LEGISLATION RELATING TO THE AAF MATERIEL PROGRAM

1939 - 1945

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CONGRESSIONAL sanction for the procurement of aircraft and other air equipment was one of the most important elements in the building of an effective air force for World War II. As war threatened in Europe late in the 1930's, the United States took steps to strengthen its air arm. This study examines the series of legislative authorizations for the execution of the AAF materiel program from 1939 to the end of the war in 1945, grouping the measures in five broad categories: (1) authorization and appropriation for new aircraft; (2) provision of funds to prepare industry for mass production and for expediting deliveries; (3) provisions concerning contracts and the limitation of profits; (4) creation and support of research facilities; and (5) foreign sale and lend-lease of air materiel. Some phases of materiel legislation, such as action concerning acquisition of land, construction of bases, and maintenance of facilities, have been excluded as belonging more specifically to the histories of the bases and to field service activities than to a history of materiel legislation.

An earlier version of this history, prepared by Dr. Chase C. Nooney, carried the account to the summer of 1945. Dr. Chauncey E. Sanders has supplied additional material to cover the story for the remainder of the war.

Other AAF Historical Studies treat different portions of the legislative acts discussed here. They are No. 7 (Rev.), Legislation Relating to the AAF Training Program, 1939-1945; No. 16 (Rev.), Legislation Relating to the AAF Personnel Program, 1939-1945; and No. 39, Legislation Relating to the Air Corps Personnel and Training Programs, 1939-1945.

Readers familiar with the subject matter are invited to furnish the Air Historical Office with criticisms, additional facts, or interpretations.
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Legislation Relating to the AAF Materiel Program

1339-1945

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Chapter I

AUTHORIZATION AND APPROPRIATIONS FOR AIRCRAFT, JUMP ENGINES
AND SPARE PARTS

On 2 July 1936 Congress created the Air Corps and authorized a maximum strength of 1,500 serviceable planes within five years. Because of action by the War Department and the Bureau of the Budget, the Air Corps was not even able to accomplish this program in 10 years. (See Chart, on following page, and App. 1.) By that time the Baker Board had recommended an increase of 520 planes, and Congress sanctioned this increase, the 2,320-plane program, on 24 June 1935. Of this number there were on hand only 842 on 30 June 1937. It was expected that a total of 1,375 would be on hand within a year and 420 more by the end of the fiscal year 1938.

In an effort to attain the established objective, the Air Corps had submitted estimates of approximately $100,000,000 for the fiscal year 1938, but the War Department Budget Advisory Committee had reduced these by $13,000,000 and the final appropriation by Congress was only slightly more than $77,000,000.

In testifying on the military establishment appropriation bill for 1939, Gen. Malic Craig, Chief of Staff, stated that the program called for the procurement of 525 planes for the Regular Army and Organized Reserve from 1938 funds and 420 from 1939 funds. The purchase of these planes would fulfill the Baker Board objective by 30 June 1940. The total amount requested for the Air Corps during 1939 was $89,853,366 of which $13,126,394 was necessary to cover for contract obligation for 1938, thus
leaving a net availability of $73,556,972.

Of the total appropriation requested, $33,150,446 was for the purchase of 394 new planes by the regular army while 32 were to be procured by the Organized Reserve and 43 by the National Guard. This was a total of 471 against an expected washout of 183, or a net increase of 281 toward achieving the goal. All of this sum was not sought as a direct appropriation, for contract authorizations of $14,000,000 and $5,126,394 were to supplement appropriations of $18,150,946 and $8,302,273 for airplanes and spares, respectively. Maj. Gen. Oscar Westover, Chief of the Air Corps, explained that part of the increase in the item for spares was caused by calculating an allowance of 75 per cent instead of 50 per cent spare engines which he considered inadequate. It was expected that the reduced unit costs resulting from mass purchase would enable the Air Corps to procure 592 planes rather than the number justified.

Despite the statements of General Westover, the House appropriations committee reduced the item for spares by approximately $2,000,000—the difference between a 75 per cent and a 50 per cent allowance—and suggested that the major portion of that amount be used to meet current deficiencies in that item and that the remaining $171,004 as well as $600,000 of current unexpended funds be applied to research. The Acting Secretary of War recommended the reinvestment of the amount necessary to procure 75 per cent spare engines, but the Senate committee refused the request.

As approved, the act provided an appropriation of $70,556,972 (of which $10,126,394 was for contractual obligations incurred during the fiscal year 1938) and a contract authorization of $19,126,394. It was stipulated that of the above sums not less than $33,150,446 should be—For a discussion of research, see below, Chao IV.
applied to the procurement of new combat airplanes and their "equipment and accessories," including not more than $1,601,044 for the procurement of spare engines and spare parts for airplanes procured by expenditure of fiscal year 1938 funds.\textsuperscript{12}

In the fall of 1933 the Assistant Chief of Staff, War Plans Division, recommended that the Air Corps 10,000-plane program be approved by the Chief of Staff.\textsuperscript{13} Approval was given on 25 November 1933, and the new program was to be a two-year project. By this plan—which, of course, had not received congressional sanction—the combat strength of the air arm was to be increased to 5,620 planes, with 2,705 active and 2,915 in reserve.\textsuperscript{14} This program provided for the purchase of 8,030 planes within two years to supplement the 1,970 "on hand, undelivered, and scheduled to be procured from 1939 funds, less losses in the next two years." It was anticipated that 2,000 would be procured from government facilities and 6,030 from private industry.\textsuperscript{15} The cost of this then-ambitious project was estimated at $1,286,000,000 in addition to the 1939 appropriation and the estimates submitted for 1940. To maintain this number of aircraft would involve annual materiel expenditures of $141,238,997 for 1,500 planes with government-furnished equipment and spare parts and $12,056,020 for experimental research and development.\textsuperscript{16} This program, prepared by the high officials of the air arm and approved by the War Department General Staff, was no doubt a reflection of the recognition of the powerful bargaining influence of an air force in being.\textsuperscript{17} It never received congressional approval, but was replaced by the 5,500-plane program in early 1939.

The increased realization of the necessity of building America's military machine, especially the air force, for hemispheric defense became
more articulate as the European situation degenerated. In his message to Congress on 12 January 1939, President Roosevelt pointed out that the Baker Board report of a few years ago is completely out of date. No responsible officer advocates building our air forces up to the total either of planes or of productive capacity equal to the forces of certain other nations. We are thinking in the terms of necessary defenses, and the conclusion is inevitable that our existing forces are so utterly inadequate that they must be immediately strengthened.

To prepare the air arm for its role in defense, the President urged the appropriation of $300,000,000 for the purchase of "several types of airplanes for the Army," noting that this should provide a minimum increase of 3,000, with the expressed hope that the placing of orders on such a large scale would materially reduce the unit cost and actually provide many more planes. President Roosevelt suggested that $50,000,000 be made available immediately so that contracts could be placed to "correct the present lag in aircraft production due to idle plants."

Newspaper reaction to the message was generally favorable, some papers implying surprise that the program had not been more extensive. The Army-Navy Journal of 14 January 1939 emphasized that both services needed more planes and that the President had achieved balance in the program presented. The Journal felt that the President had "discarded the grandiose suggestions of diplomats and others, and . . . sought and took the advice of his experts, the responsible heads of the War and Navy Departments."

The expansion program had been under consideration by the Air Corps for some time, and on 13 January 1939 the Chief of the Air Corps submitted to the Chief of Staff a breakdown of the $300,000,000 which the President requested. By this proposal $170,000,000 would be used for material procurement--1,500 combat, 1,125 training, and 14 "miscellaneous"-type planes.
General Arnold stated that this program provided a nucleus as a "well-rounded air defense which would be wholly lacking if the whole $300,000,000 were devoted to the procurement of airplanes." The purchase of these 3,000 planes would bring the strength of the air arm to 5,000 serviceable planes, of which 2,000 were to be held in reserve.

To carry out the aircraft provisions of the President's message, Senator Johnson (N.d.), chairman of the House Committee on Military Affairs, introduced H.R. 2780 into the House on 13 January 1939. This bill authorized the Secretary of War to equip and maintain the Air Corps with "not to exceed six thousand serviceable airplanes" and empowered him to maintain the number specified by replacing obsolete and unserviceable aircraft from time to time. This bill was exactly as submitted by the House Committee, as it already included Section 8 of a more inclusive bill "to increase the efficiency of the Air Corps." 23

The War Department stated that the passage of H.R. 2780 or its companion bill, S. 842, "would be a major contribution to the cause of national defense" and recommended favorable consideration. It was pointed out that a possible reduction in unit costs would permit the purchase of a larger number of planes than authorized by the bill, even though the amount of expenditure was fixed. It was therefore suggested that the committees on military affairs give consideration to the need of the limit on airplane strength so that an ever greater number of planes could be procured. 24

Subsequently, the House Committee on Military Affairs had been conducting hearings on various phases of the President's national defense message, and on 31 January H.R. 2780 was incorporated with other national defense
measures into H.R. 3513 which was replaced on 7 February by H.R. 3701. The latter measure was identical with H.R. 3513 except that the authorized airplane strength was reduced from 6,000 to 5,500. Testimony had already been taken on the various portions of H.R. 3701, and it was favorably reported on 2 February. A minority report agreed with the intent of the bill but disagreed with Section 1 which authorized immediate purchase of the planes. The minority view of the conviction that procurement should be spread over three years so that the Air Corps would be in a better position to take advantage of the year-to-year developments. This view was expressed during debate on the measure, in an amendment offered by Representative H. J. Andrews (N.Y.) on 15 February which sought to limit procurement to 1,000 planes per year except in case of a declaration of national emergency. This was the occasion of considerable debate but was defeated by a vote of 138 to 139.

One of the strongest speeches calling for an adequate national defense was made by Representative Don Carter (Ohio) on 14 February. He characterized the authorizations of H.R. 3701 as the "irreducible minimum of what should be done at the present time." Carter stressed the importance of immediately beginning a program that would assure the creation of an adequate air force, and he quoted from a speech by Gen. Frank R. Andrews, Commanding General of the G.I.R. Air Force, to emphasize his point. General Andrews had said that the air force is not a commodity that can be procured in the open market, no matter how much gold and silver may be available. Money will not buy it; desire will not create it. Timely foresight, based upon an intelligent conception of the potentialities for other material features of the bill, see below, Chaps. II and III.
of air power and its effects upon the destiny of nations is the
only formula that can assure its development... adequate air
power cannot be created after the necessity for its need has arisen.
Like a navy it takes years to build an air force.

Some of the amendments affected the Air Corps material program, and
the measure passed the House by a vote of 807 to 13 on 15 February. In
the Senate committee hearings, it was pointed out to General Arnold that
he had been credited by newspapers with favoring the construction of
10,000 planes. General Arnold replied that the report was inaccurate and
that he was for the 5,500-plane program "hook, line, and sinker, because
I believe it is a program that is well planned, ... balances the per-
sonnel with the airplanes, and ... answers the problem of the aerial
defense of the United States, and I cannot see any need at this time for
anything more." 22

The Senate committee increased the authorized strength from 5,500
to 6,000, 33 and this increment was justified, during debate, by the ex-
tent of the territory to be defended—the Western Hemisphere. This in-
crease did not involve any additional appropriation but simply allowed
procurement of more aircraft if the stipulated funds would allow. 34

Senator Bennett C. Clark (D.), however, pointed out that all who had
tested before the committee had considered 5,800 airplanes as ade-
quate, and since the bill did not limit the amount to be spent on planes,
6,000 might cost much more than the estimated $170,000,000. 35 Despite
reported assertions that the measure was for defense only, it was attack-
ed by some individuals who insisted that the only reason for wanting
6,000 planes was to prepare for intended entry into a war abroad. Others
resented the old argument that the way to keep out of war was to show
that the country was sufficiently strong to defend its own interests and
shorts.

As passed by the Senate on 7 March, H.R. 3791 authorized a maximum
of 6,000 serviceable planes and an appropriation not to exceed $500,000,000
"together with such annual appropriations as may be necessary to maintain
such air force." These changes were agreed to by the House in conference
committee, and the measure became Public Law No. 18 on 3 April 1939. 137

Public Law No. 18 thus authorized the most ambitious expansion pro-
gram which the Air Corps had ever proposed to Congress. It was felt by
the Chief of Staff that the passage of this act was an excellent example
of the effects of publicity and public pressure. Until pictures showing
the bombings of women and children in Spain and China had been circulated
the public was indifferent to the plea for the necessity of creating
additional air power. These photographs, however, developed public pres-
sure and Congress made provision for "long-overdue appropriations for air-
planes and anti-aircraft material." 38

During the course of debate on H.R. 3791 some doubt had been expressed
as to the ability of the aviation industry to meet the requirements of
the new program. The Aeronautical Chamber of Commerce of America felt,
however, that the industry "would easily be able to take care of the pro-
posed requirements." The production of approximately 1,000 additional
planes for the next two years would require only a "very small portion
of the actual capacity of the industry" which was estimated at 6,000
to 10,000 planes. The consensus was that the placing of additional or-
ders would have the effect of "stimulating the industry and enabling

* See Chap. III.
In less than two weeks, the new program would have achieved its objective.

While the task seemed daunting and impossible, the engineers and technicians worked tirelessly to make it a reality. They worked long hours, without much rest, to ensure that the project was completed on time.

As the deadline approached, the pressures mounted. The team worked around the clock, sacrificing their personal lives for the greater good.

In the end, it was a triumph of human ingenuity and perseverance. The new program was a massive success, achieving its objectives ahead of schedule and well within budget.

An analysis conducted by the Ministry of Defense concluded that the new program had significantly improved the nation's defense capabilities, making it more secure and capable of withstanding any future threats.

The success of the new program was a testament to the dedication and hard work of the team. Their efforts had paid off, and they could now rest assured that their country was protected.

Several awards were given to the team for their outstanding work, and the program was hailed as a victory for the nation. The success of the new program set a new standard for future endeavors, inspiring others to strive for excellence and innovation.
planes this time because it was approaching the 2,320 limitation of the Baker Board. Although that number would probably be exceeded by 30 June 1940, there would be only 1,090 modern combat planes on hand by 30 June 1939. The Chief of the Air Corps continued by saying that the planes out of commission because of maintenance difficulties would reduce this number to 622 aircraft actually fit for combat.

While hearings on the regular 1940 appropriations bill were still in progress, supplemental estimates for the use of $50,000,000 were submitted in anticipation of the fulfillment of the President's request of 12 January 1939. These estimates involved the procurement of an additional 565 planes and were incorporated with the regular 1940 estimate.

Four hundred of these planes were to be pursuit, 125 attack bombers, 14 photographic, and the remainder was then termed "miscellaneous combat." The total cost of these, plus 25 per cent spares, was estimated at $6,648,373.

The House Committee on Appropriations recommended that $10,505,938 of the supplemental estimates be made as contractual authorization and that the total appropriation for the Air Corps be $47,377,221.

It was stressed that the supplemental portion of the bill sought to reach and go beyond the 2,320 goal, which was not thought attainable when the 1940 estimates were first made. Immediate availability of the supplemental estimate was to year industry to produce more rapidly for the larger program looked to in 1939. That conclusion existed as to the exact program to which the 835 new planes referred was indicated by the committee's statement that any "may fit into the 2,320 program as replacements, or be the entire expansion thereof for the present, or may
be the first increment of an expansion toward any objective ranging from 2,320 to 5,800 airplanes." The committee was doubtful that delivery of these planes could be affected by 30 June 1940. It stated that on 31 December 1939 there were 558 planes on order, some under funds or contractual authority which had been available as far back as 1 July 1939. Also, 763 planes which had been authorized had not been ordered. Then the 219 of the regular estimates and the 355 of the supplemental estimates were added, the total being 1,820 planes for delivery in the next 17 months. To the committee reported, "Past performance suggests that to be an exceedingly ambitious program." 28

On the floor of the House, Snyder again indicated that a maximum of 1,120 planes was already authorized and that without estimating for the enactment of legislation authorizing 7,800 planes, the President was free to submit estimates for an additional 1,235 planes. 29 In spite of some criticism and assertions that the expansion program was instigated by "propaganda of the aviation industry" who sought available orders from the Air Corps, the House passed the measure on 3 March 1939. 30

The Senate appropriations committee reduced by $1,963,597 and $8,935,258, respectively, the amounts of contractual obligation for new aircraft and their equipment and $1,977,037 was applied to combat aircraft. The figures then read $87,074,952 and $38,118,200, respectively. 31 This action was a result of a letter of 6 March 1939 from the Secretary of War to the chairman of the Senate committee, pointing out that the more reductions were the amounts to be expended for spare parts. 32 This change was agreed to by the House in conference committee, but the Senate reduced from its $1,935,258 increase in research funds. The measure became public law No. 41 on 11 April 1939. 33
The first step toward supplying funds for the new expansion had been taken. Combined with the regular 1939 funds, the new appropriation amounted to $37,737,231. Of this amount, $6,500,000 was to be chargeable to the 1938 appropriations, and $15,326,904 was to satisfy contractual obligations for aircraft items procured during the fiscal year 1939. Contractual authorization of $2,280,980 was provided, and it was stipulated that of the appropriations and contract authorizations, $67,494,932 shall be applied to the procurement of air airplanes and their equipment and accessories, of which amount . . . not less than $66,118,200 shall be applied to the procurement of combat airplanes and their equipment and accessories."54

Though there was considerable confusion as to the program for which the $39,300,000 supplementary estimate was intended, it became clear very soon that it was a definite part of the 5,500-plane program. Additional estimates were anticipated soon after the passage of Public Law No. 16 for the fulfillment of the Air Corps portion of the general expansion program. General Craig stated before the House Committee on Appropriations that the need for an expanded and improved air force was the result, principally, of three conditions: (1) the state of political tension throughout the world and the vast increase of armament by all world powers; (2) the rapid development in aviation and the consequent emphasis on aerial warfare; and (3) the announced government policy of defending the Western Hemisphere against aggression.55

The estimates involved $280,000,000 of which the direct share of the Air Corps was $77,760,355 in cash appropriation and $44,000,000 in the contractual authority. The major portion of these sums was to be used to procure 2,487 airplanes, exclusive of the aircraft provided for in the
1940 budget and the 20,000,000 amendment required which had been incorporated in the regular 1940 military appropriation bill. General Arnold stated that this would bring the total to 2,500 planes within the years (by 30 June 1941), and if it had been cancelled by the armament industry, the sufficient to meet these deficits. The Chief of the Air Corps pointed out that all the losses so far authorized had been obviated with the exception of the funds for 150 attack bombers. It was continued by indicating that the current contract situation was the only means of obtaining the unit costs and prompt the purchase of the major portion of the previous amendment appropriation for current aircraft. The funds requested for additional planes ($22,000,000) could be used primarily for other types, and therefore would thus be brought back into balance.

An increase of 120 planes would require an increase of 500 planes are an annual appropriation of $22,000,000 to maintain the service at a peak of 5,500 planes.

The vote for the total was for 400 planes at an interest rate of $30,000,000. It was explained to the committee that this provided for 20 percent more planes instead of the 50 percent limitation under which the Air Corps had tolerated during the previous year.

As reported on 16 June 1939, the vote was limited an expenditure of approximately $25,000,000 for planes—$2,000 for each. All of 177 for the National Guard. The committee agreed to the "unconditional" procurement of 210 planes for a ration, but were the procurement of the remainder aircraft contingent upon the President's decision as to that portion of the funds as could be used for national defense. Representative E. L. V. Lewis (D.) offered an amendment in the House on 21 June 1939 to
reduce the number of planes to be purchased by 1,283 and to authorize the procurement of these only when the President felt that a national emergency justified their purchase. In speaking this amendment, Representative J. J. Keller (Conn.) warned of the possibility that the United States might be plunged into war sooner than was thought, and that the entire program should be carried out in order to learn more of productive capacity and possibly "to save the proposed restrictive amendment was rejected by a vote of 217 to 150 on 22 June; and Powers' attempt to recommit the bill was unsuccessful, as the measure was passed by the House on the same day.

The Senate committee amendments did not concern Air Corps items, and the measure became Public Law No. 104 on 1 July 1939.66 The Air Corps was given $30,727,005 in appropriation and $1,005,000 contractual authority. The greater portion of these sums was for the procurement of aircraft and parts, and they brought to $900,000,000 the appropriation for the air corps expansion program as outlined by the President on 12 January 1939.67 Congress has acted quickly, efficiently, and without quibbling on the War Department's requests to meet what were considered the minimum needs for national defense. Within slightly less than three months Congress had made $261,070,924 available to the Air Corps. This was one-half as much as it turned over received in the 14 preceding fiscal years and provided for the procurement of 3,231 planes—or approximately twice as many as were on hand at the beginning of 1939.

In March 1939, Nazi Germany had lengthened its long list of aggressions by occupying the Sudetenland, and on 1 September 1939 she moved into Poland, bringing open warfare to the Continent. Seven days later President Roosevelt proclaimed a state of limited national emergency, and steps were taken to preserve the neutrality of the United States.68
The preliminary estimates for fiscal year 1941 had been submitted by 15 August 1939 and provided for 496 planes at a cost of $39,450,000. This procurement was considered a "replacement program based on a prediction as to the number of planes that will become obsolete and as to the number of crashes." The cost of several of the types of planes had increased rather then decreased; the result was a deficiency in previous appropriations for planes of approximately $16,000,000. It was planned to care for this deficiency by transferring $8,000,000 from the appropriation for spare engines and parts, leaving $18,464,800 for the latter category. This, however, would leave a deficiency of $25,804,013 in spare engines and spare parts. To make up part of this deficiency the Air Corps wanted a 1941 appropriation of $10,250,000 and hoped to balance the remainder—at least to a considerable extent—by the "employment of old planes in reserve." Since, however, all plane contracts—except $16,000,000—had been awarded, the War Department budget advisory committee felt that it would be impractical to unbalance the program by the above action. The 1941 estimates, therefore, called for $30,150,000 for planes, $12,672,782 for spare engines and parts, and $35,104,827 for maintenance and operation. Included in the last item was $10,250,000 for 1940 sources. An item of $25,804,013 was included for the payment of contract authorizations. Condition had changed drastically by the time these estimates reached Congress.

Shortly after the outbreak of the European conflict the Air Corps submitted to the General Staff estimates for 500 reserve airplanes, a number which would bring our total strength to 6,500 craft. The cost of this program was estimated at $28,750,931. The cost of these planes was reduced at the suggestion of the Assistant Chief of Staff, G-4 and
ACTIVATED on 17 October 1939, the Act of 1937 provided that 317 of the
600 plans be ready to start at a light by 1937. If the heavy buyers
were secured from Consolidated, the total cost would be $12,324,000, out
of which $2,700,000 would be only $10,622,000. These estimates included
several additional items of spare parts, and

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were the signal ordnance it was.

The opportunity for the prevention of these radiates did not come
immediately, but on 13 September 1939, a letter in all
future contract to Congress the matter of plans to be approved be given
to congress, in executive session only. It felt this procedure was
justified by the realization that airplane manufacture, "not our cost
estimates in our deposits or our budgets and then cut the matter at their
selves to almost identical figures," if not done in test interfere,
the Air Corps might be able to deliver planes. In October the Air
Corps added that "there is also, of course, the added possibility that
these costs and numbers of airplanes constitute information which should
come to our foreign errance." 70

The Air Corps moved proceeded with the fulfillment of the 3,512-
plan objective in October to 1940. Meanwhile, the aviation
public was realizing more and more of the importance of war, especial-
ly bombers at all cost. The first indication of the congressional desire
for heavy expansion of the Air Corps was in the suggestion of
Representative Snyder, on 12 January 1940, that the authorized strength of
the Air Corps be raised to 6,000 planes. 71 The expansion program was
drawing both official and public criticism from varied sources. On 6 Febru-
ary 1940, Senator Henry Jackson reported deficits of the
Government operations caused by "some excess of the aircraft in-
ventory," which were "not in line with the business methods." 72 Representative Thomas
Colonel (Lt. Col.) L. Martin, in commenting on the above article, attributed the activity of the aircraft industry to the lifting of the arms embargo, asserted that the domestic economy was not on an even keel, and maintained that America was plunging toward war. He felt that "we are setting in motion factors which will prolong the war and which will cause a large industry in our land to decline the prolongation of the war and which may even plunge us headlong into the war."73 These, and similar comments in favor of or opposed to military expansion, were not uncommon prior to entry of the United States into the war.

Columnists also questioned the adequacy of the 5,600-plane program for homeland defense. Frazier pointed out the devastating possibilities of bombardment and suggested that Congress vote "hundreds of these peace guarantors (long-range bombers)." He admitted that it might not be advisable to concentrate on fleets of this type of aircraft immediately, but urged the creation of manufacturing facilities to turn them out when needed.

The House Committee on Military Affairs had considered the possibility of retarding Air Corps procurement in order to obtain the very latest types of aircraft. General Marshall, on 20 January 1940, pointed out that this would be undesirable and would accomplish nothing, since "there is always a later type being manufactured." General Marshall also refuted the charge that the Air Corps was out of proportion to the rest of the Army.

The 1941 military establishment appropriation bill provided for $212,426,072, including a contract authorization of $25,739,500. The net was available for new obligations, however, would be only $206,686,584.
since $79,305,688 was required to meet 1940 contract obligations. This
sum would provide for the procurement of only 490 planes as compared
with the purchase of 3,018 in the fiscal year 1940.\textsuperscript{22}

Then the Chief of the Air Corps gave his testimony on 7 March 1940,
the entire 5,500-plane program was reviewed. General Arnold pointed out
that the $330,000,000 program had become $362,027,000 because of an in-
crease of $2,000,000 for research and development and $27,000 to cover
the cost of preparing a comprehensive direct of data on Alaska. Of this
amount the direct appropriation for the Air Corps was $130,170,686. For
planes and accessories and equipment $132,175,440 of the allotted $177,-
316,982 had already been obligated. All contracts provided for delivery
by 30 June 1941. Delivery by this date was reasonably assured by the
penalty clause which provided for 1/15 of 1 per cent for each calendar
day of delay, but was not to exceed 15 per cent of the unit price of any
plane.\textsuperscript{23}

In explaining the estimates, General Arnold indicated that for new
airplanes, spare engines, and spare parts, $82,082,285 was requested. This
was $117,195,766 less than appropriated in 1940, and this request was only
for replacement of predicted losses. The 1940 appropriation, however, had
not covered the procurement of the necessary spare engines and spare parts
because of the increased cost of planes. This increased price is attributed
to several factors: (1) the liquidating damage clause, guaranteeing the
delivery date of planes; (2) increased performance, necessitating the pro-
curement of planes with performance superior to those available when funds
were requested; (3) the guaranteed performance of the aircraft as specified;
(4) "fear of labor difficulties and unsettled conditions of the world which
might affect the procurement of operating bases and depots to be operated and maintained; (5) the splitting of awards; (6) the limitation of profits. 25

When the 1941 estimates were originally drawn, the anticipated deficiency was only $10,250,000. Since that time it had increased by
$20,000,000, and this was cared for in the supplemental estimates for that amount. 26 The total appropriations would procure 490 planes and provide for the deficiencies in spare engines and spare parts. 27 The House Committee on Appropriations questioned the advisability of purchasing the 456 planes for reserve and thought that only the types of planes not already provided for in the reserve should be procured. This was justified on the ground that the purchase of 2,200 planes for the reserve had been intended to accomplish an acceleration of the industry. Since many foreign orders had been secured and the rate of production had greatly increased, the fundamental reason for a large reserve had ceased to exist. 28

The committee reported H.R. 9209 on 3 April 1940, recommending a reduction of $15,412,034 in the cash appropriation for new aircraft so that only 57 instead of the requested 490 would be procured. 29 The Bureau of the Budget estimates had provided for $25,559,839 cash and $25,780,500 contractual authority for the planes. If only 57 were procured—as recommended—$6,143,555 in cash was provided and the contractual authority eliminated. 30 The 1940 appropriations were short $30,250,000 apart from the 186 planes which had not been ordered on 7 March 1940 and for which there was in reserve $9,341,542, and the committee explained: 31

Rather than defer contracts until the shortage could be regularly made up, the War Department chose to tie up funds that had been made available for the procurement of spare engines and spare parts.
For airplanes, let us assume the situation thus brought about by their respective requests: $19,800,000 in each case and a supplemental request of $10,000,000.

Until a full recovery of the effect of the delay in deliveries and their relationship to foreign orders, the committee requested a total of only one-half of the supplemental request. The total Air Corps appropriation recommended was $65,702,162 and $10,000,000 for construction authority as opposed to the requested $19,800,000 and $17,700,000, respectively.

In reporting to Congress, the Chairman of the Appropriations Committee explained that the Air Corps was not going to get $2,000 (the average amount) of the 5,000 planes until certain foreign orders had been filled. This difference would not affect the Air Corps, but would keep the various projects in line with the request.$27 of the $2,000 planes could be deferred for the present, the district felt as well out of the $2,000 planes could be deferred. The total savings effected could be $10,000,000 each and $7,000,000 in construction authority. An attempt to recall all the bills with instructions to reduce the total of 10 percent was defeated, and therefore passed the Senate on April 11.

The Fiscal Officer, referring to the situation of the budget officer of the War Department to the War Department, recommended that the $15,000 be included in the amount for some engines and to reissue the new which was recommended for the planes. The total appropriation could be the same under this basis, but he felt the need for an additional 150 planes should be provided. This would increase the aircraft material item to $8,909,000 for the Air Corps and $1,011,160 for ordnance and signal equipment.
Just at this time thesituation in Europe and the growing threat of war unleashed on the Scandinavian countries. After the events had concluded leading to the loss of the Low Countries and as the country had been struck with lightening, President Roosevelt, addressing Congress on 16 May 1940, took cognizance of these "real powers of destruction" and asserted that "no old distance is so strong that it requires no further strengthening, and no asset is so unlikely or impossible that it may be ignored." The President continued by emphasizing that America's plans were not inferior to those of other nations, but that "one belligerent power" not only had more planes than all its opponents combined, but a yearly production capacity nearly twice that of its opponents. America's productive capacity, however, had risen from 6,500 planes to more than 12,000 planes per year in just 12 months. This was not considered enough. "I should like to see this action geared up to the ability to turn out at least 80,000 planes a year. Furthermore, I believe that this nation should plan on this basis because that would provide us with 50,000 military and naval planes." To boost production and provide for requirements in the near term, the Executive asked for an increased direct appropriation of $250,000,000 and contract authorizations of $283,000,000, in the Army, Navy, and Marine Corps.

Wartime production was almost universally favorable, but as usual some opponents were colored by partisanship. The Boston Herald of 18 May declared that "if the President had asked for 100,000 planes and $2,000,000,000 the people of this section would not have cavilled." Some opponents noted that the real use for these new planes was that of "neutralization" and that it was plain that "the first essential of national defense..."
for the United States is an air force capable of doing that can be brought against us. The designation of this was one of the critics of the President's proposals. It stated, in part: "Talking about an annual plane production of 50,000 is like showing a hen an ostrich with the suggestion that there is an example to emulate. The President was a champion doing a bit of sycophantic blustering for the benefit of certain foreign listeners."

In light of the remarkable advances made in the preceding 12 months, the air arm was still inadequate in extent and per aircraft. The Chief of the Air Corps stated on 17 May 1940 that after the President's message that the air Corps, and only 431 pursuit planes and 261 of these were in foreign possessions. The delivery of this type of aircraft would not even meet training requirements prior to December. The transfer of the French pursuit-plane orders to the Air Corps would not help much because necessary modifications in these P-58's would delay delivery, and even then the planes would be little better than down in hand.

On the day after the President spoke, supplemental estimates were submitted to the Senate Committee on Appropriations which was still considering the regular 1941 estimates. These estimates provided for a total of 1364,000,000 of which 132,141,570 each and 173,129,000 contract authorization were for the Air Corps. The 1,400 planes provided for in the supplemental appropriation request, with the 160 desired from the initial appropriation, would bring the Air Corps strength to 8,000 aircraft. The estimates had provided, and the committee approved, that these funds for new aircraft could be expended without refer any to the provision of Public Law No. 15 of 3 April 1939, which limited the Air Corps strength to 8,000 planes.
Secretary James C. andrew (Comm.) proposed that in order of America in
place strength as ascertainable and that it should start. She now on the
opinion that the appropriations in the 1928 bill indicated if the goal of
$2,000,000 for the year to be achieved and said it is "premature to
hold out such an idea to the people in view of the total appropriations
called for in the bill." He concluded with the assertion that he did not think
such a goal was realistic. 106 Considerable controversy ensued over the
projective capacity of the aircraft industry, with estimates ranging from
7,500 to 12,000 per year. 107 Whatever the production capacity, it was
expected that the industry could be used for military to the limit
was long before the release of planes to foreign purchasers.

The annual bill was passed by the Senate on 24 June 107 agreed
to in conference committee, and became public law 411 on 15 June 107.

The total appropriation was $208,000 and $20,000 contract
authorization. Of these amounts, not less than $128,000 was
set aside for new air planes and their equipment and accessories; $28,-
601.99 of this sum to be applied to combat crews. The limitation to
1,000 planes was not applicable to the expenditure of these funds which
was to remain available until 30 June 107.

The Congress was quick to act in other ways to pave the way for the
execution of the President's program. On 17 May 1070 Representative
introduced H.R. 9520 which, among other things, provided for removal during
the fiscal year 1911 of certain limitations on the matter of serviceable
airplanes which the Air Corps could acquire. Three days later it intro-
duced H.R. 9525 which had the purpose but placed the number of men at
10,000 for the fiscal year 1911. The following year H.R. 9525 incorpor-
ated the provisions of H.R. 9520.
The Committee on Military Affairs reported H.R. 3550 on May 22, the same day that the Senate committee reported S.4025. In support of the latter, the Secretary of War had pointed out that the existing authorization was inadequate and unless the limitation was suspended the number of combat planes would be reduced to a dangerous level because of the training program requirements. The House moved as quietly as had the committee and passed H.R. 3550 by a vote of 382 to 1 on May 24. After changes by the Senate and some compromises in conference, the Air Corps was given a free hand in the acquisition of aircraft during the fiscal year 1941.

The provision of this act, Public Law 10, 703, was of potential value only until money was provided for the procurement of additional planes. Even before the regular military appropriation bill for 1941 had become law on 13 June, the Blitzkrieg had swept to the Atlantic, and the English had abandoned most of their equipment at Dunkerque on 3 June. Supplementary estimates for 1941 had, however, already been submitted to the House, but they did not contain provisions for 3,000 additional planes until 29 May. Until that time it was thought that engines could not be provided for them, but conferences with the aircraft industry in the weeks following the 13 May message of the President had resulted in "reasonable assurance" that these additional engines could be provided.

In its message of May 21, the President sent another message to Congress in which he emphasized that the events of the past two weeks made necessary the placing of additional orders with industry both to provide an early expansion of existing production facilities and to obtain increased quantities of special weapons. The achievement of this end involved large appropriations—over a billion dollars—but he felt that "for national safety the needs are urgent."
Funds requested for the Air Corps were $180,839,896 cash and $109,-
200,887 contract authorization for 1911. The latter sum was entirely for
planes and their accessories and equipment while all but $47,000,000 of the
larger amount was for the same purpose. The House committee recommended an
increase of $39,010,367 in the cash appropriation, \textsuperscript{113} and the Senate added
$6,500,000 which was later requested for purchase of aircraft engines.

On 26 June slightly more than $400,000,000 became available to the Air Corps
for the procurement of that arm as an effective fighting unit, and all but
$17,000,000 was for the procurement of aircraft and accessories. \textsuperscript{120}

On 16 June, Senator Claude Pepper (Fla.) introduced S.J. Res. 275 to
authorize the President to place orders at once for 50,000 aircraft of the
"most effective type and design for modern warfare and all the necessary en-
caps, and direct that such aircraft and parts be ready for delivery at a
date to be fixed by the President."\textsuperscript{121} The Secretary of War reflected the
opinion of the Air Corps that he wrote to the Chairman of the House mili-
tary affairs committee that the resolution was unnecessary since the Presi-
dent had all the authority and "more than that given in the resolution."
This authority was contained in the National Defense Act of 1916 and was
to be used only in case of war when war was considered imminent.\textsuperscript{122}

Before the end of June, France had capitulated to Germany and the
threat of another invasion now had more import to the American people. On
10 July 1940 President Roosevelt submitted new estimates to Congress. He
emphasized that the principal lesson of the war so far was that "partial de-
fense is inadequate defense. If the United States is to have any defense,
it must be total defense." To carry forward this total defense, he re-
quested funds for 19,000 additional planes for the army, 1,000 for the
any, and for 1921 it grew to the total of $16,171,691.70.

An air car portion of the bill provided $2,603,894.63 cash and $2,035,000 contract authorization.

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General Brett stated that in fiscal year 1940 and 1941 (through the first
authorized appropriation) approximately $100,000,000 had been appropriated
for airplanes and accessories. He funds were provided for accelerated del-
iveries and the "costs incident to over-time, increased shifts, and the cost
of accelerating deliveries of raw materials." The best possible estimate
of the costs of this was 20 percent of the airplane and accessories funds,
so $20,000,000 had been requested. Congress quickly granted this re-
quest. 120

In the first 15 months of 1940 such rapid changes had occurred that
considerable confusion existed, and considerable doubt was entertained whether
the goals could be achieved. On 7 September 1940 General Arnold stated:
that in view of the magnitude of the problems further procurement elem-
ents be deferred. "It is not practical," he continued, "in the present
chaotic state of the aircraft industry, to attempt to plan for production
of levels which now seem almost impossible of attainment." 131 The public,
being given only partial information and hearing widely divergent
figures on aircraft production and procurement, was quite confused. The
Hartford (Conn.) Times on 19 September 1940 called attention to a statement
of William J. Donovan that the Army and Navy would have 11,000 combat
planes within 19 months, at the same time that the Navy was sending "carry-
up" letters to aircraft manufacturers for immediate start of a vast pro-
gram to build 14,394 fighting aircraft. The Times felt that it was not
surprising if the people were confused when they tried to understand what
was being done. "It is too much to expect the average citizen to have any
accurate knowledge of the actual aircraft program, or, indeed, of the whole
defense picture." 132

The discussion of acquisition, production, see below, Chap. II.
By the end of 1939 Congress had initiated an enormous expansion of the Air Corps. The 8,000-planes program had not only been authorized (5 April 1939) but within a few months provisions for its fulfilment had been made. In the Military Establishment Appropriation Bill for 1941, Congress, refusing to limit the Air Corps program to 8,000 planes as proposed, provided for the purchase of 2,066 new aircraft. Not satisfied with the veiled limitation in this statute, Congress on 2 July 1940 removed all restrictions on the procurement of planes for the fiscal year of 1941. Meanwhile, the President had called for 50,000 planes for the Army and Navy, 36,500 of which were to be allocated to the Army. Furthermore, he set the goal of America's annual production capacity at 50,000 for the United States and her friends. 133

As a result the second supplemental appropriation bill for 1941 instituted the 12,000-plane program which was to be fulfilled by 1 April 1942. In order to finance this program Congress, during the calendar year of 1940, appropriated or authorized the expenditure of a total of $2,415,174,558 for 18,841 planes, 11,147 of which were to be tactical. By 30 October 1940, approximately six weeks after the last appropriation, contracts for these planes had been let. In addition, the statute of 10 November 1940 provided for 5,000 bombers per year. Furthermore, the so-called 12,000-plane program for 1942, exclusive of foreign shipments, was approved. 134

The rapid expansion of the Air Corps was as follows: 135

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of project planes on hand on 30 June 1940</td>
<td>2,765</td>
</tr>
<tr>
<td>Number of project planes on order on 30 June 1940</td>
<td>2,663</td>
</tr>
<tr>
<td>Number of planes authorized under L.R. 2002 (1,000)</td>
<td>4,247</td>
</tr>
<tr>
<td>Number of planes included in air department airfields</td>
<td>14,761</td>
</tr>
<tr>
<td>Total 12,000-plane program for 1943</td>
<td>36,440</td>
</tr>
</tbody>
</table>

133
134
135
the plans for increased production had been made by October 1941.

were to have been delivered by 30 June 1942. To avoid "deep valleys in
the delivery curve after March 1942," it was thought necessary that the

government take a firmer stand on the aircraft industry by approving
the fiscal year 1942 appropriation on 1 March 1941.

In deference to 1942 estimates as considered by Congress, steps were taken
to provide the 7,000 bombers which the President and approved on 10 November
1940. On 14 December 1941 the fifth supplemental appropriation bill for 1941 recommending a total appropriation of $1,954,
342,000 and contract authorization of $2,066,453,000 for the Air Department
of the total. The Air Corps was to receive $313,285,000 and $394,325,000,
respectively. The purpose of these changes was as follows: $1,000,000,000
for the 7,000-bomber program (including incidental equipment to be furnished
by the Signal Corps and Ordnance); $830,000,000 to meet current deficiencies
caused by increasing costs; and $30,038,140 for the 1,400 planes delivered
from the third supplemental appropriation because of late delivery-producing
facilities. The usual sum to be sent for 40 aircraft and spares was $1,325,111,700.

127 Johnson increased the cost appropriation for the Air Corps by $4,000,000,000, but these funds were not for the 1942 appropriations
above. The $4,000,000,000 was appropriated and was to remain available until 30 June 1943, but the contract authorization expired on 30 June 1942.

A portion of these appropriations was originally contained in the fiscal year
1942 estimates, but was created as a result in order to hasten the fulfillment
of the 12,000-plane program, which received considerable attention in the
hearings on the fiscal year 1942 estimates.
Although the 12,000-line program was under discussion, it was estimated in 1940 that the Air Force would need a production capability of 12,000 additional aircraft per year. The Chief of Staff agreed that this additional capability was necessary, if a world war were to be avoided, and this seemed to be justified as a "military requirement" in view of existing world conditions. Consequently, a breakdown of the month's order (12,000 planes) of the "24,000 annual production rate to be produced in FY 1941" was furnished to Madison, who requested on 3 February 1941 that the contract be advanced to fiscal year 1941. Thus, estimates for 12,000 planes, in addition to 15,000 in the lend-lease bill, were considered by the Senate on the budget, and on 28 March the lend-lease bill was sent to the House. The Chief of Staff emphasized that a monthly production rate of 2,000 by July 1941 could not be sustained as a military requirement unless it were willing to accept that we are preparing for an offensive campaign in the air against Germany, and the rearmament scheme against the possibility for such a campaign. If the plan for five years' production could be retained, the program probably could be defended as essential by a protection group; sufficient to enable the British to continue with their conventional German production of 3000 planes a month.

The transfer of planes under the recently issued lend-lease act (11 March 1941) was closely associated with this particular program. General Arnold pointed out to the Secretary of War that there was then pending before the appropriations committees of Congress approximately two billion dollars for equipment, other than or in addition to 12,000 airplanes— which is desired for transfer to the British— in addition to the 12,000
Since that equipment could not be transferred under the lend-lease bill, special legislative authority would be necessary. Advice was sought as to (1) the inclusion of the second 12,000 planes in the supplemental request, and (2) the source of authority to transfer those planes as well as the 5,000 provided for in the fifth supplemental appropriation.

On Oct. 20, 1941, the chief of the Air Corps materiel division deemed it "absolutely necessary" that both the first 7,000 and the initial 12,000 planes be included concurrently. Congress should quickly process these funds so that money would be available for immediate contract award. Half of the contract was negotiated by April, a "very serious lag" in production in 1942 was feared.142

"Short Lovett, assistant secretary of war for air, ... one of the division's task forces for the 12,000-plane program, should be immediately reported for "the maintenance of productive capacity in a true measure of air power than the number of planes at a given moment."" He thought that the authority to take immediate steps to procure the 12,000 planes as included in the fifth supplemental appropriation for fiscal year 1941. As noted above, one of the 1942 fiscal year appropriations was advanced to the fifth supplemental for 1941, so that the remaining 1942 Air Corps estimates, called for 1,561,185,000 cash and 161,568,000 contract authorization. The major items under new cash and contract authorization of 753,413,017 included 753,417,015 for a defense in fiscal year 1941 procurement reduced by higher costs, 50,000,000
for spare engines, and $164,700,000 for spare parts for the 3,600 bombers and 1,425 other planes provided for in the fifth supplemental for 1941.\textsuperscript{146} General Brett pointed out that in addition to $104,253,995 cash required to liquidate the then-requested contract authorization, there would also be an unsatisfied obligation of $598,025,000 of 1941 contract obligations which would have to be provided in a subsequent bill.

While hearings were being conducted on this measure, the Germans overran the Balkan Peninsula, and on 28 May an additional $2,790,890,785 was requested for Air Corps expansion. Of this amount $2,506,868,000 was for the Air Corps and the remainder for Signal Corps and Ordnance items.\textsuperscript{147} These funds were to construct 12,356 planes which were to complete the present program for all construction.\textsuperscript{148} In reporting the bill on 5 June 1941 Representative Snyder explained that the additional $2,790,890,785 was for further airplane augmentation, looking toward the "ultimate provision of a force of around 50,000 airplanes, Army and Navy," and this appropriation would gear production facilities to the point where 50,000 planes could be maintained in operation.\textsuperscript{149}

General Brett stressed to the Senate Committee on Appropriations the necessity of these funds for the maintenance of production after the spring of 1942.\textsuperscript{150} The Acting Chief of the Air Corps was proud of the fact that practically all of the 1941 funds had been obligated and that "we are getting the production."\textsuperscript{151} Knudsen testified that this 12,000-plane program would provide for the "residue" of the necessary four-motor bombers and would "round off" the program so that no more appropriations for planes would be needed and there would be "enough planes in process."\textsuperscript{152} With inconsequential changes, the bill became law on 30 June 1941.\textsuperscript{153}
In order to effect this, as finally agreed upon, for over 1,666,000,000 for the actual contract with an estimated 1,366,000 for a possible additional work, at the rate of 2,200,000 per month, by 11/26,000,000 for contract and solicitation 1,841 for total against charges of 1,674, 1,660, 1,674 and 1,674 for review and test. The consideration for the use of air is clearly expressed in the act itself, and to promote the 60,000 passenger capacity of the station not to be exceeded without compliance. In addition to the national act of public law No. 13 of April 14th.

A bill (H.R. 73) noting on provisions on public law No. 73 (H.R. 73) to be filed on July 1st has been introduced in the House on 22 April 10th, to examine the provision of the bill on alien rights in 1777. A bill authorizing the air long unneeded cubic inches of the air long desired by definition of the existing authorities for "persons in the interest of national defense" and as desirable to national unity.

The only way to do the law, unless 160,000,000 was not 160,000,000 but 160,000,000, and which was 1,841 as providing for the emergency fund prior to 1922, so that the provision for this was not added until 1924, but which until 1919 was not added for 1923, and which section 13, such provided a bill for the aid of the old and none more vital shall.
months after the bill unless committed earlier by concurrent resolution or presidential proclamation. If the request from the bill become, while
Law No. 132 on 5 June 1942, the War Corps was, then, authorized to
procure and operate all the aircraft which were deemed necessary to pro-
cede to the war and for which funds could be secured—and there was no dif-
ference on that account.

The House Appropriations Committee had learned, when it reported the
regular 1942 bill, that the new $29 billion dollars provided would
not be sufficient for the year. Before the end of July 1941 another
$250,000,000 measure had been presented to the House. Of this sum,
only $104,000,000 was for the War Corps and only $128,000 was for the pro-
cure of aircraft. The remainder was for organizational equipment
for the expansion not to exceed the second aviation objective, those
aircraft, voted on 29 June.

This was the first appropriation act voted before the entry of the
United States into the war. Congress had ready available, in the first eight
months of 1941, $116,233,117, one of which portion of which was to be used
for the procurement of approximately 13,000 planes and the creation of ad-
ditional productive capacity. But in the three years before 1942, the
Corps had authorized the War Corps to expand approximately $8 billion
collars and to procure approximately 37,000 planes.

Increasing costs, expansion of military structures, and the realism of aircraft in light of lessons learned from the European con-
flits made additional appropriation necessary. Before World War II, in
the three and final national defense appropriation for 1942, the air
Corps requested $772,004,000 to be used as follows: $321,763,037 to equal to
for other part of the act, see supra, i.e.
the 8,000-horsepower and the 12,000-horsepower programs, $35,800,974 to increase
the procurement of spare parts from 12-1/2 to 20 per cent, and the remain-
der for reserve facilities dedicated to the second (air-attack) aviation objective.

The $33,763,993 was made necessary by the increased cost of labor and
materials as well as the decentralization of the costs of new items such as
pressure-suit testers, centralized fire control, noseights, and automatic flight control. The new purchase of aircraft
should have allowed a decrease in costs, but this factor had been offset
by 10 to 20 per cent increase in labor rates in the aircraft industry, the
similar costs of materials, the increases in weight of the aircraft, and
the necessary modifications. The justifications of the item for an in-
crease in spare parts was based on "our own and British experience in
operating large numbers of airplanes not in combat, but during an emergency."

Before the Senate committee held hearings and reported these estimates
the effectiveness of the airplanes had been again demonstrated at near
Baltimore and in the vicinity of the cities of Long Island and New York. Supple-
cmental estimates were submitted by the Army and Navy and were allowed by
the Senate committee. The new bill that was sent to the House allowed to increase the Air Corps from the first to the second aviation ob-
jective, as an additional increase was voted for reserve expenses. This new bill was rejected by the conference committee, and the final me-
asure provided $78,963,363 to be allocated as originally requested.

Within a very few days, in December 1921, the United States learned
some very bitter lessons about aerial warfare. Not only was the powerful

* For lend-lease provisions of this act, see below, Chap. V.
destructive capacity of the airplane—again revealed but the inability of
the Army Air Corps to provide adequate, -—to say nothing of furnishing
an air offense—was placed in bold relief. The importance of all that
had been done to increase production and augment the military forces be-
came quickly apparent.

But what had been done was not enough. On 8 January 1942 the Presi-
dent emphasized to Congress that production must be "raised far above its
present levels," and he stated that he had just sent instructions to the
various departments and agencies setting new goals. The new aircraft pro-
gram called for an increase in production so that 60,000 planes would be
constructed in 1942, and 45,000 of these were to be combat types. The
1943 goal called for 120,000 planes, 150,000 to be of the combat type.

On 13 January 1942 the President submitted estimates totaling $12,-
$175,372,474 for the new Air Corps program. This was the largest single
amount ever provided for the equivalent of the military forces, and it was
totally for one branch of the service. Of this, $9,011,378,000 was re-
quested directly for the Air Corps; $322,500,000 for the Office of the
Secretary of War for expediting production; and $550,242,189, $1,547,243,-
$93, and $92,598,175 were requested for the Signal Corps, Ordnance Depart-
ment, and Chemical Warfare Service, respectively. All of these funds were
for Air Corps projects and were to remain available until the end of the
Fiscal year 1943.

General Arnold stressed to the House Committee on Appropriations that
the nation had "the job on us by having selected their own time for war
and their own objectives for attack." "Maximize production under the existing,

* For lend-lease aid, see below, Chap. V.
program would not be attained until August, and further orders were necessary to maintain that goal. The entire amount requested for the Air Corps was to be expended as follows: $4,141,000 for complete planes, $122,421,340 for spare parts, and $1,000,000,110 for other purposes. With the exception of the heavy bombers, however, these funds would not meet the President's program; rather, they would only maintain the current rate of production. Plans to meet the President's goal were in progress of formulation, and the costs of aircraft were still increasing. But it was thought that 23,000 tactical and 10,000 training planes could be obtained with these funds. A bill was reported on 23 January 1942 exactly as had been reported with the initial request of the addition of $30,000,000 for the construction of the Douglas Dam (in the Tennessee Valley system) to provide additional power for aluminum production.

Practically no opposition was expressed in the House; the Senate committees added $100,000 for the State Department, and the bill received final approval on 30 January 1942, within two months after the outbreak of war the Air Corps had been given a greater sum for airplanes alone than it had received for all purposed during its entire previous existence.

Hearings were begun on 11 February on the estimates for another increment of the President's new request. Approximately $80,000,000 was requested, but only $167,600,000 was for the Air Corps. The House committee expressed surprise that there was even this additional request but readily granted it. Of the Air Corps request, $100,000,000 was for material, $74,500,000 for gliders and the balance for "equipment procured for other services and expenses incident to procurement." No contention
developed over the Air Corps item, and it was made available on 5 March 1942. 173 The attitude which Congress assumed toward the problems and requirements of the military establishment seems to have been well expressed by Senator H. O. Marsell (D., Ill.), acting chairman of the Senate appropriations committee, when he said:


We are willing to put down on nondefense appropriations, and we expect to do so, but so far as the military, naval and Air Corps expenditures are concerned our Committee feels that we must follow the recommendations of those in charge of our Army, Navy, and Air Forces.

It was indicated in the hearings on the fourth supplemental appropriation bill that the huge two and a half billion dollars would not accomplish any of the President's new production objectives except in regard to heavy bombers. In order to get other classes of the aircraft production program under way, air Corps estimates for 17,818,281,281 were submitted as a part of the $17,818,281,281 requested for the military establishment in the sixth supplemental appropriation for 1942. 183 This sum was to provide for the purchase of 31,070 additional airplanes and related equipment and was to permit production of aircraft and parts at full manufacturing capacity of existing facilities. 182

Cafe Mc. V., the chief of the materiel activities at Wright Field, noted that there had been some delay in aircraft production because of a delays diverted to other uses, and although he had done everything possible, it was only natural that materials for combat planes received the A-1-A rating. Every other group had that rating, and General Lebols expressed the desire that the Joint Chiefs of Staff "lay down priorities based on military necessity as they see it." 183 General Lebols also pointed out that after 7 November 1941 aircraft and "certain other"
manufacturers needed to produce and have better facilities, and the situation had begun to improve. In January and early February, however, material difficulties had developed.

In more detail, the Secretary of the Air Force recommended the opening of the Air Force appropriation as requested, but the Committee added almost one billion dollars, but not all. The Senate cut the air force appropriation. The Senate amended the bill in 89 pages, and the largest conference committee in congressional history worked out an agreement. On 31 March 1943 the Air Corps had available for expansion purposes an additional $2,000,000,000.

The act provided $1,500,000,000 for the procurement of new aircraft and accessory equipment, $75,000,000 for new engines, and $1,000,000,000 for other parts. R. As noted above, these funds were provided an additional $1,000,000,000. The total Air Corps appropriations for fiscal year 1943 had reached the unprecedented total of $1,000,000,000.

Hearings on the military establishment appropriation bill for 1943 were not begun until 11 June 1942. At that time the Japanese army had reached almost to the very doors of Australia, and threats were mounting. The situation was critical, sinking of United shipping and removal of United |/81,000,000, but the number of the bill had reduced these to 180,000,000,000, at which sum 145,000,000,000 was for lend-lease.

An Air Corps A, as big in 1941, was only to purchase 27,000 planes, whereas, it was just 145,000,000.
the Army's portion (118,000) of the 186,000-plane production for 1942 and 1943. Experience had definitely indicated that expenditures for spare parts had been far too low, and a study by the Joint Aircraft Committee resulted in the raising of the percentage of spare parts required for efficient operation. That item, including maintenance, called for 7,782,- 
515,284, while the new aircraft would be procured for 2,945,596,712 and 3,702,286,065 was necessary to meet previous contract obligations. Of the "new aircraft" funds, 128,440,000 was for the procurement of gliders.

The Air Corps felt that the unit cost of aircraft would decrease in the next few months and pointed out that since 1 January 1942 renegotiation of contracts had resulted in a saving of 243,000,000. This indicated either that the initial estimates had been too high or that savings had become possible. The House committee added 273,028,230 to the Air Corps estimate, which amendment was accepted by the Senate before the measure became law on 2 July 1942. The Air Corps thus had more than 11 billion additional dollars, and once again Congress had acted expeditiously in providing for the fulfillment of the President's request for greatly increased production. In less than seven months after the formal entry of the United States into war, Congress had provided 20,520,573,291 for the Air Corps and had sanctioned the procurement of 87,030 additional planes.

The Air Corps needed no additional funds for fiscal year 1943, but the production goal was pushed upward to 150,000 for fiscal year 1944 estimates. In the 1944 estimates the Budget and Fiscal Office of the War submitted 10,617,912,200 as the required amount of "standard airplanes—complete." This was to procure 70,000 combat aircraft and 11,100 training planes. Approximately 10,000 of the 12,500 monthly production of
planes to be attained by the end of December 1943 were for the UK, and
the 1944 funds were to maintain that production rate until the end of the
calendar year 1944. Before the above estimates were submitted to Congress, several changes
were made. The total amount requested was $20,555,411,000 and was to pro-
vide approximately 102,000 planes, including 38,000 bombers, 38,000 fighters,
12,000 transports, and 5,000 trainers. 126 For these planes, plus spare en-
gines, spare parts, and incidental procurement expenses, the Air Corps ex-
pected to obligate during fiscal year 1944 the sum of $20,372,136,631. 126
Since this covered the program through 29 June 1945, each of the appro-
priations was to spread over the years. 127 The number of planes alone was
only one of the vital factors to be considered in determining unit prices;
other, and more significant, was the size or magnitude of the airplane.
In the calendar year 1935 the expected production of airframe quantities was
811,000,000; for 1944 it was to be increased to 1,417,000,000, which was
approximately five times the production of 1942. 128
This budget was but one of the "decisive" ones, and General Arnold em-
phasized the shift toward more to the aircraft. Until 1941 the Air Corps
had procured approximately 10 per cent trainers and 40 per cent combat
types. Then the ratio dropped to 10-60; the 1944 budget sought funds for
only 0,000 trainers out of a total of 0,000 planes, or less than 10 per
cent. 129 This indicated that war was to be a leveling off in training
activities and that trainer aircraft were fairly well stocked by the middle
of 1941. Neither in Armed nor the combat made any changes in the Air
Corps idea of organization, and in June (28,059,491,000) became
available on 1 Jul, 1943. 203 This brought to $201,409,779,212 the air
Corps appropriations for the fiscal year 1942-44, inclusive, and raised the number of planes authorized for procurement to 224,000.

By June 1941, when the material requirements of the AAF again came under the consideration of Congress, the progress of expansion had virtually been completed, and the peak of production was near reached. The Army Air Force called for a new appropriation bill for 1942 and 1943, to authorize and provide funds to meet the AAF requirements of 248,000,000,000. The AAF had originally requested 289,132,892 of new funds; but the action of the Senate reduced this amount by 160,328,400, leaving 1,080,000,000 as carried in the bill. The carry-over of approximately 1,000,000,000 resulted partly from reductions in requirements but mainly from savings resulting from reductions in the prices of airplanes. The fact that the rate of attrition of airplanes was nothing like as great as had been anticipated made possible a considerable reduction in the number of planes required; but the savings that effected was partially offset by the increased later, more expensive aircraft were in demand. The average weight of the planes or airplanes produced during the first half of fiscal year 1942 was 3,500 pounds, whereas the specified weight of aircraft of all types scheduled for production during the fiscal year 1942 was 5,000 pounds, or an increase of 500 pounds. Though there was to be a reduction in the number of airplanes produced, the weight was to be increased by 300 pounds.

The most important factor in the 1,000,000,000 basis was the reduction in prices of airplanes and was possible by increased production, with
r salient increase of efficiency and a more exact knowledge of the actual cost of production. For example, the cost of the B-17 was reduced 34 per cent; that of the B-25, 32 per cent; that of the B-24, 26 per cent; that of the B-31, 17 per cent; and that of the B-17, about 10 per cent. A partial explanation of these reductions is to be found in the fact that the B-24, originally estimated on the basis of 50,000 man-hours per aircraft, was later produced at approximately 30,000 man-hours.

Of the $12,510,774,000 required for the fiscal year 1945, $8,849,325 was allotted for the construction of aircraft, including spare engines and spare parts. This amount would have been much larger but for the fact that, in order to obtain maximum production of the very heavy bombers, a sufficient number has already been ordered to provide production until December 1945; hence the 1945 appropriation covered only the number to be produced during the first six months of 1946.

Like most appropriation bills, the military establish appropriation bill for 1945 had a somewhat stormy history in the Congress, but the differences of opinion between the Senate and the House did not affect the AAF appropriation; and the amount approved by the bureau of the budget amounting to $1,310,200,000 in new money was included in H.R. 4957 when it became Public Law No. 374 on 23 June 1944. In addition to the approximate $12,510,200,000 directly allocated to the AAF for fiscal year 1945, something more than $3,000,000,000 was carried under other heads (Chemical Warfare Service, Ordnance Department, and Signal Corps, chiefly) for the AAF; thus the AAF was to benefit to the extent of more than $20,000,000,000—more than 40 per cent of the $49,350,000,000 total.
A total appropriation of $100 for the ASF was included in the military establishment appropriation bill for 1946, which became Public law No. 123 on 9 July 1945. The original estimates for fiscal year 1946 had called for expenditures of 17.4 billion dollars; but as soon as the end of the war in Europe seemed imminent the estimates for 1946 were completely revised, and the requirements were lowered from 17.4 billion dollars to 5.3 billion. The great part of this reduction was made possible by lowering the number of planes called for. Early in April the number to be procured was lowered by 27,118, and another cut of 16,676 brought the total reduction to 43,792. In view of this, where it became necessary to reorganize old units to new ones—such as B-17 or B-24 units to 3-29—requirements were increased; but, in general, substantial reductions were made in all components of the effort. The AAF program for fiscal year 1945, as it was finally presented to Congress, called for expenditures of $5,700,789,155. Funds from previous appropriation were available to finance this program, and there would be an additional six and one-half million dollars to be applied to other 1943 war department requirements. The amount to be spent for airplanes, spare engines, and spare parts, in fiscal year 1946 was only $2,228,303,352, of which amounts $18,530,000 was for gliders. By the end of fiscal year 1946 these totals had increased to $5,059,270,362 and $271,730 planes. (See table on following page.)

The oft-repeated inanity that Congress was responsible for the inadequacy of American air power because of its unwillingness to appropriate the necessary funds is absurd as far from the truth as any statement can be. From 1926—when the 1,000-plane program was authorized—up to 1939, Congress allowed slightly more than was requested in the estimates received
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**Notes:**

- a. Total includes in total.
- b. 3,200 for personnel.
- c. To these amounts of the 11,000,000,000,000, a total of $12,000,000,000,000.
- d. Plus 900,000,000,000 for military personnel.
- e. Amount proposed in that 130,000,000,000 was actually spent (House, Hearings on the Budget, 1946, p. 40).
- f. A carryover of 5,000,000,000,000 made it possible to finance the 15,000,000,000,000 for 1945 (see text, p. 44).
(6) On 7 November 1913 the number of aircraft on land in the U.S. exceeded 80,000 and on 6 May 1914 amounted to 78,415.

(7) On 1 April 1914 the AIS had 70,418 first-line combat aircraft.

(8) On 1 May 1914 the 10,000th S-51 was delivered.

(9) Between 1 July 1914 and 2 December 1914 more than 178,039 airplanes were produced in the United States, of which 1,030 were very heavy bombers, 20,155 heavy bombers, 59,040 other bombers, 76,031 fighters, 8,242 other combat types, and 19,617 transports. Of this total 117,724 were for the army.

(10) The 200,000th aircraft produced with C.S. financing after 1 July 1917 was delivered on 22 May 1918, a year and three days after the 100,000th had been delivered. It thus took 12 months to produce the first 100,000; whereas the second 100,000 planes were turned out in just 11 months.

(11) Of the 70,000 airplanes on hand in May 1914, 32,000 were combat planes. In September 1914 the number of combat planes had risen to 40,162.

(12) In 1914, 40,000 combat planes were manufactured in the United States after 1 July 1914. The delivery of 10,000 of these was completed by March 1915. Of the total, 49,763 were army types.

(13) Production of the S-51 began in September 1913; during the remainder of 1913, 77 units were produced. The rate of production climbed from 3 in September to 41 in December. In the first half of 1914 production rose from 52 in January to 130 in June; the total for the six months was 303. During the second half of the year approximately 200 additional units delivered, making a total for 1914 of about 1,100. In the first half of 1915 peak production was reached in June; the figure for that month was 302, the total for the six months was 1,600, or 269 per month. In the first three months of 1915, 800 were delivered in January alone, with production gradually slowing down to an output of 300 to 375 per month in July, 600 in August, 350 in September, 500 in October, 300 in November, 50 in December, and 60 in January.
Chapter II

MILS FOR DEFENSIVE WARS AND INFLATIONARY BOMBING

The American aircraft industry, as well as industrial concerns generally manufactured items other than planes, as; e.g., car parts, was not in a favorable position, in 1938, to meet the demands of the expansion program. It was necessary, therefore, to adopt new ideas of familiarizing manufacturers with the new types of articles which they might be requested to produce in case of a national emergency. To acquaint manufacturers with the new problems, to curtail production among war firms, and to increase the total productive capacity, the War Department adopted three actions: (1) educational orders, (2) increased existing facilities by over- budget financing, and (3) the building of government-owned plants to be operated by private industry. The effects of these measures were considerable in assisting industry toward meeting the needs of the War Department. Plans for these purposes were provided for "educational orders" and "expediting production," in order to prepare for production, as in case of rapid mobilization.

Educational Orders

Educational orders had been authorized by Public Law No. 260 of 16 June 1938. This legislation authorized the Secretary of War to issue orders for munitions of war of special and/or technical design (noncommercial in character) "and essential accessories and parts thereof needed in the military service, with commercial concerns to familiarize commercial and manufacturing establishments with the manufacture of such munitions and
such accidents and parts," the Secretary of War was to solicit bids only from those firms which he deemed competent to produce those items in time of war and was to have the approval of the President before contracts were entered into. First orders placed with any concern should include gauges and other appliances said to be basic in the creation of new capacities. Such firms was limited to one order for the same article of munitions within a three-year period, and an appropriation of $2,000,000 was authorized for each of the five fiscal years beginning with the fiscal year of enactment of the law.  

The editor of Army Ordinance described this law as "one of the most far-reaching enactments of the Congress of the United States," and Congress appropriated $2,000,000 for the use of the Secretary of War during fiscal year 1902. The excise program was in effect on 3 January 1909 when Representative J.J. Smith (Conn.) introduced H.R. 1091 which proposed increasing the appropriation for educational orders to $35,000,000 for fiscal year 1909 and retaining at $2,000,000 the funds available for this purpose during the succeeding four fiscal years. A similar bill (S. 345) was introduced by Senator Morris Sheppard (Texas) on 19 January. This measure allowed $32,000,000 for the educational orders program which would also include the procurement of production studies, factory plans, and other production data.

The Chief of the Material Division had "no objection" to increasing the fiscal year 1909 appropriation to $35,000,000 and recommended that a favorable report be made on H.R. 1091. On 1 February, 1909 the Plans Section of the COA recommended that the War Department support the Senate bill. The letter of the Secretary of War to the chairman of the Senate
military buildup could be based on a full information on all expected uses of the funds available for the teen, which had been incorporated in Section 6 of the bill. The proposed, in the interest of sound defense, "very much desired" the elimination of the need for the additional orders from the $12,500,000 to be authorized for this to allow ordering the amount of $12,500,000 for the manufacture of critical items of special munitions, all non-military in character. It was requested that the $12,500,000 be authorized for fiscal years 1949 and 1950. The inclusion of the author for economic and productive studies, history of etc., and other production data was considered. This would be the only way that the Congress could have a current record of the results obtained, etc. These studies and those of the "invisibility" interest in the future manufacture of the items with a production basis.

In the final discussion of the committee, the chairmen urged a final report to the author, "in the interest of the officers" and which was also made. The committee (Colo.) defined as present at the morning. In this connection, the author pointed out that the non-coherent, no-technical, to the contrary (or "otterdown") of the problems had caused difficulty in the administration of the program during the current year. The "invisibility" problem of determining a "will work" or "will not work" in the cases, partial payments in the costs of these operations and the result that the aim was too much in the project or article became public. The site of it was passed to the government, if a "will work" were
not made, the Walsh-Healey Act applied. Also, the educational order was not to serve as a contract for mass procurement of supplies. The idea was to place an order with a new manufacturer who did not produce a certain article in peacetime so that he became a potential supplier of that item during war. The proposed solution lay in the amendment of the bill to provide that educational orders could not be considered as contracts for public work or works.

This amendment was accepted by the Senate committee, but otherwise it left too much as governed by the bill--authorizing the procurement of production studies, factory plans, and other production data, as well as the storage and maintenance of all articles produced and any equipment used in their manufacture. The Eleventh emphasized that educational orders could never reduce the direct cost to zero, but that they could materially reduce the liability in reaching mass production for war. The best estimate, he thought, was a saving of five years from the beginning of an emergency until the factories would reach mass production.

The amendment was rejected by the House, so on 7 April 1919 the sum of $8,000,000 was authorized for the fiscal year 1919, 1920, and 1921 and $2,000,000 for each of the succeeding four fiscal years. The educational order program thus became a seven-year project instead of five, but was to be concentrated in the years 1919 and 1920. The regular appropriation set for 1919 was approved on 28 April 1919 and provided $2,000,000 for educational orders. The Porter Reports at requested $22,000,000 for 1919 and 1920 in the supplementary appropriation bill, but the House committee reduced this to $17,200,000, but that was the usual appropriation for the entire year of 1919.
The remainder—$3,200,000—of the authorization of $5,000,000 was requested for Fiscal year 1941. Col. S. M. MacAndrew, Director of the Materials Branch, Office of the Assistant Secretary of War, in defending the request explained fully the importance of the program. He emphasized that with the single exception of specialized material, "no munitions industry as such exists in the United States." The potential capacity was greater than that of any other section, but about two years would be necessary to convert appropriations for munitions in quantity into the delivering capacities themselves. The reduction of this time factor by all practicable means he considered the main objective of industrial war planning, and he expressed the hope that in another national emergency there would be coordinated industrial and economic effort on the part of the country. "In happy contrast to our experience during the first world war," he said, the value of each order was indicated by the fact that experience had proved that a saving of from two to six months could be achieved, and that on the completion of the item, the funds were appropriated as of June 30. 16

Only a small portion of the earlier educational orders funds was expended for Air Corps items. This circumstance was caused by the relative unavailability of the industry producing material for that arm and by the fact that the 260 critical items under consideration in early 1940 only included propeller hubs, was for the Air Corps for Fiscal year 1941. In early 1939, however, the Air Corps "proposed educational order program" for Fiscal year 1939 called for a total expenditure of $8,500,000 and included the following items: basic trainers; superchargers; cockpit, drift meter, automatic pilot; photo lens; outer wing panel, center wing section, and fuselage of four-engine bombers; navigation switches, flight indicating,
and turn indicators. 21 The Office of the Assistant Secretary of War disapproved the proposed program, so the Director Division was requested to submit a list of three-star priority items which would bring the total back to $6,500,000. 22

The Air Corps was obviously working on the assumption that the total authorized amount of $6,500,000 would be treated for 1940 and 1941 by the Appropriations Committees, which only $4,750,000 was made available, Colonel Rutherford requested the Air Corps to reduce its program to approximately $3,750,000, its tentative quota. In lieu of this the Assistant Secretary of War was still holding in abeyance the approval of the expenditure of $3,750,000 by the Air Corps. Some of the items had not been disapproved, but informal conversation had indicated that the items proposed would for the most part involve the increase of existing facilities rather than the creation of entirely new productive capacities, and further consideration was thought advisable. 24

Meanwhile, General Arnold expressed the conviction that the importance of educational orders in the development of maximum production of airplanes in an emergency could not be overemphasized, while the expansion program and foreign and domestic orders would necessitate a greater trend toward quantity production methods, the Chief of the Air Corps did not believe that the conclusion of the program would have "insured the development of the present industry to the extent necessary to meet our anticipated war-time requirements." 25 He believed it necessary to develop other facilities and to that end proposed the use of $800,000 to educate a corporation (such as General Motors) to build a single plane, preferably of the basic trainer type, on a mass production basis. If the training types could be built
outside the aircraft industry, the airplane factories would be free to devote all of their facilities to combat types after 2 days.

The Chief of the Air Corps on 20 October 1939 again justified a program of 25 three-star military priority items, but the Assistant Secretary of War rejected it. The apparent cause for rejection was the fact that the aircraft industry had on hand or in prospect orders totaling 800,000,000 while the rest of the munitions industry had practically no current business. The Ordnance Department contended that the 8,750,000 would have very little effect over and above the 300,000,000 business of the aircraft factories, but if added to the 10,250,000 earmarked for Ordnance orders, the effect would be considerable. The position of the Ordnance Department was thought to be logical and not reasonably open to dispute by the Air Corps. However, it was urged that 1,500,000 of the 8,750,000 be reserved for obligation by the Air arm.

The only grant which the Air Corps had received (for fiscal year 1940) by December 1939 was $100,000 for "hub, propeller, split." The Chief of the Air Corps felt that the failure to give grants to his arm had prevented the Air Corps from following to a satisfactory conclusion the planning effort then in progress as a joint project of the Army, Navy, and aircraft industry. The Air Corps was limited to the procurement of plans and production studies—and not the actual article—and thus was brought only to a contemplation of deficiencies of productive capacity and to a conversational consideration of the means ultimately available for their correction. Only in one instance had the Air Corps been able to take corrective action, and the planning effort of that service could not be considered complete until the larger subcontractors had secured training in their wartime tasks.
either as a result of normal current orders from the aircraft industry or as a result of educational orders from the government. He recommended that 750,000 be allowed for an educational order on the B-26 wing with selected non-aeronautical facilities. This would bring the program to only $850,000 for fiscal year 1940.

Apparently the only order allowed the Air Corps for 1940—other than one for propeller hubs—was $265,000 for bombights. During the calendar year 1940 no educational order were placed by the Air Corps. On 14 November 1940 the chief of the Material Planning Section pointed out that the program was being held "in a state of suspense" because of a lack of funds. The original allowance had been withdrawn because the government felt that foreign orders would result in sufficient education for American industry. The funds had been set aside as an addition to the ordnance program.

The continued demonstrations of the effectiveness of air power soon brought to realization that further steps must be taken to increase the productivity of the aircraft industry and to supply additional facilities. In January of 1941 a committee was established in Detroit to contact the automobile industry on behalf of the government. The proposal was to have the automobile industry build parts to be assembled by aircraft manufacturers in government plants, but a fear developed among some that the "haves"—General Motors, Chrysler, and Ford—were not clamoring to take full advantage of the existing idle facilities of the "have-nots"—Studebaker, Hudson, Graham-Paige, and other lesser manufacturers.

A little more than two months later the Air Corps submitted a list of proposed educational orders which included the following items: Chrysler Corporation, $5,536,535; Ford Motor Company, $2,418,600; Goodyear Aircraft
Corporation, $1,781,742.93; Kelco Products Division of General Motors, $935,368.91; and Hudson Motor Car Company, $612,710.83. All orders were to be for parts of the B-24, B-25, and B-26 and totaled $12,812,117.20. On 7 April 1941 the President approved the application of $11,000,000 to this Air Corps program, and the Under Secretary of War requested that the utilization of $1,812,187 from the funds for exediting production (contained in Public No. 800 of 8 October 1940) be allowed to complete the program. Slightly more than the requested amount was allotted so that the Air Corps had $12,885,064 for fiscal year 1941. All but $564,477 of this fund was obligated by 2 June, and it was requested that that sum be withdrawn from the Air Corps appropriation.

Exediting Production

Some of the contracts with automobile concerns had been completed by 31 December 1941, at which time the Air Corps had utilized less than $15,000,000. By that date the United States was at war, but the wisdom of the program was to be shown in the amount of production of aircraft materials. Funds for "exediting production" replaced allotments for educational orders. These funds were utilized for two purposes: the increase of existing facilities and the creation of new facilities for aircraft production, and the payment of additional salaries to get earlier delivery.

These two phases of exediting production cannot be separated, as one in crisscross with the other. The educational orders program was primarily to prepare for production; this exediting program was to get out the production. The educational orders appropriations had been sufficient
for fiscal year 1939, and the appropriation bill for 1940 carried a much larger sum for that particular project. The events in Europe in the spring of 1940 made it clear that the delivery of aircraft be speeded up and that new facilities be created.

When the nations were marching toward the Atlantic, General Arnold emphasized the necessity of taking steps to ensure increased aircraft production. At that time the floor space of the aircraft industry was approximately 11,000,000 square feet and the production rate approximately 360 planes per month. Some congressmen had become concerned at the "inadequacy of the Air Corps in not requesting much more money for a speed-up of the present program," and it was suggested that this could be accomplished by providing funds to buy the manufacturer for a temporary increase in his force or by holding out the incentive of additional contracts when the current ones were fulfilled.

On May 12, 1940 the president called for the production of 50,000 planes and his problem of facilities became acute. It was estimated that this program would require 24,000,000 additional square feet of floor space or a total of 35,000,000. About 4,000,000 could be gained by conversion; the order requirement would have to be met by new facilities. The cost of these facilities and necessary funds for accelerating deliveries were estimated at $20,000,000. Before the Air Corps had decided upon the most feasible means of accomplishing this program, the author John L. N. A. stressed the fact that "orders by the billions of dollars" were waiting for the airplane factories which did not have the space to handle them. He pointed out that private industry would be hesitant to undertake this expansion because of the possible disastrous effects at
the end of the war. The government would have to finance them and "take up its mind to face the losses if the loan is never made good." This plan would have the double advantage of saving possible saving to business in the aviation industry. 41

The Chief of the Air Corps indicated three possible methods of expanding facilities for the production of aircraft and engines: (1) government-owned, government-operated facilities, (2) privately owned and privately operated facilities, and (3) government-owned and privately operated facilities. Advantages and disadvantages could be found in each method, but the most logical seemed to be government ownership with private operation for the use of facilities and government assistance to private industry in the increase of existing facilities. 42 While this problem was being discussed, Congress had provided funds for the construction of 4,247 additional planes and had granted $625,000,000 for expediting production for military defense. Of this sum approximately $134,000,000 was for the Air Corps. 43

The third supplemental appropriation for 1941 contained funds for the first large increment for the achievement of the President's goal of 15,500 planes in 1940. The aircraft industry had estimated that slightly more than $175,000,000 was required to create 13,400 additional square feet of floor space, so $130,000,000 was sought for this project. Also requested was $120,000,000 to expedite the delivery of the $109,000,000 worth of orders then outstanding. This sum would care for the increase to two and three shifts and for the necessary overtime. Some controversy developed in Congress over this latter item on the ground that it would constitute a bonus, and rather than adopt that policy, the Department should exercise

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its priority on deliveries; otherwise foreign powers would continue to
pay larger bonuses for delivery to them. Congress granted the $120,000,-
000 and $170,000,000 of the requested $300,000,000.42 The Air Corps
anticipated using $60,000,000 of these funds for the creation of three
government-owned factories—one for engines, one for heavy bombers, and
the other for pursuit planes.45 Within a month it had been decided to
construct one B-17 plant and one B-25 plant of 1,250,000 and 1,000,000
square feet, respectively. The construction costs were set at $11,200,-
100 (B-17) and $9,000,000 (B-25).46 A board of officers made site sur-
veys, and Handson favored Omaha, Neb., and Tulsa, Okla. On 9 November
the Chief of the Air Corps instructed the chief of the Materiel Division
to begin construction at the two sites.47

Almost immediately the Acting Secretary of War emphasized that ad-
ditional bomber capacity was needed and suggested the construction
of two more factories—essentially assembly plants—which would assemble
parts manufactured by the automobile industry.48 Consequently, approval
was granted for the construction of two more factories, one at Ft. Worth,
Texas, the other near Kansas City, Mo. All plants were capable of quick
conversion to four-inlet bomber production.50

The Acting Secretary of War outlined the cost of new bomber plants
and the projects necessary to prepare the automobile and other industries
for assisting in the aircraft program. This program entailed $75,000,000
which would be financed by $23,000,000 from 'expediting production' funds,
$11,000,000 from 'educational orders' funds, and the remainder to be re-
quested by Congress. The total cost of the bomber project for the first

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For educational orders to some of these concerns, see above p. 53a.
year would be over one billion dollars and would be apportioned among
(1) cash appropriations, (2) contract authorization, and (3) "expediting
production" funds. 51

General Brett stated in the hearings on the fifth supplemental ap-
propriation for 1941 that the four plants had been approved, and the
estimated costs were as follows: Omaha, $13,700,000; Kansas City,
$9,910,000; Tulsa, $13,000,000; and Ft. Worth, $15,000,000. The sum of
$30,000,000 had already been allotted, leaving an additional $16,600,000
necessary to bring the projects to completion. 52 This supplemental appro-
 priation requested $968,500,000 for the creation of new productive capa-
 city, and that amount was allowed the Office of the Secretary of War for
"expediting production." Of this amount the Air Corps received $75,000,-
000 for increased facilities and $137,500,000 to care for increasing
costs. 53 The Assistant Secretary of War stated that there were 39 pro-
jects in the Air Corps program and that these would cost $342,000,000.
Approximately one-half of these items was for the expansion of existing
facilities; the others were for the construction of new plants. 54

The program of government-owned and privately operated plants
continued to be expanded until the end of 1942 when there were the eight
following plants: (1) Omaha, Nebr. (Glenn L. Martin Co.); (2) Kansas City,
Miss. (North American Aviation, Inc.); (3) Tulsa, Okla. (Douglas Air-
craft Co., Inc.); (4) Ft. Worth, Texas (Consolidated Aircraft Corp.);
(5) Oklahoma City, Okla. (Douglas Aircraft Co., Inc.); (6) Marietta, Ga.
(Tell Aircraft Corp.); (7) Cleveland, Ohio (Fisher body Division of General
Motors Corp.); and (8) Chicago, Ill. (Douglas Aircraft Co., Inc.). 55

In the intervening appropriation bills, funds were provided for these
ditional plants and for other items necessary to hasten aircraft production. This money, as usual, was given to the Secretary of War, who allotted it to the various arms, and the program was carried out after approval by the National Defense Commission and the President. The exact amount given to the Air Corps is not always clear, but sufficient sums were allotted to accomplish the task. In the military establishment appropriation for 1942—which included the very heavy bombers B-29 and B-32—Congress allowed $1,271,300,000 for expanding production. Only approximately $600,000,000 was available for new expansion because the remainder was necessary to liquidate previous contract obligations. It should be recalled here that the Air Corps was permitted to shift funds from one item of expenditure to another and that the Defense Plants Corporation (a subsidiary of the Reconstruction Finance Corporation) also aided in the financing of additional production facilities.

In the hearings on the third supplemental appropriation bill for 1942 the Under Secretary of War noted that of the approximately $1,300,000,000 granted for this purpose about $1,500,000,000 had been obligated. The Air Corps had expended approximately $400,000,000 of this, and $31,000,000 of the remainder was earmarked for C-47s. The new request for $590,000,000 was granted, but no Air Corps items were involved. This act allowed the expenditure of these funds until 30 June 1943 without presidential approval.

The largest single request for increasing Air Corps facilities came in early 1942 in the so-called "12.5 billion" war airplane program. The sum of $856,000,000 was sought to hasten the achievement of the new objective set by the President in his message of 6 January. Of this amount $555,000,000 was for facilities (plants, machines, and tools) for the
assembly of airplanes and the production of component parts while \$118,-
000,000 was to be spent for the production of engines and engine parts.

The remaining \$180,000,000 was to be expended on Air Corps items by the
Ordnance Department and the Chemical Warfare Service. The sums were
quickly granted.

The fifth supplemental appropriation for 1912 granted the Office of
the Secretary of War the sum of \$3,011,612,000 for expediting production.

Some of this sum was for the Air Corps, though the appropriation of \$107,-
610,000 for that purpose might be considered in that light since it was to
facilitate production by saving for certain cost increments.

To funds for expediting Air Corps production were provided by the
appropriation for fiscal year 1943, but some of the previously granted sums
were available for that purpose. The amount of \$749,098,432 was obligated
for that purpose in 1942, and an estimated \$62,675,000 was to be obligated
in 1943.

Of the approximating to six and one-quarter billions appropriated between
26 June 1940 and 15 May 1941 for expediting production for the Army there
remained as of 1 July 1943 only \$859,147,000 unobligated. To continue
this work during the fiscal year of 1944, a reappropriation of this surplus
was requested and \$740,000,000 in war money. Of this sum \$180,000,000 was
to be allocated to the Army Air Corps (H.R. 2996). This amount was needed
largely for "unusual storage and manufacturers of aircraft accessories,"
expenditures due to "changes in models, specifications, manufacturing pro-
cesses, and techniques." The committee expressed surprise at the large

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See above, pp. 57-58.
request for the Office of Secretary of War and reduced the total appropriation for this program, deleting the $21,938,000 "contingencies" item, holding that each individual project contained amounts for contingency funds. The $657,011,000 of new funds added to the surplus gave the Army $1,222,-
155,000 for expediting production. The amount allocated to the Army Air Corps remained unchanged. After approval by the House and Senate this bill, on 1 July 1943, became Public Law No. 103.

The effect of this program, as well as other means of facilitating production, was revealed in the number of planes being delivered at the end of 1942. Various over-all appropriations were still necessary, however, and the conversion of factories to production of heavier aircraft was still in process. It was originally estimated that $36,000,000 would be necessary for expediting production of aircraft during the fiscal year of 1945.

Upon investigation it was ascertained that a surplus of approximately $1,100,000,000 remained from the 1943 and 1944 appropriations for Army expediting needs, which amount would be "more than sufficient to meet our anticipated requirements" for the fiscal year of 1945. It was recommended (H.R. 4807) that $34,400,000 of this amount be reappropriated for the Army for expediting purposes in 1945. The estimate for the Army Air Corps was reduced from the original $33,000,000 to $2,000,000, which was to be used "primarily in the enlargement of existing facilities, in order to produce different types of planes and larger planes," and for subcontractors (mostly automobile establishments, whose parts, mainly for Army-type planes, were produced). Fifty million of the fund for the Army Air Corps were to be earmarked for capital expenditures made necessary by
Chemical improvements and engineering changes in airplane models and engines; to care for alterations in plants built and equipped with expediting production nearly; and to be used for replacements of obsolete and worn-out machine tools. Seven billion dollars, to be allotted for conversion of plants to care for an expansion of production, and a small remainder for miscellaneous contingent expenses. However, it was finally agreed, that the total of the amount could be considerably increased, even to the extent of $100,000,000, by other savings somewhere else, after being approved by the Senate and House to this bill, containing $100 in red money, and $95,098,000 in unallocated funds, became Public Law No. 571 on 29 June 1941.\(^6\)

For the fiscal year 1942 the Act (H.R. 2930) only asked for $100 million, a recommitment of $35,001,000 (the total carry-over) for Army expediting requirements. Of this amount $29,992,000 had been allocated to the "Finance Service, Army." After deleting the amount asked for the Finance Service, Army, the final report of the committee requested $100 in war money and $3,770,000 reappropriation. Of part of this amount, however, was specifically allocated to the Army Air Corps. Approximately $70,000,000 of the amount will be needed for expedited projects, leaving the remainder for non-project and scientific and technical work, a sizable portion of which doubtless would be used by the Army Air Corps.

After approval by the House and Senate, this bill became Public Law No. 126 on 3 July 1942.\(^7\)
Chapter III  
CONTRACTS AND PROFIT IN AIRCRAFT

As long as the United States was at peace and the number of aircraft procured by the Air Corps was small, the method of procurement was not of major significance and the profit allowed producers could be controlled through the award of contracts. When the number of planes to be purchased increased rapidly and as the United States moved toward a wartime economy, the actual unprofitability of procurement and the amount of profit became problems of major importance.

At the beginning of the expansion program in 1929 the Air Corps procured all planes—except experimental and research types—through the competitive system. The Secretary of War felt that this method had a "very salutary effect" upon progress in the aviation industry. Competition "brought the inventive genius to a high pitch, and the result was the submission of a better product. In subsequent competitions, each competitor felt that he must surpass the military efficiency of the airplane previously purchased in order to be considered for award. This constant striving demonstrated the soundness of competitive bidding, and the Secretary foresaw, in the very near future, the Army Air Corps "fully armed with the most modern and efficient fighting aircraft."

As steps were taken to attain the authorized recommendation by the Inter-Board and as the European development of aircraft proceeded at an unprecedented rate, the feeling developed that changes were needed.
in the contractual authority of the War Department. Maj. Fleet, president of Consolidated Aircraft Corporation, pointed out in early 1928 that legislation was before Congress to encourage domestic and foreign operators of aircraft, and that similar encouragement was needed in the fields of aircraft design and construction if America was to maintain the pace set by foreign powers. Since modern aircraft development was becoming so costly, the manufacturers could not well proceed with the creation of new models under the existing system. He suggested, therefore, that the government obtain the assistance of industry at "actual cost plus a reasonable fixed-in-advance fee, not increasing in the form of a percentage as the cost continues through to completion, as was the practice in wartime 'cost plus percentage' contracts." This method would give incentive to the orator to accomplish the desired result at the "lowest possible cost since it gains on quarter of the output, while the government saves the other three quarters." Fleet thought that the War Department should be enabled to deal "fearlessly, intelligently and economically" in the interest of the government and not be "forced to deal lesser under an inadequate law than invites charges of scandal."

Nine months later, in November 1928, the Chief of the Air Corps recommended to legislation to submit authorizing the secretary of war to procure aircraft upon a negotiated basis, without competition, in his opinion the government requirements could not be fulfilled under the existing procedure. In connection with the numerous measures introduced to carry out the President's aviation expansion program of 12 January 1929, a bill (H.R. 693) was introduced into the House on 7 February. This bill contained many provisions relative to methods of procurement of aircraft,
among them the statement that "contracts, with or without such competition in the discretion of the Secretary . . . may be on either a fixed price or a fixed fee plus actual cost basis and may provide for periodical progress payments." Also, the profit limitations of 10 per cent as provided in previous legislation (15 Stat. 553 and 16 Stat. 1923) would be removed. 5

In his careful, quite elaborate in its sense, the not approved by the Chief of the War Division except all the desired procurement legislation was provided for by H.R. 3518, which had been introduced on 31 January, 6 the only procurement legislation in H.R. 3518 however, concerned authorization of purchase and said nothing of methods. The proposed procurement legislation, prepared in the Office of the Assistant Secretary of War, was being held until the President returned and the military affairs committee was in a "rescue mode." 7

The various air corps indexes were consolidated into H.R. 3731, but this last contained nothing that would change procurement procedures or limit profit. In the hearings which preceded the introduction of this bill, General Arnold emphasized that he was not opposed to competitive bidding; he was, but the problems was set of the planes in the time allotted. The only way to do this was to cut the entire industry—such of which was then idle—so that under the existing system there was no possible since authorities could declare only one winner and award only one contract in any event. 8 General Arnold emphasized that, through its auditing system, the air corps knew very well the costs of production of various types of planes and could negotiate contracts that would not allow an

5 See above, p. 6.
unconscionable profit. In discussions concerning the submission of single aircraft, the Air Corps chief stressed the fact that models had increased excessively in cost, and the Air Corps was allowed to purchase only 10% of the quantity entry. The unsuccessful competitor could be reimbursed in two ways: (1) sold abroad, or (2) sold to the government. General Arnold felt that since many of the losses could present armament with valuable features, sale abroad was not desirable. The Air Corps proposed, therefore, to buy "only the design and one airplane each from the next two unsuccessful bidders," only to the extent of the manufacturer's cost would be paid.

As early as 1931 it was felt the produce contained no provisions relative to limit or prevent or profit limitations. The Senate committee denied no provision on this, but on 6 March Senator C. L. Borah ( ) offered an amendment which provided that all profit limitations applicable to the procurement of civil aircraft should be applied to new aircraft. This means that all profits over 10% of cost would be returned to the Treasury, except that a loss for one year might be allowed as a "credit in determining the excess profit, if any, for the next succeeding income tax year." In the Senate hearing General Arnold testified 10% or more in connection with profit limitations but emphasized that in his view the industry should have a "fair" profit. While the exact meaning was not clear, from the testimony at the time, it appears that he did not intend for his statement to be used as a denial of a 10% or less profit limitation provision such as Senator Borah proposed. Eventually the discussion ended in the Senate, but the amendment became Section 17 of the bill as passed on 7 March 1933.
The following day the Finance Division pointed out to the Plans Division that the contract did not guarantee a 10 per cent profit but did prevent a larger return. The 1934 audits revealed that on Air Corps contracts the average profit had been 12.95 per cent; on pipeline contracts, 10.89 per cent; on airplane contracts, 8.17 per cent; on accessory and miscellaneous contracts, 24.21 per cent. The so-called excessive profits were, therefore, limited to this last category which was not affected by the provisions of 172.3701. Also, it was felt that this provision would result in higher prices and that the funds should revert to the Air Corps rather than to the Treasury. The results of the act could be "disadvantageous both to the Air Corps and to the contractors." 13

The chief of the Plans Division recommended passage of the bill and in the communication to the Assistant Secretary of War pointed out that the 10 per cent profit condition might be "entirely satisfactory" for negotiated contracts but "... unsatisfactory" for contracts resulting from competitive bidding. The Secretary of War's letter supported this opinion. He emphasized that one year was too short a period to recoup possible losses and that since all competitions for quantity procurement for the Army must be accompanied by physical inspection of the contracts at the expense of the bidder, the burden added was not enormous than previously. He maintained that a constant or an amendment would "seriously interfere" with the placing of orders for Government aircraft. 14

The Air Corps' opposition to this portion of the bill had a definite effect. The conference committee modified the original amendment so that a 12 per cent profit was allowed on all contracts for aircraft or portions thereof, and the time limit for making up losses or deficiency

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of profits was increased from one to four years. A significant addition provided that when aircraft were procured as a result of competitive bids requiring the submission of sample aircraft the Secretary of War was authorized to purchase one sample aircraft from not more than three unsuccessful competitors, these being those to be purchased in order of their merit, and not more than 75, 15, and 50 per cent, respectively, of the actual cost was to be paid. The measure became law in this form, thus allowing a percentage of profit on airplane contracts that was almost identical with the percentage of profit on all Air Corps contracts in 1928, greatly increasing the period in which losses could be recovered, and granting the Secretary of War certain freedoms of action in the conclusion of contracts who had submitted bids in an competitive bidding procurement.

In January 1929, the Secretary of War had sent to the various of the House and the Senate a draft of a proposed bill authorizing the Chief of the Air Corps to procure, without advertising, certain aircraft parts or instruments or aeronautical accessories the character of which or the ingredients thereof "of such a nature that the interests of the public service would be injured by publicly divulging their..." The chief of the matériel division emphasized that attempts to place contracts for the new-Air Corps program had shown that it was mandatory to have the above authority apply to aircraft if the 5,000-plane program was to be met. This bill was introduced as H.R. 3193 by the chairman of the Committee on Military Affairs on 21 January, and the following day an identical bill, S. 1013, was introduced by Sheppard into the Senate. S.1013 passed the Senate without amendment, but the House Committee on Military Affairs provided that no purchase could be made under this act until the Secretary of War certified to the necessity of a secret
order and only after submitting the proposal to three reputable bidders. The Senate agreed to the above amendment, and the measure became law on 13 July 1929.

The Air Corps did not want any procurement of aircraft without advertising, but it did allow the protection of some of the detailed plans and specifications of the aircraft industry.

In early 1930 the Materiel Division pointed out that this measure did not authorize open market purchase of aircraft for "any purpose other than those provided in the act." Furthermore, it was restrictive, and it was felt that the intent of the restrictions was to "prevent any interference with the procurement methods of munitions aircraft." The reason for this probably based on past investigations of aircraft procurement. The Materiel Division pointed out that some had raised the "only objectionable" part of the bill, requiring submission to three reputable concerns, because to change the law was not possible because it was thought it could be futile and harmful to the measure and that it was best "not to raise this issue now."

The Air Corps, in collaboration with the Secretary of War, compiled a current list of aircraft procurement in early 1930, but the lengthy proposal was never introduced into Congress. On 10 July 1930 the Assistant Secretary of War wrote to the President recalling their conversation of 23 May and transmitting a bill for the negotiation of contracts for the purchase of aircraft until 30 June 1941. The bill included a clause limiting profit to the 12 per cent provided by public law 18 (April 1929), and the Assistant Secretary pointed out that he and the Chief of the Air Corps had already discussed the measure.
with the chairmen of the House Military Affairs committees. On that very day, ... introduced H. R. 711 into the House. This bill authorized the Secretaries of war and navy to procure aircraft, parts, and accessories "in such manner and from such sources" as they determined to be necessary in the interest of the national defense.

H. R. 711 presented a new approach in the House committee, and on 13 July, a new measure was introduced. This bill, H. R. 7207, prepared in the plans division, CNO, and submitted by the Secretary of war on 10 July, 1939, provided for the creation of a Defense fund. Until 30 June 1941 the Secretary of war was authorized to award contracts (for aircraft, parts, or accessories) to the lowest responsible bidder who could satisfactorily perform the work or service required to be the best advantage of the government or, in the interest of the national defense, to award not more than three other bids. No contract was to be in excess of the price offered by the bidders, and the Secretary of war was to report to Congress on all contracts awarded under this act. This measure did not repeal any acts or prohibit any contracts then authorized but it added additional legislation.

In support of H. R. 7207 the Secretary of war pointed out that it was not his desire to abandon competitive bidding or to resort to the proposed authority except "under circumstances where the public interest clearly requires such action." Unless this legislation were passed, there was a danger that the greater part of the contemplated program might fall into the hands of a limited number of concerns which could not make timely delivery of the contemplated aircraft. A similar situation existed in regard to government-furnished equipment, so it was considered of "primary
importance" that the proposed legislation be enacted. The House Committee amended the bill to extend the authority to the Secretary of the Navy and reported it on 28 July 1930. Meanwhile, an identical measure (H.R. 7207) had been introduced into the Senate on 24 July 1930 and was favorably reported two days later. The Senate passed its bill on 1 August, but on 31 July the House had passed over H.R. 7207 "not out of prejudice." It was not until 19 February 1931 that the House substituted the Senate bill for its own and acted favorably. The bill became law on 5 March 1931.

As finally passed the law allowed the Secretary of War (or Navy), when contracts were awarded as a result of competitive bidding, to choose the bidder whom he thought could best meet the requirements, or he could split the award among as many as three bidders. These nonnegotiable contracts had to be reported to Congress, were subject to review by the President and the federal courts, could not provide more than 12 per cent profit, and were to be awarded only when each nation was necessary in the public interest. Also, the law stated that an existing statute was repealed, moribund, or suspended but that this was additional legislation. While this act did not grant full authority for negotiation of contracts, it did modify slightly the existing armament regulations and made possible the breaking of contracts among the smaller producers who could not have received orders under the single-award system. This act helped to bring about an earlier delivery of aircraft and the creation of a greater productive capacity. As has been noted, it was not the intention of the Office of the Secretary of War to make extensive use of the authority, but it was considered essential in an emergency a measure.

On 25 January 1931 Representative J. L. Cochran (R.) introduced H.R.
3182 to authorize procurement without advertising in all cases when the aggregate amount did not exceed $100. Otherwise, any procurement made without regard to section 3732 or the revised statutes must have the written authorization of the head of the department if the amount was in excess of $500.25 The bill definitely placed restrictions upon emergency purchases. The Committee on Expenditures in the Executive Departments reported the bill, it was recommitted, reported a sin, and on 2 June was struck from the calendar. Meanwhile, the Air Corps thought that the provisions would not be too restrictive and offered no particular objections to the bill. The Secretary of War, however, opposed its enactment unless it was made inapplicable to the Air Corps.27

The Air Corps, in April, spoke against any change in the profit limitation on Air Corps contracts unless they were technical changes for administrative purposes. If any were made, it was suggested that scientific instruments be excepted and that contracts for Army and Navy aircraft be considered in determining profit.26 The President's speech of 16 May 1940 called for enormous increases in aircraft production, and the problems of profits and negotiated contracts became more acute. The Air Corps pointed out that negotiated contracts were essential to accomplish the program.

The competitive bidding system was the occasion of unusual expenditure of time: 20 to 90 days for advertising; 50 to 60 days for evaluation of bids; and 60 days for approval of the evaluation board proceedings and execution of the contracts. Thus the minimum time was 130 days, and the process sometimes required as much as 210 days.

On 25 May 1940 Representative Carl Vinson (Ga.) introduced H.R. 7522 to extend negotiated contractual authority to the Secretary of the
ovy, in the course of consideration of the bill, amendments provided
that all profits on army and/or navy aircraft should be limited to 7 per
cent. This was modified by the conference committee, and as approved on
30 June 1929 and passed as Public Law No. 671, the act allowed 3 per cent
profit. It also prohibited the use of cost-plus-a-percentage-of-cost
negotiated contracts, limited to 7 per cent (of the total estimated cost
of the contract) be fixed due to be paid in cost-plus-a-fixed-fee con-
tracts, and made the above provisions applicable only to all contracts of
$50,000 or more.

In H. R. No. 2680, which provided for extension of negotiated con-
tractual authority to the Secretary of War, was introduced in the "case
and ... favorably reported the following, i.e., the provisions of
the bill, the authority of the Secretary of War was broad, and as was
enabled to enter into contracts as such classes as under such conditions
as he deemed best. Though the contractual authority was considered es-
sential, the bill went through several changes which were acceptable to
the War Department, and it became Public Law No. 703, on 2 July 1929. The
Secretary of War was given the authority of the Secretary of the
Navy, and the same restrictions were imposed regarding types of contracts
and profits that could be made. That the Secretary did not intend
to invoke any that the contract as it was shown by a note from the
Director of Current Procurements. On the same day that H. R. No. 2680 becom-
e in the nature that (1) negotiated contracts would be used only when es-
sential to expediting the accomplishment of the defense program; (2) care
would be taken to obtain a degree of competition by informal inquiry;
(3) in any case where the contracts are for $100,000 or more, the approval

--- For other provisions of this act, see above, Chap. I. ---
of the Secretary of War was required; and (b) the cost-plus-a-fixed-fee contract was to be used only when necessary to the interests of the United States.\footnote{44}

Three days later, 5 July 1940, an address of 19 June by the Acting Secretary of War was made public. In this he disclaimed all responsibility for the profit limitation contained in S. 9322 (Public Law No. 671), saying that he knew of it only a few hours before the committee took action. He expressed strong disapproval of the provision and thought that excess profits could be taken by taxes. The present state of expansion, he said, would not have been reached had not the aircraft manufacturers been allowed "a livable profit to justify their experimentation under the capitalistic system." Congress should consider carefully what this might do toward prohibiting the expansion of private industry and toward retarding the armament program.\footnote{45}

These measures had caused considerable delay in placing contracts for aircraft. On 26 July General Brett, chief of the Internal Division, stated that on 15 June he had been ready to negotiate contracts for 4,000 planes. The law was not signed until 2 July, and in the meantime the modification of the Vinson-Trammell Act of 1936 by Public Law No. 671—limiting profits to 8 per cent—caused a scrapping of all contracts. Industry was still unwilling to sign the negotiated contracts because of the possible repeal of the Vinson-Trammell Act, the effects of which action could not be clearly foreseen.\footnote{46}

Congress moved to rectify this condition by enacting the second supplemental appropriation bill for 1941 (H.R. 10265) to allow 12 per cent profit on aircraft but restrain the 8 per cent profit on naval vessels. General Arnold was told by the Senate committee that unless the 12 per cent profit
allowance were created, the Air Corps would be forced to negotiate contracts on a cost-plus-fixed-fee basis. This was not desirable because it increased the cost to the taxpayer, thus reducing the average profit of airplane manufacturers for the past few years and hence made the cost of 3 or 4 percent. This act was approved on 9 September 1939 without even the profit limitation provisions.

Slightly less than one month later, Section 101 of the National Defense Act of 1940 added full profit limitation provisions to aircraft contracts.

The authority to split awards created by Public Law No. 426 (March 1941) was the subject of a provision of negotiating contracts created by Public Law No. 70 (2 July 1940) extended only to 30 June 1941. To allow the 22 April 1941 bill (5476) to extend this authority (including the privilege of exercising an unlimited order of aircraft) was introduced into the House.

At first and still later indicated the necessity of the legislation for the execution of the program, but the House did not pass until the following year. In the meantime extension of the bill for fiscal year 1942 was, however, provided by the regular military bill, but as a proviso.

Law 5476 again came up for consideration in 1942, the House added a proviso which extended the split awards authority, the negotiation of contract privilege, and the right of profit limitation until six months after the war, unless the President submits a concurrent resolution of Congress or a presidential order issues. In this form, the measure became Public Law No. 519, on 5 June 1942.

Another, several other measures were introduced for the purpose of "providing for cooperation for the actual defense" and of prescribing the control of military aircraft requirements. On 1 July 1940 Senator Ford (136) introduced S. Res. 2, which stated that all defense contracts
entered into by the Joint Chiefs should provide for the fullest practicable utilization of productive facilities, including the deployment of personnel "as nearly as possible during each period of 24 hours." The air corps pointed out that all continued contracts for aircraft, equipment, and accessories then being negotiated on this basis, had it favored the language of the resolution, the Secretary of War, however, pointed out that while he was in accord with the idea of realism, the program forward, there was a difference in the time required to produce various articles, and therefore the degree of urgency varied. Unless the resolution were changed to allow the exercise of discretion by the contracting authorities, he was opposed to it as an unnecessary burden on the contractors, a needless expense to the government, and a creator of additional storage problems. The resolution died in the Joint Military Affairs Committee.

The entry of the United States into the war soon brought the revival of the Lend-Lease Act of World War I in the form of the Lend-Lease Act. On 15 December 1941, Representative HOWARD W. BAXTER (Texas) introduced H.R. 6290. The second portion of this bill gave to the President, and those acting for him, the power to enter into contracts, or amendments or modifications of contracts, without regard to the provisions of law wherever he believed such action could facilitate the prosecution of the war. No cost-plus-a-percentage-of-cost contracts were to be used. The measure was speedily enacted, becoming law on 18 December 1941.

By the early part of 1942 it had become evident that changes in standards of production and the decrease in costs resulting from mass production made possible certain savings on negotiated and competitive contracts. Consequently, a provision was added to the sixth supplemental appropriation act for 1942 authorizing and directing the Secretary of each department to insert
a re-negotiation clause in all contracts of $100,000 or more. Renegotiation
was to be accomplished at a period or periods man by the Secretary, decided that
were more or less impracticable or impossible. If the Secretary,
considered excessive, the Secretary, was authorized to hold further negoti-
ations in the amount of the excessive profits, or if an amount of
were to recover or to cause losses. All savings resulting from contract cancels-
or cancellations were to revert to the Treasury. The law was to remain in
force for three years or until July 1, 1912, since another provision of the
law did not alter the above and provisions of the law enacted.

Responsibility for the fulfilling of continuous expediting was directed
at the Air Service. The Secretary of War was in charge of the
air supply service's handling. The administration's overall directive
in connection therewith was subject to the approval of the Secretary of War or his
representative. The Navy in the Air Corps was therefore responsible for all procurement of supplies peculiar to the
Air Corps, and all supplies were received with approval of the
Secretary of War or his representative or the Air Force Supply Division.

With the increase in the number of contracts in late 1911 and early 1912, a
division of procurements was made in the office of the Undersecretary to
coordinate all contracts of $100,000 or more. Major contracts
were submitted to the Secretary of War and the Undersecretary of
War, before being presented to the Secretary of War or
his representative or the Air Force Supply Division.
the correct dates are to be inserted in the line at the top of the second page. The first page of 1012 provides the original date of approval. The dates on 1012 and on the third page should be inserted in the line at the top of the second page. The dates on the third page should be inserted in the line at the top of the third page.

The date on 1012 should not be more than one digit after the date of this instruction, which is 1 March 1945. Required to be used on the first page of the third page of 1012, if required in the same section of the document, may be used on the second page of the third page of 1012, if required in the same section of the document, may be used on the third page of the third page of 1012, if required in the same section of the document.
Chapter IV

RESEARCH AND DEVELOPMENT

One of the most important phases of material activities in the period 1939-44 was research and development. Unless sufficient and effective utilization were made of the fundamental work of the aerodynamics experts, it was entirely possible—and likely—that much of the effect of the huge expenditures would be nullified by the production of planes inferior in performance to those of potential enemies. The basic research for both the Army and Navy was conducted by the National Advisory Committee for Aeronautics (NACA), while the Army agency for applying these findings was the Material Division (later German) located at Wright Field. Legislation for this activity falls into two categories: (1) the authorization for new facilities and (2) the granting of appropriations for the NACA and the Air Corps.

In the few years prior to 1939 other nations of the world had expended much larger sums for aviation development than had the United States. The inevitable result was that those nations had research facilities far superior to those of the United States at the time the expansion program was inaugurated in 1939. The unprecedented augmentation authorized in that year called for a strengthening of research facilities if the full benefit was to be reaped from the expenditure of money appropriated. There were, then, several bills in 1939 which sought to encourage, increase, or strengthen aeronautical and general research and invention.

On 3 January 1939 Representative Melvin J. Meas (Minn.) introduced H.R. 99 which provided for the setting up of a national defense commission.
on inventions to be imposed on a civilian employed by the president, the army officers, the navy officers, the Chief of the Air Corps, the Chief of the Bureau of Aeronautics, and four others of Congress, from the Senate and House of Representatives committees. This group was to receive, review, and pass upon the work of all inventions, discoveries, and other devices submitted to the government for use in national defense and were authorized to build and test models of devices believed to warrant such treatment and expense.

The Air Corps Serial Division thought that the bill needed clarification, but it should be supported if only on the selfish grounds of winning the Air Corps on the burden respecting aeronautical inventions and to insure a way of developing inventions by those individuals who were unable to bear such expense. The Air Section admitted that the bill would have the above and other advantages, but it also had several disadvantages. These were: (1) the membership was too large and "too high-placed" and (2) the proposed commission would duplicate the work of the I.A.S. and the Interior and Design Board. The disadvantages, it was held, far outweighed the advantages, so it was recommended that the bill not be supported and that it be accomplished by creasing, if necessary, the authority of the I.A.S. and the Interior and Design Board. The Senate Section of the Air Corps found nothing in the bill which should "elicit favorable recommendation." The bill died in committee.

Two months later, March 1938, Sen. Miller Hill (Ia.) introduced S. 1769 which provided for the establishment of a government-owned, government-operated engineering aviation center. This center was to manufacture airplanes primarily as a yardstick for production costs and was to function
In one letter in 1940, the Air Corps prepared a letter for transmission to the chairman of the Senate military affairs committee in which it was pointed out that (1) a feasibility study for the installation of manufacturing costs and goals already exceeded the war budget at existing levels; (2) the government was opposed to entering the manufacturing field in competition with private industry; (3) only about two general types of airplanes could be built in one plant, and since the Air Corps needed about 12 types, the expansion of the plant would not be very great; and (4) the operation opened the passage of the bill. The Senate committee held hearings on the measure, but it was never reported.

A similar bill, S. 1987, was introduced in the House on 21 March 1943, but no action was taken on it. Nearly two years later, 17 February 1941, Senator Hull removed his bill as S. 840. The opposition of the Air Department was more pronounced than previously, and it was stated that the erection of the new plant would be "unsound" and "unnecessary." Again, no action was taken.

Meanwhile, the urgent issue of the inadequacy of research facilities had been aired in committee hearings, and money had been sought for a new laboratory. General Arnold stressed the significance of research as a means of most efficiently utilizing available funds and noted that Germany had five research centers comparable to the one at Langley Field. One of the most vital needs was a 450-mile-an-hour wind tunnel for research on higher speed planes. The Air Corps estimated for research and development had been cut $1,000,000 at the urging of the Navy, and General Arnold thought $4,000,000 additional (to the regular 1940 appropriate
tion of ($3,000,000) should be authorized for use during the year. It is also recog-
nized that entirely for another at laboratories for the research
requirements of the Air Corps to be supplied from funds of war.

In lieu of a provision for Fiscal year 1938, the Army had received
$1,750,000, of which $400,000 was to be used for the construction
of a new building. The 1938 appropriation authorized $1,150,000
was reassigned. This was provided for an increase in personnel and an
addition of $5,000 for continuous tunnel construction.

With the introduction into Congress of legislation for the new
laboratory, additional funds were requested. In 1937, the request for
laboratory at Sunnyvale, Calif. Table of $10,000 was approved. The
request was for technical investigation and development of
$2,110,000
the extension of laboratory facilities, and $500,000 for immediate use
at Sunnyvale. Dr. Frank R. Burris, vice-president of G.E., and Dr. George
H. Dick, director of a research laboratory, were instrumental in
securing this appropriation.

In October, 1937, S.I. pointed out that the events at which indoor
burning could be used in laboratories, without breakdowns,
was therefore, a no-brainer business proposition to have or capture
when the cost was new results. "To have a police aircraft will be conve-
nient to patrol, but too inferior aircraft at but to locate disaster."

Although it was known that indoor burning would be a duplication of
work at the laboratory, the necessity was pointed out. Laboratories, by
extent, it would be an additional facility. It is not correct, it should have
the arrangements for the laboratory's efforts, the Chief of the Air Corps, and the Chief of

[Signature, date, and other details present]
the very heart of a matter was then revealed that the Senate committee reinserted this item and insisted that this was an emergency project. The committee did not respond favorably to these urges, but on 17 April 1950, Senator Hubert Humphrey (D-Minn.) offered an amendment providing for $1,000,000 appropriation and $500,000,000 contractual authority for the Hanford project. Senator Robert Byrd (D-Wyo.) offered an amendment striking out the contractual authority and added a need to the own appropriation only. The conference committee struck out the Hanford appropriation, and the only allowance for facilities was $160,000 for Hanley Field. After the Senate committee had refused to allow the Hanford appropriation, some newspapers deemed it a "pity" that the House should have been followed in this respect. The New York Times of 15 April thought that the House's defense of the bill should have been sufficient to convince Congress of the project, but certainly the argument of its emergency character should have been convincing. It was that "to refuse the research appropriation asked is, in handsome phrase, to hold up the subject and let out at the back. To allow sectional considerations to enter into such a decision would be acting less than patriotic." The Washington Evening Star of 16 April thought "we still not too late to rectify an error that might turn the difference between victory and defeat in case the United States become involved in a major conflict. It has been argued that defense could not be made, and in case the Laboratories at Hanley should be destroyed, the damage would be a "long way toward aerial supremacy." The security standpoint, if for no other reason, there should be at least the laboratories. This year has seen evidence of a major conflict..."
in the defeat of the proposal, and said;

"It can be little short of criminal in our national security in this matter were to be sacrificed to a matter of sectional pride or mere political expediency. And it is a fact that none of this feeling us. to be made by the defense and war-time conditions.

"The cost is irrelevant. It is like that of providing a squadron of four-engine bombers; 1 cent out of the cost of the air defense program will do the job."

The Senator concluded that the wise at rejection should not end the right and that further efforts could be made.

While this request for appropriation was being rejected by Congress, the supplemental bill for appropriation for 1939 was under consideration. In the estimate an additional $,200,000 was sought for air Corps research and development during the fiscal year 1939. General Arnold said that since January, a program he had studied the research and development program and concluded that engine and pursuit-plane development must be emphasized to a far greater degree than in the past. In these categories the United States was far ahead of foreign nations, only the laboratories of the United States being definitely superior to foreign types. The $,200,000, together with the regular appropriation of $,000,000, he maintained, would be only the minimum requirements; $20,000,000 would be required annually for the next three years if the United States were to outstrip other nations in research.

The Chief of the air Corps also brought out the necessity for another air laboratory but stated that the additional research facility should not be tied to the immediate requirement of the Air Corps. He said, would be for the future and not at present. This would be true because of the kind element. General Arnold expressed against the exception
of the Handley laboratory, saying it would be a waste of money, and he indicated that there would be need for three or four or five laboratories in the future. Period on research in universities, he answered that those institutions did not do fundamental research but studied means of adapting a certain design to production. If the universities were allowed to expand their activities too much in this respect, the Air Corps would lose control.

The House committee added $2,000,000 for research and development, making a total of $4,000,000, which was granted to the Air Corps on 1 July 1939.

As the Washington evening star predicted on 15 April, additional attempts were made to provide for another 'C' research laboratory. However, they proved in vain. On 6 July 1939, Representative John C. Costello (Calif.) introduced H. R. 6260 which authorized an appropriation of $300,000 for one or two to construct and equip aeronautical research facilities at Sunnyvale, Calif. The Air Corps strongly recommended full support for this bill. It was emphasized that practically all of the fundamental and basic research in aeronautics was being done at Langley Field by the "C", and those facilities—which could not be expanded because of space limitations—were inadequate to meet the demands of the Army, Navy, and manufacturers. The military aircraft of the United States has not kept pace in performance with the craft of the major foreign nations because basic and applied research facilities...have not been expanded so extensively or by how in these foreign countries. If we are to regain a position of equality in the performance of aircraft with foreign countries, research facilities must be made available, and a planned research program established. Considering the geographical distribution of the aeronautical industry in the United States, another basic research center, with improved facilities, should be established on the West Coast.
Sunnyvale was recommended as a suitable location because of the available land, the favorable climate, and the near-by labor supply.

Three days later Representative John Z. Anderson (Calif.) introduced H.R. 6216 which was identical to H.R. 6200, and on 18 May Representative John M. Houston (Kans.) introduced H.R. 6399 authorizing $10,000,000 for an aeronautical research center at Wichita, Kans. The Air Corps pointed out that these bills were identical except for the proposed location. First priority should be given, it was thought, to a West Coast location because of the industrial concentration there. H.R. 6200 would be favored only if approval for two laboratories could be secured. The Secretary of War thought that H.R. 6399 would benefit the central portion of the aviation industry and would therefore be in the interests of national defense.

Other bills were introduced by representatives seeking NACA laboratories for their states. On 23 May, Representative Jennings Randolph (W. Va.) presented H.R. 476 which authorized spending $5,000,000 for facilities at Morgantown, W. Va. The War Department felt that Morgantown was the least desirable of the three proposed locations; it was too close to, and no more readily accessible than, Langley Field, and therefore first consideration should be given Sunnyvale and Wichita. The last bill for an NACA research laboratory—this time for $10,000,000 at Denver—was introduced by Representative Lawrence Lewis (Colo.) on 14 July 1935. In approving the Sunnyvale project the Secretary of War on 28 July emphasized that the passage of H.R. 6200 or H.R. 6216 would best serve the interests of the air arm. He did feel, however, that a stipulation should provide that the site be designated by the Air Department. In that way the Air Department's interests would be fully protected.
The issue is placed that just as laborers, etc. in third decision, appropriation bill for 1.0, can occur. The House, the estimate provided for an appropriation of $3,000,000 and construction authorization of $2,000,000 for the construction and equipment of another 1.01 laboratory, was located at 

the location of which was determined by a study. In the Mazarov, Dr. V. A. Maksutov, of A., restored the argument which had been advanced previously: (1) the program as necessary to the national defense; (2) it took up the island because (3) it is not one to construct all facilities in one place, (4) because the limited additional over what is available, (5) the 1.0 percent of military aircraft production is located on one island coast but on 1.02 percent of

the island; (6) the study has been conducted through staff by experts; (7) there would be no duplication in the proposed 1.03 million dollars; and (8) there would be no inefficiency resulting from a slight 

alteration of cost, some component would be under the control of the A. Charles...

The agreement was that there was no need to rush to catch up in aeronautical development unless the research facilities were created.

The document contains a section about the 1.04 million dollars and 1.05 million dollars, but the text is not legible in the image provided.
authorized to research facilities when very vital to the operation of
non-official military aircraft.

An independent estimate a year ago in the Office of Estimates of 
$6,000,000. Or last year, 1,200,000. For additional con-
struction at Langley, and 4,000,000. The cost for part of the ex-
pansion is for the new air laboratory at West Field near Cambridge.

Dr. Lindbergh pointed out that the results of the 1925 laboratories and
establishments were related to the expansion that has taken place in
the use of aeroplanes for military purposes. These same results
have been pursued at Aberdeen
Aeroplane factory. Strictly speaking, this is new work by (1) the type
of equipment with which our industrial and military research could be
connected and (2) the essential needs and to a great extent.

As a consequence, the Air Force has been able to provide to such
information that can improve performance, but only for its research pro-
gram. Until now it has not been able to, in the scale of other military
services.

The results to date quickly reached by the Air Force, which is
realizing the increased needs. In addition to work toward the com-
plete lines of more efficient, the following facilities at work are
now in progress: (1) 5,000,000. That includes the central, larger, more
complete, and (2) 150,000,000. For example, we have now
aircraft, the construction of which is ongoing to enable the Air Force for research
in essential and non-aircraft purposes. It increased from 25,000
(in 1930) to 100,000.
by the time the above venture had been enacted the German air sweep over parts of northeastern Europe, and soon France's fall became inevitable. In the first supplemental appropriation bill for 1941 funds were requested for the establishment of an 'Aircraft Research Laboratory.' Some opposition developed on the floor of the House to the granting of the $2,000,000 cash and $6,400,000 contractual obligation. The proponents of additional funds for research due to the import of the bill, citing letters from the Special Survey Committee on Aeronautical Research Facilities, which indicated a drastic need for engine research and urged immediate action. This plant was to be for engine development for planes. The attempt to restrict were defeated, and the new laboratory was authorized on 28 June 1940. In addition to the $2,000,000 cash and contractual authorization of $6,400,000 for the engine laboratory, $1,200,000 was voted to construct a new electric power plant at Edwards. This last item was made necessary by the increased facilities there in the preceding year.

The increased research required for the new laboratories and the funds to fulfill the contractual obligations for the new laboratory, in California, as the 'aerospace laboratory,' located near C1 valdosta, brought the fiscal year 1942 amounts for USA to $10,001,210. Of the amount, $5,600,250 was to be applied to the engine laboratory and $4,400,000 to other.

Each stated that in fiscal year 1942 this would conduct research exclusively on aerodynamic problems while the still amount of research that was being done on simply solid transferred to the Cleveland plant. The result would be, according favorably on or so required, emphasized that the scientific research for the 'A' was the "most fundamental activity of the government in connection with the development of America's potential..."
strength in the air. No matter how many aircraft are produced, nor how many pilots are trained, unless the aircraft or at least equal in performance to the best produced by our other nations the whole expenditure may be largely wasted. 23 The 1931 budget made no mention of A.C. Fund, but the act was approved on 5 April 1941. 44

As the reultation grew worse for the Allies, plans for aeronautical research facilities expanded. In June of 1941 the N.A.C. sought deficiency fund for 1941 to co-ordinate plans for 1942. Dr. Bush explained that there were three reasons for the necessity of increased allowances: (1) uncorrected cost; (2) load increase in necessary to utilize the Langley facilities in every possible way; (3) enlarged plans called for a larger engine-testing wind tunnel; and (2) the increase cost of production made it impossible to expand the facilities at the original estimate. The House committee approved the requested $430,000 general appropriation, $375,000 for expansion and additional construction at Langley, an additional contract authorization of $4,300,000 for the Cleveland plant. The authorization for the larger decrease was raised from $1,400,000 to $1,600,000. The appropriations received final approval on 3 July 1941.

Very soon it was evident that more funds would be required for one. Astronomer, Dr. G. E. Owen, 47 said that the U.S. was not living up to its responsibility. He said that the U.S. was not living up to its responsibility and would fall far behind unless some were done in the way of existing facilities. An increase of $3,207,500 was sought for the Cleveland laboratory, of which $2,077,000 was for an additional and "different" type of wind tunnel. The sum of $141,426 was needed for construction at Langley and $1,402,375 for a general appropriation. These sums were made available on 31 October 1941. 48
between this bill and total of 1943 no m. projects for c. were approved, but the Cleveland, Hampton, and Ames laboratories were constantly extended and equipped to meet the new demands. Of the total appropriations of 4,18,982,700 for 1943, 1,971,000 was for Cleveland and 16,800,000 for c. Shortly before c. however, an additional 1942 appropriation had provided 3,530,000 for Cleveland and had raised the amount that could be expended on the facilities from 10,000,000 to 18,471,000. This limit was again raised on 16 March 1945 when another 2,100,000 was appropriated for Cleveland and 111,000 for Hampton. The general appropriation was 3,250,000. By the time these were granted, the construction of the engine research plant was practically completed, and the money was to be used primarily for equipment. At the hearings on the bill c. officials pointed out a very important research development—the low-sodium, which was one important factor in the efficiency of the vet.

In the hearings on the regular appropriation for 1944 bissaker summarized the great advance of the last few years. Since the research expansion of 1947 the c. had received construction appropriations amounting to 38,507,150 and the staff had expanded from 16 in 1927 to a proposed 4,410 for fiscal year 1945. Several units of the engine research laboratory were already in operation, and these special research projects had been turned over to 80 universities. The 64 per cent proposed increase in personnel brought the total appropriation to 15,872,000; 3,707,000 for c.; 1,000,000 for construction; and 14,000 for printing and binding, a total of 19,672,000. These sums were approved on 26 June 1945.
The report on the end of 1956 was submitted that the United States had
limited the need in aerosol research, and more funds were needed to
support the need. It had been shown, however, that money invested
in the research had resulted only in the under one percent of their
projects. A recent Statistical study showed an annual of 1,773 on
which was limited, but the 1,773 which had been cut was not 725 at
least 700 of the 1,773 of these projects could now be used on the
renewal of 1,156,665 in aerosol programs, it limited to the 1,773
employees could be used only for 2,219.

For the year 4,745,883 for Cleveland, we still had 75,001 for gen-
eral expenses at the end of 1956.

General Arnold and Vice Adm. A. C. Strauss strongly supported these
cuts, stating that the force is needed with little change. The 1,773
for personnel were reduced by 100,000 the funds for personnel since, by the end of the
year, the funds required for full-time instead of six
months, in order to be utilized only valued to the value
of research to the project as noted and the remaining half of
the 1,773. Strauss also noted one of the problems that had
been cut was 17,577,710 not 1 about further charges.

In 1957, the initial appropriation will be 1,156,665 for the year,
and an amount that is usually over 10,000 in the
sum of 65, approved on 37 J. 31, and 28,252,420, then included
logs for printing and mailing.

For 1957, the initial appropriation will be 1,156,665 for the year.
On 7 March 1935, President Roosevelt sent to the Senate a request for a appropriation for the U.S. of 10,500,000 for salaries and expenses of 1,150,000 for construction and equipment at the Air Force Base at Cleveland, and 1 of 7,500,000. Thus in the second session of the Seventy-Eighth Congress there were appropriated for the U.S. 17,500,000.

On 7 March 1935, President Roosevelt sent to the Senate a request for a appropriation for the U.S. of 10,500,000 for salaries and expenses of 1,150,000 for construction and equipment at the Air Force Base at Cleveland, and 1 of 7,500,000. Thus in the second session of the Seventy-Eighth Congress there were appropriated for the U.S. 17,500,000.

The Air Force Base at Cleveland, which had already part of the building and was not a provision for the base, but the request of the Director of the Air Force Base, and the appropriation of 10,500,000 was included in this bill, which was introduced on 10 March 1935.

An appropriation bill for 1935 was introduced in the House on 10 March 1935; it authorized, for a appropriation of 10,500,000, the sum of 90,000,000, and 1,150,000 for salaries and expenses. The House committee observed the increase in the amount of about 7,000,000 over the last appropriation made it possible to provide for all employees, including those on active service, 1935 and those necessary to start new construction projects. There was an objection to the increase in the report to the House committee or in the conference report, but it was allowed by the Senate committee—
The greatly increased expenditures resulting from the President's message of 13 May 1929 soon brought requests for more funds, among which larger sums for research. In the first supplemental appropriation for 1931, $27,000,000 were the budget for research. A controversy over research fuel, in general developed in the House, but all restrictive attempts were defeated and the bill became law on 26 June 1930.

No further research funds were sought until March 1931 when the fifth supplemental appropriation bill was under consideration and $4,000,000 was requested. On this amount, $2,000,000 was for development of a special type of airplane, apparently a jet-propulsion craft. This was granted on 5 April 1931.

During this period important research and advances in the development of the diesel engine preceded the introduction of L-123 on 17 June 1930. This bill provided for the establishment of a division of the diesel engine which should be for the purpose of studying the possibilities of the diesel engine in connection with aviation.

The Department pointed out that by nature and its ability to use low-grade fuel the diesel engine was far more important to certain European countries than to the United States. However, the existing diesel engine did not give promise of military adaptability, and although developments in the United States should be pushed, it was thought that this could be accomplished by the use of diesel engines in aircraft in 1939. For our Department could not keep pace with it, it was

In the military establishment appropriation bill for 1942...
$12,870,000 was requested for by the Air Corps for the procurement and development of new aircraft, armament, and power plants for aircraft and accessory equipment. One of this amount is to have been for use by other arms, and the Air Corps was to utilize $9,010,000. This sum was well out of the appropriation which was approved on 23 June 1941.

Just before the entry of the United States into the war, an additional $4,108,000 was requested for experimental development. This was intended to test adaptations in aircraft in line with the lessons that had been learned from the European conflicts as to develop new aircraft. Some of the projects concerned troop-carriers, gliders and airborne task-force transport equipment, power plants, air-creapers, dual-rotation propellers, and the use of new metals and alloys. No changes were made in any of the Air Corps requests, which were granted on 17 December 1941.

As noted in Chapter I, the Air Corps appropriations, as well as those for other arms, were joined to a resolution that the fiscal year 1946 bill carried $112,870,000 for Air Corps research and development. This was to allow for the continued development of high-altitude aircraft, variety of armament, power, and other associated equipment. The authorization of the work in 1942 had advanced the service-test usage of such equipment, and on 11 December 1942, it was required when during fiscal year 1942. At the close of the vote, Representative Charles K. Ch授 (D., Mo.) expressed pleasure in seeing this large sum for research and asked Chairman the bill for its refusal to agree to the Senate's research proposal in early 1942. On 2 July 1942 the bill, without changes in the Air Corps requests, became law.
As General Smith had indicated, this was insufficient for 1942; later 39,311,000 was sought for 1943. Before the 1944 estimates were defended, an important research center had been created. This was the USA School of Applied Science (later the Tactical Center) which operationally tested the material which had been developed at Wright Field and field-tested at Adlersfield. As usual there was little discussion on the research itself, and none had been available at the beginning of fiscal year 1944.

In allocating funds for fiscal year 1945, the LC allotted the sum of 70,305,000 to research and development; of this amount, 70,010,000 was for aeronautical research, the remainder being divided between medical and biological and meteorological research and development.

The aeronautical establishment appropriation bill for 1945 contained only a total appropriation of 400 for the LC, but the Air program for fiscal year 1946 called for the expenditure of funds previously appropriated but not then obligated, of 146,826,671 for aeronautical research and development. This represents an increase of 70,175,771 over the amount set aside for aeronautical research in fiscal year 1945, but is less, approximately, than the amount actually spent in that year.

In addition to the support given to the aeronautical research program by continued approval of the appropriations, there were various efforts during 1941 and 1942 to enact legislation intended to give even further support to such research. There was still proposing to create an office of "military research and development" in the Army Department, another was introduced "to establish a research board for national security to insure the continued researches of the nation along fundamental lines by providing for the application of
valuable research to national security." Third bill would have introduced a "National Research Question." Another bill would have authorized an appropriation of up to $20,000,000 for research grants, as of June 2nd, 1917. As of December of 1917, the Secretary of the Navy, and the Director of Civil Aeronautics, "for the purpose of aiding any individual or corporation, as it may, in connection with the development of a type of aircraft or in improvement of existing types of aircraft, or in connection with start-up expenses in the course of development," bill would have authorized the expenditure of "such sums of money as may be necessary, not exceeding $2,000,000," to enable the National Advisory Council for Aeronautics, through a research board, to be "in a position to take action and endeavor to provide for scientific research and development." No bill authorized in the nature of funds for the development or improvement of aircraft.

The or reports objected to such proposed legislation on the ground that it would interfere with the work of a "despite direct official interest." It was said that the or reports been made by no nation's effective now and did not develop in the field efficiently. By the end of 1915 most of the bill had been enacted into law.

The story of national aviation research and development activities is not one of steady, uninterrupted progress, but rather a continuing for this work as it was by speedily developing each large aspect of the unemployment of aircraft. Formerly is attitude was still essentially a pri-
vital by the fact that the results of our work were more physically apparent than those of the research program. However, once progress was thorough and of the vital significance of the accomplishments were noted and praised, the funds requested by the courts were quickly made available.
Chapter V

SOME ADDITIONAL CONSIDERATIONS

The United States, in the course of several years, has discovered the
need for a number of new weapons and equipment to meet modern
requirements. In order to ensure the proper development and
production of these new systems, it is necessary that a great deal
be understood about the production processes in use with the
2
advancement of new military equipment. It is not


1

In addition, the increased production capability in the United
States will also require the development of new manufacturing
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processes. It is not


2

In conclusion, the increased production capability in the United
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d
or the destruction of the organization of the soviet union.

In 1933, a new wave of purges began, targeting not only supposed traitors and enemies of the state, but also many members of the Communist Party. The most famous example is the arrest of Grigory Zinoviev and Lev Kamenev.

The purges led to the eventual downfall of the Soviet Union, as the leadership was weakened and new leaders emerged, who were less concerned with the interests of the masses. The result was a series of civil wars and political upheavals that led to the eventual collapse of the Soviet Union.

In conclusion, the purges of 1933 were a pivotal moment in the history of the Soviet Union, leading to the eventual collapse of the organization and the emergence of new leaders who were less concerned with the interests of the masses.

References:

1. The Soviet Union: A History
2. The Rise and Fall of the Soviet Union
3. The Soviet Union: A Political History
4. The Soviet Union: An Economic History

In the beginning, there was no company, no nation, no rule, no law. The world was a wilderness, a place of chaos and confusion. People lived in small, isolated communities, each on its own island of knowledge and culture. There were no boundaries, no limits to what could be known or achieved.

But as time went on, these communities began to interact with each other. They traded goods, shared knowledge, and learned from each other. This exchange of ideas and knowledge helped to create a sense of unity and purpose.

Eventually, this unity led to the creation of a single, unified nation. The people of this nation worked together to build a better world, to create a government that was fair and just. They created laws and rules to govern their society, and they worked to ensure that everyone was treated equally.

This nation continued to grow and expand, but it faced many challenges along the way. There were times of conflict and division, times when the people struggled to find a common purpose. But through it all, the nation persevered, and it remained strong and united.

Today, this nation stands as a shining example of what can be achieved through cooperation and determination. It serves as a beacon of hope for all those who seek a better world.
It is...
...
In order to obtain the desired results, it is necessary [A] to conduct extensive research and development. This will involve the collection of data from various sources, the analysis of this data, and the development of new technologies to support these efforts. It is important to note that this process will be iterative, requiring feedback and refinement at each stage.

In addition to these efforts, it is crucial to establish partnerships and collaborations with other organizations and stakeholders. This will help to ensure the successful implementation of the proposed initiatives and to leverage the resources and expertise of others.

Finally, it is important to communicate the goals and objectives of these efforts to the wider public and to engage with them in a meaningful way. This will help to build support and to ensure that the initiatives are aligned with the needs and aspirations of the people.

Overall, the success of these efforts will depend on the commitment and dedication of all involved, as well as the availability of adequate resources and support. However, with careful planning and execution, it is possible to achieve the desired outcomes and to make a positive impact on the lives of those affected.

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The data was collected through [B] surveys, interviews, and observations. The analysis was performed using statistical software, and the results were verified through peer review. The technologies developed in this process include [C] sensors, detectors, and communication systems. These technologies are designed to be robust, reliable, and efficient, and they have been successfully tested in various scenarios.

The partnerships established through this process include [D] government agencies, research institutions, and private companies. These partnerships have been instrumental in providing the necessary resources and expertise to support the initiatives.

The communication efforts have involved [E] workshops, seminars, and public outreach programs. These efforts have helped to increase awareness and understanding of the initiatives, and they have helped to mobilize support from the wider community.

In conclusion, these efforts have led to significant progress in achieving the desired outcomes. The data collected has provided valuable insights, the technologies developed have been effective, the partnerships have been fruitful, and the communication efforts have been successful. The future prospects are promising, and there is reason to believe that the initiatives will continue to make a positive impact on the lives of those affected.
and also to the United States Senate (111) and the Senate that he
would not seek to be renominated. However, he was renominated
and ultimately agreed to serve as President with the Vice-President
of the United States until

[Text continues]
and that a day is observed, etc.
AMR-32, Ch 5

In a united effort to ensure freedom and peace throughout the world, it has been necessary to take certain measures in the past to prevent the spread of communism. However, the continued advance of the aggressor nations has brought about new problems which require additional measures to be taken. It is necessary that these problems be recognized and approached in the light of the present situation. We must strive to maintain peace and freedom for all nations, and to prevent aggression from spreading further.
MAWS-22, Summary

The overall objective of the program was to reduce the time lag between the introduction of a new production process and the attainment of the required production levels. This was achieved through a series of improvements and adjustments in the manufacturing process. The contribution of the program was a great reduction of the time lag, enabling the company to be more competitive in the market.

Due to the complexity of the task, it was important to ensure that all factors were considered in the decision-making process. This involved a thorough analysis of the existing production processes and the identification of areas for improvement. The implementation of the new processes was carried out in a phased manner, with each phase building upon the previous one. This approach allowed for a smooth transition and minimized any disruption to the existing production line.

Overall, the program was a success, demonstrating the importance of continuous improvement and innovation in maintaining a competitive edge in the industry. The reduced time lag had a significant impact on the company's ability to respond to market demands and stay ahead of the competition.
null
of those you can understand it, but our decision in July
on 1 July 1941, we intended to discuss and a military
recommendation for the war. In June, their were
arranged and on this war had, unless we received
by a correct resolution or responsible person in the earlier,
will be 1/2,92,000,000 pounds in the new title of contract

revised closely more with contractual relation, we

provisions in 3 months the station and that over 2,000
persons can be reduced to a dozen for aircraft, none at all
serves continued to be built and a large order to the
reduction of their service is without the press of the year, the
amount of 3,000, 1,000,000 pounds over 10 years and
not a decision made, but an order, to not be taken in

contradictory, and also the two hundred to do the number for
contract. A total of 1,000,000 pounds or an equal
authorization, not six million, but 1,000,000 pounds or at
reduced to necessary only, is to be reduced to every
exclusion to this line.

2. Final Report of War Department Special Committee on Army Air Corps
   July 12, 1937, p. 31; 49 Stat. 1907. The 2,520-planes objective is
   sometimes referred to as the requiring program.

3. These figures were given by Maj. Gen. Oscar Stetson, Chief of the
   Air Corps, on 3 February 1933. (House, Hearings on Military Estab-
   lishment Appropriation Bill for 1939 (H.R. 9552), 75 Cong., 3 sess., 41st.)

4. $10,699,736 of this sum was for previous contractual obligations and
   $19,126,323 was contractual authorization. (Ibid., 9-10, 21.)

5. The National Guard was allotted 171 of the 2,520 planes. (Ibid., 9-10.)
   General Craig stated that the number 2,520 should be revised as
   not fixed.

6. Ibid., 9-10, 22, 23. The Air Corps had originally requested $118,269,035,
   but the Budget Advisory Committee had reduced this by approximately
   $26,000,000.

7. Ibid., 23.

8. Ibid., 456.

9. He emphasizes that until 1937 the Air Corps had been allowed 100 per
   cent spare and that the Navy still was getting the equivalent. (Ibid., 480-21, 485-50.)

    Corps equipment procure by other arms brought the Air Corps total to
    about $124,000,000, or 33 per cent of the budget. (Ibid., 13.)

11. Ltr. Louis Johnson to Royal S. Copeland, 31 Mar. 33, in Senate, Hearings
    on H.R. 9592, 75 Cong., 3 sess., 3; H. Rept. No. 1565, 75 Cong., 3
    sess.


13. Memo for C/S by AG/B, 16 Nov. 53, in Lyon, Project Records, 2k 1,
    10,000 Airplane Procurement. These records were kept by Col. A.J. Lyon,
    Technical Executive of the Material Division, and are now on file in
    AG/B, 2k 15.

124
11. Attachment to memo cited in n. 15. All but 665 of the 3,720 training planes were to be in active service, while 220 of the 650 miscellaneous aircraft were to be held in reserve.

15. Incl to memo for Chief, Materiel Liv by G/AC, 29 Nov 33, in file cited in n. 15.


17. Such influence was shown by the outcome of the Munich conference in September 1938.


19. Ibid. The President stated: "Levée of all hystaria, this program is but the minimum of requirements." (Cong. Rec., 76 Cong., 1 Sess., 219.)


21. Memo for C/S by G/AC, 13 Jan 39, in AAC 321.9 Bulk, General Arnold's Book. The sum of $3,000,000 would be applied to research and $3,000,000 to bomb procurement and bomb storage. The term "miscellaneous" included principally liason and photograph aircraft. It was, however, seen as continuing the planes "more specifically earmarked.

22. App. 1 to General Arnold's Book. The remaining 2,000 planes necessary to make 1,500 were on order or provided for by 1938 and 1940 fumes.

23. HR, Plans Sec to G/AC, 21 Jan 39, in Plans Liv file, AAC/AO. The following day an identical bill, S. 342, was introduced into the Senate.

24. 5/7 to chairman of House and Senate military affairs committees, 3 Feb 39, in AAC 022 K, Legislation. The communication noted that time had not permitted submission of the letter to the Bureau of the Budget, so it does not involve any commitment as to the exact relationship of the legislation to the program of the President.


26. For discussion of the training and personnel features, see AAF Historical Studies: No. 7 (Revise 6), Legislation Relating to the Army Air Forces Training Program, 1939 to 1945, and AAF Historical Studies: No. 16 (Revised), Legislation Relating to the AAF Personal Personnel Plan, 1939-1945.

27. H. Rept. No. 52, 76 Cong., 1 Sess.
13. The remainder of $650,000,000 was to be used for signal corps and ordnance items (Ibid.; S. Rep. no. 112, 76 Cong., 1 Sess., 7.)


15. Ibid., .

16. Ibid.


18. Ibid., 2283, 2270.

19. Ibid., 116, 76 Cong., 1 Sess., 1.


22. Ibid., 53.


24. Ibid., 20.

25. Ibid., 23.

26. Ibid., 46, 76.

27. Ibid., 51, 78.

28. Ibid., 42.


30. Ibid., 7.


32. Ibid., 2771, 76 Cong.,

33. Ibid., 225, 2. Ibid., 226, 76 Cong., 1 Sess.; S. Rep., 932.

34. Finally, the air corps itself did not receive $650,000,000. Large 

60. Proclamation 2602, D-C, 30, in Federal Register, 9 Sep 39.

60. For discussion on neutrality as war, see Chap. V, this study.


71. Ibid., note for J. J. Scott, to John D. S. Fitzgerald, 13 Sep 39, in files of files 111.12, which states that Mr. Scott is the officer who causes the work to come in from the public and who receives the letters from the public department, as the public and the public officers have been referred to in this case in 19.10.3.


73. Ibid.

74. Note for C/C, 3-4, by C/C, 3-30, in files of files 111.2, which states 711-19.


76. Ibid., 75, 3rd Sess., 3rd Sess., 317.

77. The president is head of the commission to coordinate foreign and domestic air and land purchasing.

78. Ibid., 75, 3rd Sess., 3rd Sess., 317.

79. "Can we have more funds?" in this report, 18 Jul 39, quoted by "Can. Air Forces (Col. T.)," in Col. T., 75, 3rd Sess., 3rd Sess., 317-320. This table also shows the importance of additional funds for research.


82. Note, February 14, 1939. Appropriations. Appropriation bill for 1939-40 provides for the Army Air Forces, which includes the United States War Departments, 77,000,000 for ordnance equipment, 7,915,178 for radio and other equipment, and 2,000,000 for transportation of troops, a mistake of 18,000,000 exists in the record of total.

83. Ibid., 74-75.
84. A failure of Congress to act promptly in an effort to set prior delivery, but it was too early to determine the effect of foreign purchases on domestic deliveries because quantity deliveries were not scheduled until the latter part of spring. Earlier deliveries to foreign countries were theoretically excluded, however, by the no. 1 priority given to the try and test. (Ibid., 176-77.)

85. Ibid., 183.
86. Ibid., 187.
87. Ibid., 186.
88. Ibid., 173-74.
89. Ibid., 173, 76, 40.
90. Ibid., 19.
91. Ibid., 20.
92. Ibid.
93. Ibid.
94. "CON. I.e., 76 CON. 1, 3 CON., 368.
95. Ibid., 408.
96. As for 1-3 by 76 CON. 1, 40, CON. 1, 121, 2, CON. 1, 181.
97. CON. I.e., 176 CON. 1, 76 CON. 1, 3 CON., 3 CON., 7, 3 CON., 368.
98. Ibid., 368.
99. Ibid., a few days prior to this speech President Roosevelt had called on the Secretary of War to obtain a "substantial increase in heavy bomber protection." The communication stated that the effective defense of the United States required this, "...to this end will you take whatever action is needed, including the procurement of aircraft, to obtain substantial reduction in the production rate which I am indicating to you in a private conversation." (Ibid., 1-3, 1940.) The report stated that this took a large expansion of plant facilities and utilization of existing factories not then secured in other situations. As " lm the most important elements in the President's request lay in the fact that it was not primarily a letter to be sent quickly, but rather a dissenting letter, an add to an entirely non-objective."
100. Portland Oregonian and Denver Post, 16 May 40. See also, St. Louis Post-Dispatch, Des Moines Register, and Philadelphia Record, 16 May 40; Chicago Daily Tribune and Atlanta Constitution, 17 May 40.

101. Memo for C/S by C/AS, 17 May 40, in AG 452.1-32.b, subd. sale ... Abroad.

102. Senate, Hearings on H.R. 9202, 76 Cong., 3 Sess., 375.

103. Only 200 of the 2,400 planes were of the combat type. (Ibid, 5.)

104. Ibid., 375; S. Rept. No. 1630, 76 Cong., 3 Sess., 8.


106. Ibid., 6503-05. General Arnold had testified that the expected peak by December 1940 was 1,248 planes per month. (Senate, Hearings on H.R. 9202, 76 Cong., 3 Sess., 73.)


108. 54 Stat. 350.

109. Cong. Rec., 76 Cong., 3 Sess., 6356. This measure and its Senate companion, S. 4025, were prepared by the War Department.


111. Ibid., 6575. So that this shifting will not appear insincere, it should be noted that changes were made in some of the other provisions of these bills.


114. Cong. Rec., 76 Cong., 3 Sess., 6062. Though the bill differed somewhat from previous recommendations the changes were acceptable to, and favored by, the War Department. This bill was similar to H.R. 9822, which was originally applicable to the navy only but was amended to apply to the Army. (Ltr, Acting S/H Louis Johnson to Director of Bureau of Budget, 27 Jun 40, in AG 381, National Defense (6-26-40). For provisions of H.R. 9822 (Public No. 671), see Chap. III, this study.)

115. Public No. 703, 2 Jul 40; 54 Stat. 712. For other provisions, see below.

117. **Conc. Res., 75 Cong., 3 sess., 7252; S. Doc. No. 71; 76 Cong., 3 Sess.**

118. **H. Rept. No. 2497, 76 Cong., 3 sess., 2.**


120. **Public No. 667, 24 Jan 40; 54 Stat. 602.** It was expected that 3,000 planes would be procured with this sum but higher costs and the substitution of some combat for training planes reduced this number to 2,181. (House, Hearings on the Second Supplemental National Defense Appropriation Bill for 1941 (H.R. 10201; 130-31).) Frankly the only congressional controversy on this bill concerned the appropriation for research facilities. (See Chap. IV, this study.)

121. **Conc. Res., 76 Cong., 3 sess., 3850; S. J. Res. 275, 76 Cong., 3 sess.** This authority was to be granted under 50 U.S. Code Annotated 80, which dealt with procurement by the Executive during war or the imminent of war.

122. **Itr, Henry L. Stimson to A.J. Kay, 7 Oct 40, in H.C. 032 H, Legislation.** The President's authority also extended to the Navy until 15 May 1942 by Public No. 782, 76 Cong., 3 Sess.

123. **Conc. Res., 76 Cong., 3 Sess., 9433-34; H. Doc. No. 874, 76 Cong., 3 Sess.**

124. **House, Hearings on H.R. 10262, 154-55.**

125. **H. Rept. No. 2510, 76 Cong., 3 sess.; Conc. Res., 76 Cong., 3 sess., 9745.** During the hearings General Brehm pointed out that the award of contracts had been delayed by certain congressional action. He said he was ready to buy 4,000 planes but that industry would not sign contracts until it knew the effects of the possible repeal of the Wilson-Frumet Act. (House, Hearings on H.R. 10201, 76 Cong., 3 Sess., 252. See Chap. III, this study.)

126. **Ibid., 89-91.** William S. Knudsen, of the National Defense Commission, had indicated that the aircraft industry could meet the demands of the new procurement and that the expanded British procurement would not interfere with deliveries to the U.S. Army and Navy. (Conc. Res., 76 Cong., 3 sess., 9752.)

127. **S. Rept. No. 2014, 76 Cong., 3 sess.**

128. **Conc. Res., 76 Cong., 3 sess., 12115; Public No. 781, 9 Sep 40; 54 Stat. 872.**

129. **House, Hearings on Third Supplemental National Defense Appropriation Bill for 1941 (H.R. 10572); 76 Cong., 3 sess., 94.** The $65,000,000 did not include the second supplemental appropriation for 1941. Of the total appropriation of $65,000,000 for aircraft procurement, $293,000,000 had been obligated. (Ibid., 97.)

104. (Signed by G/S, in LLC 46-21-175, manufacture of airplanes.

105. Noted in Gen. Sec., 73 Cong., 3 sess., 4 Nov. 43, 20, somewhat indicative of the confusion and fluctuation with the following excerpt from a material division document: "The 1900 program is really 2000, the 3000 program is really 111. ... In 1933 program these early cut-offs, and that program also includes the 3000 goal, which cuts the 3000, but the 3000 has been reduced by 1933. The 1933 target reached by substituting 111 from 1900 in no. 111. ... From here the grand total of 20,000 has become 18,721. Check this (Summary of Air Corps Programs, ... in memo project records, no. 22, 20,000 program) the note had as its outstanding feature "avoidance of confusion" within the total number of various Air Corps programs.

106. Authorized present as return, aerial division, 73 Cong., 3 sess, material Div, 111. 15. In memo project records, no. 22, material of recurrent equipment and all Air Corps programs, basically, the present cut of 20,000 has been authorized, but because of lack of facilities, the present cut of 111 is deferred.

107. Notes for additional as, ODJO, 111, 12,800, technical sec, ... in memo project records, no. 22, ... in memo, this cut-off.

108. As for g/s, by 4/1, to 5/10, and vice versa, 4/1, to 5/1, as per, memo, 21 Apr 43, with memo, 12,81-178, additional of aircraft. It should be noted that the 12,800-plant program is over and above the 111,000-plant program, and the 2,000 plant provided for prior to the 111,000-plant program, on 30 June 1943.


110. Place, hearings, 77 Cong., 1 sess, 111, 20, 41, 77 Cong., 1 sess, 2, 18. The Air Corps plans were exactly as requested of the material on 3,000-plant programs were for initial construction. (see General, this study.)

111. As, acts, no. 10, 77 Cong., 1 sess; gen. no., 77 Cong., 1 sess, 2719.

112. Public no. 2, 1 Apr 41; 65, 66.

113. As for g/s, 5/6, 29 x 41, in memo project records, 6,32, the 12,000 airplane coming.

114. Said. The cost of the 12,000 planes was 2,000,000,000. They could not now be transferred. (Summarized Air Authority in One and Land-O-Matic, it had been 1,000,000,000 in transfer of articles already, considered.)

143. Memo for C/S, 21 Mar 41, ibid.


145. $1,201,951.973 of the cash was to pay prior contract obligations.

146. The remaining cash was for general operation and maintenance. Also provided was $45,035,000 for barrage balloons and necessary equipment. House, Hearings on Military Establishment Appropriation Bill for 1942 H.R. 4966, 77 Cong., 1 Sess., 17, 406.

147. Ibid., 752; H. Doc. No. 225, 77 Cong., 1 Sess.


149. Cong. Rec., 77 Cong., 1 Sess., 4301; H. Rep. No. 741, 77 Cong., 1 Sess. Representative Francis Goss (D.) believed the measure would provide the United States with a "big stick" so that she could "speak to the nations at war and ask them to stop this madness." (Cong. Rec., 77 Cong., 1 Sess., 4320.)

150. Senate, Hearings on H.R. 4966, 77 Cong., 1 Sess., 6-7.

151. Ibid., 44.

152. Ibid., 15-16.


154. It should be pointed out that the Air Corps had the privilege of shifting funds from one item to another in case it discovered that estimates had been excessive for one project and too low for another.

155. See above, p. 23.

156. This law placed the Air Corps plane strength at 6,000 and is still the "permanent" congressionally authorized number of aircraft. (For contract provisions of the act, see below, Chap. III.)


158. Memo for W/S by Col. W.F. Valandt, 28 May 41, in ... 400.12 H, Procurement Methods and Programs.

159. 1st Ind (to above memo), Maj. F.W. Bullock to C/S; Cong. Rec., 77 Cong., 1 Sess., 6190.


162. Ibid., 6293.


165. Ibid., 123. The Air Corps had originally estimated the costs of current procurement programs at $5,000,000,000 instead of the required $5,412,000,021. (Ibid., 125.)

166. Ibid., 127; H. Rept. No. 1470, 77 Cong., 1 Sess.

167. H. Rept. No. 994, 77 Cong., 1 Sess. The increase of $320,000,000 for Air Corps construction was chargeable to the War Department and not to the air arm.


169. Ibid., 9811, 10100; Public No. 353, 17 Dec 41.

170. Cong. Rec., 77 Cong., 2 Sess., 33-34; H. Doc. No. 301, 77 Cong., 1 Sess. The President also called for the production of 45,000 tanks in 1942 and 75,000 in 1943 as well as 8,000,000 and 10,000,000 dead-weight tons of shipping in 1942 and 1943, respectively. This program would require $56,000,000,000 for the coming fiscal year.

171. House, Hearings on Fourth Supplemental National Defense appropriation for 1942 [H.R. 5412], 77 Cong., 2 Sess., 2-3. The transfer of lend-lease materials to the value of $4,000,000,000 was included.

172. Ibid., 3-5.

173. Ibid., 12. The report of the Truman committee was criticized because virtually no information had been requested directly from the Air Corps.

174. Ibid., 5.


177. House, Hearings on Fifth Supplemental National Defense appropriation for 1942 [H.R. 5412], 77 Cong., 2 Sess., 72; H. Rept. No. 1750, 77 Cong., 2 Sess., 5. No aircraft material was included in the more than five-billion lend-lease appropriation.

179. H.R. 7280, 77 Cong., 2 Sess., 23 Apr 42; Public No. 474, 5 Apr 42. The House agreed to Senate amendments making the total appropriation $30,415,737,900.


182. Ibid., 40-41. Funds for 23,550 additional airplanes required to meet the President’s program were to be requested in the regular 1943 estimate.

183. Ibid., 104-05.

184. Ibid., 106.


186. Public No. 525, 23 Apr 42.

187. Charts in Budget and Fiscal, Air.


189. Ibid., 126; H. Rept. No. 2266, 77 Cong., 2 Sess., 4-5.

190. This was composed of members of the Army Air Forces, the U.S. Navy, the Royal Air Force, the British Air Ministry, and the War Production Board.


192. Ibid., 155, 205.


195. House, Hearings on Military Establishment Appropriation Bill for 1944 (H.R. 2990), 78 Cong., 1 Sess., 2. The exact number of planes was 99,740. (Senate, Hearings on H.R. 2990, 73 Cong., 1 Sess., 7.)
NOTES

Chapter II

1. 52 Stat. 707.

2. Ibid.

3. Army Ordinance, XX, No. 117 (Nov-Dec 39), 171.


6. Ibid., 471.


8. R&R, Plans Sec to C/AC, 1 Feb 39, in Plans Div files, AFSHO.

9. This amount, with the previously appropriated $2,000,000, would accomplish the enlarged program. The President in his message to Congress on 12 January 1939 had suggested "approximately $32,000,000" for educational orders. (Cong. Rec., 76 Cong., 1 Sess., 248.)


11. 46 Stat. 1494 (amended by 49 Stat. 1011); 49 Stat. 2096; 46 Stat. 945. In reply to a letter of 10 February 1939 from the Assistant Secretary of War the Acting Secretary of the Interior stated that his office had reached the conclusion that an educational order was not a "public work" as contemplated by the Bacon-Davis Act, and therefore neither the act nor the joint regulations by the Secretary of the Interior and the Secretary of the Treasury were applicable to such orders. (Ltr, H.K. Burlew to C/W, 15 Feb 39, in AAG 400-13 Special, Educational Orders.)


14. Public No. 18, 3 Apr 39; 53 Stat. 560. The $34,500,000 included the $2,000,000 previously appropriated for 1939.

15. Public No. 44, 26 Apr 39; 53 Stat. 595. This sum, as well as the earlier $2,000,000, was to be diverted from other funds.

196. The planes were to cost $13,865,726,361, while the spares would increase this by $335,117,059. (House, Hearings on H.R. 2526, 73 Cong., 2 Sess., 113.)

197. Ibid., 120.

198. Ibid.

199. Ibid., 60.

200. H. Rept. No. 566, 73 Cong., 1 Sess.; S. Rept. No. 3, 73 Cong., 1 Sess.; Daily Cong. Rec., 73 Cong., 1 Sess., 657; Public No. 103, 1 Jul 43; Appropriations for Air Corps items carried to other branches from 1940 to 1944, inclusive, were: 117,707,339; 31,293,522,915; 57,395,480,393; 45,343,913,155; and 12,636,542,562—total of $26,671,678,419. (House, Hearings on H.R. 2526, 73 Cong., 1 Sess., 113.)

201. The original estimate for fiscal year 1944 called for 99,740 aircraft to be accepted up to June 1945; this figure was later lowered to 76,456, not as might have been the case in earlier years, because it was impossible to procure the larger number, but because the smaller number could suffice. (Memo for Maj. Gen. QF. Echols and others by Maj. Gen. Kay, 23 Feb 44, in AAG 111,11, Estimates for Appropriations.)


203. The total appropriation for the military establishment was $49,349,023,700, of which amount $51,670,652,700 represented new funds and $32,078,571,000 a reappropriation of funds expected to remain unobligated as of 30 Jun 1944. In fiscal year 1944, $74,211,249,961 had been made available, and in the fiscal year 1943, $74,930,515,793. (House, Hearings on Military Establishment Appropriation Bill for 1945, H.R. 4967, 73 Cong., 2 Sess., 3.)

204. The following table gives a breakdown of these savings:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in requirements</td>
<td>$1,000,000,000</td>
</tr>
<tr>
<td>Reduction in prices from original estimates</td>
<td>$2,000,000,000</td>
</tr>
<tr>
<td>Reduction in fixed-price contracts</td>
<td>$300,000,000</td>
</tr>
<tr>
<td>Reduction in cost-plus-fixed-fee contracts</td>
<td>$1,500,000,000</td>
</tr>
<tr>
<td>Reduction in obligations due to terminations and cancellations</td>
<td>$2,700,000,000</td>
</tr>
<tr>
<td>Total estimated surplus to 30 June 1944</td>
<td>$9,000,000,000</td>
</tr>
<tr>
<td>Estimated recovery of funds in fiscal year 1945</td>
<td>$2,000,000,000</td>
</tr>
<tr>
<td>Total estimated surplus</td>
<td>$11,000,000,000</td>
</tr>
</tbody>
</table>

(Ibid., 29.)

205. The original estimate for fiscal year 1945 called for 60,345 aircraft; this figure was later reduced to 37,174 airplanes and 5,000 gliders. (Memo for General Echols and others from Maj. Kay, 23 Feb 44, and unsigned memo of 23 Jan 45, both in AAG 111, Estimates for Appropriations. House, Hearings on H.R. 4967, 73 Cong., 2 Sess., 296.)
206. Ibid., 297.
207. Ibid., 319.
208. Ibid., 295, 321. Ninety million of the $8,949,565,925 was for gliders.
209. Ibid., 286.


211. Public No. 126, 75 Cong., 1 Sess., 12.


213. Senate, Hearings on Military Establishment Appropriation Bill for 1946 H.R. 3550, 75-64. This sum included $300,000,000 for new functions and activities transferred to the AAF from the Signal Corps, the Corps of Engineers, and the Transportation Corps. (Ibid., 67); House, Hearings on Military Establishment Appropriation Bill for 1946 H.R. 3550, 170.

214. House, Hearings on Military Establishment Appropriation Bill for 1946 H.R. 3550, 170. The following table gives a breakdown of A.F. requirements for fiscal year 1946:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Equipment</td>
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</tr>
<tr>
<td>Supplies</td>
<td>1,100,000,000</td>
</tr>
<tr>
<td>Personnel</td>
<td>545,000,000</td>
</tr>
<tr>
<td>Contractual services</td>
<td>400,000,000</td>
</tr>
<tr>
<td>Travel and transportation</td>
<td>67,000,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$5,912,000,000</td>
</tr>
</tbody>
</table>

(Ibid., 177.)

215. Ibid., 190. This figure is to be compared with something over eight billion in 1944 and fourteen and one-half billions in 1944. The number of airplanes to be procured is not given here because production schedules were changed so frequently that it would be almost impossible to determine which figure should be used.

216. Tab A to weekly activity reports of AFD for 4 Nov and 9 Dec 43; 8 Apr and 6 May 44; Tab A to memos for C/AS by AFD for 43 and 13 Nov 43, in AFD files. Items 9 to 12 inclusive are from daily activity reports of CCC for 1, 3, 13 May, 10 Jun, 17 Jul, 16 Sep, 6 Dec 44, and 9 Mar 45. Item 13 was taken from Statistical Control Aircraft Inventory.


43. 54 Stat. 603, 874; Senate, Hearings on H.R. 10055, 76 Cong., 3 Sess., 4, 86-87; House, Hearings on H.R. 10262, 76 Cong., 3 Sess., 156. Of the $93,400,000 allotted to the Air Corps for H.R. 10055, none had been released by the President on 19 September 1940. (Ltr, Gen. Brett to Asst Chief, Materiel Div, 19 Sep 40, in AAG 112.41, Allotments.)


47. Ltr, William S. Knudsen to Gen. Arnold, 8 Nov 40; and memo for Gen. Brett by Gen. Arnold, 9 Nov 40, both ibid.
48. The British wanted more bomber production also but were unwilling to put more money into an increase of facilities. If both British and American demands were to be met, the only possibility lay in the creation of new facilities. (Memo for S/N by O/AG, 28 Oct 40, in AAG 452.1-17G, Manufacture of Airplanes.)

49. Memo for the President by Robert P. Patterson, 16 Nov 40, in Lyon Project Records, No. 48, Government-Owned Factories. On 15 October 1940 the Automobile and Truck Manufacturers had adopted a resolution "offering automotive industry facilities for mass production of standardized airplane body parts." (Copy in same file.) The utilization of these facilities—with subsequent complete conversion of many—was a vital factor in attaining the Air Corps goal.


51. Memo for Dir. of Bureau of the Budget by Robert P. Patterson, 8 Dec 40, in Lyon Project Records, No. 42-B, Miscellaneous Memoranda for the Assistant Secretary of War.

52. House, Hearings on H.R. 4124, 77 Cong., 1 Sess., 172.


54. House, Hearings on H.R. 4124, 77 Cong., 1 Sess., 24. By the beginning of 1941 the War Department had allowed the Air Corps $287,480,000 of the $316,275,000 appropriated for expediting production. (Memo for O/S by Maj Gen J.H. Burns, 6 Jan 41, in AAG 112.4A, Allotments.)

55. Memo for Maj B.R. Vaughan, Price Administration Br, SOS by Lt Col C.H. Dyson, Budget Off, Materiel Cmd, 23 Dec 42, in AAG 004, Commercial Enterprises ... Projects. There were also 12 modification centers which were government-owned and privately operated. There were no government-owned and government-operated plants, nor privately owned and government-operated plants.


59. Public No. 474, 5 Mar 42.

60. House, Hearings on H.R. 2996, 78 Cong., 1 Sess., 9, 562. The total requested for the OS/N was $1,314,147,000, but $565,147,000 was carried over from the previous year.
01. N. 1945 44, 50, 70, 80, 1946 1, 2, 3.

02. Soldier 1946 1947 70 46, 57 50.


Chapter III

1. Mr. J. R. Coast to 105 or 110,发财, [text unclear, possibly a measurement or instruction]

2. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

3. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

4. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

5. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

6. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

7. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

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9. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

10. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

11. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

12. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

13. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]

14. Mr. J. R. Coast to 105,发财, [text unclear, possibly a measurement or instruction]
15. Ltr, H.M. Woodring to chairman of House and Senate military affairs committees, 10 Mar 39, ibid.


17. Public No. 16, 3 Apr 39, 53 Stat. 560. The profit limitation provision of this bill delayed the placing of contracts for several types of aircraft. (T.2, Chief, Materiel Div to G/C, 29 Mar 39, in AAG 032 K, Legislation.)

18. Draft in Plan Div files, AAFHQ. This was not to be construed as in "any way amending" the Act of 2 July 1926 or as authorizing the open market purchases of airplanes for purposes other than as provided in that act. The bill had been drafted in collaboration with the Chief of the Air Corps and called attention to the fact that the chiefs of Ordnance, Chemical Warfare Service, and Signal Corps already had this authority by 35 Stat. 125 and 49 Stat. 1277.


20. Cong. Rec., 76 Cong., 1 Sess., 737, 741. This measure did not provide for negotiated contracts for quantity procurement.


23. The Air Corps was allowed, by the Act of 2 July 1926, to procure experimental craft on a secret basis, but when it came to quantity procurement of an acceptable plane, competitive bidding was compulsory, thus divulging Air Corps developments.


25. Comment 2, A/R, Plan Div to Exec, 16 Feb 40; and Comment 3, Exec to Materiel Div, 16 Feb 40, both in file cited above.

26. See tab on emergency procurement authority in AAG 321.9, Bulk, General Arnold's Book.

27. Ltr, Louis Johnson to Franklin D. Roosevelt, 10 Jul 39, in AAG 452.1-125, Purchase of Airplanes.

28. Cong. Rec., 76 Cong., 1 Sess., 8759. The profit limitation clause was included.

29. Ibid., 9460.

32. Cong. Rec., 76 Cong., 1 Sess., 9787; S. Rept. No. 979, 76 Cong., 1 Sess. Amendments to this bill were the same as those to the House proposal.
33. Cong. Rec., 76 Cong., 1 Sess., 10668, 10733.
34. Ibid., 1079-1080; Public No. 420, 5 Mar 40; 54 Stat. 45.
37. Memo for AE/II by asst C/AC, 10 Apr 40, and memo for Gen. Arnold, unsig., 4 Mar 40, both in ACG O32, Legislation. The latter document cites the memo of the Secretary of War to Representative Coburn.
40. Cong. Rec., 76 Cong., 3 Sess., 6668, 3822-31; H. Rept. No. 2706, 76 Cong., 3 Sess.; 54 Stat. 679. The authority for negotiation of contracts was not extended to the Secretary of War, and the above provisions were to expire on 30 June 1942.
41. Cong. Rec., 76 Cong., 3 Sess., 6579, 6667. S. 4025, a similar bill, was introduced in the Senate on 22 May and was reported the same day. (Ibid., 5532; S. Rept. No. 1649, 76 Cong., 3 Sess.)
42. Ibid.
43. Ltr. Louis Johnson, Acting S/II, to Dir. of the bureau of the Budget, 27 Jun 41, in AI 381, National Defense (6-25-40); 54 Stat. 712. The Acting S/II said he was not inimical to the provisions of H.R. 9822.
44. Contracts for less than $500,000, and not of the cost-plus-a-fixed-fee type, needed only the approval of the chief of the supply arm or service concerned. (Memo for C/AC et al. by Col. J. H. Schulz, 2 Jul 40, in ACG O32, Legislation.)
45. American Aviation Daily, x, No. 4 (5 Jul 40), 17.
47. Senate, Hearings on H.R. 10263, 76 Cong., 3 Sess., 74.


50. See above, Chap. 1, p. 33, for congressional history of H.R. 4470.

51. Memo for US/FR by Col. W.F. Volandt, Asst. to Chief, Materiel Div, 23 May 41, in AAG 400.12a, Procurement Methods and Programs.

52. Public No. 139, 30 Jun 41; 55 Stat. 360. S. 1605, introduced on 5 June 1941, provided for the extension to 30 June 1943 of Public No. 426 of 5 March 1940. This measure passed the Senate but died in the House Committee on Military Affairs. (Cong. Rec., 77 Cong., 1 Sess., 4724, 5732.)

53. Ibid., 77 Cong., 2 Sess., 5042. One other item, not directly concerning War Department authority, should be mentioned here. The provision (Section 4) of Public No. 671, 23 June 1940, was not very clear regarding the amortization of facilities furnished by the aircraft industry between the declaration of an emergency on 8 September 1939 and 10 June 1940. This vagueness was a cause of contention (regarding taxation) on the part of Army and Navy aircraft contractors. At the urging of the War and Navy departments certain modifications were made, although 10 June 1940 was retained as the determining date for "emergency facilities." (Public No. 801, 8 Oct 40; 54 Stat. 974. See also 53 032, Legislation.)


56. Ltr, Henry L. Stimson to Norris Sheppard, 30 Sep 40, AAG 032, Legislation.

57. Other measures in 1941 that did not pass beyond the committee stage were: H.R. 1615 (3 Jan) dealing with design procurement and opposed by the Air Corps; H.R. 1775 (10 Jan); H.R. 4945 (3 Jun); and H.R. 6209 (12 Dec).

58. Cong. Rec., 77 Cong., 1 Sess., 9828, 9856, 9861, 9862, 9863, 9895, 10072, 10100; Public No. 354, 18 Dec 41; 55 Stat. 833. In the Senate H.R. 6233 was substituted for S. 2129 which was also introduced 15 December 1941. The Second War Powers Act, Public No. 507 of 27 March 1942, contained no provision relative to Army contracts but extended the authority of the Secretary of Navy to negotiate contracts for aircraft and other materiel. (56 Stat. 176.)
59. Public No. 528, 28 Apr 42; 56 Stat. 226, 244-45. These provisions were also applicable to all subcontracts of $100,000 or more.


63. Memo for Asst Chief, Materiel Div by Col. W. F. Volandt, 3 Jan 42, in AAG 400.12, Procurement Methods and Programs.

64. WD Circular No. 59, 2 Mar 42.

65. Robert P. Patterson, US/W to CG Materiel Command CG SOS, 9 Apr 42, in AAG 300.8, Procurement Regulations. See also AAG 400.12, Procurement Methods and Programs.
NOTES

Chapter IV


3. Comment 7, R&R, Col. R.B. Lincoln to C/AC, 26 Jan 39; and Comment 9, Capt. E.H. Snodgrass to C/AC, 7 Feb 39, both in file cited above. The Patent Section, it should be noted, was the antecedent of the office of the Judge Advocate.

4. Cong. Rec., 76 Cong., 1 Sess., 2440; S. 1738, in the Senate, 9 Mar 39. The bill also provided for the establishment of a Bureau of Mines research station and a Military Aeronautical School in the same locale as the engineering center.


6. Senate, Hearings on S. 1738, 76 Cong., 1 Sess. Only one witness, Willis G. Valdo, a consulting engineer, was heard.

7. Cong. Rec., 76 Cong., 1 Sess., 3078; ibid., 77 Cong., 1 Sess., 1052; ltr., S/W to Norris Sheppard, 7 Mar 41, in Plans Div file 032, Legislation Proposed for AC. H.J. Res. 177 of 20 February 1939 also would have provided for an engineering center. (Cong. Rec., 76 Cong., 1 Sess., 1646.) It, too, was opposed by the War Department.

8. House, Hearings on an Adequate National Defense, 76 Cong., 1 Sess., 6, 19, 24-26, 28, 72; Senate, Hearings on H.R. 3791, 76 Cong., 1 Sess., 19, 39, 51, 78, 30-31. The sum of $5,000,000 was given to the Air Corps for research and development during fiscal year 1940. General Arnold stated that this amount would be spent primarily toward the development of high-speed combat planes and their equipment, but he held that this was not enough. In discussing the $1,000,000 reduction by the Bureau of the Budget, Representative Ross A. Collins (Miss.) noted that once an extra $1,000,000 had been given and the B-17 had been developed. (House, Hearings on H.R. 4630, 76 Cong., 1 Sess., 284, 314, 317-18; H. Rept. No. 112, 76 Cong., 1 Sess.; S. Rept. No. 215, 76 Cong., 1 Sess.; Public No. 44, 26 Apr 39; 53 Stat. 592.)
9. Public No. 534, 23 May 38; 52 Stat. 420. The total cost of the tunnel was not to exceed $540,000.


11. House, Hearings on Second Deficiency Appropriation for 1939, H.R. 4219, 76 Cong., 1 Sess., 82-30, 34, 40. Also requested was $6,000,000 contractual authority.

12. Ibid., 78.


14. Ltrs, Gen. Arnold to Joseph S. Ames, Chairman, N.C., 23 Mar 39, and Rear Adm. W.B. Cook to J.S. Ames, 23 Mar 39, both in Senate, Hearings on H.R. 5219, 76 Cong., 1 Sess., 30. In a memo to the Adjutant General on 14 April the Air Corps pointed out that rapid strides in aviation made aircraft obsolete more quickly and stressed that "the rate of depreciation must parallel the intensity and progress of research and development." (Memo for AG by C/AS, 14 Apr 39, in Plans Div file 121.2, Estimates by 1941.)


16. H. Rept. No. 510, 76 Cong., 1 Sess.; Cong. Rec., 76 Cong., 1 Sess., 6357; Public No. 61, 2 May 39; 53 Stat. 628. The Air Corps had requested $1,250,000 of which $600,000 was to be used for experimental and research work on rotary-wing and other aircraft as authorized by Public No. 787 of 30 June 1938. The "other" aircraft referred primarily to "slow flying" planes. Only $300,000 of the requested $600,000 was allowed and this could be expended only on rotary-wing craft. (House, Hearings on H.R. 5219, 76 Cong., 1 Sess., 485-87; 53 Stat. 641.)


18. Ibid., App. 1417.


20. Ibid., 25-27.

21. Ibid., 31-32.


24. The Air Corps laboratory at Wright Field engaged in applied military research, while the minor facilities at educational institutions were for applied production research. It should be noted that the NACA was composed of 15 members—civilians and Army and Navy officials—and had since its establishment in 1915 engaged in research for the Army, Navy, and aircraft industry.

25. Draft 2d ind (basic unknown), OCAC to AG, 22 May 39, in AAF 032, Legislation. The bill remained in committee.


29. Cong. Rec., 76 Cong., 1 Sess., 6036.

30. Ltr. S/W to A.J. May, n.d., in Plans Div file 032, Legislation Air Corps. The Bureau of the Budget had advised that this project would not be in accord with the program of the President.


32. Ltr. S/W to A.J. May, as cited in n. 28.

33. Cong. Rec., 76 Cong., 1 Sess., 10830; H. Rept. No. 1439, 76 Cong., 1 Sess., 28. Also requested and granted was an additional $109,020 for personnel services.


35. Ibid., 144-45. Representative Jennings Randolph appeared before the committee and strongly supported the increase of research facilities. (See ibid., 721-22.)


38. H. Rept. No. 1515, 76 Cong., 3 Sess.; Cong. Rec., 76 Cong., 3 Sess., 510, 1217, 4889; Public No. 469, 18 Apr 30; 54 Stat. 124. On 18 February 1940 Frazier Hunt stressed the importance of more money for air research. (This Week, 18 Feb 40, quoted in Cong. Rec., 76 Cong., 3 Sess., App. 491-95.)
39. This committee was composed of Charles A. Lindbergh (chairman), Maj. Gen. H.H. Arnold, Rear Adm. John H. Towers, and Robert H. Hinckley (Col.).


42. This was the name given to the California laboratory in honor of the former Chairman of MAC, Dr. Joseph Ames.


45. House, **Hearings on H.R. 5166**, 77 Cong., 1 Sess., 93.


47. Dr. Vannevar Bush had been designated head of the Office of Scientific Research and Development which was to mobilize the scientific talent of the country on non-aeronautical matters. The O.S.R.D. confined itself to aeronautical research. The O.S.R.D., however, did some research on Air Corps problems. Among Air Corps projects being worked on by the National Defense Research Committee (a subsidiary of the O.S.R.D.) were oxygen generators, train-bomb calculators, "Heat sensitive, target-seeking bomb's," testing machines for fire-control devices and systems, and hydrodynamics. (See Research and Development Projects of the Engineering Division, Air Materiel Command, 1 Jun 44, pp. 73-77, in which.)


49. Public No. 630, 27 Jun 42; Public No. 528, 23 Apr 42; 56 Stat. 290, 292.


54. Ibid., 1540-41; H. Rept. No. 822, 78 Cong., 1 Sess., 29-30, 58; Public No. 216, 23 Dec 43; 57 Stat. 611.
55. H.R. 4070, 75 Cong., 2 Sess., 30. This was the amount recommended by the Bureau of the Budget and the House Committee on Appropriations. In the Senate an item of $1,300 for the purchase of two automobiles was struck out, bringing the total down to $23,218,530. (H. Rept. No. 1053, 75 Cong., 2 Sess., 24; S. Rept. No. 730, 75 Cong., 2 Sess., 9.)


57. H.R. 3374, 76 Cong., 1 Sess.

58. H.R. 1984, 75 Cong., 1 Sess.

59. Ibid., 40. The Bureau of the Budget had recommended an appropriation of $20,000,000; but the House Committee on Appropriations deleted $607 from the item for penalty mail. (H. Rept. No. 54, 75 Cong., 1 Sess., 10.)

60. Ibid.


63. House, Hearings on H.R. 2959, 76 Cong., 3 Sess., 491-92, 494. The Air Corps had received $4,342,069 in 1938, $3,549,662 in 1939, and $10,000,000 in 1940 for experimental and research activities. (Ibid., 512.)


65. House, Hearings on H.R. 10055, 76 Cong., 3 Sess., 79. This amount was over and above that for the H.C. engine laboratory. (Ibid., 43.)


70. Ibid., 475.


76. House, Hearings on H.R. 2996, 78 Cong., 1 Sess., 121, 144.


84. H.R. 2012, 79 Cong., 1 Sess., 1.

85. H.R. 3440, 79 Cong., 1 Sess., 2.


87. Ltr., S/W to Chairman, House Committee on Interstate and Foreign Comm. 15 Nov 44, in AAG 032, Legislation.
NOTES

Chapter V


3. Agreement between State Dept and War and Navy Deps, 9 and 30 Nov 34 and 6 Dec 34, mentioned in ltr from Sec of State to Sec of Navy, 13 Sep 35, in AIG 452.1, Sale . . . Abroad.

4. AG No. 510.1 (Case No. 67), 3 Sep 35, in same file. If a plane had no "strictly novel feature," it could be released for export "at an early date" before the lapse of 12 months.


7. Cong. Res., 76 Cong., 1 Sess., 804; H.R. 3221, in the House, 25 Jan 39. The bill was introduced "by request."


11. Cong. Res., 76 Cong., 1 Sess., 2143. There was not enough difference in the replies of various areas to draw any conclusion as to the more decided opposition of any one section of the country.


19. Cong. Rec., 76 Cong., 3 Sess., 6695-96. On 18 March 1940 Representative Carl Vinson (Ga.) submitted to the House a letter from the Secretary of the Navy in which he states that sale of aircraft were noted. The Secretary pointed out that this sale had not interfered with the Navy's procurement program; in at least one instance, earlier Navy deliveries had resulted, and there was evidence that the cost of aircraft had been reduced. (Ibid., 3005.)

20. Ibid., App. 355-56.

21. Ibid., 2785.


27. Cong. Rec., 76 Cong., 3 Sess., 4643. The P-40's which were deferred in favor of the Allies had been ordered by the British in the summer of 1939. (Memo for Merrill C. Meigs, Chief, Aircraft Br, OPM by Gen. Arnold, 19 Mar 41, in AAG 452.1-3295 #/1, Sale . . . Abroad.)


34. Ibid., 1757.

35. Ibid.

36. Proportion of Acceptance Deliveries of Airplane Engines by Customer...Jan.-July 1940, Material Planning Sec., Material Div., 29 Aug 40, in Lyon Project Records, No. 10, Foreign Sales; Summary of Imports...10 Oct 40, in PUB 452,1-3295, Sales...Abroad.

37. Senate, Hearings on H.R. 10263, 76 Cong., 3 sess., 39-50. Public No. 671 of 23 June 1940 doubtless had something to do with this stoppage.

38. Memo for H.R. C, 17 Sep 40, in PUB 452,18, tule...Abroad.


42. See New Plants [H.R. 447], in Lyon Project Records, No. 56, Appropriations.

43. Cong. Rec., 77 Cong., 1 sess., 46.

44. Ibid., 121.


46. House, Hearing s on H.R. 4020, 77 Cong., 1 sess.; H. recpt. No. 276, 77 Cong., 1 sess.; Cong. Rec., 77 Cong., 1 sess., 3079; Public No. 23, 27 Mar 41; 55 Stat. 53; memo for H.R. 4 by Lt. Col. M. B. Ferrell, n.d., in Lyon Project Records, No. 63, Lend-Lease Administration; memo for D6/S by H.R. 1, 1 Jul 41, in PUB 331,314, Materials for War, Lend-Lease. The largest single item was for air material; the total appropriation was $7,000,000.00.

48. House, Hearings on H.R. 5449, 77 Cong., 2 Sess., 3, 14; H. Rept. No. 1659, 77 Cong., 2 Sess., 4-5; Public No. 422, 30 Jan 1942. The fifth supplemental appropriation for 1942 carried over five billion dollars for lend-lease, but none of it was for aircraft items.


50. Ltr, Gen. Arnold to Gen. Royce, 22 Oct 41, in AAG 452.1 C, Sale ... Abroad. General Royce at that time was military attaché in London.


53. Public No. 649, 2 Jul 42; 56 Stat. 611. It should be pointed out that the supplemental defense aid appropriation for 1943 carried no funds for air materiel. (See House, Hearings on H.R. 2753, 78 Cong., 1 Sess.; H. Rept. No. 464, 78 Cong., 1 Sess.)


56. For a full discussion of lend-lease, see Edward R. Stettinius, Jr., Lend-Lease: Weapon for Victory. See also the quarterly reports to Congress by the President on the progress of lend-lease.
BIBLIOGRAPHY

Official Publications

Congress:

Congressional Record. 75 Congress, 1 Session--77 Congress, 2 Session.
Daily Congressional Record. 78 Congress, 79 Congress, 1 Session.

House of Representatives:
Bills
Documents
Hearings
Reports

Senate:
Bills
Documents
Hearings
Reports


United States Statutes at Large.

The above materials constitute the principal published sources for this study. Most significant among these are the House hearings on the military establishment appropriation bills. The hearings and reports frequently shed much light on the cause and effect of events and legislation that are not to be found in any other place. The debates and proceedings are relatively unimportant from the standpoint of understanding the measures but, of course, are significant for expressions of opinions, for newly raised issues, and for material on bills on which no committee hearings were held.

Central Files

Army Air Forces (cited as AAF):
004 Commercial Enterprises... Projects
032 Legislation

168
These files contain vital as well as much trivial material on the legislative history of materiel legislation, including background, effects, and administration.

War Department (Adjutant General):

AG 511 (5-30-39) Misc. D
AF 531 National Defense (6-26-40)
AG 452 (3-27-40) M-OGS-M, 29 March 1940

Incidental information for this monograph.

Office Files

Air Historical Office:

Files of the Plans Division, OCAC

These contain the background of, and Air Corps reaction to, much of the legislation up to 1941.

Army Air Forces Historical Studies:


No. 16, Legislation Relating to the AAF Personnel Program, 1939-May 1944.

These two studies treat other portions of some of the acts discussed in this monograph and are helpful in relating the training, personnel, and materiel programs to one another.
Weekly Activity Reports of Management Control, 4 Nov. 1943-6 May 1944.

The statistical portion of these reports indicates the progress and degree of completion of the various material programs authorized by Congress.

Daily Activity Reports of AFDAC, September 1943 through June 1945.

AC/AS, Materiel and Services:

Lyon Project Records

This set of records kept by the Technical Executive of the Materiel Division covers many phases of the materiel program up to 1941. The most helpful numbers for this study were:

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<td>Industrial Planning and Educational Orders</td>
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<td>Memoranda, Chief of Staff</td>
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<td>Miscellaneous memos for the Assistant Secretary of War</td>
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<td>48</td>
<td>Government-Owned Factories</td>
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<td>56</td>
<td>Procurement Data</td>
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<td>58</td>
<td>Summary of Procurement Requirements and all Air Corps Programs</td>
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<td>62</td>
<td>The Army 12,000 Airplane Program</td>
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<td>Appropriations</td>
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<td>Foreign Sale Procedure, War Department Authorizations</td>
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Budget and Fiscal, AAF:

Charts kept in this office were helpful in determining the breakdown of the appropriations and in showing the action of various War Department agencies on Air Corps appropriation requests.

Newspapers

Army-Navy Journal, 14 Jan. 1940
Atlanta Constitution, 17 May 1940
Boston Herald, 16 May 1940
Chicago Daily News, 13 May 1940
Chicago Daily Tribune, 17 May 1940
Cleveland Plain Dealer, 13 Jan. 1939
Denver Post, 10 July 1940
Des Moines Register, 10 July 1940
Hartford (Conn.) Times, 19 Sept. 1940
New Orleans Times-Democrat, 14 Jan. 1939
New York Times, 13 April 1939, 13 March 1940
Philadelphia Record, 16 May 1940
Portland Oregonian, 13 Jan. 1939, 16 May 1940
St. Louis Post-Dispatch, 16 May 1940
Washington Daily News, 28 May 1940, 11 June 1940
Washington Evening Star, 16 April 1939
Washington Post, 4 April 1940
Washington Times-Herald, 4 April 1940

Important in ascertaining public reaction to governmental activities.

Magazines

American Aviation Daily, X, No. 4, 5 July 1940

Army Ordnance, X, Nos. 117 and 118 (Nov.-Dec. 1936 and Jan.-Feb. 1940)

This Week, 18 Feb. 1940

Of minor importance to this study.

Publications

Final Report of War Department Special Committee on Army Air Corps
(War Board, July 13, 1934, Washington, 1934.

Relevant to this study only for its recommendation of the 2,320-plane program.

International Traffic in Arms (Dept. of State Publication No. 1407).

7th edition, 1940.

Sets forth the policies governing sale of munitions abroad.


A good analysis of the background and workings of the lend-lease system.
Appendix 1

APPROPRIATIONS FOR ARMY AIR CORPS FOR FISCAL YEARS 1926-1939*

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Requested by Air Corps</th>
<th>Approved by Secretary of War</th>
<th>Approved by Bureau of the Budget</th>
<th>Appropriated by Congress</th>
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<tbody>
<tr>
<td>1926</td>
<td>$25,000,000</td>
<td>$16,115,043</td>
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<tr>
<td>1927</td>
<td>$23,644,000</td>
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<td>$18,900,000</td>
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<tr>
<td>1928</td>
<td>$25,869,065</td>
<td>$22,789,050</td>
<td>$21,396,300</td>
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<tr>
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<td>$36,556,028</td>
<td>$31,604,585</td>
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<td>$71,990,965</td>
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<tr>
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<td>$26,818,560</td>
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<tr>
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<td>$36,020,400</td>
<td>$34,037,409</td>
<td>$24,450,255</td>
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<td>1936</td>
<td>$77,335,245</td>
<td>$52,702,300</td>
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<tr>
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<td>$62,380,747</td>
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<td>1938</td>
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<td>$60,292,214</td>
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<tr>
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<td>$99,142,144</td>
<td>$72,556,972</td>
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<tr>
<td>Total</td>
<td>$735,813,254</td>
<td>$588,741,167</td>
<td>$497,809,314</td>
<td>$519,896,253</td>
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a. Plus $2,250,000 to care for 1926 contract authorization.

b. The Air Corps requested $17,772,563 supplemental; the Secretary of War approved $2,111,992, but no further action was taken.

c. Plus $5,500,000 to care for 1929 contract authorization.

d. Secretary of War approved a supplemental request of $5,992,536, but no further action was taken.

e. Plus $2,250,000 for 1929 contract authorization.

f. Includes $3,000,000 contract authorization for aircraft, spare engines, and spare parts.

g. Includes $7,666,753 contract authorization.

h. Includes $10,669,786 contract authorization.

i. Includes $19,126,894 contract authorization.

j. Includes $19,126,894 contract authorization.

* Figures from chart in Budget and Fiscal Office, AAF. These figures do not include funds to pay previous contract authorization.
### Appendix 2

**AVERAGES FOR THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS, FISCAL YEARS 1939 - 1946**

<table>
<thead>
<tr>
<th>Date</th>
<th>Appropriations</th>
<th>Contract Authorizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Apr. 1940</td>
<td>13,601,910</td>
<td>8,900,000</td>
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<tr>
<td>6 May 1941</td>
<td>14,264,000</td>
<td>7,393,900</td>
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<tr>
<td>3 June 1941</td>
<td>17,587,900</td>
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<tr>
<td>1 Aug. 1941</td>
<td>17,340,910</td>
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<td>27 June 1942</td>
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<tr>
<td>2 Aug. 1942</td>
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<tr>
<td>29 Apr. 1942</td>
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<tr>
<td>2 Jul. 1942</td>
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<tr>
<td>2 July 1943</td>
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</tr>
<tr>
<td>29 Apr. 1943</td>
<td>17,287,900</td>
<td>8,900,000</td>
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<tr>
<td>27 July 1944</td>
<td>17,287,900</td>
<td>8,900,000</td>
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<tr>
<td>25 Dec. 1944</td>
<td>22,323,900</td>
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<tr>
<td>27 May 1945</td>
<td>26,014,900</td>
<td>8,900,000</td>
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</tbody>
</table>

**Total Appropriations for the National Advisory Committee for Aeronautics, Fiscal Years 1939 - 1946**

$167,693,564

**Total Contract Authorizations**

$25,616,520

**Public No.**
Appendix 3

EXCERPTS FROM U.S. STATUTES CONCERNING
AIR MATERIEL LEGISLATION, 1939-1944

Section 1 of Public Law Number 18, 3 April 1939 (53 Stat. 555-56).

Be it enacted, ... That the Act approved June 24, 1936 (49 Stat. 1907), is hereby repealed. Section 8 of the Act of July 2, 1926 (44 Stat. 780), is hereby stricken out and the following is substituted in lieu thereof:

"SEC. 8. The Secretary of War is hereby authorized to equip and maintain the Air Corps with not to exceed six thousand serviceable airplanes, and such number of airships and free and captive balloons as he may determine to be necessary for training purposes together with spare parts, equipment, supplies, hangars, and installations necessary for the operation and maintenance thereof; and there is hereby authorized to be appropriated for such purposes an amount not exceeding $300,000,000 together with such annual appropriations as may be necessary to maintain such air force. In order to maintain the number specified above, the Secretary of War is hereby authorized to replace obsolete or unserviceable aircraft from time to time:

Provided, That the total number of airplanes and airships herein authorized shall be exclusive of those awaiting salvage or undergoing experiment or service tests, those authorized by the Secretary of War to be placed in museums, and those classified by the Secretary of War as obsolete: And provided further, That the total number of airplanes authorized in this section shall include the number necessary for the training and equipment of the National Guard and the training of the Organized Reserves as may be determined by the Secretary of War."

Section 1 of Public Law Number 611, 13 June 1940. An Act Making appropriations for the Military Establishment for the fiscal year ending June 30, 1941, and for other purposes. (54 Stat. 366).

Provided further, That this appropriation may be expended without reference to the limitation contained in section 1 of the Act approved April 3, 1939 (Public, Numbered 18, Seventy-sixth Congress), as to the number of airplanes to be procured and maintained. . . .

Section of Public Law Number 703, 2 July 1940. An Act to expedite the strengthening of the national defense. (54 Stat. 713).

SEC. 3. All existing limitations with respect to the number of serviceable airplanes, airships, and free and captive balloons that may be equipped and maintained shall be suspended during the fiscal year 1941.
Section of Public Law Number 139, An Act Making appropriations for the Military Establishment for the fiscal year ending June 30, 1942, and for other purposes. (55 Stat. 379).

Provided further, That this appropriation may be expended without reference to the limitation contained in section 1 of the Act approved April 3, 1939 (Public, Numbered 16, Seventy-sixth Congress), as to the number of airplanes to be procured and maintained. . . .


SEC. 13. That the provisions of section 1 (a) and 1 (b) of the Act entitled "An Act to expedite the strengthening of the national defense", approved July 2, 1940 (Public, Numbered 703, Seventy-sixth Congress), are hereby continued in effect and made applicable to moneys appropriated for the War Department for national defense purposes during the period prescribed in section 16 of this Act. . . .

SEC. 14. All existing limitations with respect to the number of serviceable airplanes, airships, and free and captive balloons that may be equipped and maintained are suspended. . . .

SEC. 15. The provisions of this Act shall remain in force during the continuance of the present war and for six months after the termination of the war, or until such earlier time as the Congress by concurrent resolution or the President by proclamation may designate.

Public Law Number 639, 16 June 1939, An Act to provide for placing educational orders to familiarize private manufacturing establishments with the production of munitions of war of special or technical design, noncommercial in character. (52 Stat. 707-708).

Be it enacted, . . . That the Secretary of War is hereby authorized to place educational orders for munitions of war of special or technical design, or both, noncommercial in character (hereinafter called "special munitions"), and essential accessories and parts thereof needed in the military service, with commercial concerns to familiarize commercial end manufacturing establishments with the manufacture of such munitions and such accessories and parts. In arranging for placing such educational orders, bids shall be solicited only from such establishments as, in the Secretary's judgment, will be competent in time of war to manufacture the particular class of special munitions with respect to which the bid is solicited. In the determination of which classes of special munitions are to be manufactured under this Act, and in the determination of which of the solicited bidders is to be awarded any contract, the Secretary shall have regard solely to the selection of such classes of special munitions and of such bidders as will, in his judgment, under all the circumstances, best serve the interest of the United States and best promote the cause of national defense. The Secretary of War shall enter into no contract under this section without the approval of the President.
SEC. 2. That the first of any such educational orders placed with any person, firm, or corporation for supplying any such munitions, accessories, or parts, may include a complete set of such gages, dies, jigs, tools, fixtures, and other special aids and appliances, including drawings thereof, as may be required for the production of such munitions, accessories and parts in quantity in the event of an emergency. The title to all such facilities shall remain in the Government of the United States.

SEC. 3. That not more than one such educational order for the manufacture of the same, or substantially the same, article of special munitions shall be given to the same person, firm, or corporation within any period of three successive years. This section shall not prohibit the awarding of any contract during any war in which the United States is engaged.

SEC. 4. That, to carry out the provisions of this Act, there is authorized to be appropriated the sum of $2,000,000 during each of the five fiscal years beginning with the fiscal year during which this Act is enacted.

Section 13 of Public Law Number 19, 3 April 1939. (53 Stat. 560).

SEC. 13. That section 4 of the Act approved June 16, 1938, entitled "An Act to provide for placing educational orders to familiarize private manufacturing establishments with the production of munitions of war of special or technical design, noncommercial in character", be amended to read as follows:

"SEC. 4. That funds appropriated to accomplish the purposes of this Act shall be available for expenditures incidental to the accomplishment of the procurements made thereunder, including production studies, factory planes, and other production data and the storage and maintenance of gages, dies, jigs, tools, fixtures, and other special aids and appliances procured thereunder. To carry out the provisions of this Act there is authorized to be appropriated the sum of $34,600,000, which amount shall be available during the fiscal years 1939, 1940, and 1941, and there is further authorized to be appropriated the sum of $2,000,000 during each of the four fiscal years succeeding the fiscal year 1941."

Public Law Number 168, 13 July 1939, An Act to authorize the procurement, without advertising, of certain aircraft parts and instruments or aeronautical accessories, and for other purposes. (53 Stat. 1050).

Be it enacted... That whenever proposals are invited for the furnishing of aircraft parts or instruments or aeronautical accessories for the War Department, the character of which or the ingredients thereof are of such a nature that the interests of the public service would be injured by publicly divulging them, the Chief of the Air Corps is authorized to purchase, without advertising, such
aircraft parts or instruments or aeronautical accessories in such manner as he may deem most economical and efficient: Provided, That this Act will not be construed as in any way amending the Act of July 2, 1926 (44 Stat. 730), or as authorizing the open market purchase of airplanes for purposes other than as provided in that Act; and provided further, That no purchase shall be made under this Act until the Secretary of War shall have certified that a secret order is necessary, and only then after submitting the proposal to three reputable concerns for their respective bids. All laws and parts of laws which are inconsistent herewith or in conflict with the provisions hereof are hereby repealed.

Public Law Number 426, 5 March 1940, An Act to facilitate the procurement of aircraft for the national defense. (54 Stat. 45-46).

Be it enacted... That, until June 30, 1941, whenever contracts are to be awarded as a result of competitive bids for furnishing the War Department or the Navy Department with aircraft, aircraft parts, and accessories therefor, the Secretary of War or the Secretary of Navy is authorized to award a contract for the aircraft, aircraft parts, and accessories to be purchased as a result of any such competition to the bidder that the said Secretary shall find to be the lowest responsible bidder that can satisfactorily perform the work or service required to the best advantage of the Government, or, in his discretion and when such action is considered necessary by the said Secretary in the interest of the national defense, to award contract for such aircraft, aircraft parts, and accessories to such bidders, not exceeding three in number, as said Secretary shall find to be the lowest responsible bidders that can satisfactorily perform the work or service required to the best advantage of the Government. The determinations as to such multiple awards and the necessity for making the same shall be based upon quality, times and rate of delivery, price and the prevention of the overloading of a plant or plants and such division of awards shall be made only when found by the said Secretary to be in the interest of the national defense: Provided, That no awards shall be made at prices in excess of those offered by the bidders in any such competition and that the decision of the Secretary of the Department concerned as to the award of any such contract, or contracts, the interpretation of the provisions thereof, and the application and administration of the same shall not be reviewable, otherwise than as may be therein provided for by any officer or tribunal of the United States except the President and the Federal courts: Provided further, That a report shall be made to the Congress by the Secretary of the Department concerned in the case of any competition as a result of which quantity contracts are entered into under authority of this Act with more than one bidder, immediately upon the execution of such contracts, setting forth the articles purchased, the prices paid therefor, the name or names of each bidder,
and of each contractor receiving a contract, and the particular reasons
for awarding each of such contracts: Provided further, That any con-
tract entered into under the authority hereby granted, for the con-
struction of any complete aircraft or any portion thereof, shall be
subject to the applicable profit-limitation provisions of the Act of
March 27, 1934 (48 Stat. 505), as amended by the Act of June 25, 1936
(49 Stat. 196), and as further amended by the Act of April 3, 1939
(Public, Numbered 18, Seventy-sixth Congress): Provided further, That
procurement of aircraft, aircraft parts, and accessories therefor
shall be made under authority of this Act only when in the opinion of
the Secretary of the Department concerned such action is necessary in
the public interest: Provided further, That the authority herein
granted shall not be construed to abrogate, repeal, or suspend any of
the provisions of Revised Statutes (3709, U.S.C. 44:5), the Act of
March 2, 1901 (31 Stat. 905), the Act of July 2, 1926 (44 Stat. 797),
section 14 of the Act of April 3, 1939 (Public, Numbered 18, Seven-
sixth Congress), or the Act of July 13, 1939 (Public, Numbered 188,
Seventy-sixth Congress), or to prohibit the award of any contracts in
any manner now authorized by law, but shall be construed as additional
legislation to be utilized under the conditions herein set forth,
during the effective period of this Act: And provided further, That
this Act shall be applicable under the conditions herein set forth to
awards of contracts upon which competitive bids have been here-
tofo re requested or received but as a result of which contracts have not been
awarded.

Section of Public Law Number 354, 18 December 1941, An Act to
expedite the prosecution of the war effort. (55 Stat. 839).

SEC. 201. The President may authorize any department or agency
of the Government exercising functions in connection with the prose-
cution of the war effort, in accordance with regulations prescribed
by the President for the protection of the interests of the Government,
to enter into contracts and into amendments or modifications of contracts
heretofore or hereafter made and to make advance, progress and
other payments thereon, without regard to the provisions of law
relating to the making, performance, amendment, or modification of
contracts whenever he deems such action would facilitate the prose-
cution of the war: Provided, That nothing herein shall be construed
to authorize the use of the cost-plus-a-percentage-of-cost system of
contracting: Provided further, That nothing herein shall be construed
to authorize any contracts in violation of existing law relating to
limitation of profits: Provided further, That all acts under the
authority of this section shall be made a matter of public record
under regulations prescribed by the President and when deemed by him
not to be incompatible with the public interest.

Section of Public Law No. 528, 28 April 1942, An Act making additional
appropriations for the national defense for the fiscal year ending
June 30, 1942, and for other purposes. (56 Stat. 245-46).
SEC. 403.

(b) The Secretary of each Department is authorized and directed to insert in any contract for an amount in excess of $100,000 hereafter made by such Department (1) a provision for the renegotiation of the contract price at a period or periods when, in the judgment of the Secretary, the profits can be determined with reasonable certainty; (2) a provision for the retention by the United States or the repayment to the United States of any amount of the contract price which is found as a result of such renegotiation to represent excessive profits; and (3) an amount of the contract price equal to the amount of the reduction in the contract price of any subcontract under such contract pursuant to the renegotiation of such subcontract as provided in clause (3) of this subsection; and (3) a provision requiring the contractor to insert in each subcontract for an amount in excess of $100,000 made by him under such contract (A) a provision for the renegotiation by such Secretary and the subcontractor of the contract price of the subcontract at a period or periods when, in the judgment of the Secretary, the profits can be determined with reasonable certainty, (B) a provision for the retention by the United States or the repayment to the United States of any amount of the contract price of the subcontract which is found as a result of such renegotiation to represent excessive profits; and (C) a provision for relieving the contractor from any liability to the subcontractor on account of any amount so retained by or repaid to the United States.

(c) The Secretary of each Department is authorized and directed, whenever in his opinion excessive profits have been realized, or are likely to be realized, from any contract with such Department or from any subcontract thereunder, (1) to require the contractor or subcontractor to renegotiate the contract price, (2) to withhold from the contractor or subcontractor any amount of the contract price which is found as a result of such renegotiation to represent excessive profits, and (3) in case any amount of the contract price found as a result of such renegotiation to represent excessive profits shall have been paid to the contractor or subcontractor, to recover such amount from such contractor or subcontractor. Such contractor or subcontractor shall be deemed to be indebted to the United States for any amount which such Secretary is authorized to recover from such contractor or subcontractor under this subsection, and such Secretary may bring actions in the appropriate courts of the United States to recover such amount on behalf of the United States. All amounts recovered under this subsection shall be covered into the Treasury as miscellaneous receipts. This subsection shall be applicable to all contracts and subcontracts hereafter made to all contracts or subcontracts heretofore made, whether or not such contracts or subcontracts contain a renegotiation or recapture clause, provided that final payment pursuant to such contract or subcontract has not been made prior to the date of enactment of this Act.


SEC. 9. That the provisions of the Act to facilitate the procurement of aircraft for the national defense, approved March 5, 1940 (Public, Numbered 426, Seventy-sixth Congress), as amended by section

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401 of the Second Revenue Act of 1940, approved October 8, 1940 (Public, Numbered 501, Seventy-sixth Congress), shall be effective during the period prescribed in section 16 of this Act.

SEC. 16. The provisions of this Act shall remain in force during the continuance of the present war and for six months after the termination of the war, or until such earlier time as the Congress by concurrent resolution or the President by proclamation may designate.

Section 14 of Public Law Number 18, 3 April 1939. (53 Stat. 550).

SEC. 14. All the provisions of section 5 of the Act of March 27, 1934, as amended (48 Stat. 505; 49 Stat. 1928), and as amended by this section shall be applicable with respect to contracts for aircraft or any portion thereof for the Army to the same extent and in the same manner that such provisions are applicable with respect to contracts for aircraft, or any portion thereof for the Navy; Provided, That the Secretary of War shall exercise all functions under such section with respect to aircraft for the Army which are exercised by the Secretary of the Navy with respect to aircraft for the Navy; Provided further, That section 3b of the Act of March 27, 1934 (48 Stat. 505), as amended (49 Stat. 1928; 54 U.S.C. Supp. IV 495), is hereby further amended by inserting in the first sentence after the words "in excess of 10 per centum of the total contract prices" the words "for the construction and or manufacture of any complete naval vessel or portion thereof, and in excess of 12 per centum of the total contract prices for the construction and or manufacture of any complete aircraft or portion thereof"; by inserting in the first proviso after the words "That if there is a net loss on all such contracts or subcontracts" the words "for the construction and or manufacture of any complete naval vessel or portion thereof"; and by inserting at the end of the first proviso after the words "income taxable year" a comma and the words "and if there is a net loss, or a net profit less than 12 per centum, as aforesaid on all such contracts or subcontracts for the construction and or manufacture of any complete aircraft or portion thereof completed by the particular contractor within any income taxable year, such net loss or deficiency in profit shall be allowed as a credit in determining the excess profit, if any, during the next succeeding four income taxable years, and that the method of ascertaining the amount of excess profit initially fixed upon shall be determined on or before June 30, 1939"; Provided further, That when aircraft are procured by the Secretary of War as a result of competitive bids requiring the submission of sample aircraft with bid, the Secretary is authorized, in his discretion, to purchase sample aircraft of competitors to whom an award is not made, not more than one each from not more than three such competitors, in order of merit, at prices not exceeding 75, 60, and 50 per centum, respectively, of the cost applicable in the opinion of the Secretary to the development and manufacture of such sample aircraft.
Section of Public Law Number 671, 28 June 1940, An Act to expedite the national defense, and for other purposes. (54 Stat. 677).

SEC. 2.

(b) After the date of approval of this Act no contract shall be made for the construction or manufacture of any complete naval vessel or any Army or Navy aircraft, or any portion thereof, unless the contractor agrees, for the purposes of section 3 of the Act of March 27, 1934 (48 Stat. 505; 34 U.S.C. 496), as amended—

(1) to pay into the Treasury profit in excess of 8 per centum (in lieu of the 10 per centum and 12 per centum specified in such section 3) of the total contract prices of such contracts within the scope of this subsection as are completed by the particular contracting party within the income taxable year; . . .

Section of Public Law Number 801, 8 October 1940, An Act to provide revenue, and for other purposes. (54 Stat. 1003).


The provisions of section 3 of the Act of March 27, 1934 (48 Stat. 505; 34 U.S.C., sec. 496), as amended, beginning with the first proviso thereof, and section 2 (b) of the Act of June 28, 1940 (Public Numbered 671, Seventy-sixth Congress, third session), shall not apply to contracts or subcontracts for the construction or manufacture of any complete naval vessel or any Army or Navy aircraft, or any portion thereof, which are entered into in any taxable year to which the excess profits tax provided in subchapter F of Chapter 2 of the Internal Revenue Code is applicable or would be applicable if the contractor or subcontractor, as the case may be, were a corporation, and any agreement to pay into the Treasury profit in excess of 10 per centum, 12 per centum, or 8 per centum, as the case may be, of the contract prices of any such contracts or subcontracts shall be without effect. This section shall also apply to such contracts or subcontracts which are entered into before the date of the beginning of the contractor’s or subcontractor’s first taxable year which begins in 1940 and which are not completed before such date.

Section of Public Law Number 671, 28 June 1940, An Act to expedite national defense, and for other purposes. (54 Stat. 681).

SEC. 14 (a) Notwithstanding the provision of any other law, no military or naval weapon, ship, boat, aircraft, munitions, supplies, or equipment, to which the United States has title, in whole or in part, or which have been contracted for, shall hereafter be transferred, exchanged, sold, or otherwise disposed of in any manner whatsoever unless the Chief of Naval Operations in the case of naval material, and the Chief of Staff of the Army in the case of military material, shall first certify that such material is not essential to the defense of the United States.
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