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DEVELOPMENT OF AAF BASE FACILITIES IN THE UNITED STATES 1939-1945

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Development of AAF Base Facilities in the United States,

1939 - 1945

Prepared by
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FOREWORD

This study is concerned with the development of command facilities for the Army Air Forces during the period of World War II, and it makes no effort to treat the almost equally extensive subject of the expansion of industrial facilities under AAF sponsorship. This latter phase of AAF expansion has already been covered in AFSHO Historical Studies: No. 40, Expansion of Industrial Facilities under Army Air Forces Auspices, 1940-1945. No effort has been made to give particular notice to each separate command installation, but most of the important main and sub-bases developed have been at least mentioned in the narrative. The present study was prepared by Robert F. Futrell of the Air Historical Office.

Like other Air Historical Office studies, this history is subject to revision, and additional information or suggested corrections will be welcome.

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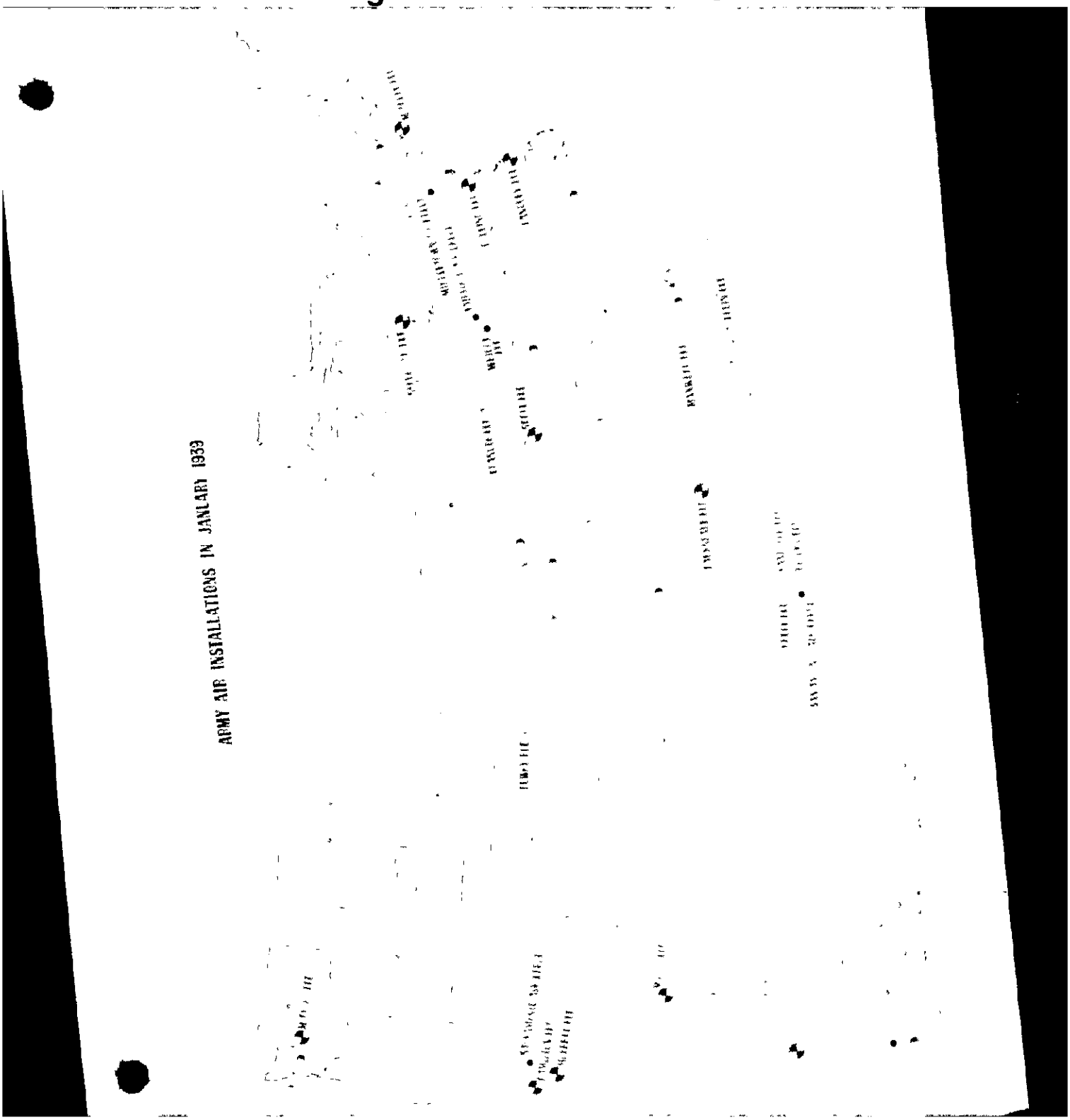

Chapter I

STATUS OF AIR INSTALLATIONS IN 1939

On 4 January 1939 President Roosevelt, warning that undeclared wars, the growth of heavy armaments, and threats of new aggression were sweeping the world dangerously close to general hostilities, called upon Congress to take steps to protect the western hemisphere "against storms from any quarters."[1] The attention focused upon the armed forces as a result of this admonition revealed to the public that the Army Air Corps lacked the men, the planes, and the base installations it needed both for proper training and for the strategic defense of the continental United States.

The installation deficiencies were particularly acute because the Air Corps, unlike other elements of the Army, depended upon its bases not only for housing but for fighting power and training effectiveness. Yet in early 1939 the bases available to the Air Corps were more like the hodge-podge of airfields which had been salvaged from World War I than the system of bases needed for the protection of the United States in a world which was headed toward war. During the 18 months of American participation in World War I, the Army had hurriedly expanded its 3 original training airfields to a total of 58 major installations.[2] Urgent training demands had given little time for careful site selection, and the simple operational characteristics of the aircraft then in use had permitted many of the fields to be located on sites which were little more than tracts of level land which could be acquired expeditiously. There had been little, if any, consideration for locating

airfields for the defense of the United States. At the close of World War I the Army retained some 16 of the installations for its air component,[3] and all but three of them were still in service in January 1939.

Of the 10 air bases assigned to the General Headquarters Air Force in January 1939 for use in the defense of the United States, five were of such World War I origin.[4] Langley Field at Hampton, Va., and Mitchel Field at Hempstead, N. Y., were the only bases available for the defense of the Atlantic coast. Near the Pacific coast, March Field, at Riverside, Calif., functioned as the defense base for the Pacific southwest. Located in the center of the continent, Scott Field, at Belleville, Ill., and Selfridge Field, at Mt. Clemens, Mich., could fill no defensive mission.

The five other bases assigned to the GHQ Air Force were of more modern construction. In 1929 and 1930 Congress had permitted the War Department to accept donated sites for Barksdale Field, at Shreveport, La., and for Hamilton Field, at San Rafael, Calif. Barksdale had been constructed with some view to its use for the defense of the Gulf coast, and Hamilton had been designed as a bomber base for the defense of the San Francisco Bay area.[5] In 1935, as a part of an exchange of facilities between the Army and Navy to relieve duplication, the War Department had been required to give up its air bases at Rockwell Field, San Diego, Calif.; old Bolling Field, Anacostia, D. C.; and Luke Field, Oahu, T. H., in exchange for Moffett Field, Sunnyvale, Calif.[6] The exchange was not particularly desired by the Air Corps, and Moffett, because of its high annual maintenance costs (especially on the large dirigible hangar), was thought to be a poor station. As

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a frontier defense base it duplicated facilities located at Hamilton Field, just to the north of San Francisco Bay. During the period between 1935 and 1939 there had been considerable agitation to return it to the Navy.[7] After the transfer of old Bolling Field to the Navy, the War Department had secured funds for the development of a new air base, also called Bolling Field, immediately south of the old installation, and in 1939 this base was just becoming completely operational.[8] The newest of the GHQ Air Force bases was McChord Field, at Tacoma, Wash., which had been authorized by the Wilcox Act of 12 August 1935. This act, written with the advice of the Chief of the Air Corps, had authorized the construction of bases in the northeast, southeast, and northwest United States, in Alaska, and air depots in the southeast and Rocky Mountains area of the United States.[9] Under its comprehensive authority, the Air Corps had asked for funds to construct the northwest air base, later named McChord Field. Construction had been initiated on the donated site in 1938, but the field was not to be ready to receive tactical units until 1940.[10]

These GHQ Air Force stations did not satisfy the requirements of the Air Corps defensive mission. The Air Corps Board, the agency responsible for recommending Air Corps tactical doctrine, had concluded in 1936 that "in the past Air Corps stations have not been located solely in accordance with tactical or strategical requirements." There was no air base in New England although its industrial complex made it a prime objective for enemy air attack. The southeastern United States and the entrance to the Caribbean were similarly unprotected. The Air Corps Board considered that both of these regions needed the facilities which had been authorized in the Wilcox Act.[11] The inadequacy of the 1939

tactical stations for the operation of the heavier and faster military aircraft which were being brought into use in 1939 was also evident. The arrival of B-17 at Hamilton Field, for example, had led to immediate demands for taxiways which had not been provided in the original design for the bomber base. The GHQ Air Force had protested in 1937 that drainage, housing, and landing fields at its bases were inadequate, and commercial engineers had recommended that paved runways at least 7,000 feet in length would be needed for the new types of heavy bombers. None of the tactical stations possessed such facilities.[12]

The burden of World War I construction, supposedly temporary in 1917 and 1918, lay heavily upon the fields used by the Air Corps for training in 1939. Of the seven air bases used in January 1939 for such training, only two had been constructed since World War I. All three of the Air Corps flying training fields had been located in the vicinity of San Antonio, Tex., for purposes of economy and centralization and to take advantage of the good flying weather of south Texas. Kelly Field, originally the aviation cantonment of Fort Sam Houston, had been formally established in July 1917, had been used for flying training during the war, had been a mechanics training school from 1920 to 1922, and had been again reopened as a flying school in 1922.[13] Training had begun at Brooks Field in March 1918, but in May 1919 a balloon school had replaced the flying school. After the movement of the lighter-than-air school to Scott, Brooks had been reopened as a primary flying school in 1922.[14] The single new flying training field, Randolph, had been organized in September 1928 and its installations had been erected in the years which followed. Primary and basic training functions, previously located at

March and Brooks Fields, had been concentrated at Randolph in 1931. Kelly, however, had been continued in operation as a sub-post of Randolph, although this prevented a capacity exploitation of the newer plant at Randolph.[15]

The two airfields used for Air Corps technical training in 1939 were Chanute Field, at Rantoul, Ill., and Lowry Field, at Denver, Colo. Chanute had been located and leased in May 1917 as a flying school, and after the war it had been used temporarily as a storage depot for aviation supplies. In 1921, as a purely temporary expedient, the plant had been reopened to receive the mechanics school from Kelly, but eventually all of the technical training functions of the Air Corps had been concentrated at Chanute. When it was proposed to move the school in 1930, however, so much opposition was manifest in Illinois that the project had to be abandoned. In 1934 a site board again recommended that the school be moved to Denver, Colo., in 1937 a political compromise permitted the movement of a part of it, and in 1938 three of the technical departments were transferred to new facilities which were donated at Denver. As a part of the donated facilities the technical school also obtained a 10 x 10-mile bombing range, badly needed for training of bombardiers. In January 1939 the new air base at Denver, Lowry Field, was being built.[16]

Maxwell Field at Montgomery, Ala., site of the Air Corps Tactical School and the Air Corps Board, had a combined training and experimental mission. The property had been originally secured for an engine repair shop in December 1917, but in 1921 the maintenance function had been

moved to Fairfield, Ohio, leaving Maxwell to become a flying field. In 1927 permanent construction had been initiated, and in 1931 the Tactical School had moved from Langley to occupy the new plant.[17]

Both from the point of view of housing and technical facilities these training airfields--with the notable exception of Randolph--were poorly equipped for their mission. Housing at Chanute, Kelly, and Brooks was predominantly of World War I origin. The use of such "temporary" construction had, in fact, led General Arnold to remark that the government had got more than its money's worth from such emergency housing.[18] The salubrious climate of south Texas prevented actual hardships to the personnel housed at Kelly and Brooks, but Chanute, over-crowded and run-down because of the long indecision as to its fate, was positively dangerous to the health of its inhabitants. "Don't shoot 'em, Chanute 'em," had become a popularly conceived punishment facetiously spoken of in the Air Corps for officers who incurred displeasure.[19] Maxwell Field, although one of the showplaces of the Air Corps because of its buildings, which had cost $3,433,612 of the $5,371,167 expended on the station by June 1940 had runways which could be extended in only one direction for more than 3,500 feet, and the OCAC estimated that a new installation could be built for less than the amount of money that would be required to buy the expensive property needed to bring Maxwell up to proper operational standards.[20]

The four air depots existent in January 1939, except for changes in designation and the movement of one of them to a new plant, were closely similar to the depots which had remained in use after World War I. The

San Antonio Air Depot, opened at Duncan Field in September 1917, was still operating in 1939. Middletown Air Depot, at Harrisburg, Pa., also founded in 1917, was so sharply bounded in area that there was considerable indecision as to whether it should be retained or abandoned. Fairfield Air Depot, Fairfield, Ohio, established in January 1918 to give services to the wartime Wilbur Wright Field, had limited facilities in 1939. Sacramento Air Depot, Sacramento, Calif., was the only new depot. Ground had been broken at its site in 1936, and the old depot which had been at Rockwell Field was moved there in 1938. Construction was still underway in 1939.[21] The headquarters and the experimental activities of the Materiel Division, CCAC, were located at Wright Field, Dayton, Ohio, a new field which had been occupied in 1927.[22]

Even in terms of normal peacetime requirements, existing facilities at the four air depots in 1939 were no more than barely adequate. With the exception of the new Sacramento Warehouse, available storage facilities were filled. The repair capacity of the four depots was but 3,400 work units per year. The San Antonio Air Depot at Duncan Field was crowded between Kelly Field and the tracks of the Texas and New Orleans Railroad, making expansion impossible. The Middletown Air Depot was similarly crowded between an urban area and the Susquehanna River. The use of heavier aircraft had made the landing fields at Fairfield and Middletown hazardous. Patterson Field, at Fairfield, was without runways and heavier aircraft met difficulty in landing in inclement weather. Olmstead Field, Middletown Air Depot, was so small and circumscribed by flying hazards as to be dangerous for navigation.[23]

In January 1939 Army observation units, organically a part of the Air

Corps but assigned to Army ground units for administration, training, and operational control, were located at Lawson Field, Fort Benning, Ga.; Pope Field, Fort Bragg, N. C.; Godman Field, Fort Knox, Ky.; Gray Field, Fort Lewis, Wash.; Marshall Field, Ft. Riley, Kan.; and Post Field, Fort Sill, Okla.[24] These units varied in size from a flight to a squadron, and the fields were, for the most part, small and limited in facilities. Godman Field, for example, had originally been the Fort Knox polo grounds, and the observation squadron there in 1939 operated from a grass strip.[25] In October 1937 it had been reported that housing conditions at the air support fields varied from "fair to bad."[26] Other small fields were Stewart, at the Military Academy; Phillips, at the Aberdeen, Md., ordnance testing ground; and Sherman, at Ft. Leavenworth, Kans. All of these fields were a part of the local posts, and they were not controlled by the Air Corps.

The bombing and gunnery ranges available to the Air Corps in early 1939 were too few in number and too small in size for the intensive training which was desired. In 1936 the Air Corps Board had recommended that a suitable range was necessary for each Air Corps station, and in 1937 the GHQ Air Force had described the lack of available ranges as the "limiting factor" in its preparation for combat.[27] Plum Tree Island, off the Virginia coast near Langley, had been acquired in 1930, and in September 1936 Langley had also secured the use of Mulberry Island, a part of the Fort Eustis Coast Artillery Reservation, but it was not until September 1940 that the Coast Artillery Corps agreed that the Air Corps interest there was paramount.[28] Selfridge had acquired a gunnery range at Camp

Skeel, Oscoda, Mich., in 1922, which was suitable only for summer use.[29] In 1933 tactical units at March Field had begun bombing and gunnery training at Muroc Lake, Calif., but this dry lake bed became wet during inclement weather and a scattered holding of civil claims complicated its use.[30] Mitchel and Hamilton had no regular ranges, but units at the former used a range at Camp Upton, N. Y., and at the latter made some use of the old Mather Field, Calif., reservation.[31] In 1936 the Air Corps Tactical School had secured the donation of 1,460 acres of land including a civil airfield at Valpariso, Fla. This installation, called Eglin Field, also made use of overwater ranges and ranges in the Choctawhatchee National Forest. Range facilities in the forest area, however, were severely limited by a checkerboard of civil holdings which covered the reservation.[32] The ranges at Barksdale were located on the immediate air base area, and, although this reservation included 26,886 acres, the closeness of the ranges to the airfield traffic pattern caused some difficulties.[33] Largest of the bombing ranges was the 64,000-acre tract southwest of Lowry Field which the Air Corps Technical School had brought into use in February 1938.[34]

The Air Corps also maintained small detachments of weather, communications, service personnel, and organized reserves at 29 civil airports to service and control Army aircraft making use of the airports in cross-country and ferrying flights.[35] Since it was obviously impossible for the Air Corps to maintain during peace the number of installations which would be needed for war, the Army looked to the civil airports of the nation for the additional bases which would be needed during a national emergency.

War plans required a net-work of civil airfields, suitable for military use, in each of the nation's four corners and a similar route of civil airfields connecting these peripheral areas of the United States.[36] In January 1939, however, the Civil Aeronautics Authority, after an extensive survey, reported that of the 1,907 civil airports in the continental United States, only 882 had facilities for refueling, only 230 had adequate lighting equipment, and only 231 had hard surfaced runways. The CAA standards for classification of airports included four specifications based primarily on runway length: Class I, 1,500 feet; Class II, 2,500 feet; Class III, 3,500 feet; and Class IV, 4,500 feet. By Air Corps standards only Class III and Class IV airfields were generally suited for military use. Although a number of the airports were penalized by the lack of the specified facilities and so were forced into a lower category, there was on 1 January 1939 not a single Class IV civil airport in the United States. Only 36 civil airports were in Class III, and only 178 were in Class II. Approximately seven-eights of the existing civil airports were thus in the lowest specification or failed to meet the CAA standards at all.[37] Between 1933 and 1939 the government had spent some $137,931,950 for relief purposes on the development of civil airports, but from the point of view of national defence too much of this relief money had gone into the development of small fields. A federal interest in the development of a national system of airports was vital if the civil airports were to be made of value to the national defense.[38]

Several fairly obvious difficulties had been encountered by the Air Corps in building up to its 1939 air base situation. It had certainly been penalized by the large number of World War I bases which had been continued

in use with minor improvements despite the fact that most of them were not suitably located for continental defense. The rapid development of larger and heavier military aircraft types had caused all of the air bases to become obsolete much more rapidly than funds could be secured to expand them. Although the Air Corps had been authorized new bases by the Wilcox Act, it had been inexpedient to ask Congress for funds to construct them. Moreover, the Air Corps, with its units understrength, had neither the personnel nor the equipment for any additional bases even if they could have been secured. The War Department had not been entirely free to determine its own program of construction for the Air Corps. The 1935 interchange of facilities, for example, had forced the War Department to use the bulk of its funds for new air bases in Hawaii, the District of Columbia, and for a new depot at Sacramento. Funds had thus been diverted to substitute facilities which might have gone into the building of the new bases authorized or into the expansion of the existing plant. Since all funds for land acquisition were a part of the money appropriated for construction, it had been thought inadvisable to secure large areas for bombing and gunnery practice at the expense of needed construction. Finally, although the Air Corps had admittedly got the lion's share of Army construction funds in the late 1930's, the total appropriations for all Army construction had been infinitesimal when compared to Air Corps needs.[39]

Chapter II

AUGMENTATION OF AIR FACILITIES, 1939-1940

The near impasse in the construction and improvement of Air Corps base facilities was brought to an end in the spring of 1939. As he had promised eight days earlier, President Roosevelt sent Congress a message on 12 January asking a $300,000,000 appropriation "for the purchase of airplanes for the Army." The additional planes, he explained, would "considerably strengthen the defenses of the continental United States, Alaska, Hawaii, Puerto Rico, and the Canal Zone."[1]

On 13 January General Arnold proposed that $62,000,000 of the appropriation should be spent on two new continental air bases, and one air base each in Puerto Rico, Panama, and Alaska. This program, he urged, would provide the nucleus of "a well-rounded air defense which would be wholly lacking if the whole $300,000,000 were devoted to the procurement of airplanes."[2] He also pointed out that "airplanes alone, even of a superior type, do not make an air force."[3] On 18 January General Arnold asked the Chief of Staff to secure $20,000,000 of WPA funds to build two new air depots. Provision for these depots, needed to repair and maintain the new aviation equipment about to be authorized, had not been included in the $62,000,000 estimate[4] and he was unwilling to use more than this amount of the $300,000,000 for construction. The Air Corps thus hoped to secure all of the base installations which had been authorized by the Wilcox Act, plus additional air bases in Puerto Rico

and Panama.[5] All of these facilities were urgently needed for hemispheric defense.

After the necessary hearings and debates, Congress followed the general recommendations of President Roosevelt. On 3 April 1939 the Air Corps was authorized the $300,000,000 with which it was to procure and maintain a strength of 6,000 aircraft.[6] By the appropriations act of 1 July Congress allowed a cash outlay of $64,862,500 plus a contract authorization of $21,337,500 for the Air Corps construction.[7] Despite General Arnold's efforts to secure funds for the two air depots from the WPA, these costs at the last moment had been figured into the overall requirement--thus making the grand total for construction $86,200,000 instead of the amount recommended by the Air Corps.[8] On 21 July the Secretary of War announced the allotment of $62,800,000 plus $3,961,000 of WPA funds for Air Corps construction.[9]

General Arnold, long impressed with insufficient funds and realizing that the needs of the Air Corps still exceeded its means, sought to insure a maximum utilization of all new facilities. To this end he cautioned all station commanders not to attempt to bring pressure on the War Department through civilian channels for particular projects of interest to them.[10] In all construction it was emphasized that simplicity would be the keynote.[11] Station commanders were also enjoined that funds could be made available for "only the most urgently needed essential items."[12] Under General Arnold's directions the construction estimates were set up so that no definite amounts were committed to specific projects, so as to permit savings on one project to be applied to another.[13] Permanent construction

was to be provided for all technical buildings; troops, other than those in Alaska and Panama, were to be housed in temporary mobilization-type structures. General Arnold estimated that permanent construction for all of the new stations would have cost about $128,000,000 and he was certain that nothing had been left in his program for construction "but the mere flesh and bone." He defended the use of temporary housing by stating that there was neither the time nor the money for construction of permanent buildings at all of the new stations and by pointing out that such World War I temporary construction was still in use.[14]

The channels for effecting construction were clogged in 1939; most of the authorities and responsibilities were vested in the War Department General Staff. Ordinarily the using service indicated its general needs and, if new stations were to be built, requested the appointment of War Department site boards to recommend sites for the new installations. The Assistant Chief of Staff, G-4, initiated the necessary papers, and, after approval by the Chief of Staff, the boards (with membership representing all interested agencies) were formally appointed by The Adjutant General. They made their investigations and reported to The Adjutant General who in turn sent their reports to the G-3 and G-4 Divisions of the General Staff and to the chief of the using agency for comment. These individuals having commented, the board proceedings were transmitted to the Secretary of War for final approval. After his approval of the site the using agency next requested the initiation of construction, and the G-4 Division, acting for the Chief of Staff, directed the Quartermaster General to acquire the necessary real estate and to prepare layout plans in coordination with the wishes of the using agency. Following the approval of the layout plans, construction

directives were prepared by the G-4 Division, approved by the Chief of Staff, and issued to the Quartermaster General whose construction Quartermasters on the local project supervised the actual work at the site.[15]

Since the two new continental bases were actually to be used by the GHQ Air Force, there was some doubt whether this agency or the OCAC should assume the initiative for their construction. On 1 March 1939, however, the Chief of the Air Corps was designated the immediate commander between the GHQ Air Force and the War Department,[16] and the OCAC assumed the initiative in the matter. On 18 April 1939 General Arnold informed the GHQ Air Force that the Buildings and Grounds Section, OCAC, would review all layout plans for new construction. The GHQ Air Force, however, was to submit requests for additional facilities needed at its bases to the Chief of the Air Corps.[17] The GHQ Air Force would also be allowed to comment on the site locations of the new bases.[18]

Planning for the location of the new combat bases had actually begun far in advance of the actual appropriations for their construction. In 1936 the Air Corps Board had recommended that these combat bases be located far enough inland so that enemy aircraft would have to search over unfamiliar territory to find them. In 1938 General Arnold had desired that this proposal be followed in principle.[19] At Arnold's request, the War Department had established a site board in October 1938 to select a tentative site for the northeast air base. This board, composed of officers from the War Department General Staff and OCAC,[20] had been directed in January 1939 to extend its search to locate sites for the

southeast air base and air depot.[21] By April 1939 this board had completed its work and had made its report[22] none of the sites recommended by the board for the northeast air base were found satisfactory, but there was quick agreement on the locations for the southeast air base and depot. General Arnold accordingly recommended that the sites for the latter two installations be approved and the site for the northeast air base be made the subject of more investigation.[23] On 13 July the Secretary of War accordingly announced that the southeast air base would be located six miles southwest of Tampa, Fla., on a peninsula which jutted out into Tampa Bay.[24] This site was selected because it was far enough south to permit its aircraft to operate in the Caribbean and still to be shielded by the mainland of Florida against possible carrier-borne attacks.[25] The location of the northeast air base near Chicopee Falls, Mass., a decision made difficult by the dense population of the area, was not announced until 15 September 1939.[26]

Following the designation of sites the Office of the Quartermaster General made detailed surveys and drew up plans for construction. After approval by the Office of the Chief of Air Corps the specifications were sent to local QMC officers who were selected to supervise the actual work.[27] Since clearance of a maze of tax claims at Tampa required condemnation procedure and WPA funds were used to pay for clearing the land, construction did not begin until early in 1940 on the base which was to be known as MacDill Field. At the northeast air base, subsequently named Westover Field, condemnation and evacuation proceedings were also necessary

and construction could not begin until February 1940.[28] General Arnold accurately predicted that the two air bases would not be fully operational for at least two years.[29] MacDill was ready to receive its air base group in March and April 1940,[30] but Westover was not sufficiently completed to receive a similar complement until later that year. Because there was no heat in the maintenance buildings, the heavy bombardment group scheduled for Westover was not ordered there until May 1941.[31] In order to provide landing facilities for the heavy bombardment group which was transferred to MacDill in May 1940, the Air Corps had to secure the use of the landing field at nearby Drew Field and operate there until the runways at MacDill were completed in February 1941.[32]

Site selection for the depots at Ogden and in the southeast had also been accomplished prior to the appropriations for the depots. The site for the Ogden Air Depot had been inspected during the period of optimism following the passage of the Wilcox Act, and a site for the future depot had been located adjacent to the Ogden Ordnance Depot, a site which the Army considered suitable to supply any place on the Pacific coast and yet be far enough distant to protect it from enemy attack.[33] The site for the southeast air depot was selected by the same board which investigated sites for the northeast and southeast air bases. After inspecting New Orleans, La., Panama City, Fla., and Tampa, Fla., Mobile, Ala., was chosen because it was thought that a depot there would augment the logistic facilities of Panama and support a task force in the South Atlantic. The War Department announced its approval of the Mobile site on 13 July.[34] The actual construction activity

was initiated by the Quartermaster Corps, and work was begun at Ogden in January 1940; although both the air depot and the adjoining Hill Field were ready for limited operations during 1940, they were not completed until late 1941.[35] At Mobile the government began land procurement in January 1940, but problems of drainage and clearing delayed construction until June; the Mobile air depot and its Brookley Field were consequently not ready for full-scale operations until January 1942.[36]

The augmentation program included no appropriations for new flying training fields, but the Chief of Air Corps was permitted to enroll flying cadets in civil schools for elementary flight training. Ground work for this training had been laid prior to the passage of the enabling legislation: in November 1938 the Chief of Air Corps had directed the Air Corps Training Center to establish a board for the inspection of the 11 civil flying schools which had indicated that they were interested in receiving government contracts. On 6 June 1939 the War Department approved a request for authority to organize nine civil school detachments.* The government incurred no expense and no responsibility for the erection of facilities at these civilian contract schools. Training started at all of them shortly after 1 July 1939.[37]

The appropriation of 1 July 1939 did carry funds for the expansion of technical training facilities at Chanute and Lowry. In addition to these expanded facilities, the Air Corps Technical School secured the use of Scott Field on 1 June 1939 for housing a basic training center, an arrangement which was supposed to hold good until such time as the

*These were located at Tulsa, Okla., Santa Maria, Calif., Dallas, Tex., San Diego, Calif., Tuscaloosa, Ala., Glendale, Calif., East St. Louis, Ill., Lincoln, Neb., and Glenview, Ill.

headquarters of the GHQ Air Force moved to Scott.[38] The Air Corps Technical School was also permitted to make contracts with civil schools at Chicago, Ill., Glendale, Calif., Boston, Mass., Newark, N. J., East St. Louis, Ill., Garden City, N. Y., and Tulsa, Okla, for training aviation mechanics.[39]

Efforts to secure bombing and gunnery ranges during the 1939 augmentation were only partially successful. In July 1939 General Arnold requested that three ranges should be acquired for McChord, Hamilton, and MacDill Fields, but the War Department, pointing out that Congress was holding hearings on what would probably be the last deficiency appropriation for the year, directed the Air Corps to broach the matter during the new fiscal year.[40] In September 1939, however, the Air Corps again requested funds for the development of ranges near Valpariso, Fla.; near Boise, Idaho, or Spokane, Wash.; and near Hamilton Field. Funds were appropriated for the acquisition of ranges near McChord and Hamilton in February 1940 and in June Congress gave the Choctawhatchee National Forest area to the Army.[41] Two boards, consisting of representatives from the War Department General Staff, the OCAC, the QMC, and the GHQ Air Force, were appointed to seek possible sites in the eastern and western sections of the United States.[42] The acquisition of the Choctawhatchee National Forest pre-empted the function of the board for the survey of the eastern United States,[43] but by April 1940 the western site board had located sites near Arlington, Ore., Sacramento, Calif., Wendover, Utah, and Tonopah, Nev. Almost immediate possession was secured of the tract of waste land near old Mather Field, Calif., but the negotiations for the other ranges dragged on so long that they may

more properly be considered to have been a part of the 1940-1941 expansion of Air Corps facilities.[44]

During 1939 the OCAC worked closely with the CAA and the WPA to develop the civil airports of the nation to a point suitable for military exploitation. Under the Civil Aeronautics Act of 1938 the CAA had been charged with the collection of data and the formulation of policy for a system of public airfields which would be of value to commerce and to the national defense of the United States.[45] Late in August 1939 the War Department directed the Chief of Air Corps to submit a list of civil airports which should be improved, indicating also the desired priority and extent of improvement. With war beginning in Europe early in September, the Air Corps almost immediately replied that it desired all of the civil airports lying within 100 miles of the Atlantic coast from Maine to Mobile, Ala., to be built up. As a second priority it wished all of the larger airfields of the remainder of the country developed to a point suitable for military use.[46] On 14 September the OCAC designated military priorities on the CAA tentative project list with the understanding that the designation was subject to change.[47] At general conferences between representatives of the CAA, the WPA, and the OCAC were held later in September, it developed that by law WPA funds could be used for development of airfields only in proportion to the relief needs of the various states and each local agency, moreover, which desired to secure such a grant had to contribute a sponsorship share of funds. The WPA nevertheless agreed to take cognizance of Air Corps requests for high priority development of airdromes along the Atlantic coast and to keep the local sponsorship share for such military projects as low as

possible. The CAA agreed to solicit sponsors for projects of military necessity, and the Air Corps indicated that it would furnish the two agencies with a definite list of airports which were of importance to the national defense.[48]

To determine the airfields necessary for WPA development, General Arnold secured the formation of a committee representing the War Plans Division, the Navy, and the OCAC. This committee reported that enough airports should be developed in the northeast to accommodate the entire striking force of the Air Corps. In the southeast it believed that a lesser force would be required but that several airports would be needed for movement of aircraft to the Caribbean, to Panama, and to South America. In the northwest it named airports needed both for local defense and for staging units to Alaska. Only one airport--that at Brownsville, Tex., which was thought to be necessary for ferrying via the inland route to Panama--was specified for development. It recommended that 5,000-foot runways would be required at all the airdromes recommended for development by the CAA and the WPA.[49] The revised list was transmitted to the War Department on 11 December 1939, and after the WPA had added other airfields in Alaska, Puerto Rico, and Haiti, the final revision was sent to the CAA on 4 January 1940 by the Secretary of War.[50] The WPA, in its turn, directed each of its local administrators concerned to cooperate with the CAA in setting up airports for development with WPA funds on the most advantageous conditions.[51]

The 1939 augmentation construction program was to be the last of the peace-time type expansions. Its base facility requirements had been long planned, its construction costs closely figured, and its execution closely

monitored. There had been few, if any, mistakes, but the time consumed in such perfectionistic efforts meant that no repetition on similar scale would be possible in the more rapid expansions of the Air Corps which were to follow. The achievements of the program had been notable: the strategic bases needed for a minimum of strategic defense had been rounded out, and a working cooperation had been established between the Air Corps and the CAA and WPA.

Chapter III

EXPANSION OF FACILITIES FOR HEMISPHERIC DEFENSE, 1940-1941

By April 1940 the augmentation program, conceived prior to the beginning of World War II, had brought the Air Corps to a personnel strength required to man its 25 combat groups.[1] Continued Nazi successes, however, made it evident that 25 groups could not defend the hemisphere. In June 1940 the Air Corps was accordingly directed to expand to a strength of 54 combat groups, and in March 1941 it was further directed to expand to 84 combat groups. The Chief of the Air Corps, with increasing responsibility, had to secure new facilities to provide for the increased training, maintenance, and dispersal requirements of the two programs, as well as for the combat groups. In a third and less extensive, program, the War Department General Staff initially assumed most of the responsibility for building up the observation units needed for cooperation with its expanding ground forces. The Chief of the Air Corps at first shared only partially in the development of facilities for these units, but in July 1941 the newly created Army Air Forces inherited active direction of the whole rather confused matter. These three phases of effort were designated, whether rightly so or not, as hemispheric defense programs.

1. The 54 Combat Group Program.

The easy successes of the German armies in the Netherlands and France in May and June 1940 gave ample indication of the strength of the Axis

air arm. An Axis victory in Europe, which, despite American naval supremacy, might permit a German-Italian penetration into South America with a strength of some 1,000 tactical aircraft, seemed possible.[2] To meet this threat, Congress 13 June 1940 voted funds to complete the Air Corps construction authorized in 1939, to expand the enlisted strength of the Air Corps to 55,000, to increase the authorized aircraft strength of the Army, and to raise the rate of pilot training to 7,000 per year. In a supplemental appropriation, spurred to quick approval on 26 June by the collapse of France, Congress voted funds and authority to increase the Air Corps enlisted strength to approximately 94,443 men.[3]

Acting on the authority given in the supplemental appropriations, the War Department on 29 June directed the Air Corps to organize its tactical strength on the basis of 3,873 combat aircraft, 2,131 combat aircraft in reserve, and 6,831 training aircraft. This program it designated as the Army's first aviation objective. The form of organization set up by the Air Corps required 54 combat groups, six transport groups, and 4,006 tactical aircraft assigned to units. Funds and personnel allotments, however, permitted the immediate organization of only 41 combat groups, and it was not until 8 October 1941 that the Air Corps secured the appropriations needed to finance the difference between the approved 41 combat groups and the projected 54 group organization.[4] Actually both of these expansions (with the exception of their pilot training programs) were undertaken simultaneously under the designation of the 54-group program. Under the two programs there were related expansions of flying training, technical training, and depot maintenance facilities. New bases and other installations had to be secured for each of these augmentations as well as for the accommodation of the new combat groups.

Expansion of Training Facilities

The most immediate task for the projected combat expansions was to increase the pilot tr. ining rate, planning for which antedated formal legislative approval. At the White House on 14 May 1940, General Arnold proposed to raise the rate of pilot training from the current 4,500 to 7,000 per year and to utilize the pilot eliminees for navigation and bombardment training.[5] Having secured tentative approval of this idea, he forwa ded a formal plan for the accomplishment of these objectives to the Chief of Staff on 24 May. This plan, among other features, proposed that the existing Air Corps Training Center be expanded into three centers--the Southeast, the Gulf Coast, and the West Coast Air Corps Training Centers. The Gulf Coast Training Center was to control Randolph, Kelly, Brooks, a new advanced school to be located in south-central Texas, and a new specialized school to be located near Houston, Tex. The Southeast Training Center was to be assigned Maxwell, Barksdale, a new advanced school near Maxwell, and a specialized school to be located at Eglin Field. The West Coast Training Center was to take over Moffett and to open a new advanced school in the San Joaquin Valley of California. Each of the civil contract schools was to open a new civil school. The War Department approved this recommendation on 6 June,[6] and funds to house the increased number of flying cadets, to build the new training fields, and to secure additional training aircraft were appropriated on 13 June.[7]

During May 1940 the OCAC requested each of its nine civil contract schools to make plans to open nine additional schools on the Pacific coast. The Air Corps Training Center appointed a board of officers to inspect the sites for the new schools recommended by the civil schools,

and on 19 June the OCAC announced that locations had been approved.* Training of navigators was inaugurated on 10 August at a civil school operated by Pan American Airways at Coral Gables, Fla.[8]

Acting on War Department orders, the Air Corps Training Center formed a site board to select sites for the military flying schools. After having received telegraphic recommendations from the future commanders of the West Coast and the Southeast Training Centers, the board rather perfunctorily proposed to locate a bombardier school at the site of old Ellington Field, near Houston, Tex.; a new basic school at the municipal airport, Montgomery, Ala.; a new advanced school at the municipal airport, Stockton, Calif.; and a new advanced school near San Angelo, Tex. A site for a specialized pursuit school near Selma, Ala., was selected and approved later in June.[9]

With these preliminaries out of the way, the redistribution of the existing facilities was undertaken. On 8 July the three new training centers were established.[10] Maxwell, Moffett, and Barksdale were turned over to the centers on 15 August, 10 September, and 15 October respectively.[11] Eglin Field, expanded to include the whole Choctawhatchee forest area, was designated as a separate post and as the site of a gunnery school on 17 August. On the same day the other new schools at San Angelo, Ellington, Montgomery, and Stockton were formally constituted by the War Department.[12]

Construction at the new installations was slower than had been anticipated. Complicated lease negotiations at the Montgomery municipal

* Muskogee, Okla. (Hatbox Field), Fort Worth, Tex. (Hicks Field), Hemet, Calif., Oxnard, Calif., Ontario, Calif., Jackson, Miss., Sikeston, Mo., Lakeland, Fla., Albany, Ga.

airport delayed government entry until August 1940, but by November the new station--called Gunter Field--was ready for training. In a change from the first plans, Gunter was developed as the basic training school for the Southeast Training Center.[13] Possession was taken of the leasehold at the Stockton municipal airport in July, and training began late in December 1940.[14] On 18 July, 640 acres of land were leased near San Angelo, construction began in August, and the new Goodfellow Field was ready for the beginning of basic flying training in February 1941.[15] A lease was negotiated at the site of Craig Field, Selma, Ala., in July, clearing and construction began in August, and flying training began there on temporary runways in May 1941.[16] Construction of the new installation at Ellington Field met the most difficulties: the construction which began in August 1940 was so retarded by rain and drainage problems that the field was not ready for flying training until October 1941.[17] Originally it had been planned that construction be limited to construction of cantonments and development of a turfed landing field at these stations, but local soil conditions soon made it evident that some sort of landing surface would be necessary.[18] Congress appropriated funds for prepared landing surfaces at these fields on 17 March 1941.[19]

The tactical expansions also necessitated an increased training rate for Air Corps technicians. The 41-group program required an increase in enlisted strength from about 43,000 men to over 94,000, and the 54-group program required more than 136,000 enlisted men.[20] Accordingly, the OCAC directed its Technical School on 7 June 1940 to prepare to train an additional 21,100 technicians (making a total of about 31,600 men to be trained) prior to 31 December 1941. It hoped to accomplish most of the

added training by using civil contract schools, and it proposed to train all administrative clerks in civil schools.[21] Before such planning could be effectuated, the Air Corps encountered the needs of the 54-combat group program, and on 11 July the OCAC directed the Technical School to prepare to train about 52,000 technicians in the same period of time. This directive contemplated use of Scott Field for technical training,[22] and the establishment of two new Army technical schools at new installations.[23] Colonel G. C. Brant, Commandant of the Technical School, replied with the proposal that this training could best be accomplished by a maximum exploitation of the existing training plant and by a system of apprentice training in individual combat units. The Technical School, it was explained, had neither the personnel nor the equipment necessary to found new branch schools, and it was not believed that civil schools could train a large number of students. This apprentice plan was rejected by the OCAC because it required too much time for accomplishment.[24]

The actual accomplishment of the training objectives represented a compromise of viewpoints. The Air Corps secured $6,000,000 from Congress for two new technical schools on 8 October 1940, but they were not to be built during the 54-group expansion.[25] Instructional shifts were put into effect at the existing technical schools. Scott Field was established as the permanent station of the Radio Operators and Mechanics Course in September 1940.[26] The War Department offered Jefferson Barracks, St. Louis, Mo., to the Air Corps for use as a replacement and basic training center, and on 30 July the post was turned over to the Air Corps.[27] By October 1940 Jefferson Barracks was in use, and in February 1941 it was

formally designated as an "Air Corps Replacement Center (Technician).[28] In order to clear Lowry Field for armament and photography training, the Technical School requested the CCAC to secure nearby Fort Logan, a ground forces post which was being evacuated, as a site for clerical training.[29] In November 1940 the War Department made this assignment, and on 1 March 1941 the clerical department was moved to Fort Logan.[30] The technical training expansion also made use of civil mechanics schools in addition to those which had been given contracts in 1939.*

The effectuation of plans for 54-combat groups also necessitated another upward revision of pilot training, and in August 1940 formal planning was begun to train 12,000 pilots annually. The CCAC sought to secure a part of this increase by a concentration of training into shorter courses, but some physical expansion was made inevitable by the very size of the increment.[31] Accordingly, the Air Corps asked for eight new flying training fields, two new gunnery training fields, and five new cadet reception centers. Funds for this construction, amounting to $19,082,500, were appropriated on 24 September 1940.[32] Late in September the CCAC directed each of its three training centers to make recommendations for locations of their share of the new installations. Certain sites were suggested for investigation, but the responsibility for preliminary recommendation was placed on each center.

The Gulf Coast Training Center was directed to recommend sites for a new observers' school, a new basic school, an advanced twin-engine school, two advanced single-engine schools, and two gunnery schools, one of which

*By October 1940 classes had entered such civil schools at Oakland, Calif., Inglewood, Calif., Dallas, Tex., New Orleans, La., Lincoln, Neb., Kansas City, Mo., and Philadelphia, Pa. Another school at Jackson Heights, L.I., N.Y., was added in January 1941. (Hist. of Army Air Corps Technical Training, V. 1, pp. 121-22.)

to be in the Victoria-Matagorda area of Texas.[33] Because of the urgent need for a school to train observers, the CCAC prior to receipt of formal recommendations directed that the new observation school would be located at Brooks Field.[34] After three sets of recommendations had been submitted, the CCAC finally allocated only one advanced flying school--for which it favored the site at Victoria, Tex.--to the Gulf Coast Training Center.[35] The West Coast Training Center was directed to make recommendations for the location of a new basic school, two new advanced flying schools, and one gunnery school.[36] The board set up by the center to locate these sites investigated and discarded some 34 sites, and on 11 October it recommended Bakersfield, Calif., for the new basic school; old Mather Field, Sacramento, Calif., for the advanced twin-engine school; Phoenix, Ariz., for the advanced twin-engine school; and Las Vegas, Nev., for the new gunnery school.[37] In December the CCAC directed the center to recommend a site for an additional basic school, and the training center board offered a site at Taft, Calif.[38] Between 28 September and 18 October a Southeast Training Center site board inspected 24 possible sites within its area. Its final recommendations were that a flexible gunnery school should be located at Panama City, Fla., a basic school at Macon, Ga., and advanced schools at Albany, Ga., and at Dothan, Ala.[39] To make the final and official recommendations of the sites, the CCAC secured the appointment of a War Department board early in December 1940. Late in January 1941 this board, which consisted of representatives of the Buildings and Grounds Division, CCAC, the Training and Operations Division, CCAC, and the Corps of Engineers,[40] approved the sites which had been offered by the training centers; on 7 March the CCAC

reported that these sites had been approved by the War Department and that they would be developed.[41]

In expanding the training fields in areas close to the Pacific coast, the CCAC encountered the opposition of Lt. Gen. D. C. Emmons, Commanding General of the GHQ Air Force. General Emmons protested on 20 March 1941 that training fields which could not be evacuated in time of war without serious disruption of training should be located only in the interior of the country. The Plans Division, CCAC, agreed in principle with General Emmons but was unwilling to deny the training activities the mild climate of the Southeast, Gulf coast, and Pacific coast. In an emergency it held that training activities could be diverted to those of the three areas not under attack; it thought it improbable that there would be a threat to more than one of the sea frontiers at the same time.[42]

Expedition of the 12,000-pilot program required the new flying schools to be operational by June 1941 and the gunnery schools by July 1941.[43] All prohibitions on runways and landing mats were relaxed, and Congress appropriated funds for such facilities at the new fields on 17 March.[44] *

*Training began early in June 1941 at Cochran Field, Macon, Ga.; Luke Field, Phoenix, Ariz.; Mather Field, Sacramento, Calif.; Minter Field, Bakersfield, Calif.; and Gardner Field, Taft, Calif., Turner Field, Albany, Ga.; was not ready for training until August 1941. (Hist. of the AAF Pilot School /Basic/, Cochran Fld, Activation to 7 Dec 1941, v.1, p. 11, in AFSHO 281.64-1, v. 1; Hist. of Luke Fld, Activation to 8 Dec 41, v.1, p. 18, in AFSHO 285.79-1, v.1; Hist. of Mather Fld, Jan 39 to 7 Dec 41, p. 7, in AFSHO 286.24-1; in The AAF Pilot School /Basic/, Minter Fld, 30 Apr 41 to 7 Dec 41, p. 29, in AFSHO 286.46-1; Hist. West Coast ACTC, 8 Jul 40 to 7 Dec 41, v.1, p.206; Hist. Turner Fld, 15 May 41 to 7 Dec 41, v.1, Sect.4, pp. 1-25; Hist. Foster Fld, 12 Oct 40 to 1 Mar. 44, v.1, p. 51 in AFSHO 283.21-1, v.1; Hist. AAF Flexible Gunnery School, Las Vegas, 1 Jan 39 to 7 Dec 41, v.1, passim; in AFSHO 281.64-1, v.1; ibid., 8 Dec 41 to 1 Jan 43, v.1, p.1, in AFSHO 285,54-2, v.1; Hist. AAF Flexible Gunnery Sch, Tyndall Fld, 1 Jan 39 to 7 Dec. 41, v.1, passim; Hist. AAF EFTC, 1 Jan 39 to 7 Dec 41, v.1, pp. 200-203, 222-223.) Inclement weather delayed the construction at Foster Field, Victoria, Tex., and training did not begin there until late in September 1941. Difficulties in securing the use of the gunnery ranges at Las Vegas, Nev., and Tyndall Field, Fla., delayed the beginning of flexible gunnery training at those stations until December 1941 and March 1942 respectively.

As part of the expanded pilot training program, the OCAC decided to use three enlarged cadet reception centers instead of the five centers for which funds had been appropriated on 24 September 1940.[45] On 7 December it directed each training center to submit recommendations for the location of one cadet reception center. Maxwell, Moffett, and Kelly Fields were recommended, and designations of centers at those fields were approved by the War Department on 21 February 1941. These reception centers actually opened at Maxwell in September 1941, at Kelly in November 1941, and at Santa Ana, Calif. (instead of Moffett) in February 1942.[46]

Additional civil contract schools were also needed to train 12,000 pilots a year. The 7,000-pilot program had dealt with no new civil contractors, but the nine existing contractors could not manage another similar expansion. In June 1940, therefore, all 38 of the approved civil flying schools of the country were sent a letter outlining the specifications for such government training, and on 27 June the Chief of the Air Corps directed the Air Corps Training Center to prepare a priority list of the interested civil flying schools. On 13 November 1940 the OCAC directed the Gulf Coast Training Center, which (being a redesignation of the old Air Corps Training Center) had succeeded to the direction of the civil contract program, to select 11 new contract schools from the priority list. Six of the 11 new schools finally approved by the War Department were located in the Gulf Coast Training Center area; five of these were required to move to sites which were less hazardous for training.* Contract schools in the West Coast Training Center area were approved at

*Only the school at Oklahoma City, Okla., remained in its original location; the other schools were moved from Dallas, Tex., to Brady, Tex.; from Robertson, Mo., to Cuero, Tex.; from Houston to Corsicana, Tex.; from Grand Prairie to Stamford, Tex.; and from Memphis, Tenn., to Pine Bluff, Ark.

King City, Calif., Tulare, Calif., and Glendale, Ariz. These and the other contract schools in the area were transferred to the jurisdiction of the West Coast Training Center on 15 February 1941. New civil schools in the Southeast Training Center area were approved at Camden, S. C., Arcadia, Fla., Americus, Ga., and Tuskegee, Ala. The first three of these schools were operational in March 1941, but Tuskegee, established for Negro aviation training, did not open until August 1941. Together with the other civil schools in the area, they passed to the control of the Southeast Training Center on 15 January 1941.[47]

Procurement of Tactical Air Bases

According to the schedule the GHQ Air Force was to be more than doubled in size. Tactical strength was to increase from 25 to 54 combat groups, six new transport groups were to be organized, the existing four combat wings were to be increased to 17, and four new air district (shortly to be redesignated as air forces) headquarters were to be established. The need for rapid expansion meant that there would be no time to build new air bases on a permanent scale such as McChord, MacDill, and Westover. Instead, the War Department announced that existing facilities--military, state, and municipal--would be used to the maximum in the expansion.[48] It directed that all new construction incident to this and other Army expansions would be of a temporary type rather than the permanent construction which had been used during the 1939 augmentation program.[49]

Pursuant to the policy of maximum utilization of existing facilities the War Department offered Jefferson Barracks, St. Louis, Mo., Fort George Wright, Spokane Wash., Fort Douglas, Salt Lake City, Utah, and Fort

Lawton, Seattle, Wash., to the Air Corps on 18 July 1940, effective at such time as their garrisons could be moved. The OCAC indicated initially that it could use all of the posts except Fort Lawton.[50] This post was believed to be located too far from the municipal airport in Seattle to be suitable for the use of a tactical group.[51]

The immediate task confronting the Air Corps was to find stations for the tactical groups which had to be moved from Moffett, Maxwell, and Barksdale in order that those stations could be used for flying training. After several plans for the evacuation of Maxwell and Moffett had been considered, it was finally decided to move the heavy bombardment group from Hamilton Field to the municipal airport at Salt Lake City, Utah, and to replace it with the two pursuit groups and the observation squadron from Moffett. The composite group which had served as the test organization of the Air Corps Tactical School at Maxwell was to be moved to Orlando, Fla., and the Air Corps Tactical School was to be temporarily inactivated.[52] During July 1940 the Air Corps accordingly secured leases on the Salt Lake City and Orlando municipal airports.[53] Request was made for the immediate transfer of Fort Douglas to the Air Corps in August, and on 20 September this transfer was formally accomplished.[54] On 20 August construction of an Army cantonment was begun at the Salt Lake City airdrome lease, and early in September the heavy bombardment group from Hamilton was moved to quarters at Fort Douglas. In January 1941 a part of the Air Corps troops was shifted to the new cantonment at the airdrome lease, but the Air Corps continued to occupy Fort Douglas until December 1941 when it was returned to the control of the IX Corps Area.[55] The composite group was transferred

from Maxwell to the Orlando airdrome lease in September 1940, and during the same month the units from Moffett were moved to Hamilton.[56] Early in October 1940 the light bombardment units at Barksdale were moved to tent shelter at Savannah, Ga., pending the construction of a cantonment at the Hunter Field leasehold. One light bombardment squadron was quartered in tents at Lawson Field, Fort Benning, Ga., in order to train with the ground troops there.[57]

Selection of sites for the new stations required under the 54-group activation program began on a planning basis in June 1940. The Plans Division, OCAC, drew up a tentative list of stations for the new units and submitted it on 15 June.[58] The list was passed on to the War Department on 18 June, and, in order to make a detailed investigation of sites, the Plans Division recommended that a board of officers consisting of representatives from the GHQ Air Force, the Training and Operations Division, OCAC, and the Buildings and Grounds Division, OCAC, should be set up.[59] By 2 July a revised list of sites had been drawn up to meet War Department wishes, with the understanding in the OCAC that the list was tentative in nature and designed merely to commit the General Staff to a general program of activation.[60] The OCAC, however, was not to be allowed the active control of the site selection procedure which it had contemplated. The Assistant Chief of Staff, G-4, initiated the action looking toward the appointment of site boards on 12 July. His instructions to the three boards which were to determine sites in the East, the South, and the West were exceedingly general: they were to determine the availability of government- or state-owned facilities, the location of these facilities with relation to population centers, full data necessary for leasing

purposes, technical facilities already available, utilities to be made available, the availability of building areas, the extent of financial or other assistance obtainable from local authorities, and, last on the list, the general suitability of the field for an Air Corps station.[61] The three boards, as they were set up on 18 July, contained an officer designated by the War Department General Staff, an officer from the GHQ Air Force, and an officer from the Office of the Quartermaster General.[62]

These boards, as they were set up by the War Department, led to numerous difficulties. All of them were headed by officers who were not from the Air Corps.[63] Colonel Willis H. Hale, the GHQ Air Force representative on the board which had surveyed the South, reported in 1941 that such an officer had either to be "merely a puzzled and confused figure-head" or else he had to assume an active role which might lead to clashes of personalities on the board. Colonel Hale thought that such boards had made a "poor impression" on the civil authorities with which they had consulted. In his opinion, it was just as intelligent to have a Coast Artillery Corps officer in charge of an Air Corps board as it would be to have an Air Corps officer in charge of the selection of sites for remount depots. Colonel Hale also pointed out that a lack of specific instructions had resulted in many findings that "so and so " would be satisfactory "if and when so and so" was accomplished.[64] The lack of a direct representative of the Chief of the Air Corps on the boards meant that his office, in passing on the board recommendations, had little data other than that furnished in the often imperfect board reports. The OCAC generally observed the opinion of the GHQ Air Force member and based its findings on it.[65]

The slowness of the boards in reporting to the War Department caused delay in locating the new stations. Brigadier General R. C. Moore, Assistant Chief of Staff, G-4, at length directed on 8 August that some sort of an answer should be got from the boards which had not reported,[66] and on 17 August a conference in the Plans Division, OCAC, attended by General Marshall, General Arnold, and General Moore, made a final list of the new stations together with the designations of the units which were to be located at them.[67] On the basis of this list the Plans Division assigned construction priorities on 18 September to the municipal airports.* Later, Baton Rouge, La., and Hartford, Conn. were added to the program, but during December it was decided to move the Air Corps project from Hartford to Windsor Locks, Conn.[68] During the same month the GHQ Air Force found objections to the site of the airport at Yakima, Wash., and the OCAC secured the movement of the project from Yakima to Pendleton, Ore., where flying conditions were less hazardous.[69]

Site board reports were passed to the OCAC as soon as they were received in the War Department, and after approval there they were sent back to the General Staff. After this approval the Quartermaster Corps was directed to start negotiations for leasing.[70] The standard lease form, a form not easily adapted to Air Corps requirements, secured only that part of the airfields necessary for erection of an Army cantonment, contained an agreement that the Army would have the use of the runways and

*Salt Lake City, Utah, Orlando, Fla., Tampa, Fla. (Drew Field), Tallahassee, Fla., Savannah, Ga., Louisville, Ky., West Palm Beach, Fla., New Orleans, La., Tucson, Ariz., Albuquerque, N. Mex., Portland, Ore., Oklahoma City, Okla., Bangor, Me., Ft. Wayne, Ind., Jackson, Miss., Manchester, N. H., Meridian, Miss., Everett, Wash., Yakima, Wash., Spokane, Wash., Fresno, Calif., Charlotte, N. C., Augusta, Ga., and Boise, Idaho. (R&R, Brig. Gen. B. K. Yount, Chief, Plans Div, OCAC, to Chief, B&G Div, subj: Construction Priorities for Completion of Airdromes, 18 Sept 40, in AFSHO 322.0824, OCAC Plans.)

landing field, and included such miscellaneous agreements as the site boards had been able to secure. Generally the Air Corps sought to limit civil use of the fields to scheduled airliners and to other privately owned aircraft equipped with two-way radio.[71] Several of the first leases showed defects which made renegotiation or amendment necessary. Early in November 1940, for example, it was discovered that few of the leases contained provisions against student flying. At Albuquerque the lease prohibited student flying only if the aircraft were not equipped with two-way radio.[72] Some of the leases did not provide enough room for building the facilities needed by the Air Corps. At Albuquerque the lease executed in December 1940 assigned the government only 18 acres out of the 898 acres on the airfield.[73] The process of forwarding leases through the Office of the Quartermaster General cost much valuable time, especially since many of the leases so laboriously negotiated had to be revised after they were inspected by the OCAC.[74]

Since few of these municipal airfields were immediately suitable for the use of tactical units, the OCAC sought the assistance of the WPA and later of the CAA in building them up to the proper operational standards. Understanding that the WPA intended to liberalize its regulations governing application of its funds to military purposes, General Arnold asked on 6 June 1940 for assistance in improving a number of stations needed both for defense and for the 7,000-pilot program.[75] On 24 June the OCAC furnished the WPA a tentative list of stations which it expected to be selected for combat groups under the 54-combat-group program.[76] On the same day the Plans Division, OCAC, designated a liaison officer to work on projects

requiring WPA assistance.[77] In the fall of 1940 the CCAC also supported legislation which was designed to appropriate funds to the CAA for the development of a national system of airdromes.[78] In October 1940 the CAA, with the blessings of the War Department, received $40,000,000 with which it was charged to construct, improve, and repair not more than 250 public airports to be designated by the Secretaries of the War and Navy Departments.[79] By December a list of first priority airdromes had been discussed and approved in joint conferences between the Army, Navy, and the CAA, and by March 1941 the last of these funds had been allocated.[80] To complete pressing needs, Congress appropriated another $94,977,750 to the CAA in June 1941 and raised the ceiling on the number of airports to be improved to 399. On 25 August 1941 the CAA received an additional $5,500,000 to round out developmental work already started.[81] In the expenditure of these funds the CCAC sought to develop airports in each of the strategic areas which were needed for defense, to improve the fields needed for ferrying, to build up the airports at which tactical units were to be located, and to build new fields to accommodate civilian flying displaced from airports by military use.[82]

According to the planning the only military funds which were to be necessary in the development of the new tactical fields would be those funds needed to build the military housing and the limited technical facilities (one shop hangar per group) allowed. Such funds were appropriated on 26 June for the 41-group expansion and on 8 October for the 54-group program. Though General Marshall had directed early in November that the funds be released without delay, they were not made available until December 1940.[83] Once construction was started, additional expenses due to rising costs of constructional materials, additional requirements

not originally contemplated, and the necessity for government purchase of several of the airfields (thus making them ineligible for CAA grants) made it necessary for the War Department to request deficiency appropriations. These deficit appropriations--including $17,485,000 to complete Air Corps housing and additional sums for runways at Portland, Everett, Hartford, West Palm Beach, Fort Wayne, Charlotte, and East Baton Rouge--were approved on 17 March 1941.[84]

By the fall of 1940 it had become apparent that the Quartermaster Corps was overtaxed by the volume of construction which was being placed upon it. To speed up the lagging Air Corps construction the Assistant Chief of Staff, G-4, accordingly asked that consideration be given to the transfer of Air Corps construction to the Corps of Engineers. Colonel F. M. Kennedy, Chief, Buildings and Grounds Division, OCAC, initially opposed the proposed transfer. Although he admitted that the Air Corps construction program seemed to be two months behind schedule, he blamed most of the delay upon the slowness in the selection of sites. Since the Quartermaster Corps had already made a number of the project estimates for construction, he feared that to transfer the effort would further delay the whole program.[85] General Marshall also professed to have had misgivings as to possible delays, but on 19 November 1940 he directed that all Air Corps construction should be transferred to the Corps of Engineers as quickly as possible. The transfer of all but a few of the projects underway was accomplished gradually, seemingly without causing any considerable delay.[86]

Air Corps plans for the occupation of the new stations indicated in January 1941 that Orlando, Salt Lake City, and Savannah were needed

immediately; that West Palm Beach would be needed in February; that Charlotte and Tallahassee would be needed in March; that New Orleans, Jackson, Meridian, Augusta, Baton Rouge, Spokane, Portland, Everett, Fresno, Oklahoma City, Tucson, and Albuquerque would be needed for occupancy in April; and that Bangor, Manchester, Pendleton, and Boise would be needed in May.[87] Because of the delays in the initiation of construction General Emmons had predicted in December 1940 that the construction program would be a "serious bottleneck" unless it could be expedited "to the greatest possible degree."[88]

Though there were a number of delays in the anticipated dates of occupation of the new stations, the Air Corps activation program was sufficiently flexible to prevent construction difficulties from becoming a "serious bottleneck." On 1 January 1941 the facilities at Orlando and Salt Lake City were nearing completion and work was underway at Albuquerque, Boise (Gowen Field), Charlotte (Morris Field), Tampa (Drew Field), Jackson, Savannah (Hunter Field), New Orleans, Oklahoma City (Will Rogers Field), Portland, Louisville (Bowman Field), Tallahassee (Dale Mabry Field), Tucson (Davis-Monthan Field), and West Palm Beach (Morrison Field).[89] Hunter Field at Savannah was quickly brought to completion: with construction expedited on a cost-plus a fixed-fee basis, its cantonment was virtually complete in late January 1941, less than 90 days after the original ground had been broken.[90] The facilities at West Palm Beach were accepted on 27 February,[91] and the cantonment at Bowman Field, Louisville, was marked complete on 20 March.[92] By June 1941 most of these fields were operational, and construction difficulties were minor.[93] Of the group of airports only New Orleans offered a serious problem to the

expansion program. The New Orleans municipal airport had been enthusiastically recommended by the site board as a base for a heavy bombardment group, an excellent cantonment had been constructed, and a heavy bombardment group had been transferred to the field with little difficulty. The runways on the municipal field, however, were only 3,400 feet long, and the heavy group found it impossible to conduct effective operational training from the field. Despite these difficulties the group remained there until December 1941, and at that time the field was turned to other uses.[94]

Construction at the remaining airfields in the program met with somewhat more difficulty. Among the less serious problems were those encountered at Paine Field, Everett, Wash., where construction was delayed by labor strikes. By housing incoming troops in tents it was still possible to receive a pursuit group there in June.[95] Key Field, Meridian, Miss., was delayed from 30 to 45 days due to slowness in acquisition of outlying areas not contemplated by the site board and by a shortage of skilled labor and critical materials.[96] At Harding Field, Baton Rouge, La., there were difficulties in removing high tension wires and in grading and drainage, both of which tasks had been undertaken by local authorities. The field was not able to receive its pursuit group until October 1941.[97] Pendleton, Ore., was ready to receive its medium bombardment group in June 1941, but in May 1942 a series of heavy bomber accidents caused by a depression in the middle of the runway led to a decision to abandon the field for such flying.[98] Daniel Field, Augusta, Ga., was completed approximately on schedule and was used during the Carolina maneuvers in the fall of 1941. In 1942, however, it was decided that the field was too small for tactical training, and the Air Corps cantonment was diverted to other purposes.[99]

The municipal airports at Fresno, Calif., and Ft. Wayne, Ind., proved to be unsuitable for Air Corps use and substitute facilities had to be developed. The municipal airport at Fresno was too cramped for proper training, so that the Air Corps had to secure the use of the new CAA airport which was to be developed with CAA funds. Disgruntled land owners in the vicinity, some protesting that the location of an Army field near Fresno "would be an invitation to invading planes to bomb and destroy" the city, held up construction at the new site with court orders. A lack of funds encountered in July further delayed construction, but Hammer Field was ready to house its tactical units in August 1941. These medium bombardment squadrons used the runways at nearby Chandler Field until Hammer was ready for flying in November 1941.[100] At Ft. Wayne, Ind., local pressure by civilian flyers and the deterioration of the runways at the municipal airport led the Air Corps to recommend that it be allowed to take over the new airfield being developed for the city by the CAA. This solution was approved by the War Department, and Baer Field was ready for occupancy in October 1941.[101] At Windsor Locks, Conn., the initiation of construction was delayed by the late decision to move the airfield project from Hartford to the new CAA facility, but facilities at the new field were ready for a pursuit group when it arrived in August.[102]

Difficulties with local authorities led to government purchase of the municipal airfields at Spokane, Wash., and Bangor, Me. At Spokane the OCAC first planned to lease Sunset Field (later named Geiger Field) which was being developed with WPA and CAA funds. The local county commissioners, glad at first to receive an Army post, later showed interest in making

commercial concessions for the use of the field. In August 1940, however, the county commissioners had offered the field to the United States by deed, and in January 1941 General Arnold requested that the field be so secured. A deed was executed on 15 January 1941, and after further improvement it became operational in July 1941.[103] In the original lease on Dow Field, Bangor, Me., the city had agreed to maintain the runways, but by April 1941 it had become reluctant to spend its money for maintaining a field used principally by military aircraft. Several of the runways, moreover, had been so relocated as to bear little semblance to the original field. The Air Corps accordingly proposed to amend the original lease in order to clear Bangor of its obligations, but both the Quartermaster Corps and The Judge Advocate General considered that such an amendment would incur new obligations for the government contrary to its interests. The city of Bangor, on its part, flatly refused to maintain the runways, and the local Air Corps units were not able to use Army funds for the purpose. In April 1942 the AAF finally resolved the cause for conflict by securing a quit-claim deed to the whole field. Despite this lingering controversy, the base was ready for the use by tactical units in August 1941.[104] Although there was no lack of cooperation on the part of the local authorities, the War Department secured the title to the 480 acre tract comprising Drew Field, Tampa, Fla., early in 1941. Drew Field, which continued to be used by the bombardment group from MacDill until February 1941, functioned as a sub-base of MacDill until 15 September 1941 when it became a separate post.[105]

The acquisition and development of these fields completed the requirement of the 54-group program for tactical stations, but installations had

also to be provided for the new air district, command, and wing headquarters which were activated to control the tactical groups. The headquarters of the GHQ Air Force--shortly afterwards to be redesignated as the Air Force Combat Command--was moved from Langley to Bolling Field in early March 1941.[106] Air Corps policy dictated that each of the new wing headquarters should be located at one of the tactical stations, but the headquarters of the Northeast, Southeast, Northwest, and Southwest Air Districts--redesignated as air forces on 26 March 1941--were larger and more important organizations requiring separate installations.[107] Notwithstanding the announced policy, the headquarters of the Northeast Air District (First Air Force) was located, supposedly as only a temporary measure, at Mitchel Field. The headquarters of the Southeast Air District (Third Air Force) was established in the National Guard Armory at Tampa, Fla., and the headquarters of the Southwest Air District (Fourth Air Force) was located in leased space at Riverside, Calif.[108] Because of the slow evacuation of Fort George Wright by its ground units, the headquarters of the Northwest Air District (Second Air Force) was activated in the National Guard Barracks at Felts Field, Spokane, Wash., and remained there until it took occupancy of Fort George Wright in March 1941.[109] Headquarters of the I Interceptor Command was located at Mitchel at its formation, headquarters of the III Interceptor Command was opened at Drew Field, and headquarters of the IV Interceptor Command was located in leased space at Riverside, Calif.[110] Fort Lawton, Seattle, Wash., was transferred to the Air Corps in May 1941 for use of the headquarters of the II Interceptor Command.[111]

Use of the municipal airports by both military and civilian aircraft

led to numerous operational hazards and lowered military training efficiency. The Air Corps had sought to limit civilian operations at the leased airports to scheduled air liners and aircraft equipped with two-way radio. It had sought to secure the development of alternate airports for civil traffic so displaced with CAA and WPA funds.[112] Despite these efforts there were almost continuous reports of hazardous conditions, and General Emmons warned that "serious conditions" would result unless something was done to remove unskilled civilian pilots from the fields used by the Air Corps.[113] Although the Air Corps had authority in most of its leases to prohibit unscheduled flying, it thought that such blanket action would be unwise. It preferred to establish rules looking toward an intelligent regulation of civil flying.[114] After conferences with the CAA and WPA, however, the OCAC announced in February 1941 that thenceforth its tactical units would be located on municipal airports only when they could be leased in their entirety together with an adjacent building area. It was also decided that training fields and air depots should be government owned installations.[115]

To bring order out of the increasingly chaotic system of air navigation an Interdepartmental Air Traffic Control Board was established by the Army, Navy, and CAA. This board met first on 7 April 1941 and agreed to investigate flying difficulties at some 10 localities throughout the country. Field hearings occupied the board from 9 April to 17 April, and on 29 April it recommended that a single federal authority have the authority to make flying rules and to prevent the erection of hazards on the nation's airways.[116] The OCAC immediately announced that it would welcome

such federal control and urged the creation of a single authority to enforce safety in flight.[117] The recommendations of the board were also approved by the War Department, the Navy, and the CAA, but no such sweeping control of civil flying was made until the beginning of the war in December 1941. The War Department, however, directed the OCAC to continue participation in the Interdepartmental Air Traffic Control Board and to be bound by its decisions.[118] Prior to 7 December 1941 this board held 39 meetings dealing with such matters as air space reservations, establishment of danger areas for flying, changes in civil air regulations, and the location of Army and Navy air installations.[119]

The OCAC and the War Department also made determined efforts to profit from the mistakes made during the selection and occupation of the civil airports. In April 1941 the Chief of Engineers issued specific instructions to his division engineers to consider a list of specified aircraft characteristics prior to making layout plans for air installations, and in July 1941 the Buildings and Grounds Division, OCAC, printed detailed instructions for use of air site boards.[120] Other improvements in procedure which resulted from the experiences of the selection of these combat stations were introduced into the programs which were to follow.

Construction of Air Depots

The authorization of additional combat and training aircraft for the 54-combat-group and 12,000-pilot programs required more maintenance and repair than could be accomplished by the six air depots operating and under construction in January 1941. The four old depots had a combined capacity for overhauling 800 engines a month, and Mobile and Ogden were expected to provide maintenance for an additional 500 engines each month. It was

estimated, however, that the combat expansion and the additional training planes would necessitate an overhaul on at least 20,000 engines a year. To meet this shortage, Major General G. H. Brett, Acting Chief of the Air Corps, estimated that three additional depots with a combined monthly capacity of 900 engines would be required. This would allow a theoretical annual maintenance of 26,400 engines, but with the 20 per cent reduction in theoretical capacity which experience had indicated as reasonable due to materiel shortages, labor scarcities, and other unavoidable delays, the depots would be actually capable of maintaining only 20,120 engines a year.[121]

General Brett requested funds to provide for the three new air depots on 17 February 1941. He recommended that one of the depots be located in the general vicinity of Atlanta, Ga., one in the Albany-Syracuse area of New York, and one in the Oklahoma City-Tulsa area of Oklahoma.[122] The location of the additional depot in the southeast was based on the premise that the Mobile Air Depot would be used primarily to serve the Caribbean air forces. The additional air depot in the northeast was made necessary by the impossibility of expanding Middletown. Location of a depot in the midwest would allow it to assume the overflow of the other depots.[123] Congress, in legislation approved on 17 March 1941, made $45,000,000 available for the construction of the three depots.[124]

At a conference between representatives of the Assistant Chief of Staff, G-4, the Office of Chief Engineer, and the Buildings and Grounds Division, OCAC, it was agreed on 4 March 1941 that the OCAC should ask for War Department orders establishing a board of officers to inspect sites for the depots. The Chief of Air Corps, moreover, was to instruct the

boards on site requirements and he was to review their completed reports prior to final consideration of them by the G-3 and G-4 Divisions of the WDGS.[125] Site boards were established in March and during the following month they inspected (among other sites) Oklahoma City on 9 March, Macon, Ga., on 18 March, and Rome, N. Y., on 3 April. Both Oklahoma City and Macon offered free land for the depots, and Rome offered certain free utilities including 1,000,000 gallons of water a day. For the mid-western depot Tulsa, Okla., Wichita, Kans., and Oklahoma City were considered, but Tulsa and Wichita were ruled out because their defense industries were already taxing their local labor supply. In Georgia the choice of sites rapidly narrowed down to locations near Atlanta and Macon; after it had been estimated that the depot could be built near Macon for less money and six months faster, it was decided to locate the depot at the Wellston site near Macon. Each of the sites selected had disadvantages: Rome had a handicap of a sub-zero climate during the winter; Oklahoma City had intense summer heat, inadequate housing facilities, and a serious competition for skilled labor; the Wellston site was on swampy land, proximate to no immediate town, and was in an area of limited skilled labor supply. Despite these disadvantages, the War Department announced its acceptance of the Oklahoma City site on 8 April, of the Wellston site on 14 June, and of the Rome site on 25 June.[126]

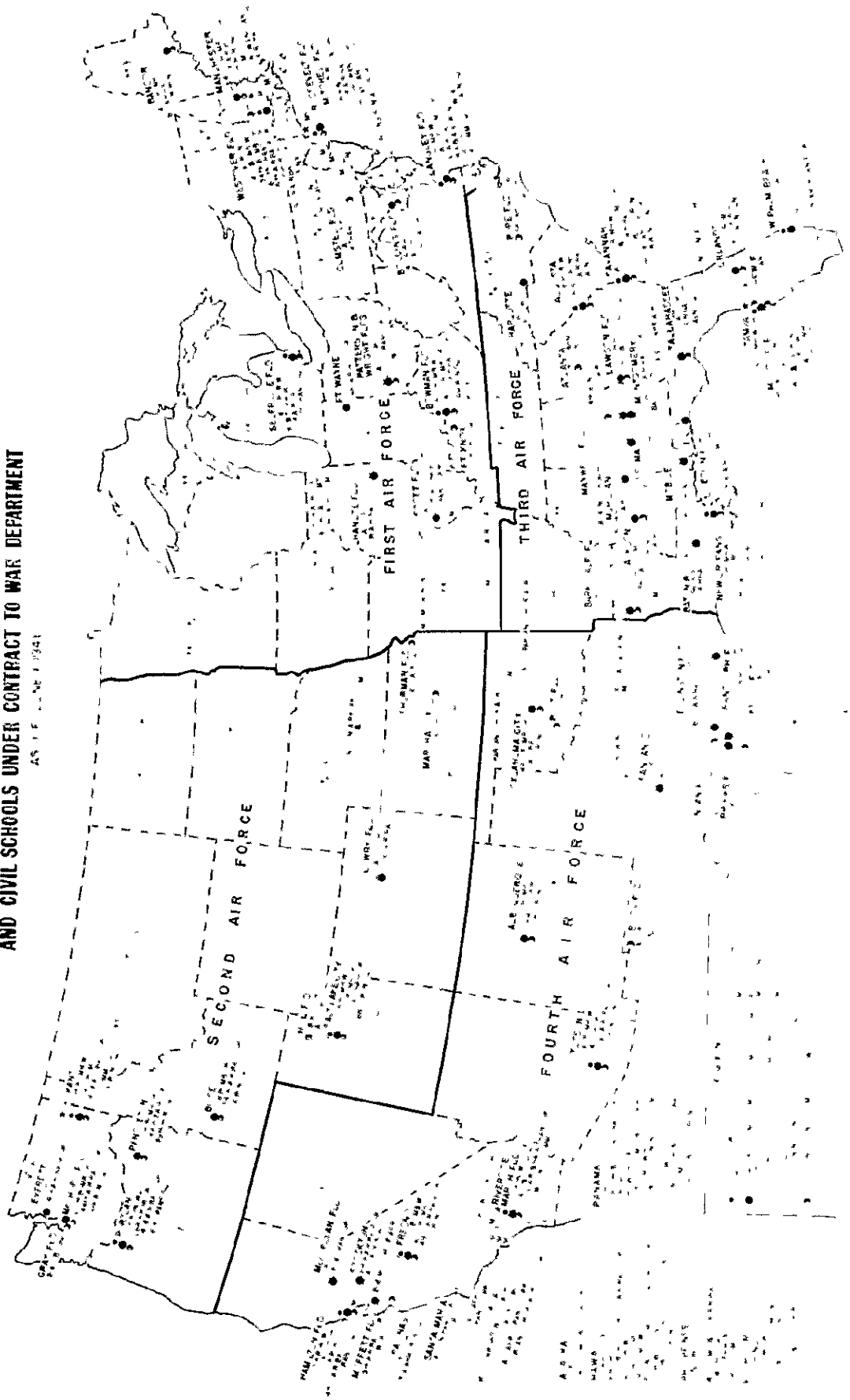
Most of the prime contracts at the new air depots were let on a cost-plus a fixed-fee basis, and the depots were at least partly operational late in 1942. Oklahoma City was first used by the Air Corps in August 1942 although it was still incomplete. Construction began at the Wellston site, subsequently named the Warner Robins Air Depot, in September 1941,

and the two principal contracts were completed on 31 August 1942. Ground at Rome was broken on 2 August 1941, and, despite unfavorable weather during the winter, the original construction contracts had been completed by November 1942.[127]

Acquisition of Bombing and Gunnery Ranges

The expansion of specialized flying and tactical training made the acquisition of additional bombing and gunnery ranges an urgent matter. During the 1939 augmentation the GCAC had planned on a basis of one local range for each of its combat bases, but in 1940 this policy was somewhat extended. General Arnold announced in June 1940 that proper tactical training demanded both the continuous use of local practice ranges adjacent to the combat bases and the periodic use of larger general ranges for bombing with live bombs and aerial gunnery training.[128] In actuality, especially in the western United States where large local ranges could be obtained, the difference between the "local" and the "general" ranges was sometimes nebulous.

Considerations of safety demanded that the general ranges be large reservations closed to the public, and since it was unsafe for armed aircraft to fly over civilian areas, these general ranges required an airfield within their confines. During the last stages of the 1939 augmentation a reconnaissance had been made of tracts of land near Tonopah, Nev., Wendover, Utah, and Arlington, Ore., in an effort to secure local practice ranges for McChord Field. During the spring and summer of 1940 negotiations had been opened to secure the three tracts, about 90 per cent of which was public domain, for use as general ranges.[129] The 60 x 90 mile area at Tonopah was transferred to the War Department on 29 October 1940,



but the clearance of the numerous scattered claims of cattlemen, homesteaders, and miners delayed the use of the Tonopah range until December 1941. In June 1941, however, the range was divided between the GHQ Air Force and the West Coast Air Corps Training Center for training uses.[130] Because of grazing commitments the Interior Department in October 1940 was willing to release only 1,500,000 acres in western Utah for the Wendover Range. This area was further reduced in effective size by an agreement with the CAA which prevented bombing within five miles of the civil airways crossing the range. Settlement of private claims and the building of an airfield at Wendover delayed Air Corps use of the range until late in 1941.[131] Possession was assumed at the Arlington, Ore., site in April 1941, but the facilities at the Boardman Range were not ready until late in 1941.[132] Late in the same year the War Department also secured the transfer of a 60 x 30 mile tract of public domain near Alamogordo-Las Cruces, N. Mex., and the Alamogordo (also called the White Sands) Range was developed during early 1942.[133] In July 1940 the Chief of the Air Corps directed the GHQ Air Force to appoint a board of officers for the location of bombing and gunnery range sites in the eastern United States.[134] The GHQ Air Force subsequently recommended tracts of land near Avon Park, Fla., and Myrtle Beach, S. C. The two ranges became operational during the summer of 1942.[135]

The OCAC treated the acquisition of the local practice ranges as a lower echelon matter as far as it was permitted to do so. In December 1940 it requested funds to lease 30 such ranges, each to be of approximately 5,000 acres and to be located adjacent to the combat airdromes then without ranges. The Construction Branch, G-4, protested the necessity

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for both local and general ranges, but the OCAC insisted that the local practice ranges for air-to-ground gunnery and bombing with practice bombs in no way relieved the necessity for larger demolition and aerial gunnery ranges.[136] Congress appropriated the desired funds on 17 March 1941, and the OCAC attempted to secure the allotment of the money directly to its subordinate commanders who would be able to secure the best bargains. The Quartermaster Corps was unwilling to cede its leasing functions, but the Corps of Engineers permitted the allotment of construction funds directly to the GHQ Air Force for expenditure.[137] The OCAC accordingly placed the burden of locating these ranges directly upon the GHQ Air Force and upon its successor, the Air Force Combat Command. When the latter protested in July that the original site boards had been derelict in not having selected the sites, the OCAC issued supplemental instructions making such action mandatory for future site boards.[138]

Acquisition of these local ranges was usually worked out by the base commanders who needed the ranges. In the Second Air Force local ranges were secured at Ephrata, Moses Lake, and Ritzville, Wash.[139] By November 1942 eleven other local ranges had been obtained.* Delays in the procurement and development of these ranges, however, seriously impeded the training of tactical units during 1941. Throughout most of this critical year, for example, the tactical units of the Second and Fourth Air Forces shared the crowded ranges at Muroc Lake for all of their bombing practice.[140]

Training center activities, which took over old Mather Field and a part of the Tonopah range, further reduced the areas available to the

*For Selfridge at Bay City, Oscoda, and Harbor Beach, Mich.; for Langley at Cape Henlopen, Del.; for MacDill at East Mullet Island, Fla.; for Harding at Grand Island, La.; for Will Rogers at Great Salt Plains, Okla.; for Hunter at Harris Neck, Ga.; for Key at Pachuta, Miss.; for Westover at Quabbin Reservoir, Mass.; and for Bowman at Salt River, Ky. (AAF, Station List, 1 Dec 42.)

tactical organizations, but even at that the three training centers were pressed for ranges. During 1940 and 1941 the War Department, although faced with severe opposition from local sportsmen and fishing interests, acquired Matagorda Island and the adjoining Matagorda Peninsula on the Texas coast for use as ranges for cadet training at Ellington, Barksdale, and later Foster Field. A 26,695 acre area on the Florida coast in the vicinity of Panama City was purchased (after a long legal proceedings which increased land costs from an estimated $225,000 to 537,916) as the range area for the flexible gunnery school to be located at Tyndall Field. The gunnery school at Las Vegas, Nev., made use of a part of the Tonopah range, but developmental problems permitted no effective use of the area until late in December 1941. In locating ranges for Luke Field the Air Corps encountered the same problems which it had met in clearing the other western ranges: suitable desert lands were available in the public domain between Gila Bend and Ajo in southern Arizona, but the majority of the area had been leased to cattlemen under the terms of the Taylor Grazing Act. On 5 September 1941 the President withdrew the lands from public use by executive order, but most of the grazing permits which had been issued by the Grazing Service of the Department of Interior had just been renewed in May 1941 for periods running up to 10 years duration. Only one of the permits had a clause permitting revocation, and the stockmen, although notified that firing would commence on 30 September, simply refused to evacuate the lands, which they were in the process of grazing, and began political agitation. Nothing could be done to clear the range areas until 26 December 1941 when a court order was secured to that effect. Consequently the first pilots to be trained at Luke Field had no

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gunnery and bombing training.

2. The 54-Combat-Group Program

Continued Axis successes during the summer and early winter of 1940 led to another revision of estimated enemy capabilities and indicated that a victorious Axis could have both naval supremacy and an ability to operate a force of 5,000 combat aircraft in South America.[142] Accordingly the War Department on 14 March 1941 directed the Air Corps to complete the 54-group program "at the earliest practicable date" and immediately thereafter to undertake an expansion to 84 combat groups with 7,799 tactical aircraft. On 18 February 1941 the Chief of Staff had directed the Chief of the Air Corps to increase pilot training to 30,000 per year and technician training to 100,000 per year.[143] These three expansions were to comprise the Army's second aviation objective. No definite time limit was stipulated for the accomplishment of the second aviation objective, and it was no more than well under way on 7 December 1941. Expansion of the facilities for the programs was not completed when the 84-combat-group program lost its role in hemispheric defense and became the beginning program for the development of offensive air power needed for the successful termination of World War II.

Expansion of Training Facilities. Planning for the expansion of flying training to a rate of 30,000 pilots per year had been initiated well in advance of the actual directive for such an increment. On 30 October 1940 the War Department had directed the Chief of the Air Corps to prepare a long range plan for the development of civil airfields as potential training installations for a 30,000-pilot rate.[144] The CCAC, however, had been unwilling to make such plans because of its experiences at Stockton

and Montgomery.[145] On 17 December 1940 the Chief of the Air Corps had nevertheless directed the training centers to prepare plans for training at such a rate. The same standards of training were to be met, one civil contract school in each center was to be coverted into a contract basic school, and the centers were directed to recommend possible sites for new flying fields.[146]

In February 1941 Brigadier General Davenport Johnson, Chief, Training and Operations Division, OCAC, indicated that the time was appropriate for the appointment of a War Department site board for the inspection of sites which had been recommended.[147] Early in March, however, a conference of representatives of the Assistant Chief of Staff, G-4, the Buildings and Grounds Division, OCAC, and the Office of the Chief of Engineers decided that the responsibility for site selection should be passed formally to the training centers. Each center was to appoint a board consisting of an Air Corps officer, an officer from the Corps of Engineers, and a Medical Corps officer. Their reports were to go to the Chief of Air Corps for review and thence to the War Department General Staff for final action.[148] The Chief of Engineers indicated that he wished his representative on the board to be the District Engineer of the area concerned.[149] On 26 March 1941 the War Department formally charged the training centers to locate and recommend the sites for development.[150]

For the 30,000-pilot expansion the OCAC originally estimated that 36 additional flying school units, including three new gunnery school units and an additional six replacement center units, would be needed. More than one unit might be located at the same station. The units were subsequently allocated to 20 new flying fields, one new gunnery school, and

one replacement center. The training center commanders approved this application of effort at a conference held in Washington in March 1941.[151] Funds for the 36 flying school units and six replacement center units were included in the budget estimates and they were appropriated in legislation approved on 5 April 1941.[152]

During the 30,000-pilot expansion the Air Corps was also forced to find duplicate facilities for Moffett Field. In January 1941 a Navy site board, charged to locate lighter-than-air facilities in the San Francisco Bay area, visited Moffett. Because of this visit, Brigadier General H. W. Harms, the commanding general of the West Coast Training Center, wished a definite understanding as to the future of the field before additional Air Corps funds were expended there. As a result of the discussions which followed, General Arnold proposed that Moffett could be turned back to the Navy, if the Air Corps received $8,000,000, including an item of $1,500,000 used at other stations because Moffett had been inadequate to receive the tactical units which should have gone there.[153] In April 1941 Brigadier General Carl Spaatz, Chief, Plans Division, OCAC, told the Navy General Board that Moffett could be returned provided there was a real strategic need for it and provided that the Air Corps could be given approximately $6,000,000 in return.[154] Later in the same month Admiral H. R. Stark, in a personal note to General Marshall, indicated that the Navy would welcome the return of Moffett. General Marshall, after consultation with the OCAC, agreed that the base could be returned about eight months after the Air Corps had been given funds for substitute facilities. He was willing to return Moffett to the Navy, but he was just as unwilling to disrupt the Air Corps training program in any way.[155]

In legislation approved on 16 August 1941 Moffett was transferred to the Navy and the War Department was given $6,500,000 for the development of a substitute basic flying training station.[156]

Site selection in each of the three centers was becoming difficult because of land scarcity. This situation was so acute in the West Coast Training Center area that one officer protested on 15 June 1941 that the center, in locating new sites, would have to "Go into Northern California, Oregon, or Washington where the rain raineth and all fields so far surveyed will have to have a mat; or go into the deepest desert where every building must be erected not only for men but for officers and not alone to shelter them but to provide a minimum of diversion from work and heat and dirt." To alleviate the shortage of sites the CCAC, on 25 June 1941, changed the center's eastern boundary from the 108th to the 103d meridian, thus extending the center over the mesa country of New Mexico and a part of west Texas.[157]

Despite some difficulties the three training centers were able to solve their problems.* Under the 7,000- and 12,000-pilot programs the

*The Gulf Coast Training Center converted its civil elementary school at Brady, Tex., into a basic school, established new basic schools at Enid, Okla., Sherman and Waco, Tex., new advanced schools at Mission, Lubbock, and Midland, Tex. and Lake Charles, La., and a new gunnery school at Harlingen, Tex. The center also secured new civil elementary schools which were opened at Coleman, Tex., Chickasha, Okla., Pallinger, Tex., Uvalde, Tex., and Paris, Tex. These civil schools were approved by the CCAC on 5 June, and on 17 June an additional contract school was approved for Bonham, Tex. (Hist. AAF Central FTC, 1 Jan. 1939 to 7 Dec. 1941, v. 2, pp. 197-200, 231-238). The West Coast Training Center was allowed two new basic schools at LeMoore and Merced, Calif., and advanced schools at Higley, Ariz., Roswell, N. Mex., and Victorville, Calif. The civil school at Ontario, Calif., was to be converted into a basic school. Only one new civil elementary school--to be located at Visalia, Calif.--was approved for the center. (Hist. West Coast ACTC, 8 July 1940 to 7 Dec. 1941, v. 1, pp. 152-167, 170.) As a substitute for Moffett Field, it was decided that the aviation cadet reception center formerly allotted to Moffett should be built at Santa Ana., Calif. (Ibid., v. 1, pp. 174-182.) The Southeast Training Center was permitted to establish new basic schools at Greenville, Miss., Sebring, Fla.,

(* Continued on next page)

sites for new flying schools had all been leased for nominal sums. Since this policy was supposed to have worked hardships in site selection procedures, the OCAC directed in May 1941 that sites could be purchased at appraised valuations if it was thought advantageous. To avoid the ill will of local authorities who had leased their sites, the OCAC urged that land be purchased only when necessary.[158]

Despite the expedition of cost-plus a fixed-fee contracts, only a part of the new installations were suitable for training during 1941. In the Gulf Coast Training Center area facilities at Perrin Field, Sherman, Tex., and at the Enid, Okla., basic school were ready for training in December 1941, and by May 1942 the last of the schools--Waco, Tex--was operational.[159] In the West Coast Training Center area the fields at LeMoore and Merced, Calif., and Williams Field, Higley, Ariz., were ready for training in December 1941 and January 1942, but Victorville, Calif., and Roswell, N. Mex., did not become operational until February and June 1942. The field at Roswell was built with the money received for Moffett. The reception center opened at Santa Ana in February 1942, the headquarters of the center moved to Santa Ana in April 1942, and the basic flying school opened at Chico in the same month.[160] In the Southeast Training Center region the basic schools at Greenville, Miss., and Sumter, S. C. (Shaw Field), and the advanced school at Napier Field, Dothan, Ala., were ready for operation in December 1941, the advanced school at Columbus, Miss., began training in January 1942, and during February and March 1942 the advanced

*(Continued from page 57) and Sumter, S. C., new advanced schools at Columbus, Miss., Moultrie, Ga., Dothan, Ala., and Valdosta, Ga., and a new flying school for Negro pilots at Tuskegee, Ala. The civil elementary school at Albany, Ga., was to be converted into a basic flying school. The Southeast Training Center also added new civil contract schools at Avon Park, Fla., Douglas, Ga., Bennettsville, S. C., Orangeburg, S. C., Helena, Ark., Decatur, Ala., and Ocala, Fla. (Hist. of AAF Eastern FTC, 1 Jan. 1939 to 7 Dec. 1941, v. 1, pp. 86-98, 226).

schools at Spence Field, Moultrie, Ga., and Moody Field, Valdosta, Ga., became operational. Construction at Hendricks Field, Sebring, Fla., was delayed by unfavorable soil characteristics and the station was finally completed as a four-engine transition school which began training in March 1942. The Negro flying school at Tuskegee, Ala., was ready for basic training on a make-shift basis in November 1941.[161] The only new Air Corps replacement training center in the program was ordered established at Ellington Field effective on 20 September 1941.[162]

Planning for the expansion of the technical training facilities also antedated the formal War Department approval of the 100,000-technician program. The Air Corps had been allotted funds for two new technical training stations under the expansion incident to the 54-group program, and late in 1940 the Chief of the Air Corps had directed the Commandant, Air Corps Technical School, to survey sites for the two schools. In January 1941 the commandant recommended that these two schools be located at Biloxi, Miss., and Wichita Falls, Texas.[163] The OCAC secured the appointment of a War Department board to inspect the two sites, and by 18 February 1941 both of them had been approved for use during the 100,000-technician expansion.[164] The OCAC immediately asked the CAA to reserve funds for the improvement of the municipal airfields at Biloxi and Wichita Falls.[165] Additional funds, needed to secure flying field equipment and organizational equipment for the program, were appropriated on 5 April 1941.[166]

During the spring of 1941 the sites for the new installations were leased, CAA projects were set up for the improvement of the municipal airfields, and during May and June 1941 construction of Army cantonments was begun. Both of the schools were activated on 16 June 1941, and mechanics training classes began at Keesler Field, Biloxi, on 29 September

and at Sheppard Field, Wichita Falls, on 13 October. By December 1941 most of the original construction at both posts had been completed.[167] The expansion of technical training also placed a strain on the one technician replacement center available at Jefferson Barracks, Mo. In May 1941 the OCAC accordingly requested authority to build housing for a 10,000-man replacement center at Sheppard and for an 8,000-man center at Keesler.[168] On 6 June the War Department approved the proposal, and the two Air Corps Replacement Centers (Technician) were activated effective on 20 September 1941.[169]

Additional expansions were necessary at the older technical training establishments. In May 1941, for example, Lowry Field received funds to build an airfield—later called Buckley Field—on the bombing range near Denver.[170] The congestion of living quarters at Chanute Field and private housing in nearby Rantoul, Ill., caused by greatly expanded training at Chanute, made a movement of the headquarters of the Technical School from Chanute Field advisable. At the creation of the Air Corps Technical Training Command on 26 March 1941, it had been specified that its headquarters were to be located at Chanute only temporarily. During May and June 1941 Brigadier General Rush B. Lincoln at length concluded that Tulsa, Okla., offered the best prospects for the headquarters location. In August 1941 the War Department approved the chage of station, and on 7 September 1941 the headquarters was opened in leased space at Tulsa.[171]

Construction of Air Depots. To meet the added maintenance and repair requirements of the 30,000-pilot-training expansion, the Air Corps asked for and received on 5 April 1941 an appropriation of $14,000,000 for the construction of two new air depots.[172] In the same month the Plans

Division, OCAC, requested the Materiel Division, OCAC, to prepare a study of the necessity for additional air depots to meet the maintenance needs of the 84-combat-group program.[173] This study, forwarded on 2 July, calculated that 19,549 aircraft would be brought into action by the second aviation objective. Some 33,117 units of maintenance and repair work would be an estimated annual commitment, but of this amount about 1,300 aircraft and 3,000 units of work would be outside the continental United States. The Materiel Division estimated that the 11 air depots authorized and in operation would be able to maintain the work load of 30,117 units per year.[174]

In June 1941 the OCAC secured the appointment of a War Department site selection board, consisting of a representative of the Air Corps Maintenance Command, a representative of the Buildings and Grounds Division, OCAC, the District Engineers concerned, and a Medical Corps officer, to survey sites in the vicinity of San Bernardino, Calif., and in the Spokane-Everett area of Washington.[175] After inspecting several sites this board on 28 June recommended that one air depot be located at the San Bernardino county airport[176] and in July recommended another site near Spokane.[177] Both of these sites had disadvantages, but they were the best available situated in regions where maintenance was required. The two recommended locations were approved by the War Department, the land on which they were to be built was bought by local authorities, and in the fall of 1941 the sites were donated to the government.[178]

Construction of the Spokane Air Depot was authorized on 5 December 1941, and since the depot was considered to be in a defense area, its construction was expedited. By June 1943 the original construction was

nearly complete, and during the next month the depot commenced full scale operations.[179] In March 1942 the original bids for the San Bernardino Air Depot were opened, but it was not until May that construction was begun. Shortages of steel and other critical materials delayed the building effort, and the depot did not become completely operational until early 1944.[180]

Development of Bases for the Combat Groups

In the selection and development of new tactical stations for the 84-group-program the GCAC and the Army Air Forces sought constantly to remedy the mistakes and to improve upon the experiences encountered during the 54-combat-group program. The resultant base expansion was probably the most carefully planned program in the period under consideration. This base expansion was also the first to be made the direct responsibility of the Army Air Forces. The time consumed in working out procedural details caused difficulties in the initiation of construction, but many of the techniques evolved during this expansion remained in use throughout World War II.

The general letter of 14 March 1941 which directed the expansion of Air Corps tactical strength to 84 combat groups also noted that the expansion would involve additional development of the existing Air Corps stations and the construction of new bases.[181] On 28 March the Chief of Staff directed that thenceforth the Chief of the Air Corps would initiate for final action all papers on purely Air Corps matters which formerly had been drawn up by the War Department General Staff.[182] So empowered Major General George H. Brett, Acting Chief of the Air Corps, forwarded a memo containing recommended site selection procedure to the Chief of Staff on

7 May. He proposed that stations should be selected for 21 combat groups, eight in the First Air Force area, five in the Second Air Force area, four in the Third Air Force area, and four in the Fourth Air Force area. Four boards (one for each air force) were to be appointed, consisting of a representative of the OCAC, an Air Corps and Medical Corps representative from the air force concerned, a representative of the Chief of Engineers (preferably the local District Engineer or his representative), and a representative of the Corps Area in which the station was to be located. The boards were to be instructed by the Chief of the Air Corps, and they were to report directly to him. This procedure was approved by the Chief of Staff on 9 May 1941.[183]

The Adjutant General issued the directive outlined by General Brett on 13 May and required the commanders concerned to name their representatives on the four site boards.[184] Later in the month the Quartermaster General proposed that his office should be represented on the site boards in order to make the necessary lease negotiations, but the Office of the Chief of Engineers urged that this was contrary to the agreement that his office should have charge of leasing arrangements on projects to be accomplished by the Corps of Engineers.[185] In view of the fact that the Army Air Forces reorganization was to remove all Air Corps stations from the jurisdiction of the Corps Areas, the OCAC requested on 5 July that representatives of the Corps Area commanders not be included on the site boards.[186] The Adjutant General was finally able to aproint the boards on 11 July.[187] The senior air officer of each board reported to the Chief of the Air Corps for a series of conferences and for instructions.

By 30 July these officers had been given the necessary information and had been directed to locate sites for 25 stations, 21 for new groups (10 heavy bombardment, 5 medium bombardment, and 6 light bombardment groups) and 4 for units (3 pursuit and 1 light bombardment groups) which were overcrowded at their existing bases.[188] In locating these new stations the board presidents were instructed to give first consideration to states which had no Air Corps installations.[189]

The excessive amount of time which had been consumed in getting the site boards into the field seriously impeded the work of the Buildings and Grounds Division, OCAC, in the preparation of cost estimates for the construction. On 8 July Colonel F. M. Kennedy, Chief of the Buildings and Grounds Division, protested that previous cost estimates had been no more than a "shot in the dark." He requested sufficient time to receive the site board reports, get them approved, and then to secure actual estimates of the costs made at the sites by the Corps of Engineers.[190] The Office of the Chief of Engineers proposed substantially the same procedure on 26 July, but Colonel Kennedy replied that once more he had been called upon to submit estimates in advance of the reports from the site boards. His estimates were thus "the same guess work as have been all previous estimates."[191] On 8 August Colonel Kennedy estimated that the total costs of the second aviation objective construction would be approximately $412,740,871.[192] Five days later the Buildings and Grounds Division sent an estimated break-down of base strengths projected under the second aviation objective to each of the station commanders and directed them to prepare costs estimates for additional construction required to support such garrisons.[193]

Actually uncertainties as to the number and types of new groups which were to be located within the continental limits of the United States permitted no careful cost estimation. Early in October General Marshall asked as a matter of policy whether the 84-group-program stations should be located for defense or for training, and he indicated that he wished due consideration given to the needs of the air support units in planning the new stations; General Arnold replied that it was most important to emphasize training.[194] On 3 October Brigadier General Carl Spaatz directed the AC/AS, A-4, to base calculation of needs for new continental stations on the deployment schedule of AWPD-2, a plan concerned with building up the overseas air garrisons.[195] On 18 November he directed the AC/AS, A-3, the AC/AS, A-4, and the AWPD to make a definite decision as to the number of new stations to be located in the United States.[196] On 22 November AWPD presented a study which recommended that bases for 55 combat groups (14 heavy bombardment, 11 medium bombardment, 12 light bombardment, 14 interceptor, 2 observation and photo, and 2 composite groups) should be provided in the continental United States, and General Spaatz approved the study.[197] Two days later at a Congressional hearing the War Department was committed to the construction of 14 of the projected air bases in the United States.[198]

Congressional hearings had begun on the appropriating legislation on 17 November. The War Department originally asked for $105,298,177 with which it planned to construct 11 complete airfields and an additional $52,300,310 for the initiation of construction at 14 other skeleton stations. These skeletonized stations were to have runways and utilities, and additional funds were to be requested for their completion during the

new fiscal year. The total amount of money asked for these and for other miscellaneous Air Corps construction projects was $379,804,238.[199] This appropriation bill was still before Congress on 7 December, and the War Department hurriedly secured an amendment adding $390,000,000 to complete the 54-group projects still outstanding, to provide urgent construction projects reported by field commanders, and to construct all of the facilities needed by the 84-group expansion.[200] In the legislation approved on 17 December a total of $779,371,725 was appropriated for Air Corps construction, and the CAA was given $59,115,300 with which to develop an additional 105 airports required to complete the needs of the 54-group program.[201]

For the first time in its history the Army air arm was to have the active direction of its own construction. At the time of the creation of the overall Army Air Forces headquarters on 20 June 1941, the Chief of the AAF, assisted by his Air Staff, had been given direct War Department responsibility for aviation matters.[202] Designation of the sites of the new stations so devolved upon the Chief of the AAF. On 25 November General Arnold directed the Buildings and Grounds Division, OCAC, to evaluate the site recommendations which had been submitted by the site boards and to submit its conclusions to AC/AS, A-4, for review. General Arnold was to make the final designations.[203] The Buildings and Grounds Division prepared an elaborate scoring analysis on the suitability of the sites, assigning 20 points for flying weather, 20 points for terrain, 20 points for suitable location in regard to ranges, civil airways, and cooperation with the ground forces, 20 points for costs, 20 points for availability of city housing, and 30 points for tactical and strategic requirements.[204]

The recommendations of the Buildings and Grounds Division were submitted on 27 November.*

Although the funds had not actually been voted, the Assistant Chief of Air Staff, A-4, recommended on 8 December 1941 that immediate action be taken looking toward the construction of bases at Syracuse, Richmond, Rapid City, Walla Walla, Greenville, Columbus, and Nashville. He also recommended that construction should be initiated at Sioux City, Topeka, Fort Worth, El Paso, Pueblo, Santa Maria-Lompoc, and Reno, although not enough funds were included in the appropriation measure to complete them. General Arnold, however, approved only the first seven bases.[205] On 20 December the Chief of Engineers was informed that these seven bases would be all-purpose type installations, designed to accommodate the maximum characteristics of any type of combat group.[206] On 1 January 1942 the AAF formally directed the Chief of Engineers to begin surveys, site acquisition, and construction at the seven bases. Those at Syracuse, Walla Walla, and Greenville, because of their closeness to the sea frontiers, were to be dispersed.[207] On 31 December the Chief of Engineers was instructed that the other seven stations would be built.[208] A formal construction directive was forwarded on 2 February for all of them except Santa Maria-Lompoc which was held up for changes in its layout plan.[209]

*Colonel Kennedy submitted the following recommended groupings of possible sites: (1) Syracuse, N. Y., or Burlington, Vt., (2) Topeka, Kans., (3) Santa Maria-Lompoc, Calif., (4) Beaumont-Silsbee, Tex., (5) Sioux City, Iowa, or Lincoln, Neb., or Des Moines, Iowa, (6) Reno, Nev., (7) Fort Worth, Tex., (8) Nashville, Tenn., (9) Greenville, S. C., or Florence, S. C., (10) Yakima, Wash., or Klamath Falls, Ore., or Walla Walla, Wash., (11) Casper, Wyo., (12) Rapid City, S. D., (13) Aurora, Ill., or Columbus, Ohio, (14) Richmond, Va., (15) Minneapolis, Minn., (16) El Paso, Tex., (17) Pueblo, Colo., (18) Great Falls, Mont., (19) Amarillo, Tex. (Memo, Col. F. M. Kennedy, Chief, B&G Div, CCAC, to Col. E. P. Sorenson, AC/AS, A-4, subj: Site Board Proceedings, 27 Nov. 1941, in AAG 686 F.).

The sites for the first seven stations were either leased or purchased,[210] and, despite unfavorable weather during the winter and spring of 1942, their construction was rushed to completion. The base at Syracuse received troops in August 1942. Originally assigned to the Air Force Concentration Command, it passed to the Air Service Command on 1 December 1942 for OTU training.[211] Contracts were let at Rapid City in March 1942, and it was ready to receive a heavy bombardment group late in September 1942. This field became one of the heavy bombardment OTU stations of the Second Air Force.[212] At Walla Walla the Army base was located at the site of a CAA improved airfield, and it was able to receive troops in June 1942. Like Rapid City, it became a Second Air Force OTU station.[213] Despite the fact that housing was not complete at Greenville, a bombardment group was moved to the field in June. This base became a medium bombardment RTU under the Third Air Force.[214] With the completion of the buildings at Richmond in June, the base was assigned to the First Air Force for use as a fighter OTU and RTU station.[215] Work was started at Smyrna, Tenn., in January 1942, but inclement weather and delays in securing critical materials delayed the completion of the field until July 1942. On its completion the Smyrna base was assigned to the Eastern Flying Training Command for use as a four-engine pilot transition school.[216] The Lockbourne Army Air Base, located 10 miles south of Columbus, Ohio, was finished in September 1942. Glider training was conducted there on limited facilities during that summer, but on 1 October 1942 the field was transferred to the Air Service Command.[217]

Sites for all except one of the second group of stations were

purchased,[218] and construction was expedited under the war emergency procedures. Construction of housing began at Sioux City in March, and in September 1942 the base received its Second Air Force heavy bombardment OTU.[219] Building began at Pueblo during March and by October 1942 the base was ready for its Second Air Force heavy bombardment group.[220] The air base at Topeka was operational as a Second Air Force heavy bombardment OTU in September 1942.[221] At El Paso a new site was selected east of Biggs Field and construction was initiated on a heavy bombardment base. The new El Paso Army Air Base became a Second Air Force OTU, receiving troops in August 1942. Biggs Field was transferred to the Second Air Force on 21 March 1942 and continued to serve as an air support field until October 1943 when the two fields were combined.[222] At Fort Worth additional land was purchased near the airfield being built for a government owned aircraft plant, housing was erected, and by 14 October 1942 the new installation--called Tarrant Field--began transition training for four engine pilots under the Gulf Coast Training Center.[223] The Santa Maria Army Airfield was accepted on 1 May 1942. Although it was designed as an air support base, the field was assigned to the Air Service Command in December 1942 for training service groups.[224] The Reno Army Air Base, also designed as an air support field, sheltered the headquarters of the II Ground Air Support Command during June 1942, and it was also used by the Second Air Force and the Air Service Command for training service troops.[225]

The completion of these 14 air bases brought to an end the construction projected under the 84-combat group expansion. The whole program had been meticulously planned to meet the needs of a peace-time tactical

expansion, but the beginning of the war somewhat changed these needs. These bases, as will be seen more fully below, represented a most important nucleus of the war-time expansion which was to get underway in 1942.

3. Air Support Fields

The third phase of the peace-time expansion of air base facilities for hemispheric defense--the selection and construction of fields for National Guard and regular Army observation and reconnaissance units--revealed less of the comprehensive planning which had characterized the expansion of air facilities more directly under Air Corps control. Ground forces expansion during 1940 and 1941 necessitated a similar expansion of observation and reconnaissance squadrons to support the new troop units. By War Department policy armies, corps and divisions required air support units, which for convenience of training were to be located near units which they were to support.[226] These units were organically a part of the Air Corps, but because of their method of control, they were under a somewhat nebulous responsibility to the Chief of the Air Corps. The bases upon which they were located were, throughout this period, assigned to and administered by the ground forces.

The OCAC nevertheless assumed the initiative in securing bases for the regular Army squadrons. Because of the transfer of Moffett to the West Coast Training Center it was thus necessary to find a new field for the observation squadron based there. This squadron, less one flight which was transferred to Brooks Field, was moved to Hamilton in the fall of 1940 in order that it be near the headquarters of IX Corps Area.[227] Since this was a temporary station and since it was decided that the squadron should be closer to the concentration of ground troops at Fort

Ord, Calif., a new station was needed. The board of officers making recommendations for the location of the 54-combat-group stations on the Pacific coast selected a site at Salinas, Calif.[228] Housing for the squadron was accordingly constructed on an airdrome lease at Salinas, and in the summer of 1941 the squadron, together with the flight which had been moved to Brooks, was transferred to the new airfield.[229]

Under the Army's first aviation objective the GCAC was authorized to form two new reconnaissance squadrons for assignment to the Second and Fourth Armies.[230] The squadron which was to work with the Fourth Army was located at Salinas with little difficulty, but a new base had to be secured for the Second Army squadron. The board of officers making recommendations for the location of the 54-group stations in the South selected the municipal airport at Atlanta, Ga., for the unit. This site was approved by both the War Department and the Chief of Air Corps, though the GCAC later regretted the commitment.[231] Construction had begun, and late in 1940 the reconnaissance squadron cadre was sent to Atlanta. Movement of the headquarters of the Second Army to Memphis, Tenn., led that unit to request the transfer of its reconnaissance squadron to a location proximate to Memphis. The Air Corps approved this request, but the War Department was of the opinion that it would be inadvisable to abandon the Atlanta cantonment.[232] Some of the older observation squadrons were relocated during 1940 and 1941 in order to effect closer training: squadrons at Scott and Mitchel were moved to Post and Lawson Fields;[233] an additional station was leased at DeRidder, La., and in February 1942 an observation squadron from Brooks was moved there to support the armored division training at Camp Polk, La.[234]

Location and construction of stations for the National Guard obser-

vation squadrons ordered into the federal service in 1940 and 1941 was handled almost exclusively by the War Department General Staff and the National Guard Bureau.[235] Funds for housing the first 21 squadrons to be ordered to active duty were appropriated on 9 September 1940, and tentative stations were selected near the posts of the National Guard divisions with which they were to train.[236] By March 1941 all of these first 21 squadrons had been mustered into the federal service.[237] In December 1940, after plans had been made to induct nine more newly formed National Guard squadrons (one of which was to be located in Alaska), the Assistant Chief of Staff, G-3, directed the Chief of Air Corps to set up a board of officers to select sites near Rolla, Mo., Camp Forrest, Tenn., San Antonio, Tex., Pine Camp, N. Y., Hattiesburg, Miss., and Abilene, Tex.[238] Such a board was formed by War Department orders, and by April 1941 the Chief of Staff had approved the sites for the permanent stations of all 30 of the observation squadrons.[239] By the fall of 1941 these observation squadrons were either located or were in the process of being moved to their permanent airfields.*

Although the airfields and housing requirements for these observation squadrons were relatively simple as befitted their small personnel and light planes, numerous difficulties were encountered in operating from the

*Under this mobilization expansion, observation stations were brought into operation at Wheeler-Sack Field, Pine Camp, N. Y.; Otis Field, Camp Edwards, Mass.; Fort McClellan, Ala.; New Cumberland, Pa.; Detrick Field, Frederick, Md.; Lexington County Airport, Columbia, S. C.; Birmingham, Ala.; Esler Field, Camp Beauregard, La.; Chicago, Ill.; Adams Field, Little Rock, Ark.; Brownwood, Tex.; Sherwood Field, Paso Robles, Calif.; New Municipal Airport, San Antonio, Tex.; Jacksonville, Fla.; Fort Dix, N. J.; Fort Devens, Mass.; Abilene, Tex.; Vichy, Mo.; William Northern Field, Tullahoma, Tenn.; Hattiesburg, Miss.; Alexandria, La.; and Kellogg Field, Battle Creek, Mich. (AAF, Station List, 20 Sept. 1941).

stations provided them. At Esler Field, for example, the observation squadron in November 1940 was quartered in tents and in the dilapidated buildings of a former CCC camp. The sole runway was unsafe in wet weather and during adverse cross-wind conditions.[240] Reilly Field, Fort McClellan, Ala., was found to be so hazardous in May 1941 that the Chief of the Air Corps recommended that it be abandoned.[241] The squadron camp area at Columbia, S. C., located on the edge of a runway, was both cramped and exposed to the general public. In June 1941, after an inspection trip had been made by one of his assistants, Brigadier General H. A. Dargue, Chief of the Inspection Division, OCAC, noted that the observation squadrons were confused by their multiple channels of administration, depended upon often uninterested ground force commanders for their training missions, and had poor facilities for operations and maintenance. In general, the whole picture was "extremely poor."[242]

In order to improve on this situation, General Marshall on 21 June 1941 wrote identical letters to each of the Army commanders, pointing out that the training of the observation squadrons was notably deficient.[243] On 25 July the War Department moved a step further and directed the Chief of the Army Air Forces to assume active control of the observation squadrons. He was to form five air support commands to which all of the squadrons were to be assigned for training.[244] General Arnold ordered the Air Force Combat Command to form the five commands.[245] On 30 August that organization ordered the activation of the five commands, directed the formation of group headquarters to control the separate observation squadrons, assigned both the new observation groups and the existing light bombardment groups to the five commands, and formed an Air Support Section

in its headquarters to give overall direction. The air support command headquarters were established at Mitchel Field, Will Rogers Field, Savannah Army Air Base, Hamilton Field, and Bowman Field early in September 1941.[246]

Despite this action, the air support bases remained confused. The AAF assumed the basic War Department responsibility for the development of air support fields,[247] and, as has been seen, made provision for air support bases in the selection of the 84-combat-group fields. Many of the existing observation squadron airdromes, however, remained under the jurisdiction of the ground force commanders. As late as March 1942 the Second Air Force had not determined whether it had any authority over the fields on which its observation units were stationed.[248] Solution of this problem was to consume much effort during 1942 and 1943.

Chapter IV

EXPANSION OF AAF FACILITIES FOR WAR, 1942-1943

The 1939 augmentation had been primarily concerned with the development of the minimum bases needed for hemispheric defense, and the 54- and 84-group programs, while they did not forget defense requirements, had been largely concerned with the procurement of airfields suitable for the mobilization and training of an expanding Air Corps. During the course of 54- and 84-group programs the Air Corps had sought, principally through the CAA, to secure the development of an additional number of civil fields which would be needed for war emergency defense use. These three expansions had been closely directed from Washington. In December 1941, however, the AAF was faced with two problems: first, and most immediate, it had to provide the facilities needed for the dispersal of its air units to prevent a second Pearl Harbor catastrophe on the sea frontiers of the United States; second, it had to provide the facilities for the mobilization training of an air force of enormously increased size.

The exigencies of war thus forced an immediate procurement of a great number of air bases, caused changes in constructional requirements and techniques, and shifted the scarce factor in construction from funds to man-hours and materials. The immensity of the building programs led to some decentralization of direction and responsibilities. To a very great extent the using agencies in the field, not the AAF headquarters in Washington, had to determine their facility needs to meet the overall directives given to them by the AAF. By the fall of 1942, however, it had become apparent that the war would not be fought in the United

States, and defensive developments could be curtailed. By about June 1943 sufficient base facilities had been constructed in the continental United States for mobilization and training. Once more the headquarters of the AAF could assume a more active role in the direction of construction.

1. Procurement and Development of Defense Facilities

The impact of the news from Pearl Harbor and the immediate prospect of enemy air attacks on the continental sea frontiers forced an equally immediate deployment of AAF planes to outlying bases and a dispersal of aircraft on the main bases. A part of the facilities needed for deployment had been provided by CAA and WPA constructed airports. On 14 December 1941 President Roosevelt directed the Secretary of War "to take possession and assume control over any Civil aviation system or systems or any part thereof to the extent necessary for the successful prosecution of the War."[1] The Eastern Theater of Operations and the Western Defense Command were authorized to call upon War Department construction agencies for urgent construction, to incur financial obligations, and to use either fixed-fee, negotiated, or lump-sum contracts to get urgent construction completed. They were cautioned, however, to assure that no abuse was made of the sweeping authority to by-pass the usual War Department channels.[2]

Passive Defense Projects. During the period of extreme caution following Pearl Harbor extensive efforts were made to protect the coastal airfields against surprise attack by means of passive defense measures, including revetments, dispersed layouts, and camouflage. On 9 December 1941 General Arnold directed the immediate dispersal of all aircraft west of the Rocky Mountains and the construction of sand bag revetments for further protection. On the Atlantic coast all large concentrations

of planes were to be similarly protected at once.[3] On 13 December the AAF directed that all new bases built within 350 miles of the Atlantic and Pacific coasts and within 300 miles of the Gulf were to be given a dispersed layout.[4] By 26 December, acting under the emergency powers of the Western Defense Command, the Corps of Engineers had started 81 emergency projects on the Pacific coast, including hardstandings, dispersal taxiways, revetments, and sand bag protective devices. At Hamilton Field alone $413,850 were committed for revetments and taxiways. In the east, fighter revetments were constructed at 23 bases, and heavy bomber dispersal area were built at seven bases. By May 1942 some $35,645,023 had been spent for emergency work.[5] After the flurry of excitement had worn off, it became evident that revetments on such a large scale would not be needed. On 20 December 1942 the Second Air Force thus directed the completion of bomber revetments in progress, but sought to end the effort there and to build hardstandings and taxiways to dispersed positions instead.[6] The emergency construction powers of the continental theaters of operations were curtailed in February 1942, but on 23 March the Eastern and Western Defense Commands were allowed to authorize emergency construction projects only if they cost no more than $20,000.[7] On 4 March 1942, however, the War Department ordered that no more revetments would be constructed without specific authorization for each such project.[8]

Construction of dispersed and camouflaged facilities was continued somewhat longer. Shortly after Pearl Harbor the Corps of Engineers was instructed to provide dispersed layouts at 15 air bases near the sea frontiers of the United States,[9] and other individual projects for improvised dispersions were later authorized. On 28 February, for example, a project was approved at Dow Field costing $416,557 and including tone

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down of prominent features, planting of trees and shrubs, tone down of taxiways, painting of roofs, and construction of dispersed facilities.[10] For training purposes a complete dummy airdrome was built near the Richmond Army Air Base.[11] By December 1942, however, combat experience had shown that airfields were not remunerative targets for air attack, and Brigadier General L. P. Whitten, Director of AAF Base Services, recommended that more conventional airfields should be built in the United States.[12] In March 1943 the War Department, estimating that such projects had cost some $45,000,000, directed that future passive defense projects should be limited to vital defense zones and should be as simple as possible.[13] In October General Arnold indicated that such passive defense projects were no longer needed in the continental United States.[14]

Deployment to Defensive Airfields

Since 1939 the Air Corps had been working toward the development of a sufficient number of strategically located civil airfields to insure proper dispersal of its units both for passive protection and for the defense of potential targets for air attack in the United States. During December 1941 many of these civil fields, most of which had been improved with WPA and CAA funds, were added to the AAF roster of stations. Most of the existing fields required additional development to fit them for military use, and additional bases had to be provided to buttress the defensive situation.

During the month which followed Pearl Harbor the First Air Force, as the principal air component of the Eastern Theater of Operations and its successor Eastern Defense Command, quickly deployed its pursuit squadrons for the defense of potential targets in the Northeastern and Central

Atlantic states. One pursuit group was dispatched to the Norfolk, Va., municipal airport. Other pursuit squadrons and flights were sent to Green Airport, Hillsgrove, R. I., to the municipal airfield at Bendix, N. J., to the municipal airport at Philadelphia, Pa., to the Republic Aviation Corporation Field at Farmingdale, N. Y., to the Glen L. Martin Field at Middle River (Baltimore), Md., to Trumbull Field, Groton, Conn., to the municipal airport at Bridgeport, Conn., and to Commonwealth Airport, East Boston, Mass.[15] Leases were quickly negotiated and in January 1942 emergency construction projects at all of those fields (except Martin Field), together with the municipal airfields at Newark, N. J., Dover, Del., Atlantic City, N. J., and Beltsville, Md., and Logan Field, Baltimore, Md. (substituted for Martin Field), were ordered by the Eastern Theater of Operations. These projects covered the construction of emergency type housing and dispersal facilities.[16]

During the remainder of 1942 there was a gradual recovery from the pressures which had led to agitation for "a fighter base every five miles," and some readjustment of the pursuit fields was undertaken.[17] In April LaGuardia Field at New York City was cleared for emergency pursuit use,[18] and by June additional leased facilities had been obtained at the New Haven, Conn., municipal airfield and at Bentschler Field, Hartford, Conn.[19] During July the detachment from the East Boston airport was moved to a newly negotiated leasehold on the CAA-constructed field at Bedford, Mass.[20] In the same month the AAF leased and took over responsibility for the construction on the CAA project at Millville, N. J.[21] The completion of this airfield enabled the First Air Force to move its units from the Philadelphia municipal airfield which was unsuited for tactical use.[22]

Probably because of the failure of the CAA to find a local sponsor to purchase the site needed for development at Bendix, N. J.,[23] the First Air Force secured the lease and development of the Suffolk County Airport, at Westhampton Beach, N. Y. Work began there in September 1942 and the initial project was completed by May 1943.[24] General Arnold gave final approval for the construction of a defense airfield for Washington at Camp Springs, Md., in August 1942, and the base was ready for use in April 1943.[25] By December 1942 the First Air Force had also secured facilities needed for fighter units at Brainard Field, Hartford, Conn., at Portsmouth, N. H., and at Salisbury, Md.[26]

The First Air Force also had to find stations for its I Bomber Command which was given the mission of antisubmarine patrol along the Atlantic and Gulf coasts. Most of the stations needed were obtained by the diversion of a part of the housing and facilities at older bases, but some new stations were required. The municipal airport at Dover, Del., was accordingly leased in December 1941 and given temporary improvements by the Eastern Theater of Operations. During the fall of 1942 and the spring of 1943 a bomber station was built there.[27] A tent camp was constructed for immediate use at Bluethenthal Field, Wilmington, N. C., and in the fall of 1942 work was begun on a bombardment station.[28] At the height of its patrol operations the I Bomber Command and its successor, the AAF Antisubmarine Command (activated on 15 October 1942), operated from facilities which had either been diverted or built for its use at Dow, Grenier, Westover, Mitchel, Ft. Dix, Dover, Langley, Bluethenthal, the municipal airfield at Charleston, S. C., Chatham Field at Savannah, Ga., Jacksonville, the 36th Street Airport, Miami, Fla., the Boca Chica Naval Air Station at

Key West, Fla., Drew, the municipal airport at Gulfport, Miss., and the municipal airfield at Galveston, Tex.[29]

The Third Air Force met the more limited requirements of its defensive mission without any additional installations. In March 1942, however, the AAF Directorate of Air Defense called attention to the need for three pursuit airdromes within 25 miles of the Sault Ste. Marie Canal, the highly critical connection between the iron ore fields on Lake Superior and the Great Lakes waterways. A Third Air Force site board recommended the location of these fields at Raco, Kinross, and Sault Ste. Marie, all in northern Michigan. The area was primarily a gun-defended zone under the Central Defense Command, but, in view of the fact that the working season in northern Michigan was very short and no suitable civil fields existed for basing pursuit units in an emergency augmentation of the zone, the AC/AS, Plans, AAF, recommended that there was military necessity for the construction of runways, lighting, and gasoline storage at the three airfields.[30] The Corps of Engineers was instructed to provide the fields.[31] The project was later reduced by the deletion of the airfield at Sault Ste. Marie, but skeletonized installations were built at Raco and Kinross and placed on a standby status.[32]

On the Pacific coast the Second and Fourth Air Forces, assigned on 11 December 1941 to the Western Theater of Operations, experienced a similar expansion of facilities to meet defensive requirements.[33] In the Pacific Northwest the Second Air Force lacked a sufficient number of airdromes to provide a separate field for each of its tactical squadrons--the desideratum for defensive deployment. One pursuit group, however, was moved to Seattle, Wash., immediately after Pearl Harbor, to guard against

possible attack on the Bremerton Navy Yard and the Boeing aircraft plant.[34] Plans for the acquisition and development of other fields were somewhat complicated by the impending transfer of the defense mission in the Pacific Northwest to the Fourth Air Force, but on 1 January 1942 the II Interceptor Command requested the procurement and preparation of single pursuit squadron facilities at Bellingham, Port Angeles, Olympia, and Kitsap County (Bremerton), Wash., and at Salem and Hillsboro, Ore. For alternate use the II Interceptor Command recommended the airfields at Mount Vernon, Arlington, Sand Point, Seattle (Muller-Harkins airport) and Shelton, Wash., and at Troutdale, Scappoose, and McMinnville, Ore. Other fields--including that at Quillayute, Wash.--were recommended for development as emergency airdromes. The Second Air Force almost immediately replied that the airports at Olympia, Kitsap County, and Salem were being improved to provide a 5,000-foot runway, request had been made on the CAA to place Hillsboro in its first priority for development, and revetments were either being built or would be ordered constructed at all of the fields. In regard to the alternate fields, request had been made to the Western Defense Command to improve Mount Vernon and Arlington, the Sand Point Naval Air Station was usable, Muller-Harkins was thought to be a poor station for Army use, the CAA had been requested to improve either McMinnville or Scappoose, Troutdale was being improved, and recommendation had been made to the Fourth Air Force in behalf of improvements at Shelton.[35] The Second Air Force had obtained Navy permission to add installations at the Navy fields being developed at Quillayute, Mount Vernon, Arlington, Shelton, and Bremerton.[36]

After a period of organizational confusion the Fourth Air Force assumed control of the main Second Air Force bases in the northwest (Paine, McChord, and Portland) on 26 January 1942. By the same token it assumed responsibility for the procurement of additional fields needed in the region.[37] Major General J. E. Fickel of the Fourth Air Force requested Naval permission to develop suitable installations for one pursuit squadron at Quillayute, Shelton, Mount Vernon, Arlington, and at the new site at Oak Harbor, Wash., and received reaffirmation of the permission originally given to the Second Air Force.[38] Army construction projects for those fields, for the Bremerton Naval Air Station (Kitsap County Airport), and for the CAA constructed fields at Olympia, Bellingham, Port Angeles, Salem, and Willipa (South Bend), Wash., were approved by the AAF on 7 April 1942.[39] The Fourth Air Force also assumed jurisdiction over the CAA fields at Eugene and McMinnville, Ore., and over the flight strip at Aurora, Ore., but no housing was constructed at the installations.[40] Most of these fields were used by single pursuit squadrons during 1942, but by May 1943 only Salem, Bellingham, Olympia, and Port Angeles were occupied by troops.[41]

The Fourth Air Force was responsible for the development of defense installations on the remainder of the Pacific coast from the beginning of the period of preparation for war. During 1941 General Fickel had been active in cooperation with municipal, county, and state officials--particularly in California--in an effort to build up the civil fields to be needed for defense.[42] Shortly after 7 December 1941 it was thus possible to move squadrons and detachments of Fourth Air Force tactical units to the North Island Naval Air Station at San Diego, to the municipal fields at San Bernardino, Long Beach, Bakersfield, Oakland, and Sacramento, and

to Mines Field at Los Angeles.[43] In order to expedite business with the command post of the Western Defense Command at the Presidio of San Francisco, an advance echelon of the Fourth Air Force headquarters was rushed to Hamilton Field and by 15 December the whole headquarters, together with the staff of the IV Bomber Command, had opened at Hamilton Field. On 5 January 1942 the staffs were moved to a leased building in San Francisco. The IV Interceptor Command headquarters, more tied down by its complicated communications net-work, continued temporarily at Riverside but eventually moved to Oakland, Calif.[44]

The initial deployment of tactical units by no means met the defense needs of the Fourth Air Force. On 10 February General Fickel therefore presented the Western Defense Command with an airfield program designed to provide an operating airfield and an alternate airfield for each of the 22 tactical squadrons assigned to the Fourth Air Force. Two additional fields were provided because of the prevalence of fogs in the San Francisco region. Only 13 of these fields were available for use, construction under the emergency authorization of the Western Defense Command was underway at 12, and the remaining 19 fields required authorization.[45] All emergency construction, however, was suspended by War Department order on 24 February, so that the whole program had to be forwarded to Washington on 29 March.[46] On 7 April General Arnold, with some changes and deletions, approved most of the items of construction desired.*

*Bakersfield, Bishop, Blythe, Kearney Mesa (a field shared with the Navy), Delano, Fairfield-Suisun, the Grand Central Air Terminal at Glendale, Oakland, the Metropolitan airport at Van Nuys, the Orange County airport at Santa Ana, Oroville, Otay Mesa (joint occupation with the Navy), Palmdale, Porterville, Redding, Russell City (Hayward), the Sacramento municipal airport, Mills Field at San Francisco, and Visalia, Calif., and at the airfields previously noted in Oregon and Washington. The AAF refused to approve recommended projects at the Long Beach, Los Angeles, and Yakima, Wash., municipal airfields. (Rdg., Arnold to CG WDC, 7 Apr. 1942, in AAG 686 I.)

Changes and additions to this program of construction were not requested by the Fourth Air Force until September 1942. Then it requested authority to develop facilities for a single fighter squadron at the Oxnard, Calif., flight strip; at the Lomita, Calif., flight strip (substituted for the Long Beach municipal field); at Ontario, Calif.; at Ream Field, San Diego (joint occupation with the Navy); and at the Half Moon Bay, Calif., flight strip. To replace the Los Angeles municipal airport, it wished to develop a fighter field on San Nicholas Island, one of the Santa Barbara group lying off the coast from Los Angeles. Authorization was requested to develop a squadron strength bomber station at Ellensburg, Wash., vice Yakima. The Fourth Air Force noted that it planned to submit projects to accommodate a fighter squadron at Concord, Calif. (in place of the Alameda Naval Air Station); for housing personnel of medium bomber squadrons at the Winters-Davis, Calif., flight strip (to replace Fairfield-Suisun), and at the CAA constructed field at Madera, Calif.; and for a heavy bomber squadron at the CAA built field at Needles, Calif. (vice Blythe which had been assigned to the Troop Carrier Command).[47]

This program seems to have been approved substantially as presented, but the projects planned for later submission did not fare so well. Housing was subsequently built at Concord, but Winters-Davis and Needles received no such improvement and Madera was not assigned to the Fourth Air Force. Because of opposition from the Navy, squadron strength housing approved for Ream Field at San Diego and for the fields at Kearney Mesa and Otay Mesa was never constructed. In addition to these stations the Fourth Air Force was also assigned the fields built by the CAA at Inyokern, Montague, Napa, and Santa Rosa, but housing was built only at the latter

field. Most of these projects were small and the theater of operations type housing at them seldom exceeded accommodation for 500 men. They were occupied during the period of extensive defensive preparations effected on the Pacific coast, and most of them passed to a standby status when the air defense of the region was relaxed. On 1 May 1943 only Glendale, Russell City, Oakland, Ontario, Palmdale, Sacramento, Mills Field, the Orange County airport, Santa Rosa, and the Metropolitan airport at Van Nuys had troops assigned to them.[98]

Most of these fields which had been taken over for defensive deployment had been developed by the CAA. Shortly after the beginning of United States participation in World War II, the General Accounting Office expressed the opinion that exclusive military lease on CAA constructed airports would still be permissible for the duration of the war.[49] This made it impossible for the Air Forces to continue to look to the CAA for construction of the numerous fields which local commanders deemed necessary for national defense. Such commanders, still thinking in terms of the development of a sufficient number of airdromes to permit a large concentration of tactical units, asked for improvements to about 600 airfields, of which [illegible] would be needed during the fiscal year 1943.[50] The First Air Force, for example, sent in a list of 155 airports which it wished developed.[51] The matter was taken up with General Arnold on the evening of 27 April 1942, and he, reasoning that the war was going to be fought in Europe and the Pacific rather than in the United States, declared himself flatly opposed to the development of more than one-fourth of such a number of airports.[52] On 2 July 1942 the CAA received an appropriation of $199,740,000, and the ceiling on the number of airdromes to be built or improved was raised to 668.[53] This was the last substantial sum to be appropriated to the CAA

for the development of civil airfields during the war period. By the end of 1943 nearly all of the CAA developmental projects were complete.[54]

For the development of the flight strips which became a part of the Pacific coast air defenses, the OCAC and the AAF had worked in close coordination with the United States Commissioner of Public Roads. The Commissioner had first been empowered to contact the state highway departments in planning such strips on 5 September 1940,[55] and in January 1941 the OCAC had laid down a preliminary definition of such strips. They were to be of primary use for dispersion, were to be adjacent to good highways, and should be located within 25 to 100 miles (preferably not over 50 miles) of established air bases.[56] The OCAC desired that the program should be decentralized as much as possible, and the GHQ Air Force had accordingly directed the Air Force commanders to work with state highway departments in selecting sites.[57] Congress on 19 November 1941 appropriated $10,000,000 to the Commissioner of Public Roads for such construction as he might arrange and added $5,000,000 on 17 December 1941.[58] During [redacted] some 21 flight strips, with dimensions of 500 by 5000-8000 feet, [redacted] structed at an average cost of $394,000 each.[59] By October 1942 [redacted] the AAF, because of urgent requests from the War Production Board [redacted] projects which could be stopped without serious injury to the [redacted] felt that the program should be completed as soon as possible and [redacted] not be continued further.[60] Although most of these flight strips were [redacted] located along the continental seaboard, a few were located inland, generally to serve bombing ranges or for other specialized training.

2. Development of Facilities for the Expanding AAF

Concurrently with the expansion of facilities for the defense of the continental sea frontiers, the AAF was concerned with the much larger problem of finding and developing bases to accommodate the programmed expansion of its tactical air strength from 84, to 115, to 224, and finally to 273 combat groups. This expansion of base facilities had to keep pace with, and in most cases to precede, the projected combat expansions whose accelerated activation schedules demanded unprecedented construction activities.

The immensity of the construction problem may be seen by viewing the projected combat expansions. On 23 December 1941 General Spaatz announced that the immediate objective for the AAF would be the completion of the 84-group program during 1942.[61] On 2 January 1942, however, General Arnold in a memorandum for President Roosevelt indicated that the initial step toward development of "the mightiest air force the world has ever seen" would necessitate immediately at least 56 additional pilot schools, with an annual productivity of 70,000 pilots, ground schools to turn out 300,000 technicians a year, and at least 106 new air bases.[62] The next day the AAF proposed to add 45 combat groups to its current strength (making a total of some 115 combat groups), to expand its pilot output first to 50,000 and then to 70,000 per year, and to expand its rate of technician training during 1942 to 300,000 per year.[63] This proposal was approved for accomplishment during 1942 by the War Department on 19 February 1942.[64]

In order to facilitate future expansion, work was begun immediately to project the expansion for 1943. On 29 January AWPD proposed that the

AAF should attempt to achieve a total of 224 combat groups during 1943.[65] During February this proposed strength was approved by the AAF as a basis for study and planning.[66] By June the 224 group program was being coordinated with the War Department, and the commitment was approved in effect in the War Department troop basis issued on 28 August 1942.[67] Meanwhile, the AAF had drawn up more ambitious plans which contemplated expansion to a strength of 273 groups during 1943. On 2 September 1942 General Arnold therefore directed that plans would be made to expand the technical school output to 600,000 annually, reaching this rate by July 1943, and to expand the flying training rate to turn out 102,000 pilots annually, reaching this capacity by 31 December 1943.[68] By the middle of December 1942 it was evident to General Arnold that the 273 group program approached the maximum size that the man-power and productive resources of the United States could support. He directed the Air Staff to make plans to reduce flying training objectives and to taper off all expansion at the "saturation point" of 273 groups.[69] Although the composition of this saturation program was revised four times , the total figure of 273 groups was not again changed during World War II.[70]

Expansion planning contemplated that no more than one-third of the combat strength of the AAF would be based in the continental United States at any one time, but it provided that each combat group so accommodated would have one main base and four sub-bases.[71] During 1942 the bulk of the construction program was directly related to actual defense and mobilization needs. In October 1942, however, Donald Nelson, Chief of the War Production Board, pointed out that Army construction projects might absorb

as much as one-fourth of the total war effort during 1943, and he asked the Secretary of War to prepare a list of projected projects which could be abandoned. The AAF Director of Base Services, fearing that this meant that the WPB would begin to review all construction projects, recommended that all AAF construction should be programmed as quickly as possible and even ahead of need lest delays be encountered when new facilities were needed. The Air Staff approved the recommendation with the reservation that the AAF must not accumulate any considerable number of "ghost villages" awaiting occupants. Although the WPB never assumed an active review of Army command construction as had been anticipated, the AAF sought to bring its programmed construction to an end as quickly as possible. During November 1942 all AAF agencies were thus required to request all projects, "ruthlessly pruned to the bare essentials," which would be needed on the basis of the saturation of air power objective of 273 combat groups.[72]

The war emergency made it evident that simplifications of constructional requirements and techniques were in order. "The approved program for the AAF," wrote General Arnold on 17 January 1942, "requires an expansion of such magnitude that a complete overhauling of our plans and concepts of requirements is essential." To the end of securing "Spartan simplicity" he specified four general principles for new construction: (1) conservation of funds, materials, and national effort; (2) efficiency of operation; (3) maximum use of available facilities--military and civilian; and (4) elimination of non-essentials.[73] Later in the same month, General Arnold personally warned his A-4 that all "frills and non-essential items would be eliminated and only the bare essentials would be approved" in planned construction.[74] On 4 February 1942 the War Department directed

that all new building, except where advance planning was complete, would be of a much cheaper theater of operations type of construction rather than the mobilization type structures erected during 1939-1941.[75] On 7 February the War Department issued a long directive ordering available facilities to be used to the fullest extent, defining the means by which the Corps of Engineers should lease or purchase land, cautioning all commanders not to make commitments to civilian property owners prior to action by the Chief of Engineers, and stating that local political entities should not be encouraged to bid for Army stations in excess of their means.[76] On 24 February it directed that "construction not actually indispensable should not be undertaken."[77] On 20 May the Secretaries of the War and Navy departments and the Chairman of the War Production Board agreed that no construction project would be approved unless it was essential, could not be postponed without hurting the war effort, could not be replaced by renting facilities, would not cause duplication, represented all possible economies, and was the most simple structure possible. The War Department directed the AAF to be bound by the agreement in letter and in spirit.[78]

At the same time that the War Department and the AAF were seeking to curtail inessential construction, they were also making efforts to speed up the building of deserving projects. On 25 January 1942 the AAF authorized station commanders at some 10 bases (where construction was needed by the 84-group expansion) to approve the local layout plans.[79] Early in March it directed that layouts for expansion of existing stations and for the construction of new bases should be prepared by the District Engineers in cooperation with local commanders and would be approved by

the air force or inderendent command concerned.[80] Copies of such approved layouts were to be forwarded to the Buildings and Grounds Division, OCAC, for information.[81] The AAF also sought to increment its housing facilities by leasing. Late in January it authorized $5,000,000 for leasing the housing required by AAF recruits prior to the availability of station housing. Selection of these leaseholds was made the responsibility of the Chief of the Air Corps, and the Chief of Engineers was authorized to make such leases at a cost of not more than $10 per month per man.[82] General Arnold, however, fearing that this experiment might not be successful, ordered that leasing would be regarded as only a "stop-gap" for the solution of the housing program.[83] On 3 February the OCAC was directed to regard leasing as a temporary solution and to push building to the utmost, utilizing the existing commercial airports and tent camps as much as possible.[84] In March the ceiling on lease costs was raised to $15 per man per month where all utilities were furnished.[85]

The reorganization of the Army Air Forces on 9 March 1942 effected a decentralization of construction procedures. In April the AAF invested the commanders of its air forces and commands with responsibility for site selection. They were normally to forward their recommended sites to the AAF for approval, but emergency requests for real estate procurement could be submitted directly to the local Division Engineers. All real estate acquisition requiring annual rentals of more than $50,000 or permanent acquisition had to be processed through the OCE and required the approval of the Under Secretary of War.[86] The AAF also set up funds of $250,000 for each of the four air forces and for the Southeast Air Corps Training Center, permitting their commanders to draw on the funds for

emergency projects costing not more than $20,000.[87] On 23 July, pursuant to agreement with the AAF, the Chief of Engineers authorized his Division Engineers to approve and construct projects costing not more than $40,000 on the request of the air forces and independent commands.[88]

Such a decentralization of authority made some safeguards necessary. Unfortunate commitments to sites which could not be occupied led the Director of Military Requirements to enunciate an iron-clad policy that all sites had to be approved by the Interdepartmental Air Traffic Control Board prior to any action toward site acquisition by the Chief of Engineers.[89] The Directorate of Base Services required that it be notified currently of all plans for new AAF installations, and in August it requested that each District Engineer be notified to send three copies of new site board reports directly to it for immediate initiation of action.[90] It was also necessary to emphasize that the delegation of authority to local commanders to approve layout plans did not permit any modification of established AAF base safety requirements.[91] In September 1942 liaison officers were established with each of the Division Engineers to represent AAF headquarters during the preparation of layout and other constructional plans and to insure compliance with AAF safety requirements.[92]

One additional AAF reorganization--that of 29 March 1943--sought to eliminate the distinctions between the policy staff and the operating staff in the headquarters establishment. Thus the Base Services Division was transferred to the new AC/AS, Materiel, Maintenance, and Distribution. There, as the Air Installations Division, it continued to exercise supervision over the execution of AAF base installations policies during the remainder of World War II.[93] These decentralizations and changes in technique represented significant modifications of the pre-war construction

procedures. While most of the responsibility for construction remained with the headquarters of the AAF, the subordinate commanders had, in effect, gained the privilege of initiating and supervising the construction of projects which they needed for the performance of their assigned duties.

Flying Training Fields. Preliminary planning for doubling the 30,000-pilot-training rate had been accomplished as a part of that program, but these plans remained in suspension until Pearl Harbor. After 7 December 1941, however, the three flying training centers were directed to achieve annual pilot-output rates of 50,000, then 70,000, and finally 102,000 pilots and corresponding numbers of combat crew members. In consideration of a number of critical shortages and of the stabilization of tactical air strength at 273 groups, the 102,000 commitment was scrapped in December 1942. The maximum limits of these programs were by no means static: the 50,000 objective ranged upward to 55,000 to include foreign cadets and the 70,000 objective actually came to include 75,000 American and 5,000 British cadets. With the demise of the 102,000 program a more realistic figure of some 93,600 pilots was set in June 1943, and the peak of the pilot training was reached in the fall of that year. Thereafter the training rate began to decline.[94]

The initiation of the construction programs to accompany these training augmentations was undertaken by the OCAC and the three training centers, but on 23 January 1942 the Air Corps Flying Training Command was established as a new echelon in the command channels directly above the training centers.[95] The headquarters of this new organization, commanded by Major General B. K. Yount, were located temporarily with the OCAC, but on 1 July 1942 it was moved to leased space at Fort Worth, Tex.[96]

After the March 1942 reorganization this command assumed a responsibility for the flying training station construction similar to that vested in the four continental air forces. Primary initiative for the acquisition of the facilities needed to actuate the 55,000 rate of training, however, largely rested with the three training centers. Their problems in site selection were, as usual, somewhat diverse, but all encountered competition for desirable sites, all encountered political pressures, and all were hard pressed by the small amount of time permitted to site selection. Happily, however, a considerable body of information in regard to sites had been built up during the investigations of 1940-1941 which was available as a basis for first planning. For the first time since 1940 the centers were permitted and encouraged to utilize existing municipal fields for training stations.[97]

The final recommendation of the Southeast Training Center for doubling its 30,000 training rate had contemplated 10 new civil primary schools, 1 new basic school, 2 new advanced twin-engine schools, and 1 new flexible gunnery school. On 31 December 1941 the OCAC directed the center to take immediate action to select sites needed to triple the 30,000 rate, and on 2 January the center was instructed to select the sites for stations needed to accomplish its share of a 70,000 training rate. The deadline for the selection of sites for the 50,000 program was set for 28 February. To meet this objective the center recommended five new primary schools for Camden, Ark., Jackson and Union City, Tenn., Lafayette, La., and Clarksdale, Miss. Two new basic schools were sited at Bainbridge, Ga. (approved on 14 March), and at Dyersburg, Tenn., a site which was abandoned in favor of Walnut Ridge, Ark., when grading costs for an over-all field

proved to be excessive. A single-engine school was sited at Marianna, Fla., and the construction of two new twin-engine schools was approved for Blytheville, Ark. (on 30 March), and at Lawrenceville, Ill. (on 8 April). By February, after considerable indecision as to whether such a facility could be opened at Maxwell, the center had selected a site at Nashville, Tenn., for a classification center. A flexible gunnery school was sited and authorized for Ft. Myers, Fla., and a navigation school was placed at Monroe, La. On 10 February the center lost Barksdale Field to the Third Air Force; the bombardier training conducted there was moved to Kirtland Field, Albuquerque, N. Mex., a station just acquired by training activities.[98]

The problems encountered in selecting and developing these stations were multifold. The necessity to avoid air congestion forced the training into Arkansas, Tennessee, and Illinois. Fields in the Mississippi delta and in Florida presented drainage problems; others, such as Bainbridge, presented grading difficulties. Construction of the theater of operations housing at Nashville was initially delayed by a prohibition on over-time labor, low priorities for critical materials such as cast-iron water pipes caused additional delays, but the first aviation cadets were sent there on 15 July 1942. The navigation school at Selman Field, Monroe, La., was also delayed by critical materials, but occupancy was taken on 15 September. Despite drainage difficulties, the new Buckingham Army Airfield at Ft. Myers, Fla., was found to be "adequate" to initiate training in September. At Marianna excessive rains hindered building, but by working twenty-four hours a day the field was ready for the training deadline 11 October. Final completion of the station at Bainbridge

was held up by non-delivery of critical materials, but the field opened on 7 August. The long indecision in regard to Dyersburg necessarily delayed the completion of its substitute, Walnut Ridge, which did not begin basic flight training until 12 October. George Field, Lawrenceville, Ill., made use of 23 abandoned CCC buildings which were moved to its site, and it began training during the fall of 1942. Because of the hold-up at Walnut Ridge three classes of basic flight training were given at the new Blytheville station, beginning on 6 August. The cadets, however, had to live under virtual field conditions and the training aircraft operated from oiled strips.[99] The primary school expansion was accomplished with an unprecedented speed. On 31 December 1941 the Defense Plant Corporation, a subsidiary of the Reconstruction Finance Corporation, purchased all of the civil primary schools (except Tuscaloosa and the Tuskegee Institute) and leased them to their civil operators. The same corporation also financed and supervised the construction of the five additional primary schools needed by the 50,000 training rate in the Southeast Training Center.[100]

The expansion of the Southeast Training Center's stations to meet the 70,000 training rate followed closely on the heels of the 50,000 expansion. On 30 March 1942 the Flying Training Command directed the center to locate stations to meet its share of an 80,000-pilot training program by 24 April. Through a great decentralization of site selection activity and much oral communication via telephone channels, the center's site boards located four new basic schools at Newport, Ark. (authorized for construction on 1 May), Greenwood, Miss., Courtland, Ala. (both authorized on 5 May), and Malden, Mo. (authorized on 15 July). Advanced twin-

engine schools were authorized for Stuttgart, Ark. (30 April), and for Freeman Field, Seymour, Ind. (2 May). Two additional primary schools were established at Cape Girardeau, Mo., and Clewiston, Fla.[101]

The same shortages and weather difficulties which were delaying the 50,000-pilot constructional program hindered construction under the simultaneous 70,000-pilot construction objective. Greenwood, scheduled for completion on 1 January 1943, was delayed by rains which prevented soil stabilization; yet basic flight training began on 28 December 1942. Lack of equipment, short labor, tornado winds, and inclement weather delayed paving at Newport, but the airfield began training on 30 December 1942. The basic school at Courtland, Ala., began training on 1 February 1943. The fourth basic school--Malden, Mo.--was delayed by snow and rain, shortages of materials, and abnormal transfers of area engineering personnel. It could not begin to train until 1 May 1943. Stuttgart, projected as a twin-engine school, was suprosed to have been completed by 1 October 1942, but the typical difficulties plaguing construction caused delays. The field, however, was taken over for glider training in October and did not serve as a twin-engine school until May 1943. Freeman Field at Seymour, Ind., delayed by weather and the usual priorities difficulties, began training on 2 March 1943. Jurisdiction over the Third Air Force base at Jackson, Miss., was assumed on 1 May 1942, and the air base was used for Netherlands East Indies cadet training.[102]

The increased training responsibilities also forced the Southeast Training Center to expand its pre-Pearl Harbor stations. Maxwell Field obtained additional barracks and its landing field was belatedly expanded to bring it up to proper operational characteristics. All-over landing

fields, consisting of graded and turfed areas between runways, were allowed at most of the center's airfields. Auxiliary fields were secured (in part from CAA fields) and improved, approximately on the basis of one field to each 100 students in training at each station. Sub-bases for the gunnery schools at Tyndall and Buckingham were acquired and developed at Apalachicola and Naples, Fla.[103]

To double the 30,000 training rate, the Gulf Coast Training Center had recommended on 5 September 1941 that it would need two new primary schools, two new basic schools, one new single-engine school, and two new twin-engine schools. On 10 December 1941 the OCAC requested it to make a new plan for expansion based on a 50,000 rate and taking cognizance of the fact that undue expansion of existing stations might result in "oversaturating the air space." The comprehensive reply of the training center, forwarded on 22 December, recommended no additional primary schools, establishment of two new basic schools, one new single-engine school, and four new twin-engine schools. All navigation training was to be given at Brooks, all observation training at Kelly, and all flexible gunnery training at Harlingen, but four additional bombardier schools were to be needed. On 31 December the OCAC ordered the center to start selecting sites for the 50,000 training rate, and on 16 January 1942 the War Department ordered the center to appoint the site boards needed for such work. An almost immediate deadline for these recommendations was fixed by the OCAC, and by a telegram dispatched on 24 January the center recommended the establishment of two bombardier schools at the new municipal airports at San Angelo and Big Spring, Tex., one advanced single-engine school at the Eagle Pass, Tex., municipal airport, two advanced twin-engine schools at the Lubbock and Waco, Tex., municipal airfields, a new basic school

at the Sweetwater, Tex., municipal field, a new instructors' school at Stinson Field, San Antonio, Tex., and a new navigation school at Hondo, Tex. Brooks was to become a basic school as soon as observation training could be moved to Kelly. Most of these sites had been favorably recommended in earlier investigations. A decision reached on 10 February not to expand observation training allowed Kelly to continue to serve a twin-engine school and the instructors school. Greenville, Tex., was recommended as a basic school to replace Kelly, and difficulties at Sweetwater in locating a building area led to a search for another basic school site. This school was finally set up for Coffeyville, Kans. After much investigation of existing facilities which could be leased, the center finally decided to build its classification center at Kelly Field.[104] The center established no new civil primary schools to meet the 50,000 objective; it secured the expansion of its existing 16 primary schools by relocation of facilities at the main fields and by providing from three to nine auxiliary fields for each of the primary schools.[105]

The constructional problems in the Gulf Coast Training Center roughly paralleled those in the Southeast, but in general it seems to have encountered less delay. Majors Field at Greenville, Tex., and the airfield at Coffeyville, Kans., began flight training on 7 September and 12 November 1942. Both stations, however, were still under construction at the time. Coffeyville began training with no hangars; mud, snow, ice, and cold winds lowered the efficiency of both maintenance and training. The bombardier school at San Angelo used a CAA improved field, and the construction of all of its facilities was nearly complete when training began on 26 September. The other bombardier school at Big Spring also

used an improved field, and it began training on 25 September. The single-engine school at Eagle Pass, utilizing still another municipal field, began training on 12 November. Facilities were rushed at a new site near Hondo, and on 8 August the navigation school was moved there from Kelly Field. The twin-engine school at Blackland Field, Waco, Tex., opened for training on 15 December. South Plains Army Airfield at Lubbock, Tex., projected as a twin-engine school, was opened instead as a glider pilot school on 15 July.[106]

Planning for the installations to be needed for the 70,000 training rate virtually coincided with that for the 50,000 program in the Gulf Coast Training Center. On 30 March 1942 the Flying Training Command asked for an immediate decision on the new sites, and the next day the Center recommended Coffeyville and Winfield, Kans., for basic schools; Everman, Tex., for an advanced single-engine school; and Vernon, Lamesa, and Plainview, Tex., and Altus, Okla., for advanced twin-engine schools. These recommendations were modified by the evolving situation, and on 7 April four site boards were appointed by the center to study the problem. Coffeyville had to be substituted into the 50,000 program, Everman was disapproved by the AAF because of its commitments to the Navy, Lamesa and Plainview were dropped because of air-space congestion. Durant, Okla., was substituted for Coffeyville,; Pampa, Tex., for Lamesa; San Marcos for Everman. Later a site at Frederick, Okla., was taken in place of Vernon, possibly to appease Oklahoma political interests. In May the possibility that Lake Charles, La., a field unsuited for night training because of persistently low overcasts and night fogs, could be traded off to the the Third Air Force presented itself, and a site at Bryan, Tex., was

finally selected to replace it. In June the airfields at Garden City and Dodge City, Kans., which were being developed for British training, were transferred to the center, and the field at Liberal, Kans., was similarly presented to the center in September. These easy acquisitions permitted some readjustment, and accordingly the civil school at Brady which had been used as a basic flight school was reconverted into a primary school. San Marcos was changed from a single-engine school to a navigation school. The decision to turn Bryan into an instructors school led to the selection of another site for the school which was to be moved from Lake Charles. This site was located at Victoria, Tex. Sites at Childress, Del Rio, and Laredo, Tex., were proposed on 31 March for bombardier schools, but Laredo was later used for a gunnery school. By this almost incredible amount of trading and substitution, the center filled its needs for new school sites.[107] It also obtained three additional civil primary schools at Avenger Field, Sweetwater, Tex., at Waxahatchie and El Reno, Tex., and the primary schools used by the British at Ponca City, Okla., Miami, Okla., and Terrell, Tex.[108]

There were additional changes in the utilization of the stations between the time of the initiation of construction and its completion. The station at Bryan opened as an instructors school on 21 March 1943. Aloe Army Airfield at Victoria received the single-engine school from Lake Charles on 12 January 1943. Del Rio became a B-26 transition school instead of a bombardier school, and the three other bombardier schools were expanded to make up the difference. On 26 April 1943 the station at Dodge City also opened as a B-26 transition school. Garden City, considered as a twin-engine school during the planning, opened as a basic school on

16 January 1943. Liberal, the third of the Kansas stations originally intended for the British, began four-engine transition training on 22 March 1943. The twin-engine school at Frederick, Okla., began training on 23 April 1943, while that at Altus began training on 16 January 1943. Strother Field, Winfield, Kans., began basic training on 15 December 1942; Laredo started gunnery training on 30 November 1942; Pampa opened twin-engine training on 13 December 1942; San Marcos started its first class of navigators on 22 February 1943; and Childress began bombardier training on 20 February 1943. Still another basic flight school opened at Independence, Kans., on 22 March 1943. Typical constructional difficulties were encountered at most of these fields. In addition, work at Aloe was showed by a hurricane, work at Garden City was slowed by dust storms, and construction at Independence was hindered by a hard winter. New auxiliary fields were provided for these as well as for the older training stations in the center.[109]

Problems of site selection for the 50,000 and 70,000 programs were most perplexing in the West Coast Training Center. There, because of geographical and climatic characteristics, it ultimately became necessary to select sites with elevations higher than were deemed best, where utilities were hard to obtain, and where weather was not ideal. The task was further complicated by the necessity of avoiding the coastal defense areas along the Pacific. For the proposed doubling of the 30,000 training rate, the center had recommended on 21 August 1941 that it would have to add six primary schools, to convert four existing primary schools into basic schools, and to open two new advanced schools. On 26 December 1941 the OCAC directed the center to make immediate plans to train on a 50,000-

pilot level, and five days later the projected plan requiring an output of 70,000 pilots per year was explained to the center. Official instructions to appoint site boards were issued on 16 January 1942. During the latter part of the same month sites were inspected at Marana, Ariz. (near Tucson), near Hobbs, N. Mex., at Carlsbad, N. Mex., and at Pecos, Tex., and early in March a site board recommended Deming, N. Mex. All of these sites were subsequently cleared for schools. Four additional civil primary schools were needed, and during January a second primary school was sited at Phoenix, Ariz., near that already operating there (Thunderbird Field). During January and February a primary school was located near Blythe, Calif., and the remaining primary schools were located with somewhat more difficulty at Dos Palos, Calif., and Fort Stockton, Tex. The latter site was cleared although it was in the Gulf Coast Training Center's area of operations. 110

The new stations were brought into use fairly quickly. Kirtland Field, Albuquerque, N. Mex., was acquired from the Fourth Air Force (which was concentrating on the Pacific Coast) shortly after Pearl Harbor, and it began functioning as a bombardier school on 16 December 1941. Construction began at the Marana site on 16 April and was far enough completed to permit the first basic training to begin on 29 August 1942. Despite severe local dust storms construction was rushed at Pecos, thus permitting basic flight training to begin on 2 September. The school at Carlsbad made use of a municipal field, and construction, which began in May, was far enough advanced to permit bombardier training in October. Hobbs began training during the first week in September as a four-engine

transition school. Final approval of the Deming site was not given until April, and no bardier training consequently could not begin until the middle of December 1942. All of these fields were still under construction when they were opened. Marana, for example, had no landing area other than a fairly level strip of desert, and a detail of men had to fill rat holes on the landing surface daily. At Pecos no dust palliatives or sodding had been possible, and at times the dust was so thick that visibility was cut to 100 feet. Both Pecos and Fort Stockton suffered from water shortages. Few of the towns near the stations could house personnel entitled to live off the posts. At Marana civilian employees had to commute 64 miles a day to and from Tucson. The first classification work was carried on at temporary detachments at Winter and Williams Fields, but this function was concentrated at Santa Ana when the classification center opened there on 15 June 1942.[111]

Although much of the planning had been done, the sites for additional schools needed for the 70,000 training rate in the West Coast Training Center were formally chosen during April 1942. The center recommended sites at Douglas, Kingman, and Yuma, Ariz., and at Marfa, Tex. Another school, planned for Winslow, Ariz., was changed to La Junta, Colo., when the field under construction there was released by the British training program. Two new civil schools were acquired at Twenty-Nine Palms, Calif., and at Wickenburg, Ariz. Both stations had been built for the glider training effort and both began primary flight training in March 1943. Because of conflicts with defense activities the primary school which had been operating at San Diego, Calif., was moved to Tucson, Ariz., and opened there on 28 July 1942. Basic students at Ontario were trans-

ferred to facilities being given up by the British at Lancaster, Calif., and some American students were entered in the primary school at Mesa, Ariz., when the British began curtailing training there in November 1942.[112]

These new desert stations were brought into use as expeditiously as was possible despite problems of unavailable civilian housing, hard water in scarce supply, dust, and extremely high temperatures which lowered morale and training effectiveness. At La Junta the center acquired British facilities which were nearly ninety per cent complete, and training at the advanced twin-engine school there began on 2 November 1942. Kingman, used as a gunnery school because of the excellent ranges nearby, began training in January 1943. Advanced single-engine training began at Yuma on 6 January 1943. Work began at Douglas in June 1942, and the station began to function as a twin-engine school on 7 December 1942. On 22 May 1943 the field at Fort Sumner, N. Mex., which had been training glider pilots was changed to an advanced twin-engine pilot school.[113]

Procurement of facilities for the expanding AAF glider pilot programs accompanied the 50,000- and 70,000-pilot augmentations. After a long period of studied indifference to glider training, the AAF had begun a small training program in June 1941, making use of civil schools at Elmira, N. Y., and Lockport, Ill. An additional school was opened under a civilian contractor at Twenty-Nine Palms, Calif., in January 1942. German military successes with glider transport, particularly the invasion of Crete, caused the AAF to issue during 1942 a number of glider training objectives which were seemingly incongruous with both the materiel available for training and the tactical need for such personnel.[114] For the

most part the training centers used civil schools and Army fields which were under construction to meet the bulk of their glider pilot training responsibilities. The Southeast Training Center took over the civil school at Elmira on 1 May 1942 and subsequently obtained civil schools at Grand Forks, N. D., Crookston, Rochester, Stillwater, and Monticello, Minn., and at Janesville and Antigo, Wisc. The Elmira school was moved to Mobile, Ala., in June 1942. Two other schools were opened at Starkville, Miss., and Greenville, S. C.; good results were obtained at Greenville but Starkville was abandoned on 9 October 1942. Lockbourne Field, being built as an all-purpose air base, was obtained as a temporary glider school in June 1942 and was used until October 1942 as an advanced glider pilot school. The training was then moved to the airfield under construction at Stuttgart, Ark., opening there on 12 October. During the spring of 1943 all glider training activities of the Southeast Training Center were closed.[115] The Gulf Coast Training Center in December 1942 maintained civil contract elementary glider schools at Denton, Tex., Hamilton, Tex., Okmulgee, Okla., and Pittsburg, Kans.; basic glider schools at Lamesa, Tex., and Vinita, Okla.; and Army advanced glider schools at Dalhart and Lubbock (South Plains Army Airfield), Tex. Prior to this time the center had used schools at Spencer, Iowa, Hays, Kans., Lonoke, Ark., Aberdeen, S. D., Goodland, Kans., and Amarillo, Tex. The schools at Hays had moved to Denton in September, those at Spencer had moved to Hamilton in October, and the other three had been discontinued. During the spring of 1943 all of the schools except that at South Plains, which remained the only Army advanced glider training school, were closed.[116] The West Coast

Training Center had begun its glider pilot training at the Twenty-Nine Palms school in January 1942, and during 1942 it had obtained jurisdiction over other contract schools at Wickenburg, Ariz., Fort Morgan, Colo., Clovis (Tucumcari), N. Mex., Big Spring (Artesia), Tex., Plainview, Tex., and an Army advanced glider school at Fort Sumner, N. Mex. In November 1942 another Army advanced glider school was opened at Victorville, Calif. During the early part of 1943, in compliance with the Flying Training Command's order to cease glider training, all of the schools were closed and glider training was concentrated at South Plains.[117]

The completion of the construction required to meet the 70,000 pilot objective marked the peak of the flying training facility expansion. Although a considerable amount of planning was conducted for expansion for a 102,000-pilot training rate, this planning was scrapped in December 1942. The further training expansions were met by reducing the living space per man to 40 square feet, by the use of tentage, field kitchens, and pit latrines, and by the procurement of some additional auxiliary fields.[118]

Technical Training Facilities. The program of expansion thrust upon the AAF Technical Training Command by the beginning of American participation in World War II was ultimately to involve a six-fold increase in the 100,000 training rate operative in December 1941. The procurement of facilities for this great expansion was somewhat complicated by the fact that during most of 1942 and 1943 the command had no definitely scheduled over-all training objectives; in effect it had to train the men who were sent to it in commitments which often fluctuated from week to week.[119] On 20 January 1942, however, the command was given the authority to appoint its own site boards, and during the spring of 1942, as has been seen, the

AAF made arrangements for permitting the command to lease additional interim facilities which were needed for the rapid augmentation of the strength of the AAF.[120]

New headquarters were occasioned by the training augmentation and new facilities had to be provided for them. Major General Walter R. Weaver assumed command of the Technical Training Command on 18 February 1942, and almost immediately he announced that command headquarters would be moved to the small resort community of Pinehurst-Southern Pines, N. C., where it would be "in close proximity to Washington." Transfer of the headquarters to a hotel (which was leased for $30,800 a year) was accomplished on 15 April. The airport, called Knollwood Field, also had to be improved for the use of the headquarters, and after several additional hotels were leased, the headquarters was accommodated as well as possible in a community which apparently resented the presence of the Army. On 5 March the War Department directed the organization of four district headquarters within the Technical Training Command: the First District (with headquarters at Raleigh, N. C.), Second District (with headquarters at St. Louis, Mo.), Third District (with headquarters at Tulsa, Okla.), and Fourth District (with headquarters at Denver, Colo.). Each of the district commanders was put in general supervision of the technical schools in his geographical district, and General Weaver also charged them with the general responsibility of selecting facilities to house their personnel. All final plans for construction, however, had to be forwarded to the headquarters of the Technical Training Command, and thence to the AAF. In September 1942 the district commanders were authorized to take final action in the name of the Technical Training Command for projects

costing less than $40,000. They were authorized to approve layouts, to make minor changes in plans, and to approve plot plans for construction at factory schools. On 30 November 1942 a Fifth District was activated to control all technical training activities in the state of Florida. Each of the district headquarters occupied leased space.[121]

Pursuant to General Arnold's directions to push construction and to lease for immediate needs, the Technical Training Command launched a program along both lines. During 1942 and 1943 eight new technical training installations were rushed into operation. At Kearns, Utah (just outside of Salt Lake City), a plot of 1,405 acres was purchased, a contract for a theater of operations cantonment was let on 16 June, and Basic Training Center No. 5, was opened on 20 July, although construction was not completed until October 1942. A construction directive on Basic Training Center No. 10 at Goldsboro, N. C., was issued to the Corps of Engineers on 12 October 1943, but the post, delayed in construction by rain, was not activated until March 1943. Land adjacent to the Madison, Wisc., municipal airport was purchased, the airport was leased in April 1942, a cantonment was constructed, and on 3 August 1942 classes were begun at Truax Field in Radio School No. 3. The location of the cantonment area in a former peat bog (a decision dictated by the fact that no other area of sufficient size could be had adjacent to the airfield) ultimately raised the costs of construction by $6,000,000 over the original estimated cost of $12,000,000. By September 1945 Truax with a capacity of 16,774 men had cost $18,253,051 while Amarillo with a housing capacity of 16,778 had cost only $13,912,974. Radio School No. 4 was located on a leased site adjacent to the Sioux Falls, S. D., municipal airport. Despite

storm damages in May, the school began training on 2 July 1942.[122]

All of the new mechanics schools were located adjacent to municipal airfields. At Amarillo, Tex., the government leased land adjacent to English Field on 26 March 1942, and by August the cantonment was approaching completion. Training began on 7 September 1942. Construction ran nearly two months ahead of schedule at Lincoln, Neb., and the school began there on 6 July 1942. The mechanics school at Seymour Johnson Field, Greensboro, N. C., began training on 10 August 1942 while its cantonment was still under construction. At Gulfport, Miss., the government leased the field which was being improved by the CAA and, although construction was only about two-thirds complete at the time, training began on 2 September 1942.[123]

Since the construction of these installations was relatively simple, requiring only theater of operations housing with limited airfield development, the time interval between the initiation of work and actual use of the stations was fairly short. Construction costs, however, soared under the expedited procedures. By September 1945 the eight stations originally constructed for the Technical Training Command, with a combined housing capacity of 130,924 had cost $120,673,862. The stations were among the most expensive constructed for the AAF. The quick utilization of these roughly constructed facilities also caused some hardships to personnel so housed. Respiratory diseases at Kearns, Truax, and Sioux Falls constituted an almost constant problem during the winter months. Inclement weather turned the partly completed camps into muddy bogs.[124]

The great influx of men during 1942 also brought about an expansion of existing facilities. Construction of a cantonment at Buckley Field,

previously a field auxiliary to Lowry, was begun on 5 May, and by 6 July 1942 armament training was begun there. Space allotments at the older posts were reduced from 50 square feet per man to 40 square feet per man in accordance with Army Regulation 40-205 issued on 31 December 1942. Tent camps were erected to take care the overflow. One huge tent camp at Jefferson Barracks, housing approximately 12,000 men, caused great difficulties: deteriorating canvas during the spring of 1942 made for health hazards, and the fact that some of the men housed there had to march an excessive distance for their meals added to the inefficiency of the arrangement. In June 1942 this camp was ordered abandoned. Across the river, Scott Field in March 1942 was housing 12,505 enlisted men in barracks designed for 11,340. At Sheppard Field barracks were so crowded that there was "little more than sleeping room."[125]

Even with the construction of new stations and with the utmost expansion of the older stations, it was still manifestly impossible for the Technical Training Command to house and train all of its personnel in Army installations. Facilities which could be leased had to furnish a "stop-gap" solution to the problem. General Weaver, a man known for his vigorous actions, seems to have decided fairly early that he could use the hotels of the nation--especially those in resort areas which were going to be hard pressed by the war emergency--to house a part of his command. The AAF regarded this plan as a somewhat hazardous experiment, and many civilians thought the whole thing smacked of military occupation and soft living. General Weaver, however, maintained that "the best hotel room is none too good for the American soldier."[126] Miami Beach, Fla., had hotels and apartments for 90,000 winter tourists, and late in

1941 it was faced with the prospect of a greatly curtailed tourist trade. Early in February 1942 a group of Miami citizens accordingly informed General Weaver that 17,000 rooms were immediately available and that 70,000 could be had by April. Within five days after the arrival of General Weaver in Miami on 18 February, the Air Corps Officer Candidate School was located in leased facilities at Miami Beach. During the summer and fall of 1942 two additional basic training centers and an Officers Training School were opened there, and at the peak of its operations at Miami the Army housed about 82,000 men in some 326 hotels and apartment houses.[127] In June 1942 facilities in the hotels and apartment houses at St. Petersburg and Clearwater, Fla., were leased for Basic Training Center No. 6. Eventually some 58 hotels and apartment buildings were leased, and from February to April 1942 (while Kearns was almost inoperative due to a respiratory epidemic) an additional 10,000 man tent camp was in use.[128] Basic Training Center No. 7 was established in 48 hotels at Atlantic City, N. J., in June 1942.[129] During the fall of 1942 the quota of radio operators to be trained was suddenly increased from 48,000 to 101,000, an augmentation to be accomplished by the end of the year. Because of the pressure of the training, General Weaver secured condemnation proceedings enabling the government to take over the Stevens, Congress, and Auditorium Hotels in down town Chicago by 1 August 1942. The Corps of Engineers subsequently bought the Stevens for $6,000,000 since it was more economical to buy it than to pay the rent which the courts were about to allow. Several other buildings were leased through condemnation, and classes at Radio School No. 5 began on 1 September.[130] At Grand Rapids, Mich., two hotels and several other buildings were leased under more

amicable circumstances during the fall of 1942 for the use of a specialized weather school.[131] The radar school, moved from Scott to Morrison Field in February 1942, was transferred to occupy a leased club at Boca Raton, Fla., in May 1942. Additional cantonment housing and an airfield were subsequently built for this school.[132]

Other miscellaneous facilities were leased either in whole or in part for the expanding Technical Training Command. The Fresno, Calif., county fairgrounds, which had been used as a Japanese alien internment camp, was acquired by the Technical Training Command, and on 29 October 1942 Basic Training Center No. 8 was opened there while the Japanese were still being evacuated.[133] The Federal Indian School at Tomah, Wisc., was taken over from the Interior Department, and the first classes of a control network system radio school began on 3 November 1942.[134] Fawling Preparatory School for Boys, Fawling, N. Y., was leased in October 1942 for training cryptographers.[135] Valley Forge Military Academy at Wayne, Pa., began a preparatory course for 500 ground duty aviation cadets in November 1942. These cadets were quartered in academy buildings at a cost to the government of three dollars per man a day, but the academy gave some training in addition to housing the cadets.[136] In December 1942 a contract was executed with Yale University whereby the university leased facilities for the training of the communications, engineering, armament and photography aviation cadets. These detachments were transferred from Scott, Chanute, and Lowry Fields in January 1943.[137] Harrisburg Academy at Harrisburg, Pa., was leased for the Air Intelligence School, which opened there in April 1942.[138]

In addition to these leased facilities, the Technical Training Command

farmed out a great number of its trainees to civilian institutions. Harvard University began training classes of 300 student officers every five weeks in June 1942 in a special statistical course.[139] Other men were given training in civil contract technical schools, mechanical schools, and in factory training schools. In May 1943, shortly before such detached training was curtailed, the command had students in 35 contract technical schools, in 13 civilian mechanics schools, in 11 factory training schools, and in 5 machinist schools. Meteorology training was being given at that time in 5 colleges and universities, and 11 colleges and universities were giving clerical training.[140] Housing at most of these factory, technical, and mechanics schools was usually fair to unsatisfactory. Hotels, barracks, YMCA buildings, hangers, motor courts, and industrial buildings were used by such schools in the Second District. At one school the students had to use the showers at a high school two blocks from their living quarters.[141]

The employment of these leased facilities was undoubtedly less satisfactory than the use of Army cantonments at regular stations would have been, but it did result in savings in labor and critical materials at a time when the nation's strength was hard pressed to mount a successful war effort. From a long-range viewpoint, capital and productive effort which would otherwise have gone into temrorary barracks with little post-war salvage value to the nation was saved. In October 1942 a House investigating committee reported that the cost per man at Miami was considerably below the amount which would have been spent in housing the same man in Army barracks. Although the Senate's war investigating committee concluded that facilities had been obtained at Miami at an annual rental

of [illegible],000,000 which would have cost $100,000,000 and would have taken six months to complete, it also thought that the AAF had exercised too much persuasion and even intimidation in negotiating leases there. It is also significant that the Army, in its much criticized purchase of the Stevens Hotel in Chicago (a hotel which had been built at an over-capitalized cost of approximately $2,000,000) complete with its furnishings for $[illegible],000,000, later realized $441,000 from the sale of surplus furnishings and sold the hotel after occupying it for more than a year for $5,000,000.[1/2]

Airfields for Operational and Replacement Training. Prior to Pearl Harbor the activation and training of new groups had been accomplished by splitting off cadres from old groups, filling up the new groups with recruits, and giving cooperative training between the two combat groups until the off-spring had sufficient personnel and skill to occupy a separate air base. With the beginning of the war, however, it was necessary to move most of the old groups overseas, leaving only a few groups capable of giving parenthood and training to off-spring. Moreover, the First and Fourth Air Forces had important defense missions and could give only limited attention to the training of new groups. The Second and Third Air Forces were accordingly given the mission of training both new groups and replacement groups. The I Troop Carrier Command was established and provided with stations for similar purposes. For a short time during 1942 the I Concentration Command staged the new units in their overseas movements. Most of these functions needed new air bases and auxiliary airfields.

For the first five months of 1942 the First Air Force devoted most of its time and attention to the air defense situation along the Atlantic

coast, but on 2 May the I Intercentor Command (to be redesignated on 15 May as the I Fighter Command in the general redesignation of "pursuit" units as "fighter" units) was directed to lay out an OTU program. By attaching a satellite group to each of its operating groups for three months of supervised on-the-job training at its group and squadron stations, it was to fill both defensive and training missions. On 1 June the air force was formally directed to operate three Operational Training Units (OTUs), but it subsequently was able to open only two. These two OTU's, however, operated under the New York and Philadelphia Fighter Wings during 1942 and 1943.[143] The Fourth Air Force, like the First Air Force, was primarily occupied with a defensive mission, but in May it was also directed to operate two on-the-job fighter OTU's and one OTU for P-38 units during 1942 and 1943.[144] Both of the air forces used their installations which they had developed for defense in their training programs, and, except for some additional housing, they required no new facilities.

The Second Air Force, as has been seen, was relieved from defense activities on the Pacific Coast during January 1942 and assigned a mission of training heavy bombardment groups and replacement crews. The loss of its bases on the coast, however, left the air force with only Pendleton, Gowen, Geiger, and Salt Lake City for the initiation of its training. On 26 January Davis-Monthan Field at Tucson, Ariz., was transferred to it, and on 21 March the field nearing completion at the Dendover Bombing Range was elevated to the status of an air base.[145] On 1 March 1942, when the heavy bomber development program was officially begun, the Second Air Force set up parent OTU groups at Davis-Monthan and Pendleton with their off-spring groups at Geiger and Gowen. Use of Wendover and Salt Lake City

was postponed until the next cycle of training six weeks later, when it was believed weather would be better. In April these two fields received newly activated groups.[146] In order to bring up the badly deficient level of technical training, the Second Air Force established a camp in WA barracks at Yakima, Wash., and trained mechanics at the Feery Institute there. Another field training unit for radio operators was set up, and Washington State College, Pullman, Wash., and two civil clerical schools were used to train clerks. For training gunners and navigators it set up a school at Camp Joseph Lee near Spokane, Wash. These schools continued in operation until late 1942.[147] During April 1942 a series of heavy bomber accidents at Pendleton led to the decision to exchange the parent group there and the Aviation Engineer regiment in training at Davis-Monthan. This movement was made early in May.[148]

This program utilized the existing facilities to the utmost. On 1 April 1942, Major General F. L. Martin, commanding the Second Air Force, accordingly asked for the rapid completion of the air bases being built at Walla Walla and Pendleton, and for the construction of new heavy bomber bases at Pocatello, Idaho, Great Falls, Mont., Yakima, Wash., Salina, Kans., and Casper, Wyo.[149] Each of these sites had been recommended by an 84-group site board, and within a week the Directorate of Base Services had forwarded requests for land acquisition at Salina, Great Falls, and Pocatello to the Corps of Engineers. Other requests for Casper and Yakima seem to have followed.[150]

On 17 May 1942 Brigadier General Robert Olds assumed command of the Second Air Force, and he almost immediately prepared larger expansion plans in anticipation of all heavy bombardment OTU and RTU functions being

assigned to the air force. By the end of May he had decided to abandon the idea of giving all training to new groups and combat crews at single stations in favor of three phases of training, each of 30 days duration, to be given at separate stations. Third phase training was to be given under simulated combat conditions and required the groups to operate from squadron airfields. His first casting of the program (somewhat changed in execution) required first phase bases at Geiger, Gowen, and Davis-Monthan; second phase bases at Walla Walla, Wendover, and Alamogordo; and third phase bases at Great Falls, with satellite squadron airdromes at Cutbank, Lewiston, and Glasgow, Mont.; Rapid City, S. Dak., with satellites at Pierre and Philip, S. Dak., and Scottsbluff, Neb.; and Sioux City, with satellites at Huron, Watertown, and Mason City, S. Dak. The location of the satellite airdromes was obviously tentative. For the expansion of combat crew training during 1943 General Olds wanted to add airfields at Ephrata, Wash., Casper, Wyo., and Topeka to each of the three phases. For the expansion of OTU training during 1943 he wanted to add Pocatello, Pueblo, and Salina to the three phases. Salt Lake City was to receive and process all personnel coming into the air force.[151] This plan of organization was approved by the AAF on 11 June 1942.[152]

The specified plan for the use of air bases was almost immediately superseded as the Second Air Force embarked upon an extremely complicated negotiation for new facilities. Requirements were established and revoked almost according to the caprices of the daily situation. On 1 June, for example, General Olds requested the assignment of such of the main bases mentioned in his plan as were not already in the Second Air Force fold. He also requested the sites or local airfields at Pratt, Kans., Lordsburg,

N. Mex., Engle, N. Mex., and Wink, Tex. As satellites for Walla Walla, he asked for the local airfields at Madras, Redmond, and Burns, Ore. For air support use, he asked for the new base at El Paso. Since he had no need for Yakima, General Olds mentioned that he had cancelled construction directives there.[153] The sites requested were assigned, but almost at once the Second Air Force found that it did not need Lordsburg, Engle, and Wink.[154] The field at Burns, being built by the CAA at a site which General Olds found unsatisfactory for heavy bombardment was also released. In Kansas and Nebraska, where the Navy had cleared for its use several of the fields desired by the Second Air Force, General Olds met additional difficulties, and, after a great deal of bickering, he succeeded in getting only one site--that at Grand Island, Neb.--out of five sites desired.[155] By July the construction program had begun to emerge in intelligible form. The AAF approved the construction of three bases with so-called "blind" landing fields having one runway 10,000 by 500 feet in dimensions, three dispersed satellite fields and 1? other satellite fields with normal parking and taxiways, and a new air base at Pyote, Tex. In August the AAF authorized the construction of the over-sized landing fields, suitable both for instrument landings and for B-29 and P-32 operations, near Ephrata, Wash. (subsequently called Moses Lake Army Airfield), at Clovis, N. Mex., and at Salina, Kans. By December a fourth over-sized landing field had been authorized for a new base at Mountain Home, Idaho.[156]

The location of the satellite fields, however, continued to meet clearance difficulties.[157] On 9 September General Olds protested bitterly that the Second Air Force had "been greatly hindered in meeting the commitments made ... in the production of heavy bombardment units and crews

due to the slowness resulting apparently from the extremely complicated procedure involved in the approval of construction projects and the issuance of construction directives." By 1 October he required the use of satellites for Sioux City at Watertown and Mitchel, S. Dak., and at Scribner, Neb.; satellites for Great Falls at Cutbank, Glasgow, and Lewiston, Mont.; satellites for Rapid City at Pierre, S. Dak., and at Ainsworth and Scottsbluff, Neb.; and satellites for Forbes at Luning, Neb., and at Fairmont and Herrington, Kans. By 1 December he wanted satellites for Salina at Walker, Great Bend, and Pratt, Kans., and satellites for Walla Walla at Pasco and Redmond, Ore. By 1 February he would need the satellites for Kearney at McCook, Grand Island, and Harvard, Neb. In rebuttal to the charges of undue delay, the Corps of Engineers disclaimed "any part in delaying the construction of the Second Air Force projects." Before a construction directive could be issued it had to get a program from the WDC, the site had to be cleared by the AA with the Interdepartmental Air Traffic Control Board, and there also had to be a "reasonable assurance" that a real estate directive would be issued before any site acquisition procedure could be started. It took an average of less than one day to issue a construction directive after the receipt of a program or a real estate directive, and construction had actually been initiated at the airfields in question in an average time of less than 13 days after the issuance of the construction directives. The Office of the Chief Engineer, nevertheless, urged its Division Engineers to expedite the work on the satellites still more.[158]

This tortuously developed program of expansion represented the work of the construction of new installations for the Second Air Force dur'ng

the war period. Some additional construction at the existing bases was, however, permitted because of additional requirements. On 5 November 1942 the Directorate of Base Services notified the Second Air Force that the programming of construction at AAF establishments would have to be brought to an end and that after 1 December 1942 new projects would have to be cleared with the War Production Board.[159] General Olds replied that while it was desirable to bring war-time construction to an end, he did not believe it could be done until the end of the war. He, nevertheless, asked only for additional housing for 1200 persons at Tucson, Pyote, El Paso, Clovis, and Alamogordo so that they could expand training during the winter months.[160] In January 1943, in response to an AAF query regarding facilities needed in the tapering off of construction as a part of the saturation of air power program, General Olds recommended that nine of the satellite fields be built up to group station levels so that they could be used by groups being processed for overseas movements. These projects were recommended to the Chief of Engineers in January 1943.[161]

During 1942 and 1943 the new stations were built and the older bases were expanded to meet their operational requirements, seemingly with a maximum of difficulties. To General Olds, who anxiously awaited the completion of each project, almost everything seemed to conspire to hold up the building effort. In November 1942 he protested that so many regulations had been written around the expenditures of amounts less than $40,000 that, to his knowledge, not a single penny had been made available to the Second Air Force through such channels.[162] Priorities were also vexatious. General Olds thought, for example, that his projects were so closely related

to overseas movements as to deserve the AA-2 priorities given to projects directly connected with such movements. The Directorate of Base Services, however, explained that the continental AAF activities desired approximately 40 per cent of their projects urged on one pretense or another and 163
that it could not break up the priority system which had been established. In a long summary of deficiencies requiring correction by the AAF written on 19 November, General Olds formally protested again about the amount of time which he had discovered to be lost "due to the time element involved in the transmission of papers through various agencies of the Army Air Forces and the War Department." He charged that such transmissions between the Directorate of Base Services and the Office of the Chief Engineer required four trips requiring 4 to 6 days each or an average time lag of 20 days. Much difficulty had also been encountered from green lumber which promptly shrank and had to be replaced. Delays had been encountered because of shortages of materials while concentration camps for aliens and prisoners of war had been completely finished. Two months later Brigadier General E. L. Eubank, Director of Bombardment, pointed out that when all land acquisition papers were properly accompanied with the necessary information from the field only one trip between the Directorate of Base Services and the Office of Chief of Engineers was required. The time interval for transmitting the papers through regular message center channels (it was impractical to use a courier for each of the 2,000 pieces of correspondence passing between the two offices each week) was only one day. As for the use of green lumber, for more than a year there had not been enough seasoned lumber in the country to construct a single project. The highest possible priority had been assigned to the Second Air Force

projects, and the highest priority of all had been assigned by the President to detention camps--a situation over which the AAF had no control.[164]

Despite all of these delays the initial base construction program of the Second Air Force was rushed to completion in a remarkably short time. By September 1942 eight bases (Geiger, Gowen, Davis-Monthan, Walla Walla, El Paso, Pocatello, Herlong, and Ephrata) were in use for heavy bomber training.[165] All of the installations had 54- and 24-group program origins, but Dyersburg and Ephrata had been bombing and gunnery range fields until the beginning of the 1942 program. Dyersburg, when its first heavy bomber group arrived in April 1942, had less than a dozen buildings for housing.[166] Conditions were similarly crude at Ephrata in June 1942 when its first group arrived for training.[167] During 1942 and 1943 both bases received enlargements and improved landing fields. In October 1942 four more bases (Pueblo, Sioux City, Rapid City, and Alamogordo) became operational.[168] The first three of the bases had been conceived during the 24-group program; Alamogordo, again, was a former bombing and gunnery range station. Construction of bombardment group housing had begun in February 1942, the landing field facilities were completed on 19 June, and by December 1942 most of the construction at the base was complete.[169] In November and December 1942 the four bases--Pocatello, Casper, Salina, and Great Falls--which the Second Air Force had requested built on 1 April 1942 came into full operation.[170] Work on Smoky Hill Army Air Base at Salina had actually begun on 5 May and all major construction on the first projects was complete on 15 December 1942, but completion of the over-sized 10,000-foot runway took somewhat longer.[171] Construction began at Pocatello on 22 May,

its housing was complete on 15 October, and on 1 November it received its first heavy bombardment group.[172] Work began at Great Falls on 9 May and the base was entirely complete on 28 February 1943; on 30 November the first heavy group to train there arrived. The runways, however, had been constructed during the fall of 1942 during very cold weather, frozen aggregates had gone into the embankment fills, and the runways began to settle and develop deformities with the spring thaws of 1943. These runways had to be repaired, but the Second Air Force continued to use the field until 16 October 1943 when it turned the field over to the Air Service Command.[173] The air base at Casper seems to have performed satisfactorily although the Second Air Force entertained apprehensions that it could not be operated for training during the extremely severe winters of the region.[174]

During the winter, spring, and early summer of 1943 the other bases being built for the Second Air Force came into operation.[175] Constructional problems on all but three of the stations seem to have been minor, but the three satellite fields of Great Falls-Cutbank, Glasgow, and Lewiston--encountered the same runway failures in April 1943 that had plagued the main base. Since the estimated cost of repair to the four stations was $9,650,000, the Second Air Force used the satellite fields for five months and then abandoned them.[176]

The completion of this development program ended the era of the Second Air Force's construction of new airfields. Thereafter the air force obtained new facilities by trading with other continental AAF agencies for fields in excess of their needs. On 12 December 1943, for example, the air base at Blythe, Calif., was taken over from the I Troop Carrier Command,

and a heavy bombard unit from which had been sorely beset by bad weather at Orlando was moved there to continue its combat crew training.[177] In January 1943 the Second Air Force also began to exploit the air support field at Alexandria, La., for heavy bomber overwater flight training, and during the same month it secured the airfield at Galveston, Tex., for the same purpose. In April it began using the field developed by the Technical Training and Antisubmarine commands at Gulfport, Miss., for overwater ... . In February 1943 it acquired the fields at Dalhart, Tex., and ..., Tenn., for heavy bombardment ... training. During May 1943 the headquarters of the air force were moved from Fort George Wright to leased facilities in Colorado Springs, Colo.--a move which was justified by the southeastward shift in the air force's area of responsibility.[178]

The Third Air Force, ultimately to be charged with all OTU and RTU functions for medium, light, and dive bombardment units and RTU for fighter aviation, paralleled the expansion of the Second Air Force. For a number of reasons, however, its construction problems were less serious. In January 1942 the Third Air Force had 19 stations assigned, most of which were suitable for its training needs.[179] It also had a great number of CAA improved civil airfields within its operational area which were fairly well suited to the use of medium and light aircraft.

Despite its eventually assigned training role, however, the Third Air Force's first operational training was to be given to heavy bombardment groups. Brigadier General Follett Bradley of the III Bomber Command proposed on 1? January 1942 that the two heavy bombardment groups remaining in his command should be used for operational training. Each of them would

require an established base where it and its off-spring group could train for six weeks, an outlying field for transition flying, and a third airfield to which the off-spring group could be sent for an additional six weeks of independent training. This plan was approved by the Air Force Combat Command on 2 February, and the Third Air Force accordingly established two CTU's--the first (B-24) at Barksdale and the second (B-17) at MacDill. For the use of the MacDill CTU the Third Air Force secured the use of CAA improved fields at Tampa (Hillsborough-Henderson County Airfield) and at Sarasota, Fla. No transitional flying field was found for the Barksdale, CTU, but the CAA improved municipal airport at Fort Myers, Fla., was secured as its unit training field.[180] These fields received tactical use when they were still little more than improved runways. At Sarasota the heavy group sent to the field for final training on 1 April found unfinished asphalt runways (which soon deteriorated under the use of the heavy bombers) and a tent camp area. A formal lease for the field was not negotiated until 1 July 1942.[181] Page Field at Fort Myers was leased on 19 February and the first B-24 group arrived from Barksdale on 31 March.[182] The first group to train at Fort Myers, however, was stripped of its flight echelon to reinforce the Middle East and had to be committed to unit training again. In order to move the group out of Page Field, the Third Air Force secured a lease on another Florida CAA-improved field at Lakeland and transferred the group there on 17 May.[183] Training of heavy groups was not long continued by the Third Air Force, for on 11 June 1942 the AAF shifted all such training to the Second Air Force.[184]

By the same authority that took away the heavy bombardment training, the Third Air Force was made responsible for all medium, light, and dive

[illegible] employment training. Originally it had been intended on 27 February to activate all training [illegible] groups, but lack of aircraft had caused postponement of the OTU until June. Training was worked out along the lines of the [illegible] plan which required five weeks for the assembly of the new group, five weeks of supervised training under the tutelage of a parent group, and five weeks of unit training at a separate airdrome. Each OTU was also to have an auxiliary field for transitional flying practice. Three OTU's were set up: a B-25 OTU at the Lexington County Airport, Columbia, S. C., with an auxiliary field at Congaree, S. C., and a unit training field at Walterboro, S. C.; a B-26 OTU at Lakeland using [illegible] Field as its auxiliary and landing field at Sarasota as its unit training field; and a B-26 OTU at [illegible] Hillsborough-Henderson County Airport as its auxiliary and [illegible] as its unit training field. Later Sarasota proved unsuitable for B-26 operation and the field at Lakeland was taken into the program as a substitute. The medium OTU program thus involved the use of [illegible] facility—the airfield at Walterboro.[185] This CAA [illegible] field was leased on 30 April, and a construction program was quickly begun. When the B-25 group from Columbia moved there on 5 August, however, the field was in poor shape. One runway almost immediately sank in the middle, four new buildings collapsed, and there was only one water tap on the field. Nevertheless, the medium group completed its training [illegible] on schedule.[186]

Concurrently with and destined to replace the medium bomber OTU program, the Third Air Force conducted combat crew or RTU training. Part of this training was conducted by the OTU's through the simple device of training extra air crews with each new bomb unit, but in order to increase

the productive capacity still more, the Third Air Force activated a medium bomber RTU to function at the new air base at Greenville, S. C., on 6 July 1942.[187] This RTU used the CAA improved municipal airfield at Anderson, S. C., and Coronaca Field, a CAA improved field at Greenwood, S. C., for transition flying.[188] In July 1942 the OTU at Orangeburg was replaced by an RTU which remained in operation until February 1945.[189] After training four student groups, the B-25 OTU at Columbia was converted into an RTU in January 1943 and remained in operation until 1945.[190] Another B-26 OTU was activated in July 1942 at MacDill and transferred to Fort Myers in the following month. In December 1942 it was again transferred to the new field that had been built on the Avon Park bombing range. It moved back to MacDill in October 1943, where it remained until the following month when it was transferred to Lake Charles, La., to finish out the war.[191]

For the most part the very complex light and dive bombardment OTU and RTU programs, undertaken by the III Air Support Command, made use of existing facilities and the other airfields which were built up for air support use. The scheme of such training involved the same periods of formation, supervision, and unit training as the medium bombardment program. One light bombardment OTU operated at Key Field from June to August 1942 and trained a student group in all three phases at the same time. Another light bombardment OTU functioned at Will Rogers Field from May to October 1943, sending its off-spring groups to Lake Charles, DeRidder, Woodward, Okla., Ardmore, Okla., and Muskogee, Okla. This OTU was moved to Morris Field, Charlotte, N. C., in November 1943 to finish out the war as an RTU. In August 1943 a second OTU group was set up at Florence, S. C., at the airfield which had been acquired from the I Troop Carrier Command. A dive

bombardment OTU was operated at Key Field from August to October 1942, giving all three phases of training to its one student group there. A second dive bombardment OTU operated at Hunter Field, Savannah, Ga., from July 1942 to January 1943, sending two student groups to train at Waycross, Ga., and one to DeRidder. With the redesignation of all dive bombardment units as fighter bomber units on 15 August 1943 the two dive bombardment OTU's were converted into fighter bomber OTU's and placed under the II Fighter Command. The OTU at Key Field subsequently sent two groups to unit training at Congaree, S. C., and one to Drew Field. The OTU at Hunter moved to Drew in February 1943 and subsequently sent two student groups to Walterboro and one to Lakeland.[192] The new stations involved in this training effort were thus those at Waycross, Ga., Ardmore, Woodward, and Muskogee, Okla., and at Congaree, S. C. All but the first of these had been improved in the air support field developmental program. The Waycross field had been built by the CAA, and in June 1942 the Corps of Engineers had begun the construction of runway extensions and theater of operations housing. The first dive bombardment group to train there arrived in August 1942.[193]

The Third Air Force initially established two fighter OTU's, but on 2 May 1942 it was relieved of the responsibility for such operational training and directed to train fighter pilot replacements instead. Two fighter replacement training centers were implemented in June 1942 at Morris Field and at Dale Mabry Field. Because of the unfavorable weather at Charlotte the FRTC was moved to Drew Field in August. The FRTC at Drew subsequently acquired additional squadron stations and sub-bases at Sarasota and Pinellas, Fla. In January 1943 the FRTC functions were moved from

Drew to Sarasota and a new sub-base was acquired at Punta Gorda, Fla. By May 1943 the center also had sub-bases at Bartow, Fort Myers, and Hillsborough. The Dale Mabry FRTC used sub-bases at Thomasville, Ga., Harris Neck, Ga., and at Perry, Fla.[194] Facilities at Venice, Fla., formerly used by the Air Service Command, were taken over for fighter squadrons in June 1943 in a further extension of the Sarasota FRTC operations.[195] Most of these new stations were CAA improved municipal airfields for which the Third Air Force had secured the construction of theater of operations housing in its final statement of needs under the saturation of air power developmental program.[196]

The Third Air Force also conducted reconnaissance replacement training successively at Will Rogers Field, William Northern Field at Tullahoma, Tenn., and finally at Key Field, but these training activities utilized only existing facilities.[197] In March 1943 the Third Air Force took over the photographic reconnaissance OTU which had been operating at Peterson Field, Colorado Springs, Colo., under the direct control of the Director of Photography since April 1942.[198] It also operated an Aircraft Warning Unit Training Center at Drew Field.[199] It operated a general replacement depot at Daniel Field, Augusta, Ga., during 1942, and at temporary facilities in Plant Park in Tampa after February 1943.[200] During 1942 the Third Air Force gave cold weather operational training at Alpina, Oscoda, Grayling, and Saginaw (Tri-City Airport), Mich. In addition to these main facilities the Third Air Force, like other AAF units, used a number of civil fields at which there were few if any military improvements for auxiliary flying training fields.

The smallest of the AAF organizations dealing in operational and replacement training was the I Troop Carrier Command, an organization established on 30 April 1942 to train combat troop carrier groups and wings for airborne operations.[201] According to the plan for training developed during April 1942, the I Troop Carrier Command was to consist of a headquarters, 3 wings, 12 groups, and 48 squadrons. During the training period it would need 12 airfields, one of which was to serve its headquarters, four to be used for joint air-ground training, and three to be used for preliminary troop carrier flying training.[202]

The work of selecting stations for troop carrier training actually had been undertaken in the general air support base development program. On 20 February 1942 the Chief of the Air Corps had been directed to appoint a board of officers to select a site for an advanced glider school, and this board apparently recommended a site between Laurinburg and Maxton, N. C.[203] The Directorate of Ground-Air Support, taking cognizance in planning of the needs for troop carrier training by July 1942 had secured the inspection of sites at Florence, S. C., and Billy Mitchell Field at Milwaukee, Wisc. Noting that site inspections were being undertaken at Alliance, Neb., Ardmore, Okla, Blythe, Calif., and Sedalia, Mo., the Directorate of Ground-Air Support on 2 July 1942 directed the I Troop Carrier Command to finish the site selection by designating a board to inspect any additional stations which might be needed.[204]

With most of the preliminaries thus accomplished, I Troop Carrier Command encountered few difficulties in locating its activities on these and other air support stations which were either ready for use or were being built. A tract of land adjacent to Stout Field, the Indianapolis,

Ind., municipal airport, had been leased on 7 April and in June 1942 the cantonment constructed there received the headquarters of the command.[205] Preliminary military transition training had to be given to civil airlines pilots being indoctrinated, and the I Troop Carrier Command utilized Stout Field, Billy Mitchell Field, Kellogg Field, and Camp Williams Airfield (Camp Douglas), Wisc., for this purpose.[206] As new and more suitable facilities became available, these fields were given up (Camp Williams and Billy Mitchell Fields were given up in September 1942), and by December 1942 all transition flying training was centered at Bergstrom Field, Austin, Tex.[207] This field's site had originally been leased for the construction of an observation base, but since the field could not accommodate more than 15 C-47's in its traffic pattern, four nearby municipal fields were leased for landing practice until two additional parallel runways could be finished at Bergstrom in July 1943.[208]

The troop carrier operational training program made use of most of the facilities originally projected for the use of I Troop Carrier Command. As has been seen, however, the airfields at Blythe, Calif., and Ardmore, Okla., were transferred to the Second and Third Air Forces. The airfield at Florence, S. C., was used for troop carrier training from 30 June 1940 to 5 March 1943, at which time it also was transferred to the Third Air Force.[209] To accomplish the bulk of its operational training the I Troop Carrier Command was thus left with eight airfields. Three of these (Bowman, Lawson, and Pope) were prewar airfields. One--Camp MacKall, N. C.--was a ground forces post and airfield utilized by sufferance. The remainder had been built for the command.[210] Laurinburg-Maxton had been built as an over-all field between 20 June and 31 October 1942, and it became operational in the

following month. The airfield at Sedalia, Mo., was ready for use in September 1942. Alliance became operational in December 1942. The last of the fields to come into use was at Grenada, Miss., which (although built as an air support base) became a troop carrier RTU in June 1943 and was closed in March 1944.[211] Few difficulties were encountered in the occupation and utilization of these fields, and by February 1943 the I Troop Carrier Command could report that it required no additional facilities to complete its part of the 273 group saturation program.[212]

One additional AAF function was concerned with the OTU process during a part of 1942. This was the short-lived I Concentration Command which was established on 19 June 1942 to process and expedite the movement of AAF tactical units (later modified to include only the air echelons of such units) to the overseas theaters of operations. On 15 November 1942 the command was ordered to disband, and its work was given to the air forces which were training units for export. During the course of its short and troubled career the command used eight assigned airfields, located chiefly in the Middle West, and other fields (Dow, Grenier, and Westover) borrowed from the First Air Force. On 8 July it was assigned operational control (the bases were administered by the Air Service Command) of Selfridge, Baer, Syracuse, Kellogg Field, and Lockbourne, none of which the command found suitable for its mission. Syracuse, for example, was still in process of construction and would not have runways as soon as needed. Baer was a pursuit field and its runways were too limited in dimensions and had too many hazards for staging the B-26 units which the command wanted to put there. Kellogg Field was short in housing capacity.

Selfridge, a fighter base, also needed additional runways. These defects were taken care of with new construction projects. In addition to these old bases, the I Concentration Command secured the assignment of leased facilities at Lunken Field, Cincinnati, Ohio, to serve its headquarters which were moved to that city in July 1942. The command also took over responsibility for the completion of the airfield at Dyersburg, Tenn., which had been suspended in June 1942. During August it sponsored construction directives for completing facilities at the field for two heavy bombardment groups, projects which were to be completed in February 1943. At the Ford plant's field at Willow Run the command secured construction projects for runway extensions and for housing a heavy bombardment group.[213]

At the conclusion of its period of activity the I Concentration Command bases were divided among other AAF agencies. Selfridge and Kellogg Fields were transferred to the Third Air Force, Baer went to the I Troop Carrier Command for use in staging, Dyersburg went to the Second Air Force, Lockbourne subsequently was used for four-engine transition training by the Southeast Training Center, the housing at Willow Run was used by a Technical Training Command school detachment, and Syracuse remained in use by the Air Service Command.[214]

Air Support Airfields. Having received the responsibility for training and reorganizing the observation and reconnaissance squadrons of the Army in the fall of 1941, the AAF gradually succeeded in bringing some order into the confused organizational air support problem during 1942. At the same time the Air Support Section of the Air Force Combat Command, which became the AAF Directorate of Ground-Air Support with the inactivation of the Combat Command, erected and secured the development of a system

of airfields designed to serve air support units training with the ground forces.

On 10 December 1941 the Chief of Staff approved a study projecting the needs for new observation squadrons and groups (together with new air base and materiel squadrons desired to service them) to be required by the expansion of the Army ground forces during 1942 and 1943. From this authority, together with the information on the location of the new ground posts, the Air Support Section drew up a comprehensive requirement for air support fields to be needed during 1942 and 1943.[215]

This projection assumed that extensive base development would be needed adjacent to the four Army headquarters at New York, Memphis, San Antonio, and San Francisco, and adjacent to the command post of the Armored Force at Fort Knox. Each Army corps headquarters was also to have an adjacent base. Each division post was to have a smaller base, depending in size on the rate of one observation squadron to be located near each division. Additional requirements were specified for the Desert Force maneuver area which was to be centered at Indio, Calif. Finally, the program required AAF glider and troop carrier stations at Laurinburg-Maxton, Sedalia, Ardmore, and Alliance.[216] A part of these needed airfields existed from pre-Pearl Harbor construction and merely required expansion to meet the needs of the heavier aircraft being assigned to observation units. Other stations would have to be provided--preferably, as the Directorate of Base Services informed the Chief of Engineers in April 1942, from existing airfields or fields being improved by the CAA.[217]

Actually, however, the program was somewhat unrealistic in presuming a static situation whereby air support aviation would work closely with

armies, corps, and divisions much as it had prior to 1941. The construction of special air support bases near each army and near the armored force headquarters seemingly presumed that the five air support command headquarters would be located at them. Actually, the air support commands did not achieve such a close relationship with the ground force headquarters. During the summer of 1942, moreover, the V Air Support Command was deactivated, and the four remaining commands (ultimately redesignated as the I, II, and III Tactical Air Divisions and the III Tactical Air Command in 1944) were moved about to follow by Army maneuvers and training.[218] The air base facilities for air support units near New York and San Francisco were shared with other AAF functions at existing bases. At Memphis, however, leases were negotiated and construction was begun on housing for 176 officers and 1,700 enlisted men. On 16 April 1942 the Directorate of Air Support reduced the planned garrison there and shared the facilities with the Air Transport Command.[219] Alamo Field (San Antonio Municipal Airfield No. 2) was leased for air support units supporting the Third Army and the division at Camp Swift, but no such extensive garrison as had been contemplated was provided.[220]

Only a part of the bases designed to occupy a position proximate to Army corps headquarters (excluding those posts which also served divisions) seem to have been built. Most of these airfields were soon diverted to other uses. Stout Field at Indianapolis, first leased as a base adjacent to a corps headquarters, passed to the I Troop Carrier Command when the corps headquarters was located in Chicago. Newcastle Airport at Wilmington, Del., was leased in anticipation of it serving units supporting a corps,

but the size of the air support garrison was cut down in order to share the field with the ATC which moved in on 29 May 1942. Hillsgrove Airport (Green Field) at Providence, R. I., projected to support an unspecified corps, was developed by the I Fighter Command with little if any view to air support use. The air base at Salem, Ore., also projected by the air support base development program to support an unspecified corps, became a Fourth Air Force defense base instead.[221]

The remainder of the projected program was accomplished much as had been planned. The existing division-supporting fields were changed to meet new requirements. The field at Jacksonville, Fla., inherited by the AAF as the supporting base for Camp Blanding, was turned to other uses and a new air support base built at the municipal airport at Gainesville, Fla. (Alachua Army Airfield), with an advance field at Keystone Heights, Fla., near Camp Blanding.[222] According to plan the AAF troops at Detrick Field, Frederick, Md., were moved out by 8 September 1942 and the installation was turned over to the ground forces.[223] Sherwood Field at Paso Robles, Calif., taken over in the mobilization of the National Guard observation squadron there, was transferred to the Navy in the fall of 1942.[224] The construction of an airfield near Fort McClellan, Ala., was finally abandoned in June 1942 and arrangements were made to use the airfield at Birmingham, Ala., instead.[225] The other existing air support bases were built up, an activity which ran into some inevitable conflicts with the local ground forces post commanders. At Gray Field, Fort Lewis, Wash., for example, plans for the expansion of the airfield conflicted with ground forces plans to expand the Army post. After much friction and some recrimination which went so far as to suggest that the AAF was attempting to take

over the whole post, a local adjustment was worked out. The AAF, however, was never successful in securing autonomy for its local commanders of airfields on Army posts.[226] Nor did the AAF succeed in a second attempt to get a board of officers to make definite boundaries at each of the fields located on an Army post.*[227]

In the Desert Center maneuver area the AAF built up airdromes at Blythe, Desert Center, Rice, Shavers Summit, and Thermal, Calif. Blythe, as has been seen, was turned over to the Second Air Force for bombardment training. The other fields were transferred with the IV Air Support Command and its units to the Desert Training Center on 21 January 1943.[228] The command, the units, and the airfields remained assigned to the center until they were released and assigned to the Third Air Force on 28 November 1943.[229]

*During 1942 and 1943 new air support fields were either built or leased which, when added to the pre-Pearl Harbor air support fields, completed the following Army post--airfield situation: Camp Edwards, Mass. (Otis Field, Falmouth, Mass.); Fort Devens, Mass. (Fort Devens Army Airfield, Ayer, Mass.); Indiantown Gap Military Reservation, Pa. (New Cumberland and Reading Army Airfields); Fort Dix, N. J. (Fort Dix Army Airfield); Fort Bragg, N. C. (Pope Field); Camp Pickett, Va. (Blackstone Army Airfield, Blackstone, Va.); Camp Butner, N. C. (Raleigh-Durham Army Airfield, N. C.); Camp Blanding, Fla. (Alachua Army Airfield, Gainesville, Fla., and Keystone Heights Army Airfield, Fla.); Camp Gordon, S. C, (Aiken Army Airfield, Aiken, S. C.); Camp Atterbury, Ind. (Camp Atterbury Army Airfield); Camp Breckenridge, Ky. (Camp Breckenridge Army Airfield); Fort Custer, Mich. (Kellogg Field, Battle Creek, Mich.); Camp Gruber, Okla. (Muskogee Army Airfield, Okla.): Fort Riley, Kans. (Marshall Field); Camp Howze, Tex. (Gainesville Army Airfield, Gainesville, Tex.); Camp J. T. Robinson, Ark. (Adams Field, Little Rock, Ark.); Fort Leonard Wood, Mo. (Vichy Army Airfield, Mo.); Camp Carson, Colo. (Peterson Field, Colorado Springs, Colo); Camp Maxey, Tex. (Legion Field, Paris, Tex.); Camp Swift, Tex. (Alamo Army Airfield, San Antonio, Tex.); Camp Hood, Tex. (Killeen Field, Temple, Tex,); Fort McClellan, Ala. (Reilly Field and Birmingham Army Airfield); Camp Rucker, Ala. (Ozark Army Airfield, Ozark, Ala.); Camp Forrest, Tenn. (William Northern Army Airfield, Tullahoma, Tenn.); Camp McCain, Miss. (Grenada Army Airfield, Miss.); Camp Shelby, Miss. (Laurel Army Airfield and Hattiesburg Army Airfield, Miss.); Fort Sill, Okla. (Post Field); Camp Davis, N. C. (Camp Davis Army Airfield); Camp Barkley, Tex. (Abilene Army Airfield, Abilene, Tex.); Fort Bliss, Tex. (Biggs Field); Fort Huachua, Ariz. (Hereford Army

(Continued on page 139)

Most of these airfields were municipal fields, many of which had been improved by the CAA. The housing facilities at them varied according to the prominence and use of the fields. Esler Field, one of the largest of the fields used solely for air support, could accommodate 200 officers and 2,200 enlisted men in July 1944 while Rice Army Airfield, one of the smallest of the air support fields, had housing for only 20 officers and 100 enlisted men.[230] By September 1945 Esler had cost a total of $3,680,972, Rice only $700,884. Most of the fields were organized and administered as sub-bases of larger AAF bases in their vicinity. Most of the fields were passed to the control of the Third Air Force in January and December 1943 when that air force received the responsibility for all of the air support commands.[231] Throughout the war they served units engaged in maneuvering with the ground forces, units such as tow target squadrons which were training with antiaircraft regiments, and other units engaged in similar functions.

Facilities for Air Service, Maintenance, and Air Transport. The impact of World War II upon the supply, maintenance, and air transport functions

*(Continued from page 138) Airfield, Ariz.); Fort Ord, Calif. (Salinas Army Airfield, Calif.); Camp Beale, Calif. (Marysville Army Airfield, Calif.); Camp San Luis Obispo, Calif. (Estrella Army Airfield, Paso Robles, Calif.); Camp Adair, Ore. (Corvallis Army Airfield, Ore.); Camp White, Ore. (Medford Army Airfield, Ore.); Fort Lewis, Wash. (Gray Field); Fort Jackson, S. C. (Congaree Army Airfield, S. C.); Fort Benning, Ga. (Lawson Field); Pine Camp Military Reservation, N. Y. (Wheeler-Sack Field); Camp Campbell, Tenn. (Camp Campbell Army Airfield); Camp Cooke, Calif. (Santa Maria Army Airfield); Camp Hulen, Tex. (Palacios Army Airfield, Tex.); Camp Polk, La. (DeRidder Army Airfield, La.); Camp Claiborne and Camp Beauregard, La. (Esler Field and Alexandria Army Airfield); and Fort Knox, Ky. (Godman Field). (AAF, Station List, 1 Dec. 1942; AAF, Air Ground Support Sect., Air Support Base Requirements, 1942-1943.)

of the AAF caused the same tremendous expansion of base facilities as was the case in the training and defense functions. It also brought about the redefinition and clarification of the mission which resulted in the creation of three new commands: Air Service, Materiel, and Air Transport. Each of the commands, however, had been represented as somewhat interconnected agencies prior to Pearl Harbor. A provisional Air Corps Maintenance Command had been established under the Materiel Division, OCAC, on 15 March 1941. It was elevated from a provisional status on 30 June and on 17 October had been established as the Air Service Command. On 11 December 1941 the ASC was removed from the control of the Materiel Division, OCAC.[232] The remainder of the Materiel Division was redesignated as the AAF Materiel Command on 22 April 1942.[233]

The Materiel Command, largely a testing and procurement authority, needed fewer facilities than did the Air Service Command which stored, overhauled, and repaired AAF aircraft and equipment. The headquarters facilities of the Materiel Command at Wright Field, however, were expanded by such ingenious means as the conversion of auto parking sheds into offices, the maximum use of hall space, and the adoption of three rotating eight hour shifts. Offices were also rented in Dayton and 711,271 additional square feet of floor space were constructed during 1942.[234] During 1943 approximately 140 buildings and major building additions were completed, including two large administration buildings, 21 civilian war housing buildings, new laboratories, and additional military barracks.[235] By September 1945 Wright Field, having received construction valued at $48,817,078 since June 1940, was the most expensive of all AAF command facilities.

During 1942 the Materiel Command, crowded at Wright Field, secured the use of the Clinton County Airport at Wilmington, Ohio, for testing gliders.[236] Only one set of field installations was constructed for the Materiel Command: the modification centers which served to fit the mass production aircraft models to the needs of the specific theaters of operations. A total of 21 of these centers was activated during 1942, eight being operated by commercial airlines and the remainder by aircraft manufacturers. Nineteen of the centers remained in operation at the end of the year after two other centers had been closed out.*[237]

The Air Service Command--charged with maintenance, repair, and storage of AAF aircraft and equipment and the training of air depot troops and other service personnel--developed a much larger network of base facilities. Despite bad weather, constant shortages of critical materials, and the necessity of changing construction plans to meet these conditions, the 11 air depots either in construction or in operation at the time of Pearl Harbor were expanded to meet new requirements. Much of the maintenance load could be borne by working around the clock, but storage and maintenance facilities nevertheless had to be augmented. During 1942 new depot supply warehouses increased the storage space available from about 4,000,000 to 7,736,585 square feet, and by August 1944 depot storage provided

*Daggett, Calif.; Tucson, Ariz.; Love Field, Dallas, Tex.; Fairfax Airport, Kansas City, Kans.; Buffalo, N. Y.; Evansville, Ind.; Niagara Falls, N. Y.; Offutt Field, Omaha, Neb.; Standiford Field, Louisville, Ky.; Cheyenne, Wyo.; Vandalia, Ohio; St. Paul, Minn.; Denver, Colo.; Birmingham, Ala.; Memphis, Tenn.; Tulsa, Okla.; and Kansas City, Mo.

approximately 24,000,000 square feet of covered warehousing. Maintenance structures costing $73,525,566 were completed between January 1942 and June 1944. By 1943 all of the air depots (except Middletown which had two runways the longer of which was 4,900 feet) had three runways varying in length from 4,500 to 7,800 feet. Between January 1942 and June 1944 housing costing $21,390,016 and post utilities and miscellaneous structures costing more than $93,000,000 were built at the air depots. Approximately $5,000,000 was spent for the purchase of additional land at the depots. The largest of the area increases, however, occurred at the San Antonio Air Depot in January 1943 when it took over Kelly Field and consolidated it with its own Duncan Field under the name of Kelly.[238]

These cost figures included the expenses incurred in building one new air depot at Miami, Fla. In February 1942 the ASC had estimated that it would require four new depots.[239] These depots--planned for location near Phoenix, Ariz., Miami, Fla., Wichita, Kans, and Omaha, Neb.--seem to have been considered necessary to support the five old depots which were within 250 miles of the coasts and which might come under enemy attack. Funds for these depots were set up in the budget estimates for 1943 and possible sites were inspected, but the stringent regulations established for the control of critical materials made it evident that such construction would be impractical. On 8 December 1942 the ASC again asked for three new engine repair depots to be located at Omaha, Miami, and Phoenix. This request was disapproved by the AAF on the grounds that hostile attack was no longer probable and that most of the combat groups would be overseas and the flying training on the wane before the depots could be built. The Air Staff, however, was willing to authorize one new depot which would repair

2,000 engines and furnish 1,000,000 square feet of storage.[240] After much indecision as to the exact location of this depot, the Air Staff finally authorized its construction at the 36th Street Airport, Miami, Fla., on 5 January 1943. The runway system on the municipal airport was accordingly purchased, and construction which was directed on 2 February was completed within 14 months--more than a year less than had been needed for the older air depots. The cost of this depot was included in the costs noted in the consideration of the expansion of the air depots.[241]

The augmented depot storage facilities were still insufficient to store the mounting stock of aircraft and materiel delivered to the ASC. To meet this problem the command leased as much commercial storage space as could be secured and sponsored the construction of specialized storage depots. By August 1944 the ASC held warehousing containing approximately 62,000,000 square feet of which slightly more than two-thirds was government owned. Leased storage included over 400 separate properties, rented for an estimated cost of $4,000,000 a year.[242]

The ASC also used a number of air bases for training its service personnel and air depot groups, for storage, and to meet maintenance requirements in certain areas. These airfields, however, had been developed originally by other AAF agencies and had been inherited by the ASC. Beginning in December 1943, as will be seen in the following chapter, all airfields placed on a stand-by status were assigned to the ASC.[243]

During 1941 and 1942 the ferrying and air transport functions of the AAF, which had been variously accomplished but had usually been the work of the Materiel Division, OCAC, were concentrated in the Air Corps Ferrying Command. Because of the nature of its mission--as well as the fact

that the command was first regarded as a temporary expedient--the Ferrying Command initially made heavy use of bases controlled by other AAF agencies and developed few fields of its own, but as the burdens of transport and related training increased the command--redesignated as the Air Transport Command on 20 June 1942--secured active control of a number of the older airfields and developed some new fields to meet its own needs.

The basic reason for the establishment of the Air Corps Ferrying Command on 29 May 1941 was, first, to erect a responsible agency for ferrying aircraft destined for the British from the factories to transfer points on the borders of the United States, and, second, to provide a military agency to begin the transport of mail and key personnel overseas. Neither of these functions required extensive facilities, and the Ferrying Command was authorized only to call on AAF agencies for assistance and to use Lend-Lease funds for absolutely needed developments.[244] For ferrying the command needed detachments along its flight routes and fields suitable to serve as transfer points; it also needed some bases suitable as installation points where special equipment could be installed on the planes to be flown across the Atlantic. During July and August control officers were sent to the aircraft factories on the Pacific coast, and on 21 June an installation point was opened at Patterson Field. By the end of July, however, this installation point had been moved to facilities at the Wayne County Airport, Romulus, Mich., which was rented with lend-lease funds.[245] Another installation point was set up at the Nashville, Tenn., municipal airfield in September, and by December 1941 other control offices had been set up at the 36th Street Airport, Miami, Fla.; Savannah, Ga.; Floyd Bennett Field, New York City; West Palm Beach, Fla.; Hensley Field, Dallas,

Tex.; Bolling Field; and at other scattered points. Additional installation and transfer points were needed for aircraft which were to travel the North Atlantic route to Britain; consequently early in August 1941 the War Department secured deeds to the municipal airfields at Presque Isle and Houlton, Maine, and began their development for military use with lend-lease funds.[246] Difficulties with fog at Long Beach caused the command to initiate improvements at the Palm Springs, Calif., municipal airport in September 1941.[247] Since the Ferrying Command was unwilling to take over the materiel squadrons established to service it at Bolling, Long Beach, Romulus, Presque Isle, Houlton, and Miami in the fall of 1941, the Maintenance Command (forerunner of the ASC) undertook the obligation on 8 October 1941.[248]

With the beginning of the participation of the United States in World War II, the Ferrying Command took on a more permanent aspect. On 30 December it was reorganized to include two subordinate divisions--the Domestic Division and the Foreign Division. With the approval of its manning table in January 1942 the command became a legitimate AAF organization, and it subsequently activated wings and ferrying squadrons. On 3 February it took over the control of the materiel squadrons serving it. The broadening responsibilities of the command led to its redesignation of 20 June 1942 as the Air Transport Command, with overseas wings and a domestic Ferrying Division. The headquarters of the ATC were soon moved to more spacious quarters in the AAF Annex at Gravelly Point, Va., adjacent to the Washington National Airport, and the headquarters of the Ferrying Division were moved to accommodations given up by the Air Force Concentration Command at Cincinnati, Ohio, opening there on 9 February 1943.[249]

These expanding responsibilities led to the out-right acquisition of more base facilities. Morrison Field at West Palm Beach, Fla., was formally taken over from the Third Air Force in June 1942. Palm Springs was occupied early in April. Because of interference from defense activites at Boeing Field, Seattle, Wash., as well as the need for opening an interior air route to Alaska, the ATC activities at Boeing Field were moved to Gore Field, Great Falls, Mont., on 22 June. In September the ATC moved from Hensley Field, where its activities had been pressed for space, to Love Field at Dallas. Two other airfields which had been designed as air support bases at Wilmington, Del., and Memphis, Tenn., were occupied in May and November 1942. The necessities of training also required the occupation of additional bases. Early in July 1942 a trans-ocean training unit was opened at Rosecrans Field, St. Joseph, Mo., and a similar unit was opened at Homestead Field, 28 miles southeast of Miami. An Arctic training school at Camp Williams, Wisc., became operational in December. Beginning early in July 1942 housing was built at Camp Luna, N. Mex., the former summer encampment area of the New Mexico National Guard, and a training school for enlisted technicians was opened.[250] During 1943 a few more bases were acquired. The Fairfield-Suisun, Calif., airfield, originally built as a medium bomber base for the Fourth Air Force, was taken over and activated as a station of the ATC's Pacific Wing in May 1943. Because of the pressing need for C-46 crews in the India-China Wing, the ATC activated a third training unit at the Reno Army Air Base in June. It also operated a replacement center at Alpina, Mich., and then at Billy Mitchell Field, Milwaukee, Wisc.[251]

In addition to these bases the ATC secured operational rights at other bases along its ferry and transport routes. Early in June 1942 the Ferrying Command asked for minor improvements at a number of fields on its routes only to be required to use servicing facilities at existing bases. This policy, however, was somewhat relaxed when the command showed that it was impossible to use Army bases in all cases because of conflicts with the training programs of other AAF agencies.[252] Although the ATC seems to have had trouble in securing these operational rights early in 1942, the problem lessened when the initial rush of AAF operations began to taper off in the fall of 1942. By 27 February 1943, for example, the ATC stated that it did not believe that it would have any substantial need for new construction.[253]

Tactical Experimentation and Training Facilities. At its establishment on 19 May 1941 the Air Corps Proving Ground received the entire Eglin Field reservation which had been secured for the use of the gunnery school of the Southeast Training Center. This gunnery school was continued in operation, but the old composite group which had been moved from Maxwell to Orlando in 1940 was transferred to Eglin and redesignated as the Proving Ground Detachment on 1 July 1941. In September the Air Corps Board, which had been relatively inactive at Maxwell, was moved to Eglin. As a part of the AAF reorganization during the spring of 1942, the Proving Ground was finally given command status on 1 April 1942.[254] As a command and as a detachment, the Proving Ground was required to test AAF equipment and materiel for tactical suitability. In pursuance of this mission the command had by 1945 built up both the main base at Eglin and had secured

the construction of 10 auxiliary airfields on the reservation, each devoted to a particular phase of testing operations. The reservation had been increased in size to 429,758 acres, most of which was owned by the government. The cost for both land acquisition and construction had been approximately $23,000,000.[255]

In central Florida the Fighter Command School and its successor, the School of Applied Tactics, built up a more ambitious training and testing area. School activities in this region had originated on 29 March 1942 when the Air Defense Operational Training Unit was activated under the orders of III Interceptor Command for the purpose of training personnel in the techniques of controlled interception. This OTU, redesignated as the Interceptor Command School on 30 March 1942, was assigned the main air base at Orlando, Fla., and airfields which were to be located at Leesburg, Crystal River, Dunnellon, Zephyrhills, Brooksville, and the Hillsborough-Henderson County Airport at Tampa. Fields at Kissimmee and Montbrook, Fla., were later made available in place of Crystal River and the airport at Tampa. A secondary field being built under the CAA near Orlando, later called Pinecastle Army Air Base, was subsequently assigned to the school. All of these new fields except Brooksville and Montbrook had been improved by the CAA. The Third Air Force also designated an area in central Florida over which the Interceptor Command School was to maintain a model air defense region, complete with radar stations, search light installations, and fighter airdromes. The academic plant of the school was located in the local fairgrounds at Orlando. On 29 May 1942 the school, redesignated as the Fighter Command School, was placed directly under the AAF. During its eight months of existence it was able to use

only Orlando Air Base for flying, but during the summer and fall of 1942 housing was built at the other fields and their runways were being improved. By 26 September searchlight units were billeted at Winter Garden, Eustis, and Umatilla--all towns in central Florida--and Signal Corps units were dispersed at some 12 radar stations in the region.[256]

During the summer of 1942 discussions were held among the AAF directorates regarding the necessity for reopening some new tactical school to replace the old Air Corps Tactical School which had been closed at Maxwell Field in June 1940. After some uncertainty as to the location of this school the AAF Director of Management Control finally decided on 25 September that with some expansion the facilities of the Fighter Command School would be suitable for the purpose. A board of officers quickly located a new school area immediately north of Orlando Air Base for the new headquarters and academic installation, and on 27 October 1942 the AAF School of Applied Tactics was established at Orlando.[257] By 1 March 1943 the new academic area was ready for occupation. The School of Applied Tactics encompassed four departments--Air Defense, Air Support, Bombardment, and Air Service--each of which was assigned combined training and testing missions for their respective type personnel and materiel. The Air Defense Department, successor to the Fighter Command School, was assigned control of Orlando Air Base and the airfields at Kissimmee, Leesburg, Zephyrhills, and Cross City, Fla. The last field was another CAA improved airport which at Bushnell, Fla., was built by an engineer battalion as a training exercise and was subsequently operated as a combat-type fighter airdrome. Additional searchlight cantonments were established by the department at the towns of Apopka and Clermont.[258] The Air Support Department

received control of the two air support fields which had been built near Camp Blanding--Alachua Army Airfield at Gainesville and Keystone Heights Army Airfield--and the airfield at Dunnellon. The fields at Dunnellon and Keystone Heights were provided with over-all landing areas for glider operations during 1943.[259] The airfields at Brooksville, Montbrook, and Pinecastle were assigned to the Bombardment Department, and, although originally designed for fighters, they were expanded to suit them for heavy bombardment aircraft during 1943. Pinecastle, for example, was given a 10,000-foot runway.[260] The Air Service Department functioned both as a school organization and as the service organization for all of the units assigned to the school. It established a combat-simulated service center at Leesburg, Fla., an Ordnance depot at Gotha, Fla., and a Quartermaster advance depot at Minorville, Fla.[261]

Bombing and Gunnery Ranges. During 1942 and 1943 the AAF continued to encounter the same difficulties in locating bombing and gunnery ranges which had been met prior to Pearl Harbor. In the eastern United States the high price of land made large reservations virtually impossible to obtain and only small precision bombing and air to ground gunnery ranges could be obtained. Air to air gunnery ranges had to be located over water areas. In the western United States, where large tracts of public domain were available, the AAF nevertheless continued to find that there were few areas, however barren, in which someone did not have a vested interest. Despite the difficulties the AAF acquired between Pearl Harbor and June 1943 approximately 12,500,000 acres of land--an area larger in size than the combined acreage of New Hampshire and Vermont.[262] By June 1943 the

minimum size tract for precision bombing ranges had been set at 2 x 2 miles, for air to ground gunnery ranges at 4 x 6 miles, and for-air-to air gunnery ranges at 20 x 40 miles. The size of the areas was dictated by the necessity for safety. The precision bombing range area of four square miles, for example, allowed a safety area of one square mile, a not excessive area since bombs might be dropped from 20,000 feet. The 20 x 40-mile size of the air-to-air gunnery ranges was necessitated by the fact that planes, flying at four miles per minute, fired .50-caliber projectives which would carry 11 miles at 20,000 feet altitude. The AAF allocated precision bombing ranges to stations on a basis of one range to 25 crews in training, air-to-ground ranges on the basis of one to each training base, and the air-to-air ranges on the basis of special need.[263] In locating the ranges it was made mandatory that the least productive available land be use, that public facilities be relocated as little as possible, and that the range be approved by the Interdepartmental Air Traffic Control Board. Ranges could not be within 12 miles of a base; precision bombing ranges and air-to-ground ranges, however, had to be within 75 miles of the using base while air-to-air gunnery ranges had to be within 250 miles of the using air base.[264]

The range needs of the First and Fourth Air Forces, concerned as they were with fighter training during 1942 and 1943, were fairly easily supplied. The First Air Force developed a 14,677-acre reservation near Millville, N. J., as a fighter gunnery range and got it into operation late in 1942.[265] The Fourth Air Force controlling both the Muroc range and a part of the Toroyah range, seemingly had ample facilities for bombing and gunnery training.

The Second Air Force, however, encountered more than its share of troubles in acquiring ranges to serve its mushrooming heavy bombardment training program. "Every rat that's been dug ... has been complaining as soon as we get a range," protested one Second Air Force officer.[266] Strong opposition was encountered in Oregon and Idaho from stockmen, but eventually the air force secured two ranges in each state which could be used during a part of the year and grazed in the inactive periods. At Albuquerque delay was encountered in securing permission to bomb on state-owned land which was scattered throughout the public domain.[267] During 1943 the problems continued. At Blythe, Calif., the Second Air Force heavy bombardment group was prevented from bombing by the ubiquitous activities of the Desert Training Center, and not until December was there a delimitation by which Blythe was allocated four part-time ranges in the desert.[268] In June 1943 the AAF secured approval for the acquisition of 65 additional precision bombing ranges, 27 air-to-ground gunnery ranges, and four air-to-air gunnery ranges, most of which were for the Second Air Force.[269] In September 1943 the air force was allotted eight additional precision bombing ranges and one additional air-to-ground gunnery range when its training increased.[270] Although these ranges were obtained for the Second Air Force, the fact that some 25 checks requiring action by 4 different agencies had to be met before any request could be made for land acquisition made the process time consuming. As late as September 1943 Brigadier General Newton Longfellow, a Second Air Force wing commander, stated flatly that the Second Air Force gunnery training program, because of a lack of ranges, was "merely eyewash."[271]

The Third Air Force seems to have expanded its ranges without so much difficulty. By November 1943 it had the general bombing ranges at Avon Park, Fla. (218,908 acres) and at Myrtle Beach, S. C. (with a combination of land and water ranges covering some 223,147 acres). Other significant ranges were the Pancock County, Miss., range with 30,622 acres (a sub-base of Key Field), and the Great Salt Plains Bombing Range at Cherokee, Okla., with 31,177 acres (a sub-base of Will Rogers Field). Other water ranges were maintained over the Gulf of Mexico for air-to-air gunnery.[272] Third Air Force air support fields, when other facilities were lacking, used neighboring ground forces ranges. Godman Field and Camp Atterbury Army Airfield, for example, were provided an air-to-ground gunnery range and a pattern bombing range on the Camp Atterbury artillery range.[273]

The training and experimental commands also expanded their ranges. The bombardier school at Kirtland Field, by way of illustration, had a total of 29 precision bombing ranges by October 1945. The other bombardier schools at Deming, Roswell, Victorville, Big Springs, Childress, Midland, San Angelo, and Carlsbad eventually obtained from 15 to 24 precision bombing ranges each.[274] Tentative plans announced early in 1942 had contemplated the establishment of one general bombing range for each three bombardier schools, complete with elaborate targets simulating European objectives, but this plan had been impractical to execute.[275] The gunnery schools necessarily had larger ranges. By October 1945 Las Vegas, Laredo, and Kingman had land ranges covering 2,305,280, 628,296, and 161,997 acres of land respectively. Tyndall and Harlingen had combinations of land and water ranges, while Buckingham used a 960,000-acre water range over the Gulf of Mexico. By 1945 the Matagorda Island ranges occupied

50,825 acres, while the Matagorda Peninsula ranges included a land area of 29,230 acres and an overwater area of 704,000 acres. The Ajo-Gila Bend Ranges, used by Luke and Williams Fields, occupied 1,123,135 acres. Radar bombing training activities at Boca Raton used island targets cleared for use by permits from the British and Bahamas governments, and Boca Raton also was the only AAF activity to have bombing ranges off the east coast of Florida in the Navy sphere of authority. The Proving Ground Command at Eglin Field had 53 land and water ranges within the Choctawhatchee reservation, on nearby Santa Rosa Island, and over the Gulf.[276]

Most of the bombing ranges were little-improved tracts of barren land with simply marked targets. Targets usually consisted of co centric circles marked on the ground, some of which could be lighted at night by flares or electric lights.[277] Bomb hits were generally scored by triangulation from observation towers scattered about the reservation. Other targets were more elaborate. Kirtland's ranges had a simulated battleship, a bridge, gun emplacements, and an oil refinery.[278] The larger ranges had some airfield facilities. During 1942, for example, the Second Air Force secured flight strips at Boardman, Ore., and Sahuarita, Ariz., to serve the Boardman (Arlington) and the Davis-Monthan ranges.[279] The Third Air Force built two landing strips at the Great Salt Plains range. The West Coast Training Center built fields at Ajo and Gila Bend.[280] The expense of each range naturally varied with the locality and the extent of it development. The cost of 11 sites for precision bombing ranges submitted by the bombardier school at Midland, Tex., in January 1942 may perhaps be indicative of such costs where the lands were rented. This

development cost $120,900, an amount which covered land rents (ranging from 10 to 75 cents per acre with 10 cents the prevailing rate), fences ($500 per mile), fire guards ($500 per mile), and access roads ($300 each).[281] By September 1945 Midland's 23 ranges comprised 34,799 acres, rented at an annual cost of $15,601, and had received $303,210 worth of construction.[282]

During the summer of 1943 the AAF made a final determination of the range needs of its agencies. These estimated requirements were approved by the Assistant Secretary of War for Air on 29 June. In September 1943, as has been noted, the Second Air Force was allotted a few additional ranges, but the AAF attempted to hold its agencies to their estimated needs. After October 1943 all range requirements had to be submitted to the Office of the Assistant Secretary of War for Air for approval before any real estate could be procured for such purposes.[283]

Chapter V

CONSOLIDATION AND DISPOSITION OF FACILITIES, 1943-1945

During the summer and fall of 1943 the AAF reached the peak of its training and operations in the continental United States. In April it had a maximum strength of 1,302,824 persons at domestic installations. In September it had the largest domestic housing capacity--housing for 2,401,340 persons. In October it had the largest number of combat groups (143) in the continental United States. In November the greatest number of flying cadets (109,322) were in training. In December it reached a peak total of 773 separate air installations (345 main bases, 116 sub-bases, and 322 auxiliary fields) within the United States.[1] Since it was evidently passing its peak of operations in the United States, the AAF sought during 1943-1945 to take measures both to curtail all new construction and to release such surplus properties as were no longer needed for the war effort.

1. Curtailment of Construction

The vast bulk of AAF war-time construction, as has been seen, was finally programmed late in 1942 in order to get it ready for the peak of operations during 1943 and in order to escape any delays which might result from plans to impose more stringent regulations for the conservation of critical constructional materials. Thus in January 1943 General Arnold, after returning from an inspection trip which covered most of the United States, felt able to direct that all new projects would be curtailed and that "commanders must work together and utilize the facilities that have been constructed."[2]

ARMY AIR FORCES INSTALLATIONS

15 JULY 1944

LEGEND

○ – AAF INSTALLATIONS WITH FLYING FIELD FACILITIES
□ – AAF INSTALLATIONS WITHOUT FLYING FIELD FACILITIES
∅ – FLIGHT STRIP
X – SEARCHLIGHT STATION
◐ – AAF INSTALLATIONS TEMPORARILY TRANSFERRED OR RELEASED
● – AAF INSTALLATIONS PERMANENTLY TRANSFERRED OR DISBANDED

COLLEGE TRAINING DETACHMENTS AND WAR SERVICE TRAINING DETACHMENTS ARE NOT SHOWN ON THESE MAPS

KEY TO ABBREVIATIONS

1AF – FIRST AIR FORCE
2AF – SECOND AIR FORCE
3AF – THIRD AIR FORCE
4AF – FOURTH AIR FORCE
C G – COMMANDING GENERAL AAF
ASC – AIR SERVICE COMMAND
ATC – AIR TRANSPORT COMMAND
TCC – AAF TROOP CARRIER COMMAND
TAC – AAF TACTICAL CENTER
PGC – PROVING GROUND COMMAND
MC – MATERIEL COMMAND
EFTC – EASTERN FLYING TRAINING COMMAND
ETTC – EASTERN TECHNICAL TRAINING COMMAND
CFTC – CENTRAL FLYING TRAINING COMMAND
WFTC – WESTERN FLYING TRAINING COMMAND
WTTC – WESTERN TECHNICAL TRAINING COMMAND

AAB – ARMY AIR BASE
AAF – ARMY AIR FIELD
AF – AIRFIELD
AP – AIRPORT
AWS – AIRCRAFT WARNING STATION
BR – BOMBING RANGE
BR&GR – BOMBING & GUNNERY RANGE
CB – CRASH BOAT STATION
CSA – CIVILIAN SCHOOL AREA
FS – FLIGHT STRIP
NAS – NAVAL AIR STATION
P E – PORT OF EMBARKATION
SB – SUB BASE
SPSTG – SPECIALIZED STORAGE
CPT – CONTRACT PILOT SCHOOL
TTD – TECH TRAINING DETACHMENT
GOAP – GOVT OWNED ASSEM PLANT

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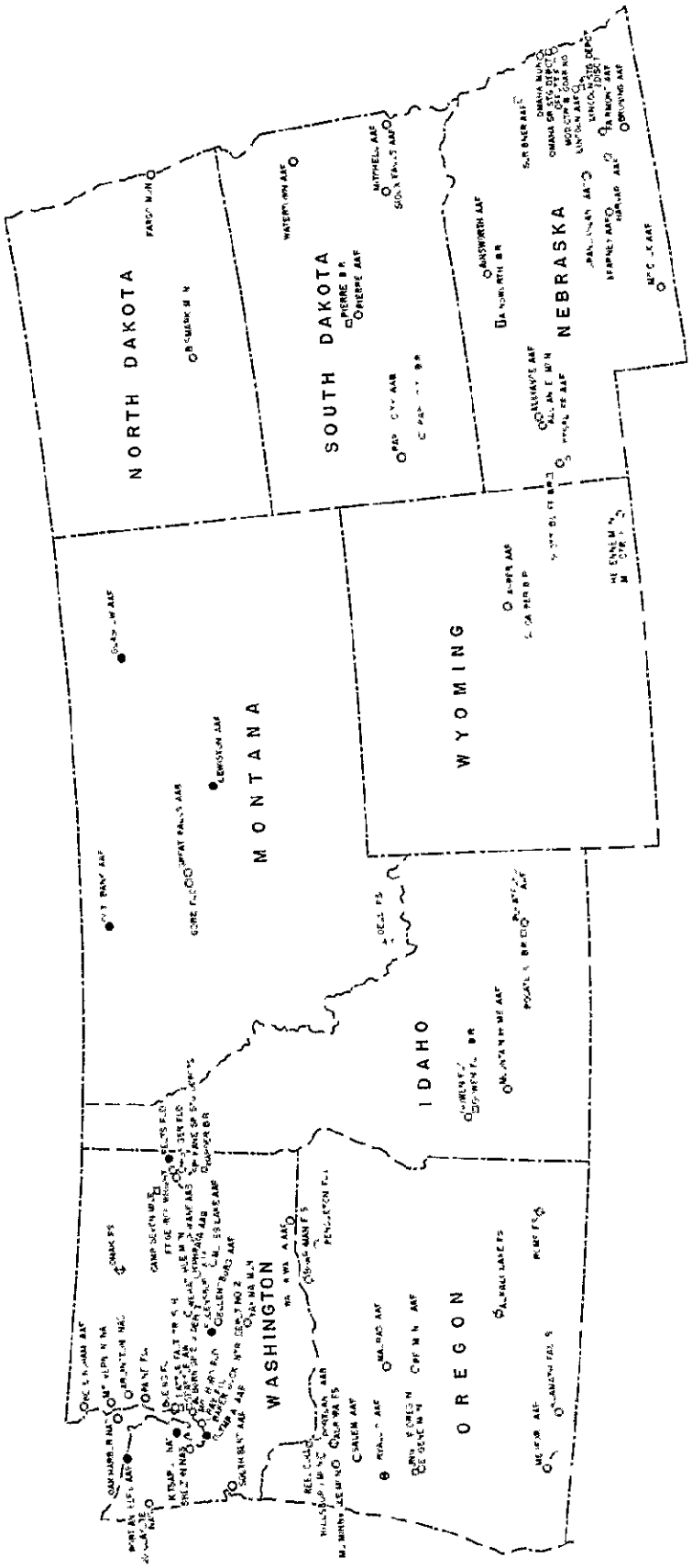

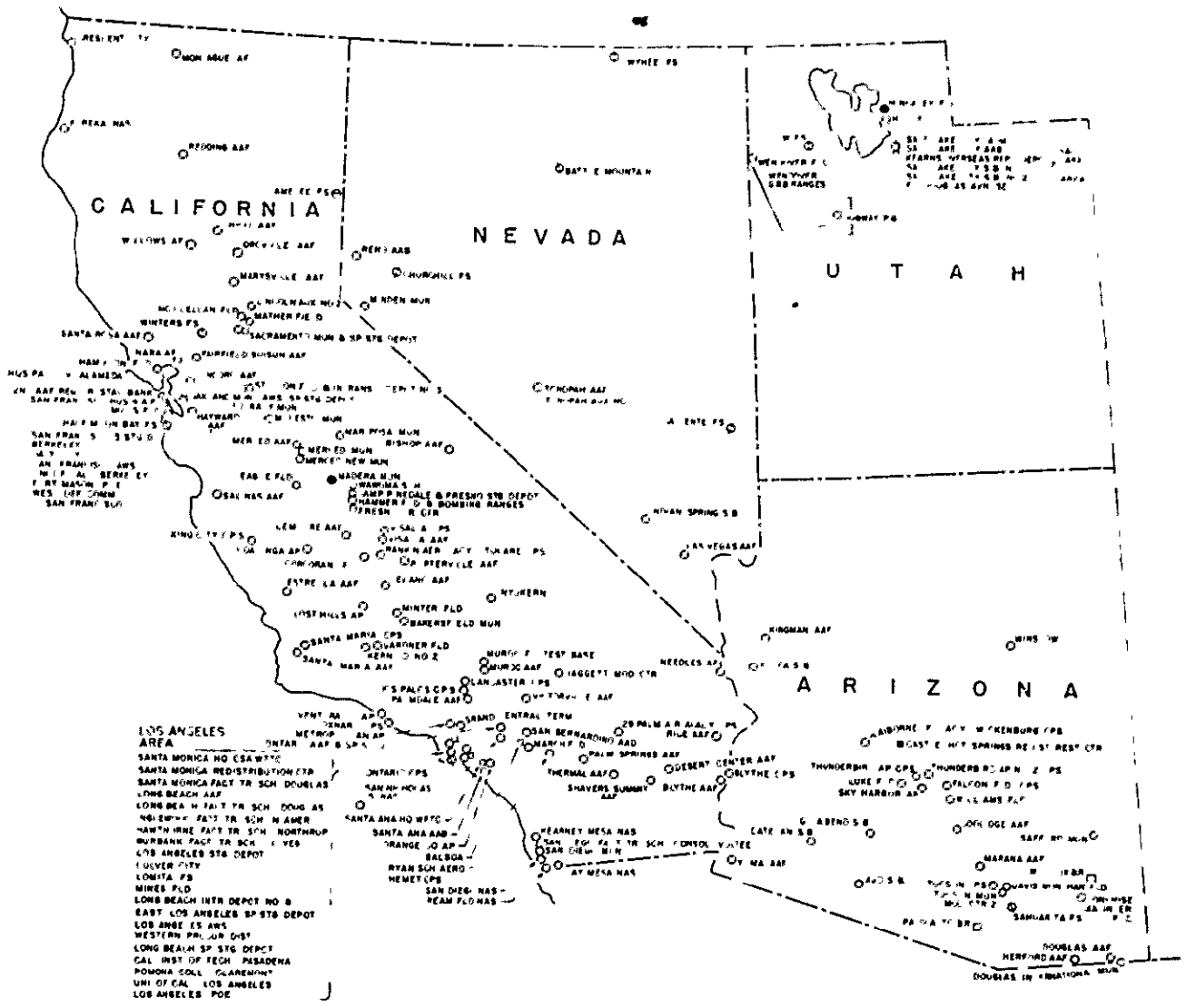

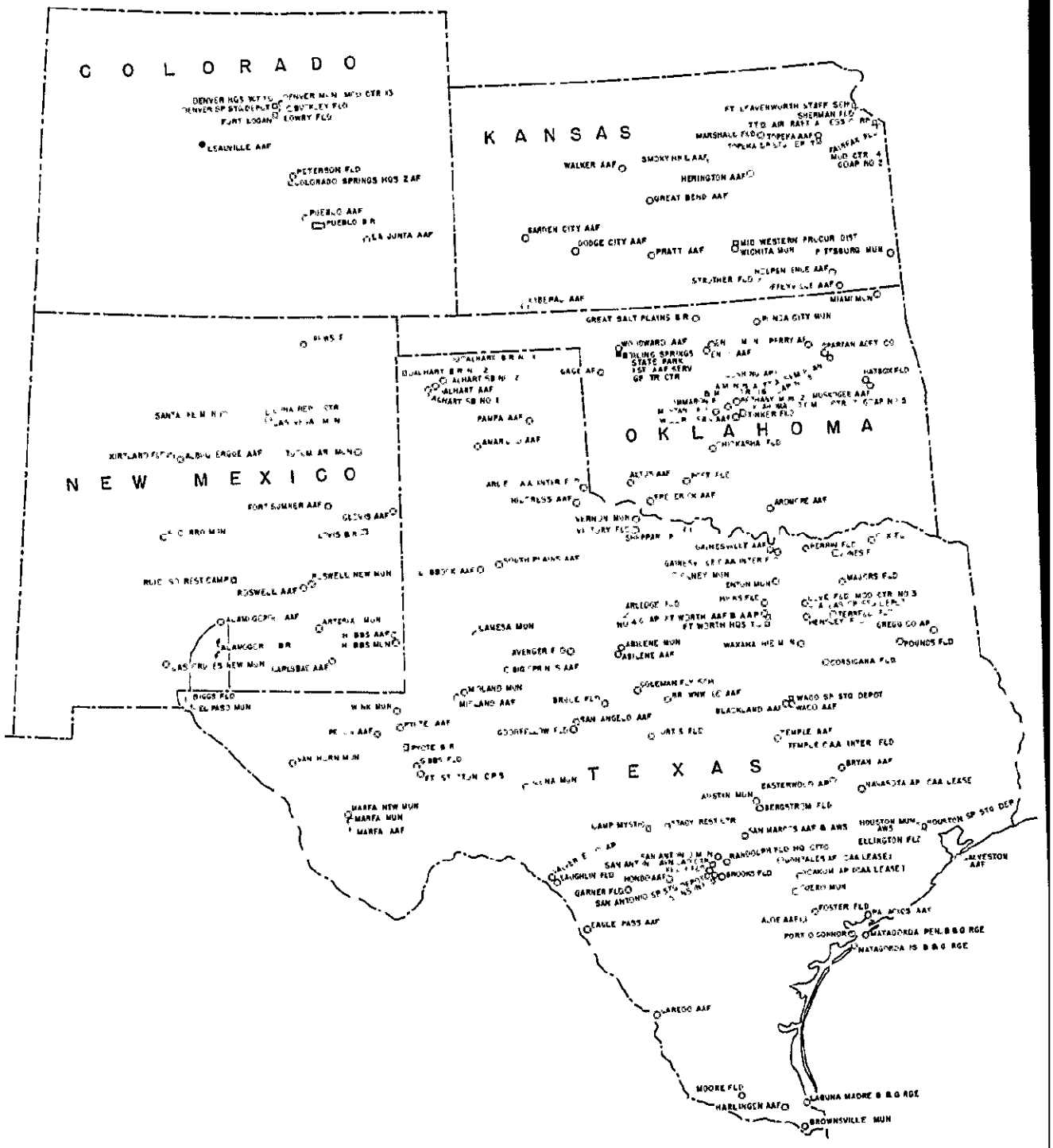

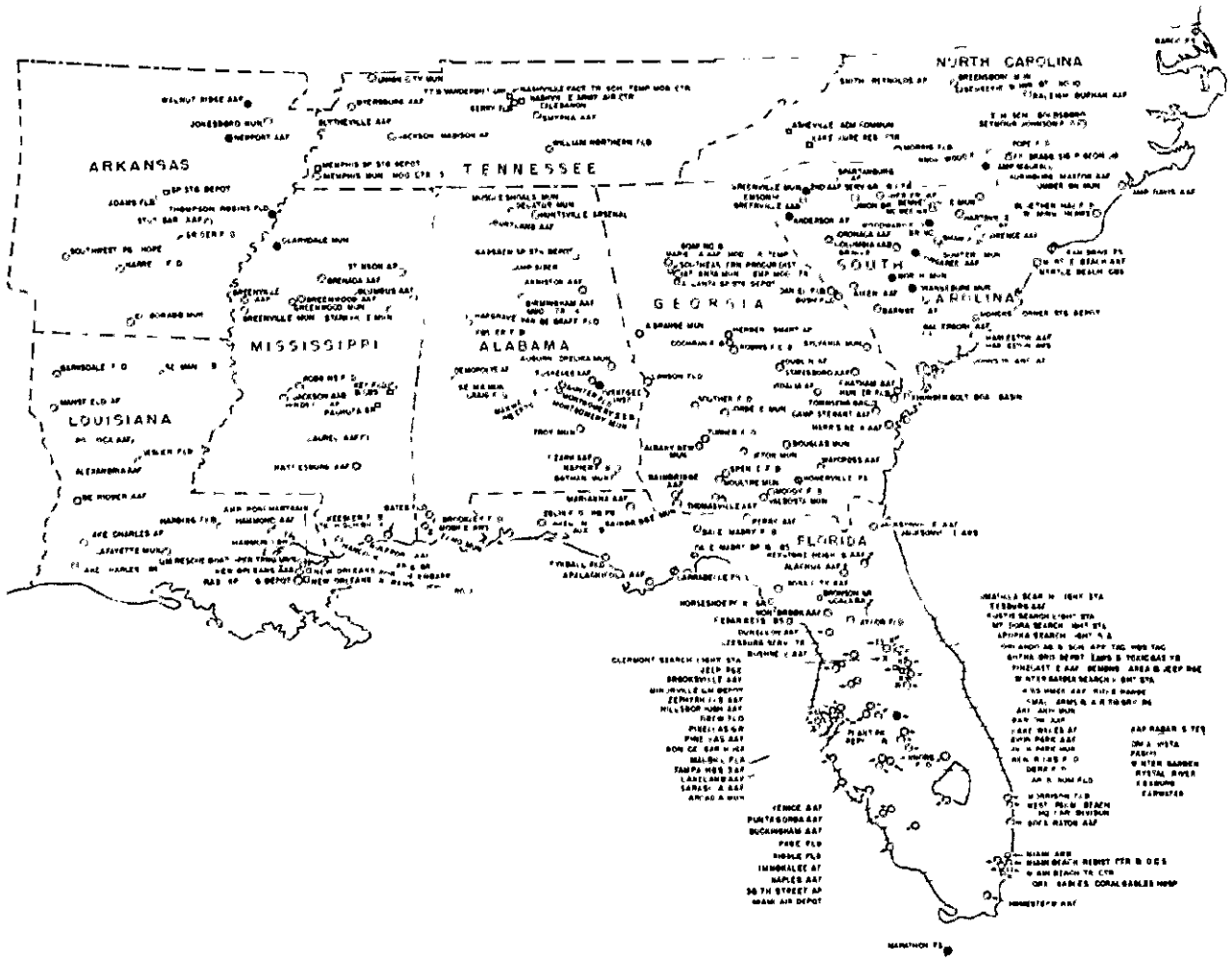

The War Department was also working to reduce new construction projects. On 2 April 1943 it noted that, despite the fact that all major construction had been completed, there had been no appreciable decrease in the number of small projects which were being requested, a fact which was delaying the war effort.[3] On 15 April it called attention to its "Spartan simplicity" directive of 1 June 1942 and reiterated the idea that critical shortages made the "greatest economy" necessary. The AAF backed up this memo with the instructional precept that "Facilities which are desirable but are not essential must be eliminated from consideration."[4] In August 1943 the G-3 Division, WDGS, stated as a general principle that no more land would be purchased for the Army unless failure to acquire it would so impede "training in a given area as to make retention of land already purchased questionable."[5] After 31 December 1943 the authority of division engineers to approve new construction projects costing up to $40,000 without reference to the OCE was revoked.[6]

Despite these directives the volume of Army construction during 1943 remained high and did not decline as rapidly as was desirable. During that calendar year the total construction command authorized for the AAF amounted to more than that for the Army Ground Forces and the Army Service Forces together. General Arnold, displeased both with this disparity and the fact that AAF construction was not declining in volume by month in proportion to that of the AGF and ASF, ordered on 14 January 1944 that all future construction in the AAF would be limited to that required "to meet critical requirements developing from changing operational needs for which existing facilities ... are completely inadequate."[7] He promised the Army

Service Forces, moreover, that while changes in operational requirements of aircraft would necessitate some additional work all such projects would be subject to "rigorous review."[8]

The effects of General Arnold's displeasure at the continuing volume of construction requests were soon manifest in more stringent regulations. After 16 February 1944 all requests for new construction and for the acquisition of additional real estate had to be signed by the commanding general of the air force or command making the request.[9] On 27 February General Arnold specifically directed that, without exception, there would be no more AAF construction within the continental limits of the United States without his personal approval for each project. Despite the great amount of detail which this policy threw upon the headquarters of the AAF, it was strictly interpreted and executed.[10] In October the AAF announced that thenceforth it could acquire no additional hotels.[11] In November General Arnold instructed the Second Air Force that the war would have to be finished with the facilities which were at hand, that no new construction projects would be approved until all existing facilities had been fully utilized and all possibilities for improvisation exhausted, and that no new requests for construction would be submitted for stations "lacking reasonable prospects" for selection as post-war bases.[12] These principles were restated as general policy for the whole AAF in May 1945.[13]

The response of the continental air forces and commands to these orders for curtailed construction was immediate and seemingly sincere. Thus the Central Flying Training Command directed on 22 December 1943 that "the time has come to stop thinking in terms of additional facilities and to start thinking in terms of utilization of existing facilities."

No new flying facilities could be expected unless made necessary by a change in the types of aircraft used in training. No new buildings could be built while other buildings were vacant.[14] Even though General Olds initially protested against the curtailment of construction by stating that "a shortage of materials and equipment means not that construction must stop but that more materials and equipment must be produced," both he and his successors issued directives curtailing the initiation of new projects in the Second Air Force.[15]

The volume of AAF construction requests was reduced by these restrictive policies, but the flow of new projects was by no means completely dammed. In the fiscal year 1945, for example, AAF command construction accounted for approximately $163,800,000 of the total Army construction authorization of $692,000,000.[16] Most of this new construction was directly attributable to the changes in training responsibilities brought about by the emergence of the very heavy bombardment type aircraft. By the fall of 1943 it was evident that most of this new training would have to be done on Second Air Force fields which had been built up for heavy bomber training. This meant that the other continental air forces would have to take over a part of the heavy bomber training. Accordingly new projects would have to be authorized to expand fields for both very heavy and for heavy bombardment training.

With the relaxation of their defensive requirements both the First and Fourth Air Forces were given expanded training missions. In September 1943 the First Air Force was required to operate six replacement training groups for fighters, and in October 1943 it was made responsible for operating four heavy bombardment replacement groups. These expansions

were to make use of existing facilities, and in the case of the latter program the air force was expressly forbidden to construct new facilities.[17] It was nevertheless later necessary for the AAF to permit the expansion of housing at Chatham Field, Savannah, Ga., and at Charleston, S. C., for heavy bombardment training.[18] Between 1941 and 1945 the Fourth Air Force expanded its fighter training, began the training of jet fighter units, received the responsibility for night fighter training, and was required to devote six stations to training heavy bombardment crews. Most of the facilities were already on hand for the use of the expanded training activities, and three of the six heavy bomber training installations (Walla Walla, Mountain Home, and Gowen) were obtained from the Second Air Force.[19] Some additional housing was permitted at Fourth Air Force stations, but the AAF was by no means generous. In August 1943, for example, the Deputy Chief of Air Staff approved an expenditure of $1,000,000 to expand housing at Ellensburg, Wash., for fighter training, but he informed the Fourth Air Force that General Arnold would authorize no additional training or operational facilities in the Northwest.[20] During 1943 and 1944, as a part of the program to give each air force a more balanced training load, the Third Air Force received a heavy bombardment training objective and the Second Air Force received fighter groups. Neither air force needed any special facility expansion for the accomplishment of the training.[21]

Much of the new construction built after 1943 was more closely connected with the needs for very heavy bombardment training. The most serious problem was to find fields for the B-29's which were to be used against

Japan in large numbers. These aircraft needed 7000 x 150-foot runways with a load capacity of 120,000 pounds. Runways 6000 feet long with a lesser load capacity, however, could be used for limited training. The B-32's had about the same characteristics as the B-29's, but the B-36 type aircraft (although it was obvious that they would probably not be in operational use during World War II) required runways with 200,000 pound gross load capacity.[22] Housing and maintenance requirements for very heavy bombardment groups were obviously in excess of the facilities provided at most AAF bases.

The Second Air Force, which gave up part of its heavy bombardment training monopoly in the fall of 1943, received initial responsibility for the preparation of B-29 units for combat. Following modest beginnings in the spring and summer of 1943, training was being conducted at Salina, Great Bend, Pratt, and Walker, Kans., and at Clovis, N. Mex., by the end of the year. The Cobb County Airport at Marietta, Ga., was expanded to serve the B-29's being turned out by the assembly plant there.[23] Housing at Pratt, Great Bend, and Walker, originally designed as satellite fields for Smoky Hill but which had been expanded to accommodate heavy bomber groups for staging, was found especially inadequate. At Pratt the housing needed for B-29 units was about three times the base's capacity, and troops had to be quartered in gymnasiums, hutments, and tents.[24] During 1944, however, base facilities were expanded at Clovis, Pyote, El Paso, Great Bend, Pratt, Walker, Alamogordo, Davis-Monthan, Grand Island, Fairmont, Harvard, McCook, Dalhart, Smoky Hill, Kirtland, Gowen, Mountain Home, and Pocatello in order to fit them for B-29 training.[25] At first there was

much anxiety that the runways designed for heavy bombers at these stations would not hold up under B-29 flying, but by the fall of 1944 experience showed that with much maintenance they could be expected to survive until the summer of 1946.[26]

The AAF Training Command, which had to give transition flying training on B-29 and B-32 type aircraft, also needed to expand some of its airfields. At a conference in the Air Installations Division on 17 August 1944, the capabilities of the Training Command's fields for very heavy bombardment use were canvassed. There it was decided that five bases would ultimately be required, one of which would be needed immediately. The conference decided that Maxwell Field could best be expanded first, and by 26 August the Air Installations Division had prepared the necessary plans for extending the Maxwell Field runways to 7000 feet.[27] In September three other fields--Lowry, Randolph, and Roswell--were selected for expansion, including a lengthening of runways, a widening of taxiways, increased maintenance apron space, and a few additional hangars.[28] The fifth school--a transition school for B-32 pilots--was located at Fort Worth, but, since the field could meet very heavy bombardment standards for limited operations, the base was authorized only an additional hangar.[29]

The Third Air Force was first considered for B-32 unit training, and it prepared plans to expand Barksdale, Gulfport, MacDill, and Chatham Fields (the last of which was to be obtained from the First Air Force) for the purpose. Each was selected because few additional facilities would be required. By December 1944 the AAF had decided not to train B-32 units in the continental United States, and the Third Air Force was given the responsibility for operating four B-29 combat crew stations.[30] In

January 1945 construction projects were authorized to provide a 7000-foot runway at MacDill Field, to enlarge the parking aprons at MacDill, Barksdale, Gulfport, and Chatham, and to build hangars at Barksdale, Gulfport, and Chatham.[31] By the end of June 1945 most of this construction was complete and training was in progress at all four of the stations.[32]

The Fourth Air Force participated in B-29 training only to a limited extent. During 1944 a 6500-foot runway at Muroc had been extended to 7000 feet, and beginning in May 1945 the Fourth Air Force began to give training for lead crews for B-29 formations there. The end of the war cut short more extensive plans for B-29 training in the Fourth Air Force.[33]

The construction of runways suitable for B-36 aircraft was a much greater problem than was the providing of facilities for the B-29's and B-32's. These aircraft, as they were designed, would require a landing surface designed to take a 300,000 pound gross load. No design criteria existed for such loading and the problem was further complicated by the fact that all aviation engineering designs for runways had been based on modifications of standard highway designs which had never contemplated a 300,000 pound loading.[34] An experimental runway was authorized to be built at Muroc, Calif., in May 1944, but in July General Arnold ordered the project abandoned when a survey of soil characteristics showed that costs would be excessive.[35] In August planners from the Air Installations Division and the Materiel Command agreed that a new runway could best be built at the Fort Worth Army Airfield, adjacent to the plant in which the first B-36 was being built. The Materiel Com and agreed to request the project, which could be built with industrial funds available to the command. The 300,000-pound capacity runway was first planned to be 7300 feet long

and 200 feet wide with 75-foot stabilized shoulders and with a connected operating apron 150 x 1200 feet. The cost of this project was estimated at $2,250,000.[36] The designed length of the runway had been extended to 8200 feet by the time that the project was submitted for approval in February 1945. After more conferences as to the design, work was finally commenced in June 1945. By this time it had been decided to build the experimental runway 300 feet wide and to delete the shoulders. The project was not completed until August 1946.[37]

The beginning of the employment of very heavy bombardment aircraft from the Marianas against Japan demanded a build-up of AAF facilities on the Pacific coast for supply and transportation. During 1944 the AAF secured the construction of a $10,000,000 intransit depot at Alameda, Calif., for specific overseas shipments.[38] Mather Field, Hamilton Field, and Fairfield-Suisun Army Airfield were expanded for ATC transport and ferrying employment.[39] The ground forces post at Camp Kohler, Sacramento, Calif., was taken over for an overseas replacement depot.[40] Hills Field at San Francisco was improved in a joint Army-CAA development program which was designed to provide extra air facilities in the San Francisco area to meet the peak load of redeployment of air units to the Pacific.[41]

Some additional construction was permitted in order to bring other miscellaneous installations up to anticipated operational conditions. At Camp Springs, Md., a project for developing Andrews Field as the headquarters of the Continental Air Forces was projected in September 1944, and by April 1945 the Chief of Engineers had allocated $10,000,000 for the construction of administrative buildings, officers' quarters, utilities, a new 8,000-foot runway designed to stand 120,000-pound loads, and other

airfield expansion.[42] Efforts were also made to purchase leased land at fields which seemed certain to be kept in the post-war air force. Following the decision to keep the installations at Orlando occupied by the AAF Tactical Center, the Chief of Engineers was requested to acquire in fee all of the land being used for its gunnery ranges at Pinecastle and the land needed for the expansion of the headquarters post near Orlando.[43] The storage space utilized by the Air Service Command and its successor, the Air Technical Service Command, continued to increase almost to the end of the war. By August 1945 the AAF occupied 87,241,000 square feet of storage of which 14,813,000 square feet was leased.

The AAF also took over a number of excess Ground Forces stations during 1944 and 1945 in order to meet specialized needs. Fort Thomas, Ky., became an AAF convalescent hospital. Because it furnished laundry and other services to Marfa and Pecos Army Airfields, Fort D. A. Russell, Tex., had to be taken over when the Ground Forces declared it excess. Camp Davis, N. C., was secured by them for the training of aviation engineer battalions in January 1945, but it was released to the Marine Corps in August 1945.[44] These facilities, however, required no new construction to suit them for AAF needs.

2. Disposition of Excess Facilities

At the same time that the War Department and the AAF were making efforts to curtail all new construction, both were seeking to dispose of their excess facilities--a task which in many ways was more troublesome than had been their original acquisition. In December 1943 the War Department, predicating its necessity on the fact that personnel shortages demanded

that excess stations be closed or transferred to some other war or civilian agency which could make better use of them, stated its policy in regard to the disposition of surplus Army installations. The AAF, AGF, and ASF were directed to submit data on their surplus stations to the Mobilization Division, ASF, which in turn would circularize all agencies of the War and Navy Departments and other governmental functions to determine if they could be used. It was to make recommendations for final disposition or transfer to the G-3 Division, WDGS, which was charged with making disposition of the facilities.[45] Early in January 1944 additional instructions were issued making the Chief of Engineers responsible through his division engineers (later changed to district engineers) for canceling surplus leaseholds when not more than a $50,000 annual rental was involved. All surplus installations were also to be transferred to the Chief of Engineers for lease or sale. Approval of the Commanding General, ASF, acting for the Under Secretary of War, would be necessary for sales or cancellations of leaseholds renting for more than $50,000 annually.[46] After the creation of the Surplus War Property Administration early in 1944, the final disposition of surplus installations by sale was allotted to that agency.[47]

While these policies were being worked out, the AAF had already begun to dispose of its surplus facilities--particularly its excess leaseholds. During the late spring of 1943 the flying and technical training schools had begun to pass their peak training loads and were showing surplus facilities. First to be cut back in the ensuing contraction were the civil mechanics schools, and (despite strong protests from the Aeronautical Chamber of Commerce) during May and June 1943 most of the contracts with

these schools were canceled. The consolidation of the independent Flying Training and Technical Training Commands into one AAF Training Command, with headquarters at Fort Worth, Tex., on 7 July 1943 resulted in a reduction of leased headquarters facilities. During the summer of 1943 and the early part of 1944 the training activities gave up most of their leased hotels. By the end of July 1943 all of the basic training functions had been moved from St. Petersburg, Fla.; Atlantic City was evacuated completely by training activities by January 1944; and most of the training functions had been moved out of Miami by the spring of 1944. Hotels in Detroit and Chicago were similarly evacuated. The newly created AAF Personnel Distribution Command, however, continued to occupy a part of the hotels which had been leased in St. Petersburg, Atlantic City, and Miami.[48]

In evacuating these hotels the AAF ran into a considerable amount of criticism. So many complaints were heard that the Senate war investigating committee visited Miami in January 1944 to determine the source of the difficulties. It reported that the AAF had shown poor policy in not having taken the hotels originally through condemnation proceedings. Instead, the Corps of Engineers, acting for the AAF, had negotiated directly with the hotel owners and had worked out contracts which had not been completely fair to the owners. Each contract, for example, had contained a provision giving the government a right to terminate it on thirty days' notice; yet the rate of rent had been fixed on a lower than annual rental rate. Damage settlements with the hotel owners whose hotels were being given up were somewhat unfair. In some instances the Corps of Engineers had sought to hold owners' claims down by invoking fair wear and tear

clauses in the contracts or by threatening to exercise the government's right to restore the hotels if the owners would not agree to take a cash settlement. The committee report also criticized the fact that some of the hotels had been kept only a short time, a manifestation of too many changes of mind. The Stevens Hotel, for example, had been kept but 13 months and hotels in Detroit had been taken over and given up in less time.[49] The report, however, did not show that the government had lost money through the jealous efforts of the AAF and the Corps of Engineers to conserve funds, even if their economy had been achieved at the expense of the citizens who owned the hotels.

The AAF had also begun the rather uncertain work of disposing of its surplus airfields and ranges even prior to the announcement of War Department policy on the subject. In October 1943 the Navy had asked for any surplus Army airfields located near enough to the coasts to be of use for carrier pilot training. The AAF almost immediately gave up its facilities at Mt. Vernon, Arlington, Shelton, and Quillayute, all naval air stations in the state of Washington.[50] To expedite the exchange of information on excess facilities, an Army-Navy Facilities Committee was set up in February 1944, and in March a list of 84 standby stations was furnished to the Navy for possible transfer.[51] In April Otis and Trumbull Fields and other airfields at Hyannis, Mass., Port Angeles, Wash., Congaree, S. C., Portsmouth, N. H., New Cumberland, Pa., and Westfield, Mass., were transferred to the Navy.[52] Later in the year it was given the airfields at Jacksonville, Fla. (where the AAF retained operational rights and some facilities), at Keystone Heights, Fla., at Fort Devens, Mass., and the training fields at Waco, Tex. (Blackland Army Airfield), and at Walnut

Ridge, Ark.[53] Some additional AAF facilities for which there was no apparent use were given up completely. By 30 June 1945 it had turned a total of 79 air installations over to the ASF for final disposition.[54]

Despite the obvious desire to be rid of its excess bases, the AAF was fairly slow in giving them up until the needs of redeployment could be ascertained, needs which were by no means clearly determined as late as April 1945.[55] The disposition of AAF facilities between 1943 and 1945, as well as the build-up of facilities during the first two years of the war, are shown in the following chart:[56]

Chart I
STATUS OF AAF CONTINENTAL FACILITIES
1941 - 1945

	7 Dec 1941	31 Dec 1941	31 Dec 1942	31 Dec 1943	31 Dec 1944	VE Day	VJ Day
Main and Sub-bases	114	151	416	461	414	412	401
Auxiliary Fields	x	x	198	322	309	291	269
Contract Pilot Schools	x	x	69	66	14	14	6
Rented Office Space (3)	x	x	x	x	79	109	103
Hotels (4)	x	x	464	216	75	75	75
Bombing and Gunnery Ranges	x	x	x	x	480	473	433
Civilian and Factory Schools	x	x	66	47	21	17	16
College Training Detachments	x	x	16	234	2	1	1
Specialized Depots (5)	x	x	12	41	68	51	43
Miscellaneous Installations	67	(1) 46	(2) 29	32	44	30	30
Total Installations (6)	181	197	1270	1419	1506	1473	1377
Training Establishments	112	151	479	833	464	454	434
Grand Total (6)	293	348	1749	2252	1970	1927	1811

Notes: (1) Forty-seven of these miscellaneous installations were airfields projected or under construction. (2) Thirty-three of these miscellaneous installations were airfields projected or under construction. (3) AAF sites and other small leased installations are not included. (4) This item includes hotels which were leased, owned, or on a contractual basis. (5) Totals include sub-specialized depots. (6) Items marked "x" are representative of missing information and consequently make the totals unrepresentative for comparison.

In general the AAF preferred to retain all of its airfields which had housing and third echelon maintenance facilities until the needs of rede-

ployment could be settled.[57] Most of its excess fields were thus put in a standby status. On 9 December 1943 the Air Service Command was made responsible for receiving all of the excess fields and for maintaining them.[58] These standby stations were utilized for the war effort in any way consistent with their proper preservation for redeployment. The stations and their ranges were leased for grazing under arrangements made by the Corps of Engineers, always with the reservation that they could be repossessed by the AAF on 15 days notice.[59] Provision also had to be made by the lessor to keep animals and other appurtenances away from the runways.[60] Housing at Walterboro, S. C., and at Seymour Johnston, Dale Mabry, and Tyndall Fields was made available for prisoner of war camps on a revocable basis.[61] Billy Mitchel Field at Milwaukee, Wisc., was transferred to the ASF until VE-Day plus 30 for housing Barbadian laborers and prisoners of war.[62] In general, the AAF did not favor any lease of its standby fields which permitted cultivation of the soil and consequent destruction of the sod.[63] The number of fields kept on a standby basis varied from month to month, but on 1 September 1945 some 72 of the 401 main and subbases and 74 of the 269 auxiliary fields of the AAF were being held on an inactive basis.[64]

No little unfavorable civilian comment resulted from the policy of keeping some airfields on an inactive basis at the same time that the AAF was spending money to enlarge other bases. The Second Air Force, in moving its activites out of most of its South Dakota stations, raised considerable political opposition and questioning. It explained the decision to move out of South Dakota and to keep Nebraska bases with the justification that the latter bases had better transportation and were easier to control,

but this did not suit the local citizens.[65] Similar criticism was directed against the same air force for placing Scribner Army Airfield on a stand-by status while other airfields in the same state--Nebraska--were being additionally developed.[66] Part of the critics were answered in the same manner with an explanation that the curtailed activities of the AAF made it necessary that some bases be closed down while at the same time other bases had to be given additional improvements so that they would be suited for very heavy bombardment training.[67]

Meanwhile the AAF was making plans for the liquidation of the vast bulk of its installations after VJ-Day and for the retention of other stations for the postwar air force. By May 1944 a list of 61 stations for permanent use was fairly firm, and the Chief of Engineers was asked to make moving evaluation surveys to determine their fitness for retention.[68] Much of the preliminary planning was done by the office of the AC/AS, M&S, but the final arbiter of the stations to be retained was the Air Facilities Board. In the spring of 1945 questionnaires were sent out to the commands occupying those bases which were tentatively selected for the postwar air force requesting miscellaneous information.[69] By 15 July 1945 a list of 125 stations for active service and 40 additional stations to be maintained on standby status had been drawn up for the use of the interim air force.[70] During August survey boards visited continental stations, checking operational factors, transportation, nearness to population centers, health, technical facilities, water supply, housing and messing, medical facilities, and other such pertinent considerations.[71] Thus the AAF had drawn up a body of information concerning the best of its stations which were desirable for the postwar air force, but the actual stations to be

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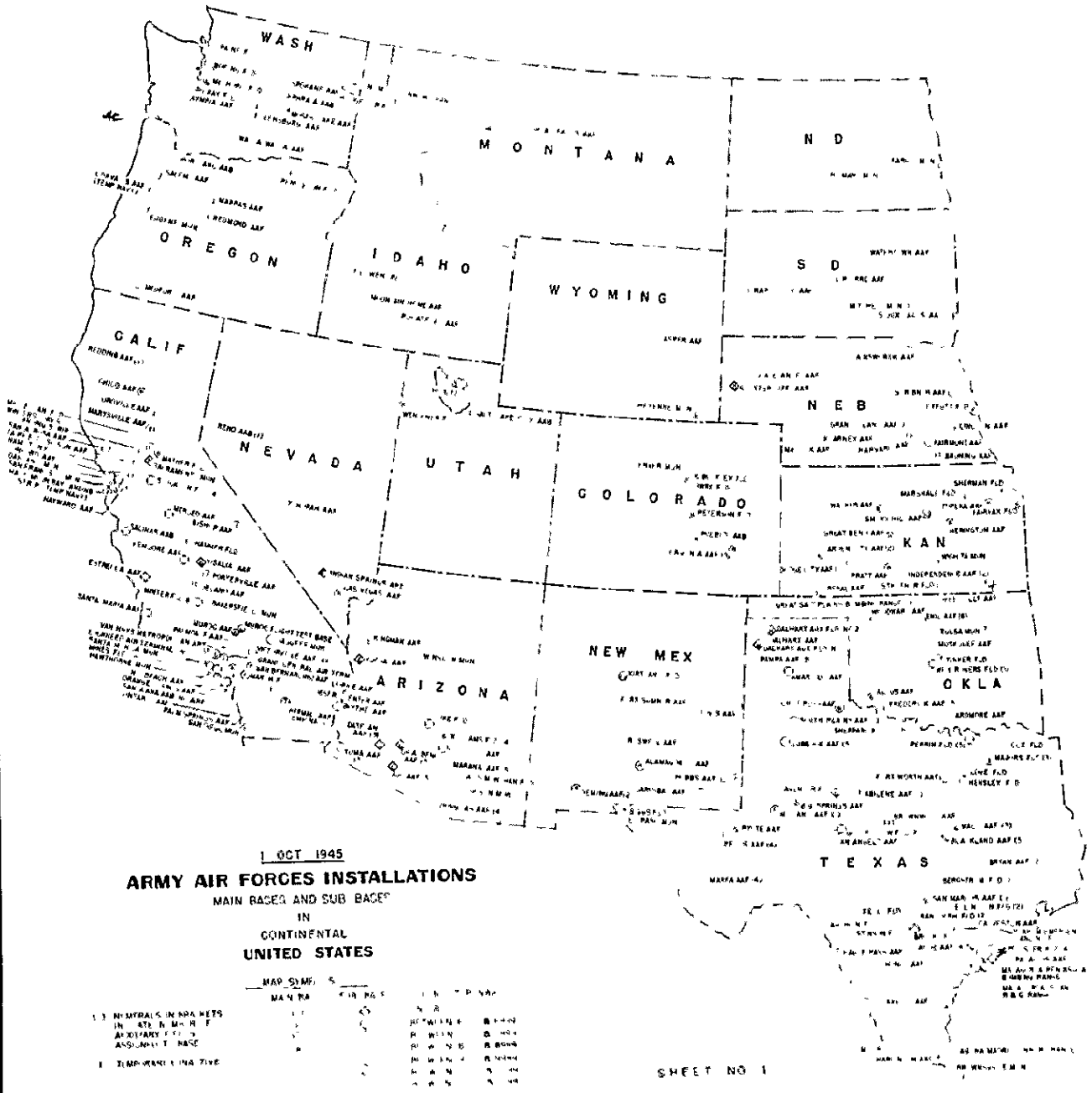


1 OCT 1945

ARMY AIR FORCES INSTALLATIONS

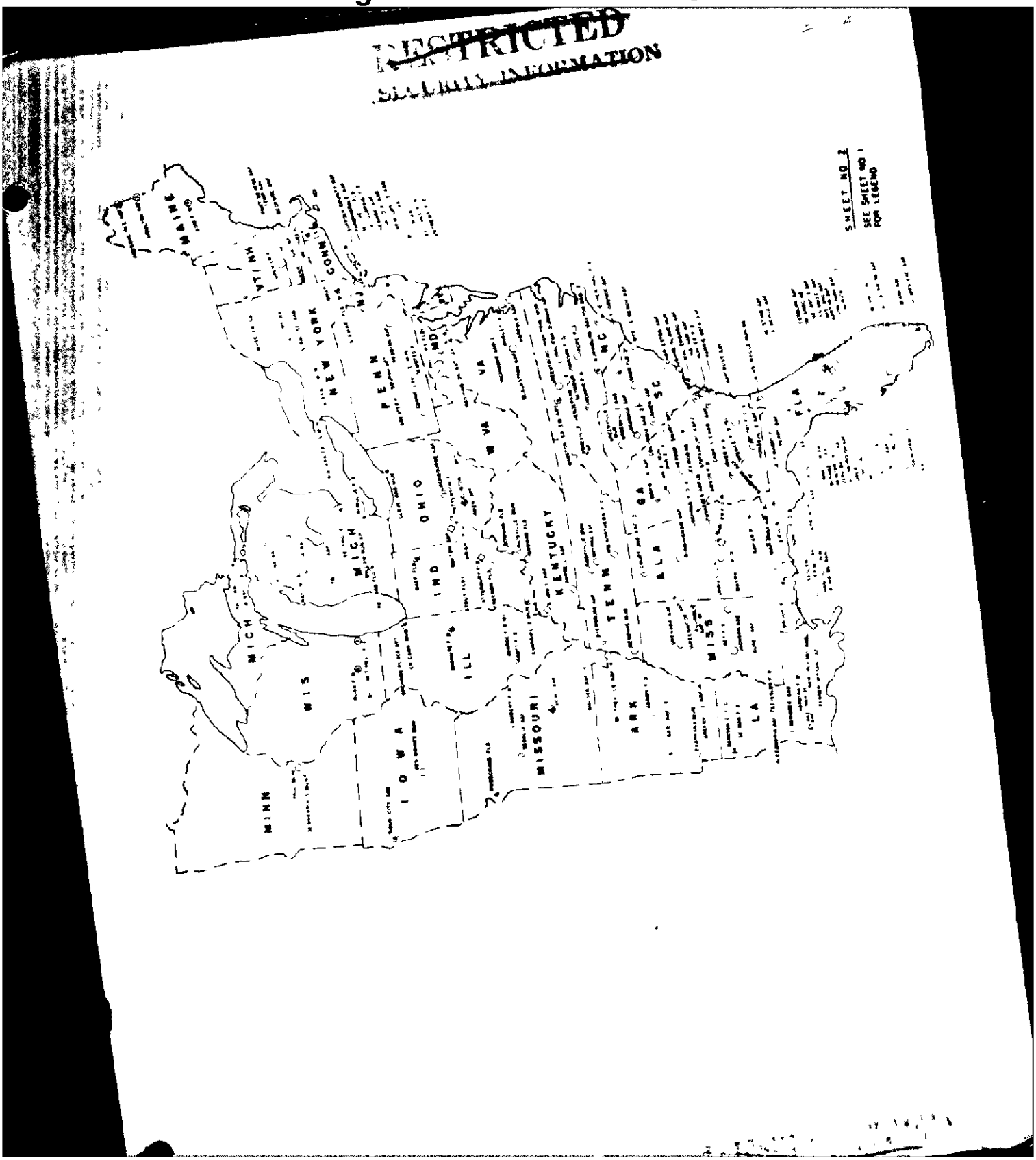
MAIN BASES AND SUB BASES

IN

CONTINENTAL

UNITED STATES

SHEET NO 1



kept would depend upon the appropriations permitted following the end of World War II.

Following the capitulation of Japan, surplus facilities were speedily relinquished in accordance with the demobilization plans. On 26 October alone 192 installations were reported as surplus to the ASF.[72] During December the last of the leased hotels at Miami were returned to their owners. By the end of the year the AAF held only 429 installations, including 273 main and sub-bases of which 106 were inactive and 156 auxiliary fields of which 68 were on a standby status.[73] It was well on the way toward demobilization.

Chapter VI

MISCELLANEOUS PROBLEMS OF AIR FACILITY DEVELOPMENT

At least three continuing problems were so interconnected with all of the phases of AAF base development as to warrant special consideration outside of the chronological narrative of events which has been presented. These problems are: (1) a determination of the effect of political pressure on the selection and development of stations for the AAF, (2) an evaluation of the importance of the various controversies between the AAF and the Navy in regard to the acquisition and utilization of airfields, and (3) a consideration of the costs of construction for the AAF, which, because of the rapid transition from one building program to another, are not easily determined according to the phase treatment in the foregoing narrative.

The first of these problems--political pressures on site selections--was perhaps more apparent than it was a real matter for concern. Local officials, real estate interest, chambers of commerce, and other pressure groups always attempted to secure Army posts for their communities, but for the most part these efforts undoubtedly canceled themselves by their very multiplicity. To some extent these advertizing activities furnished a valuable source of information on the advantages of sites which could be used by the AAF. Nearly every one of the AAF station histories presents an opening section covering the desires and efforts of local pressure groups to get an air base for their community. It was these efforts, in most instances, which resulted in a site board visiting the community, but while these organized efforts may have exerted some influence on the site boards they were never determining factors in site selection.

The Air Corps traditionally fought against any effort of political interests to dictate the exact location of its air bases. The Chief of the Air Corps objected to the original draft of the Wilcox Bill introduced on 17 January 1935 because it designated sites for the new frontier air defense bases too particularly. The resulting emendation which became the Wilcox Act made only a general designation of the strategic areas in which defensive bases and depots would be located.[1] Having secured this legislation, the Air Corps maintained a constant alert to keep it as it was. In April 1938 it opposed a House bill proposing to repeal the Wilcox Act, believing this effort to be sponsored by Pittsburg, Pa., political interests who wanted an air base there. On this occasion the OCAC urged that repeal of the basic act would jeopardize its authorization for new bases and "would likely create no end of correspondence, investigation, inspection and so forth, to satisfy all proposals for the establishment of air bases, regardless of importance of the area in which proposed." Again in March 1939 the War Department voiced the same disapproval of a bill seeking to repeal the Wilcox Act.[2] During 1940 the OCAC successively disapproved of bills designed to permit the selection of three air bases on the Atlantic coast, to establish an air base at Vancouver, Wash., and to build an air base in Maine.[3] The 1939 augmentation program, covered as it was by the comprehensive Wilcox Act, was free from all forms of log-rolling and political pressures. It will also be remembered that General Arnold went to the unusual length of cautioning all Air Corps base commanders not to try to secure any political agitation for projects of interest to them.[4]

Large scale expansion, connected with the avowed intentions of the Air Corps to utilize existing civil airfields as much as possible, gave more opportunities for political manipulation during 1940 and 1941. The need for speed in locating stations for the 54-group program, however, made it necessary for the Air Corps to take almost any airport which had an acceptable landing area and was willing to lease a building area. Site boards frankly sought to secure the best bargains which could be obtained from communities interested in getting an air base, a business which, when conducted on such a large scale, was fraught with inevitable difficulties. In the first place there was no clear policy as to whether the boards should strive to secure "all they can get for nothing" or whether they should seek only a building site and an airport which could be leased. One Air Corps officer on such a site board frankly stated that he did not believe "that an Army officer should ... be placed in the position of being a kind of mendicant, seeking civilian [illegible] in the guise of of cooperation."[5]

This practice of seeking local assistance in the form of free land was of long standing and although it was sound in principle it sometimes resulted in the virtual sale of air installations to the highest bidder. The commitments by local interests formed a basis for pressure which should have been subordinated to tactical, training, and construction requirements. The process introduced an element of competition between municipalities which resulted in bargains which for local, financial, or other reasons could not be fulfilled. At Greenville, Miss., for example, the city certified that a railroad spur would be constructed to the airfield site. This concession was based on a gentleman's agreement with the

local railroad that it would build the spur, but when the railroad backed down, the city was able to furnish only the right-of-way. At Bangor, Me., the city executed an airport lease providing that it would maintain the runways, but later for reasons which have been seen refused to do so. At East Baton Rouge, La., the police jury obligated itself to remove high tension wires around the airfield, but later attempted to do this by putting pressure on the local utility company, so causing delay. Fresno, Calif., was unable to obtain the amount of land it promised to lease to the government at its airport, making it necessary to move the entire project to an alternate location. There were many other similar breaches of contract. These civil commitments were consequently not economical and additional construction costs were made necessary, thus nullifying many of the supposed advantages of placing Air Corps stations at airports which offered the most concessions. The whole theory, moreover, effected undue hardships on small communities which could not afford to bid for air bases.[6]

While there is little evidence of direct Congressional pressure dictating the location of air bases, there are abundant manifestations of site boards being instructed to inspect sites at the instigation of a number of Congress. This, in itself, was more helpful than hurtful because it did call attention to many desirable sites. At times, however, it caused delays and waste effort when site boards were required to inspect manifestly unsatisfactory sites. In locating a local bombing range near Albuquerque, N. Mex., for example, the CCAC requested the 9th Air Force to make a report on one particular site "regardless of the nature of your recommendations, as this office is required to advise Senator Carl Hatch

of New Mexico who has interested himself in this proposal in behalf of a constituent."[7] Again, a site board for the 54-group program was required to inspect a site at Roanoke, Va., although the terrain was unsuited and the only tactical group which could have gone there had been fairly well committed to Meridian, Miss.[8] Strong and determined efforts seem to have been made by the CCAC to resist more dishonest political influence. Upon receipt of confidential information that a former Texas congressman had received a retainer of $1,000 to get an Army post at Laredo, McAllen, or Brownsville, Tex., the CCAC advised the commander of the Gulf Coast Training Center that he would "carefully guard" his conversation and make no commitments until such had been approved by the CCAC.[9] While two of the cities later received AAF stations, there was such a time delay as to negate a charge of any peculation.

The easing of the financial situation which began with the appropriations for the 84-group tactical stations seem to have been instructed to give weight to states which did not have air bases, there is absolutely no indication that political pressure dictated the location of any one of the new stations. While political considerations probably caused the Gulf Coast Training Center to move a training stations projected for Vernon, Tex., across the river into southern Oklahoma, eventually locating it at Frederick, there seems to be little reason to believe that the station did not function just as well in southern Oklahoma as it would have done in north Texas. As the war progressed, the AAF was able to take an even bolder stand and to demand that there be no consideration of any factor in site selection which would delay the war effort.

In summary, it seems evident that the main detrimental effect of

political pressure was to delay site selection in a few instances. Constant intervention into the process of site selection by political leaders on every level was troublesome, but it is a well-recognized part of the democratic process. In most cases, moreover, senators and representatives, when they did attempt to secure consideration of sites of interest to their constituents, acted as lawyers seeking to present the best possible case for their clients, and in no case do they seem to have tried to dictate the outcome of the decision. By the same token, the AAF took the best of the sites offered without undue appeasement to any particular pressure group.

The various controversies between the AAF and the Navy in regard to acquisition and utilization of the airfields and the air space of the nation caused a not inconsiderable amount of localized irritation, but from the viewpoint of the national war effort the problems never proved to be serious. In the first place, the AAF and the Navy showed a high degree of cooperation at most jointly utilized bases. Army airfields at Jackson, Miss., Abilene, Tex., and El Paso, Tex., and elsewhere, were used to service naval aircraft as early as May 1942.[10] Similarly, local agreements were drawn up early in 1942 permitting the Air Corps to use the naval air stations at Arlington, Quillayute, Shelton, and Oak Harbor, Wash. Here the Corps of Engineers built facilities for single fighter squadrons.[11] In the second place, the Interdepartmental Air Traffic Control Board furnished a working machinery for the adjustment of most of the Army-Navy facilities difficulties. But there were some local points of discord which, given an enemy attack on one of the sea frontiers so affected, might have been dangerous to the continental defenses.

Most of the points of irritation between the Army and Navy air services arose in Florida, an area with optimum flying weather but with a limited air space. Difficulties first arose in western Florida where the control of all of the Choctawhatchee National Forest placed AAF activities at Eglin Field very close to the flying area of the naval air station at Pensacola, Fla. Air Corps officials at Eglin, desiring to exploit the whole of the reservation, wished to prevent Navy air operations east of the western boundary of the Choctawhatchee reservation, roughly the 87th meridian, but on 3 June 1941 a local agreement was drawn up restricting Air Corps operations to 86° 45' west longitude and permitting only operations under 1000 feet to 86° 50' west longitude. It was agreed that the two fields then under construction west of the first line of demarcation would be completed, but that no others would be begun.[12] This agreement was tenable during the limited operations preceding Pearl Harbor, but with the beginning of the war it became a source of discontent. At the same time operational competition was beginning elsewhere in Florida. For bombing and gunnery training the CCAC had proposed to give the Navy unrestricted use of all off-shore areas along the east coast of Florida except a sector approximately 80 miles long between Ft. Pierce and Boca Raton, reserved for the use of Morrison Field. The Army proposed to assume an unlimited use of the west coast of the state.[13] This proposition, tendered in March 1941, seems never to have been formalized, but it became the basis of a gentleman's agreement between General Arnold and Admiral Towers. In December 1941 the Navy accordingly opened Air Corps planes to over ferrying operations from the 36th Street Airport to the International Airport at Miami.[14] During the spring of 1942 both services, probably unwittingly,

abridged the terms of the agreement. One AAF site selection board mistakenly inspected the CAA improved municipal airport at Vero Beach, and a Navy board attempted to secure a lease on the Gainesville municipal airfield which, according to AAF interpretation, came within the Camp Blanding air space reservation.[15]

To bring more order into the Florida situation, a joint conference between Army and Navy representatives evolved a north-south dividing line for the state running from Jasper to Everglades. In the agreement, published on 19 September 1942, the Army received control of the area lying west of the dividing line except Pensacola and an area around Lake Tohopekaliga which was reserved for a sea-plane base. To the east of the line the Navy would control all except the Camp Blanding area, Pabo Sound (a Signal Corps school), Morrison Field, Boca Raton, Homestead, and Clewiston (an AAF flying school). The line of division between Eglin Field and Pensacola was drawn in at 86° 45' west longitude with no change to the existing agreement.[16]

This, however, was no more than a working solution, and by January 1943 the AAF had secured Navy permission to establish an air depot at the 36th Street Airport at Miami. In February 1943 the Navy reopened the discussion of the boundary line when it proposed to open an amphibious training base on St. Andrews Bay, between the Proving Ground reservation and Tyndall Field at Panama City. To Brigadier General Grandison Gardner, commanding the Proving Ground Command, it seemed that his reservation was going the way that Rockwell and Duke Fields had gone—the Navy, encroaching from both sides, would finally take it all over.[17] The outcome of the disagreement was a conference held in Washington on 30 December 1943. Here

it was decided to leave the dividing line as it was, but to permit local activities to make temporary agreements contravening the basic division for periods not in excess of 90 days. The representatives of the Army and Navy at this conference were to remain as a board subject to call when local agreements could not be satisfactorily worked out.[18] Early in February 1942 this agreement was announced as Army policy.[19]

On the Pacific coast the Fourth Air Force encountered much the same difficulty, but with more successful solutions to the problems. During the years of peace each agency on the west coast had made their plans for meeting a war emergency without coordination. The result, revealed after Pearl Harbor, was that both the Army and Navy had counted on using many of the same civilian fields. In the San Diego area only five fields were available for defense in 1942. Ord, Lindbergh Field was an Army installation, and it was unsuited because of its limited area for the operation of barrage balloons. The Fighter Command accordingly asked for joint occupancy with the Navy at Rose Field, Otay Mesa, and Kearney Mesa, in addition to the one squadron facilities which had been made available at Lockwell Field. The Navy replied that the three fields were needed exclusively for training and had no room for single fighter squadrons belonging to the Army. Since no local agreement was forthcoming, the matter was referred to the Interdepartmental Air Traffic Control Board, which in December 1942 recommended that the Navy's offensive mission should take precedence over the Army's defensive task. Although the matter certainly to be presented ground at high levels in the War and Navy Departments, it never received a satisfactory solution, and it was finally to have been dropped during the fall of 1943 when the Fourth Air Force moved from a

defensive to a training mission.[20]

During 1942-1943 the Second Air Force engaged in a more limited controversy with the Navy. In June 1942 General Olds visited Washington and was given to understand that the Second Air Force would be permitted to develop stations at Hutchinson, McPherson, Newton, and Lyons, Kans., but when he proposed to survey the sites, he found that the Navy had already cleared Hutchinson with the Interdepartmental Air Traffic Control Board and objected to Second Air Force use of the other three sites. The Second Air Force finally had to give up all three of its sites, but in return the Navy [illegible] which it might have had for [illegible] at [illegible] Island, [illegible]. [illegible] the [illegible] controversy [illegible] control [illegible] in Washington and [illegible]. In [illegible] General Olds received what he described as "an extremely arrogant letter" from the local Naval District commander in the Pacific northwest stating that the Navy planned to expand the training activities around [illegible], [illegible], [illegible], General Olds said, violating a 35,000,000 [illegible] in Washington and [illegible]. General Olds [illegible] first to [illegible] with [illegible] and to [illegible] in front of Navy aircraft, but finally the Interdepartmental Air Traffic Control Board in August 1943 finally ordered the Navy to limit its activities to an altitude of less than 3000 feet and to a radius of 50 miles of [illegible].[21] These two [illegible] were thus easily settled by the ordinary machinery available to the Interdepartmental Air Traffic Control Board.

Really satisfactory agreements looking toward cooperation between Army and Navy facilities were not known until 1944. These agreements were evolved as a result of the transfer of excess Army airfields to the

Navy during the spring of that year. To effect these transfers both services named members to a Joint Army-Navy Air Facilities Committee, which began to function in March.[72] This committee confined [illegible] activities to the business at hand, but it also took action looking toward the cooperative use of all air facilities. As a result of its discussions, the Navy agreed to remove its servicing detachments from the AAF fields which it was using for ferrying and to rely on AAF service personnel, thus saving both men and equipment.[73] By September 1944, moreover, the Navy had concurred in an AAF proposal regarding [illegible] cooperative use of Army and Navy air facilities by either service in the event of an emergency.[74]

Although this committee was by no means definitive, the Army and Navy, after three years of war, had at last reached a [illegible] of agreement which looked toward cooperation in the [illegible] of their air bases. The [illegible] had not been a good one, and essentially the fundamental [illegible] of trust between the two [illegible] services [illegible] [illegible] to the national [illegible] on the coast of the United States. Certainly [illegible] might well have [illegible] San Diego [illegible] of all from the [illegible] defense of the region. [illegible], the [illegible] might have been [illegible] had there been [illegible] of the [illegible]. Thus the AAF, although it assumed [illegible] airfields [illegible] of the committee, still [illegible] with the [illegible] defense of the whole area. The [illegible] of the [illegible] Traffic Control Board, moreover, had proved [illegible] for the settlement of minor jurisdictional disputes, but it had failed [illegible] of

the board did not agree. There was clear indication from the episode at San Diego that some unity of command, capable of taking some sort of positive action, was needed at the top level to control both the Army and Navy.

The problem of the costs of AAF installations, while easily determined for individual stations from the project records maintained by the Office of the Chief of Engineers, is somewhat more difficult to determine on an overall scale. Since the totals available were based upon slightly different schedules or reporting during the war years, it is hard to find an exact figure for the cost of war construction for the AAF.

Inventory figures for the value increase in AAF construction are based upon the date of 30 June 1940, at which time the value investment in such installations as continued in use throughout the war approximated $98,000,000, as may be seen in Chart II. This figure, however, does not include the original cost of land, and it has the defect of including the cost of only those stations which remained in use. For this reason the cost of Moffett Field, estimated to be $[illegible],604,45[illegible] as of that date, should at least be added to the total to get an approximate capital value of installations in use as of June 1940.[75] The total value of the AAF plant in June 1940 would therefore seem to be approximately $104,000,000. The emphasis which had been placed upon the comfort and convenience of personnel in the relatively undeveloped airfield facilities at most of the pre-1940 bases is clearly indicated by the amounts of money which had been spent. By 30 September 1945 the total capital investment in the then currently used command installations had increased to $2,991,606,435. The composition of this sum, as well as its relation to the overall War Department investment in command installations, may be seen in

Chart II

SUMMARY OF CONSTRUCTION COSTS AT AAF STATIONS TO 30 JUNE 1940

INSTALLATION	AIRFIELD	HANGARS	TECHNICAL	CANTONMENT	UTILITIES	TOTALS
Barksdale Field	$ 376,242	$ 709,354	$ 346,625	$ 4,228,509	$ 1,370,849	$ 7,031,579
Biggs Field	52,943	65,250	23,965		15,802	157,960
Bolling Field	2,015,036	630,292	69,983	1,094,722	887,399	5,297,432
Brooks Field	280,993	1,687,923	102,560	353,711	65,113	2,510,300
Chanute Field		85,750	64,262	1,301,496	1,114,058	2,565,566
Tucson, Ariz.		39,620	4,573	19,548	2,845	66,586
Eglin Field			12,994	107,104	3,464	123,562
Ft. Dix Airfield	103,286					103,286
Godman Field	103,741	41,000		18,894		133,635
Gray Field	122,255	241,839	13,677	35,606		413,247
Hamilton Field	920,111	1,190,731	103,601	2,956,549	729,396	5,905,388
Kelly-Duncan Fields	1,572,604	892,324	2,538,868	1,651,214	1,460,429	8,115,339
Langley Field	1,592,916	1,581,959	819,261	6,192,797	2,430,986	12,617,959
Lawson Field	24,797	177,884	11,289			213,970
Lowry Field	981,497	836,617	212,019	1,036,592	129,999	3,196,724
March Field	459,434	364,278	94,614	2,785,094	665,409	4,366,759
Marfa, Tex		8,877	3,150	6,347	10,179	28,553
Marshall Field	24,997	94,782	22,238	148,158	9,991	300,166
Maxwell Field	197,232	430,619	412,695	3,433,612	616,983	5,371,167
McClellan Field	371,709		3,479,639	899,656	571,999	5,323,002
Mitchel Field	620,785	446,953	162,067	3,055,170	701,931	4,986,906
Offutt Field, Neb.	250	94,632	164	500		95,546
Olmsted Field	21,621	121,272	1,464,456	667,734	1,638,842	3,913,925
Oscoda, Mich.	13,957		220	13,054	725	27,953
Patterson Field	91,712	126,409	1,514,912	1,958,605	1,241,273	4,931,911
Phillips Field	315,691	142,421	12,168	90,116		560,396
Pope Field	30,059	288,991	27,784	259,259	79,024	725,177
Randolph Field	1,359,259	915,257	582,206	6,747,789	1,386,987	10,992,137
Scott Field	19,156	602,087	103,911	2,854,022	463,278	4,046,394
Selfridge Field	93,967	220,927	219,091	2,470,186	1,869,762	4,873,973
Sikeston Field		41,758	14,598	3,000		59,356
Wright Field	117,716	393,934	2,275,134	602,361	854,936	4,133,381

Source: AG/413-4, AMD, Summary of Real Estate and Construction Costs for AAF Installations, 15 Sept. 1946

Chart III. These figures, however, do not contain costs for facilities which had been developed but had been transferred or [illegible] prior to 30 September 1945.

The [illegible] total summary of the value of War Department construction placed between 1 July 1940 and 31 August 1945 is shown below in Chart IV. Such "work placed" or "put in place" is defined as [illegible] of the costs of labor, materials in place, equipment, rental, and miscellaneous other costs applicable to work accomplished. The [illegible] during the period of the war emergency, a total of 3,1[illegible],0[illegible]5,000 or [illegible].5 per cent of the total War Department expenditures for facilities, went for the construction of AAF command installations. This figure represents a

Chart IV [illegible] CONSTRUCTION [illegible], 1 JULY 1940 - 31 AUGUST 1945		
Type of Installation	Amount	Per Cent
Industrial Facilities	[illegible]3,[illegible]2,264,000	[illegible]0.0
Command Facilities	7,4[illegible],6[illegible]1,000	7[illegible].0
Air Forces	3,1[illegible],0[illegible]5,000	[illegible]
Ground Forces	2,[illegible],[illegible]37,000	[illegible]6.5
Storage and Shipping	1,0[illegible]0,[illegible]7,000	9.[illegible]
Miscellaneous	[illegible]53,19[illegible],000	4.[illegible]
Total for War Department	10,[illegible],0[illegible]5,000	10[illegible].0

Source: AAF, Statistical Review, World War II, p. 11.

fairly accurate approximation of the cost of AAF command facilities for the period of the war emergency, and it is more accurate than the inventory figures for September 1945.

The trend in AAF command construction costs by month between December 1941 and August 1945 may be seen in Chart V. This chart also shows a comparison of AAF construction put in place by month with the total War

[illegible] 30 [illegible] 1945

TYPE	NUMBER	LAND	CONSTRUCTION	TOTAL	LEASED	LAND (AC) LEASED	TOTAL	ANNUAL RENTAL
		COST SINCE 1 JULY 1940						
AAF Tactical Training	[illegible]	[illegible],127	[illegible]	[illegible],012	15,[illegible],470	[illegible],470,[illegible]	1[illegible],170,035	1,370,143
AAF Storage	130	[illegible]	462,[illegible],140	473,[illegible],539	71,132	[illegible],035	91,213	5,114,287
AAF Miscellaneous	[illegible]37	11,[illegible]	[illegible], 91,[illegible]	[illegible]10,340,934	569,151	[illegible],549	1,437,710	[illegible],137,424
ASF & AGF Training	231	[illegible],304,217	[illegible],152,[illegible]	2,[illegible],729	7,297,124	[illegible],943	8,135,967	5[illegible]3,734
ASF Storage	210	31,337,[illegible]	[illegible],745,202	905,[illegible]3,177	459,[illegible]	14,441	474,3[illegible]8	6,453,451
ASF & AGF Miscellaneous	259	16,725,[illegible]	1[illegible],110,[illegible]	2[illegible],246,372	319,972	231,772	551,744	9,116,502
POW and Staging	137	2[illegible],917,357	[illegible],277	[illegible],357,324	59,362	13,146	76,508	7,983,951
[illegible]	16[illegible]	[illegible],539	[illegible],301,714	[illegible],154,[illegible]3	29,394	50,511	79,905	126,992
Harbor Defenses	[illegible]	11,[illegible]	11[illegible],461,[illegible]	126,[illegible]	54,[illegible]	9,311	63,327	131,125
[illegible]	47	11,[illegible]	132,127,[illegible]	[illegible],516	16,766	2,[illegible]17	19,[illegible]33	1,969,064
[illegible]	114	7[illegible],[illegible]6		7[illegible],[illegible]6	2,776		2,776	
GRAND TOTAL	2,[illegible]	27[illegible],110,[illegible]	7,[illegible],77[illegible]	7,[illegible],557,[illegible]	[illegible],367,[illegible]	4,734,591	29,102,[illegible]31	37,141,[illegible]3

Source: [illegible] Tr[illegible], [illegible], [illegible] and [illegible], 30 Sept. 1945, p. 3.

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Department expenditures for construction put in place by month. It well illustrates the tremendous increase in AF construction activity during 1942 and the gradual, although slow, decline in construction activites during the remainder of the war period.

Chart V

VALUE OF WORK PLACED MONTHLY ON WAR CONSTRUCTION PROGRAM IN THE CONTINENTAL UNITED STATES DURING WORLD WAR II

Year and Month	Total WD Construction	Total AAF Command Construction
1941		
December	$ 206,198,000	$ 12,645,000
1942	5,565,875,000	1,716,102,000
January	205,167,000	42,312,000
February	203,392,000	33,307,000
March	379,217,000	68,602,000
April	367,629,000	76,477,000
May	418,261,000	106,940,000
June	539,204,000	151,535,000
July	720,364,000	247,734,000
August	645,901,000	241,535,000
September	650,825,000	219,707,000
October	602,587,000	218,453,000
November	502,736,000	191,713,000
December	330,692,000	110,737,000
1943	1,893,569,000	821,132,000
January	285,456,000	93,164,000
February	224,926,000	76,695,000
March	203,008,000	81,294,000
April	197,220,000	115,471,000
May	200,417,000	82,908,000
June	172,693,000	83,475,000
July	161,372,000	76,795,000
August	121,634,000	60,327,000
September	105,354,000	45,244,000
October	93,482,000	45,906,000
November	74,052,000	30,806,000
December	53,955,000	24,147,000
1944	440,943,000	173,303,000
January	39,209,000	19,414,000
February	34,565,000	16,344,000
March	30,258,000	14,149,000
April	30,278,000	15,180,000
May	32,551,000	15,469,000
June	32,906,000	13,562,000
July	39,908,000	16,473,000
August	42,717,000	16,169,000
September	37,673,000	14,334,000
October	41,711,000	12,937,000
November	43,769,000	13,261,000
December	35,298,000	5,961,000
1945	401,631,000	58,279,000
January	32,836,000	5,791,000
February	33,452,000	5,382,000
March	51,412,000	5,797,000
April	52,466,000	6,836,000
May	60,160,000	6,987,000
June	60,973,000	7,231,000
July	62,480,000	9,761,000
August	47,852,000	10,444,000
TOTAL	$ 8,508,116,000	$ 2,781,461,000

Chart V - Continued

Source: ASF, Statistical Review, World War II, Appendix C, p. 84.

Chart V - Continued

Source: ASF, Statistical Review, World War II, Appendix C, p. 84.

G L O S S A R Y

AC/AS, MM&D	Assistant Chief, Air Staff, Materiel, Maintenance and Distribution
AC/AS, M&S	Assistant Chief, Air Staff, Materiel and Services
ASC	Air Service Command
ATC	Air Transport Command
AWPD	Air War Plans Division
CAA	Civil Aeronautics Authority
CCC	Civilian Conservation Corps
FRTC	Fighter Replacement Training Center
FSA	Farm Security Agency
OCAC	Office, Chief of the Air Corps
OCE	Office, Chief of Engineers
OTU	Operational Training Unit
QMC	Quartermaster Corps
RTU	Replacement Training Unit
WDGS	War Department General Staff
WPA	Works Progress Administration
WPB	War Production Board

NOTES

Chapter I

1. Cong. Rec., 76 Cong., 1 Sess., v. 84, p. 74, 4 Jan. 1939.

2. House, Hearings before Subcommittee No. 1 (Aviation) of the Select Committee on Expenditures in the War Department, 66 Cong., 1 Sess., 6 Aug. 1919, Serial 2, v. 1, pp. 327-328; Airport Survey, 24 Mar. 1939; H. Doc. No. 245, 76 Cong., 1 Sess., p. 9.

3. House, Hearings of the Committee on Military Affairs on Army Appropriation Bill, 1920, 66 Cong., 1 Sess., 7 June 1919, p. 469.

4. Station List, OCAC, 2 Mar. 1939. This list differs from the situation in January 1939 only in that it shows new units to be activated.

5. Public Law No. 806, 70 Cong., 2 Sess., 45 Stat. 1301, 25 Feb. 1929; Hist. Barksdale Field, Inception to 7 Dec. 1941, v. 1, pp. 2-7; AFSHO 241 ?, 280.??-1, v. 1; House, Hearings before Committee on Military Affairs on H. R. 12?63, 71 Cong., 2 Sess., 9 June 1930, pp. 2-3; Public No. 514, 71 Cong., 2 Sess., 46 Stat. 857, 3 July 1930; Hist. Hamilton Field Air Base Area, Feb. 1929 to 31 Mar. 1933, pp. 6-10; in AFSHO 284.04-1.

6. Exec. Order No. 7215, 26 Oct. 1935. This action followed a long period of uncertainty as to the disposition of fields which were held in common by the Army and Navy. Rockwell Field, for example, was located on North Island in San Diego Bay. In 1912 the Signal Corps had obtained the site for an Army aviation station, and in 1917 the island had been purchased as a joint Army-Navy base (Ltr., Brig. Gen. W. I. Kenly, to TAG, 16 May 1918, sub: Aviation School at North Island. File 1/1-C, OCAC Plans, in AFS O). Both the Army and Navy had tried to supplant the other from the crowded island, and as late as May 1934 the Air Corps had protested a shift any plan to move its activities from the island(Memo, Brig. Gen. O. Westover, Asst. C/AC, to Chief, WPD, sub: Relinquishment of Rockwell Field, North Island, by Army Air Corps for use by the Navy, 25 May 1934, in AFS O 323.7, OCAC Plans.)

7. R&R, Col. ? ? Lincoln, Chief, Plans Sect., OCAC, to Chief, Inspections Sect., OCAC, 22 Oct. 1937, in AFSHO 323.7, OCAC Plans; R&R, Chief, ?G Sect., OCAC, to Chief, Supply Div., OCAC, sub: Disposition of Moffett Field and Scott Field Hangars, 22 Mar. 1938, in AAG 600.1 A; Ltr., TAG to CG, IX Corps Area, sub: The Unsuitability of Moffett Field, California, for Army Use, 12 Jan. 1935, in AAG 686 A.

8. Hist. Bolling Field, 1935-1945, pp. 16-22, in AFSHO 280.60-1; Ltr., Comdr. W. C. Griffin to CO, Bolling Fld., sub.: Old Bolling Field, 15 Nov. 1937, in AFSHO 323.7, OCAC Plans.

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9. Public Law No. 26, 74 Cong., 1 Sess., 49 Stat. 594, 12 Aug. 1935; 3d ind., (ltr., TAG to C/AC, sub.: H. R. 4130--Frontier Defense Bases, Air Corps, 20 Jan. 1935), C/AC to TAG, 7 Feb. 1935; in AG 580 (1-26-35) Misc. DC of S.

10. Hist. McChord Fld., 1937-1943, pp. 1-18 in AFSHO 286.27-1.

11. Air Corps Board, Study No. 5: Report on Overhead Fire-Proof Protection for Air Corps, 2 Jan. 1936. This report is much more comprehensive than its title would indicate. Ltr., TAG to Chiefs, Armed Services, sub.: Air Board Reports, 15 Sept. 1939, in AG 320.2 (6-26-39) M-B-M. Tab. F.

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13. Hist. Kelly Fld., 1 Jan 1939 to 11 Dec. 1941, pp. 4-14, in AFSHO 285.20-1, v. 1.

14. Hist. Brooks Fld., 1917-1944, pp. 3-15, in AFSHO 280.99-1, v. 1.

15. Hist. Randolph Fld., 1931-1944, v. 1, pp. 1-71, in AFSHO 287.96-1, v. 1.

16. Hist. Chanute Fld., 1917-1941, v. 1, pp. 1-20, in AFSHO 271.46-1, v. 1; Hist. Lowry Fld., Activation to 7 Dec. 1941, pp. 1-19, in AFSHO 285.77-1; Hist. of Air Corps Technical Training from 1917 to 7 Dec. 1941, v. 1, pp. 1-23, in AFSHO 225-2, v. 1.

17. Hist. Maxwell Fld., 1 Jan. 1939 to 7 Dec. 1941, pp. 1-6, in AFSHO 286.26-1.

18. House, Hearings before the Subcommittee of the Committee on Appropriations on the Supplementary Military Appropriations Bill for 1940, 76 Cong., 1 Sess., 17 May 1939, p. 46.

19. Hist. Chanute Fld., 1917-1941, v. 1, p. 42. See also miscellaneous inspection reports on Chanute Fld., (in AFSHO 352, OCAC Plans).

20. Ltr., Lt. Col. F. F. Galloway, CO, AC Adv. Flying School, Maxwell Field, to C/AC, sub.: Improvement of Maxwell Field, 23 Sept. 1940, Col. T. H. Kennedy, Chief, TSG Div., OCAC, wrote on this letter: "We could build a whole new station for less money." (In AFSHO 600.1, OCAC Plans); AC/AS-4, Air Installations Division, Summary of Real Estate and Construction Costs for AAF Installations, 15 Sept. 1946, p. 143.

21. Hist. Acquisition of Facilities for the ASC, 1939-1944, pp. 1-17, in AFSHO 201-20; ACR, Maj. F. S. Vanderberg to Col. Carl Spaatz, Chief, Plans Div., OCAC, sub.: Flying Field at Olmsted Field, Middletown, Pa., 4 Sept. 1940, in AFSHO 600.1, OCAC Plans.

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23. Hist. Acquisition of Facilities for the ASC, 193?-1944, pp. 1-17; Hist. San Antonio ASC, Inception to 1 Feb 1941, pp. 1-?, in AFS ? Hist. San Antonio ASC, Inception to 1 ?eb 1943, ?? ?-?; Hist. Air Depot at Fairfield, Ohio, 1917-1943, pp. ?-?, 205.11-1, v. 1; Hist. Air Depot at Fairfield, Ohio, 1917-1943, pp. ?-?, in AFHC 205. 02-1; Hist. Sacramento ASC, pp. 122-273, in AFHC 205.10-1, v. 1; Hist. Middletown Air Depot, Activation to 1 Feb. 1943, pp. 1-4, in AFHC 205.04-1.

24. Station List, OCAC, ? ?ar. 1939; ltr., TAG to Chiefs, Arms and Services, sub.: Air Board Reports, 15 Sept. 1939, in AG 3?? .? (?-26-39) ?-?.

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27. Ibid.; Air Corps Board, Study No. 5: Report on Overland ?omb-Proof Protection of Air ?ases, ? Jan. 1936.

28. Hist. Langley Fld, Inception to 1 Mar. 1935, v. 1, pp. 1?-1?; memo, Brig. Gen. Carl Spaatz, Chief of A/S, AAF, to Deputy C/S, Air, sub.: Use of Mulberry Island by Fort Eustis Coast Artillery ?eplacement Center, 4 Sept. 1941, in AAG ?23.7, OCAC Plans.

29. Hist. Selfridge Fld, 1 Jan. 19?? to 7 Dec. 1941, v. 1, pp. 4?-??.

30. Hist. Turner Army Airfield, 1 Jan. 1939 to 31 Dec. 1941, v. 1, pp. 1-5 in AFHC ?? .6?-1, v. 1.

31. Ltr., Lt. Col. ?. ?. Davis, Exec., OCAC, to CG GHQAF, sub.: Military Air Space ?eservations; 1st Ind., Brig. Gen. W. G. Kilner, C/S, GHQAF to C/AC, 7 Oct. 1938, 29 Sept. 193?, in AAG 614.

32. Hist. Maxwell Fld., 1 Jan. 1939 to 7 Dec. 1941, pp. 1?-1??; ltr., TAG to Commandant, AC Tac. School, sub.: Status of Valin Field, 10 Dec. 1937, in AG 614 Valparaiso, Fla. (11-3-37) Misc. (?t) C.

33. Hist. Barksdale Fld., Inception to 7 Dec. 1941, pp. 21-25.

34. Hist. Lowry Fld., Activation to 7 Dec. 1941, pp. 21-25.

35. Station List, OCAC, 2 ?ar. 1939.

36. Memo, Col. Carl Spaatz, Chief, Plans Section, to C/AC, sub.: Civil Airdromes Required for Military Increases, 14 Nov. 1939, in AFHC ???, OCAC Plans.

37. CAA, Airport Survey, 19??, pp. xv-xvi. Class III and Class IV airports had to meet standards in ?? to ?, lighting, hangars, radio information, two-way radio, visual aids, ?ueling, ?epairs, weather information, two-way radio, visual traffic control, instrument approach ? ?, and administration buildings (Ibid., p. 20).

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3[illegible]. Ibid., pp. 10-14.

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2. Memo, Maj. Gen. H. H. Arnold, C/AC, to Asst. S/W, sub.: Construction Supplemental Budget, Army Air Corps, 1940, 13 Jan. 1939, Lyon Project Books, No. 25, Tab. 3.

3. House, Hearings before the Committee on Military Affairs on An Adequate National Defense, 76 Cong., 1 Sess., 12 Jan. 1939, p. 9; WD, Immediate Release, 12 Jan. 1939, Statement before Military Affairs Committee.

4. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, 18 Jan. 1939 in AAG 600.1 H.

5. In March 1939 the War Department resisted an effort to repeal the Wilcox Act on the grounds that it provided the basic authority for the 1939 construction program. (Ltr., H. H. Woodring, S/W, to A. J. May, Chairman, House Committee on Military Affairs, 23 Mar. 1939, in AFSHO 030, OCAC Plans).

6. Public Law No. 19, 76 Cong., 1 Sess., 53 Stat. 555, 3 Apr. 1939

7. Public Law No. 164, 76 Cong., 1 Sess., 53 Stat. 994, 1 July 1939

8. Resume, Div. Chiefs Mtg, OCAC, 3 Apr. 1939, in AFSHO 360, OCAC Plans.

9. WD, Immediate Release, 21 July 1939, Air Corps Construction Projects. These WPA funds included the $1,500,000 released on 12 Feb. 1939 for purchase of land at Chanute, Lowry, and at the new installations to be built. (Ltr., W. A. Gray, Asst. Adm., WPA, to S/W, 21 Feb. 1939, in AAG (21 A).

10. Ltr., Maj. Gen. H. H. Arnold, C/AC, to CO's, All Air Corps Stations, sub.: Construction at Air Corps Stations Incident to Expansion Program, 6 Apr. 1939, in AAG 600.1 H.

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12. Ltr., Lt. Col. W. F. Davis, Exec., OCAC, to CO's, All Air Corps Stations, 8 Feb. 1939, in AAG 600.1 F.

13. Resume, Div. Chiefs Mtg., OCAC, 17 Apr. 1939.

14. House, Hearings before the Subcommittee of the Committee on Appropriations on the Supplementary Military Appropriation Bill for 1940, 76 Cong., 1 Sess., 17 May 1939, p. 24.

15. OCE, Hist. Branch, Military Construction in the United States under the Direction of the Quartermaster General and the Chief of Engineers, v. 1, pp. 72-79, 86, in Files, Hist. Div., HD Special Staff.

16. Ltr., TAG to Chiefs, All Arms and Services, sub.: Organization of the Air Corps, 1 Mar. 1939, in AG 320.2 (2-15-39) Misc. C-M.

17. Ltr., Maj. Gen. H. H. Arnold, C/AC to CG GHQAF, sub.: Air Corps Expansion Program, 18 Apr. 1939, in AFSHO 322.082, OCAC Plans.

18. Ltr., Maj. Gen. D. C. Emmons, CG GHQAF, to C/AC, sub.: Air Base Sites, 18 Mar. 1939.

19. Air Corps Board, Study No. 5: Report on Overhead Bomb-Proof Protection of Air Bases, 7 Jan. 1936; memo, C/AC to C/S, 23 Nov. 1937; Lyon Project Books, No. 1.

20. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, sub.: Air Base Sites in Northeastern Part of the United States, 12 Oct. 1938, ltr., TAG to Lt. Col. W. R. Warren, sub.: Board of Officers, 15 Oct. 1938, in AG 686 A.

21. Ltr., TAG to Lt. Col. W. R. Warren, sub.: Location of Northeast and Southeast Air Bases and Southeast Air Depot, 31 Jan 1939, in AG 686 A.

22. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, 11 Apr. 1939, in AG 686 A.

23. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, 10 July 1939, in AG 686 A; memo, C/AC to C/S, 15 July 1939, in AG 614.

24. WD, Immediate Release, 13 July 1939, Southeast Air Base and Southeast Air Depot Locations Announced.

25. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, 11 July 1939, in AG 686 A.

26. WD, Immediate Release, 15 Sept. 1939, Northeast Air Base Locations; Hist. Westover Fld., 1939 to 31 Dec. 1942, v. 1, p. 3, in AFSHO 939.74-1, v. 1.

27. Ltr., Col Carl Spaatz, Chief, Plans Div., OCAC, to Exec., OCAC, sub.: Construction in Air Corps Expansion Program, 11 Aug. 1939, in AFSHO 322.082, OCAC Plans; OCE, Historical Branch, Military Construction in the United States under the Direction of the Quartermaster General and the Chief of Engineers, v. 1, pp. 72-79, in Hist. Div., HD Special Staff.

28. Hist. Westover Fld., 1939 to 31 Dec. 1942, v. 1, pp. 1-19; Hist. MacDill Fld., 23 May 1939 to 7 Dec. 1941, v. 1, passim, in AFSHO 936.01, v. 1.

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30. C/AC, Weekly Rpt. to the C/S, 7 Mar. 1940, in AFSHO Files, 2931.

31. Hist., Westover Fld., 1939 to 31 Dec. 1943, v. 1, pp. 1-14; Rpt., Brig. Gen. D. M. Yount, Chief, Plans Div., OCAC, to Chief, TPO Div., OCAC, 7 June 1940, sub.: Westover Fld., in AFSHO 323.7, OCAC Plans.

32. C/AC, Weekly Report to the C/S, 2 May 1940; Hist. Drew Fld., 1 Jan. 1939 to 7 Dec. 1941, pp. i-ii, in AFSHO files, 232.31-1.

33. Rpt., Col. Carl Spaatz, Chief, Plans Sect., OCAC, to Exec., OCAC, sub.: Report of a Telephone Conversation with Commander A. Murdock of Hitchcock Ordnance Air Depot, 29 June 1939, in AFSHO 323.7, OCAC Plans.

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36. Hist. of Wright ASC, Jan. 1939 to Feb. 1942, passim, in AFSHO 205.05-1.

37. Hist., GAF Central Flying Training Comd., 1 Jan. 1939 to 7 Dec. 1941, v. 2, pp. 182-184, in AFSHO 226.3-1, v. 2.

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39. Ltr., TAG to C/AC, sub.: Training of Specialists in Civilian Institutions--War Department Protective Mobilization Plan, 12 Aug. 1939, in AG 371 (7-31-39) Misc. C.

40. Ltr., Maj. Gen. H. H. Arnold, C/AC, to TAG, sub.: Air Corps Training [illegible], 17 July 1939, in AFSHO 634, OCAC Plans.

41. Ltr., C/AC to TAG, sub.: Air Corps Combined Bombing and Gunnery Ranges, 15 Sept. 1939, in AAG 614 C; Hearings before the Subcommittee of the Committee on Appropriations on the Bill Making Supplementary Appropriations for 1940, 76 Cong., 3 Sess., pp. 33-45; Public Law No. 115, 76 Cong., 3 Sess., 54 Stat. 27, 12 Feb. 1940; Public Law No. 663, 76 Cong., 3 Sess., 54 Stat. 665, 27 June 1940.

42. Ltr., TAG to Lt. Col. W. N. McClelland, sub.: Appointment of Board, 8 Aug. 1939, Ltr., Maj. Gen. H. H. Arnold, C/AC to TAG, sub.: Selection of Site for Bombing and Aerial Gunnery Range, 31 Jan. 1940; 1st Ind., Chief, TPO Division, OCAC, to Exec., OCAC, sub.: Appointment of Board for Selection of Bombing Range, 16 Feb. 1940, in AAG 614.

43. Ltr., Maj. Gen. H. H. Arnold, C/AC, to TAG, sub.: Location of Bombing Ranges, 5 Jan. 1940, in AAG 614.

44. Ltr., Col. C. L. [illegible], to TAG, sub.: Board Proceedings on Bombing Areas for West Coast, 23 Apr. 1940, in AAG 614; WD, Immediate Release, 7 June 1940, Acquisition of Bombing and [illegible] for the Army Air Corps; C/AC, Weekly Report to the C/S, ?? Feb. 1940.

45. Ltr., C. W. Hester, Administrator, CAA, to S/W, ?? Nov. 193?, in A?HO 6?6, OCAC Plans.

46. Ltr., TAG to C/AC, ?? Aug. 1939, sub.: WPA Projects for Improvements to Civilian Airfields, in AAG 686 A; R&R, Lt. Col. W. F. Farthing, Plans Div., OCAC, to Col. Carl Spaatz, Chief, Plans Div., OCAC, sub.: WPA Aid for the Coming Year in the Building of Airports, 9 Sept. 1939, in AFSHO 323.7, OCAC Plans.

47. Memo, Brig. Gen. G. V. Strong, Asst. C/S, WPD, to C/S, sub.: WPA Projects for Improvement of Civilian Airfields and CAA Program in Connection Therewith, Dec. 1939, in AFSHO 686, OCAC Plans.

48. Memo, Lt. Col. W. F. Farthing, Plans Div., OCAC, to Exec., OCAC, sub.: Conference on WPA Projects for Improvements to Civil Airports, 23 Sept. 1939, in AFSHO 686, OCAC Plans.

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2. Memo, Brig. Gen. L. J. Malony, Actg. Asst. C/S, WPD, to C/S, sub.: Air Force Requirements, May 1941, in AFSHO 5091-78.

3. Public Law No. 611, 76 Cong., 3 Sess., 54 Stat. 350, 13 June 1940; House, Hearings before the Subcommittee of the Committee on Appropriations on the First Supplemental National Defense Appropriations Bill for 1941, 29 May 1941, p. 70; Public Law No. 667, 76 Cong., 3 Sess., 54 Stat. 599, 26 June 1940.

4. Ltr., TAG to C/AC, sub.: Army's First Aviation Objective, 29 June 1940, in AG 580 (6-28-40) M-F; House, Hearings before the Subcommittee on Appropriations on the Third Supplemental National Defense Appropriations Bill for 1941, 76 Cong., 3 Sess., 13 Sept. 1940, pp. 54-55; Public Law No. 800, 76 Cong., 3 Sess., 54 Stat. 965, 9 Oct. 1940; memo, Brig. Gen. B. K. Yount, Asst. C/AC, for C/S, sub.: Army's First Aviation Objective, 6 Aug. 1940, in AAF 321.9 B.

5. Hist. AAF FTC, 1 Jan 1939 to 7 July 1943, v. 1, p. 83, in AFSHO 224-1, v. 1.

6. Memo, Maj. Gen. H. H. Arnold, C/AC, to C/S, sub.: Plan for Expansion of the Air Corps Training Program, 24 May 1940, in AFSHO 322.0924, CCAC Plans.

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8. Hist. AAF CFTC, 1 Jan. 1939 to 7 Dec. 1941, v. 2, pp. 185-190; Hist. AAF FTC, 1 Jan. 1939 to 7 July 1943, v. 1, p. 128.

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10. Ltr., TAG to CO's, Randolph, Maxwell, and Moffett Fields, sub.: Establishment and Redesignation of Air Corps Training Centers, 5 July 1940, in AG 320.19 (7-5-40) M (Ret) M.

11. Ltr., TAG to CO, Maxwell Fld., sub.: Establishment of an Air Corps Advanced Flying School at Maxwell Fld., 12 Aug. 1940, in AG 352, Maxwell Fld., (7-29-40) M-C; ltr., TAG to CO, Moffett Fld, sub.: Establishment of Air Corps Basic Flying School at Moffett Field, 10 Sept. 1940, in AG 352 (8-22-40) L (Ret) M-C; ltr., TAG to CO, Parksdale Fld., sub.: Establishment of Air Corps Specialized Flying School at Parksdale Fld., 11 Sept. 1940, in AG 352 (8-22-40) M (Ret) M-C.

12. Ltr., TAG to C/AC, sub.: New Air Corps Stations, 17 Aug. 1940, in AG 370-1 (8-7-40) M (Ret) M-C.

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14. Hist. Stockton Fld., 27 Aug. 1940 to 7 Dec. 1941, v. 1, pp. 4, 6, 7-8, 13, in AFCHO 248.88-1, v. 1.

15. Station Hist. Goodfellow Fld., 15 May 1940 to 1 Mar. 1941, pp. 3-4, 5, 11, 14, in AFCHO 248.51-1.

16. Hist. of Craig Fld., 1 July 1940 to 7 Dec. 1941, pp. 3, 4, 5, 24, in AFCHO 248.90-1.

17. Hist. of Ellington Fld, Apr. 1940 to 1 Mar. 1941, v. 1, pp. 1, 11, 30, 42, 45, in AFCHO 248.66-1, v. 1. See also the discussion of the selection of the site at Ellington Fld. in Hist. AAF Central Files, 1 Jan. 1939 to 7 Dec. 1941, v. 2, pp. 211-217.

18. R&R, Brig. Gen. D. L. Mount, Chief, Plans Div., OCAC, to Chief, AG Div., OCAC, sub.: WPA Projects for Construction of Facilities and Improvement of Mat--Advanced Flying School, Stockton, Calif., 9 Sept. 1940, in AFCHO 353, OCAC Plans; R&R, Brig. Gen. Carl Spaatz, Chief, Plans Div., OCAC, to Chief, AG Div., OCAC, sub.: Provision of Runways for New School Stations, 7 Mar. 1941, in AFCHO 353, OCAC Plans.

19. House, Hearings before the Subcommittee of the Committee on Appropriations on the Fourth Supplemental National Defense Appropriation Bill for 1941, 77 Cong., 1 Sess., 12 Feb. 1941, p. 169; Public Law No. 13, 77 Cong., 1 Sess., 55 Stat. 24, 17 Mar. 1941

20. Memo, Brig. Gen. G. H. Brett, Actg, C/AC, to Asst. C/S, G-3, sub.: Air Corps Personnel Programs, 11 July 1940.

21. Ltr., Maj. C. F. Duncan, Exec., OCAC, to CO, ACTS, sub.: Institutional Training of Enlisted Men, 7 June 1940; Hist. Army Air Corps Technical Training, 1917 to 7 Dec. 1941, v. 3, pp. 450-451, in AFCHO 252.2, v. 3.

22. Hist. Army Air Corps Technical Training, v. 3, pp. 456-457; ltr., Maj. C. F. Duncan, Exec., OCAC, to CO, ACTS, sub.: Technical Training--130,000 TT Program (To be Completed January 1, 1942, 11 July 1940.

23. Hist. Army Air Corps Technical Training, v. 3, p. 457; ltr., Maj. C. F. Duncan, Exec., OCAC, to CO, ACTS, sub.: Technical Training Schools, 11 July 1940.

24. Hist. Army Air Corps Technical Training, v. 3, pp. 479-480; ltr., Col. C. C. Grant, CO, ACTS, to C/AC, sub.: Training of Aviation Mechanics, 15 July 1940.

25. House, Hearings before the Subcommittee of the Committee on Appropriations on the Third Supplemental National Defense Appropriation Bill for 1941, 76 Cong., 3 Sess., 13 Sept. 1940, p. 54; Public Law No. 800, 76 Cong., 3 Sess., 54 Stat. 865, 9 Oct. 1940.

26. Ltr., TAG to CO, Chanute Fld, sub.: Transfer of Radio Operators and Mechanics Course to Scott Fld., Ill., 7 Sept. 1940, in AG 352.01 (7-23-40) M-M; Hist. Army Air Corps Technical Training from 1917 to 7 Dec. 1941, v. 1, p. 94.

27. Hist. Army Air Corps Technical Training, v. 1, p. 95; ltr., TAG to C/AC, sub.: Utilization of Army Posts by the Air Corps, 1[illegible] July 1940, in AG 680.1 (7-1[illegible]-40) M-C; ltr., TAG to C/AC, sub.: Use of Jefferson Barracks, Missouri, by Air Corps for Housing Recruits, 20 July 1940, in AG 680.1 (7-24-40) M-D.

28. Ltr., TAG to C/AC, sub.: Air Corps Replacement Centers, 21 Feb. 1941, in AG 32[illegible].2 (1-16-41); Hist. of Army Air Corps Technical Training, 1917 to 7 Dec. 1941, v. 1, p. 95.

29. Hist. Army Air Corps Technical Training, v. 1, p. 97, v. 3, pp. 574-575; ltr., Col. [illegible] [illegible]rant, CO, ACTS, to C/AC, sub.: Clerical School, Lowry Fld., Colo., 20 Aug. 1940.

30. Ltr., TAG to C/AC, sub.: Use of Fort Logan, Colo., 19 Nov. 1940, in AG 352 AC Tech School (10-5-40) M (Ret) M-C; Hist. Army Air Corps Technical Training, 1917 to 7 Dec. 1941, v. 1, p. 97.

31. Hist. AAF TTC, 1 Jan. 1939 to 7 July 19[illegible], v. 1, pp. 102-10[illegible].

32. Public Res., No. 9[illegible], 76 Cong., 3 Sess., 54 Stat. 9[illegible], [illegible] Sept. 1940.

33. Ltr., C/AC to CG, [illegible], [illegible] Sept. 1940, cited in Hist. AAF Central TTC, 1 Jan. 1939 to 7 Dec. 1941, v. 2, p. 220.

34. Hist. AAF Central TTC, v. 2, p. 225; ltr., C/AC to CO, [illegible], 23 Oct. 1940.

35. Hist. AAF Central TTC, v. 2, p. 225; ltr., C/AC to CO, GCACTC, 6 Dec. 1940.

36. Ltr., C/AC to CO, WCACTC, 27 Sept. 1940, cited in Hist. West Coast ACTC, 8 July 1940 to 7 Dec. 1941, v. 1, p. 149, in AFSHO 226.[illegible]-1, v. 1.

37. Hist. West Coast ACTC, v. 1, p. 150. Proceedings of Board of Officers Convened at Moffett Field, 11 Oct. 1940.

38. Ibid., v. 1, p. 151; ltr., C/AC to CG, WCACTC, 11 Dec. 1940. Proceedings of Board of Officers Reconvened at Moffett Field, 8 Jan. 1941.

39. Hist. AAF Eastern TTC, 1 Jan. 1939 to 7 Dec. 1941, v. 1, pp. 85-86, in AFSHO 226.2-1, v. 1.

40. Ltr., Col. [illegible] Stratemeyer, Exec., Plans Div., OCAC, to TAG, sub.: Reappointment of War Department Boards of Officers to Survey Sites for Military Purposes, 27 Nov. 1940, in AFSHO [illegible], OCAC Plans; ltr., Col. [illegible] Ferrell, Chief, [illegible] Div., OCAC, to CG, [illegible], 3 Dec. 1940, in AAG 6[illegible] I.

41. Hist. AAF [illegible]C, 1 Jan. 1939 to 7 July 1943, v. 1, p. 123.

42. Ltr., Lt. Gen. D. C. E[illegible]ons, CG [illegible], to [illegible], sub.: Air Defense Policy, 20 Mar. 1941; memo, Brig. Gen. Carl Spaatz, Chief, Plans Div., OCAC, to [illegible], sub.: Air [illegible] Policy, [illegible] Apr 1941, in [illegible] 360.01, OCAC Plans.

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44. Public Law No. 1[illegible], 77 Cong., 1 Sess., 55 Stat. [illegible], [illegible] Mar. 1941.

45. Ltr., Lt. Col. [illegible] G. Fairchild, [illegible], Plans Div., to [illegible], sub.: Change in Air Corps Station [illegible], 16 Jan. 1941, in [illegible] 323.7[illegible], OCAC Plans.

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48. WD, Immediate Release, 2[illegible] Oct. 1940, Air Corps [illegible] to Produce Force for [illegible] in [illegible].

49. Ltr., [illegible] to Chiefs, Arms and Services, sub.: War Department [illegible] Policy, 1[illegible] June 1940, in [illegible] (6-1[illegible]-40) [illegible].

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51. [illegible], Maj. Gen. D. C. Emmons, CG [illegible], to C/AC, [illegible] 1940, in [illegible] 323.[illegible], OCAC Plans.

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158. Ltr., C/AC to [illegible], [illegible] 1941, [illegible] ACTC, [illegible] July 1940 to 7 Dec. 1941, v. 1, pp. [illegible].

159. Hist. AAF Central FTC, 1 Jan. 1939 to 7 Dec. 1941, v. 2, pp. 250-259; Hist. Waco Army Airfield, 14 Aug. 1941 to 1 Mar. 1944, v. 1, pp. 8, 20, 22, 146 in AFSHO 279.47-1, v. 1; Hist. of the AAF Pilot School (Basic), Ferris Fld, 1 Jan. 1939 to 1 Mar. 1944, v. 1, pp. 11, 17, in AFSHO 287.79-1, v. 1; Hist. of the AAF Pilot School (Basic), Enid, Okla., 1 Jan. 1939 to 1 Mar. 1944, v. 1, pp. 6, 10, 19, in AFSHO 282.74-1, c. 1; Hist. Harlingen Army Air Field, 1 May 1941 to 1 Mar. 1944, v. 1, pp. 8-10, in AFSHO 284, 09-1, v. 1; Base Hist., Lake Charles Army Airfield, Activation to 31 Dec. 1943, v. 1, passim, in AFS O 285.41-1, v. 1; Hist. Lubbock Army Air Field, 23 June 1941 to 1 Mar. 1944, v. 1, pp. 17, 33, in AFSHO 285.78-1, v. 1.

160. Hist. West Coast AFTC, 8 July 1940 to 7 Dec. 1941, v. 1, pp. 193-194, 206; ibid., 7 Dec. 1941 to 31 Dec. 1942, v. 1, pp. 103, 193, in AFSHO 226.5-2, v. 1; Hist. Merced Army Airfield, Activation to 8 Dec. 1941, v. 1, pp. 20-24, 40, in AFSHO 286.35-1, v. 1; ibid., 8 Dec. 1941 to 31 Dec. 1942, v. 2, pp. 24-26, in AFS O 286.35-1, v. 2; Hist. McMoore Army Airfield, 3 Feb. 1941 to 7 Dec. 1941, v. 1, pp. 7-9, in AFSHO 285.65-1, v. 1; ibid., 8 Dec. 1941 to 1 Jan. 1943, v. 1, pp. 8-9, in AFSHO 285.65-2, v. 1; Hist. AAF Pilot School (Basic), Chico, 10 Sept. 1940 to 7 Dec. 1941, passim; ibid., 7 Dec. 1941 to 1 Jan. 1943, pp. 1, 14, in AFSHO 2 1.53-2; Hist. Roswell Army Airfield, Activation to 31 Dec. 1942, v. 1, p. 23, in AFSHO 288.17-1, v. 1. Hist. Williams Field, Insertion to 7 Dec. 1941, v. 2, p. 10, in AFSHO 280.50-1, v. 2; ibid., 8 Dec. 1941 to 1 Jan. 1943, v. 1, pp. 9, 10-11, in AFSHO 279.50-2, v. 1.

161. Hist. AAF Eastern FTC, 1 Jan. 1939 to 7 Dec. 1941, v. 1, pp. 307-309, 563-564; ibid., 7 Dec. 1941 to 1 Jan. 1943, v. 2, p. 824, in AFSHO 226.2-2, v. 2; Hist. AAF Pilot School (Basic) Greenville, 7 Dec. 1941 to 1 Jan. 1943, v. 1, p. 3, in AFSHO 2 3.60-2, v. 1; Hist. Shaw Fld., Insertion to 7 Dec. 1941, v. 1, pp. 7-9, in AFSHO 280.56-1, v. 1; ibid., 8 Dec. 1941 to 31 Dec. 1942, v. 1, p. 11, in AFSHO 280.56-2, v. 1; Hist. Spence Fld., 15 July 1941 to 7 Dec. 1941, v. 1, pp. 32-33, in AFSHO 286.80-1, v. 1; ibid., 8 Dec. 1941 to 31 Dec. 1942, v. 1, p. 5, in AFSHO 286.80-2, v. 1; Hist. Napier Fld., 1 Jan. 1939 to 7 Dec. 1941, v. 1, p. 15, in AFSHO 286.78-1, v. 1; ibid., 8 Dec. 1941 to 1 Jan. 1943, p. 37, in AFSHO 286.78-2; Hist. Sch. of AAF Pilot School (Advanced), Moody Fld, Insertion to 7 Dec. 1941, p. 7, in AFSHO 286.59-1; ibid., 8 Dec. 1941 to 31 Dec. 1942, v. 1, p. 17, in AFSHO 286.59-2, v. 1.

162. Ltr., TAG to CO, SLAFTC et al., sub.: Air Corps Replacement Training Centers, 30 Sept. 1941, in AG 350.2 (9-27-41) MT-M-F.

163. Ltr., Brig. Gen. R. E. Lincoln, Commandant, ASTC, to C/AS, sub.: Increased Sites--Air Corps Technical Schools, 10 Jan. 1941, in AFSHO Files.

164. KCR, Chief, Plans Div., OCAC, to Chief, T&C Div., OCAC, sub.: Board of Officers to Survey Sites for Air Corps Stations, 13 Jan. 1941, in AFCHO 333.1, OCAC Hists; AGR, Chief, Plans Div., OCAC, to Chief, T&C Div., OCAC, sub.: Board Proceedings, Wichita Falls, Texas, 18 Feb. 1941; AGR, Chief, Plans Div., to Chief, T&C Div., OCAC, sub.: Board Proceedings, Biloxi, Miss., 18 Feb. 1941, in AFCHO 350, OCAC Hists.

165. Memo, Col. Robert Olds, Plans Div., OCAC, to Asst. C/S, G-4, WD, 21 Mar. 1941, in AFCHO 353, OCAC Hists.

166. Public Law No. 29, 77 Cong., 1 Sess., 55 Stat. 123, 5 Apr. 1941.

167. Hist. Roesler Fld., Activation to 7 Dec. 1941, v. 1, pp. 7-33, 186, in AFCHO 205.12-1, v. 1; Hist. Sherrard Fld, Activation to 7 Dec. 1941, v. 1, pp. 8-20, 67, in AFCHO 2 8.70-1, v. 1.

168. Memo, Lt. Col. H. S. Fairchild, Exec., Plans Div., OCAC, to C/S, sub.: Air Corps Replacement Centers, 19 May 1941, in AFCHO 323.7, OCAC Plans.

169. Ltr., TAG to C/AC, sub.: Air Corps Replacement Training Centers, 6 June 1941, in AG 660.12 (5-10-41) (C-B; ltr., TAG to C/AC, sub.: Air Corps Replacement Training Centers, 20 Sept. 1941, in AG 320.2 (9-21-41) (C-AF.

170. Hist. Lowry Fld, Activation to 7 Dec. 1941, v. 1, Ch. VI, pp. 10, 13, in AFCHO 205.77-1, v. 1.

171. Hist. Army Air Corps Technical Training, 1917 to 7 Dec. 1941, v. 1, pp. 23-26.

172. Ltr., Col. J. F. Curtemeyer, Exec., OCAC, to TAG, 20 Feb. 1941 sub.: Construction--30,000 Pilot Training Program, in AFCHO 600.1 -1; Public Law No. 9, 77 Cong., 1 Sess., 55 Stat. 16, 5 Apr. 1941.

173. AGR, Chief, Plans Div., OCAC, to Chief, Materiel Div., sub.: Additional Air Depots for the Second Aviation Objective, 24 April 1941, in AFCHO 353.7, OCAC Hists.

174. Memo, Chief, Materiel Div., OCAC, to Chief, Plans Div., OCAC, sub.: Additional Air Depots for the Second Aviation Objective, 5 July 1941, in AFCHO 353.7, OCAC Hists.

175. Ltr., TAG to Lt. Col. C. C. Rutt, thru CC, Maintenance Comd., sub.: Board of Officers to Select Sites for two Air Corps Depots, 17 June 1941, in AG 580 (6-16-41) CF.

176. Hist. San Bernardino Air Depot, Activation to 31 Dec. 1942, v. 1, pp. 12, in AFCHO 205.12-1, v. 2.

177. Hist. Spokane AAB, 1942-1945, v. 1, p. 1, in AFCHO 205.12-1, v. 1.

[illegible], Chap. [illegible]

17[illegible]. [illegible] San Bernardino Air Depot, Activities to 31 Dec. 1943, v. 2, pp. [illegible]; Hist. [illegible] 1942, 1943, v. 1, p. 1[illegible].

17[illegible]. Ibid., v. 1, pp. 26, 27, 51.

1[illegible]. Hist. San Bernardino Air Depot, Activities to 31 Dec. 1943, v. 2, pp. 10[illegible], 1[illegible].

1[illegible]. Ltr., [illegible] C/AC, subj: [illegible], [illegible] 1941, in [illegible] (3-7-41) [illegible].

1[illegible]. Ltr., [illegible], to Asst. C/S, G-4, subj: [illegible] Air Corps [illegible] 1941, in [illegible].

1[illegible]. [illegible]

1[illegible]. Ltr., [illegible] Air Corps [illegible], [illegible] 1941, [illegible].

1[illegible]. [illegible] Lt. Col. [illegible], [illegible] C/AC, subj: [illegible] 1941), [illegible] to [illegible] 1941, in [illegible] Lt. Col. [illegible] C.

1[illegible]. [illegible] (Ltr., [illegible] C/AC, subj: [illegible] June 1941), [illegible] (7-27-41) [illegible] C/S, [illegible] July 1941, [illegible].

1[illegible]. Ltr., [illegible] C/AC, subj: [illegible] July 1941, in [illegible] ([illegible]) [illegible].

1[illegible]. [illegible] Spaatz, C/AS, AAF, to Chief, [illegible], subj: [illegible] Situation, 84 Group Program, 30 July 1941, in [illegible].

1[illegible]. [illegible] (Ltr., [illegible] C/S, [illegible] to Col. [illegible] July 1941), Col. [illegible], subj: [illegible] to C/AC, [illegible] Aug. 1941, [illegible].

1[illegible]. [illegible] Col. [illegible], Chief, [illegible] Div., [illegible], to [illegible], [illegible] Objective, [illegible] July 1941, in [illegible].

1[illegible]. [illegible] (Ltr., Col. [illegible], [illegible], to C/AC, subj: [illegible], Chief, [illegible] Div., [illegible] July 1941), [illegible] Aug. 1941, [illegible].

192. Ltr., [illegible] Div., [illegible], sub.: [illegible] Written [illegible], [illegible] 1941, in [illegible] 201.1 [illegible].

193. Ltr., [illegible] Div., [illegible], sub.: [illegible] Future [illegible] [illegible] [illegible], 17 [illegible] 1941, in [illegible] 1-1.

194. [illegible] Arnold, [illegible], sub.: Aircraft [illegible] Ice [illegible], 1 Oct. 1941, in [illegible].

195. [illegible] 8 Oct. 1941; [illegible] 1941, [illegible].

196. [illegible] [illegible] 1941.

197. [illegible] sub.: [illegible] 1941, [illegible].

198. [illegible] 1941. [illegible] Committee on [illegible] [illegible] [illegible] Chapter [illegible]).

199. [illegible] Committee on [illegible] [illegible].

200. [illegible].

201. [illegible].

202. [illegible].

203. [illegible] for Future Air [illegible] Activities, [illegible] 1941, [illegible].

204. Chart, [illegible] 1941, [illegible]. The total [illegible] [illegible] ton 20, [illegible], Lincoln [illegible] [illegible], Carpe [illegible], [illegible] City [illegible], [illegible], Pueblo [illegible], [illegible].

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and Color Guide 70.

205. Memo, Col. T. F. Sorenson, AC/AS, A-4, to C/S, sub.: Selection of New Air Base Sites, 8 Dec. 1941; amended and approved by Maj. Gen. H. H. Arnold on 9 Dec. 1941, in AAG 686 F.

206. Memo, Chief, MG Div., CE AC, to C of E, 20 Dec. 1941, in AAG 686 F. An all-purpose airfield was to have housing for the 64 officers of a medium bomb squadron, for the 212 men of a heavy bombardment squadron, and landing facilities for the heaviest type of planes then in use.

207. Ltr., Col. T. I. Sorenson, AC/AS, A-4, to C of E, sub.: Construction of Emergency New Air Bases, 1 Jan. 1942, in AAG 686 F.

208. Ltr., CE AC to C of E, C/AC, sub.: Selection of New Air Bases, 31 Dec. 1941, in AG 580 (12-20-41) MC-AAF.

209. C of E, Hist. Branch, Mil. Constr. in the United States Under the Direction of the CE and the C of E, v. 2, p. 149; memo, Col. W. J. Reed, Chief, MG Div., to C/AC, sub.: Report on Status of Current Construction Program, 6 Feb. 1942, in AAG 600.1 G.

210. All of the Sites with the exception of Richard, Greenville, and Smyrna, Tenn., were purchased. (AAF, Installations Directory, 1 July 1944).

211. Hist. Syracuse Army Air Base, Activation to 1943, v. 1, pp. 2, 5, 7-8, in AFHRC 207.69-1, v. 1.

212. Hist. Grand City Army Air Base, 2 Jan. 1942 to 31 Dec. 1943, pp. 3, 7, 13, in AFHRC 207.69-1.

213. Hist. Walla Walla Army Air Base, 10 June 1942 to 31 Dec. 1942, pp. 1-4, in AFHRC 259.53-1.

214. Hist. Greenville Army Air Base, 28 May 1942 to 31 Dec. 1942, v. 1, pp. 1/-41, in AFHRC 283.67-1, v. 1.

215. Hist. Richmond Army Air Base, June 1942 to Apr. 1944, v. 1, pp. 5-24, in AFHRC 207.97-1, v. 1.

216. Hist. Smyrna Army Airfield, Activation to 1 Jan. 1943, v. 1, pp. 1/-69, in AFHRC 207.69-1, v. 1.

217. Hist. Lockbourne Army Air Base, Activation to 31 Dec. 1942, v. 1, pp. 2-44, in AFHRC 285.717-1, v. 1.

218. Only the air base at Sioux City was located on a leased airfield, and this municipal field was leased for exclusive military use. (AAF, Installations Directory, 1 July 1944).

219. Hist. Sioux City Army Air Base, Activation to 31 Dec. 1942, v. 1, pp. 1, 6, 19, in AFCHC 2?9.65-1, v. 1.

220. Hist. Pueblo Army Air Base, 25 Mar. 1942 to 31 Dec. 1942, pp. 1, 4, in AFSHO 2?7.60-1.

221. Hist. Topeka Army Air Base, 1 Aug. 1942 to 31 Dec. 1942, pp. 1, 8, in AFCHC 2?9.16-1.

222. Hist. Hqs. of Biggs Fld, 7 Dec. 1941 to 31 Dec. 1942, v. 1, p. 1, in AFCHC 2?0.74-2, v. 1; ltr., TAG to CC, Biggs Fld, sub.: Jurisdiction of Biggs Fld, Texas, 21 Mar. 1942, in AG 580.82 (3-5-42)MC-M-AAF/A-4; AAF, Station List, 4 Nov. 1942, p. 6.

223. Hist. AAF Pilot School (Four Engine), Fort Worth, May 1942 to 1 Mar. 1944, v. 1, pp. 1, 6, 7, 13, 46, in AFSHO 2?3.?0-1, v. 1.

224. Hist. Santa Maria Army Airfield, 1 June 1942 to 31 Dec. 1943, v. 1, pp. 1, 2, 4, 10, 12, in AFSHO 2?3.73-1, v. 1. This field was assigned to the IV Fighter Command on 16 Sept. 1943.

225. Hist. IV Tac. Air Div., Activation to August 1944, pp. 4-5, in AFSHO DIV-TAC-2-HI, 1 Sept. 1944; Hist. Hdq., Army Air Base, Pyote, Tex., 10 Oct. 1942 to 28 Feb. 1944, v. 1, pp. 1, 3, 5, 6, 13, in AFCHC DIV-565-HI, 10 Oct. 1942. Pyote Army Air Base was finally brought into use for flying training as the station for the 3d CTW, Ferrying Division, AAFC, in July 1943.

226. Ltr., TAG to Chiefs, Arms and Services, sub.: Air Board Reports, 15 Sept. 1939, in AG 320.2 (6-26-39) M-B-M.

227. Ltr., TAG to CG, IV Corps Area, sub.: Movement of One Flight of 82d Observation Squadron to Brooks Fld, Texas, 15 June 1940, in AG 353 (6-20-40) M-C-M; 4th, Chief, Plans Div., GSUS, to C/AC, sub.: Station for 82d Observation Squadron, 5 July 1940, in AFCHC 322.052, GSUS Plans.

228. Memo, Lt. Col. I. C. Baker, Exec., GSUS, to Asst. C/S, G-3, sub.: Observation Squadrons for Armored Divisions, 9 Aug. 1940, in AFCHC 322.052, GSUS Plans.

229. Ltr., TAG to CGs, VIII and IX Corps Areas, sub.: Transfer of 82d Observation Squadron, 1 Apr. 1941, in AG 370.5 (3-31-41) M-C-M.

230. Memo, Col. W. I. Swaddle, Actg. Asst. C/S, G-3, to C/S, sub.: Assignment of Regular Army and National Guard Observation Squadrons, 26 Nov. 1940, in AFCHC 322.052, GSUS Plans.

231. Memo, Maj. G. F. Duncan, Exec., GSUS, to Asst. C/S, G-3, sub.: Change in Station for the 28th Army Cor. Sq., 30 Oct. 1940, in AFCHC 370, GSUS Plans.

232. 2d Ind. (Ltr., Brig. Gen. [illegible] Robinson, C/S, 2d Army, to TAG, sub.: 30th Obs. Sq. [Army], 19 May 1941), [illegible] C. Curtis, Exec., [illegible] Div., OCAC, to TAG, 9 June 1941; Ltr., TAG to Chief, AAF, [illegible] Div., OCAC, to TAG, [illegible] 30th Obs. Sq. (Army), 4 Aug. 1941, in AG 320.5 30th [illegible] Squadron, (5-19-41) MC-C.

233. Ltr., [illegible] to CG's Corps Areas, sub.: [illegible] and Assignment of [illegible] Observation Squadrons, Air Corps, 7 Oct. 1941, in AG 320.2 (5-[illegible]-40) M (Act) M-C.

234. Hist., [illegible] Army Air Base, 1 Jan. 1935 to 31 Dec. 1942, v. 1, [illegible], in [illegible] 202.1[illegible]-1, v. 1.

235. [illegible] Col. [illegible] Kennedy, Chief, [illegible] Div., OCAC, to Chief, [illegible], sub.: [illegible] of National Guard from Jacksonville, Fla., to Camp Blanding, 13 Mar. 1941, in [illegible] 322.13, OCAC Plans.

236. [illegible] No. 771, 76 Cong., 3 Sess., 54 Stat. 872, 9 Sept. 1940; Ltr., [illegible] to [illegible], sub.: Construction of National Guard Units, [illegible] 1940, in AG 600.12 (5-16-40) [illegible]; [illegible], Chief, [illegible] Div., OCAC, [illegible], OCAC, sub.: National Guard Units, 25 Sept. 1940, in [illegible] 322.13, OCAC Plans.

237. [illegible], Chief, [illegible], to [illegible], [illegible] National Guard Squadrons, [illegible] 1941, [illegible], in [illegible] 322.7, OCAC Plans.

238. [illegible], Col. [illegible] Twaddle, Actg. Asst. C/S, G-3, to C/AC, sub.: [illegible] of Observation Squadrons, 14 Dec. 1940, in [illegible] 320.[illegible], OCAC Plans.

239. [illegible] Carl Spaatz, Chief, Plans Div., OCAC, to Chief, B&G Div., OCAC, sub.: Housing for Air Corps Troops, 18 Apr. 1941, in [illegible] 322.13, OCAC Plans.

240. Ltr., Col. [illegible] Johnson to [illegible], sub.: [illegible] Investigation, 103d Div. [illegible] Observation Sq., 15 Nov. 1940, in [illegible] 333.1, OCAC Plans.

241. Ltr., [illegible] C. W. [illegible], C/AC, to [illegible], sub.: Selection of a [illegible] Site for the 102d Observation Sq., 5 May 1941, in [illegible] 322.13, OCAC Plans. [illegible] subsequently [illegible]. ([illegible], AG Sect., [illegible], to [illegible], sub.: Ground [illegible] Support [illegible] at Fort McClellan, 7 June 1942, in [illegible].)

242. [illegible], Brig. Gen. H. A. [illegible], Chief, Instruction Div., OCAC, to C/AC, 4 [illegible] 1941, in [illegible] 320.4, OCAC Plans.

243. Memo, C/AC to C/S, sub.: Combat Readiness of Observation Aviation, [illegible] [illegible] written by Gen. Marshall to Lt. Gen. [illegible], Lt. Gen. [illegible], Lt. Gen. Ben Lear, Lt. Gen. H. A. Drum, and Lt. Gen. J. L. DeWitt on 21 June 1941, in [illegible] 320.4, OCAC Plans).

24[illegible]. Ltr., [illegible] to Chief, [illegible], sub.: Air Support Aviation, [illegible] July 19[illegible], in [illegible] (7-17-41) [illegible]-AF.

24[illegible]. Ltr., Maj. Gen. [illegible] Arnold, Chief, [illegible], to [illegible], sub.: Air Support Aviation, [illegible] July 1941, in [illegible]

24[illegible]. [illegible], [illegible] Dec. 1941; memo., Lt. Col. D. C. [illegible], to Chief, [illegible], 3 [illegible] 1941, in [illegible]; [illegible] Air Div., [illegible] to [illegible] 1944, v. [illegible], pp. [illegible], [illegible] Sept. 1941; [illegible] IV Air Support Command, [illegible] 1941 to [illegible] 1941, pp. 1-2. [illegible]; [illegible] III [illegible] Command, 7 Dec. 1941 to [illegible] 1941, pp. [illegible] [illegible] 7 [illegible] 1941.

24[illegible]. [illegible], Col. [illegible], Chief, [illegible] Div., [illegible], to Chief, [illegible] 12 [illegible] 1941, sub.: [illegible] of [illegible] Service, etc., to [illegible] [illegible] (322.1), [illegible].

24[illegible]. [illegible], [illegible] Dec. 1941 to [illegible], [illegible], p. [illegible] [illegible]-2-[illegible], 7 [illegible] 1941.

[illegible] INFORMATION

Chapter IV

1. Exec. Order, No. 8974, 14 Dec. 1941.

2. Ltr., TAG to CG, [illegible] Theater of Opns., sub.: G-4 Administrative Order--Designation of Eastern Theater of Operations, 2[illegible] Dec. 1941, in AG 371 (12-19-41) [illegible]-D-M; Ltr., TAG to CG, Western Defense Comd., sub.: G-4 Administrative Order--Designation of Western Defense Comd. as Theater of Operations, 12 Jan. 1941, in AG 320.2 (1-11-42) [illegible]-D-M; Ltr., TAG to CG, [illegible], sub.: G-4 Administrative Order--Designation of [illegible] Defense Command as Theater of Operations, 1[illegible] Dec. 1941, in AG 320.2 (12-13-41) [illegible]-D-M.

3. [illegible] of [illegible], AAF, 9 Dec. 1941, in [illegible] 1052-74.

4. Memo, Col. [illegible] F. [illegible], AC/AS, A-4, AAF, to C/AC, sub.: Construction of [illegible], 13 Dec. 1941, in AAF 686 B.

5. OCE, Hist. [illegible], Mil. Constr. in the United States Under the Direction of the QMG and the C of E, v. 2, pp. 154-159.

6. Hist. [illegible], 7 Dec. 1941 to 31 Dec. 19[illegible], v. 1, pp. [illegible]-24.

7. OCE, Hist. Branch, Mil. Constr. in the United States Under the Direction of the QMG and the C of E, v. [illegible], pp. 154-155; Ltr., Brig. Gen. [illegible] D. [illegible], C/S, [illegible], SOS, sub.: Administrative Procedure Relating to Construction, [illegible], Zone of the Interior, 2[illegible] Mar. 1942, in AAF 600.1 [illegible].

8. Ltr., [illegible] to C/AC, sub.: Construction of Airplane [illegible] in the Continental United States, 4 Mar. 194[illegible], in AG 6[illegible] (2-2[illegible]-42) [illegible]-AAF.

9. OCE, Hist. Branch, Mil. Constr. in the United States Under the Direction of the QMG and the C of E, v. 2, pp. 197-201.

10. Hist. [illegible] Fld, Activation to 26 [illegible] 194[illegible], pp. 1[illegible]7-1[illegible], in [illegible] [illegible].20-1.

11. Ltr., Lt. Col. D. F. [illegible], [illegible], to CG, Western Defense Command, sub.: Army Airdrome Constr. Project, 23 July 1942, in AAG 6[illegible] I; Hist. [illegible] Army Air [illegible], Jun 1942 to [illegible] 194[illegible], v. 1, pp. [illegible].

12. Ltr., [illegible] Gen. [illegible] I. [illegible], [illegible], to [illegible] Comd, Ft. Belvoir, Va., 1[illegible] [illegible] 194[illegible], in AAG 600.1.

13. Ltr., [illegible] to [illegible], Defense Comds., sub.: [illegible] Measures, 5 Mar. 1943, in AG 3[illegible] (2-25-43) [illegible]-C-SP-[illegible].

14. 1st Ind. (ltr., Col. J. C. Shively, [illegible] Sect., [illegible], to CG 4th AF, sub.: Further Constr. of Passive Protection Measures at AAF Installations, 23 Sept. 1943), "CJG" [illegible], 4th AF, to CG, AAF, 9 Oct. 1943; 2d Ind., Col. J. C. Shively to CG 4th AF, 25 Oct. 1943, in AAG 600.1 G.

15. Hist. I Ftr. Comd., Dec. 1941 to July 1944, v. 2, Appendix, [illegible], in [illegible]; Hist. [illegible] Fld, 7 [illegible] to 31 July 1944, v. 1, pp. 103-104; Hist. Westover Fld, 1939 to 31 Dec. 1943, v. 1, pp. 33-34; Hist. Mitchel Fld, 1917 to [illegible], v. 1, pp. 41-42.

16. Ltr., CG [illegible] to CG I Corps Area, sub.: Theater of Operations Construction for Air Fields, 31 Jan. 1942; ltr., CG [illegible] to CG II Corps Area, sub.: Theater of Operations Construction for Air Fields, n.d.; ltr., CG [illegible] to CG III Corps Area, sub.: Theater of Operations Construction for Air Fields, 31 Jan. 1942, in AAG 600.1 [illegible].

17. Organizational Development, Northeast Air District and First Air Force, 19 Nov. 1940 to 31 Dec. 1942, pp. [illegible], in [illegible], 19 Nov. 1940.

18. Ltr., Col. [illegible], AC/AS, [illegible], AAF, to CG 1st AF, sub.: Use of Idlewild Airport for Pursuit [illegible], 10 Apr. 1942, in [illegible] 686 I.

19. Ltr., Col. [illegible] Sepulveda, AG, 1st AF, to CG AAF, sub.: Assignment of Airdromes and Installations to First Air Force, 1? June 1942, in AAG 686 [illegible].

20. Hist. Bedford Army Air Base, July 1942 to 31 Dec. 1943, v. 1, pp. 1-4, in [illegible], v. 1.

21. Hist. Millville Army Air Base, Dec. 1940 to 1 July 1944, v. 1, pp. 1-3, in [illegible], v. 1.

22. Ltr., Brig. Gen. F. O'D. Hunter, CG 1st AF, to CG AAF, sub.: Plan for Use of First Air Force Bases, 4 Oct. 1943, in [illegible].

23. Ltr., [illegible], CG 1st AF, to [illegible], 22 Apr. 1942; [illegible], Col. [illegible], to [illegible], 20 [illegible]. 1943; [illegible] Gen. I. F. [illegible], to [illegible], 2 Apr. 1942; ltr., [illegible], to [illegible], 3 Apr. 1942, in [illegible].

24. Hist. Suffolk County Army Air Field, 17 May 1943 to 1 Nov. 1944, v. 1, pp. 1?, 13, 17, in [illegible], v. 1.

25. Hist. Camp Springs Army Air Base, Inception to 31 Dec. 1942, pp. 3, 5, 9, 13, in [illegible].

26. [illegible], Station [illegible], 1 Dec. 1942.

27. Hist. Dover Army Air Field, Nov. 1940 to 15 [illegible]. 1944, p. 2, in AFSHO 282.29-1.

27. Hist., [illegible] Fld, 1[illegible] Oct. 19[illegible] to 7 [illegible]. 19[illegible], [illegible], in [illegible] 2[illegible].2[illegible]-2.

28. Ltr., Lt. Col. C. [illegible] Van [illegible], [illegible] 1st AF, to [illegible], sub.: [illegible] Command Stations of the First Air [illegible] for the [illegible] Command Stations of the First Air Force [illegible] Constr. [illegible], Col. J. [illegible], [illegible], to [illegible], [illegible] July 19[illegible]; Ltr., Col. J. [illegible] Fourth Air Force [illegible], 5 Nov. 19[illegible], [illegible] Command, sub.: [illegible] Air Forces [illegible], in [illegible] ([illegible].1 A.

29. [illegible], [illegible] AF, to [illegible], sub.: Airdromes in the Sault Ste. Marie [illegible], [illegible] 19[illegible]; [illegible] Gen. I. F. [illegible], [illegible], to [illegible], [illegible], 30 Apr. 19[illegible]; [illegible] 19[illegible]; [illegible] Jun. 19[illegible], in [illegible].

30. 3d Ind. (Ltr., Lt. Col. C. C. [illegible], [illegible], to [illegible], sub.: [illegible] Vicinity of Sault Ste. Marie, [illegible] 19[illegible], in [illegible] [illegible] 19[illegible]), [illegible], to C of E, 21 [illegible] 19[illegible], in [illegible]; Ltr., Sault Ste. Marie Vicinity, [illegible], 24 Jun. 19[illegible], [illegible]

31. [illegible] 1 Oct. 19[illegible], II, [illegible].

32. Ltr., [illegible] T. [illegible], [illegible] AAF, [illegible], sub.: [illegible] [illegible] 17 [illegible] 19[illegible], in [illegible]-3[illegible].

33. Hist. [illegible] AF, 7 Dec. 19[illegible] to 31 Dec. 19[illegible], v. 1, [illegible].

34. [illegible] Ind. (Ltr., [illegible] Intercept [illegible] Command, 1 Jan. 19[illegible]), [illegible] to [illegible], sub.: [illegible] of Intercept [illegible], [illegible]. 19[illegible]; [illegible], [illegible] AF, to [illegible] Interceptor Comd., [illegible] 19[illegible]; Hist. 2d AF, 7 Dec. 19[illegible] to 31 Dec. 19[illegible], Supporting Documents to Chapter [illegible], Nos. 51, 5[illegible].

35. Ltr., [illegible] Ulrich, [illegible] 2d AF, to [illegible] 4th AF, sub.: Dispersal of Intercept [illegible], [illegible] Jan. 19[illegible]; Hist. 2d AF, 7 Dec. 19[illegible] to 31 Dec. 19[illegible], Supporting Documents to Chapter [illegible], No. 5[illegible].

36. [illegible] of the 4th AF, 19[illegible] to 19[illegible], v. 1, [illegible],

37. [illegible], 19[illegible].

38. Ltr., [illegible] 4th AF, to Commandant, 12th Naval Dist., 21 Feb. 19[illegible]; Ltr., [illegible] C. S. [illegible], Commandant, 13th Naval Dist., to [illegible] 4th AF, [illegible] 19[illegible], in AAF 6[illegible].

39. [illegible] 7 Apr. 19[illegible], in AAF [illegible].

40. GO [illegible], 4th AF, 3 [illegible] 19[illegible], in [illegible].

41. [illegible] Station List, 1 [illegible] 19[illegible], Sect. III, pp. 15, 19. The CAA also [illegible] fields at [illegible] and [illegible], in its [illegible] [illegible] Fourth Air Force did not assume jurisdiction over the fields. (Ibid., Sect. [illegible], p. 15).

42. Organization and Functions of the 4th AF Through the Year 1942, pp. 2[illegible]-235.

43. Ibid., p. 235; Hist. Hamilton Fld. [illegible], [illegible] 19[illegible] to 21 [illegible] 1944, p. 47.

44. Organization and Functions of the 4th AF, 1942 to 1945, v. I, p. 13-14.

45. Ltr., [illegible] F. [illegible], CG 4th AF, to CG [illegible], [illegible]: [illegible] Priority [illegible] for the 4th AF, 10 [illegible] 1942; [illegible] and Functions of the 4th AF, 1942 to 1945, v. I, p. [illegible]; Ibid., v. 2, No. 34.

46. Ltr., Lt. Gen. J. L. DeWitt, CG [illegible], to CG [illegible], sub.: [illegible] Priority Airdromes for the 4th AF, [illegible] 1942; Ibid., v. 2, No. 26.

47. 1st Ind. (Ltr., Col. [illegible] C. [illegible], [illegible], to CG 4th AF, sub.: Increased [illegible] of Construction [illegible] 4th AF, [illegible] 1942), [illegible] Hamilton Field, [illegible] 4th AF, [illegible] Sept. 1942; Organization and Functions of the 4th AF, 1942 to 1945, v. 3, No. 76.

48. [illegible], Station List, 4 Nov. 1943, Sect. I; Ibid., [illegible] 1944, Sect. II, pp. 2-4.

49. Ltr., [illegible], [illegible] Counsel, [illegible], to [illegible] of [illegible], [illegible], [illegible] 1942, in AAG 6[illegible] [illegible]

50. [illegible], Lt. Col. [illegible] McCloy [illegible] to [illegible] [illegible], [illegible] 1942, in [illegible].

51. Ltr., Col. [illegible] to [illegible], sub.: [illegible] Priority List for [illegible], [illegible] 1942, in AAG 6[illegible].

52. [illegible], Lt. Col. [illegible] McCloy [illegible] to [illegible] Vandenberg, [illegible], [illegible] 12 Jun 1942, in AAG 6[illegible].

53. Public Law No. [illegible], [illegible] Cong., [illegible], [illegible] Ibid., [illegible] July 19[illegible].

54. On [illegible] 194[illegible], [illegible] and complete [illegible] Commission [illegible] the Chairman of the [illegible]. (Public Law No. 21[illegible], [illegible] Cong., [illegible] Ibid. [illegible]; Station List, 4 Nov. 1943, Section [illegible]).

55. Public Law No. 780, 76 Cong., 3 Sess., 54 Stat. 859, 5 Sept. 1940.

56. Ltr., Lt. Col. I. W. [illegible], to Chief, Plans Div., OCAC, sub.: Flight Strips for Military Aircraft in Critical Area A (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, and northern half of New York), 21 Jan. 1941, in AFCHO 686, OCAC Plans.

57. Memo, Lt. Col. S. S. Hanks, Plans Div., OCAC, to Brig. Gen. Carl Spaatz, sub.: [illegible] for the Construction and Maintenance of Flight Strips for Military Aircraft as Well as for Using the Present Network of Communication Facilities, 3 Apr. 1941, in AFCHO 601, OCAC Plans; memo, Maj. [illegible] Curtis, [illegible], Plans Div., OCAC, to Chief, Intel. Div., OCAC, sub.: [illegible] Rpt. (Plans Div.), [illegible] Apr. 1941, in AFCHO 319.1, OCAC Plans.

58. Public Law No. 295, 77 Cong., 1 Sess., 55 Stat. 747, 19 Nov. 1941.

59. [illegible] to AFCHO, [illegible] 1942, in AAG 611 C; AAF, Station [illegible] 1 Dec. 1942. [illegible] Flight Strips [illegible] [illegible] Calif., [illegible] Calif., [illegible], Fla., [illegible], Utah, [illegible], Oxnard, Calif., and Winters, Calif.

60. Ltr., Col. L. I. [illegible], to [illegible], Commissioner of Public Roads, 2? Oct. 1942, in AAG 611 C. [illegible] flight strips were subsequently provided at Ocean Drive, S. C., and [illegible]. (AAF, [illegible] Directory, 1 Jul. 1942). [illegible] Ocean Drive, [illegible].

61. [illegible] Air Staff Mtg., 22 Dec. 1941, in AFCHO [illegible].

62. Memo, Lt. Gen. H. H. Arnold, Chief, AAF, to C/S, sub.: Information for the President, [illegible] Jan. 1942, in AFCHO [illegible].

63. Memo, Lt. Col. C. E. Duncan, Sec., A/S, to C/S, sub.: Expansion of the AAF [illegible] 1942, [illegible] Jan. 1942, in AFCHO [illegible].

64. Ltr., TAG to Chief, AAF, sub.: [illegible] of AAF During [illegible] Year 1942, 1? Jan. 1942, in [illegible] (1-21-42) [illegible]-AAF.

65. Memo, Col. [illegible] Craig, Actg. AC/AS, OTD, to Chief, AAF, sub.: AAF [illegible] for 1943, 2? Jan. 1942, in AFCHO [illegible].

66. [illegible] Col. J. Y. York, [illegible] A/S, to A-1 et al., sub.: AAF Expansion for 1943, [illegible] Feb. 1942, in AFCHO [illegible].

67. [illegible], Col. [illegible], Chief, [illegible], sub.: [illegible] of [illegible] Program, 6 June 1942, in AFCHO 3002-65; memo, Col. J. I. Loutzenheiser, Chief, Operational Plans Div., AC/AS, Plans, to [illegible], sub.: Brief Hist. 273 Group Program, 30 Dec. 1942, in AFCHO [illegible].

68. Memo, Lt. Gen. H. H. Arnold, CG AAF, to Director of Military Requirements, sub.: AAF Expansion Program, 1942-1943, 6 Sept. 1942, in AFSHO 2091-46.

69. Memo, Lt. Gen. H. H. Arnold, CG AAF, to ... Stratemeyer, sub.: Saturation Point of the Air Forces of the United States, 17 Dec. 1942; memo, Lt. Gen. H. H. Arnold, CG AAF, to All Concerned, sub.: Saturation Point of the Air Forces of the United States, 5 Jan. 1943, in AFSHO ...-11.

70. Memo, Col. J. I. Leutnenheimer, Chief, Operational Plans Div., AC/AS, Plans, to Maj. Gen. B. M. Giles, sub.: ... 273 Group Program, 10 Feb. 1943, in AFSHO ...

71. Memo, Col. C. A. ..., AC/AS, Plans, to AC/AS, A-4, sub.: New Construction for Calendar Year, 1943, 6 July 1943, in ...

72. Ltr., Donald Nelson, Chief, WPB, to S/W, ... Oct. 1942; ..., Col. I. P. ..., ..., to AC/AS, sub.: ..., 31 Oct. 1942; ..., Col. 1942; ... No. 19: The Facilities and Construction Program of the ... 1941 to ... 1945, II, ... tion ... 175, 191; ltr., Col. ..., ... 1942, to ... memo, ... Construction ... 1943, ... 1942, ... to AC/AS, A-4, sub.: ... Construction ..., in ... 600.1 ...

73. Ltr., ..., Chief, ..., to ..., sub.: Construction and Installations for the ..., 17 Jan. 1943, in AAG 600.1 I.

74. ..., Maj. Gen. G. E. Stratemeyer, AC/AS, A-4, to AC/AS, ..., sub.: Air Corps Construction, 27 Jan. 1943, in AFSHO ...-55.

75. ..., Direction of ..., 1941, sub.: ..., ... 1942; ltr., Col. ..., ... 1942, in ... 600.1 ... struction ... for ... Field, ..., ... showed costs per man to be $44 for theater of operations type and 175 for mobilization type construction. It ... the theater of operations ... could ... the time that ... (Hist. 2d AF, 7 Dec. 1941 to 31 Dec. 1942, v. 2, p. 406).

76. Ltr., TAG to CG's, All Departments and Corps Areas, sub.: War Department Real Estate Policy, 7 Feb. 1942, in AG 601.1 (1-21-42) ...

77. Ltr., TAG to CG's, All Departments and Corps Areas, sub.: War Department Construction Policies, Zone of the Interior, 24 [illegible] 194?, in AG 600.12 (2-19-42) [illegible]-D-M.

78. Ltr., TAG to CG AAF, sub.: Directive for War-Time Construction, 1 June 194?, in AG 600.12 (5-30-42) MO-SPAD-M.

79. Ltr., Lt. Col. P. [illegible] Whitney, Asst. AAG, to CG AFCC, sub.: Construction of Additional Facilities at Existing Stations, 25 [illegible] 1942, in AAG 600.1.

80. Ltr., Lt. Col. P. [illegible] Whitney, Asst. AAG, to CG AFCC, sub.: Layout Plans for Authorized Construction for the AAF, 3 [illegible] 194?, in AAG 600.1.

81. Ltr., Col. [illegible], Chief, [illegible] Div., OCAC, to CG AFCC, sub.: Decentralization of Air Corps Construction Activities, 6 Feb. 194?, in AAG 600.1.

82. Ltr., Col. [illegible] Dick, AAG, to C/AC, sub.: Leasing of Commercial Buildings for Air Corps Troops, 21 Jan. 1942; Ltr., Col. [illegible] Dick, AAG, to C of E, sub.: Leasing of Commercial Buildings for Air Corps Troops, 23 Jan. 194?, in AAG 601.53.

83. Memo, Col. [illegible] Hanley, AC/AS, A-4, to C/AS, 3 Feb. 194?, in AAG 601.43.

84. Ltr., Lt. Col. [illegible] Whitney, Asst. AAG, to C/AC, sub.: Air Corps Construction, 3 Feb. 194?, in AAG 601.53.

85. Ltr., Lt. Col. P. [illegible] Whitney, Asst. AAG, to C of E, sub.: Leasing of Commercial Buildings for Air Corps Troops, 1? Mar. 194?, in AAG 601.53.

86. AAF Regulation No. 85-3, 25 Apr. 194?; WD Circular No. 47, 1? Feb. 194?.

87. Ltr., Col. L. P. Whitten, Asst. AAG, to C of E, sub.: Allocation of Funds, 17 Apr. 194?, in AAG 600.1.

88. WD, OCE, Circular Ltr. No. 1??, sub.: Decentralization of Authority for Minor Construction Projects, 23 July 194?, cited in OCE, Hist. Branch, Mil. Constr. in the United States Under the Direction of the CQM and the C of E, v. 2, p. 1?0.

89. Rcd. of Telephone Conversation, Maj. Gen. [illegible] S. Fairchild, AFDAS, to Maj. Gen. [illegible] Clis, CG ?1 AF, 1 Jul. 194?, in AAG 6??.0-1.

90. Ltr., Col. L. P. Whitten, AFDAS, to CG [illegible], sub.: Plans for New AF Installations, 23 July 194?, in AAG 6?6 E; Ltr., Col. L. P. Whitten, AFDAS, to C of E, 2 Aug. 194?, in AAG 3??.7 [illegible].

91. Ltr., Col. [illegible], to [illegible], subj.: Approval of Layout [illegible], [illegible] 19[illegible], in [illegible].

92. Ltr., [illegible] Dow[illegible], Chief Liaison Officer, [illegible] Div., to Air Force [illegible] et al., subj.: [illegible] of [illegible] Liaison Officers, [illegible] Division, [illegible] 19[illegible]; [illegible] 2d AF, 7 Dec. 1941 to 31 Dec. 19[illegible], [illegible] Documents [illegible], No. [illegible].

93. AAF Hist. Studies: No. 10, Organization of the [illegible] Air Arm, 1935-1943, pp. 10[illegible]-10[illegible]. On [illegible] July 1944, the office of [illegible], was [illegible] the AC/AS, [illegible] Installations Division [illegible]. ([illegible], 10 July 1944, in [illegible] 324.2, v. 1).

94. Hist. AAF TC, 1 Jan. 1939 to [illegible] 1943, v. 1, pp. [illegible], [illegible]-274, 234-270.

95. Ltr., [illegible] to [illegible], [illegible] et al., subj.: [illegible] of the Air Corps [illegible], 23 Jan. 19[illegible], in AG [illegible] ([illegible]) [illegible].

96. Hist. AAF TC, 1 Jan. 1939 to 7 July 19[illegible], v. [illegible], pp. [illegible]-35[illegible].

97. Ibid., v. 1, pp. 233-237.

98. Hist. AAF [illegible] TC, 7 Dec. 1941 to 1 Jan. 19[illegible], v. 1, pp. [illegible], 123-12[illegible], in [illegible] 2[illegible].2-2, v. 1; Ibid., v. [illegible], p. [illegible]; [illegible] Fld., 7 Dec. 1941 to [illegible] 1944, pp. 2-4; Ltr., [illegible] to [illegible], [illegible], and [illegible], subj.: Jurisdiction and Control of [illegible] Air [illegible] and [illegible] 21.14, [illegible] Dec. 1941, in [illegible] ([illegible]) [illegible]-AF.

99. Hist. AAF Eastern [illegible], 7 Dec. 1941 to 1 [illegible], v. [illegible], pp. 1[illegible].

100. Ibid., v. 1, pp. [illegible], [illegible]-403.

101. Ibid., v. 1, pp. [illegible], 1[illegible]-153.

102. Ibid., v. 1, pp. 91, [illegible]; Ibid., 1 [illegible] to [illegible], v. 1, pp. 74-7[illegible], [illegible], [illegible]-512, in [illegible], v. 1.

103. Ibid., 7 Dec. 1941 to 1 Jan. 19[illegible], v. 1, pp. 11[illegible]-1[illegible]3, [illegible]-231, 23[illegible]-237.

104. Hist. AAF Central TC, 7 Dec. 1941 to 31 Dec. 19[illegible], v. [illegible], pp. 1[illegible].

105. Ibid., v. 2, pp. 131-141.

106. Ibid., v. [illegible], pp. [illegible]; Hist. [illegible] to 1 [illegible], v. 1, pp. 2, [illegible], in [illegible].05-1, v. 1; [illegible] Airfield, 14 Sept. 19[illegible] to 1 Jan. 19[illegible], v. 1, pp. 1, 4, 20, 20, in [illegible].33-1, v. 1; Hist. [illegible] to 1 [illegible] 19[illegible], v. 1, pp. 3, 4, [illegible], in [illegible], v. 1; [illegible]

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of AAF Pilot School (TE), Eagle Pass, 26 May 1942 to 1 Mar. 1944, v.
1, pp. 3, 7, 13, 31, in AFSHO 2?.51, v. 1; Hist. Coffeyville Army
Airfield, 17 June 1942 to 29 Feb. 1944, v. 1, pp. 6, 14, 15, 125,
in AFSHO 2?1.65-1, v.1; Hist. South Plains Army Airfield, 10 June
1942 to 1 Jan. 1943, v. 1, pp. 6, 9, 12, 13, 22, in AFSHO 2??.7?-2,
v. 1; Hist. Hondo Army Airfield, 4 July 1942 to 1 Mar. 1944, v. 1,
pp. 5, 6. 9, in AFSHO 2?4.46-2, v. 1.

107. Hist. AAF Central FTC, 7 Dec. 1941 to 31 Dec. 1942, v. 2, pp. 197-
217. These British schools had been located by the Chief of the Air
Corps and were being built with funds from the ? ? Aid Supple-
mental Appropriation Act for 1941. (Ltr., Maj. Gen. ? ? Brett,
C/AC, to Undersecretary of War, 22 Apr. 1941; ltr., President F. D.
Roosevelt to S/W, 23 Apr. 1941, in AAG 353.9 ?-?).

108. Hist. AAF Central FTC, v. 2, pp. 141-140.

109. Hist. ?ol., Strother Fld., 2 July 1942 to 1 Mar. 1944, v. 1, pp. 22,
43, in AFSHO 2??.91-1, v. 1; Hist. AAF Instructors' School, Bryan,
Tex., 1 Mar. 1942 to 1 Mar. 1944, v. 1, p. 16, in AFSHO 2??.05-1,
v. 1; Hist. Aloe Army Airfield, 28 July 1942 to 1 Mar. 1944, pp. iv,
?, in AFSHO 2?0.19-25; Hist. AAF Pilot School (Advanced Twin-Engine),
Frederick Army Airfield, 23 Sept. 1942 to 1 Mar. 1944, v. 1, pp. 7,
9, in AFSHO 2?2.27-1, v. 1; Hist. AAF Pilot School (Advanced Twin-
Engine), Altus Army Airfield, 7 Dec. 1941 to 1 Jan. 1943, v. 1, pp.
5, 20, in AFSHO 2??.25-1, v. 1; Hist. Lamar Army Airfield, 3 Aug.
1942 to 1 Mar. 1944, pp. 7, 44-45, in AFSHO 2?7.36-1; Station Hist.,
San Angelo Army Airfield, 26 June 1942 to 1 Jan. 1943, v. 1, passim,
in AFSHO 2??.39-2, v. 1; Ibid., 1 Jan. 1943 to 1 Mar. 1944, v. 1, p.
13, in AFSHO 2??.39-3, v. 1; Hist. Childress Army Airfield, 2 May
1942 to 1 Mar. 1944, v. 1, Ch. 1, pp. 3, 5, Ch. 2, p. 5, in AFSHO
2?1.54-1, v. 1; Hist. Laredo Army Airfield, 12 Aug. 1942 to 1 Apr.
1944, v. 1, pp. ?, 34, 47, v. 2, p. 54, in AFSHO 2?5.51-1, v. 1,
v. 2; Hist. AAF Pilot School (Specialized Four-Engine), Dodge City,
Kans., v. 1, pp. 10-12, in AFSHO 2?0.22-1, v. 1; Station Hist.,
Garden City Army Airfield, v. 1, pp. ?, 14, 22, 42, 47, in AFSHO
2??.23-1, v. 1; Hist. Survey of the AAF Pilot School (Specialized
Four-Engine), Liberal Army Airfield, 1 Jan. 1943 to 1 Mar. 1944, v.
1, pp. 1-4, in AFSHO 2??.4?-1, v. 1; Hist. AAF Pilot School (Basic),
Independence Army Airfield, 10 Oct. 1944 to 1 Mar. 1944, v. 1, pp. 4,
20, in AFSHO 2?5.02-1, v. 1.

110. Hist. WCTC, 7 Dec. 1941 to 31 Dec. 1942, v. 1, pp. 35-55, 145, in
AFSHO 226.5-2, v. 1.

111. Ibid., v. 1, pp. 42, 45-46, 47, ?-??, ?1, ??, ?, 93, 94.

112. Ibid., v. 1, pp. 55-56, 65-72; v. 2, pp. 203, 207.

113. Ibid., v. 1, pp. 59-60, 63-64, 81-97; Hist. Fort Sumner Army Airfield, 1943, p. 51, in AFSHO 283.18-2.

114. Hist. AAF TTC, 1 Jan. 1939 to 7 July 1943, v. 7, pp. 1895-1938; AAF Historical Studies: No. 1, The Glider Pilot Training Program, 1941 to 1943, pp. 1-75.

115. Hist. AAF Eastern FTC, 7 Dec. 1941 to 1 Jan. 1943, v. 2, pp. 1032-1094; ibid., 1 Jan. 1943 to 31 Dec. 1943, v. 2, pp. 940-953.

116. Hist. AAF Central FTC, 7 Dec. 1941 to 31 Dec. 1942, v. 1, pp. 47-50; ibid., 1 Jan. 1943 to 31 Dec. 1943, v. 4, pp. 780-903.

117. Hist. WCTC, 7 Dec. 1941 to 31 Dec. 1942, v. 3, pp. 535-564, ibid., 1 Jan. 1943 to 31 Dec. 1943, v. 3, pp. 529-535.

118. Hist. AAF TTC, 1 Jan. 1939 to 7 July 1943, v. 1, pp. 294-306.

119. Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 2, pp. 223-241.

120. Ltr., TAG to CG AFTTC sub.: Boards of Officers, 20 Jan. 1942, in AG 210.484 (1-20-42).

121. Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 1, pp. 155-170; v. 2, pp. 189-214, 276.

122. Hist. Basic Training Center No. 5, Kearns, Utah, 1 May 1942 to 1 Oct. 1943, v. 1, pp. 1, 2-6, 15, in AFSHO 229.45-1, v. 1; Hist. Basic Training Center No. 10, Goldsboro, N. C. 1 Mar. 1943 to 7 July 1943, v. 1, pp. 25, 33, 34, 46, in AFSHO 229.29-1, v. 1; Hist. Truax Fld, 1 July 1942 to 31 Dec. 1942, v. 1, pp. 11-13, 20, 34-35, 42, in AFSHO 289.24-1, v. 1; Hist. Technical School, Sioux Falls, S. D., Activation to 31 Dec. 1943, v. 1, pp. 11-20, in AFSHO 288.66-1, v. 1; WD, Quarterly Inventory, Owned, Sponsored and Leased Facilities, 30 Sept. 1945.

123. Hist. Amarillo Army Airfield, v. 1, pp. 5, 6-10, 26, 61, in AFSHO 280.27-1, v. 1; Hist. Lincoln Army Airfield, Activation to 1 Dec. 1943, v. 1, pp. 1, 4, 5, 28, 30, in AFSHO 285.71-1, v. 1; Hist. Seymour Johnson Fld., Activation to 7 July 1943, v. 1, pp. 5, 21, 154, in AFSHO 288.57-1, v. 1; Hist. Gulfport Fld, 1942, v. 1, pp. 26, 30, 65, 72, in AFSHO 283.79-1, v. 1.

124. Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 2, pp. 299-304; WD, Quarterly Inventory, Owned, Sponsored and Leased Facilities, 30 Sept. 1945.

125. Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 2, pp. 299-301; v. 5, p. 712.

126. Ibid., v. 7, pp. 278-279.

127. Ibid., v. 2, pp. 278-284; Hist. Fifth District, AAFTTC, v. 9, pp. 1-76, v. 2, passim, v. 4, passim, v. 7, passim, in AFSHO 227.5-1; S. Report No. 10, pt. 16, 78 Cong., 2 Sess., 3 Mar. 1944, p. 124.

128. Hist. Fifth District, AAFTTC, v. 8, vv. 2-61.

129. Hist. Basic Training Center No. 7, Atlantic City, 29 June 1942 to 15 Aug. 1943, v. 1, pp. 1-5, in AFSHO 229.02-1, v. 1.

130. Hist. Chicago Schools, 4 Sept. 1942 to 3 Nov. 1942, v. 1, pp. 1-26, in AFSHO 229.11-1, v. 1; Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 2, p. 291.

131. Hist. AAF Weather Training Center, 21 Nov. 1942 to 31 Dec. 1942, pp. 16, 128-134, in AFSHO 229.28-1.

132. Hist. Data, Boca Raton Fld., Inception to 31 Dec. 1942, v. 1, pp. 2, 6, in AFSHO 280.87-1, v. 1.

133. Hist. Basic Training Center No. 8, Fresno, Calif., 29 Oct. 1942 to 1 Sept. 1943, v. 1, pp. 1-18, in AFSHO 229.25.

134. Hist. AAF Technical School, Tomah, Wisc., 5 Nov. 1942 to 31 Dec. 1942, pp. 11, 12, 13, 33, in AFSHO 229.86-1.

135. Hist. AAF Cryptographic School, Fowling, N. M., 3 Nov. 1942 to 15 Sept. 1943, pp. 1-4, in AFSHO 229.67.

136. Hist. Cadet Basic Training Center No. 2, Valley Forge Military Academy, 7 Oct. 1942 to 15 May 1943, passim, in AFSHO 229.90.

137. Hist. Aviation Cadet School at Yale Univ., 3 Dec. 1941 to 31 Dec. 1942, pp. 17, 19, 26, in AFSHO 229.94-1; ibid., 1 Jan. 1943 to 7 July 1943, v. 1, pp. 68-70, in AFSHO 229.94-3, v. 1,

138. Hist. AAF TTC and its Predecessors, 1 Jan. 1939 to 7 July 1943, v. 5, p. 984.

139. Hist. AAF Statistical School, Organization to 31 Dec. 1942, v. 1, pp. 4-6, in AFSHO 229.37-1, v. 1

140. AAF, Station List, 1 May 1943, Section II, pp. 11-12.

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BIBLIOGRAPHICAL NOTE

The most important sources of information for this study were found to be the files of the Air Adjutant General concerned with air site boards, the acquisition of land, and construction, the file numbers of which had been cited fully in the footnotes. Several individual documents, but most important for the period prior to Pearl Harbor, were the files of the Plans Division, OCAC, now in the Archives of the Air Historical Office. Full references to these files have also been given in the footnotes of this study.

For the period prior to 7 December 1941 special importance attaches itself to the hearings of the House and Senate on Army and National Defense appropriation measures and the associated public laws and appropriation acts; after the beginning of United States participation in World War II, however, such government documents proved little informative. The airport survey of the CAA, published as H. Doc. No. 245, 76 Cong., 1 Sess., on 27 March 1939, is the best exposition of the condition of civil air facilities in 1939. The reports of the Senate War Investigating Committee (Truman Committee) offer valuable criticisms covering the development of Army facilities and particularly in regard to the leasing of hotels for the AAF at Miami Beach.

Other government and military publications were of varying importance. The AAF Station List furnished a convenient monthly summary of facilities, but they became detailed only after the summer of 1942. The annual reports of the Commanding General, Army Air Forces, provide a general account

of Army construction activities during each fiscal year after 1941, but little detailed information pertaining to the AAF [illegible] unit in Ireland. The OCE, Progress of Military Construction series, issued twice monthly after January, 1941 and filed in the OCE library, furnish an itemized and detailed reference in regard to construction currently underway. For cost figures the War Department, Quarterly Inventory of Owned, Sponsored and Leased Facilities, issued as of 31 March, 30 June, 30 September, and 31 December during 1944 and 1945, is valuable although [illegible] reference. For an over-all viewpoint on cost, the Army Service Forces, Statistical Review, World War II, has been used. The AC/AS-4, Air Installations Division, Summary of Real Estate and Construction Costs for AAF Installations, issued on 15 September 1946, is an excellent cost accounting of all main AAF installations.

Constant use has been made of the various manuscript histories available in the AFSHO and Historical Division, War Department Special Staff. Particularly deserving of mention is the OCE, Historical Branch, "Military Construction in the United States under the Direction of the Quartermaster General and the Chief of Engineers," which furnishes a complete treatment of the organization and functioning of the War Department for AAF construction. The various air force and command histories in the AFSHO have been gleaned of material on their construction programs and difficulties, and other information has been taken from the somewhat unevenly useful AAF base and station histories prepared in the field by local historical officers.

For the 1944-1945 phase of the construction story the daily diaries of the AC/AS, OCD, AC/AS, [illegible], and the Air Installations Division [illegible]

[illegible] descriptively, but the [illegible] have been found to be [illegible] use-ful for the [illegible] detail of [illegible] authorized than [illegible] [illegible] of achievements, [illegible] of techniques, and lessons learned.

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