procedure to Facilitate Entry into the U.S. in the National Interest of German and Austrian Scientists Sponsored by Government Departments Other Than War and Navy," OTS.

12. Ltr, Secy of Commerce to Secy of State, March 14, 1946, OTS; Ltr, Under Secy of State to Secy of Commerce, June 6, 1946, OTS; Business Advisory Council, Conclusions of Committee on Importation of German Scientists and Technicians, May 29, 1946, OTS; Secy of State to Atty Gen, March 7, 1946, OTS.

13. Memo, Gen. N. B. Harbold to AC/AS-2, April 1946, Subj: "Current Situation of 'Long-Range' Exploitation of German and Austrian Scientists and Technicians in U.S.," RSI; JIOA 4/3/M, Memo for Information, April 25, 1946, OTS; JIOA 1/3/D, April 30, 1946, Subj: "Procedure to be Followed by the JIOA in Implementing the Entry into the U.S. in the National Interest of German and Austrian Scientists," OTS.

14. Gen. George L. McDonald, AC/AS-2 to Deputy Chief of Air Staff, May 6, 1946, RSI; JCS Memo, March 13, 1946, Subj: "Substitution of Code Word," RSI; Capt. H. W. Boesch to Col. Putt, March 25, 1946, Subj: "Report on Trip to Washington, D.C.," RSI; "Paperclip: Part I," *ONI Review* (February 1949), 22, HADN.

15. Memo, Brig. Gen. N. B. Harbold for AC/AS-2, May 7, 1946, Subj: "Conference on Exploitation of German Scientists, Office Assistant Secretary of War," RSI.

16. Intelligence T-2, AMC, "Report on Conference in Washington with Officials of the State Department," June 10, 1946, cited in Harriet Buyer and Edna Jensen, "*History of AAF Participation in Project Paperclip*" (WPAFB, 1948), 22; SD Representative on JIOA to Dir, JIOA, June 19, 1946, Subj: "Basic Information Required by the State Department in Connection with Application of German Scientists for Visas to Enter the U.S.," RSI.

17. "Conference on Exploitation of German Scientists, Office Assistant Secretary of War," May 7, 1946, RSI.

18. Smith Simpson, *Anatomy of the State Department* (Bos-

ton, 1967); *Congressional Record*, July 18, 1950, 81st Cong, 2d Sess, 10489; *Ibid.*, May 15, 1952, 82d Cong, 2d Sess, 5352.

19. Harold F. Peterson, *Argentina and the United States, 1810-1960* (New York, 1964), 441-458; Spruille Braden, "The Germans in Argentina," *Atlantic Monthly*, Vol. 177, No. 4 (April 1946), 37-43.

20. Robert A. Divine, *American Immigration Policy, 1924-1952* (New Haven, 1957), 160-161; House of Representatives, Committee on Immigration and Naturalization, *Hearings to Deny Admission to the United States of Certain Aliens*, 79th Cong, 2d Sess, February-March 1946, 1-77.

21. "Conference on Exploitation of German Scientists, Office Assistant Secretary of War," May 7, 1946, RSI; State Department Representative on JIOA to Dir, JIOA, June 19, 1946, RSI.

22. Arthur D. Morse, *While Six Million Died* (New York, 1967), 137-140, 146-148, 383.

23. Office memo, "Enemy Scientists—Policy and Procedure," no date, OTS.

24. Senate Committee on Appropriations, *Technical Information and Services Act, Hearings*, 80th Cong, 1st Sess, May 1947, 45-168; OTS, "Summary of 1946 Overseas Operations, Technical Industrial Intelligence Division," November 20, 1946.

25. *New York Times*, February 18, 1946; Ltr, Dr. Roger Adams to John C. Green, March 16, 1946, OTS; Report, Quartermaster Corps, no date, Subj: "Utilization of German Technical and Scientific Personnel," AIF; Cable, USFET to AGWAR, February 28, 1946, OMGUS; Dr. A. Smekal to Scientific Br, FIAT, May 1, 1946, Subj: "Relief Payments for Evacuated German Scientists," OMGUS.

26. Cable, USFET to WD, July 17, 1946, OMGUS; Dir of Intelligence, WDGS to Chief of Staff, July 30, 1946, Subj: "Exploitation and Denial of German and Austrian Specialists," AIF; Col. D. L. Putt to CG, AAF, June 14, 1946, Subj: "Request for Immediate Action to Protect the Long-Range Exploitation Program of German Scientists in the United States," RSI; Cable, AGWAR to USFET, August 20, 1946, OMGUS.

27. Col. Putt to CG, AAF, June 14, 1946, RSI; German Scientist's letter in Maj. George Collins, AC/AS-2 to Dir, JIOA, August 19, 1946, AIF; Hqs, ATSC to CG, AAF, June 4, 1946, Subj: "Request for Security of Families of German Scientists," FRC.

28. Col. Putt, Hqs, AMC to CG, AAF, September 4, 1946, Subj: "Information of Foreign Efforts to Contract German Scientists," AIF; MID to AC/S, G-2, USFET, April 17, 1946, Subj: "Military Research in the French Occupation Zone of Germany," AIF; USFET to WD, July 16, 1946, Subj: "Bruno Eckert Group," AIF; Naval Adviser, OMGUS to CNO, June 17, 1947, Subj:

"Former German DFS Scientists Working in France," HADN.

29. Col. D. L. Putt, AMC to CG, AAF, November 4, 1946, Subj: "Exploitation of German Scientists in England," RSI; Scientific Br, Intelligence Div, WDGS to Chief, Intelligence Unit, WDGS, June 5, 1946, AIF; Ltr, Robert Frye, European Dir, TIID to Ray Hicks, OTS, Department of Commerce, October 23, 1947, OTS.

30. Maj. George Collins AC/AS-2 to Dir, JIOA, August 19, 1946, AIF; Proposed Outgoing Message, Brig. Gen. W. H. Draper, August 25, 1946, OMGUS; Chief, FIAT to Chief of Staff, OMGUS, August 27, 1946, Subj: "Denial of German and Austrian Scientists and Technicians," OMGUS.

31. Dir of Intelligence, WDGS to Chief of Staff, July 30, 1946, "Exploitation and Denial of German and Austrian Scientists," AIF; Hqs, AAF to Dir of Intelligence, WDGS, June 26, 1946, Subj: "German and Austrian Scientists at Wright Field and Their Dependents in Germany," AIF; Scientist, quoted in Jensen, 125-126.

32. Col. D. L. Putt to CG, AAF, June 14, 1946, RSI; Dir of Intelligence, WDGS, to Chief of Staff, July 30, 1946, AIF; Memo, Patterson to Aurand, June 26, 1946, RSI; Patterson to Aurand, July 15, 1946, RPP; Office Memo, MID, WDGS, July 9, 1947, AIF; Petersen to Patterson, July 25, 1946, RPP.

33. Arthur Krock, *Memoirs* (New York, 1968), 223-224, 419-480.

34. Kennan, *Memoirs*, 304; Ltr, Secy of Air Force to Secy of State, February 27, 1948, RSI; SWNCC 257/24, October 10, 1946, Subj: "Interim Exploitation of German and Austrian Specialists Under Project Paperclip," OTS; Personal Interview, President Harry S. Truman, Independence, Missouri, June 3, 1963; Foreign Relations, *Germany*, 1946, Vol. V, 689.

35. JIOA 875, October 16, 1946, Subj: "Status of Exploitation Program," OTS; "Long-Term Employment Contract," in Jensen, *Project Paperclip* 1946-1948, Exhibit D, RSI.

36. Hqs, USFET to Dir of Intelligence, WDGS, January 2, 1947, Subj: "Semi-Monthly Status Report on Project Paperclip," AIF.

37. Letter quoted in Memo, Hqs, AAF to Dir of Intelligence, WDGS, February 19, 1947, Subj: "Intelligence Information," AIF.

38. Hqs, AMC to CG, AAF, December 4, 1946, Subj: "Intelligence Information," AIF; V. L. Sokolov, *Soviet Use of German Science and Technology, 1945-1946* (New York, 1955), 10-11, 26-28; Senate Subcommittee of the Judiciary, *Scope of Soviet Activity in the United States, Hearings*, 85th Cong, 1st Sess, 1958, 4905-4922; Frank A. Howley, *Berlin Command* (New York, 1950), 136.

39. Hqs, AAF to Dir of Intelligence, WDGS, February 19,

1947, Subj: "Intelligence Information," AIF; Hqs, AMC to CG, AAF, March 18, 1947, Subj: "Intelligence Information," AIF; Chief of Intelligence, AMC to Chief of Staff, USAF, May 19, 1948, Subj: "Intelligence Information on Russia," FRC; Hqs, AMC to CG, AAF, January 15, 1947, Subj: "Intelligence Information," AIF.

40. Memo, Chief of Intelligence, AMC to Chief of Staff, USAF, May 19, 1948, Subj: "Intelligence Information on Russia," FRC.

41. Foreign Relations, *Germany*, 1946. Vol. V, 736-749; Howley, *Berlin Command*, 136-138.

42. *Washington Times Herald*, October 25, 1946; *New York Times*, October 28, 1946; *Newsweek*, November 11, 1946; *New York Times*, November 24, 1946.

43. G-2, WDGS to Gen. Osborn, August 14, 1945, Subj: "Movement of German Scientists to the United States," AIF; WD Press Release, "Outstanding German Scientists Being Brought to U.S.," October 1, 1945; Patterson to Fulbright, January 29, 1946; *New York Times*, February 15, 1946; Chief, MIS to AC/S, G-2, March 15, 1946, Subj: "Press Release on Exploitation of German Scientists," AIF; *New York Times*, March 21, 1946; MID, WDGS to Adm. T. B. Inglis, USN, March 27, 1946, Subj: "Publicity Regarding Exploitation of German Scientists by the U.S.," AIF.

44. *New York Herald*, July 7, 1946; Exploitation Br, MID, WDGS to Dir of Intelligence, WDGS, Subj: "Further Press Releases on Scientific and Exploitation Program," AIF; Lt. Froelich, AMC to Col. Putt, AMC, November 21, 1946, RSI; WD Press Release, November 12, 1946.

45. WD Press Release, December 4, 1946, Subj: "United States Gains Technical Aid from German-Austrian Scientists," RSI; "Secrets From Hitler," *Newsweek* (December 9, 1946), 64; "Nazi Brains Help United States," *Life*, 21 (December 9, 1946), 49-50; "Nazi Scientists Aid Army on Research," *New York Times*, December 4, 1946. See also: "Science Has No Nationality," *Science Illustrated*, 2 (February 1947), 13; "We Want with the West," *Time*, 48 (December 9, 1946), 67-68; "V-2's to Diesels," *Business Week* (December 14, 1946), 36-38; "Noted German Scientists Work for Uncle Sam," *Science News Letter*, 50 (December 14, 1946), 373.

46. *Daily Worker*, December 4, 1946.

CHAPTER FIVE

1. Gavin de Beer, *The Sciences Were Never at War* (London, 1960), 26, 204; Association of Scientists of Cornell University, "Resolution on German Scientists," January 29, 1947, UCL;

Ithaca *Journal*, January 18, 1947; Minutes of ASCU Membership Meeting, January 29, 1947, UCL.

2. Chief, Intelligence Gp, WDGS to CG, AAF; Chiefs of Ord, Engineers, CWS, QMC, SC, and TC, September 20, 1946, Subj: "Implementation of Revised Paperclip Program," AIF; Under Secy of War to Secy, GS, May 28, 1945, Subj: "German Scientists," RSI.

3. Gallup poll statistics from the Roper Public Opinion Research Center, Williams College, September 27, 1960.

4. *New York Times*, December 30, 1946; Joachim Joesten, "This Brain for Hire," *The Nation* (January 11, 1947), 36-38; Seymour Nagan, "Top Secret: Nazis at Work," *New Republic*, 117 (August 11, 1947), 24-26; *New York PM*, August 26, 1947.

5. "Our Platform for Defeated Germany," *Prevent World War III*, 8 (March-April 1945), 5-6; Ltr, Secy, Society for the Prevention of World War III to Henry Wallace, July 22, 1946, OTS; "Welcome to 1,000 Nazis," *Prevent World War III*, 18 (December 1946-January 1947), 3; see also "German Scientists," *Prevent World War III*, 19 (February-March 1947), 5-6; "German Scientists," *Prevent World War III*, 20 (April-May 1947), 3; "National Conference on the German Problem," *Prevent World War III*, 20 (April-May 1947), 18-19; Ltr, Edgar Ansel Mowrer, Chairman, National Conference on the German Problem to Secy of War, March 11, 1947, AIF.

6. Ltr, Midwest Regional Director, Commission on Law and Social Action, American Jewish Congress to Executive Secretary, Federation of American Scientists, April 7, 1947, UCL; Ltr, Stephen S. Wise to Secy of War, Atty Gen, Under Secy of State, Alexander Wiley and Earl Michener, April 14, 1947, AIF; Lt. Robiczek to Col. Putt, December 26, 1946, Subj: "Miscellaneous Activities and Operations," RSI; Ltr, American Association of Scientific Workers, Association of New York Scientists, Church League for Industrial Democracy, Committee of Catholics for Human Rights, Council for Democracy, Friends of Democracy, League for Fair Play, Methodist Federation for Social Action, Progressive Citizens of America, Society for the Prevention of World War III, and Southern Conference for Human Welfare to Averill Harriman, February 19, 1947, OTS.

7. Alice Kimball Smith, *A Peril and a Hope: The Scientists Movement in America, 1945-1947* (Chicago, 1965).

8. Memo to Chapters, January 8, 1947, in Ltr, W. A. Higinbotham to author, November 3, 1958; Albert Deutsch, "Scientists Shocked by U.S. Efforts to Place Nazis in School Jobs Here," *New York PM*, December 31, 1946; *New York Times*, December 24, 1946; "January 14 Meeting," *W.A.S. Bulletin* (January 1947), 3, UCL, Ltr; William G. Schlecht, Chairman, Committee on the Social Sciences and the Humanities, W.A.S., to Dr. Douglas M.

Kelly, January 22, 1947, UCL; "Hiring of German Scientists," W.A.S. *Bulletin* (February 1947), 5, UCL; W.A.S., Rough Draft of Letter for Comment and Criticism, UCL; Minutes of the Council, F.A.S., New York, February 1-2, 1947, UCL.

9. Telegram, W. Schlecht, R. Emberson Brown, W.A.S. to Higinbotham, February 1, 1947, UCL; Memo, Higinbotham to member associations, February 14, 1947, UCL; Memo, Higinbotham to member associations, February 21, 1947, UCL; Ltrs, Higinbotham to Secy of War, CG, AAF, Atty Gen, Secy of State, Secy of Navy, February 14, 1947, UCL.

10. H. A. Bethe and H. S. Sack, "German Scientists in Army Employment," *Bulletin of the Atomic Scientists*, 3 (February 1947), 65-67; S. A. Goudsmit, "German Scientists in Army Employment," *Bulletin of the Atomic Scientists*, 3 (February 1947), 64.

11. Ltr, Public Relations Division, WD to Higinbotham, March 7, 1947, UCL; Ltr, Acheson to Higinbotham, March 13, 1947, UCL; Minutes of Meeting, F.A.S. Council, March 15-16, 1947, UCL.

12. Minutes of Meeting, F.A.S. National Council, May 12, 1947, UCL; Ltr, Higinbotham to Dr. Robert E. Wilson, Cornell University, May 13, 1947, UCL.

13. Lt. Robiczek to Col. Putt, December 12, 1946, Subj: "Miscellaneous Activities and Operations," RSI; Col. W. R. Clingerman, WF to Lt. Col. Philbrick, Boston University, March 28, 1946, Subj: "Surveillance of German Scientists," FRC; *Congressional Record*, June 30, 1947, Vol. 93, Pt. 6, 80th Cong, 1st Sess, 7912; *London Times*, June 29, 1947; Chief, Public Relations, GSC to Chief of Staff, February 18, 1947, Subj: "German Scientists Working for the War Department," AIF; Memo, Chief, Exploitation Sec, GSC to Executive, Intelligence Dept, August 12, 1947, Subj: "Request for Daily Newspapers," AIF.

14. Chief, Public Relations, GSC to Chief of Staff, February 18, 1947, AIF; Chief, Intelligence Gp, WDGS to Dir of Intelligence, WDGS, March 3, 1947, AIF; Chief, Intelligence Gp, WDGS to Chief, Public Relations Div, WDGS, March 22, 1947, Subj: "Press Release on Project Paperclip," AIF; Adj Gen's Office, WD to Divisions of the WDGS and Special Staff, March 27, 1947, Subj: "German Scientists Working for the War Department," RSI; Intelligence Div, WDGS to Chief, Public Relations Div, WDGS, March 31, 1947, Subj: "Release of Information on Exploitation of German and Austrian Specialists," AIF; Secy of War to Asst Secy of War, March 24, 1947, RPP; Memo, Exploitation Br, Intelligence Div, WDGS to Public Information Div, June 10, 1947, Subj: "Proposed Press Release on Project Paperclip," AIF; Executive, Intelligence Div, WDGS to Dir of Intelligence, WDGS, c. July 1, 1947, Subj: "Investigation of Security Aspect of Project Paperclip and Qualifications of Certain Specialists," AIF; Office Memo, GSC,

May 4, 1948, Subj: "Political Screening of Paperclip Personnel in Europe," AIF.

15. Personal letter of author, July 10, 1960; James Waterman Wise, "Let Us Not Lessen Our Luster," *American Unity*, Vol. V, No. 6 (March 1947), 3-4.

16. Ltr, Professor at Cornell University to colleague, February 28, 1947, UCL.

17. Hqs European Command to JIOA, May 7, 1948, Subj: "Security Standards for Paperclip Personnel," AIF.

18. Philip Morrison, "Alsos: The Story of German Scientists," *Bulletin of the Atomic Scientists*, 3 (December 1947), 365; Eugene Rabinowitch, *Bulletin of the Atomic Scientists*, 4 (April 1948), 105; Max von Laue, "The Wartime Activities of German Scientists," *Bulletin of the Atomic Scientists* (April 1948), 103; Frederic Lilje, *The Abuse of Learning: The Failure of the German University* (New York, 1948), 164-165.

19. Harry F. Byrd, "Hitler's Experts Work for Us," *The American Magazine*, 145 (March 1948), 136.

20. Morton M. Hunt, "The Nazis Who Live Next Door," *Nation*, 169 (July 16, 1949), 56-58 and *ibid.*, 169 (July 23, 1949), 82-84; Personal letter to author, July 24, 1960.

CHAPTER SIX

1. Chief, Intelligence Gp, WDGS to Dir of Intelligence, WDGS, January 21, 1947, Subj: "Operation Paperclip," AIF.

2. Ltr, Acting Chief, Analysis Div, Intelligence, WF to Mr. Charles Burrows, Dir, School of Engineering, Cornell University, February 28, 1947, OTS.

3. Edward A. Kolodziej, *The Uncommon Defense and Congress, 1945-1963* (Columbus, 1966), 38-150, Chief of TC to MID, WDGS, October 25, 1946, Subj: "Exploitation of German Scientists," AIF; Memo, Office AC/AS-2 for Executive, AC/AS-2, March 21, 1947, Subj: "Weekly Activity Report," RSI; Intelligence Div, WDGS to Chief, Budget Div, WDGS, May 28, 1947, Subj: "Request for Authorization of Payment of Certain German and Austrian Specialists," AIF; Jensen, *Project Paperclip 1946-1948*, 22-23, RSI.

4. Intelligence Div, WDGS to Chief, Public Relations, WDGS, March 25, 1947, "Project Paperclip," AIF; Maj. Gen. R. J. Chamberlin, GSC to CG, AAF, June 9, 1947, Subj: "Termination of Procurement Phase of Project Paperclip," RSI.

5. Intelligence Div, WDGS to Chief, Budget Div, WDGS, May 28, 1947, AIF; Hqs, USFET, AC/AS-2 to Intelligence Div, WD, February 15, 1947, Subj: "Progress Report, Intelligence Division, War Department Team at Landshut, ETO," AIF.

6. Lt. Col. Douglass W. Eiseman, USAF for Dir, JIOA, July 16, 1947, Subj: "Report on Project Paperclip," RSI; Memo, Col. L. L. Williams, GSC to CG, AAF, August 20, 1947, Subj: "Termination Procurement Phase of Project Paperclip," RSI; Kolodziej, *The Uncommon Defense and Congress, 1945-1963*, 62-63, 69-70; Hqs, EUCOM to Dir of Intelligence, GSUSA, January 7, 1948, Subj: "Semi-Monthly Status Report—Project Paperclip," AIF; Hqs, EUCOM to Dir of Intelligence, GSUSA, January 11, 1949, Subj: "Semi-Monthly Status Report—Project Paperclip," AIF; Hqs, EUCOM to Dir of Intelligence, GSUSA, January 12, 1950, Subj: "Monthly Status Report—Project Paperclip," AIF; Hqs, EUCOM to AC/S G-2, DA, January 8, 1951, Subj: "Monthly Status Report—Project Paperclip," AIF.

7. Attachment to Interoffice Memo, Maj. Gen. George McDonald, February 25, 1948, Subj: "Proposed Letter to the Secretary of State Concerning German and Austrian Scientists," RSI; SWN-CC 257/24, October 10, 1946; "Long-Range Employment Contract," in Jensen, *Project Paperclip 1946-1948*, Exhibit D, RSI.

8. Lt. Col. Douglass Eiseman, USAF to Dir, JIOA, July 16, 1947, Subj: "Report on Project Paperclip," RSI; JIOA, "Standard Operating Procedure for the Immigration, by Preexamination, of German and Austrian Scientists and Technicians Sponsored by Military Agencies," March 14, 1947, RSI.

9. Truman quoted on displaced persons in Divine, *American Immigration Policy, 1924-1952*, 114. For the Truman loyalty program see Allan Theoharis, "The Rhetoric of Politics: Foreign Policy, Internal Security, and Domestic Politics in the Truman Era, 1945-1950," in Barton Bernstein, ed., *Politics & Policies of the Truman Administration* (Chicago, 1970), 196-241.

10. *Congressional Record*, May 15, 1952, 82d Cong, 2d Sess, 5354-5359; Lt. Col. Douglass Eiseman, USAF to CG, AMC, WF, October 31, 1947, Subj: "Amendment of Immigration Procedure," RSI; Act of June 20, 1941 (55 Statute 252) in Marion T. Bennett, *American Immigration Policies* (Washington, 1963), 70.

11. Memo, Col. Robert Taylor, AAF for AC/AS-2, July 9, 1947, Subj: "Visas for German and Austrian Scientists," RSI; Office Memo, MID, WDGS, July 25, 1947, Subj: "Conference with Mr. O'Sullivan, State Department," AIF; George C. Marshall, Secy of State to Kenneth C. Royall, Secy of War, August 12, 1947, HADN; Secy of War to Secy of State, September 3, 1947, HADN; Memo, Chief, Analysis Div, Intelligence Dept, WF to Col. McCoy, October 15, 1947, Subj: "Immigration Visas for Paperclip Specialists," RSI; Brig. Gen. George Schulgen, USAF to CG, AMC, October 29, 1947, RSI; Memo, Lt. Col. Douglass Eiseman, USAF to CG, AMC, December 19, 1947, Subj: "Documents to be Presented by German Specialists When Appearing Before Consular and Immigration Officials," RSI.

12. John L. Sullivan, Secy of Navy to Marshall, February 10, 1948, HADN; John L. Sullivan to Secy of Army and Secy of Air Force, February 10, 1948, Subj: "Immigration Visas for German Specialists Employed by the Armed Services," HADN; Office Memo, Gen. George C. McDonald, USAF, February 25, 1948, Subj: "Letter to the Secretary of State Concerning German and Austrian Scientists," RSI; Symington to Marshall, March 26, 1948, HADN.

13. Menjou cited in Robert K. Carr, *The House Committee on Un-American Activities, 1945-1950* (Ithaca, 1952), 60; *Congressional Record*, May 15, 1952, 82d Cong, 2d Sess, 5347-5360; Ned Brooks, "Three Star Extra," March 25, 1948.

14. *New York Times*, April 9, 1948; Office Memo, Dir of Intelligence, WDGS, May 1948, Subj: "Outline of Conference with Mr. Hoover, 11:00 A.M., 11 May 1948," AIF; Lt. Gen. Chamberlin, GSC to Maj. Gen. McDonald, USAF and Rear Adm. Thomas B. Inglis, USN, May 11, 1948, Subj: "German Specialists Program," AIF; Asst Secy of Air Force to Symington, May 13, 1948, Subj: "Immigration Visas for German and Austrian Scientists," AIF; Chief, Exploitation Sec, WDGS to Dir of Intelligence, WDGS, October 19, 1948, Subj: "Progress Report—Immigration of Paperclip Specialists," AIF.

15. John C. Green, "Last Call for Germany," *Federal Science Progress*, Vol. 1, No. 1 (February 1947), 24.

16. Memo, Asst Dir, OTS to Walter White, Business Advisory Council, January 16, 1947, Subj: "Importation of German Scientists in the National Interest," OTS; Memo, Green to Asst Dir, OTS, March 27, 1947, OTS.

17. Asst Dir, OTS to Green, August 5, 1947, Subj: "German Scientist Program," OTS; Memo, Green to Dir, JIOA, July 23, 1947, Subj: "Department of Commerce Cooperation with Armed Services Under Operation Paperclip," OTS; Ltr, Ray L. Hicks, Special Asst, OTS to Robert Frye, European Dir, TIID, October 16, 1947, OTS.

18. Ltr, Hicks to Green, September 24, 1947, OTS; Ltr, Hicks to Frye, October 28, 1947, OTS; Ltr, Hicks to Frye, October 16, 1947, OTS; Eugene J. Hardy, "Washington," *The Iron Age* (October 9, 1947), 94-95.

19. Jensen, *Project Paperclip 1946-1948*, 103-112, RSI.

20. Bipartite Committee on Scientific and Technical Personnel, March 7, 1949, Subj: "Employment of German Scientists," OTS; Hicks to Green, August 30, 1949, Subj: "German and Austrian Scientist Program," OTS; Dr. Charles A. Johnson, *History of the Air Research and Development Command 1 July-31 December 1954* (unpublished manuscript), 8, RSI.

21. Gimbel, *The American Occupation of Germany, Politics and the Military 1945-1949*, 7.

22. WD to USFET, February 8, 1947; OMGUS; Clay to WD, June 25, 1947, Subj: "Detention of German Scientific Personnel," OMGUS; DA to CINCEUR, October 10, 1947, OMGUS.

23. GS, USA to Chief, Ord, September 29, 1948, AIF; Weekly Staff Conference, Deputy Cdr in Chief, EUCOM, April 27, 1948, Subj: "Special Projects," AIF; Dir of Intelligence, OMGUS to Dir of Intelligence CINCEUR, August 20, 1948, Subj: "Technical Intelligence Development of Denial Program Consultants," OMGUS; Chief, Scientist Sec, Intelligence Div, WDGS to Chief, Procurement Br, WDGS, October 31, 1950, Subj: "HICOG Consultants," AIF; Dir of Intelligence, Hqs, EUCOM to Dir of Intelligence, DA, August 10, 1948, AIF.

24. "Report on Austria," September 20, 1949, Appendix B to Ltr, Dir of Intelligence, Hqs, USFA to Dir of Intelligence, GSUSA, c. October 1949, Subj: "Denial Program, Scientific, Austria," AIF.

25. "Draft of Proposed Plan," G-2, WDGS, c. December 1949, Subj: "Plans for the Initial Interrogation of Certain Designated Specialists," AIF.

26. Chief, Special Procurement Br, WD to CSGID, January 4, 1950, Subj: "Notes on the Implications of Policy Trends and Their Bearing on the European Scientist Program," AIF; Truman *Memoirs*, Vol. II, 339.

27. Johnson, *History of ARDC*, 3-4, 8, RSI; Col. Harold Watson, USAF to Maj. Gen. D. L. Putt, July 13, 1950, RSI; Col. Harold Watson, USAF to Dir of Intelligence, Hqs, USAF, May 28, 1951, Subj: "Implementation of Project 63," RSI; JCS, "Statistical Report of Aliens Brought to the United States Under the 'Paperclip' Program," December 1, 1952, OTS; Johnson, *History of ARDC*, 10-13.

28. For the Internal Security Act and Truman's quote, see Divine, *American Immigration Policy*, 160-163, 176; Actg Dir, JIOA to Dir, OTS, August 29, 1951, OTS; *Congressional Record*, July 18, 1950, 81st Cong, 2d Sess, 10489.

29. Senate Armed Services Committee, *Inquiry into the Military Situation in the Far East*, 82d Cong, 1st Sess, May 15-31, 1951, 1468-1469; *Congressional Record*, May 15, 1952, 82d Cong, 2d Sess, 5352; Truman, *Memoirs*, Vol. II, 284; Public Law No. 14, *Congressional Record*, March 28, 1951, 82d Cong, 1st Sess, 1375, 2389; Senate and House of Representatives, *Revision of Immigration Laws, Joint Hearings*, March-April 1951, 244-245.

30. JCS, "Statistical Report of Aliens Brought to the United States Under the 'Paperclip' Program," December 1, 1952, OTS; Ltr, Maj. Jack Campbell to Maj. Eugene Flood, July 21, 1952, FRC.

31. *Forschung Heisst Arbeit und Brot* (Stuttgart, 1950), F.B.I. translation, 48; Hqs, Civilian Censorship Div, ETO to

Deputy Dir of Intelligence, WD, July 25, 1947, Subj: "Semi-Monthly Trend Report," AIF; Hqs, EUCOM to Army Intelligence Div, January 4, 1949, Subj: "Briefing: Unauthorized Publicity of Operation Paperclip," AIF; Office Memo, WDGS, "Translation of Correspondence in *Physikalische Blatter*, Vol. VI, 190, February 19, 1950," AIF; Gustav Stolper, *German Realities* (New York, 1948), 94.

CHAPTER SEVEN

1. Arnold cited in Memo, Deputy CG, Intelligence, WF to CG, AAF, January 23, 1946, Subj: "Research and Development of Solid Fuel Rockets," RSI; Kolodziej, *The Uncommon Defense and Congress*, 38-150.

2. Samuel P. Huntington, *The Common Defense* (New York, 1961), 31-47; Thomas A. Sturm, *The USAF Scientific Advisory Board*, 34-35; U.S. Congress, Senate, Special Committee on Atomic Energy, *Hearings* (79th Cong, 1st Sess, Washington, D.C., 1945), 179; Vannevar Bush, *Modern Arms and Free Men* (New York, 1949), 84-85; *Congressional Record*, 85th Cong, 2d Sess, January 23, 1958, 2798; OD, WDGS for Col. Clarke, January 24, 1947, AIF; *London Times*, March 16, 1948; Intelligence Div, WDGS to Cdr in Chief, EUCOM, July 8, 1947, AIF; Jensen, *Project Paperclip 1946-1948*, 98-102, 130-132.

3. JCS, Statistical Report, December 1, 1952, RSI; Chief, Signal Office to Dir of Intelligence, WDGS, May 5, 1948, Subj: "German Scientists with the Signal Corps," AIF; Ltr, Dr. Harold Zahl, Dir of Research, Hqs, Signal R & D Laboratory to author, July 25, 1960.

4. Hamill cited in Interview Transcript, General Toftoy, Col. Hamill and Vincent Hackett, February 10, 1959.

5. OD, WDGS to Col. Clarke, January 24, 1947, AIF; Intelligence Officer, Ft. Bliss to AC/S, G-2, April 14, 1947, Subj: "Intelligence Summary, Fort Bliss-White Sands Area," AIF; Office Memo, G-2, May 14, 1947, Subj: "Security Survey by Headquarters, Fourth Army," AIF; James McGovern, *Crossbow and Overcast* (New York, 1964), 212; *El Paso Herald Post*, "German Scientists in El Paso Blasted," July 1, 1947.

6. *El Paso Herald Post*, July 2, 1947, July 18, 1947, August 5, 1947; Chief Exploitation Sec, Intelligence Div, Report, November 1947, Subj: "Conference at Ft. Bliss Relative Security on Public Relations Aspects of Project Paperclip," AIF; Intelligence Div, GSUSA to Chief of Ord, January 20, 1948, Subj: "Surveillance and Custody of Paperclip Personnel, Fort Bliss," AIF; Memo Report, GSUSA, November 26, 1947, Subj: "Project Paperclip, Ft. Bliss, Texas and Adjacent Areas," AIF; Executive Officer, CSGID to CG, Fourth

Army, April 1948, Subj: "Surveillance of Paperclip Personnel," AIF. Lehrer cited in Mary M. Simpson, "The Race for Missiles," *Bulletin of the Atomic Scientists* (October 1957), 302.

7. Toftoy-Hamill-Hackett interview; Maj. Gen. H. N. Toftoy and Col. J. P. Hamill, *Historical Summary of the von Braun Missile Team*, unpublished manuscript, 1959; Chief of Ord to Dir of Intelligence, GSUSA, May 7, 1948, Subj: "Immigration of Alien Scientists Employed by the Ordnance Department," AIF.

8. JCS, Statistical Report, December 1, 1952, RSI.

9. Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, 1955), 708-709; Monthly Status Report No. 12, AAF, Aero-Medical Center, September 30, 1946, RSI; See *German Aviation Medicine, World War II* (Washington, 1950), 2 Vols.; Jean Evans, "History of the School of Aviation Medicine, 1918-1958," *The Air Power Historian*, Vol. 4, No. 4 (October, 1958), 255; *Bibliography of Space Medicine*, U.S. Department of Health, Education, and Welfare: Washington, D.C., 1958; Interview with Dr. Hubertus Strughold, San Antonio, Texas, July 5, 1966.

10. Memo, Hqs, USFET, Office of AC/S, G-2 to Chief, CPM Br, G-2, WD, January 24, 1946, RSI; Jensen, *Project Paperclip 1946-1948*, 119-129; Chief, Analysis Div, cited *ibid.*, 93; Office Memo, WF, Subj: "Scientist Program," March 1947, RSI.

11. Memo, Deputy CG, Intelligence to Asst Secy of War for Air, Subj: "Work of German Scientists," March 24, 1946, RSI; Office Memo, WF, Subj: "Scientist Program," March 1947, RSI; Memo, Office of AC/AS-2, WF to Dir, JIOA, Subj: "Report on Project Paperclip," July 16, 1947, RSI; Interview with Lt. Gen. D. L. Putt, Los Angeles, July 1, 1960.

12. Davis, *Postwar Defense Policy*, 257; JCS, Statistical Report, December 1, 1952, RSI; "Paperclip: Part II," *The ONI Review* (Washington, 1949), 15-21.

13. Ltr, von Braun to Kurt Stehling, November 12, 1952, WVB; Johnson, *History of ARDC*, 15.

14. Loyd S. Swenson, Jr., James M. Grimwood and Charles C. Alexander, *This New Ocean* (Washington, 1966), 18-30; Vernon van Dyke, *Pride and Power* (Urbana, 1964), 10-16; Medaris, *Countdown for Decision*, 214-219.

15. Medaris, *Countdown for Decision*, 226; *Congressional Record* (February 3, 1958), 1269; *New York Times*, October 10, 1957; U.S. Congress, Senate, *Hearings on "Inquiry into Satellite and Missile Programs,"* Part II (85th Cong, 2d Sess, Washington, D.C., 1958), 1823; John Foster Dulles, "The Role of Negotiation," *Department of State Bulletin*, 38 (February 3, 1958), 159.

16. Senate Armed Services Committee, *Inquiry into the Military Situation in the Far East: Hearings*, 82 Cong, 1 Sess (1951), 1468; *Congressional Record* (March 19, 1951), A1565; *Congres-*

sional Record (April 25, 1956), 6932; Senate Subcommittee of Committee on Judiciary, *Kidnapping of Space Scientists, Hearings*, November 21, 1957, 85th Cong, 1st Sess, 4920-4923; "Helping the Enemy," *Life Line*, November 20, 1962.

17. *Congressional Record*, January 14, 1958, 85th Cong, 1st Sess, 228-229; Elford A. Cederberg, "German Scientists: Truman's Folly," *American Mercury*, 87 (July 1958), 121.

18. Richard E. Stockwell, "The German Legacy," in Asher Lee, ed. *The Soviet Air and Rocket Forces* (New York, 1959), 229-239; *Congressional Record*, 85th Cong, 2d Sess, March 4, 1958, article from German "Welt Am Sonnabend," October 26, 1957; Robert Littell, "The Kremlin Picks a German Brain," *The Reader's Digest*, August, 1958, 97-101.

CHAPTER EIGHT

1. For an excellent study of the intellectual migration during the 1930's, see Laura Fermi, *Illustrious Immigrants* (Chicago, 1968).

2. Robert Havighurst, *Report on Germany* (New York, 1947), 51.

3. Memo, Deputy CG to CG, AAF, July 11, 1947, Subj: "Intelligence Information—General Attitude of German Scientists and Their Families," AIF.

4. David Rodnick, *Postwar Germans, An Anthropologist's Account* (New Haven, 1948), 1, 158, 221-225.

5. Havighurst, *Report on Germany*, 34.

6. Ltr. Weber to Commander, Military Government, Kronach, July 25, 1946 (in personal papers of Dr. Weber).

7. Deputy CG, Intelligence to CG, AAF, July 11, 1947, Subj: "Intelligence Information," AIF.

8. Office Memo, Fort Bliss, Texas, to DASE Personnel, October 13, 1949, Subj: "Two Urgent Requests by Major Hamill," DKH.

9. John G. Medaris, *Countdown for Decision* (New York, 1960), 117.

10. Hitler cited in James V. Compton, *The Swastika and the Eagle* (Boston, 1967), 17-20. See also Norbert Muhlen, "America and American Occupation in German Eyes," *America Through Foreign Eyes*, ed. Richard D. Lambert (Philadelphia, 1954), 52-61.

CHAPTER NINE

1. Kennan, *Memoirs*, 296; Stalin quoted in G. A. Tokaty, "Soviet Rocket Technology," *Technology and Culture*, Vol. IV, No. 4 (Fall, 1963), 523.

Bibliographic Comment

SECONDARY SOURCES: I have identified the published materials used in this study in the footnotes, but a number of books deserve additional mention. Dieter Huzel, *From Peenemünde to Canaveral*, is an excellent autobiographical account of the migration of the rocket experts from Germany to the United States, and contains much useful factual material as well as personal insights. James McGovern, *Crossbow and Overcast*, is a generally superficial and frequently inaccurate study of the Allied offensive against the German rocket threat and the removal of the von Braun team to the United States, but does offer some interesting material drawn from interviews. Michel Bar-Zohar, *The Hunt for German Scientists, 1944-1960*, is a French author's description of the dispersal of German experts throughout the world; aimed at the popular market and based on scant documentary evidence, it offers excitement and drama at the expense of accuracy. David Irving provides both drama and accuracy in his two superb books on German scientific development during World War II, *The Mare's Nest* and *The German Atomic Bomb*; comprehensive and thoroughly documented from official records, these studies are models of thoughtful analysis. Three books which I found very useful on the early postwar period are equally comprehensive, carefully documented, and definitive: Vincent Davis, *Postwar Defense Policy and the U.S. Navy, 1943-1946*; John Gimbel, *The American Occupation of Germany, Politics and the Military, 1945-1949*; and Alice

Kimball Smith, *A Peril and a Hope: The Scientists' Movement in America, 1945-1947*.

MILITARY ARCHIVES: This book is based substantially on the files of the Army, Navy, and Air Force for the period 1945 to 1951, many of which are still classified. The location, nature, and status of those files is as follows:

Air University Library, United States Air Force, Maxwell Air Force Base, Alabama. A small collection of miscellaneous materials on the program, especially regarding the procurement period.

Air Force Museum, United States Air Force, Wright-Patterson Air Force Base, Ohio. A limited collection of documents filed under the heading "German Scientists"; they include reports of interrogations of the scientists by U.S. civilian and military personnel.

Federal Records Center, St. Louis, Missouri. Many of the retired documents pertaining to the Project, especially for the period 1947-51. Security clearance through the appropriate service is required for access.

Historical Archives, Department of the Navy, Alexandria, Virginia. A collection listed as "German Scientists," which partially documents the Department's participation in Paperclip. A security check is required for access to records.

Office of Naval Intelligence Washington, D.C. Most of the pertinent materials on the Navy's participation in the German scientist program. The Office does not allow access to the files, but will make appropriate materials available. It requires a security check for entry and submission of the manuscript for clearance prior to publication.

Research Studies Institute, Air University, United States Air Force, Maxwell Air Force Base, Alabama. Thousands of documents and many invaluable reports and unpublished manuscripts relating to the program; the material is especially valuable for the utilization of specialists at Wright Field. The Institute requires security clearance for access, and submission of the manuscript to the USAF Book Program for review prior to publication.

World War II Records Division (now Modern Military Records Division) of the National Archives and Records Service, Washington, D.C. An excellent collection of documents, especially the records of the War Department General Staff, which are indispensable for an understanding of policy-making on the national level. The Center also has control of the Robert Patterson papers and the files of the Office, Military Government, United States. It requires security clearance for access and a review of the manuscript by the Office of Freedom of Information, Department of the Army, prior to publication.

OTHER MANUSCRIPT COLLECTIONS: I have also made extensive use of documents retained by other governmental agencies and of those in private collections, none of which requires special procedures for the use of materials. The Department of Special Collections, University of Chicago Library, has the papers of the Federation of American Scientists, the Washington Association of Scientists, and the Association of Scientists, Cornell University. The Harry S. Truman Library, Independence, Missouri, has a small collection including letters to Truman supporting or denouncing the program. The Office of Technical Services, Department of Commerce, has the best collection of material pertaining to exploitation within Germany. It also has complete files on those scientists imported under the auspices of the Department and a considerable amount of material relating to the development of national policy. Robert Staver, former Army Ordnance officer, now an engineer at Palo Alto, California, has a superb collection on his role in the procurement of the Peenemünde documents and the enlistment of the von Braun team. Dieter Huzel, a former rocket specialist at Peenemünde, now with North American Aviation in Los Angeles, has gathered a large amount of material on his association with the program in Germany and at Fort Bliss; Howard Robertson, deceased, retained a small but useful number of documents pertaining to his position as chief scientist with the FIAT organization; and Werner von Braun has donated his papers, mostly speeches and letters, to the Library of Congress.

QUESTIONNAIRES: For Chapter Eight, I made extensive use of the questionnaire replies of 165 specialists. The questionnaire asked for general biographical and occupational information and comments on the following: treatment by the military agencies during the procurement phase and the period of "military custody;" hostility encountered among native Americans; the problems of adjustment, especially that of language; the professional opportunities prior to and following immigration; the extent of association with civic organizations, clubs, professional, or religious groups in this country; the most and least appealing aspects of living in the United States; and considerations regarding return to Europe.

CORRESPONDENCE AND INTERVIEWS: I found correspondence and interviews to be a major source of primary materials and opinion. The ranks, locations, and affiliations of those listed below were valid at the time of the research contact:

CORRESPONDENCE

Adams, Dr. Roger. The William Albert Noyes Laboratory, University of Illinois, 13 June 1960.

Cairns, Dr. Stewart. Department of Mathematics, University of Illinois, 7 June 1960.

Eaker, Lt. Gen. Ira C., USAF (Ret.), 22 August 1960.

Goudsmit, Dr. Samuel A. Former civilian chief of Alsos Mission, 28 June 1960.

Higinbotham, Mr. W. H. Former Executive Secretary, Federation of American Scientists, 3 November 1958.

Kibbey, Dr. D. H. Department of Mathematics, Syracuse University, 2 June 1960.

McNarney, Lt. Gen. Joseph T., USAF (Ret.), 15 June 1961.

Morrison, Dr. Philip. Department of Physics, Cornell University, 10 July 1960.

Pollard, Dr. Ernest C. Biophysics Department, Yale University, 27 June 1960.

Porter, Dr. Richard. General Electric Company, 19 January 1962.

Rabinowitch, Dr. Eugene. Editor, *Bulletin of the Atomic Scientists*, 12 July 1960.

Ranger, Col. Richard USA (Ret.). Former Signal Corps officer in Germany, 12 August 1960.

Rothstein, Dr. Jerome. Edgerton, Germeshausen & Grier Inc., 1 June 1960.

Simon, Maj. Gen. Leslie, USA (Ret.), 14 August 1961.

Staver, Maj. Robert, USA (Ret.). Former Army intelligence officer in Germany, 17 December 1961.

Weisskopf, Dr. Victor F. Department of Physics, Massachusetts Institute of Technology, 21 June 1960.

Wolff, Dr. Irving. Chairman, Education Committee, Radio Corporation of America, 20 June 1960.

Zahl, Dr. Harold A. Director of Research, U.S. Army Signal Research and Development Laboratory, 25 July 1960.

INTERVIEWS

Fagan, Mr. James. Civilian Chief, Office of Research and Development, Army Ballistic Missile Agency, Huntsville, Alabama, January 1960.

Green, Mr. John C. Director, Office of Technical Services, Department of Commerce, November 1959.

Groth, Dr. Eric. German Paperclip specialist, Santa Monica, California, September 1960.

Hamill, Col. James P. Director, Research and Development,

Aberdeen Proving Ground, Maryland, November 1959.

Hicks, Mr. Raymond. Department of Defense, December 1959.

Hollman, Dr. Hans. German Paperclip specialist, Los Angeles, California, 11 September 1960.

Huzel, Dieter. Former Paperclip specialist, Los Angeles, California, 5 November 1960.

Millikan, Dr. Clark. California Institute of Technology, Pasadena, 23 June 1960.

Putt, Lt. Gen. Donald L., USAF (Ret.), Los Angeles, California, 1 July 1960.

Robertson, Dr. H. P. California Institute of Technology, Pasadena, 28 July 1960.

Staver, Maj. Robert, USA (Ret.). Los Angeles, California, 6 March 1962.

Strughold, Dr. Hubertus. San Antonio, Texas, 5 July 1966.

Truman, President Harry S. Independence, Missouri, 3 June 1963.

Zwicky, Dr. Fritz. California Institute of Technology, Pasadena, 19 July 1960.

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was born in Caroline, New York, in 1933 and educated in California. He received his B.A. from the University of Redlands and his M.A. and Ph.D. from the University of California at Los Angeles. In 1962 he joined the History Department at the University of Texas, where he is now an Associate Professor. His particular academic interest is in American social and political history since 1940. A scholar who enjoys teaching as well as research, he has been the recipient of four teaching excellence awards at the University of Texas. He resides in Austin, Texas, with his wife and two children.

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Clarence G. Lasby

(continued from front flap)

legality, morality, and means of importing
... their former enemies. Not
... did Project Paperclip reach ful-
... en Dr. Wernher von Braun and
... team placed in orbit the first
... atellite, Explorer I.

For this definitive study, Professor Lasby
... and corresponded with more
... participants in Project Paperclip,
... and thousands of classified docu-
... the secret files of the Departments
... y, Air Force, Navy, and Com-
... merce. The result is detailed coverage of one
... aspect of postwar history that has long re-
... quired careful definition—an account that is
... as compelling as it is comprehensive.

Project Paperclip

German Scientists and the Cold War

BY CLARENCE G. LASBY



In February 1946 the news analyst Edward P. Morgan reported that for months the Western Allies had been playing “a sinister game of hide-and-seek” with Russia for the outstanding German scientists, and that during the clandestine operations the nations had behaved “far more like enemies than allies...”

A nation remembers most easily the historical events of its past within the context of some significant period of challenge or crisis. For the last twenty-five years, the challenge and crisis have been the confrontation between the United States and the Soviet Union. The conflict has been so extensive in its scope, so ominous in its implications, and so irreconcilable, that it has provided a convenient framework for the explanation and evaluation of virtually every occurrence since 1945. It is in this context that Americans conceived of the importation of German scientists; they remember the undertaking as a natural, necessary, and, above all, disquieting concomitant of the Cold War.

Between May 1945 and December 1952 the United States government imported 642 alien specialists under several programs known collectively by the code name “Paperclip.” The acquisition of their valuable experience and specialized talents, and consequently their remarkable achievements, meant something in the delicate scales of the new international “balance of terror.” Project Paperclip deserves to emerge from myth into history.

From the Prologue