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INTEGRATION

OF THE

HOLLOMAN - WHITE SANDS

RANGES

1947 - 1952

HISTORICAL BRANCH
OFFICE OF INFORMATION SERVICES
HOLLOMAN AIR DEVELOPMENT CENTER
HOLLOMAN AIR FORCE BASE, NEW MEXICO

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OFFICE OF INFORMATION SERVICES
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AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE

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EDITORIAL NOTE

Integration of the Holloman-White Sands Ranges, 1942-1957 is a verbatim reprinting of "Holloman-White Sands Complex: Integration," the seventh chapter of the History of Holloman Air Development Center, 1 July-31 December 1954. A second printing at this time is required because sufficient copies of the original volume are not available to meet the demand for this information.

The result of professional research by Dr. Kent C. Redmond, this monograph is the distillation of a large quantity of official material related to the integration of the vast guided missile test ranges located in the Tularosa basin of New Mexico. Interpretations presented here by Dr. Redmond are based upon documents carefully cited in the appended notes.

Dr. Redmond has since transferred from the Historical Branch at Holloman Air Development Center and now occupies the position of Assistant Command Historian at Headquarters, Air Research and Development Command.

JAMES STEPHEN HANRAHAN
Center Historian
4 April 1957

HOLLOMAN-WHITE SANDS COMPLEX: INTEGRATION

Immediately after the removal of the United States Air Force's guided missile program from Wendover Field, Utah to Holloman Air Force Base,[1] New Mexico in March 1947, the problem of conflicts with a similar program being conducted by the Ordnance Department of the Army at the adjacent White Sands Proving Ground was anticipated. The need for the coordination of firing schedules and testing instrumentation to secure the most efficient use of the combined Holloman-White Sands range was acknowledged the following July in a memorandum prepared by the respective commanding officers of the two establishments.[2]

In their proposal, the commanders suggested the combination of the two ranges into the New Mexico Guided Missiles Test Range which, although under the direction of a board composed of the local commanding officers, would be used by all branches or agencies of the National Military Establishment.[3] The chief function of the board would be to coordinate "the mutual use of all facilities and areas in the New Mexico Guided Missiles Test Range," each command, however, maintaining responsibility "for administering real estate matters of the land under their command."[4]

The range formed by the Holloman-White Sands Complex possessed unique characteristics, making it peculiarly suitable for the testing of guided missiles. A long and narrow valley, hemmed in by the San Andres mountain range on the west and the Sacramento mountains on the east, it extended north and south across typical southwestern semi-arid terrain, permitting relatively easy recovery of test instrumentation. Climatically the "almost continuously cloudless skies and exceptional visibilities add immeasurably to its qualities as a missile test range."

The range was contained within an area some 110 miles in length by 40 miles in width. It was divided into two independent command areas. The northern portion, under the command of the United States Air Force, consisted of Holloman Air Force Base and the old Alamogordo Bombing Range. The command post was located on the air base proper, some ten miles west of the little town of Alamogordo.

Immediately adjoining the Air Force range to the south lay the main portion of White Sands Proving Ground with its headquarters approximately 30 miles east of Las Cruces. Long narrow strips of this range lay parallel and adjacent to the east and west of the Air Force complex. White Sands was an Ordnance Department installation, providing testing

facilities to both the Army and Navy. Each, however, operated its own launching sites on the proving ground. The extreme northern portion of the Holloman-White Sands range was shared by all three services as an impact area for their missiles.

To the extreme south were situated the anti-aircraft facilities and firing ranges of the Fort Bliss Anti-Aircraft Artillery and Guided Missile Center. This command consisted of the Fort Bliss area proper, located on the outskirts of El Paso, Texas and the Oro Grande and Dona Ana firing ranges, extending the total reservation to the southern edge of White Sands Proving Ground some forty miles north of the Texas-New Mexico border. The range was used mainly for firing practice and maneuvers.

By 1948 each of the three commands was actively making use of its respective facilities, and, furthermore, anticipating extensive expansion in future requirements. The Anti-Aircraft Artillery Center at Fort Bliss was training approximately 4000 men in the use of guns of varying calibers up to 120mm. and was expecting that figure to climb to 25,000 in the very near future. Both the Army and the Navy were engaged in guided missile experiments at White Sands. Army Ordnance was averaging two firings

per week of the V-2 and Ordnance developed guided missiles. The Navy, although at the time operating on a limited scale, had plans made for the firing of rockets designed to reach an altitude of 200 miles sometime during the autumn of 1948. Both Ordnance and Naval units at White Sands expected an increase in the frequency of missile launchings.[5]

The Air Force was using its range for the testing of air-to-air, air-to-surface, surface-to-air, and surface-to-surface guided missiles under the direction of research and development units. Firings were averaging approximately 50 per month with a rapid growth in future testing schedules foreseen. Future programming included the launching and testing of missiles during the autumn of 1948 which would require the use of the full length of the combined ranges.[6]

Sometime in November or December of 1947, while the Secretary of the Air Force was visiting the Holloman-White Sands area, a conference was held at White Sands at which it was agreed that a need existed for "certain decisions to be made locally," and that the senior officer was the proper person to make them.[7] Consequently, the Secretary decided that it was "agreeable to the Air Force for the Senior Army Ordnance Officer permanently assigned

to White Sands Proving Ground" to make decisions in those matters which could not be agreed upon by the joint committee for range coordination, which authority, however, was not to "extend into command and administration matters at Alamogordo Air Base."[8]

On 8 September 1948, the Department of the Army made White Sands Proving Ground a "class II activity under the control of the Chief of Ordnance at Fort Bliss, Texas."[9] The following January, the Commanding Officer of White Sands established, by general order, a Joint Range Coordination Committee composed of the Commanding General, White Sands Proving Ground; the Commanding Officer, Holloman Air Force Base; and the Naval Officer in Charge, White Sands Proving Ground.[10] This order, promulgated in accordance with the agreement reached during the visit of the Secretary of the Air Force in 1947,[11] empowered the Committee to establish general policies concerning the common use of the area and the facilities of the missile testing ranges. It was to meet at the summons of the Commanding General of White Sands.[12]

The Joint Range Coordination Committee had as its main goal the resolution of problems of cooperation on the local level. The conditions it sought to ameliorate arose from conflicts in the allocation of radio frequencies,

space, supply, jurisdiction, and investments.[13] Temporary allæviation had been provided for the conflicts arising out of telemetering, radio, and radar frequencies by the allocation of working hours for firing parties.[14] Space was an ever threatening problem because the launching sites for White Sands laid within the fields of fire of Fort Bliss' 90 and 120 mm guns. In the past, it had been necessary to suspend operations in order not to endanger the safety of the crews attached to guided missile projects.[15] Supply, jurisdiction, and investments were general areas of friction, bound to be exacerbated by the accelerating demand for range use by each of the three installations.[16]

Although the Joint Range Coordination Committee had originally been authorized a very broad control over the combined range facilities, and very definitely had been empowered to establish "general policies" and to appoint such sub-committees as were necessary,[17] its authority and responsibility were challenged by the Commanding General of Fort Bliss who claimed that "the purpose of the Joint Range Coordinating Committee is confined to instrumentation lines."[18] Basing his power of control upon the general order which had established White Sands as a Class II activity under his command, and, also, upon a letter from

the Fourth Army,[19] Fort Bliss' Commander contemplated the appointment of an overall Area and Facilities Committee which was to be responsible for the establishment of "policies for the common use of the area and facilities by the three participating services."[20] Committee membership was to consist of the Commanding General, Fort Bliss; the Commanding General, White Sands Proving Ground; the Commanding Officer, Holloman Air Force Base; and the Naval Officer in Charge, White Sands Proving Ground. This committee was to have the authority to appoint sub-committees among which would be included the "Range Coordinating Committee whose purpose will be confined to study and recommendations pertaining to instrumentation lines."[21]

Conforming to the opinion expressed by Fort Bliss, the Commanding General of White Sands rescinded General Order Number 1 with the issuance of General Order Number 5, which delimited the powers of the Joint Range Coordination Committee by confining the functions of the Committee to instrumention problems only.[22] In his notification to Fort Bliss of the above change, the White Sands Commander remarked that neither the Command of Holloman nor the Naval Officer in Charge at White Sands found the appointment of an Area and Facilities Committee acceptable, and, he

recommended, that "no further action be taken at this time."[23]

Despite the opposition of the Air Force and the Navy to his proposed action, the Commanding General of Fort Bliss, the following month, issued the order establishing the Area and Facilities Committee which was to "coordinate the use of areas and facilities, which are the responsibility of the Commanding General, AAA and GM Center, and which are commonly used by White Sands Proving Ground and Holloman Air Force Base."[24] The following day, 3 March 1949, Fort Bliss' Commander reasserted his powers of command over the areas in argument by remarking that "since the CG, AAA and GM Center, is responsible for the areas commonly used by WSPG, HAFB, and the AAA and GM Center, and for many of the facilities, it is considered necessary that the use of these areas and facilities be coordinated by a committee appointed by the responsible officer."[25] The committee, he continued, would not interfere with technical activities, but would be limited "in its scope to the control of those areas and facilities which are the responsibility of the CG, AAA and GM Center."[26]

The Air Force regarded unfavorably these assertions of authority by the Army and their implementation by the Fort Bliss Commander. In forwarding the letter of 3 February 1949

to higher headquarters, the Holloman Commanding Officer opposed the action of the Fort Bliss Commander on the grounds that it was not in accordance with existing agreements between the two Services.[27] Air Materiel Command took a similar position, adding that such action was "not considered to meet the local requirements of the Air Force at Holloman Air Force Base."[28]

Despite the explanation offered by the Army that the Area and Facilities Committee pertained to "logistical support" only,[29] the Department of the Air Force opposed its establishment. It argued that the appointment of such a committee was not essential to the fulfillment of "his responsibilities relative to logistical support of the guided missile ranges in New Mexico."[30] Furthermore, the Department continued, "The Air Force does not contemplate assigning an officer to the . . . Committee . . . as such an assignment would indicate tacit approval of the action of the Commanding General, Fort Bliss."[31]

The Air Force maintained, also, that the Army general order which had placed White Sands under the direction of the Fort Bliss Command had resulted in that Command rescinding orders "considered by the Air Force to be essential to good inter-Departmental relations," and in the subordination

of "technical operating committees to logistical committees."[32] Perhaps, however, the Air Force resented most strongly the Fort Bliss assertion of responsibility for the "areas commonly used by the White Sands Proving Ground, Holloman Air Force Base and the AAA and Guided Missile Center, and for many of the facilities." This claim the Air Force held was "in error."[33]

In concluding its objections, the Department challenged the validity of the White Sands general order delimiting the authority of the Joint Range Coordination Committee and recommended its replacement by the reissuance of the original directive. The latter order, it was pointed out, was in accordance with the basic agreement between the Secretary of the Air Force and the Chief of Ordnance for the United States Army.[34] Furthermore, the Air Force contended, it appeared "reasonable . . . that the Commanding Officers of the organizations charged with the technical responsibilities for carrying out . . . testing . . . should be the committee to handle joint problems arising on these ranges." This was particularly true since the "primary purpose of the White Sands Proving Ground and the Holloman Air Force Base, together with the ranges used jointly, is to provide an area and facilities essential to the development and testing of

guided missiles and related components."[35]

Simultaneously, resolution of the conflict over control of the contiguous ranges was being attempted on the highest military levels. The Munitions Board had been assigned the responsibility "for the over-all program involving elimination of duplications between the three Departments."[36] The objective--to be attained through its Committee on Facilities and Services--[37] was to effect economies and increase efficiency by the "establishment of standard organizations, procedures or policies to be applied uniformly throughout the National Military Establishment."[38]

To implement the primary purpose, in June of 1948, area subcommittees of the Committee on Facilities and Services were established. The directive recommended that "existing joing local field committees" be brought under the "cognizance of the area subcommittees . . . in order that these subcommittees will be the focal point" of all "common utilization studies."[39]

The following month the Secretary of Defense designated General Mark W. Clark as his personal field representative for the Western Area--New Mexico, Utah, Montana, California, Washington, Arizona, Idaho, Nevada, and Oregon. General Clark's primary functions were to "act as a focal point for

all common utilization efforts by the three Departments" in the Western Area, and to submit to the Secretary, through the Munitions Board, "recommendations on all matters pertaining to the utilization of facilities and services."[40] The Western Area Subcommittee was directed to act as General Clark's permanent staff in the fulfillment of these additional duties.[41]

Although its reluctance firmly to oppose consolidation indicated otherwise, the Department of the Air Force was not completely oblivious to the absolute need for a guided missile range of Holloman's capabilities. The Scientific Advisory Board appointed a committee under the chairmanship of Doctor Louis N. Ridenour to make an over-all study of the United States Air Force research and development program.[42] In its final report, September 1949, this special committee made reference to the need of the Air Force for a guided missile testing range, recognizing that the "large desolate areas in south-central New Mexico are well suited for flight testing of short-range and intermediate-range guided missiles."[43]

The committee recommended that the Air Force seize the initiative--thus strengthening its position with Congress and the Research and Development Board--by

investigating and subsequently adopting one of two alternatives. It proposed either the consolidation of Holloman Air Force Base and its bombing range with White Sands Proving Ground, to be followed by joint operation, or operation jointly by the Air Force and the Navy of the latter's facilities at Inyokern and Point Mugu. The Committee expressed the opinion, however, that the question of permanent control and use of Holloman could not be "easily resolved . . . because of the variety of uncoordinated facilities" which had "resulted from inter-Service competition in the guided missile field."[44]

Opposition to the consolidation of the Fort Bliss-White Sands-Holloman areas was centered mainly on the local level where the last two commands favored "continuation of . . . separate command status with coordination of problems through the Range Coordinating Committee."[45] Support of this position was given the Holloman Commander by the Department of the Air Force, but the Department either neglected or refused to take more drastic action. Perhaps the reasons underlying this indifference may be found in the contemporary actions by the Air Force to secure a long range guided missile range.[46] This would explain the willingness to preserve the status quo, but to push the issue no further.

The guided missile program had reached the stage of development where it had become quite apparent that even the Holloman range was not going to be sufficient for the testing of long range missiles. Brigadier General W. L. Richardson told a conference in Los Angeles that "flight testing long range missiles on the Holloman range was beginning to be very much like batting out baseball flies in the living room."[47] Three years earlier, Admiral W. D. Leahy had emphasized the need for a long range proving ground "so operated as to be equally available to various interested parties, and at which each of them can maintain its own corps of experts."[48] Between September 1947 and June 1948, enabling legislation was prepared and coordinated between the three branches of the National Military Establishment and submitted to the Bureau of the Budget. Sometime before the latter month, the Air Force had been made the responsible agency for securing this legislation. The Secretary of Defense directed the Air Force "to expedite action to provide a Joint Long Range Proving Ground for Guided Missiles for the use of the three Services."[49] Approval by Congress brought about the establishment of the joint range at the Banana River Naval Air Station in Florida. This was later to become

the Air Force Missile Test Center, Patrick Air Force Base, Florida.

Although the Department of the Air Force displayed strong signs of indecision in regard to consolidation, Air Materiel Command proceeded on the "premise that all air-to-air, air-to-surface, and surface-to-air missile test programs" would be conducted at Holloman.[50] Regarding Holloman as a permanent Air Force guided missile test center, the Command "planned to conduct all initial firings of surface-to-surface missiles" at the New Mexico installation, feeling that in the primary stages of testing, "the accumulation of accurate missile flight test data is more practical from an overland range than from an overwater range."[51] Previous testing programs at Holloman had been "highly satisfactory," providing both the Air Force and the contractor with "a wealth of test data, as well as having resulted in the accumulation of a large amount of operational experience in the launching of guided missiles." These results had been obtained despite the utilization of the range by both the Air Force and the Ordnance Department, mainly because firings had been "closely coordinated" and "extremely good relations" existed at the "working level." For these reasons the Command believed that any "attempt to

integrate the activities in the area would tend to complicate the test programs unnecessarily."[52]

Despite the protestations of Air Materiel Command and subordinate echelons, plans were made at higher levels for the consolidation of the ranges and the development of Banana River as the Joint Long Range Proving Ground under Air Force control. In the closing days of 1949, the Research and Development Board recommended the reassignment of command authority over all guided missile test areas: the Air Force to have complete control of the Long Range Proving Ground at Banana River, Florida; the Navy to retain control of Point Mugu and Inyokern; and the Army to assume complete control of the Holloman-White Sands complex.[53] This decision "came as a blow" to Colonel William H. Baynes, then commanding officer of Holloman, who opined that it was not "in the best interests of overall guided missile development."[54]

The die was cast, however, and the following March the Joint Chiefs of Staff adopted a similar recommendation, directing that "each of these proving grounds be available to all three Services for appropriate flight testing," but that the "indicated Department . . . have command, management, operational and budgetary responsibility" for its respective

testing area.[55] This recommendation had previously been concurred in by the three Service Secretaries, and subsequently it was placed on the desk of the Secretary of Defense for final action.[56] While awaiting final approval by the Secretary of Defense, the Air Force and the Army commenced preliminary negotiations on the conditions for transfer.[57] The chief difficulty here was connected with the date of transfer, Colonel Baynes arguing that an early date was an impossibility as at least two and one-half or three years would be required.[58] This, perhaps, was more an expression of opposition than of need, but in retrospect, it was probably just as well for the Air Force that the Holloman Commander sought procrastination.

In the spring of 1950, the Secretary of Defense "directed that White Sands Proving Ground and Holloman Air Force Base be consolidated under the command, management, operational and budgetary responsibility of the Department of Army."[59] Implementation of this directive was to be accomplished by three successive steps: (1) The Department of the Air Force and the Department of the Army were to prepare the basic guiding policies under which consolidation was to be effected. (2) The primary agreement was to be forwarded to the local commands "for preparation of a detailed consolidation plan." The Army was

to supervise the preparation of the detailed blueprint inasmuch as it was to assume the final responsibility. (3) The detailed plan was to be forwarded to Army and Air Force Headquarters, respectively, for approval and coordination; thence to the local level again for action.[60]

As a result of initial joint discussions, the Department of the Army submitted to the Air Force a tentative guide for consolidation.[61] The plan purported to be expressive of the views of both the Army and the Air Force, but the latter Service held that it did not "accurately reflect" its opinion.[62] In general the plan established the guiding policy for Army assumption of "command, management, and operational responsibility for Holloman Air Force Base and Alamogordo Bombing Range on 1 September 1950."[63] The Air Force specifically objected to the designation of a definite date of transfer, preferring that the Army take control "at a date, or dates, to be later designated."[64] The Air Force, also, objected to the Army proposal that it transfer to the "Department of the Army in addition to real property installed or budgeted instrumentation test equipment required for the operation of the range."[65] It countered by suggesting the transfer only of "such technical equipment presently installed at Holloman Air Force Base as is required for the operation

of the consolidated range."[66] The Air Force was justified in its objections since date of transfer and equipment to be transferred certainly were details that should have been left to the decision of the local commanders. They were in a much better position to know when transfer could efficiently take place. Air Materiel Command recognized this fact in its recommendation that such detailed planning be left to the local station commanders.[67]

One of the immediate consequences of the directive to effect consolidation at the earliest possible date was to create the belief that the Air Force program at Holloman was to be taken over in whole or in part by the Army. This in turn led to the cancellation of plans and monies necessary to the guided missile program at Holloman, thus seriously jeopardizing the Air Force guided missile program.[68] The New Mexico installation was the only practical testing range available to the Air Force at the time, since the long range proving ground at Patrick Air Force Base, Florida was not to be operationally suitable for extensive testing until late in 1951. Consequently, it was imperative for the Air Force actively and aggressively to maintain its Holloman program.

Recognizing the above fact, Air Materiel Command

dispatched to Holloman a statement of its policy on the guided missile program at the New Mexico range.[69] Pointing out that research and development in guided missiles would continue, the Command stressed the importance of Holloman as "the only land range of its size" and, therefore, essential to "USAF Guided Missile testing." "Therefore," the statement continued, "the support of USAF Guided Missiles projects at Holloman AFB will be a continuing requirement."[70] The Command then directed the Holloman Command to continue to request "all supporting services, facilities, personnel, money, etc., which you consider essential to the accomplishment of your mission."[71]

In conformity with the expressed desire of the Secretary of Defense, plans were made in the autumn of 1950 to summon a meeting at which the detailed plan for the consolidation of the three ranges and the transfer of the Holloman area to the Army would be drawn up. Overall supervision was to be exercised by the Commanding General, Fourth Army, who was to designate the chairman and assume the responsibility for the "preparation of the detailed plan."[72] Subsequently, Fourth Army Headquarters appointed a Board of Officers to "prepare the detailed plan for the consolidation of White Sands-Holloman Ranges."[73] Its membership

as proposed and finally approved was composed of Major General J. T. Lewis, Fort Bliss Commander, Chairman; Colonel G. G. Eddy, Ordnance Department, White Sands Proving Ground; Captain A. E. Uehlinger, United States Navy; Colonel W. H. Baynes, United States Air Force, Holloman Air Force Base; and Lieutenant Colonel G. U. Porter, Army Field Forces.[74]

The Air Force member of the Joint Consolidation Board wasted no time in informing the Board's Chairman of the Air Force's "policy and intentions" for the Board's "information and guidance in preparing the detailed plan of consolidation."[75] Colonel Baynes pointed out that the Air Force anticipated continued growth of its guided missile program and, consequently, the Holloman range would continue to be an essential facility to guided missile testing and development. The requirement for the fiscal years 1951 and 1952 had already been prepared and approved as being "in line with the large increase in the Air Force missile testing and development requirements and the commensurate increase in the number of aircraft required for all missile testing activities in this area."[76] He noted, however, that although the Air Force intended to furnish the aircraft necessary to

the combined programs of the three Services, the "items of support to be furnished . . . will be restricted to those which by their very nature are peculiar to the Air Force."[77] In addition, Colonel Baynes concluded, the Air Force would not approve the transferral of space authorizations, military or civilian, to the Department of the Army.[78]

With all members present, the Joint Consolidation Board convened at Headquarters, Anti-aircraft Artillery and Guided Missile Center, Fort Bliss, on 28 November 1950. The stated official purpose was that of[79]

> preparing a detailed plan for the consolidation of Holloman Air Force Base, Alamogordo Bombing Range and White Sands Proving Ground into the Army Guided Missile Range (AGMR) located on the Fort Bliss Military Reservation, and of establishing the proper command and administrative channels for the management, operations and budgeting of the various guided missile activities.

Major General J. T. Lewis, Chairman, opened the meeting by explaining the Board's purpose and by presenting to each member a copy of the Department of the Army's letter of 31 October and a copy of a draft consolidation plan prepared by Headquarters, Anti-aircraft Artillery and Guided Missile Center. In the discussion that followed, the other representatives found common ground in discovering flaws in the proposed plan.[80]

The main opposition was offered by the Army Ordnance Department--represented by Colonel G. G. Eddy, Commanding Officer of White Sands Proving Ground--which displayed a strong reluctance to see command of the combined ranges assigned permanently to the Army Field Forces.[81] It was suggested by Ordnance that the Commanding Officer of the range "should be under the direct command of the Chief of Ordnance," and furthermore, "he should be an Ordnance Officer designated by the Department of the Army on recommendation of the Chief of Ordnance."[82] To strengthen this freedom from control by the Army Field Forces, Colonel Eddy, in commenting upon the final plan, felt that "consideration should be given to making the AGMR a Class II Installation instead of a Class II Activity."[83] Such a redesignation would diminish the authority of the Army Field Forces by placing a greater degree of responsibility and control over the range in the hands of the Chief of Technical Services of the Ordnance Department.

Apparently Colonel Eddy feared that his Command, if under the control of Fort Bliss and the Fourth Army, might subordinate research, testing, and development to tactical training of Army Field Forces. He pointed out in his objections to the proposed plan that the[84]

> guided missile range could not accommodate tactical training requirements of guided missile units because of the extremely heavy research and development workload, and Army Field Forces should immediately undertake procurement of additional land for guided missile tactical firing.

In line with these efforts to eliminate or at least mitigate the authority of Army Field Force units, the White Sands Commander also proposed that construction projects peculiar to research and development in guided missiles should not be referred to the Post Planning Board as "such projects are of a highly technical nature and beyond the scope of the Planning Board."[85] And further to protect the technical mission of the combined range, Colonel Eddy insisted that[86]

> Operational control of technical facilities required for the direct support of a research and development or associated programs must be delegated to the service responsible for that program.

The representative of the Army Field Forces found the proposed plan objectionable, also, but for opposite reasons. He opposed the proposals because they did not "realize the objective of the Army Field Forces to place the entire range under the sole command of the Commanding General, Fort Bliss Military Reservation," and, furthermore, they did not "effectively provide that future major supporting facilities would be located at Fort Bliss rather than be dispersed at the various range sites."[87] Later in the discussions on

the final draft, he declared provisions should have been made for "on-the-job training requirements of troops" and "for training of tactical troops."[88] These remarks in themselves effectively disclose that the Army Field Forces foresaw consolidation under the command of Fort Bliss as merely an extension of the physical properties of the reservation for use in tactical training of field troops. Consequently, the primary purpose of research and development undoubtedly would have been subordinated to tactical requirements, resulting in a serious set-back to the National Military Establishment's technical and scientific progress.

The Navy found fault with the proposed plan because it provided for the transfer of title and maintenance responsibility for Navy facilities to the Army," arguing that "these facilities now operate as a part of White Sands Proving Ground, and are available to all services."[89] In lieu of transfer, the Navy representative recommended that "title to Navy facilities and all Naval technical equipment remain with the Navy, but that operational control of range facilities and instrumentation be vested in the Army with exception of NRL telemetering system which is experimental."[90] Furthermore, the Navy objected to Army

assumption of the Navy's "budgetary responsibility," suggesting that this "responsibility as presently held for maintenance of Naval property be retained by the Navy."[91] In defense of its arguments, the Navy estimated that transfer of Naval facilities to the Army would increase the yearly expenditure for repair and utility functions by some $12,400.[92]

Colonel Baynes, Air Force Representative, acting under definite instructions, had very little to say during the Board's discussions. He had been instructed by Brigadier General D. H. Yates, Headquarters, United States Air Force, to adhere to the earlier commitment by the Air Force "even though it did not appear to satisfy the present and future Air Force requirements."[93] Consequently, Colonel Baynes merely reiterated his earlier comments that no personnel space authorization would be transferred to the Department of the Army and that the Alamogordo Bombing Range should revert to the Air Force in the event it were to become "excess to the guided missile tactical testing requirements of the Army, Navy and Air Force."[94]

The master plan as finally accepted by the Joint Consolidation Board did provide for the return of the bombing range to the Air Force in case it became "excess

to the requirements of the Army, Navy and Air Force as a guided missile range."[95] In all other respects, it definitely followed the requirements established by the Office of the Secretary of Defense and transferred control of both Air Force and Navy properties and installations to the Army, providing for the assumption of control by the Army on 1 February 1951.[96] The exceptions made by the various board members were noted in the "Proceedings" and forwarded to interested headquarters along with the detailed plan.

Opposition during the discussions to the transfer of Air Force and Navy properties--expressed mainly by the Navy representative--led to the proposal of an alternate solution which was incorporated in the "Proceedings," but not the detailed plan. It suggested that in case the "present and contemplated future requirements and workload of the total Air Force guided missile and related programs on Holloman Air Force Base" and the need for air support should increase to such a point as to make Army control impracticable, the detailed plan "would remain substantially unchanged," but Holloman would remain under Air Force control. "Similarly the Navy would retain title to its facilities and would

continue to exercise management and operational control thereof."[97]

Colonel Baynes forwarded his comments on the problem of consolidation and its attempted resolution by the Joint Consolidation Board to the Commanding General of the Air Materiel Command by letter.[98] The Holloman Commander expressed quite frankly his dissatisfaction with the decision of Headquarters to accede to consolidation, arguing that it was based upon incorrect premises. Air Force testing activity at Holloman would increase, he contended, instead of decreasing as Headquarters had assumed. In compliance with instructions, however, Colonel Baynes wrote that in his "presentation to the board of the magnitude of the Air Force activity here at Holloman I have not officially proposed the retention of Holloman by the Air Force."[99]

In his personal summation of the discussions, the Air Force representative pointed out that although he, himself, "officially cooperative" in his concurrence with the main plan, the Navy representative, "having previously considered this consolidation as a matter pertaining only to the Army and Air Force," was greatly disturbed by the Chairman's ruling that the Navy, also,

had to "transfer all real estate and improvements to the Army." He emphatically took issue with General Lewis's ruling "with a strong dissent on this point."[100] General Lewis, himself, made the alternate proposal although he denied that the Navy dissent was in any manner responsible.[101]

Colonel Baynes found the alternate proposal superior to the main plan, but confessed that even it did not go as far as he desired. In the primary plan, the Army was committed "to furnish all base support except those items which are peculiar to the Air Force and all range responsibility," whereas under the alternate, the Air Force would retain Holloman with the Army assuming control of the "Air Force launching area including blockhouses, towers, track, instrumentation, and all range responsibility."[102] Under both plans the Army was pledged to provide the Air Force all support necessary, but this, the Colonel agreed, was the weak point in the agreement for "Air Force requirements whether technical or support must be evaluated by the Army and furnished, if agreed to, by the Army." This statement he commented was accepted "at face value . . . with mental reservations."[103]

Seeking to take advantage of Navy dissent, which Colonel Baynes said was a complete reversal of earlier agreement, the Air Force representative recommended that

if the subject were returned to the Joint Chiefs of Staff for reconsideration, the Air Force, "no longer . . . bound by its previous agreement at that level,"[104]

> should agree to the transfer of the bulk of the Alamogordo Bombing Range to the Army for joint guided missile use but should retain possession of (1) the base proper and (2) the developed and well-instrumented area in the southeast corner of the Alamogordo Bombing Range, which area is roughly rectangular in shape with dimensions of about 21 miles north-south and 6 miles east-west.

If, perchance, the Navy were to withdraw its dissent, which its Board Member indicated to Colonel Baynes had the full approval of his Headquarters, then the Air Force member recommended to Air Materiel Command "the alternate plan should be indorsed as more desirable to the Air Force than the main plan."[105]

The question of consolidation was not settled by the preparation of the detailed plan on the local level; apparently in fact, if anything, Navy dissent had reopened the problem and afforded the Air Force the opportunity to reverse its position. Air Materiel Command in response to a request from Headquarters, United States Air Force pointed out that the original proposals and discussions on consolidation, made approximately a year earlier, were no longer valid.[106] The Command argued

that economy would not be effected, the Joint Range Coordination Committee had done an excellent bit of work by insuring "the equitable use of the ranges for the past year and a half" and there was "almost daily communication at the working level between the two bases on the development of instrumentation."[107] Support was added by a restatement of the usual contentions that the Air Force guided missile program was growing large and that Holloman was essential to that program because of the geographical and climatic peculiarities that made the base unique for testing.[108] Consequently, the Air Materiel Command recommended "that the present proposal for consolidation be reconsidered and no action taken that might jeopardize the future Air Force programs, unduly penalize the Army program, or jeopardize the Air Force support of the programs of all three Services."[109]

Holloman's Commanding Officer reiterated the usual argument for retention in a draft letter he had prepared for forwarding by the newly-created Air Research and Development Command to Headquarters, United States Air Force.[110] The draft was referred by the Command to Colonel Don R. Ostrander, Chief, Plans Office, Engineering

Division, for comment. Colonel Ostrander expressed his agreement with the facts and recommendations in Colonel Baynes's draft, adding that if anything, he would suggest the "letter be made stronger."[111] He, too, believed that the Air Force could ill afford to give up Holloman because of its "certain unique and invaluable natural advantages" and because even after the Long Range Proving Ground became operational, "the existing and proposed facilities at HAFB will be completely saturated for a long period to come with Air Force guided missile activities."[112]

Throughout the remainder of 1951 and the first months of 1952, the Navy and the Air Force resisted Army efforts to secure consolidation upon its terms. Plan and counterplan were suggested by the Army and Air Force respectively, each seeking to effect its desires in this regard. Discussions and arguments followed the patterns outlined above, varying only slightly, if at all, in emphasis and detail. Finally in April 1952, the decision was reached to reopen the question by the appointment of a Joint Ad Hoc Group, composed of representatives from each Service, to study the 1950 decisiom of the Joint Chiefs of Staff, to reconsider the pending plan for consolidation in light of the contemporary situation "and to

submit a report containing a recommended course of action."[113]

During the three weeks of re-examination that resulted, the Navy and the Air Force combined in resistance to Army efforts to obtain unification of the ranges and their complete facilities into one complex under the command of the Army Field Forces. In defense of their opposition to unification under the control of the Department of the Army, the Navy and Air Force issued at the conclusion of the discussions a joint statement of their case. This statement repeated the old and usual arguments: (1) The Air Force guided missile program had increased to such proportions that the retention of Holloman was imperative; (2) The Holloman-White Sands complex offered unique geographic and climatic features essential to the testing program of all three Services; (3) Economy of operation would not be obtained by consolidation under a single command; (4) Consolidation, in effect, would operate to the detriment of the research and development program of each of the respective branches of the National Military Establishment and (5) Existing local arrangements for joint use of the range were satisfactory.[114] The two Services then

recommended that (1) "informal local agreements be formalized at departmental level," (2) "training activities on the range be accorded a secondary role and scheduled on the basis of non-interference with research and development testing of guided missile projects" and (3) a "permanent Joint Range Board" with the necessary sub-committees be established,[115]

> to make plans and provide procedures for the joint utilization by the Army, Navy and Air Force of the ranges connected with the White Sands Proving Grounds and the New Mexico Missile Test Range (HAFB), in conformity with the policies of the Department of Defense, and to coordinate activities in the joint use thereof to permit the exercise of the separate responsibilities of the Secretaries and Chiefs of Staff of the military Services concerned.

This, perhaps, is as good a place as any to note that neither the Navy nor the Air Force was opposed to joint use of the range and its facilities, coordinating their respective needs through a board operating on the local level, but with each Service retaining control of and title to its own installations. This system they felt had been effective and satisfactory in the past and would continue to be so in the future. Rather their opposition to consolidation was based upon the belief that unification under the control of a single Service would result in the subordination of their respective testing programs to that

of the controlling agency, and particularly, unification under the control of the Army Field Forces would result in the subordination of the research and development program of the National Military Establishment to the tactical training requirements of the Army Field Forces.[116] The latter fear was also expressed by the Ordnance Department's representative at the Fort Bliss meetings of the Joint Consolidation Board.

The findings of the Joint Ad Hoc Board were referred to the Secretary of Defense with the Army recommending immediate implementation of its plan for consolidation and the Navy and Air Force reiterating their request for retention of the status quo.[117] On July 18, the Secretary of Defense made known his decision in a memorandum to the Secretaries of the three Services. He concluded that although the current arrangement was "operating to the reasonable satisfaction of the three departments," it was not feasible to consider its continuation when the complex approached or reached full capacity. The solution, he explained, was not to be found in joint operation, for this would impose an unnecessary minor responsibility upon the Joint Chiefs of Staff; rather, "placing responsibility for operations in a single department . . . is the sound

solution, provided the interests of the other two departments are clearly protected." It was not necessary, however, the Secretary opined, "to consolidate into the Army title to any of the property or facilities constituting White Sands Proving Ground."[118]

Accordingly, the Secretary ordered that the plan for consolidation proposed by the Army on 18 June 1952 be effected, subject to certain amendments.[119] This plan had as its purpose the consolidation "into an integrated guided missile range White Sands Proving Ground, Alamogordo Bombing Range and such facilities of Holloman Air Force Base as may be necessary under the command, management and operational responsibility of the Department of the Army."[120] A very broad priority for range use was set by the plan, but no provision was included which gave the Air Force and Navy authority to compell strict adherence to the order of priority.[121] The Secretary's amendment made necessary the permission of the Air Force and Navy deputies, or of his own office, before the combined range could be used "for any purpose other than research and development in guided missiles."[122]

Over-all responsibility for White Sands Proving Ground was assigned to the Commanding General with the senior Army,

Navy and Air Force Commanders designated as deputies for their respective Services. Each was to be[123]

> responsible for the exercise of command and management control of the property, equipment, personnel and projects of their respective services and for operational control thereof, except insofar as operational control for over-all integration purposes may be vested in the Commanding General, White Sands Proving Ground. These deputies will be on a distinct level directly under the Commanding General.

Once again the Secretary intervened by directing that there would be Air Force and Navy deputies only, each possessing "the right to appeal any decision by the Army Commanding General, WSPG, to the Secretary of Defense through the Secretary of the Air Force or of the Navy, respectively."[124]

The modified plan allowed the Department of the Air Force to retain "title and command of Holloman Air Base," but provided that all "facilities and technical equipment" located on the Base and necessary for range integrated operation "to be under the operational control of the Commanding General, White Sands Proving Ground." Eliminated were "special instrumentation and items peculiar to . . . Air Force projects." The Alamogordo Bombing Range, including "all real estate, improvements, Air Force facilities and technical equipment," but again

eliminating equipment peculiar to the Air Force, was to be turned over to the Army. Similar terms were outlined for the Navy, that Service retaining "title and administrative (management) control of all Navy buildings, properties and facilities so long as the Navy determines that they are required in support of Navy-sponsored programs."[125] These clauses were further strengthened by the Secretary's decision that each of the Departments was to keep its present interest in or title to properties and facilities located within the complex. This right, however, was not to "impair the Authority vested by the plan in the Commanding General, WSPG."[126]

Perhaps the greatest victory for the Air Force and Navy, and, in this case for Ordnance also, was obtained at the expense of the Army Field Forces. The Secretary of Defense ordered that incorporated in the final plan be the denial of command authority to the Commanding General of Fort Bliss. The chain of command for the Commanding General of the Proving Grounds was to lead "directly to the Department of the Army via the Ordnance Department."[127] This amendment plus the one necessitating the permission of the Air Force and Navy deputies for

utilization of the range for purposes other than research and development aided greatly the opponents of tactical training of Army troops on the range.

On July 25, the Department of the Army submitted a revised plan, incorporating the amendments proposed by the Secretary of Defense.[128] The final plan was promulgated on August 19 and the three Departments were ordered to put it into effect on 1 September 1952.[129] In the meantime, Air Research and Development Command followed a policy of watchful waiting, unable to take any form of action until the final plan was drawn up and submitted. Until such time, the Command recommended to Holloman that it should continue to operate as before.[130] On 28 August, the Command was directed by the Department of the Air Force to comply with the approved plan of the nineteenth and to see that "on and after" 1 September operations at Holloman were in accordance with the plan.[131]

Air Research and Development Command had refused to yield easily to the final decision. Earlier the Assistant Deputy Chief of Staff for Development had suggested to the General Counsel for the Department that the Army plan violated the terms of Public Law 155 of the 82nd Congress.[132] Therefore, he recommended the case be carried to Congress.

Examination of the final plan, he asserted, showed it to be as undesirable as previous proposals, and he opined that "acceptance will leave the U. S. Air Force in an untenable position."[133] Two days later--in an apparent effort to stave off the directive of the twenty-eighth--the Command recommended that Headquarters, United States Air Force "vigorously continue its effort to retain Air Force interest and authority in this area."[134] It based its argument for retention upon a Command plan to establish at Holloman "an organization wherein the technical know-how of guided missile development and development testing would be concentrated."[135] Holloman Air Force Base and the adjoining range was absolutely essential to the accomplishment of such a program, consequently, it was mandatory that the Air Force have an "equal voice" in the operation of the range complex, for unilateral control by the Army would not "insure a full voice in decisions affecting the immediate and daily operations of the range" even with the right of appeal.[136] This opposition went for naught, however, for on the twenty-eighth, Washington ordered the acceptance and implementation of the plan. The following day, the Commanding General of White Sands Proving Ground issued

General Order 27, putting the plan in operation.[137] This was superseded by General Order 30, dated 22 September 1952.[138]

Even though the final decision of the Secretary of Defense had been effected on the local level by the issuance of General Order 27, Air Research and Development Command continued its resistance to Army assumption of overall control. In a Staff discussion, the Command expressed its desire "to retain as much control of activities at HAFB and on the range as possible."[139] It was decided, however, that the Command[140]

> should attempt to engage only in operations which will accrue a direct benefit to the USAF. Functions of a purely service or support nature, except those in sensitive or critical areas, should be delegated wherever possible to the Army. We should not delegate anything which takes away our power of decision as to what we are going to do and how well we are going to do it.

If Air Research and Development Command had refused to accept the Secretary's decision as final, so had the Army Field Forces, for on 9 October, White Sands received a request through Ordnance from the Chief, Army Field Forces, seeking an arrangement which would permit the training on the Proving Grounds of anti-aircraft artillery units in guided missile launchings. He defended his request on the grounds that White Sands was the "one adequate land range"

available at the time.[141] The response was negative. The Commanding General of White Sands, the Air Force and Navy deputies concurred in the belief that the proposal violated "the orders and intent of the range consolidation directive." Furthermore, tactical training by the Army Field Forces would seriously interfere with the research and development programs then scheduled, and, also, would pave the way for Air Force and Navy tactical training, which "would completely overload the range and seriously jeopardize the guided missile R & D program of the Military Establishment."[142] A subsequent message from the White Sands Command explained that the proposed training firings were just exactly what the Air Force and Navy had feared, and had formed part of the primary reason for their fight against consolidation. If the Department of the Army were to order White Sands to accommodate the Army Field Forces, the Air Force would "demand a dissolution of the consolidation agreement" and the Navy would "point out" that the Proving Grounds had "rejected certain Navy R & D work due to lack of capacity."[143] Agreements made prior to the date of consolidation, White Sands continued, were voided by the directive, and both the Air Force and Navy were of the opinion that the Army Field Forces had made "little or no effort" to obtain "guided

missile firing ranges" even though they had had "adequate" time.[144]

Brigadier General G. G. Eddy, Commander, White Sands Proving Ground, was personally opposed to the use of the range for training purposes.[145] In a report on the status of consolidation, he recommended that the portion of the directive of 19 August by the Secretary of Defense, establishing priorities for the use of the combined range be amended as follows:[146]

(1) Research and development of guided missiles.
(2) Service evaluation of guided missiles.
(3) Acceptance testing of guided missiles and components.
(4) Other research and development programs for which the range is peculiarly adapted.
(5) Service evaluation of any items accepted under Paragraph (4) above.
(6) Acceptance testing item (5) above.

General Eddy's recommendation evolved, apparently, from the interpretation placed by the Army Field Forces upon the original priority schedule which placed "guided missile research and development firings" first, "other types of guided missile firings" second and "other uses" third.[147] The Army included missile training firings in item two.[148]

Colonel Ostrander suggested to the Air Force that it support General Eddy's recommendations, however, that it

permit the Army to use the consolidated range for tactical training firings on an interim basis to prevent total breakdown of an Army missile program, and only until the Army can obtain another location for such firings."[149] These firings, he concluded, "should be limited to specific missiles, for a specific time period and on the basis of non-interference with R & D activities."[150] The Air Research and Development Command indorsed both General Eddy and Colonel Ostrander's recommendations in forwarding the latter's letter to Headquarters, United States Air Force.[151] Washington replied that it was unnecessary to modify the consolidation directive inasmuch as "the objectives can be attained by proper interpretation by the CO of the consolidation directive."[152] In this regard, Headquarters continued, the statement in the directive, "other types of missile firings," should be interpreted as "acceptance and service evaluation of missiles as opposed to organizational training."[153]

The Air Force viewpoint was presented to the Proving Grounds' Program Review Board meeting of 19 March 1953. The Army didnot concur, expressing its opinion that "training firing of Corporal and Nike should be considered

along with other programs within the priorities listed for the range in the Consolidation Order of the Secretary of Defense . . . that, if approved, training firings should be scheduled and controlled in the same manner and by the same organization as are other firings."[154] The Navy felt that "training firings should be accepted on a non-interference basis," but "first priority should be given to all Research and Development firings, inasmuch as this is considered the primary mission of the proving ground."[155] All agreed then to refer the matter to the Commanding General for his consideration.

Three months later to the day, General Eddy, by indorsement to the minutes, stated that it was mandatory for White Sands to accede to the request of the Army Field Forces on an interim basis "since no Department of the National Military Establishment desires to take any action which would delay any Guided Missile Program of any department from becoming operational at the earliest practical date." Consequently, he approved operational training firings subject to certain conditions which would place them upon a temporary basis, subordinate them to research and development activities and bring them, operationally, under White Sands control.[156] General Eddy,

although acceding to the request, was of the opinion that the problem of operational training on the range would be a recurring one and should be definitely settled at Departmental level with priority definitely and clearly granted to research and development activities over any other.[157]

Holloman's Commander supported General Eddy's decision, writing that it was in conformity with previously declared policy of the Air Force which was in "no position to object to such activities unless it can be proven that they are interfering with research and development activities."[158] Air Force Headquarters adopted the same view, limiting approval, however, to the year 1953 in order not to establish a precedent. In making known its views, Headquarters restricted tactical training firings to the CORPORAL and the NIKE only on the basis of non-interference with research and development activities.[159]

Evidently consolidation was effected on the local level relatively smoothly, for no major problem arose to upset the fine equilibrium that had been established between the three Services following the Secretary of Defense's Directive, ordering consolidation. The only exception to this was the Army Field Forces' attempt to

secure the use of the range for tactical training fire, and in this case, the Air Force, Navy and Army Ordnance Corps joined in common resistance, seeking to restrict range use to research and development primarily. Although Colonel Ostrander, in the early months of Army operation, had noted that consolidation had not realized any "major economies in guided missile research and development," he did admit that "the effectiveness of execution" of Air Force technical activity at his Center had gone "unchanged."[160] The only large dark cloud looming on the horizon was a possible controversy over the manning and operation of the Flight Determination Laboratory, for the Air Force was apprehensive lest the Army replace Air Force personnel with Army, thus denying to the former Service "any control, participation, training opportunities or technical capability in the instrumentation field."[161]

The storm failed to materialize, however, probably because Air Research and Development Command decided not to argue the question of operation of the Flight Determination Laboratory, but, rather, to let the local commanders "work out a satisfactory arrangement for Air Force management of the data-reduction facility located at Holloman."[162] This decision was to remain in effect until such

time that "the data-reduction operation" became "unsatisfactory" to the Air Force; then the decision would be made whether the Command would attempt to "regain control of its own data-reduction operation."[163]

Sometime in September 1953, Colonel Ostrander set down his thoughts regarding integration and its ramifications. He felt that any attempt to reopen the question of consolidation would have been "complicated by the fact that to date the Air Force interests in the area, except for very minor exceptions, have not suffered."[164] He found no fault with the White Sands Command, rather he appraised its attitude as "very cooperative" with "little attempt to enforce further formal consolidation by edict."[165] His apprehensions were for the future, and admittedly, "nebulous and difficult to substantiate." They were based upon[166]

> difficulties in working with highly formalized and complicated Army organization and procedures; certain plans for reorganization of Flight Determination Laboratory that are now being considered; possible restrictions on contractual performance of the instrumentation contracts which may apply in the future; increasing saturation of the range coupled with probable reductions of personnel, funds, equipment, and facilities; and the possibility of changes in administration at White Sands Proving Ground and Holloman Air Development Center which might change the present relationships.

Admitting that he could be "overly apprehensive," the

Holloman Commander opined that the Air Force was in "an extremely tenuous position at Holloman" and unless constantly on guard might find itself "in years to come pushed nearly completely off the range." Because of this he argued that[167]

> a firm decision should be made at the highest level as to the Air Force's interest in Holloman and the lengths they are willing to go to protect it; and that a logical and unvarying party line should be established and adhered to at all times.

In order not to upset the applecart and thus give the Army the opportunity "to arbitrarily extend or formalize the present rather loose consolidation," Colonel Ostrander concluded, he had adopted a policy to maintain good local relations, avoiding all friction, with the intention of fighting merely a "delaying action," leaving the major battle to a higher level.[168]

The concluding words of Colonel Ostrander set the pattern for Holloman's relations with White Sands during the subsequent year. No great areas of friction were allowed to develop that might permit the Air Force or the Army to reopen the question of consolidation. On the local level, all apparently was serene with the members of both Commands seeking to maintain harmonious and productive cooperation. Detailed operation of the range was placed

under the command of the Integrated Range Mission which was directed to [169]

> direct the operation of all integrated range facilities in support, on an equitable basis, of assigned programs of all Department of Defense agencies utilizing the services provided by the integrated range or that may be assigned (or admitted) to the range in the future.

The concensus of opinion among those members of the Holloman Command who dealt directly with the integrated range was that the established equilibrium depended too much upon the personal relationship existing between the two Commands. They admitted that since integration, the two Commands had worked together in a spirit of friendly cooperation, but they feared that a change in personalities could result in friction and the destruction of the current harmony.[170] It was the expressed opinion of Colonel Otto Haney, Deputy Commander of Holloman, that General Order 30 was too general in nature, leaving too many details to interpretation. Since the Commanding General of White Sands Proving Ground was the final local authority in range matters, his was the interpretation that in the last analysis determined policy. A change in command could result in an attitude that might act to the detriment of the Air Force program on the range.

The above fears might have led one to think that the Air

Force was looking for trouble, but that was not the case. Air Force capability and efficiency had not suffered because of integration in the past, but the future posed a possible threat. If the United States Government followed the then proposed policy of cutting the Army budget, a definite curtailment of range instrumentation portended. Naturally, the Army would protect its own research and development first, even if at the expense of the Air Force and Navy. Already it was scrutinizing proposed expenditures with a keen eye, thus creating fear in the Air Force that necessary range facilities might be reduced or eliminated.[171] Since the Air Research and Development Command was responsible for most of the testing activities on the White Sands Range, a curtailment in facilities would have a positive adverse effect upon the Air Force guided missile program as well as on related fields of research. This fear was especially strong as the budgeting of facilities and operations on the range was the responsibility of the Army, the Air Force possessing no voice in such matters.[172]

N O T E S

1. To prevent confusion the present name, Holloman Air Force Base, will be used throughout the chapter even though it was officially known as the Alamogordo Army Air Field until September 1948.

2. Memorandum, "To Whom It May Concern," prepared by Colonel Paul F. Helmick, Commanding Officer, Alamogordo Army Air Field and Lieutenant Colonel Harold R. Turner, Commanding Officer, White Sands Proving Ground, 28 July 1947. Consolidation WSPG-HAFB, File No. 1, Hq HADC. (Hereinafter this file will be referred to as Consolidation File 1).

3. Ibid.

4. Ibid.

5. Memorandum from Vincent S. Roddy, Chief Engineer, Guided Missile Branch, HQ, USAF, to Colonel A. Y. Smith, sub: Alamogordo-White Sands-Fort Bliss Facilities, 2 September 1948. File 3, War Department Unification of Facilities and Services--Western Area--Joint Use Agreements, Hq HADC, (Hereinafter referred to as Memo, Alamogordo-White Sands-Fort Bliss Facilities).

6. Ibid.

7. Memorandum from Chief of Staff, USAF to Chief of Staff, USA, 17 December 1947. File 334, Boards, Commissions and Committees, Hq, 6580th Test Group, HAFB, New Mexico.

8. Ibid.

9. Department of the Army, G. O. 59, 8 September 1948.

10. Ordnance Department, Hq, WSPG, G. O. 1, 7 January 1949.

11. Ibid.

12. Ibid.

13. Memo, Alamogordo-White Sands-Fort Bliss Facilities.

14. Ibid.

15. Ibid.

16. Ibid.

17. Ordnance Department, Hq, WSPG, G. O. 1, 7 January 1949.

18. Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit. WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949. File 334, Hq, 6580th Test Group, HAFB.

19. Ltr., CG, 4th Army to Chief of Staff, USA, sub.: Joint Instrumentation Line Facilities - White Sands Proving Ground, Las Cruces, N. M., 26 June 1948. File 334, Hq 6580th Test Group, HAFB.

20. Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit, WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949. File 334, Hq, 6580th Test Group, HAFB.

21. Ibid.

22. 2nd Ind. (Ltr., Hq, 4th Army to CG, AAA and Guided Missile Center, sub.: Joint Range Coordinating Committee, White Sands Proving Ground, 13 January 1949) Ordnance Department, WSPG to CG, Fort Bliss, Texas, 14 February 1949. File 334, Hq, 6580th Test Group, HAFB.

23. Ibid.

24. Hq, Anti-aircraft Artillery and Guided Missile Center, Fort Bliss, Texas, G. O. 23, 2 March 1949.

25. 3rd Ind. (Ltr., Hq, 4th Army to CG, AAA and Guided Missile Center, sub.: Joint Range Coordinating Committee, White Sands Proving Ground, 13 January 1949) Hq, AAA and Guided Missile Center, Fort Bliss, Texas to CG, WSPG, Las Cruces, N. M., 3 March 1949.

26. Ibid.

27. 1st Ind. (Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit, WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949) Hq, AMC to Chief of Staff, USAF, 23 March 1949. File 334, Hq, 6580th Test Group, HAFB.

28. 2nd Ind. (Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit, WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949) Hq, AMC to Chief of Staff, USAF, 23 March 1949. File 334, Hq, 6580th Test Group, HAFB.

29. 4th Ind. (Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit, WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949) D/A, GS, USA, Logistical Division, Washington to Chief of Staff, USAF, (n.d.) File 334, Hq, 6580th Test Group, HAFB.

30. 5th Ind. (Ltr., CO, WSPG to CO, HAFB and OIC, Naval Unit, WSPG, sub.: Proposed Appointment of "Area and Facilities" Committee, 3 February 1949) Department of the Air Force, Hq, USAF to Director of Logistics, General Staff, USA, (n.d.). File 334, Hq, 6580th Test Group, HAFB.

31. Ibid.

32. Ibid.

33. Ibid.

34. Ibid.

35. Ibid.

36. Memorandum from James Forrestal, Secretary of Defense, to General Mark W. Clark; Secretaries of the Army, Navy and Air Force; Chairman, Munitions Board and Director, Joint Staff, sub.: Utilization of Facilities and Services, 29 July 1948. File 3, War Department, Hq, HADC.

37. Memorandum from James Forrestal, Secretary of Defense, to Secretaries of the Army, Navy and Air Force; the Joint Chiefs of Staff; the Chairman, Munitions Board and the Chairman, Research and Development Board, sub.: Committee on Facilities and Services, 19 January 1948. File 3, War Department, Hq, HADC.

38. Ibid.

39. Memorandum from Chairman, Committee on Facilities and Services, National Military Establishment Munitions Board, to Secretaries of the Army, Navy and Air Force, sub.: Area Subcommittees of the Committee on Facilities

and Services, 9 June 1948. File 3, War Department, Hq, HADC.

40. Memorandum from James Forrestal, Secretary of Defense, to General Mark W. Clark; Secretaries of the Army, Navy and Air Force; Chairman, Munitions Board and Director, Joint Staff, sub.: Utilization of Facilities and Services, 29 July 1948. File 3, War Department, Hq, HADC.

41. Ibid.

42. Research and Development in the United States Air Force, Report of a Special Committee of the Scientific Advisory Board to the Chief of Staff, USAF. (Hereinafter referred to as the Ridenour Report).

43. Ibid., VIII, 11.

44. Ibid.

45. Memorandum, Alamogordo-White Sands-Fort Bliss Facilities.

46. For elaboration of this point, see Mary R. Self, History of the Development of Guided Missiles, 1946 - 1950. (Historical Office, Air Materiel Command, December 1951), pp. 100-08. (Hereinafter referred to as Self, Guided Missile Development).

47. Address by Brigadier General W. L. Richardson before the Ordnance Technology Conference, Los Angeles, California, 26 April 1949. Cited in Self, Guided Missile Development, p. 103.

48. Memorandum from Admiral W. D. Leahy to Secretaries of War and Navy, 23 March 1946. Cited in Self, Guided Missile Development, pp. 103-04.

49. R & R-1, Brigadier General W. L. Richardson, Chief, Guided Missiles Group, DCS/O, to DCS/O, circa 1 June 1948, 452.1 Radio Controlled Target Planes, 1948, Vol. II, AAG Files, Hq, USAF. Cited in Self, Guided Missile Development, p. 105.

50. Ltr., CG, AMC to Chief of Staff, USAF, sub.: U. S. Air Force Guided Missile Test Range Requirements, 27 May 1949. File of Colonel William H. Baynes, Hq, HADC.

51. Ibid.

52. Ibid.

53. Ltr., Colonel William H. Baynes, CO, HAFB, to Major General Clements McMullen, CG, San Antonio Air Materiel Area, 9 January 1950. Consolidation File 1. Interview with Colonel Baynes, 27 January 1955.

54. Ibid.

55. Extract from JCS 1620/17, 14 March 1950. Consolidation File 1.

56. Ltr., Lieutenant Colonel J. W. O'Neill to Colonel W. H. Baynes, 2 March 1950. Consolidation File 1.

57. Ltr., Lieutenant Colonel J. W. O'Neill to Colonel W. H. Baynes, 17 May 1950. Consolidation File 1.

58. Ltr., Colonel W. H. Baynes to Lieutenant Colonel J. W. O'Neill, 22 May 1950. Consolidation File 1.

59. Ltr., Major General D. L. Putt to CG, AMC, sub.: Consolidation of White Sands Proving Ground-Holloman Air Force Base Ranges, 30 June 1950. Consolidation File 1.

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61. Plan for Consolidation of WSPG and Holloman Air Force Base. Consolidation File 1.

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