PURCHASING POLICIES, CONTROLS, AND
PROCEDURES FOR AAF MATERIAL

The original of this monograph and the documents from which it was written are in the USAF Historical Division, Archives Branch, Bldg. 914, Maxwell Air Force Base, Alabama.

USAF Historical Division
Air University
1952

0457657
# UNCLASSIFIED RESTRICTED
## SECURITY INFORMATION

### CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I THE FACILITY FOR PURCHASE</td>
<td>1</td>
</tr>
<tr>
<td>Organization</td>
<td>1</td>
</tr>
<tr>
<td>Recruiting and Training</td>
<td>3</td>
</tr>
<tr>
<td>Appropriations</td>
<td>13</td>
</tr>
<tr>
<td>Types of Contracts</td>
<td>15</td>
</tr>
<tr>
<td>Financing</td>
<td>22</td>
</tr>
<tr>
<td>Method of Award</td>
<td>31</td>
</tr>
<tr>
<td>Educational Orders</td>
<td>33</td>
</tr>
<tr>
<td>Consular Orders</td>
<td>35</td>
</tr>
<tr>
<td>II CONTRACT NEGOTIATION</td>
<td>36</td>
</tr>
<tr>
<td>Evaluation Procedures</td>
<td>36</td>
</tr>
<tr>
<td>Plans for Procurement</td>
<td>39</td>
</tr>
<tr>
<td>Use of Small Plants</td>
<td>41</td>
</tr>
<tr>
<td>Subcontracting</td>
<td>47</td>
</tr>
<tr>
<td>Costs</td>
<td>51</td>
</tr>
<tr>
<td>Procedure in Pricing Contracts</td>
<td>54</td>
</tr>
<tr>
<td>Local Purchase</td>
<td>54</td>
</tr>
<tr>
<td>Purchase from Other Arms and Services</td>
<td>57</td>
</tr>
<tr>
<td>Purchase Abroad</td>
<td>62</td>
</tr>
<tr>
<td>III ADMINISTRATION OF CONTRACT</td>
<td>62</td>
</tr>
<tr>
<td>Auditing</td>
<td>62</td>
</tr>
<tr>
<td>Changes in Contracts</td>
<td>65</td>
</tr>
<tr>
<td>Inspection</td>
<td>69</td>
</tr>
<tr>
<td>IV COST AND PROFITS CONTROLLS</td>
<td>72</td>
</tr>
<tr>
<td>Pricing</td>
<td>73</td>
</tr>
<tr>
<td>Renegotiation</td>
<td>77</td>
</tr>
<tr>
<td>V IMPLEMENTATION OF CONTRACTS</td>
<td>82</td>
</tr>
<tr>
<td>The Need for Legislative Action</td>
<td>87</td>
</tr>
<tr>
<td>Executive and Legislative Action</td>
<td>90</td>
</tr>
<tr>
<td>Organization and Administration</td>
<td>96</td>
</tr>
<tr>
<td>Conclusion</td>
<td>103</td>
</tr>
</tbody>
</table>

This page Declassified IAW EO12958
"We'll build them; you fly them" was a wartime poster simplification of the complicated business of planning and purchasing material for the IAF. This monograph, written by Frank C. Bourne, analyses that business, especially as it was handled from immediately before Pearl Harbor to the end of World War II. It involved the perfecting of tools with which to execute the procurement process, a working organization, sufficient funds, and satisfactory contracts. It also included far-sighted planning, not only for specific items, but also for all the potential sources of supply; negotiating and writing contracts so that the public interest was safeguarded; and terminating contracts and arrangements expeditiously at the end of the war.


Like other USAF Historical Division studies, this monograph is subject to revision, and additional information or suggested corrections will be welcomed.
RESTRICTED
UNCLASSIFIED
SECURITY INFORMATION

CONTENTS

GROSSLY .................................................. 105

FROM ON UP ............................................ 106

BIBLIOGRAPHY ........................................... 132

INDEX .................................................... 135

RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
RESTRICTED
SECURITY INFORMATION
Chapter I
THE MACHINERY FOR PURCHASE

To facilitate a thorough understanding of the procedures of contract and procurement in the AAF, a brief survey of the air force organization which superintended the acquisition of materiel is necessary. Although continual reorganization, changes of nomenclature, and re-divisions of responsibility characterized this phase of air force administration, the basic principles upon which the structure was built remained constant. Past experience, particularly that of World War I, was inevitably considered when basic policies were being developed, and special care was taken to prevent graft and favoritism.

Organization

In 1939 the Secretary of War maintained direction of the procurement program, the Assistant Secretary supervision, and the chiefs of the supply arms and services had administrative and operative functions subject to the approval of the former. The power to procure material for the Army, which was the prerogative of the Secretary of War, was delegated by him to the Assistant Secretary (later Under Secretary) of War. In turn, this authority was further re-delegated in the chain of command to the contracting officers who carried on the actual negotiations with the contractors. The Assistant Secretary of War, and later the Under Secretary, not only supervised procurement, but he or his designated representative was also responsible for the approval

1
of contracts which involved more than $500,000\textsuperscript{3} on a cost-plus-fixed-fee basis; by 1942 this figure had reached $5,000,000. He also approved split awards\textsuperscript{4} and "negotiated" contracts valued at more than $5,000,000.\textsuperscript{5}

Under Secretary's "special" representative was an Army Service Forces man who theoretically acted for him as head of the service forces when dealing with them and as head of the air forces when dealing with AAF problems. Usually his directives to the AAF were colored by ASF policies, however, but instead of causing undue friction, they engendered a similarity of procurement policy throughout the Army.\textsuperscript{6}

Various civilian agencies at high levels were authorized to review and approve consequential purchases. Their basic interest, however, was only the acquisition and distribution of scarce raw materials and the use of limited productive space to the best national interest. In 1940 Commissioner William S. Knudsen of the Advisory Commission to the Council of National Defense reviewed, approved, and coordinated all contracts for aircraft, aircraft parts, and accessories which normally were submitted to the Assistant Secretary of War.\textsuperscript{7} In 1941 all orders over $50,000 for a large assortment of goods were submitted to the Office of Production Management, Division of Purchases two weeks before requests for bids were sent out or negotiations began, in order that coordination in production might be attained.\textsuperscript{8} In 1942 these powers of review and coordination were transferred to the War Production Board (WFB).\textsuperscript{9}

On 1 January 1942 the Chief of the Air Corps (and later the Commanding General, AAF) was authorized to approve contracts under
Actually the procurement authority of the Chief of the Air Corps was vested largely in the Chief of the Materiel Division. For a time—April 1942 to May 1943—the Chief of the Air Corps was bypassed in the chain of command, and the authority of the Under Secretary of War was delegated to the commanding general of the Materiel Command.

In the period of emergency and during the early part of the war, the Materiel Division at Washington acted as liaison between the Wright Field organization and higher authority in Washington. With the reorganization of the War Department in March 1942, the Washington offices were assigned supervisory, integrating, and policy-making functions. But, although the Chief of the Materiel Division was authorized to approve contracts of $1,000,000 or less, in practice his Washington office still frequently served only as liaison and reviewing authority to transmit contracts from Wright Field to the office of the Under Secretary.

The Budget and Fiscal Office of AAF Headquarters played a vital role in the work of the Materiel Division, acting as it did in a supervisory and coordinating capacity over the Contract Audit Branch at Wright Field and the offices of the audit districts which functioned in the materiel districts. The freedom of this office from direct Materiel Command control was criticized by the Materiel Command since its contracting officers had to assume full responsibility for vouchers based on the audits and judgment of resident auditors not under its control.
The material organization at Wright Field was responsible for general procurement procedures for the AAF. Serving as the primary purchasing agency, its centralized control was considered essential to insure uniform methods, to bring about economy in quantity procurement, and to build up a body of efficient personnel. The commanding general of this organization was authorized to approve contracts up to $1,000,000, while the chief of the Contracts Section at Wright Field could approve those of $500,000 or less, and the individual contracting officer could approve those up to $100,000.

Four principal functions were performed at or directed from Wright Field: planning, engineering, procurement, and inspection; and these functions remained fixed even when their executing agencies were shuffled around or underwent changes of designation. Planning was actually the responsibility of a variety of agencies at the field: Production Engineering, Production Control, and Production Resources, in conjunction with AFB and Joint Aircraft Committee (JAC) agencies. The engineering agencies prepared and approved designs, initiated procurement, and passed on capabilities, airworthiness, and on the performance of specific manufacturers. The contracting agency prepared the formal contract, and the inspection agency supervised the work of the factory inspectors, who in turn saw that the details of the contract were met. Besides its titular duty, the Contracts Section distributed "authorities for purchase" to the district offices, analyzed costs, investigated and complied with priorities regulations, and kept the only complete files of contracts.
Friction inevitably arose as Production Engineering tended to usurp functions which belonged to other agencies at Wright Field; for example, in the field of procurement, it assumed the responsibility of reviewing contract deviations in price, quality, and quantity, and followed up contracts to assure that the procuring agency processed contracts in the minimum time. This brought protests from sources both within and without Wright Field. A tendency to allow contract expiration dates to approach too closely before deciding whether additional production was desired by the Materiel Command apparently resulted from poorly defined and imperfectly respected divisions of responsibility. Many times this kind of administrative lapse provoked contractors to search for new contracts elsewhere, not the least of the reasons being the insufficient time thus allowed them to procure additional materials and supplies.

Another extraneous activity of considerable importance was set up in 1944 at Wright Field, the Aircraft Scheduling Unit, operating as an agent of the Joint Aircraft Committee, the Aircraft Production Board, the Aircraft Resources Control Office, and the War Production Board. The unit acted as a central clearing agency for equipment components and materials necessary to maintain the schedules set up by JAC, and studied the capacity of and scheduled the deliveries from AAF plants.

Despite its responsibility and specialized knowledge, Wright Field was sometimes bypassed by higher authority in Washington in procurement matters. For example, Generals Arnold, Echols, and Giles,
against the advice of Wright Field engineers, insisted on the production of the abortive LC-1 glider at a cost of more than $771,277.15 to the taxpayers. The material center was chided by Washington headquarters for making what it called "tactical" rather than technical comments on proposed procurements.

Fanning out from the core organization at Wright Field there was a tremendous subordinate field organization of district officers, area officers, contracting officers, inspectors, and auditors. At the beginning of the war there were three districts in the United States, eastern, central, and western, to which were added the midwestern in 1942 and the southwestern and midcentral in 1943. The district offices were organized along the same lines as the Materiel Command at Wright Field, and in the industrial areas or in the factories themselves contract sections were set up. Before the autumn of 1941 the district supervisors were responsible for the proper execution of Materiel Division field functions pertaining to the accomplishment of contractual obligations between the Air Corps and its contractors.

As early as 1941 decentralization of procurement from Wright Field to the procurement districts was proposed and accepted as Air Corps policy. The move, however, had ardent supporters and equally convinced detractors, so that it resulted in considerable bickering, disorganization in the lower echelons, and uncertainty in the district offices and among manufacturers. Mainly, it was felt that decentralization was needed to maintain closer contact with manufacturers, particularly the smaller ones, and to avert top-heaviness at Wright Field in a time of expending
production. In part, it was to be effected by placing all the actual work of procurement and the handling of awards, contracts, and change orders of value less than $1,000,000 with the district organizations. Such a program was spurred on by the statement from Secretary Stimson that "decentralization . . . is desired in the interest of speed." On the part of the Materiel Command, enthusiasm for the move was mixed with fuzziness as to its actual purpose. There appeared to be little realization that although decentralization in administration of contract auditing and inspection might be necessary and desirable, the re Shelfing of procurement duties to district and even plant levels would increase manifold the difficulties of maintaining a directed, integrated plan of procurement. One impracticable feature was early pointed out by Air Corps officials: the districts lacked necessary engineering staffs whereas Wright Field had an excellent one. In June 1942 the chief of the Materiel Command was asked to what extent the authority had been given to contracting officers to award contracts or less than $5,000,000 value without reference to higher authority. He replied that contracting officers were approving contracts up to $100,000 and that those of a greater amount were forwarded to the commanding general of the Materiel Command for approval. Further delegations were unnecessary, he believed, "since local purchases exceeding this amount are rare." With the appointment of Brig. Gen. C. E. Branshaw to head the Materiel Command in 1943, decentralization was accelerated. General
Brenshaw had been a district supervisor in the Western District and thought very highly of the plan to allow the districts to administer the procurement program. In June 1943 he ordered all the district supervisors to visit the Western District to observe how their own districts should be organized for maximum efficiency in decentralization.

All Authorities for Purchase (APP's) presented to the Procurement Division at Wright Field were studied, and the ones which were felt would be readily handled by the districts were extracted. It was generally believed, however, that the following items were not suitable for district procurement: airframes, engines, propellers, materials allocated by the Aircraft Scheduling Unit, lumber, and gasoline and oils; in addition, the following classifications were to be excluded: a general schedule of supply items, items of limited sources and those not all in one district, items whose sources were close to Wright Field, items whose manufacturers had a local representative to clear all orders, small confirming orders, items in the local purchase category, and policy items. With these exceptions 318 contracts amounting to $4,945,390.18 had been let by the districts by 15 March 1943. Even in this limited amount of procurement, however, the districts experienced difficulties because of (1) time lost by negotiators in seeking further clarification on APP's from Wright Field, (2) the lack of shipping instructions, (3) the fact that delivery dates were too early to permit the districts to survey potential contracting firms, and (4) a lack of experienced personnel in the districts.

RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
An AFP Committee was established in the Procurement Division at Wright Field in the Spring of 1943 to expedite the clearance of AFP's through the division. The authorities for district purchase which were then sent out gave detailed instructions concerning the contract, including preference rating and allotment authority.* Under this system a great increase in the amount of district procurement was effected. Considereble dissatisfaction continued, however, with the way decentralization of procurement was being carried out. Manufacturers who feared that it was creating confusion for those companies which had branch plants in several localities petitioned Wright Field to handle all procurement in such cases. On the other hand, the interference at Wright Field with the functioning of district offices was resented by district personnel.

The districts are being constantly bombarded with correspondence of various types dealing with reorganization of districts... [a district supervisor wrote] There is an endless amount of work being performed in trying to juggle personnel to meet charts prepared by somebody else.... It is strongly recommended that unless some particular district is not operating in an efficient manner, ... there be no further correspondence on the matter for a period of at least several months.... It is recommended that efficient personnel be placed at the district and that that personnel be allowed to run the district.

Complaints also were heard at Wright Field; by sending AFP's to the districts, control and administration by vitally interested agencies

* Other information included was as follows: item and description, quantity, shipping instructions, deliveries required, program involved, applicable specifications, prospective sources, and estimated price if possible. (SC Memo 61, 30 Nov. 1942, in A&G Central Files, 321.9, Decentralization.)
such as the Engineering Division were lost. The reaction to these objections was implicit in a memorandum of Brig. Gen. A. E. Jones:

The statement made in... reference individuals of the Procurement Division not agreeing in principle with the overall policy of decentralization may or may not reflect some opinions. Regardless of their opinion, decentralization is being effected and will be effected to accomplish procurement as efficiently in the districts as at Wright Field.

During the following year, after the departure of General Brenchaw from Wright Field, the opponents of decentralization began to regain sway; by July 1944, the district supervisors had agreed to eliminate all district procurement except in extraordinary cases.

In the autumn of 1944, all procurement functions other than the administration of contracts were being performed at Air Technical Service Command (ATSC) Headquarters rather than in the districts. Other functions of the districts, however, such as price inspection, continued to be decentralized to area and plant levels in a reasonably effective manner.

A resume of the cutouts of a district office for the concluding months of the war show it to have been the mainstay of the procurement organization of the air forces despite the loss of the contracting function. Charged with the field functions of ATSC with respect to procurement and acceptance of aircraft and related equipment, the district gathered information and furnished recommendations pertaining to the performance and ability of industry within its districts; it procured aeronautical equipment under certain circumstances and administered contractual instruments; it cooperated with industry and

* In the interest of speed, letter contracts were issued upon telegraphic instructions from higher authority.
other government agencies in converting industry and in estimating
the capacity of the district to produce required equipment; it assisted
industry in the distribution of manpower, materials, and machine tools;
it supervised government inspection; and it assisted industry in the
general problems of readjustment. 48

Recruiting and Training

The personnel upon whom the principal burden of responsibility
for a successful program of procurement fell were the contracting officers.
These men were chosen for business experience, professional and specialized
abilities, civic and moral background, evidence of business acumen and in-
telligence, and knowledge of basic policies. 49 The authority to ap-
point contracting officers was delegated to the Commanding General,
467 and he in turn gave the responsibility to chiefs of the AG Proc-
current and Readjustment Divisions, to the commanding officers of
Wakefield, of each area AGC and overseas AGC, and to the commanding
generals of the districts. 50

In June 1943, as a partial result of the decentralization program,
a need for more personnel arose in the districts. The acquisition and
training of these men were carried out under the direction of the chief
of the Legal Branch, Wakefield, where indoctrination courses were
held for many of the officers selected. Nevertheless, in the summer
of 1943 Col. Donald C. Scanlon found the districts understaffed and
the officers on hand poorly grounded in AF policies and procedures.
To alleviate the situation, he ordered the preparation of a training
manual (Handbook for Contracting Officers, 1 November 1943) and
persuaded Brig. Gen. W. E. Jones to agree to a program for the procurement and training of additional officers. This request was presented directly to Under Secretary Robert A. Lovett who gave highest priority to a project to procure 250 officers.

Three types of officers were sought: plant contracting officers, legal officers, and termination officers, a different set of requirements being established for each type. In the beginning, a good many lawyers were selected, but the emphasis came to be placed on the procurement of business men. A preference was shown for men with college and business administration backgrounds who had commenced an annual salary of at least $5,000. Only 25 of the 150 officers selected were taken directly from civil life, and these were lawyers; most of the others were men who had held managerial positions prior to their entering on active duty.

Beginning on 8 November 1943 and ending 13 March 1944, four successive courses of instruction were instituted at Wright Field. They were planned so that slightly different emphasis would be given officers chiefly concerned with local purchases and those interested in headquarters functions. The training gradually came to include more and more termination indoctrination; indeed, in the last phases the whole program was concerned with termination. The graduates were interviewed at the end of the course and were assigned in accordance with personal wishes and demonstrated abilities. Earlier (October 1943 to June 1945), eight additional courses were given for receiving men already in the program. Many contracts which would be handled by these officers were important administrative details to "the contracting officer," and as a matter of policy and
practice this came to mean any contracting officer. In view of this
interchangeability of obligations and responsibilities, it was necessary
to emphasize in the refresher course of instruction the responsibility
and authority that they held.\footnote{56}

Appropriations

In discussion of the machinery used by the AAF for the procurement
of materiel would be complete without a consideration of the amounts
appropriated by Congress to carry out the program, and the amounts
actually expended by the air forces.\footnote{\*} For the fiscal years 1939-1945
Congress appropriated $72,791,258,292 for the Army Air Forces;\footnote{56}
this amount, approximately \$6,000,000,000 was allocated in contracts.\footnote{57}
although the total actually expended during the period 1 July 1940 to
30 June 1945 was only \$38,000,000,000,\footnote{\f} the immensity of the procure-
ment problems is quite clear.

Approximately five-sixths of the total expenditure by the AAF
was for materiel. This was further broken down in many cases into
"procurement of production quantities" or "experimental projects," and
procurement of "service test equipment." The figures for the years 1942
and 1945 in the following chart will give a fair conception of how the
appropriations were allotted:

\footnote{\* \ The story of appropriations is discussed at length in ABS No. 22 (Revised),
Since it is difficult to get exact figures for actual expenditures over an
extended period of time because of such things as cut-backs, voluntary
reductions, reprogramming, and changes in bookkeeping methods, the over-
all figures in this section are given in round numbers and undoubtedly
vary in accuracy.}

\footnote{\f \ The difference is due to terminations and to unilateral action reducing
estimates on CMR contracts.}
Status of Fiscal Year 1942 AAF Expenditure Program as of 30 June 1942

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Aircraft, Engines, Parts, and S.</td>
<td>18,212,786,134</td>
<td>14,583,517,988.47</td>
</tr>
<tr>
<td>Experimental Projects</td>
<td>80,932,112</td>
<td>58,037,584.55</td>
</tr>
<tr>
<td>Service Test Equipment</td>
<td>11,268,270</td>
<td>7,877,321.93</td>
</tr>
<tr>
<td></td>
<td>18,334,266,575</td>
<td>14,611,809,886.45</td>
</tr>
</tbody>
</table>

Status of Fiscal Year 1943 AAF Expenditure Program as of 30 June 1943

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Aircraft, Engines, Parts, and S.</td>
<td>7,958,069,378.72</td>
<td>6,422,907,547.23</td>
</tr>
<tr>
<td>Experimental Projects</td>
<td>106,775,702.77</td>
<td>95,713,239.81</td>
</tr>
<tr>
<td>Service Test Equipment</td>
<td>9,433,000.00</td>
<td>6,392,051.87</td>
</tr>
<tr>
<td></td>
<td>8,677,278,031.49</td>
<td>8,527,712,233.92</td>
</tr>
</tbody>
</table>

Procurement Status Report as of 30 June 1944

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Complete Aircraft</td>
<td>17,449,207,088.32</td>
<td>16,759,202,597.06</td>
</tr>
<tr>
<td>Research and Development</td>
<td>117,796,078.00</td>
<td>117,612,416.48</td>
</tr>
</tbody>
</table>

AFSC Expenditure Program Fiscal Year 1945 as of 30 June 1945

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Planes and Parts</td>
<td>8,173,556,817.78</td>
<td>7,660,298,711.20</td>
</tr>
<tr>
<td>Aeronautical Experimental</td>
<td>137,114,000.00</td>
<td>137,113,796.85</td>
</tr>
<tr>
<td>Service Test Equipment</td>
<td>8,650,000.00</td>
<td>8,462,157.69</td>
</tr>
<tr>
<td></td>
<td>8,615,350,817.78</td>
<td>7,801,506,397.74</td>
</tr>
</tbody>
</table>

Congress fulfilled its monetary obligation to the AAF's procurement program with an unstinting, even lavish, hand, and it built up for the air force an organization of trained personnel who spent the appropriations in a generally efficient manner. Nevertheless, Congress showed a great
and continuing interest in how the funds were expended. The types of contracts used and the methods of award resulted from years of contract experience, cooperation between Congress and the War Department, suggestions and countersuggestions, trial and error, and the fruits of almost continuous legislative investigation.

Types of Contracts

Two types of contracts were primarily used by AAF procurement agencies: the fixed-price (FP) or "Lump Sum" contract and the cost-plus-fixed-fee (CPFF) contract, the former being the usual peacetime method prescribed by the government. In a FP contract, the contractor and the contracting agency agreed on a set amount to be paid to the contractor for specified items of a certain quantity and quality. This type of agreement was favored because it protected the government against excessive costs. The FP contract, however, necessitated a thorough knowledge of the expenses involved in the manufacture of an item, in order that the contractor not assume too great a risk, nor the contractee be overcharged. It also presupposed stable conditions of labor and labor costs, and sufficient time on the part of both parties to study the projects before signing contracts.

Despite the unstable conditions of the war period, the FP contract was used wherever the contracting parties were convinced on the basis of past experience that the cost could be reasonably determined in advance. It was also used at the other extreme, though, for example in contracting for gliders: the government preferred to protect itself in this case by means of the fixed price because so much of the work was undertaken.
by small, inexperienced companies. Unfortunately, though not wholly unexpectedly, constantly rising costs drove to bankruptcy several companies which had accepted these PP contracts. 62

In order to use PP contracts to the limit at the beginning of the war when production experience was limited, the War Department authorized additional provisions in the contracts which fixed a tentative original price subject to readjustment after partial performance. In January 1944 the department authorized a periodic adjustment of prices, 63 which divided the long-term contracts into a series of shorter periods from four to six months each. The contract price was fixed for only one period, at the one of which the price for the succeeding period could be set either upward or downward, according to conditions then prevailing. The fact that the price was fixed for a short period only, relieved the contractor from making commitments too far ahead. In addition, the contracting officer was authorized, at his discretion, to exempt from renegotiation the price fixed for any period. This possibility of exemption from renegotiation served as an incentive for the contractor to reduce costs during each period. 64

The number of PP contracts was considerably greater than the GPA type: from June 1940 to June 1944, 346 PP contracts for aircraft and accessories had been let as compared with 253 GPA contracts. 65 In dollar value this amounted to 59.6 per cent of the total expenditure for the period 1 July 1940-30 June 1945. 66

Congress, mindful of the scandalously high prices resulting from the use of cost-plus-percentage-of-cost (CPC) contracts in World War II and the consequent opprobrium of many prominent citizens, specifically
outlawed it in almost every law dealing with government procurement.

Certain clauses in some CIF contracts nevertheless approached cost-
plus-percentage-of-cost in spirit. For example, a contract with the
Ford Motor Company provided a fixed fee of $5,295,000 for the manufacture
of engines (5 per cent of the estimated cost of $116,458,520); the fixed
fee for spare parts, however, was placed at approximately $529,000 (5
per cent of the estimated cost) and

the fixed fee referred to herein shall be subject to increase
or decrease resulting from authorized changes...and the
estimated costs and fixed fee for spare parts shall also be
changed to the estimated costs and applicable percentage of
the fee resulting from the determination of the items of
specific parts to be purchased and the estimated cost thereof
as compiled from the breakdowns to be furnished by the con-
tractor.

Careful supervision of the terms of proposed contracts and agreements
was maintained by the Air Judge Advocate to eliminate, wherever possible,
any approach to the cost-plus-percentage-of-cost factor. In a review
of the terms of a supplemental agreement with the Ford Motor Company
(which covered the procurement of supplies and services for an amount
not to exceed $2,887,900) the Air Judge Advocate maintained that it
approached cost-plus-percentage since it left both the cost and the fee
for future determinations. To remedy this, he suggested that the
available funds be definitely divided and allocated as fixed fee and
estimated cost; if the cost could not be estimated, a fixed fee should
be provided. If neither of these steps were feasible the contract should
be of shorter duration in order that a more appropriate contract could
be drawn following the trial period.

RESTRICTED
SECURITY INFORMATION
During the war, especially in its earlier phases, many items had to be procured for which the fixed-price type of contract was completely unsuitable. The GFF contract, therefore, was usually used to procure completely new items, those in the experimental or developmental stage, and those for which the plans and specifications were not complete at a time when it was adventerous that work be started. This type of contract was highly desirable in many cases, especially for contractors who lacked previous production experience and where data covering costs were lacking. On the other hand, contractors often needed such contracts because of insufficient capital, an over-expanded volume of business, or fear of termination losses and delays. (Many items in the aircraft industry were subject to almost continuous specification changes throughout their manufacture, a factor which could increase the estimated cost of production incealably.\(^6^9\)

Until a full understanding of production costs was reached, the use of GFF contracts often proved more economical to the government than FP contracts because of the additional risks that the contractor felt he must face with the latter. It is significant, however, that the costs incurred by contractors with GFF contracts often compared favorably with those of FP contracts as the following chart indicates:\(^7^0\)

\[\begin{array}{ll}
\text{ Wright-Patterson (FP) } & \text{ Dodge-Chicago (GFF) } \\
\text{ Total Units } & 6,715 \\
\text{ Total Hours per Unit } & 3,951 \\
\text{ Per cent Subcontracted } & 46\% \\
\text{ Cost to Government per Unit } & 620,367 \\
\end{array}\]

\[\begin{array}{ll}
\text{ Total Units } & 7,739 \\
\text{ Total Hours per Unit } & 3,833 \\
\text{ Per cent Subcontracted } & 26\% \\
\text{ Cost to Government per Unit } & 15,099 \\
\end{array}\]
Cost per Unit (1944)  $1,107  $952
Studebaker costs for Wright 1820 engines on a CFF contract were very close to Buick and Chevrolet costs on FE contracts for comparable Pratt and Whitney 1830 engines. 71

The use of CFF obviously necessitated a close government audit of the contractor's expenses, and required not only approval of the manufacturer's expenditures for materials and services, but also of his application of manpower. 72 Costs resulting from experimental contracts on a CFF basis frequently ran far beyond original estimates, so that close observation of expenses as they accumulated was necessary, as well as a determination by liaison with the Engineering Division at Wright Field whether the value of the project was commensurate with the cost. 73

The various disadvantages in the use of the CFF contracts, and the possible danger of their paralleling the history of CFP contracts, made them the objects of public and Congressional suspicion from the beginning of the war. As late as the summer of 1944, legislation limiting their use was still being discussed. A widespread sentiment was expressed in testimony before a subcommittee contemplating such a move. 74

Former Secretary of the Navy Daniels...wrote me a personal letter from Mexico shortly after I took office in 1940. He said, "I see that Congress has passed an act to permit contracting on a cost-plus-fixed-fee. As one who saw what went on in World War I, I predict that they will rue the day they ever did that."

I wrote back to him and said, "Congress is determined, as far as possible, to take profit out of this war and I am convinced that the CFF contract is the best way to handle it. We will know, then, what we will pay, and it will be a great improvement on the old World War cost-plus-percentage type of contract."
Well, Gentlemen, it has proved to be just exactly
the opposite; under it waste and extravagance have been
permitted and actually encouraged by the contracting
agencies—and they are told to be bold, to be realistic,
to help the contractor.

Despite an increasing understanding of costs and production, the
very nature of aircraft production with its continuous changes in
specifications demanded the use of CPPF contracts. It did not, however,
provide an incentive for the contractor to control cost or utilize
manpower efficiently. To obviate this difficulty, a system of fixing
fees in accordance with the number of units produced was occasionally
attempted; this afforded the contractor an opportunity to gain a larger
aggregate fee by increasing his rate of production, and also tended to
reduce costs because of the utilization of more efficient methods. As
another incentive to efficiency and lower costs, a modified form of the
British "target price contract" was considered. In this system a target
estimate of the cost was fixed, and after part performance, the fee was
increased if the costs had been reduced below the estimate through
efficient manufacture.

The basic problem involved in the system of rewards to the efficient
producer was the difficulty in estimating the part of the reduction in
costs that resulted from efficiency and the part that resulted merely
from increased quantities. In addition, in the administration of con-
tracts which contained an incentive factor, it was almost impossible to
determine precisely what was allowable to costs: for example, bonuses
to employees, salaries over $25,000 a year, and state sales taxes, which
normally were not levied on government purchases. As a result of the
difficulties inherent in making awards, the AAF remained generally hesitant in using the incentive type of contract. The fear was ever present, apparently, that the original estimates by contractors would not be made in good faith. 78

The statutory limit to the amount of the fixed fee was 7 per cent of the estimated cost of the complete contract exclusive of the fixed fee. 79 This figure is of interest particularly when it is compared with the general profit percentages enjoyed by the aircraft industry in 1932. "The 1933 audits...revealed that on all Air Corps contracts the profit had been 12.55%; on airplane contracts, 24.21%." 80 Although Assistant Secretary of War Louis B. Johnson explored the delimitation of profits to 7 per cent because he felt that this would hinder the expansion of company facilities, 81 actually the AAF made it a policy to decrease steadily the amount of the fixed fee to about 4 per cent. 82 The lower percentage of fixed fee returns was made applicable particularly in those cases where the contractor's business was four times his investment. 83 Thus, contractors ran risks of large disallowances by the General Accounting Office. For the fiscal year 1943, for example, Lockheed was disallowed $12,200,000; Douglas, $6,000,000; and Consolidated, $3,000,000. When the AAF's 4 per cent fee was reduced by disallowances and taxes, the contractors felt that the profit was small recompense for their services: a threefold increase in net profit on a thirtyfold increase in net sales was pointed to as being inconsistent with a doctrine of reasonable compensation. 84 When the estimated costs were less than actual costs, the fixed fee was not increased. On the other
hand, if the actual costs were less than the estimated costs the fee might be reduced. Thus, there was little incentive to reduce re-
imbursable costs. 85

Cost-plus-fixed-fee contracts were usually of considerable size and were distributed among only a small number of important contractors. They were most used in the acquisition of aircraft, where they accounted for 72 per cent of the total procurement. 36 Of the 359,200,000 sent in CRFP contracts from 1 July 1940 to 30 April 1945, 26 contractors alone accounted for 24,359,500,000; 10 companies accounted for 75 per cent of the total, with Douglas, Ford, and Boeing alone receiving 42 per cent. 87

Another type of contract utilized rather extensively by theAAF was one that had proven successful for the purposes of the Office of Scientific Research and Development. According to this type, the government paid all the actual costs of work and allowed 68 no profit payments. The AAF employed this O.S.D "no-profit-no-lose" type of contract with educational institutions when the proposed project was one of basic research. It was also used when manufacturers needed new facilities, blackout protection, transport service, or specially trained personnel. 89

Financing

The enormous demands of the Army Air Forces for equipment and supplies required that all available facilities and personnel be employed to the maximum extent possible. Many contractors were capable of meeting a larger share of AAF demands if they were afforded means to expand their
plants or to purchase additional materials without too great a risk to themselves. These means, of course, usually took the form of financial assistance, furnished primarily in three ways: government-guaranteed loans, advance payments, and direct War Department loans administered by the AAF.

Government-guaranteed loans were authorized by the First War Powers Act and Executive Order 9001. To obtain one, the contractor first applied to a bank or banks who would agree to provide funds on condition that the government guarantee a part of the account. Application was then made to the Army Service Forces liaison officer stationed at the Federal Reserve Bank of the contractor's district. If the financing were for prime AAF contracts, the AAF liaison officer gave his approval only on the basis of satisfactory replies to queries as to whether or not the financing was necessary for the war effort, the technical ability of the applicant was satisfactory, and cutbacks were contemplated, and security, receivables were assigned or earmarked for the AAF and restrictions were placed on salaries and dividends. This method of financing was widely favored because it was available for subcontractors who were not eligible for advance payments. One hundred per cent financing by advance payments was utilized if the contractor was unable to finance his work with his own capital, could not procure private financing quickly, or justifiably refused to use his own capital or a loan. At first the advance was interest free, but after 3 June 1942, 2 1/2 per cent was charged. The interest was computed monthly on the average daily unliquidated balance of advance payments; it ceased to accrue upon the completion or termination of the contract.
On 30 June 1945, 74 per cent of the total amount loaned under the advance-payment methods of financing was in the hands of 11 CRP contractors; the 99 others who were being financed by this means were chiefly occupied with PP contracts. As of 31 August, all contractors had been advanced $3,766,284,744 of which $2,627,497,434 was outstanding or unliquidated. The total loans on advance payments, however, amounted to only about $1,000,000 (0.01 per cent of the total), and it was estimated that the CRP received a minimum of $15,000,000 in interest.

On CRP contracts the advances were made to finance the "vouchering period," which extended from the time of the actual expenditure of the advance-payment funds to the time of reimbursement by the government. The sum advanced was deposited and could be immediately withdrawn with the countersignature of the CRP contracting officer. The advance of 10 to 20 per cent of the estimated cost of a whole contract was usually sufficient to give CRP contractors the necessary working capital. If used improperly, the contractor had to make the amount good.

No liquidation of the advance was effected until near the end of the contract performance when the last unreimbursed portion of the contract equaled the advance payment, at which point the advance was liquidated by application of 100 per cent of all vouchers thereafter submitted for reimbursement.

This method of financing proved very workable since sufficient quantities of money could be obtained at low rates of interest; it was used by Douglas, Boeing, Republic, Goodyear, Martin-Nebraska, Ford, Chrysler, Packard, Curtiss-Wright, Wright Aeronautical, and General Railway Signal Company.
On FP contracts, the amount advanced was limited to a certain percentage of the contractor's costs determined by equipment data submitted by the contractor. The advance was progressively liquidated by deductions from each invoice for delivered goods. The greatest difficulty in this procedure arose from low bids submitted by weak, inexperienced companies who hoped to be bailed out by upward price recalculation. At times these shoe-string businesses caused unsound financial situations to arise: they might be financed by advance payments on one contract by one agency, by a loan from a different agency, or by advance payments and, perhaps, at the same time be in debt to still another agency or to the Treasury for taxes. The necessity for speed often precluded investigation of the financial status of contractors. In a few cases where a vital contractor was involved with several agencies and was so weak financially as to make it impossible to get a bank loan without a 100 per cent government guarantee, the Air Department made a direct loan, or a special advance-payment arrangement to fit the situation. This latter arrangement required special approval of the Fiscal Director at Washington. The Air Technical Service Command certified the need, and all funds went into a special bank account. Withdrawals were made on the counter-signature of the ATSC contracting officer assigned to supervise the loan.

Method of Award

In the 20 years preceding the nation's emergency, one of the most difficult problems in the procurement of aeronautical material was the interpretation of basic policy in the method of awarding contracts. As early as the Civil War, government policy was directed toward competitive
bidding as a basis for the award of contracts. This principle was reiterated by the act of March 2, 1901, which specified that, except in an emergency or when competition was impracticable, all purchase be after advertisement one from the lowest bidder. Army regulations were based on this principle.* In 1942, however, the Lempert Committee (a House committee) suggested that the purchase of aircraft without the restriction of competitive bidding would be to the government's interest, and in 1945 the Morrow Board suggested a modification in competitive bidding procedures.96

After a series of measures had been considered, the Air Corps Act of 2 July 1926 was passed, requiring, among other things, that contracts be awarded only after a 30-day period of advertisement and the submission of designs for competitive judgment. A board was to select the best design and the contract would be awarded to the successful company if it could perform the job at a reasonable cost. In case the designer was unable to fulfill the contract at a fair price the Secretary of War was empowered to award the contract to another company using the accepted design. Aircraft and parts of standard design were to be bought from the lowest bidder.97 And after a contract was awarded, a careful check was to be made of the company's books.

* See, for example, 41 U.S.C. 240, which stipulates that formal advertising and competitive bidding may be dispensed with only where (1) there is only one producer, (2) there is a patent and the patentee alone sells at a fixed price, (3) articles required are parts of apparatus already in use and can be furnished only by one seller, and (4) the purchase is of experimental models.
From 1926 until the beginning of World War II, the interpretation of the intention of this act as to methods of procurement was the source of continual misunderstanding. According to decisions of the Judge Advocate General, 96 a paragraph of the act of 1926, which allowed for purchase of experimental aircraft, parts, and accessories by the Secretary of War "at his discretion," did not rescind the provisions of Section 3709 of the Revised Statutes, requiring advertisement prior to quantity procurement. Almost as soon as the act was passed, however, members of Congress expressed the conviction that the bill permitted negotiated contracts of all sorts; otherwise, it was believed obsolete models would result. 98 The Baker Board in 1934 held that the act had set up three methods of procurement, purchase after design competition, purchase by negotiation, and purchase by open competitive bidding. If the interpretation allowing for negotiated procurement were held to be incorrect, the board stated further, immediate efforts should be made to secure appropriate amendments. 100

In the years following the passage of the act, the Air Corps, under one pretext or another, procured large numbers of aircraft by direct negotiation. Before a committee investigating profiteering in military aircraft in June 1934, Maj. Gen. Benjamin D. Foulois testified that the purchase of planes "had been chiefly under the negotiated system, almost entirely for the past three years"; Maj. Gen. Oscar Westover admitted the accuracy of this statement. Both were familiar with the fact that the Judge Advocate General had called such negotiated procurement a violation of existing statutes, and as a result of this revelation, the committee recommended that General Foulois be relieved as Chief of the Air Corps. 101
After the investigation, the Air Corps followed a policy of procurement after competitive bidding. Nevertheless, serious doubts arose as to the fundamental wisdom of this method of procurement, for it was feared that a few large companies would monopolize the contracts by underbidding their weaker competitors. Senator Warren R. Austin of Vermont in 1939 pointed out this danger, emphasizing the necessity of having as broad a source of supply as possible for times of crisis. At this time Maj. Gen. C. L. Logan replied that the Air Force must interest itself primarily in adequate capacity, not in distribution; in any case, he added, the current procedure was according to the law of Congress.

Competitive bidding had in fact distributed sources in an uneven manner: 75 to 80 per cent of all contracts awarded had gone to the north and northeast and only 15 per cent to the west. Until the time the United States entered the period of national emergency, however, the Air Corps continued the policy of buying only after competitive bidding or design competition, except where there was a single source of supply, and under certain other conditions allowed by the law of 1936.

The procurement of adopted types of aircraft and accessories was initiated by the issue of circular proposals to manufacturers containing detailed information concerning specifications, methods of evaluation to be employed, quantity, quality, government-furnished equipment involved, inspections and deliveries, and conditions governing the award of contract. After the circular proposals were forwarded through the Chief of the Air Corps to the Assistant Secretary of War for approval,
they were then issued to the aircraft industry with the requirement that all who intended to bid must make a monetary deposit as a guarantee of good faith. The procurement of a developmental type was preceded by a statement to the interested companies on type and methods of evaluation, and then a call was issued for bids on preliminary designs. A board of officers appointed by the Secretary of War studied the actions submitted and recommended the awards. The agreement with the winner of the competition called for the construction of an experimental plane, the cost of which was to be no more than the price bid. Upon approval of the experimental airplane an option was to be exercised for quantity production, with all costs of changes in the experimental aircraft being settled by negotiation. In the event the manufacturer offered an original design, the procurement of experimental designs was also permissible. It was the hope of the Secretary of War that this method of award after competitive bidding, if properly scheduled far enough ahead of actual procurement, would provide the best types and designs most expeditiously.

Not until 1940 did a real change in this system occur; at that time the use of "multiple awards" was extended. Previously, under the 1926 act, although awards could be distributed in design competition to contestants of equal merit—that is, in case of ties—the Secretary of War was not allowed to award work to competing firms who were not rated the same in the competition; now he could award more than one but not more than three bidders, regardless of their standing. Award decisions, which had to be reported periodically to Congress, were to be made on the basis of quality, time and rate of delivery, price, and the prevention
of an overload of orders in any one plant.

In July 1939, when the close interest of hostile foreign
governments in American military expansion was recognized, Congress
legalized procurement without advertising where secrecy seemed desirable.

The Chief of the Air Corps was authorized to purchase aircraft, parts,
and accessories by placing contracts with companies he judged most
economical and efficient, but the need for secrecy had to be certified
by the Secretary of War in such cases, and the proposal had to be submitted to at least three reputable firms for their bids.

The delays inherent in design competition and competitive bidding
continued to pull the services. The acquisition of material was
retarded by the need to await appropriations before the initiation of
procurement proceedings, and the further delays in advertising for bids
after the appropriation was received were considered dangerous.

Finally, on 2 July 1940 the Secretary of War was empowered to enter into
negotiated contracts to provide for the "development, purchase, manufacture,
shipment, maintenance, and storage of military equipment under such
conditions as he may deem necessary." This not only permitted speedier
procurement, but also a better distribution of orders among the available
contractors. In placing negotiated contracts, contracting officers
were directed to be guided by the following factors: speed, quality,
fairness of price, labor conditions, most effective use of raw material,
plant location, effect on civilian consumers, financial responsibility
of prospective contractors, experience resulting from previous orders,
and moral responsibility. When feasible, an informal inquiry and a
request for quotations from manufacturers were still used. In the
early days of the emergency, it was generally the policy to 
negotiate if the number of contractors were small or the supply of 
materials limited, and to advertise when there were many potential 
contractors and plentiful raw materials.

The use of negotiation was so successful in speeding up the war 
production that by a WFB directive of 2 March 1912,115 all procure-
ment was based on negotiation, except in a case when, consistent with 
speed, notification of a proposed procurement might be given to contractors 
and quotations secured from them. Previously, the assembly lines of 
many aircraft industries had been slowed down because vital government-
procured items were not available on time. This situation may be laid 
to the fact that government-procured equipment had been procured after 
competitive bidding. These delays in production were now eliminated.

Educational Orders

An often-expressed need to spread out procurement and prepare 
a number of sources of supply in case of war was recognized by Congress 
in June 1938 by the passage of legislation allowing the Secretary of 
War to place contracts with companies to familiarize them with the 
manufacture of munitions.117 These were the so-called "educational 
orders." They included a complete set of sources, oars, and tools which 
were to remain in the hands of the United States; two million dollars a 
year were allotted for the next five fiscal years. In March 1939 an 
amendment to this legislation allocated $24,000,000 for 1939, 1940, and 
1941 with $2,000,000 a year for each of the four fiscal years thereafter.118
RESTRICTED
SECURITY-INFORMATION

General Arnold's plan for the Air Corps' part in this program included finding articles that could be standardized for mass production, buying reproduction rights and production analyses, and ordering in sufficient quantities to give the contractor real production experience. A survey instituted by him showed that the PT-13A, L-9, LC-1, and B-17 aircraft were best suited for standardization. 119

Candidates for the educational orders were asked to concentrate on their financial and managerial stability; their facilities had to be sufficient without enlargement to produce the proposed order, and the contractor was to be a basic plane manufacturer, not merely an assembler. 120

Throughout 1936 and 1939 an Air Corps Board met periodically to plan for this program. Estimates had to be revised downward continually, however, as the amounts available to the Air Corps were successively reduced. As result of these reductions, in May 1939, when only 3,750,000 was left, it was decided to concentrate on the B-1 type aircraft in the educational program since most present aircraft manufacturers who had sufficient experience had entered the heavier field. Nevertheless, by November 1939 most of the educational funds had been withdrawn, in the belief that the large number of foreign orders in this country would perform the educational function for the manufacturers. For example, the French during 1935-1940 had placed orders with Douglas, United Aircraft, North American, and the Aerial Camera Corporation. 121

In 1940-1941, educational orders were revived as a necessary project, and $11,700,000 was allotted to the Air Corps for this purpose. 124 Part of this fund was used in carrying out plans to make the automotive

RESTRICTED
SECURITY-INFORMATION

THIS PAGE Declassified IAW EO12958
industry subcontractors for the aircraft industry, 

Martin, General Motors with North American, and Ford with Consolidated and Douglas. For example, an executive order in the form of a CIO contract was arranged with General Motors for the main landing gear and nose wheel struts for B-24D, B-25G, and B-26D aircraft. Other similar orders were placed.

**Compulsory Orders**

Since the days of the Revolutionary War, the American government had exercised the right of eminent domain in the seizure of property vital to the national interest. In 1916 the President was empowered, when the country was at war or when war was imminent, to place orders with any company for any material needed by the Army or Navy, and to seize the plant of the company involved if necessary. This authority was resisted in a law of 16 September 1940, by executive order the President delegated the powers of seizure to the Office of Production Management and the War Production Board.

Compulsory orders are usually placed when patient negotiations failed, when a contractor refused to make a quotation, refused to agree to a delivery schedule, or could not make a reasonable quotation. Even after placing such an order, however, the government continued its efforts to reach a voluntary and amicable settlement with the contractor. If all negotiations failed, the contractor was exercised a settlement deemed fair and reasonable by the Secretary of War.
RESTRICTED
SECURITY INFORMATION

Only eight mandatory orders were issued by the AAF from May 1942
to November 1944, and two of these were with the Link Aviation Devices.
In all but two cases (Lord Manufacturing Company and Thomas and Betts
Company) voluntary contracts were negotiated to supersede the mandatory
orders; thus, prices were not fixed pursuant to the mandatory
orders. In the case of the Lord Manufacturing Company, the prices fixed by the
Under Secretary of War totaled $24,478.61 as compared with a quotation
of $15,056.06 made by the company. The Lord plant was finally seized
and operated by the Navy because of uncooperative management. On
the other hand, some contractors furnished goods in emergencies without
a formal contract. If the goods were delivered before a contract was
negotiated, a confirming purchase order was made by the AAF if the value
involved was not over $5,000.00.

Trained personnel, the framework of an organization within which these
personnel could work, sufficient funds to execute a program of expansion,
and the contractual instruments by which these funds were allocated
were the instruments which made up the AAF machinery for purchase. In
general, the framework was based on proven experience and practice, but
Congress and the AAF made improvements through cooperative effort and
compromises when they were demanded by the exigencies of the service.
The productive capacity of the nation, the ability of certain companies satisfactorily to produce specific items, and the problem of how most effectively to marshall the potentials of the smaller war plants were factors indispensable to formulating a process of contracting. Closely related to these were the difficulties involved in determining cost, both estimated and real, in order that fair prices might be paid. To understand this in to understand the planning, negotiation, and fulfillment of contracts, and the following pages are intended to effect such an understanding.

A survey of the industrial potentialities for producing aircraft was initiated as early as 1920, when six planning districts were set up for that purpose; 1 three years later procurement planning offices were established and surveys were undertaken. The San Francisco office, for example, reported on all of the facilities of what important district, noting the possibilities for emergence, production and the resources, capabilities, and regulations of manufacturers. 2 These early approaches to the problem were somewhat hap hazard, however, and not until war threatened the safety of the country were more positive, organized efforts made to investigate sources of supply.
In 1939 Generals Arnold and Hap Arnold recognized the increasing necessity for organization and planning for aircraft procurement, and as a result of a productive power survey, the latter proposed a plan for instituting mass production of aircraft and accessories. The plan envisioned assigning the construction of large aircraft to large plants and small aircraft to small plants, in order to develop the capacity of manufacturers to a production of as many as 500 tactical and 150 training type aircraft per month—in retrospect, a most conservative estimate. During July General Arnold called a group of manufacturers to Washington for a discussion of overall military requirements. It was hoped that by such meetings a clear view of the actual and potential capacity of the aircraft industry would be possible and the creation of the industry furthered.

**Evaluation Procedures**

At this early date there was no difficulty in securing bids from manufacturers. The evaluation procedures of competitive bidding, however, involved annoying and potentially dangerous delays. Manufacturers complained of their uncertainty when preparing bids because of difficult legislative controls (prices increased by liquidated damages clauses, the splitting of awards for propellers and engines, and the like) and the ever-present fear of strikes. The latter probably caused the greatest concern, because it could stop production completely and appreciably increase over-all costs; a stoppage in the plant of a subcontractor could cut off the acquisition of a vital item and halt the production of the prime contractor.
In the summer of 1940 the acting Chief of the Air Corps published the Air Corps plan for speedy, efficient procurement. It involved (1) the centralizing of contracting authority at Wright Field; (2) a definite allocation of contracts for the manufacture of aircraft and engines; (3) the procurement of government-furnished and organizational equipment by short-term advertising or by split awards; (4) the use of negotiation where advertising failed; and (5) the procurement of airframes by negotiation, with prices based on audits of previous contracts. At that time it was estimated that the needs of the Air Corps could be met by placing about 250 contracts with 100 plants. 7

Although basic programs for procurement were rather definitely established by 1940, planning was sometimes held up by indecision as to operational and tactical demands and by outdate procedures. For example, in 1941 B-26 procurement was halted and replaced by B-33; the B-26 was emphasized for a time at the expense of the B-25, and then its procurement was postponed while the substitution of the B-29 was discussed. 8 Two years later, Wright Field contracting authorities were confused because higher authorities could not decide upon the extent of the need for gliders. 9 Other procurement difficulties arose as a result of an obsolescence policy formulated in the early 1930's when procurement was on an extremely small scale. In accordance with that policy, the Air Corps predicted aircraft losses and actual requirements on the basis of a 10-year life for an airplane. Later, the realization that the rate of depreciation must parallel the progress of research and development brought more logical planning. In addition, the willingness of Congress
to supply funds made it possible to pay less attention to the preservation of 16 airplanes and to pursue an obsolescence policy more in agreement with current tactical needs. 10

In spite of the difficulties of making contracts with the government, manufacturers of every description, with expressions of concern for the national welfare, offered their facilities for the production of war material. These offers were referred to the proper Wright Field authorities, or, in the case of some small companies, to the appropriate prime contractors with the suggestion that direct correspondence be opened relative to subcontractual work. 11 In the early days of the emergency period, many manufacturers were completely confused as to when they should consult about offering their services, a fact which indicated that the planning of the war period had been far from thorough. Apparently only the top layer of manufacturers had been indoctrinated in proper procedures. Letters requesting information pertaining to war contracts were directed to senators, the President, the Secretary of War, the Chief of Air Service, Chief of Air Corps, Office of the Assistant Secretary of War, war purchasing department, to a "General George H. Butts," and to Mrs. Roosevelt, 12 whereas proper preliminary advice would have directed all communications to the Contracting Officer, Materiel Division, Wright Field. It was, in fact, as late as June 1945 before Wright Field was directed to set up an office with personnel capable of answering all manufacturers' questions. 13
RESTRICTED
SECURITY INFORMATION

Some manufacturers were disappointed in their search for war contracts for wholly different reasons. The War Department maintained a confidential list of bidders to whom awards would not be made, and although the list applied only to prime contractors who were violators of the Davis-Bacon or Walsh-Healy Acts, all prime contractors were required to obtain the written approval of the contracting officer before letting subcontracts. Lists of unsatisfactory contractors were also maintained at Wright Field. Further, it was believed that some contracting officers carried mental reservations about certain contractors and that the awarding of contracts was influenced accordingly. Another problem which arose during the early period was that of encouraging the necessary research and experimentation prior to a decision as to the types of aircraft or accessories that were to be procured in quantities. Although it had been an Air Corps policy since World War I to encourage grants for research by the purchase of experimental types and to offer financial assistance in further development, much of the cost was borne by private companies. If the work proved successful, the company could recoup its expenditures by selling in production quantities; if the research was unsuccessful, the loss had to be absorbed by the manufacturer, an expense which many of them were in no condition to stand.

Plans for Procurement

Once overall policy had been determined and the preliminary plans for procurement completed, investigations and plans for the procurement of specific items proceeded apace. When this phase was reached, the Production Engineering Section at Wright Field prepared and approved
designs of standard articles, issued authorities for purchase, and counseled manufacturers on their problems to help them speed up production. Also, the capable engineers of the section were called upon to make many decisions as to technical parts of the contracts which the members of the Contract Section, mostly lawyers, were not in a position to handle. 19

In the early days of the war, the Interim Division sought to accelerate its planning and experimental work by breaking up specific problems into separate components. For example, in the problem of arming different types of aircraft, various companies were given models with which to experiment, after which the results of their private investigations were pooled to solve the common problem. 20 Another instance was the selection of the Sperry fire-control system for the North American XB-25; because the Sperry Company was overloaded with other orders, the General Electric Corporation was given the contract. 21 But these examples of industrial cooperation were not the exception but the rule: months of research were carried on by Aircraft Associates to produce a power drive for Vickers; 22 the Hinginghouse Company, upon request from Wright Field, made great efforts to fabricate a satisfactory power turret; 23 and the engineers at the Glenn L. Martin plant cooperated fully with other manufacturers in the building and testing of various aircraft models. 24

Some programs entailed planning a complicated yet carefully integrated procurement over large areas of the country. The one calling for nearly 18,000 gliders, for example, involved the awarding of contracts for some 37 experimental models to 23 companies in 10 states, and for...
contracting for 11 production models with 22 different companies in
14 states.25 In this and similar situations, once a design had been
accepted, proper coordination at Wright Field had to be
maintained to cope with the problem of determining the availability
of vital materials, the amount of work already undertaken by suitable
manufacturers, and the state of the labor market. Dates for executing
production contracts were set by the Material Planning Section of the
Material Division after data on the availability of vital, scarce materials
was coordinated.26 The Contracts Section furnished the necessary in-
formation in order to avoid placing new contracts where they would in-
tereference with the fulfillment of previous or more important obligations.27

The problem presented by an uneven distribution of available labor
was met in part by dividing the country into four industrial districts,
which were then rated or labeled I, II, III, or IV, depending upon the
labor situation in that district. Thus, the districts which already had
labor shortages were designated by the symbols I and II; III indicated that
a shortage was expected in six months, and IV that a surplus of labor
existed or was expected.28 The geographical location of potential con-
tractors was checked against the list of districts with and without labor
shortages, and it was policy not to place new orders in districts labeled
I or II. Premiums were sometimes paid by the AAF in order to place
orders where no labor shortage existed. For instance, Siegle Inc. of
New York received $2,700 for 5,000 pulleys which could have been pro-
cured for $20,550 in an area of labor shortage; similarly, the Industrial
Electronic Corporation of Brooklyn received $9,840 foratch carriers-
cases which could have been bought elsewhere for $75,000.29
Use of Small Plants

To take full advantage of the country's industrial potential, the utilization and development of small war plants was of great importance. In the first three years of the emergency, little had been done by the supply services as a whole to marshal the productive power of small industry. The Truax Committee reported in January 1942 that orders for aircraft had been concentrated in 19 great aircraft companies whereas some 60 smaller ones had received no orders at all; nor indeed, had they even been considered, despite the fact that potentially they could produce 2,000 airplanes per month. In a Senate hearing the statement was made that 56 of America's 121,320 manufacturing establishments were getting 75 per cent of Army-Navy contracts and that the rest were divided between 0.6 per cent prime contractors and 1,000 subcontractors. Thus, more than 174,000 manufacturers had not been touched by CIL in its mobilization of the nation's industrial resources. Nevertheless, the War Department was reluctant to have contractors forced upon it as long as it was accountable for the quality and expeditious delivery of matériel. Thurman Arnold testified that for quick procurement of large amounts, it was generally safer to go to a large, recognized facility.

In spite of this attitude, the chairman of JPB was authorized by Congress on 11 June 1942 to mobilize the capacity of smaller industry. He was ordered to make an inventory of small plants, to call them to the attention of the procurement agencies, and to study the problem of subcontracting. If the chairman of JPB certified the capacity of a small plant for a particular project, it was to be used even if the costs were
somewhat greater than those of large plants. In addition, a Small War Plants Corporation was established with a capital of $150,000,000 to help finance small companies; the law establishing it was to be in effect only until 1 June 1945, but Congress later extended its life to 31 December 1946.

In the summer of 1941, prior to the organization of the Small War Plants Corporation, the Air Corps had set up a Production Resources Section at Wright Field to find suitable subcontractors. By 31 January 1943 this office had helped allot $60,000,000 in subcontracts, the bulk of them placed with small war plants. The smaller plants, in fact, were handling about 3 per cent of the prime contracts by the end of March 1943 and 10 per cent of all AAF orders, including subcontracts. A monthly report was originated at Wright Field which indicated month by month the names of the small companies receiving orders, the kind of order, the number of employees in the plant, the normal business, and the amount of the order. A small war plants representative at Dayton disseminated all the information available on the kind of procurement appropriate for small plants. He obtained lists from his district representatives and then forwarded the pertinent data to the liaison men at Wright Field. The final decision as to how great a portion of the work was to be given to small plants was made at Materiel Command headquarters.

Of the 35 small plants patronized in March 1943, 22 had fewer than 100 wage-earners. Frequently, of course, the small size of these companies meant that their costs were higher than those of large firms, and a premium had to be paid by the contracting service in order to do business with them. For example, the American Tool Company of Dayton received $14,000 for an order of parts which could have been obtained for $9,065.
from a larger firm, and the Anderson Rubber Company of Akron received $70,000 for 1,000 units which could have been procured elsewhere for $62,850. Similar premiums, however, were also paid to encourage utilization of factories in areas where there was a labor surplus, as has been explained above.

To help the utilization of small war plants to the fullest extent, fixed-price contractors were particularly urged to use such plants as subcontractors, and they were promised that during any future renegotiations, proper recognition would be given to any uneconomical commitments resulting from such contracts. There were certain items, however, whose manufacture by small firms was considered impractical because of the need for many separately manufactured components and/or the considerable degree of technical experience required. Most significant of these were airframes, engines, propellers, gas or oil, wheels and brakes, airplane tires, starters, generators, carburetors, superchargers, landing gear, spark plugs, turrets, parachutes, aerial or sea, and tubes. In the months of July, 1943, 194,116,182,761 was allocated for the procurement of these items as compared to 192,676,155 for "other purchases"; of the total number of contracts for the latter, 76.6 per cent went to small plants having over 500 employees.

Subcontracting

Although occasionally it was difficult to prevail upon prime contractors to accept subcontractors (often because the former felt they were merely adopting a possible cost-cutting competition), this method of manufacture was almost universally used with it came the need for
considerable coordination and investigation on the part of the A.L., especially since some companies subcontracted so much of their work that they became little more than assemblers of parts. The great disadvantage resulted from this trend—the lack of incentive to improve design and the lenient control which the A.L. had over the subcontractors. (All negotiations with subcontractors had to be carried on through the prime contractor.)

Some indication of the importance of these problems may be gained from the fact that in August 1941 Douglas-Santa Monica was subcontracting 50 per cent of the work on the A-20D and the EE-2; in February 1943, 17 per cent of the A-20G and 30 per cent of the C-54 and C-74; and in January 1944, 15 per cent of all its work. In addition subcontractors furnished some of the main assemblies for Douglas: outwings were supplied by Erie of Detroit, nose assembly and tail cone by Reynolds of South San Francisco, tail club and nacelle structure by Avion of Los Angeles, flaps by Aircraft Containers of Southgate, California, and nose wheel and rear gunner's door by Tether Shoes, Inc., of Los Angeles. Similarly, Fisher Body provided 55 per cent of the work for North American-Kansas City, which also let out subcontracts to numerous other firms. Bellanca subcontracted 60 to 65 per cent of its contract to produce the AT-15.

The practice of subdividing prime contracts over large areas often proved troublesome to the administrative and supervisory branches of the procurement districts. For example, a prime contractor in one district often made arrangements with a manufacturer in another district without the district officials knowing anything about it. An investigation by the Eastern Procurement District discovered 8,400 subcontractors under
its jurisdiction. The contracting officer had the right to approve or disapprove subcontractors submitted by the prime contractor, once the arrangement had been made. The government legally had no control over the relationship between the two. It did, however, a definite interest in the costs charged by subcontractors. Thus, the General Accounting Office was asked by the OHP to rule on a proposed increase of $205,000 in the amount to be paid to the Armstrong Cork Company, a fixed-price sub-subcontractor to Goodyear Aircraft Company, which was operating on a CIP basis for Eiler L. Martin-Nebraska, a CIP prime contractor. 19

In letting a contract, it is often discovered that the contractor would be unable to furnish all the equipment necessary to turn out a complete item. In this case, the government made up the deficiency by direct procurement (government-furnished equipment), combined with the ulterior motive of insuring interchangeability of parts in items secured from several sources. In the summer of 1942 General Arnold and MacKenzie tried to curtail sub-contracting on the grounds that it slowed down production. General Holmes, however, pointed out that there was a greater danger in allowing manufacturers to furnish non-standard equipment, and where the worst short, or not delivered (e.g., instruments, armor, and turbo-superchargers), the manufacturers would have as much difficulty in procurement as the government did. 50 In any case, there were a large number of contracts for government-furnished equipment, as is indicated by the fact that in December 1942 the hierarchical District alone was handling 395 CIP accounts. 51 That such an arrangement could be liable
to a certain amount of confusion is clear, but in some cases hazardous accounting methods and the mixing of government-owned and contractor-owned items made the situation at bestextremely, at worst impossible. In one instance alone, Curtiss-Wright lost $20,000,000 worth of government property, of which $14,000,000 could not be accounted for. 52

Costs

The uncertainty of costs early in the wartime expansion program was the reason for the widespread use of the CRFP contract in aircraft procurement; the constant changes in costs and methods precluded pin-point pricing, despite the fact that certain values could be determined from past experience. In the summer of 1940 a report on estimating airplane costs was published, 53 and the method there set forth was used by the Material Division in the preparation of estimates and in checking bids. 54 Based on a careful study of principal airplane manufacturers, the estimating method was expressed as a formula: one variable, known in the formula as $R_3$, was computed from what was known about each manufacturer's costs per unit produced—overhead, labor, material, tools, and profits; a second factor ($F_3$) was determined by the number of aircraft to be built as compared with the construction difficulties created by the design; and the third factor ($F_c$) represented "plant concentration." The relation of the three to each other was stated as follows: Airplane Costs $= R_3 \times \frac{F_3}{F_c} \times \frac{1}{F_2}$. "Plant concentration" and the other factors had been determined previously for each aircraft manufacturing plant and for various designs and quantities of procurement so that substitutions were relatively simple.
An apparent increase in costs aroused the concern of General Arnold and Congress as early as March 1939. Informal investigations in the summer of 1939 placed the blame on contractual and legal terms, increasingly rigid specifications and inspections, the growth in weight and size of aircraft, the use of more complicated equipment, the need for materials of higher strength-weight ratio, and the use of modern tooling and machinery methods on a comparatively small production scale. On the other hand, the cost per pound of bombarding and cargo airplanes had decreased, and the rise in the cost of engines was only proportional to the greater horsepower. Audits of leading aircraft companies did not reveal excessive profits; indeed, 3 of them, Bell and Seversky, showed decided losses. Nevertheless, between June and October arrangements were made to investigate production costs, and the resultant study generally corroborated earlier opinion to the effect that more intricate aircraft required for more man-hours in both engineering and production. To eliminate rising costs, an effort would have to be made to simplify specifications. The report criticized the cumbersome delays of procurement and recommended that definite decisions be reached on types and quantities. It urged also that the law on war constructing be clarified and that the possibility of limited-life tactical planes be studied. The recommendation that designs be frozen, even for a limited period, was unacceptable to Air Corps tacticians, who wanted to make whatever changes in design they felt necessary to maintain operational superiority. Costs for military aircraft were recognized to be usually higher than for commercial types, largely because of prescribed shop inspections. Then again, costs went up when it was
necessary to set up a new supply in place of scarce already overloaded.*

In addition to the fact that the new manufacturer had to be booked, irrelevance also accounted for additional expense. Prices often were high because the number of airlines procured was not large enough to absorb the original full cost; once a type had been at least partly stabilized, costs declined progressively, or remained relatively stable, as indicated in the following table: 59

<table>
<thead>
<tr>
<th>Model</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
<th>1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-29</td>
<td></td>
<td>1,039.02</td>
<td>1,020.95</td>
<td>79.57</td>
<td></td>
</tr>
<tr>
<td>I-24</td>
<td>258,769(33)</td>
<td>323,316</td>
<td>263,925</td>
<td>16,637</td>
<td></td>
</tr>
<tr>
<td>L-17</td>
<td>261,733(33)</td>
<td>280,921(377)</td>
<td>286,339(335)</td>
<td>335,176</td>
<td>280,411</td>
</tr>
<tr>
<td>P-33</td>
<td>177,608(12)</td>
<td>180,503(120)</td>
<td>128,755(12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-51</td>
<td>30,138(1,010)</td>
<td>30,645(2,610)</td>
<td>24,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-70</td>
<td></td>
<td>51,015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W-6</td>
<td>18,052(1,010)</td>
<td>17,016(1,000)</td>
<td>12,933(2,610)</td>
<td>13,100</td>
<td></td>
</tr>
<tr>
<td>W-7-13</td>
<td>19,936</td>
<td>23,571(1,070)</td>
<td>27,106(900)</td>
<td>22,602</td>
<td>27,585</td>
</tr>
</tbody>
</table>

To analyze and control costs, offices were set up at Wright Field, and in the districts. 60 In Washington the Contract, Finance, and Analysis Branch of the Procurement Division observed from a staff level the work of lower echelons and reviewed all prices which required

* For example, 6-1 bombsights are procured from the National Ordnance Register Company of Lincoln at a unit price of 7,160 instead of the previous 5,753 from Sperry. (See note for Gen. O. X. Badertsch, 30 July 1942, in ADG (Bulk 16III), "Contracter.")

/ A letter in a red circle indicates the number of units procured; a slash indicates deletion.

REstricted
SECURITY INFORMATION
the Unit Secretary's approval. A Cost and Price Analysis Unit at
Wright Field assisted in appraising the cost arriving at reasonable estimates,
based on the costs of material, direct labor, overhead, subcontracting,
tooling, engineering, and direct charges. At times bids were negotiated
"follow-on procurements" before the delivery of the first production
article and thus before data from actual experience were available. In
the case of the B-29, though three large procurements were made from
one contractor before the delivery of the first article, successively
lower prices were negotiated in anticipation of increased efficiency.

To determine material costs, the bids from other contractors for the
same or similar articles were taken into consideration. Allowances
were made for increased efficiency, decreased scrap, and increased wages.

In addition, prior to the preparation of contracts, purchase orders,
change orders, or supplemental orders, each case was reviewed; for
this purpose Wright Field maintained 32 analysts and 28 clerks, typists,
and clerks to handle approximately 450 price analyses each
month.

Similar methods are employed in the district offices. After the
death of Mr. Field, the work load was greatly reduced. Authorities for
district purchase were occasionally forwarded from Wright Field, and
each Air Technical Service Command district was responsible for issuing
contract-change notifications and for making recommendations concerning
the effect of the change on the unit price.

---

This page has been declassified IAW EO12958.
The time required to effect all the steps in formal procurement was long. Although experience and necessity shortened this period during the war, the number of interests involved which had to be consulted was so great, and the necessary pooling, expansion, and education of manpower so difficult that the procurement of even one item remained a task of great magnitude. For example, the following steps were involved in the procurement of new airplanes: (1) preparation of type specification and methods of evaluation, and approval thereof (1-3 months); (2) preparation, approval, and distribution of "requests for bids" (1-2 months); (3) preparation of design data by the bidder (1-3 months); (4) negotiation of purchase of an experimental airplane (1 month); (5) design and construction of experimental airplane (6-12 months depending on type and size); (6) engineering tests and changes (1-3 months); (7) negotiation of purchase of service test quantities (1 month); (8) service test by tactical organizations (3-12 months); and (9) approval of type with or without changes. After all of this was accomplished, quantity procurement was initiated as follows: (1) preparation, approval, and formal request for bids (1 month); (2) advertising period (1-12 months); (3) opening of bids, and awards (1-2 months); (4) delivery of first item (6-12 months); (5) delivery of remaining articles starting 1 to 3 months after approval of the first article. In emergencies, however, this complicated procedure was somewhat abbreviated to expedite immediate procurement: (1) preparation of type specifications and methods of evaluation, and a approval thereof (1-3 months); (2) preparation,
approval, and publication of formal requests for bids (1 month); 
(3) advertising period (3-4 months); (4) opening of bids, declaration 
of winner or winners, and award of contract (1-3 months); and (5) 
delivery of first airplane. 61

The delays caused by advertising and the evaluation of bids were 
largely eliminated with the advent of the negotiated contract, but 
since many of the checks and steps of the process were essential to 
safe procurement, they were left intact. In a few cases, procurement 
of aircraft straight from the drawing board to the production lines was 
effected, as in the acquisition of the B-25. Such a method involved 
obvious dangers, which were quickly made manifest when five of the 
first six B-25's produced crashed; numerous delays thereafter were 
necessary for modification. Even so, airplanes of this type were in 
combat areas some months before they would have been had the regular 
procedure been followed. 62 Similar speed-up methods were applied in 
the procurement of the AT-9, AT-10, O-57, O-69, P-47B, O-52, TG-5, 
TG-6, and TG-8. 63 Again, in view of an urgent need and the early pro-
gress on the XCG-3 and -4, production contracts were let with Jeeco, and 
before the delivery of the first flight-test article, 11 companies had 
been given contracts to produce 6,000 CG-4A's. 64

In addition to cost and such other matters as the proved worth of 
the plane (as opposed to excellence on paper), in the evaluation of 
designs bidders were ranked on performance, engineering, and suitability. 
Among the factors noted were design, speed at sea level, endurance, 
service ceiling, rate of climb to 10,000 feet, take off and landing 
over a 50-foot obstacle, weight empty, gross weight, balance, engine, 

RESTRICTED 
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
schedule of delivery, and method of costs in quantity. After examining the aircraft in these terms, the evaluation board made contract recommendations. These were reviewed by the chief of the Material Division, the Commanding General, AAF, and the Under Secretary of War. Usually the suggestions of the evaluation board were followed, although occasionally slight changes in scheduling were made.*

As early as 1940, attempts were made to standardize inventions for bidding as well as the other steps in procurement procedure. The Air Corps immediately opposed such a move, however, on the basis that air force procurement, and other circumstances, varied too radically; in addition, obvious differences in the material to be acquired made complete uniformity undesirable. To avoid this kind of duplication of effort, all procurement was examined carefully in order to secure material through the service that was normally charged with the development of the item in question. Although the actual steps which were followed from the time that a need developed for a new item to the time that this item was in quantity production varied with circumstances, the diagram on the following page illustrates the basic steps that characterized the procurement process.  

To reduce the burden of contract administration an effort was made to simplify the contract. Higher authority in Washington tried to keep the number of separate contracts with individual contractors at a minimum by handling reevaluations, changes, and cutbacks through

* The board suggested an 50-37 split between Squiresky and Bell after each submitted single-engine fighter designs; the Assistant Secretary of War changed this to an 50-30 split. (Compare the series of circular proposals for the summer of 1939 in Lyon Project Book 6, File A.)
Similarly, the contracting body at Wright Field attempted to combine into one pool all agreements with a particular manufacturer. 70

Local Purchase

Items of relatively small value and those in general use were normally procured locally by AAF stations; 71 the commanding officer of the field reported all such purchases of more than $100 to the Commanding General, AAF. 72 The reports included a list of the items and the authority under which they were procured. Since in March 1944 a survey of five typical Air Transport Command bases 73 showed that 55 per cent of local purchases could have been avoided through requisitioning, a directive was issued prescribing a 25 per cent cut in this type of procurement. 74 A later survey between July 1944 and March 1945 revealed that 95 per cent of all local purchases totaled less than $5000. It was believed that analysis of costs at this level would be of little economic value. 75

Procurement from Other Arms and Services

Several other sources of supply included procurement agencies of armed forces other than the AAF, civilian agencies of the United States government, and foreign contractors or agencies. The total amount of procurement from all three of these was relatively small and generally the American contractor was the ultimate source. The relationships between the Materiel Command of the AAF and other procurement agencies of the War Department, and between the AAF and the Navy Department differ only in degree. Actually, the other procurement agencies of
the Air Department (included together here under the Army Service Forces) and the Lateral Command (later the Air Technical Service Command) both derived their authority from the Under Secretary of War. His procurement power was delegated both to the Commanding General, AAF, and to the Commanding General, ASF, the former generally charged with procuring astronautical equipment and the latter all other equipment. The air forces rendered the grouping of all procurement for the Army in one service, contending that it would be prejudicial to efficiency;* the Air Corps had a high priority for many items, but if the power of allocation were held by some other agency, this ranking might become meaningless. Therefore, procurement of items which are specifically for the AAF remained under its own control, whereas items for common use were procured by the branch most directly interested.

The division of interests was soon standardized and clarified, and by the spring of 1922 all assignments or changes could be handled by the Director of Procurement and Distribution. Generally this arrangement allowed only a minimum of competition between the services, and where there was conflict, one of the agencies developed its own source. Information was exchanged so that the proper agency could determine its needs. For example, Services of Supply received information on the percentage loading of airplanes with ammunition and on the chemical warfare devices by type and purpose necessary for calculating the requirements of the AAF. Coordinated procurement of two types: (1) procurement by the service of items used in common by all services, such as "substitute" items by the Quartermaster, and (2) joint

*See above, p. 53.
procurement by several using sources, such as lumber procure by
the General Procurement Agency on lumber. Some material, on the other
hand, was procured by several different sources individually: fuels
and lubricants were procured by the Quartermaster General, the Army
Air Forces, the Bureau of Supplies and Accounts, and the Bureau of
Aeronautics. From as early as the spring of 1939 the Bureau of
Aeronautics and the Air Corps exchanged procurement plans in order to
avoid a disproportionate distribution of orders among manufacturers.

In 1942 a steering committee was formed to monitor the division of
procurement between Army and Navy plants. In the procurement of
aircraft and accessories, items representing approximately 76 per cent
of the dollar value were coordinated by the AAF and the Bureau of
Aeronautics; radio and radar equipment, representing 18 per cent, were
coordinated by the Signal Corps and Navy Ordnance through the Joint
Radio Board, a subcommittee of the Joint Aircraft Committee. Thus,
only 6 per cent of the value of other material was left for further
coordination. Despite this, however, well coordinated Army-Navy
procurement did not obtain throughout the war. Prior to the spring
of 1945 there had been numerous disagreements which led the Secretary
of War to complain to the Secretary of the Navy regarding duplications,
conflicts of interest, competition for contractors, and cumbersome
committee action. Much of this was eliminated, and program planning
abated, in cases where one arm did procure for both, that is in the
categories of training aircraft, engines, propellers, and bomb sights.
Some procurement was arranged by the Office of Scientific Research and Development (OSRD); in large quantities, however, it was more or less an accidental development. At first, the OSRD procured a few "quick items" to expedite testing, but later it was embarrassed by the pressure of requests from the services, whose own organizations did not permit expeditious procurement. Inasmuch as the OSRD lacked proper safeguards for extensive procurement, it was ordered in January 1942 to limit OSRD authority to experimental items for the Army and Navy. Beyond this, services were to do all their own quantity procuring, assisted by the National Resources Defense Council in the capacity of advisor and consultant.

The AFL also obtained material from a number of less important sources. The Civil Aeronautics Authority, for example, gave 21,000 worth of equipment in the spring of 1943 for the purpose of setting up airport lighting; at the same time the AAF transferred a sum of $10,000 to GAA to cover transportation costs and certain replacement items for the beacons. Prison industries were patronized by the AAF in accordance with federal law, such purchases being cleared by the Attorney General; these purchases were specifically exempted from the Walsh-Healey Public Contracts Act by the Secretary of Labor.

Purchase Abroad

Although Congress sought consistently to protect American business by limiting purchase abroad, during the emergency period, the procuramental agencies were urged to consider Latin America as a source of
materials and supplies in keeping with the spirit of the good neighbor policy.91 The Lend-Lease Act, passed in March 1941,92 provided for aid to the allies and also, by implication, for reverse lend-lease.93 That is, the Secretaries of War and Navy were authorized to purchase abroad such purchases were in the interests of national defense.94 Inasmuch as the United States was not yet at war, the Air Corps planned no large volume of foreign purchases at that time.95

For a while friendly governments built and furnished facilities for American forces that were there on foreign soil, but in February 1942 directives were issued to enable military organizations to establish and supply their own facilities.96 AAF service commands were organized to make necessary contracts and purchases overseas for the AAF.97 Under a purchasing and contract section there were set up (1) an engineering division which outlined the requirements for local manufacture and purchase, (2) a production division which made the necessary negotiations with the contractor, and (3) a supply division which wrote the formal contract and performed all the related fiscal work.98 Whenever the need arose for a specific item, every attempt was made to procure it from stock or from Army sources; if this failed, the procurement agency certified the fact and signed a requisition for the property. This was then submitted to the purchasing and contracting officer of the service zone, who in turn submitted a request for local purchase to the Army or service contracting officer.99 The commanding general of any air force service command overseas was directed in 1942 to supervise the manufacture by foreign concerns of such items of AAF equipment and

RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
supply as were required, and to arrange for their procurement.

Various over-all organizations were set up in the theatres of
operation for this purpose. In India, a Munitions & Ammunition Committee,
made up of representatives of British, Indian, American, and Chinese
forces, assigned the entire Indian production of material to the
Allied forces and determined which items were to be supplied. In
accordance with a decision of this committee, the production of com-
plete aircraft by the Hindustan Aircraft Ltd. was tapered off to permit
using the plant for the manufacture of parts needed by the AAF. Indian
resources were also used during the war for manufacture of tires and
tubes for AAF aircraft and vehicles.

In Australia V Air Force Service Command had a CFFF contract for
tires with the Goodyear Tire and Rubber Company, Ltd. This contract,
although cleared by the Australian government, was not part of reverse
lend-lease. The decision to procure tires directly from the manufacturer
rather than through the intermediation of the Australian government was
prompted by the fear that the factory operating on a lend-lease order
might experience labor difficulties. Other items, however, were
procured through requests to the Australian Ministry of Munitions. An
order for 30,000 straps for mounting parachute units on bombs was placed
with the Australian government by V AFSC in February 1944. 

An order for double-suspension bomb hooks was placed, six of which
local ammunition company were lent to the producer to speed up producion.

Whenever possible, contract items were converted to lend-lease, and
cash purchases were kept at a minimum. During April 1944 the pur-
chasing and contracting section of the V Air Force Service Command supply

Due to page breaks and formatting issues, the text continues on the next page.
Division assigned 110 contract demands for equipment, supplies, and services, and also made 300 cash purchases for materials and supplies not on lease-loan. 106

Canada posed a somewhat different problem because of its close industrial interaction with the United States. Canolene firms were, on the whole, treated exactly like American firms and, indeed, sometimes acted as subcontractors to American manufacturers. 107

All negotiations for procurement in Canada were made through Air Supplies Ltd., in Washington, a crown company under the Canadian Department of Munitions and Supply which in turn contracted with the companies concerned. Most of these contracts were on a CPF basis. 108

In December 1941 all restrictions on the placing of contracts in Canada were removed, but in the winter of 1942 there were accusations that politics played too large a part in Canadian production. 110

As late as the winter of 1944, the procurer agencies were warned that they were to place contracts in Canada for production considerations alone, and not to provide a dollar exchange in Canada. 111

Liner purchases were made from other foreign governments. In February 1945 the Netherlands returned some training aircraft to the U.S. which were credited to the Netherlands lease-loan account; and in the spring of 1943, 25 airplanes were purchased outright from the Norwegian government. 113

A complete accounting of reverse lease-loan is almost impossible; no itemized statement of materials so procured was preserved, although such information doubtless exists overseas. 114

There was resistance abroad in 1944 to the idea of any accounting of lease-loan in reverse on the ground of its impracticability and, perhaps, unavailability. Sector Brewer of Laine observed: 115

RESTRICTED SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
The importance of a possible accounting became more significant as we found places where there is an impression existed that lend-lease and lend-lease-in-reverse were approximately in balance. In some instances this seemed to have a somewhat official air - in although it was likely at variance with the facts.

Part of the reason for the lack of accurate accounts was the fact that the Department of State instructed the United Kingdom not to legalize invoices of the reverse lend-lease that had been furnished. On this subject the Lord Committee reported that "the confusion which has been created will make an accurate accounting of lend-lease transactions extremely difficult, if indeed it is possible to achieve even a reliable approximation of lend-lease balances."
Chapter III

1. IMPLANTING THE CONTRACT

The procurement district organization, in addition to their
vital function of searching for and exploiting new sources of supply,
figured importantly both in the negotiation of the contract, as it has
already been mentioned, and in the administration of the contract. The
latter involves a definite reorganization of responsibilities, so
that certain of the, originally, village of White Field or Washington,
care later assumed, or delegated to, the officer of the procurement
organization as rest the sources of supply. For specifically, in-
spiration cutters and the drawing up of necessary changes come within
the province of the local offices. The fiscal sections of the procure-
ment districts supervised price adjustments, discounts, credits, and
returns, while the procurement sections made close supervision in novel times to
establishing a judicious balance between price and production costs.

Auditing

The audit sections of the procurement districts, in addition to
auditing or supervising the audit of C.W. contracts, price cost and
profit analyses, studied the use of "advance payments," the price
reconsiderations at the time of reconsideration, the contracting officer's
verifications of manufacturers' quotations for which reimbursement was
claimed, this included not only itemized bills for sub-contractors and
vendors, but also the original reports for labor.

62
In 1941 a representative of the Production Engineering Division was assigned to one contracting plant to monitor work costs prior to the placing of orders, to assure the accuracy of the employee, as to maintain a check on the scale. The findings of local authorities sometimes helped in the equitable settlement of company claims that were operating in line under the terms of the original contract. For example, the Pacific Electric Electric Company of Long Island City, sole source of locomotive, 5 per cent of $37,422.27 to active of locomotives, and the 20th Precinct District police the need for an increase of $1,000,000 on Plant and contract to produce $1,126. In this type of problem the responsibility of some companies is being accentuated, and the failure to assure reliable and reasonable cost both prove the value of careful investigation. Investigations of the costs sustained by GATF contractors are particularly significant to GE plant representatives, GE resident auditors, and contracting officers, partly because they are not incurred into continuous control with the cooperation of all controlling agencies, the General Accounting Office (GAO). Although the GAO studied many field project representatives at the plant level, the lack of information, particularly from the GAO to the GATF representatives, often left much to be desired. The GATF provided the difficulties of cost control under circumstances submitted from representatives to contractors until it had received a satisfactory clarification of any doubts on the propriety of the expenditure; some of these expenses were presented when, in the course of an extended audit, evidence will appear with others by other contractors.
insurance on lost tiles, Purchasing costs, charges for travel; travel work prior to the construction of the contract, publication of plant information sheets, legal fees, travel expenses incurred in accompanying the body of a deceased employee, excessive travel fees, and direct expenses for plant activities. 13 Despite this or order of suspension of credit, no further list of allowable unrecoverable costs was ever issued by OIO; a circumstance not inconsistent with the contractors.

Sometimes, however, the OIO field representative would notify the resident auditor and the replies to his internal inquiries were unsatisfactory; that was the auditor, even when officer, or contractor an opportunity to collect more and before a suspension. But this procedure is not uniform; in resident auditors service complaints that suspicions were more often raised evidential, different from those previously indicated. 14 In addition, the clerk service of such items as an increase in the price of materials 15 tended to circumscribe initiative among contractors officers with a critical need areas. In the summer of 1942, however, the anticipation of any terminations detailed interest in OIO exceptions. Despite the circumstances involved, field components of the TIO were instructed to furnish promptly to OIO representatives all costs requested and, moreover, to discover whether the information was sufficient and satisfactory, in order that termination and recollection should not be delayed. 16

Many noncontrollable details had to be determined at levels higher than the district, particularly on large contracts, a reason to the Office of the Under Secretary of the, District and plant representatives furnished much of the pertinent information in these cases. A discovery
by test personnel, for instance, that certain real did not meet
the performance specifications of the contract would cause a can-
cellation or a price reduction. Thus, the price to be paid for each
Curvex-flight F-37 was reduced to $2,200.00 because the high speed
airspeed of 300 miles per hour at 20,000 feet could not be met; in
actual tests the airplane was found capable of only 220 at that altitude.

Nevertheless, public necessity requires the continuous procurement of
these aircraft because the lower speed did not allow for the
next higher speed. The cut in price was extended by a formula wherein
the reduction in cost was in direct relation to the figure of merit
assigned at the time of evaluation and the price or figure of merit
plus a 20 per cent penalty. Thus a reduction of such a formula eliminated
partiality and provided a definite means of determining the actual loss
to the government. The arbitrary penalty figure of 20 per cent was
set by Herr H. Degener.\textsuperscript{17}

Changes in Contracting

Throughout the life of a contract, countless change orders and
supplements to the original agreements are required. These not only
provided for changes in specifications, but also were used to state the
conditions of source selection, additional purchases, engineering
services, or deconstruction of production.\textsuperscript{18} The large number of
changes required by the Material Control caused disorganization among
contractors, who blamed the alterations for increased costs. A high cost.
Douglas Aircraft estimated that there were 9,000 major changes in the
A-20 between 1936 and 1944, with 3,000 more minor recent contracts, all
of which involved $2,000,000 design engineering hours.\textsuperscript{19}
that by August 1942 it had received 9,600 change orders in its clerical
design. Since contract changes and all elemental agreements
obviously could not be written for engineering changes in such quantity,
a procedure was adopted whereby contract-change notifications were sent
to the contractors, who in turn grouped them quarterly, with costs included, so that inclusive contract changes might be made at one time.
Recommendations for changes in unit prices were necessary by design
alterations were initialed by district authorities.*

It was a policy of the Air Department to encourage a change from
CPP to CP contracts wherever this was possible. By May 1941 eight
CPP contracts were provided for bid conversion at specified
time after the completion of a certain portion of the contract.
Further, in the autumn of 1942 the AAF was instructed to avoid the
placing of CPP contracts except when absolutely necessary, and the
AAF, after informing the principal contractors of the Air Department's
desire to convert CPP contracts to CP contracts, asked for a statement
of their attitude. Their reply was implicit in the fact that by March
1944 only three contracts—amounting to $59,470,294—had been converted,
and the expectation of orders for new large aircraft made the addition
of more CPP contracts likely.23

The idea of making this change was stimulated by congressional
opinion that CPP contracts varied labor and materials, caused duplications
of service, involved excessive costs, and depended too much on lesser

---

* See above, pp. 77-79.
and renegotiation. It was also felt that by 1944 enough data on the costs of materials and labor would be available to effect a conversion. Further disadvantages in CFF contracts, such as the amount of auditing necessary and the lack of incentive for cheap production, were cited in support of the proposed change.

The contractor and the AAF, however, faced such real difficulties in converting the contracts from CFF to FP that the change-over often proved impracticable. The production of some items still fluctuated so much, because of strategic factors or specification changes, that no reasonable fixed price could be set. Many contractors were inexperienced and, with their small amount of working capital, a slight miscalculation could ruin them. Then, too, both AAF and the contractors' personnel were spread so thin that the necessary computations and negotiations were impossible if full-scale production were to be maintained.

The Navel Command has failed to develop any proof that FP contractors were any more or less efficient or economical than CFF contractors, and the OEO questioned the assumption that the new cost would be less than that expected if a CFF contract were retained. Indeed, increased risks under an FP contract often provoked an insistence on higher prices from the contractor. At any rate, from the spring of 1943 on, procurement regulations specified the inclusion in CFF contracts of clauses for conversion after partial completion or on a specified date.

The size of the conversion problem is indicated by the following breakdown of the number of CFF contracts for airplane procurement in the various AAF procurements approved between June 1940 and June 1944.
<table>
<thead>
<tr>
<th>Program</th>
<th>Date</th>
<th>Number of Aircraft</th>
<th>Type of Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>June 1940</td>
<td>4,085</td>
<td>7</td>
</tr>
<tr>
<td>B</td>
<td>September 1940</td>
<td>14,055</td>
<td>14</td>
</tr>
<tr>
<td>C</td>
<td>April 1941</td>
<td>10,186</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>June 1941</td>
<td>13,575</td>
<td>24</td>
</tr>
<tr>
<td>E</td>
<td>Lurh 1924</td>
<td>10,210</td>
<td>10</td>
</tr>
<tr>
<td>F</td>
<td>October 1941</td>
<td>3,469</td>
<td>7</td>
</tr>
<tr>
<td>G</td>
<td>January 1942</td>
<td>30,036</td>
<td>44</td>
</tr>
<tr>
<td>H</td>
<td>April 1942</td>
<td>31,041</td>
<td>32</td>
</tr>
<tr>
<td>I</td>
<td>June 1942</td>
<td>30,667</td>
<td>40</td>
</tr>
<tr>
<td>J</td>
<td>June 1943</td>
<td>59,543</td>
<td>54</td>
</tr>
<tr>
<td>K</td>
<td>June 1944</td>
<td>25,625</td>
<td>12</td>
</tr>
</tbody>
</table>

By the autumn of 1944 only 67 AAF contractors were operating on a CFF9 basis, conversions having been effected for such large contractors as Emerson Electric, Bell Aircraft, A.O. Smith, and Viscor Body. The relative smallness of this number permitted treating each firm individually and eliminated the need for over-all policies.

One of the main difficulties in this conversion program was the CFF9 accounting method, which tended to "justify" expenditures in order to secure full reimbursement rather than to present an accurate picture of inventory values or the actual cost of work in progress. As a result, instituting the FP system became a monumental task.

Some contractors were loath to negotiate a change-over before straightening out cost and inventory records and reducing the number of CFF9 subcontractors. Largely because of these difficulties, the AAF decided in 1944 that conversion to FP contracts was impracticable under certain conditions: (1) if a disproportionate amount of accounting was involved, (2) if inventories would interfere with production, (3) if conversion were to take place at a late date in execution, and (4) if conversion had to be made retroactive for an unusually long period.
One of the most important responsibilities to be undertaken by the
Lettol Organic inspection; since, roughly speaking, it was a
phase of production, it played an important part in the acceptance of
material contracted for by the AAF. The primary purpose of inspection
was, of course, to ensure that government payments were made for the
quality and quantity specified in the contract.

The inspection organization consisted of the AAF resident representative,
an inspector-in-charge, and one or more assistants, all of them being
kept informed through technical orders issued by higher authorities.\textsuperscript{36}
Government inspectors were instructed to remain aloof as far as possible
in regard to the contractor's policies, except those affecting material.

Their job was thus designed to supplement and supervise rather than
duplicate the contractor's own inspection system. The inspector's
cuties were (1) to see that the materials and supplies met specifications,
(2) to accept the prevention of production stoppages, (3) to supervise
the contractor's inspections, and (4) to prevail upon the company's
inspectors to report mistakes.\textsuperscript{37} To avoid delays, the inspector at
the factory was authorized to accept goods which did not meet specifications
precisely, provided they were reasonable equivalents, involved no safety
hazard, and did not severely affect weight or interchangeability. If
the substitute reduced costs, an appropriate contract-change notification
was to be issued by the chief of the Production Division.\textsuperscript{38}

Contractors' inspection systems are subject to two ratings,
"approved" and "deferred," based on the government inspector's opinion
of the manufacturer's accomplishments as to "contractor's quality"
Control Reception. Flights given an approved rating were subject to a review of their standing every six months, those with inferior ratings every three months. The Navy and DID agreed to reciprocal inspections at GNE plants which had contracts with both services, and the Navy maintained direct correspondence with the Lateral Command at Wright Field to report on these factories. The steps taken made the products proved unsatisfactory various. Occasionally, where personnel or inspection malpractices were blamed, corrections were made for improvement within the contractor's own organization; thus Bendix was urged to advise its engineers to "live" with their turrets during the last months of production to eliminate the possibility of defective items. The quality of inspection at Douglas-Santa Monica was found unsatisfactory in 1942 and the blame placed on poor company organization; inadequate reinspection was advised. Again, in 1944 Douglas-Santa Monica was reproached over the removal of certain key personnel advised because of shortages, inaccurate tabulating, and unenlightened purchasing policies. A third example of the value of inspection occurred when the receipt by the US of faulty engines from the Wright Aeronautical Corporation seemed to nullify the work, improper recording of tests, forking of records, failure to correlate sub-rating and defective materials, oral changes or tolerances, and allowing production to override inspection; main disregard of organization and close control were observed by the DID. Where circuit performance proved poor or unsuitable for A-38 tactical requirements, production was sometimes completely curtailed and excess parts used elsewhere. For example, production of the A-34 was started, and excess parts were used by the Navy for SP2 production. However.
faulty production, or revealed by the field performance of a product, the manufacturer can require to make, or pay for, the necessary repairs.\textsuperscript{45} Rejected defects could result in cancellations and removal from the register of potential contractors;\textsuperscript{46} usually, however, efforts were made to find alternate sources of supply before contractors were completely disbarred.\textsuperscript{47}
RESTRICTED
SECURITY INFORMATION

Chapter IV

COST AND PROFIT OBJECTIVES

In March 1934 Congress passed an act limiting the profits of navy contractors—the Vinson-Treman Act. By this statute, the books and records of the manufacturer were opened to navy auditors, and the contractor was required to pay back to the Treasury all profits in excess of 10 per cent of the total contract price. The contractors were to obtain similar terms from all subcontractors and to refrain from any subdivision of contracts calculated to evade the provisions of the act. In June 1936 this statute was extended to permit carrying over losses of one year to balance any excess profits the following year. During these same years before the emergency, it was Air Corps policy—in effect, a gentlemen's agreement—to limit the profits of Air Corps contractors to an annual average of 10 per cent of their total Air Corps business. On 3 April 1939, however, all the provisions of the Vinson-Treman Act were made applicable to the Air Corps, except that the amount of profits to be allowed was raised to 12 per cent on aircraft, and losses could be charged against profits over a four-year period.

These modifications were designed to encourage the expansion of the aircraft industry for national defense. Items which were classified as scientific were exempted from the provisions of this bill because they were normally procured in small quantities. Thus, the exception was made by the Aeronautical Board to certain vital communication,
navigational, and fire-control components of the completed aircraft while these items were still in the experimental stage. On 26 June 1940 the legal profit was reduced to 6 per cent mainly because of the rapidly increasing volume of war material procurement. In order to eliminate much auditing and supervisory work, however, firms with a government contract volume of less than $5,000,000 were exempted, a profit feature which had the effect of protecting the encouraging small business to participate in national defense.

In October 1940 the provisions of the Vinson-Grumman Act limiting excess profits were suspended, and profits were thereafter controlled by the provision of the Internal Revenue Code on 8 October 1960. It was the opinion of the Treasury Department that the retention of the Vinson-Grumman Act, applicable to naval vessels and aircraft alone, amounted to a duplication of control inasmuch as an overall price-limiting statute had been enacted.

Pricing

Pricing and re-pricing could be used to keep costs at a minimum without resorting to taxation, refunds, or renegotiation. It was advantageous to the air forces to avoid the latter method when possible, since the recovered funds were returned to the treasury and therefore lost to the air forces for further use in the programs for which they had been originally appropriated.

The Vinson-Grumman Act and allied statutes had given the Army and Navy the right to audit company books, and this right was not abridged by the suspension of the profit-limiting provisions. In September 1940,
Therefore, the Army and Navy decided to install resident cost-inspection forces in plants where a large volume of business was expected. Personal was furnished both by the Navy and by the Air Corps, with the Navy having paramount interest in the plant providing the senior resident accountant. It was felt that in this way a uniform determination of costs would be assured. The Air Corps furnished 52, the Navy 48 employees to carry out the program at a complete cost per year equal to one-twentieth of 1 per cent of the estimated expenditures. The primary duty of these inspectors was to safeguard the Government's interests in the costs of materials and services in GEF contracts.

In most districts the price inspectors were stationed at the plants of prime GEF contractors. Where prices seemed excessive they made investigations and then, in cooperation with the contractor's purchasing department, usually managed to obtain the items for less.

In the Eastern Procurement District, however, the inspectors were stationed in district and area offices rather than in the plants; they dealt directly to FP contractors, and subcontractors and vendors who might be operating under either GEF or FP contracts, and determined on the spot the costs of subcontracted and purchased items. This method resulted in saving not only for prime contractors and the government within the district, but also for those prime contractors outside the district who had subcontractors within it. In the Central District the chief of the Price Adjustment Section sponsored a program by which manufacturers were regraded for reducing prices at the time...
RESTRICTED
SECURITY INFORMATION

of renegotiation, a plan which was adopted later by the War Department. To supplement this, considerable saving was effected from time to time by alert representatives who followed cost trends closely. The General District's Price Adjustment Section, for example, discovered major increases in the costs in three contracts with the Fisher Body Division of General Motors and thereupon negotiated a price reduction amounting to $6,000,000.13

Articles authorizing price adjustments were usually included in the contracts; a periodic review of the costs was to be made in an attempt to reduce the estimates of the whole contract or parts of it. Adjustment articles included: (1) recalculation independent of statutory renegotiation; (2) periodic adjustment of price; (3) contingency charges for short-term pricing; and (4) escalation. Recalculation was designed for use in cases where the costs could not be reasonably estimated in advance and where the fact that the FP type contract was considered preferable.14 This article did not preclude an over-all review of the contract.15 When periodic adjustments were made, the intervening time was relatively short; prices for each period were based on past experience and more accurate estimates. If close pricing were maintained, the contractor was thus given further incentive to reduce costs in order to increase the margin of profit.16 The War Production Board asked approval of five FP contracts calling for delivery after 31 December 1944, when the renegotiation act was to expire. When the contractors agreed to include periodic readjustment in the contracts, the value of that move was reflected in the 43 per cent reduction made in an Allis-Chalmers contract in less than a year.17
Special price adjustment articles took into account cost variations caused by changes in schedules or allocations, and protected contractors against unpredictable risks. In a contract with Gilfillan Brothers of Los Angeles, provision was made for a downward or limited upward price revision after the completion of the contract. From 1941 to 1943 escalator clauses anticipated adjustments in prices resulting from changes in the costs of labor and materials. Clauses of this sort tended to increase profits, perhaps because efficiency rose with an increase in wages; by means of escalation Lockheed netted $1,500,000 and Wright Aeronautical a similar amount. As a result of this profitable arrangement, most companies waived the right to apply for higher prices under the clause. Finally, in April 1943 recourse to the clause was prohibited, even though interest in an escalator provision increased since contractors looking toward the post-war period, because of the insurmountable costs of labor uncertainties and deflated profits.

A new and more direct method of price control was inaugurated on 75 February 1944 by a statute authorizing the Secretary of OR, if it determined that a given price was unfair, to require the supplier to establish a more reasonable price; if they refused, the Secretary was empowered to set the price himself. The President, whose authority in this case could be delegated to a subordinate in the Executive Department, could seize any plant which did not obey this statute. All later contracts and purchase orders automatically embodied this feature.
The most spectacular method of controlling costs was renegotiation. Initially, it consisted of a review of the costs of a completed or partly fulfilled contract to determine whether the profits were excessive; if they were found to be unreasonably high, an equitable set-up was made by which excess profits were restored to the government. This device was both necessary and creditable, because estimates were based on inaccurate estimates of the probable costs, inaccuracy which were inevitable because of most manufacturers' lack of previous experience in producing war planes. This alone could not recover all overcharges, because higher corporate taxes absorbed higher costs and discouraged economical production. Moreover, a profit percentage alone did not overly some one ruin other manufacturers depending on their financial set-up. Although war contractors were protected by various price-adjustment devices and by the use of CIF contracts, the people of the United States had no over-all protection, and the increased use of CIF contracts, plus the padding of PP contracts (to eliminate risks), made for continually increased costs.\(^{24}\)

Before there was any legislation on the subject, the Air Corps usually had been able to obtain reductions from contractors through the investigation of their costs. Such assurance was gained by studying the costs of the contractor and realizing that if prices were incorrect they were unjustifiable.\(^{25}\) On 10 April 1942 the President issued an executive order\(^{26}\) which designated the War Department, Navy Department, Treasury Department, or Reconstruction Finance
Corporation, and as Modern Corporation. Provision of a series authorized to increase at 6% above, or on this authority, the DA.

Department organized a price adjustment board to aid in securing

voluntary adjustments or reduce their price, cost, or profits, proved
to be excessive. Later in April 1912 a statute authorized the insertion
of a renegotiation clause in any contract over $10,000. After the

awards could be extended annually, the excess profits here to be

remitted to the Treasury under the head of miscellaneous receipts. Similar

clauses were to be included in prime contractors in their sub-contracts.

Since this legislation was first enacted, the proposal that pro-

fits be limited to 6% on contracts over $10,000 was enacted by both the army and navy;

the two services were urged to make voluntary reductions before, and

they believed that if no allowable percentage of profits was specified, the

contract could remain flexible and the actual work on the cost of individual contractors. The ultimate

purpose of renegotiation, however, was to be done with any inability that might arise under the other clauses by encouraging and, indeed, enforcing a continuous study of costs. It would not be contracts could then be written on the basis of new reliable information and that the need for contract alterations would tend to disappear. Thus, periodically, renegotiation aimed at the revision of the law for

change or renegotiation.

Some firms in the original bills were rejected by the passage on

21 October 1912 of an amendment to Acts. Under it, controlling officers

were authorized to exempt the whole contract or the parts of it under

which excess profits were close, subjectively controlled. Further, no
renegotiation, it is to be undertaken more than one year after the end of the fiscal year during which the contract was completed. Recovery of the amounts determined by renegotiation is to be made by reducing the contract price, withholding amounts due to the contractor, directing the contractor to pay such amounts for the United States, receiving in such, or by any combination of these means. Under the provisions of the act of 1942, the chain of command for the collection of authority with respect to the air forces was as follows: The Secretary of War was authorized to carry out provisions of the act with power of collection; under him, the Under Secretary of War had the responsibility; next came the Deputy Assistant Price Adjustment Board to direct those over $10,000; and all were held in reserve, which could not be expediently or effectively financed by liquidation; under the Deputy Assistant Board, the Comptroller General, and could renegotiate for cases under $10,000; and finally, right Field and the district adjustment sections could renegotiate cases under $5,000, or from $5,000 to $10,000 with the approval of the Deputy Assistant Board. The audits and investigations were necessarily performed by procurement district personnel even when the final negotiations are approved by the Comptroller General, G.F., or by the Deputy Assistant Board.

In the first year of renegotiation, it became apparent that it was far easier to renegotiate by contract than by contract by contract. This was true because it was found that the contractors did not base their contract by contract, but as a whole rather than contract by contract. Accordingly, it was found that the contractors about to be absorbed by a host of new contractors, the case was raised in October 1942 to limit the period of renegotiation.
to one year. It was considered probable that ever contract, even
renegotiation, except to no more than a CAM contract,\textsuperscript{32} and, in fact,
long-range and periodic renegotiation can approach a cost-plus-percentage
contract in spirit. This kind of criticism, however, does not take
into consideration the flexibility inherent in the renegotiation pro-
cess; the Department Price Adjustment Board found that in the first
year renegotiated prices ranged from 0.1 to 32.1 percent of sales prices,\textsuperscript{33}
effect which seems to indicate that incentives for exceptional per-
formance were being provided through the mechanism.

The significant circumstances that characterized the first year of
renegotiation were: (1) a group of able lawyers, accountants, and business
administrators were assembled to conduct renegotiation, and (2) most
war contractors learned during this period why they should accept
renegotiation as an ultimate benefit both to themselves and to the
Government.\textsuperscript{34}

During 1943 four congressional committees studied the renegotiation
laws, with the result that revisions were initiated and finally in-
corporated in the Revenue Act of 25 February 1944.\textsuperscript{35} This statute
legalized the CAM policy of rewarding contractors for excellent
performance and directed the renegotiating officers to consider efficiency,
renegotiation, profit, capital invested, risk, contributions to the war
effort, and the character of the business. The chief administrative
changes were the formation of a new war contracts price adjustment board
which was given the power of renegotiation. Executions from re-
negotiation were increased from 100,000 usual government business to
500,000, a change which stemmed from a better understanding of both

\textbf{RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958}
costs and economy of effort, since a large percentage of renegotiations in 1942 concerned firms with less than $500,000 in government business.\textsuperscript{37}

By this statute, the terminal date for renegotiation became 1 December 1944, but by an executive order of 16 November 1944,\textsuperscript{38} this date was extended to 30 June 1945, and later to 31 December 1945.\textsuperscript{39}

Both before and after the legislation, there were many voluntary reductions by the contractors themselves, as a result of lower labor or materials costs, economies effected in plants, or increases in production and sales.* Some corporations, such as United Aircraft, voluntarily reported and refunded excess profits every few months: from 1941 through 1943 United turned back $286,000,000.\textsuperscript{40} Many contractors, large and small, sought the good will of the AAF instead of insisting on renegotiation, which entailed a loss of AAF appropriations. Such voluntary reductions of profits could be encouraged only by making the manufacturers realize that their present, or future, competitors were being constrained to eliminate excess profits.

After the creation of the War Contracts Price Adjustment Board, the chain of command and authority, for the AAF, was set up as follows: the War Contracts Price Adjustment Board, the Secretary of War, the Under Secretary of War (the War Department Price Adjustment Board), the Commanding General, AAF (Price Adjustment Branch of Material, Maintenance,

\* For example, there are in AAF Bulk Files 161 H, Contracts, a series of letters to the contracting officer at Wright Field from such representative companies as Aviation Division of General Electric (26 June 1942), Bendix Aviation (3 July 1942), Jones and Lawson Machine Company of Springfield, Vt. (14 April 1942), and Chandler Evans of South Meriden, Conn. (15 June 1942).
and Distribution and the AAF Price Adjustment Board), the Air
Technical Service Command at Wright Field, and the district price
adjustment sections. Before February 1944 the over-all policy-making
agency for the Army had been the price adjustment board, but now its
function of initiating, integrating, and directing policy for all arms
and services was taken over by the War Contracts Price Adjustment
Board. The former had been composed of members appointed by the Under
Secretary of War from nominees proposed by the commanding general of
SOS, of the Material Command, and the chairman of the War Production
Board. The war contracts board consisted of one appointee each of
the Secretary of War, the Secretary of the Navy, the Secretary of the
Treasury, the chairman of the Maritime Commission, the chairman of the
Reconstruction Finance Corporation, and the chairman of the War
Production Board. The WDPAB had assisted the Services of Supply (ASF)
and the Material Command (FRSC) in obtaining competent renegotiation
personnel, and, further, it had determined what agency should conduct
renegotiation with companies under contract to more than one War
Department agency; reviewed settlements whenever local echelons were
not authorized to make final decisions; and conducted those which, for
one reason or another, could not be handled by SOS or ATSC. One of
the chief functions of the board had been to review and make decisions
in cases of deadlock between the negotiators and the contractor—the
so-called "impasse" cases. Under the 1944 law, this latter function
was expressly retained by the board, and the Under Secretary was em-
powered to approve settlements for all War Department contracts over

RESTRICTED
SECURITY INFORMATION

RESTRICTED
SECURITY INFORMATION
$10,000,000. One step below the WDPAB was the AAF Price Adjustment Board in Washington, which theoretically handled cases on the level of AG/AS, Materiel and Services. Actually the latter office came to act rather as liaison between the Wright Field and district boards and also between the WDPAB and Office of the Under Secretary of War. After the creation of the war contracts board the Price Adjustment Branch of Materiel, Maintenance, and Distribution and the AAFPAB could approve settlements of AAF contracts from $5,000,000 to $10,000,000 and acted as liaison with the Office of the Under Secretary of War. The ATSC at Wright Field approved local cases up to $5,000,000 and acted as liaison between the districts and Washington; the district price adjustment sections prepared briefs on all cases and made final settlement on cases under $5,000,000.

The relative amount of work completed by these boards, as of 28 February 1945, is indicated in the following table:

<table>
<thead>
<tr>
<th>Settled</th>
<th>AAFPAB</th>
<th>WDPAB (OUS/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unilaterals</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Written Agreements</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Oral Agreements</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>59</td>
</tr>
<tr>
<td>Not settled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probable Unilaterals</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Proposal Made</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Heard (No Decision)</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Hearings Not Completed</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>136</td>
</tr>
</tbody>
</table>

Members of these advisory and supervisory bodies often conferred with district personnel, and on the basis of that experience they formulated certain principles to serve as guides in future work. In
particular, agreements were reached as to the general level of profit to be allowed the contractors; in 1944, by direction of the War Department, an over-all lowering of levels was sought. It was not the policy of these higher boards, when appealed to, to arbitrarily fix some different figure to satisfy the contractor; rather, a complete re-survey of such cases was made, and at times a higher figure was reached than the one under protest. Thus, the Central Procurement District, after renegotiating with the Denison Engineering Company of Columbus, Ohio, requested a refund of $1,750,000, but a review by the AAPFAE led to raising the amount to $1,850,000; then the WDPAB reviewed the case and decided upon the original figure. In the case of Bendix Aviation for 1943, the Eastern Procurement District reduced basic profits from 15.9 to 10.75 per cent and required a refund of $44,000,000, an arrangement which the company accepted. Later, however, the case was reviewed by the War Department board and the refund to the government increased by $10,000,000; the company demurred and the refund was finally settled at $53,262,659. Many manufacturers, even while admitting the justice and propriety of making large refunds to the government, found themselves unable to pay because they had put most of their profits back into their plants. In these so-called hardship cases, efforts were made to extend the period of payment.

Another echelon of the administrative control of renegotiation was represented by the price adjustment office at Wright Field together with its district branches. This agency screened out companies which did not require renegotiation, identified those which would be more
expeditiously negotiated by another arm or service, and recorded the progress and completion of assignment. Final agreements could be made by the Wright Field office and the district sections with any contractor whose annual business with the government did not exceed $5,000,000. Nevertheless, the volume of renegotiation work performed by the field itself was not large, inasmuch as it concerned, for the most part, companies in the vicinity of Dayton, Ohio.

The district price adjustment sections did the largest amount of spade work in the renegotiation process. By 31 December 1943, for example, the Eastern Procurement District alone had recovered $268,000,000 in refunds. As soon as a case was assigned to a district office, the contractor was notified and preliminary information was studied by the financial analysis unit. The negotiator assigned to the problem then reviewed all the available data and arranged a meeting with the contractor, during which renegotiation was explained and the contractor given an outline of the statistical information required of him. This information was submitted to and studied by the analysis unit, and a second meeting with the contractor reviewed all the evidence together, and recommendations for settlement were then made by the former. After a review of the negotiator's report by a district panel, a third meeting with the contractor was held, at which an effort was made to agree upon the size of any refund involved. Further meetings were held only when disagreement arose. The reports and agreements were finally transmitted to Wright Field. The number of renegotiation cases handled by the Eastern Procurement District during 1943 and the value of the contracts involved are listed in the following table:
Gross Assignments  1341
Less Reassignments  76
Less Reassignments Pending  24

Less Cancellations (probably under $500,000 in value)  361

Initiated (No Agreement)  8
Impasses Forwarded to A&F Headquarters  2

Total Verbal or Written Agreements and Impasses  870

These 870 cases were broken down as follows:

Refunds
- Concluded by district through delegation (under $5,000,000)  177
- Forwarded to WDPAB for approval (over $5,000,000)  177

Clearances
- Concluded by district  229
- Forwarded by WDPAB  189

Impasses
- In process  57
- By agreement  29
- Unilateral decision by Under Secretary of War  12

Total Verbal or Written Agreements and Impasses  870

In practice, refunds were not usually demanded of manufacturers operating on CPF contracts because the original contracts frequently provided for a fixed fee of only 4 or 5 per cent—a fixed fee as large as 8 per cent of the estimated contract cost was permitted by law. Therefore, even if estimated manufacturing costs were materially reduced, the percentage of the fixed fee to the actual cost was still below the legal limit. Accordingly, in 1943 there were no recoveries from CPF contracts. In 1944, however, when some dissatisfaction was expressed by The Inspector General over the large size of the fixed fees in the procurement of aircraft and their components, a program to reduce profits on CPF contracts was instituted. In line with this,
a refund of $2,000,000 was requested by the WDPAB from the U.S. Rubber Company for the fiscal year 1944, even though the firm had been cleared on these contracts in 1942 and 1943. The effect of this action was to reduce the basic margin of profit on U.S. Rubber contracts from 7.8 to 5.7 per cent.

Since there was no desire on the part of the government to force the contractors to make unreasonable refunds, one method used to determine a fair profit for a given concern was basing the allowable percentage on the percentage of earnings to sales reported by the company during the period 1936-1939. Also considered were the contractor's efficiency, cost of production, type of business, and contribution to the war effort. Illustrative of such renegotiation methods were the transactions with the Eaton Manufacturing Company of Cleveland, Ohio, and the Republic Aviation Corporation. The latter, the sole source of the P-47, was a prime contractor, but it subcontracted to about 620 other manufacturers. Eaton, a subcontractor or vendor of aircraft parts to General Motors, Wright, Packard, Chrysler, Pratt & Whitney, Ford, Studebaker, and several others, was a highly integrated organization which itself subcontracted less than 1 per cent of its work. Both companies were cleared on their CPF contracts—that is, they did not show excessive profits; Republic received a 5.9 per cent on actual costs, Eaton 4.8 per cent. During the period 1936-1939 Republic had suffered a loss of $593,946, while Eaton showed a basic profit of about $2,500,000 on business totalling approximately $25,000,000.
Army experts testified to the efficiency of the F-47, various buyers of Eaton products gave unqualified praise to them, and most significantly, each company had carried out radical design changes without material effect on delivery schedules. Out of its total 1943 sales of over $65,000,000, Republic showed a gross profit of approximately $9,000,000, of which about $4,000,000 was refunded to the government by renegotiation. Thus, Republic was left with an 8 or 9 per cent profit, in sharp contrast to the figure for 1936-1939. Eaton, which refunded almost half of its $10,000,000 profit, was allowed only about half of Republic's percentage, again based partially on the 1936-1939 "normal" figures.

Friction developed from time to time over the activities of the General Accounting Office,* whose auditors frequently questioned the costs which had been allowed the contractors by the AAF contracting officer. Although GAO review of renegotiation cases was responsible for delays, the AAF contracting officers often agreed that the objections raised were valid. For example, the GAO questioned an allowance of $1,000,000 made to Republic during 1943; of this amount, the contracting officer admitted that $100,000 had been incorrectly charged against the contract.58 The occasional intervention of the GAO prompted some complaints by manufacturers that they served two masters—the contracting officers and the GAO auditors; personnel necessary to production were forced into investigations for which they properly could not be spared, and a feeling of uncertainty was sometimes created among manufacturers.59

* See also above, pp. 63-64, 67.
The Office of the Under Secretary of War (NDPAS) reviewed and confirmed all final agreements in purchases exceeding $10,000,000, those between $5,000,000 and $10,000,000 requiring the signature of the Commanding General, AAF. In practice, however, most contracts in excess of $5,000,000 were forwarded to the War Department Price Adjustment Board for signature; contracts of less than that figure had to be approved by the commanding general of the district performing the renegotiation or by the commanding general at Wright Field. The following tabulation for 1943, prepared by the Price Adjustment Branch of ATSC on 31 July 1945, shows the number and importance of the larger renegotiation cases:

<table>
<thead>
<tr>
<th>Number of Cases</th>
<th>$50+ Over</th>
<th>$10-50</th>
<th>$5-9.9</th>
<th>$2-4.9</th>
<th>$1-1.9</th>
<th>$.5-9</th>
<th>$.5 Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>783</td>
<td>26</td>
<td>98</td>
<td>87</td>
<td>182</td>
<td>166</td>
<td>178</td>
</tr>
<tr>
<td>Base Profit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margin on FP</td>
<td>19.7</td>
<td>18.7</td>
<td>20.6</td>
<td>22.9</td>
<td>22.0</td>
<td>22.3</td>
<td>25.2</td>
</tr>
<tr>
<td>Base Profit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After Reneg.</td>
<td>11.1</td>
<td>11.2</td>
<td>10.9</td>
<td>10.6</td>
<td>11.1</td>
<td>11.1</td>
<td>12.3</td>
</tr>
<tr>
<td>Recovery of FP</td>
<td>833</td>
<td>460</td>
<td>191</td>
<td>68</td>
<td>64</td>
<td>27</td>
<td>20</td>
</tr>
<tr>
<td>Fee Percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost on GPF</td>
<td>4.9</td>
<td>4.7</td>
<td>6.2</td>
<td>5.2</td>
<td>3.6</td>
<td>2.2</td>
<td>3.7</td>
</tr>
<tr>
<td>Recovery on GPF</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Thus, the refunds resulting from renegotiation were substantial, even when compared with the total war budget of the United States up to 31 October 1945 the total amount recovered in this way on AAF contracts was $2,031,555,809.60; during approximately the same period (1 July 1940 to 30 June 1945) the total war budget for the AAF amounted to $38,005,200,000. In other words, almost 5 per cent was recovered by

* All the figures in the column headings are for millions of dollars.
refunds. There were, moreover, hidden but very real benefits in renegotiation: the elimination of excess profits had a good effect on the public morale in allaying its suspicion of the businessman's relationship with the war, and by maintaining materiel prices at a low but fair level, the program also contributed to the control of inflation.

The renegotiation process was criticized at an early date because some felt that there were too many variations in the policies of the different administrative agencies. Such criticisms were silenced by the formation of the War Contracts Price Adjustment Board to coordinate and direct the efforts of all these agencies. A further, and only partially solved, problem arose from the fact that the conduct of renegotiation proceedings was assigned to that service which had a prime interest in a particular company. That is, a contractor with 55 per cent Army contracts and 45 per cent Navy was assigned to the Army for renegotiation; if the AAF held 35 per cent of the Army contracts, however, the renegotiation was carried out by one of the adjustment sections of the Materiel Command, depending on the location of the contractor's plant. In accordance with this policy, manufacturers in the same industry were sometimes assigned to different negotiators, with the result that the individual negotiators did not gain as much specialized experience in dealing with a particular industry as was desirable. Interboard communications were hampered by the fact that they had to pass through military channels. Further, although it was
the aim of the renegotiation program to eliminate itself by determining fair prices for future contracts that would, in consequence, not require renegotiation, the military system by its very nature tended to defeat this purpose. To be more specific, it was observed that occasionally a 2d lieutenant serving as a contracting officer at a contractor's plant hesitated to authorize exemptions that might be well justified because he feared the risks inherent in his decision. With reference to this general situation the Truman Committee reported: "The military system does not encourage the exercise of initiative and assumption of responsibility." 63

Nevertheless, no amount of adverse criticism could obscure the fact that, from the very beginning, the administration of renegotiation was effective and generally commendable, and that the program had a healthful effect on contracting. Certain characteristics germane to the military system did not lend themselves to maximum efficiency in purely business matters, but definite controls of prices and profits were developed.
RESTRICTED
SECURITY-INFORMATION

Chapter V

TERMINATION OF CONTRACTS

In the spring of 1919 an Air Service Claims Board was established to settle accounts arising from the cancellation of contracts entered into by the Bureau of Aircraft Production and the Division of Military Aeronautics.¹ This board, which functioned under the general supervision of the War Department Claims Board, was dissolved in 1921, but based to a certain extent on its experience, an attempt was made during World War II to plan ahead before cutbacks and contract cancellations were actually at hand.

The Need for Legislative Action

Early in the war terminations presented very few problems because they resulted either from tactical considerations or from failures by contractors to fulfill obligations; changes resulting from the former caused little trouble because they generally were replaced by contracts for more essential items, or were designed to expedite the completion of other orders placed with the same contractor.² In cases of non-performance, or failure to meet delivery schedules, the government was empowered to terminate a contract and pay the contractor only for completed or partly completed items. The remainder of the order was then procured by the government on the open market, and the contractor was liable for any excess costs incurred.³ AAF procurement agencies usually gave extensions except in an emergency, but when schedules were repeatedly not met, the contract was terminated. The Hackensack Cable Company of New Jersey, for example, was scheduled to deliver 605,000 feet of cable to the air forces by 30 September

RESTRICTED
SECURITY-INFORMATION
1940; the company met neither the original schedule nor subsequent extensions of that schedule, and yet the contract was not declared in default until 23 December 1940.4 At times the government benefited from such terminations, as in the case of the Rex Body Corporation at Canastota, N. Y., which defaulted in furnishing a $767,000 order of 146 photographic laboratories only to have Oneida Limited fill the defaulted order at $760,000. Rex also defaulted on a contract for 1800 bomb shackles at $133,000 which Oneida later supplied for only $114,000.5 Non-performance was generally blamed on an inability to secure necessary machinery and materials, and on low priorities,6 although early in the emergency period it was also ascribed to the greater profits inherent in commercial contracts.7

The problems arising from non-performance terminations were few because the cases were clear-cut and there was little room for complaint on the part of the contractor. As the war drew to a conclusion, however, definitive legislative action was needed to establish the policies and aims of the government with respect to terminated war contracts. No such policies existed prior to the summer of 1944,8 although it was realized by that time that the relatively small capital of most aircraft companies did not equal the obligations assumed by these companies under government contracts. Consequently, any delay in full adjustment at the time of termination might throw such firms into bankruptcy. The vast number of subcontractors, as well as the prime contractors, could conceivably find themselves in this perilous situation. More specifically, the prime contractors did not dare pay their subcontractors prior to a final audit by the government, for they would do so only at considerable risk.9 Very often,
then, prime contractors inserted provisions in their subcontracts which barred recovery by the subcontractor in case of termination. 10

In 1943 and early 1944 the approach to termination was unrealistic. Whereas renegotiation had worked successfully on the theory that it was impracticable to review prices contract by contract, termination had been geared to formulas requiring exact and laborious arithmetical accounting. The supposition was that the exact allowance to be made for surplus inventories could be determined mathematically, but the absurdity of this supposition was apparent in the face of the tremendous volume of orders being processed through the aircraft factories. One corporation alone calculated that it had 50,000 separate orders, only 3,000 of which were valued at more than $10,000. It was hoped that as the need for renegotiation waned, the renegotiation personnel, trained in administering contracts, could be transferred to termination work. 11

Termination of a fixed-price and a cost-plus-fixed-fee contract constituted two different problems because of the way in which the manufacturer was remunerated. The lack of policy on this as well as other phases of termination caused a number of manufacturers to refuse war contracts in 1943 and even early 1944, with some consequent impairment of the total war effort. 12

Executive and Legislative Action

On the credit side of the ledger were the efforts of Mr. James F. Byrnes, the director of the Office of War Mobilization. At his suggestion, representatives of the services discussed the problems of termination in October 1943 in the light of the War Department plan for rapid cancellation of contracts in cooperation with the Navy. 13 In November 1943 Byrnes
established a demobilization unit in the Office of War Mobilization to develop policies on contract termination, and on 8 January 1944 he promulgated a "Uniform Termination Article for FP Supply Contracts and a Statement of Principles for Redetermination of Cost upon Termination of Government FP Contracts." This plan, however, was somewhat modest and did not pretend to tackle all the problems involved. 14

Of all the contracting agencies, the War Department had the most experienced staff for conducting terminations, partly because it was the first to encounter the problem and partly because it had planned ahead. 15 One of the subjects given early consideration was how to deal with manufacturers whose war contracts were subjected to sharp cutbacks. The policy then established stipulated that an effort be made to allocate another war contract to the manufacturer, and if this proved impossible, the WPB was to try and steer the company into the manufacture of essential civilian items. 16 The government further attempted to place these cutbacks in areas where there was a serious labor shortage. It was generally recognized that "when hostilities actually cease, the great bulk of contracts will be cancelled. When that time comes, a smoothly working experienced administration of contract termination can make the difference between early resumption and business stagnation." 17

Early in July 1944 contractors were asked to bring their business and contractual projects up to date, the better to meet imminent termination, 18 and at about the same time basic procedures in contract termination were established by law. The purpose of the legislation was to assure speedy, equitable final settlements, to expedite reconversion, to assure uniformity of procedure, and to facilitate the efficient use of materials. An office
of Contract Settlement was set up, with a Contracts Settlement Advisory Board composed of the heads of interested agencies. Every effort was to be made toward awarding speedy, fair compensation, using the contractor's accounting system for the basic data, and taking into consideration the degree of completion of the contract. On 3 October 1944 the Office of Contract Settlement was placed in the Office of War Mobilization and Reconversion, and to protect the public interest it was directed that all contracts not needed for the prosecution of the war be terminated at that time. This measure was designed to forestall any attempt to use war contracts as a method of reducing unemployment. The legislation also authorized the director of the Office of War Mobilization and Reconversion to integrate the information from all agencies in order to transfer manufacturers from one field to another or into non-war needs. It was specifically forbidden, however, that any contract be continued merely because a peacetime competitor still had a war contract.

Coordination with the Navy in the matter of termination began in 1943 with the publication of the uniform termination article for fixed-price contracts. In November 1943 a Joint Contract Termination Board was set up only to be replaced in July 1944 by the Statutory Office of Contract Settlement. It was not until 1 November 1944, however, that the two departments issued joint termination regulations and a Joint Termination Accounting Manual.

**Organization and Administration**

In February 1945 the Director of Contract Settlements was given all the functions and powers of the Secretary of War in the exercise of contract settlement. As a result, the AAF organization for contract termination

---

**Restrict**

**Security Information**
was as follows:

**AAF CONTRACT TERMINATIONS BOARDS**

Office of Contract Settlement  
(Policy-making body created by Congress)  
Advisory Board  
(representing contracting agencies)

War Department  
Headquarters AAF  
Headquarters ASF

Assistant Chief of Air Staff (A-4)  
Readjustment Division

ATSC Readjustment Division  
Settlement Review Board

Procurement Districts Readjustment Sections  
Areas and Sub-areas  
Plant Units  
Settlement Review Board

To carry out War Department plans for termination, the AAF had set up termination sections in the procurement districts in 1943, but actually little work was available for them until 1944. Efforts were also made to establish termination units at area and sub-area levels, and even at plants where the volume of business justified them. The chief of a termination section or unit administered the settlement contracts referred to his district as follows: he determined the methods to be followed; formulated a plan for arriving at a final settlement; received and analyzed the contractor's claims;
authorized, reviewed, and approved settlements between prime and subcontractors; negotiated partial payments and final agreements; and took the steps for final disposition of claims.  

In the summer of 1944, the chief of the termination section in the Midcentral Procurement District interviewed each prime contractor with an order of $10,000 or more, and these interviews became the basis of future negotiations.  

The War Department, and all the procurement agencies, subsequently adopted this procedure. Thus, pre-termination planning precluded most settlement problems, except for the actual physical inventory, when a company finally faced termination.  

When the need for a certain contract had passed, the contractor could seek another order with the legal and financial guidance of the settlement branch of the termination section.  

A vertical system ordinarily was used so that the government dealt with the prime contractor, the prime contractor with his subcontractors, and they with their suppliers. Thus, all settlements were made between the original contracting parties. The contractors themselves could settle all claims of less than $1,000, and specific authority was given to some firms to handle their subcontractors’ claims up to $10,000.  

Although the peak of terminations was not reached until January 1946, the great achievements during the last months of the war are illustrated by a breakdown of AAF contract termination in June and July 1945:
### AAF Contract Terminations

**June 1945**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Cost-Plus-Fixed-fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated</td>
<td>128</td>
<td>132,513,000</td>
</tr>
<tr>
<td>Eliminated</td>
<td>102</td>
<td>404,639,000</td>
</tr>
<tr>
<td>Settled</td>
<td>28</td>
<td>224,995,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>CPEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated</td>
<td>168</td>
<td>243,561,000</td>
</tr>
<tr>
<td>Eliminated</td>
<td>139</td>
<td>451,421,000</td>
</tr>
<tr>
<td>Settled</td>
<td>25</td>
<td>119,501,000</td>
</tr>
</tbody>
</table>

**Fixed-Price**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Cost-Plus-Fixed-fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated</td>
<td>1,161</td>
<td>725,217,000</td>
</tr>
<tr>
<td>Eliminated</td>
<td>478</td>
<td>245,631,000</td>
</tr>
<tr>
<td>Settled:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Claim</td>
<td>908</td>
<td>252,053,000</td>
</tr>
<tr>
<td>Without Claim</td>
<td>678</td>
<td>383,372,000</td>
</tr>
<tr>
<td>Total Settled</td>
<td>1,746</td>
<td>635,425,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CPEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated</td>
<td>1,161</td>
</tr>
<tr>
<td>Eliminated</td>
<td>478</td>
</tr>
<tr>
<td>Total Settled</td>
<td>1,161</td>
</tr>
</tbody>
</table>

Eliminated contracts included those terminated by mistake, those terminated after all deliveries had been completed, and those which were combined with other contracts with the same contractor to effect an over-all settlement. Settlements "without claim" required no recompense upon termination; these occurred when the contractor had not begun work, and/or when materials at hand could be disposed of, and/or when the contractor was subject to renegotiation.

The termination program naturally raised personnel problems. In the spring of 1944 the Material Command, having 11,104 contracts with 3,000 prime contractors for 576,421 different items, estimated that it needed 1,225 officers for termination and auditing duties. They were procured from all commands in all grades below general officers, and by mid-autumn 1944 the command had accepted 1,504 officers, of whom 1,201 were assigned to the procurement districts, 106 to the readjustment division at Wright
Field. The men had been trained at Harvard Business School, the Army Industrial College, the Judge Advocate General School, or the Materiel Command School at Vandalia.

Early in 1944 the War and Navy Departments arranged that the agency with the greater share of the contractor's business should provide the accounting and property disposal personnel to be sent to that firm. The assigned personnel, of course, did the accounting-review and plant-clearance work for all the agencies concerned. In addition, at the suggestion of the Bureau of Aeronautics, the Air Technical Service Command administered termination proceedings in all bureau cancellations of contracts in which the AAF had a dominant interest. Accordingly, the Eastern and Central Procurement Districts of ATSC handled over-all terminations with Bendix-Scintilla, the Bendix Radio Division, and Sperry. In September 1945 further cross-delegations for Navy and Army terminations were proposed.

Every effort was made by the AAF to plan for the contingencies that would arise with the end of the war. As early as August 1944 new procurement schedules were drawn up predicated on the fall of Germany in October 1944. With definite plans for procurement and production at hand, an orderly program for reconversion, cutbacks, and terminations was ready as each need arose.

The large contractors presented a special problem because of the size, variety, and number of their contracts: approximately 25 contractors represented 75 per cent of the termination load in September 1944. To cope with this volume, a special unit of seven officers was set up with the idea that it would both expedite termination and maintain liaison.
Six cases, involving contracts totaling $950,000,000, were selected for special consideration. Working in the spirit of termination legislation, most cases were concluded expeditiously. Where the company was trustworthy and efficient, there was little difficulty in reaching an agreement satisfactory to the government and the contractor. For example, the Douglas Aircraft Company had a contract to furnish spare parts for the DB-7B; 5 per cent of its work had been subcontracted and the settlements made with these subcontractors were readily approved by the termination contracting officer. The contractor presented to the government the following breakdown which, with adjustments as indicated, became the basis of an agreement:

<table>
<thead>
<tr>
<th>Contractors Statement</th>
<th>Negotiation Adjustment</th>
<th>Proposed Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased parts</td>
<td>28,291.06</td>
<td>28,291.06</td>
</tr>
<tr>
<td>Work in process</td>
<td>102,854.61</td>
<td>102,854.61</td>
</tr>
<tr>
<td>Jigs and dies</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>General and Adm. Expense</td>
<td>4,111.35</td>
<td>4,111.35</td>
</tr>
<tr>
<td>Other costs</td>
<td>35,956.33</td>
<td>12,776.68</td>
</tr>
<tr>
<td>TOTAL COSTS</td>
<td>171,223.35</td>
<td>23,181.65</td>
</tr>
<tr>
<td>Profit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post termination charges</td>
<td>2,488.12</td>
<td>2,488.12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>173,710.47</td>
<td>170,329.26</td>
</tr>
<tr>
<td>Settlement with subcontract</td>
<td>1,671.19</td>
<td>1,671.19</td>
</tr>
<tr>
<td>Completed units</td>
<td>79,710.21</td>
<td>72,463.83</td>
</tr>
<tr>
<td>Interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>255,082.87</td>
<td>246,690.70</td>
</tr>
</tbody>
</table>

The estimated portion of the total contract completed at the date of termination was 19 per cent and the approximate percentage of this proposed settlement of the gross amount was 19 per cent. Since there were no disposal credits, partial payments, or other credits, the net settlement was therefore placed at $246,690.70.41

Sometimes friction arose with the General Accounting Office which
insisted on continuing an audit for 60 days after being given an audit status date. The AAF objected on the grounds that the auditing of contracts should cease with the date of termination. This stand was dictated by the fact that the contractors needed to receive payment as quickly as possible upon termination. Although the Navy Department had not pressed the issue, the AAF held to their statutory right and duty to overrule exceptions of the GAO if such a step seemed necessary for expeditious settlement. This attitude by the air forces provoked what appeared to be dissatisfaction on the part of the Comptroller General as to the cooperation offered by the War Department.

Though no great difficulty was experienced in settling fixed-price contracts, the directives for settling cost-plus-fixed-fee contracts were sometimes troublesome and even inapplicable. The problems involved have been summarized as follows:

Under a cost-plus contract, a contractor is entitled to recoup costs on the performed part as well as the terminated part of the contract.... This frequently involves settlement of disputes concerning reimbursability of items of cost incurred over substantial periods of performance and often requires considerable time. Since the items or parts of items of cost attributable to the terminated part of the contract are not segregated, it is not possible to know that settlement of the terminated part of the contract has been completed until all claims by the contractor for costs under the entire contract have been settled.

It must be remembered that most of these contracts were very large, and that a longer period was therefore required for auditing and final settlement.

In general, the time from the effective date of termination to the receipt of a claim varied from 82 to 106 days; in the no-cost cases, the period was from 58 to 29 days, which was reduced in 1944 to an average of 36 days. Where a continued, but reduced, procurement was to be carried on, the
schedules were cut under the direction of WPB in order to expedite recon-
version to civilian activities. In the case of the A-26 manufactured by
Douglas-Tulsa, the schedule was revised to allow the company the greatest
opportunity to convert its plant; war production was cut gradually from
210 airplanes in May to 25 in December.\(^6\)

The story of termination was not yet completed as of the early months
of 1946, but the foresight of the contracting agencies and of Congress
in preparing for the reconversion of industry to peacetime pursuits has
been a bright page in the history of the war, and has resulted in a minimum
of confusion and dissatisfaction.

**Conclusion**

As the previous chapters show, the basic purchasing organization of the
Armed Air Forces was sound. It maintained personnel close to the manufac-
turers for preliminary negotiation, and for supervising, and adminis-
trating the contract; and, of equal importance, it had a coordinating
body, the Air Technical Service Command, to insure fair and efficient allo-
cation of contracts. The organization in Washington integrated AAF
purchasing with that of the other arms and services and with the over-all
United Nations program, and the personnel selected to carry out that program
proved, with rare exceptions, efficient and devoted. The preliminary con-
tract planning, however, was revealed to be somewhat less than adequate.
When most of the small manufacturers were not canvassed and were therefore
improperly instructed as to the integration of their plants in the war
program, an orderly and efficient conversion to military production was at
best a difficult task. Nevertheless, once the program was under way, these
early mistakes were more than compensated for by the AAF's efforts at profit limitation and later its method of contract termination. Adequate plans were formulated early to gain the interest and good will of the contractors so that the undertaking could be carried out with proper economy. The contracts themselves, however, also posed a problem, even though types of contracts appropriate for the diverse procurement problems faced were evolved: in the awarding of them, the safeguards against collusion and the desire for wide distribution, while justifiable, often interfered with efficiency and economy.

Nevertheless, it may be said in summary that whereas some features of the AAF material program were highly touted, and criticized, by private advertiser or public statement, the success of the AAF in effecting savings and reducing the profits of war industry has never received due recognition. The preceding pages are intended as a step in that direction.
RESTRICTED
SECURITY-INFORMATION

GLOSSARY

AACFAB  AAF Price Adjustment Board
AF  Authority for Purchase
ASF  Army Service Forces
ATC  Air Transport Command
ATSC  Air Technical Service Command
CFD  Cost-plus-fixed-fee
CFPC  Cost-plus-percentage-of-cost
FP  Fixed-price
GAO  General Accounting Office
JAC  Joint Aircraft Committee
ORM  Office of Production Management
OSRD  Office of Scientific Research and Development
RFC  Reconstruction Finance Corporation
SMPC  Small War Plants Corporation
WCPAB  War Contracts Price Adjustment Board
WDPA  War Department Price Adjustment Board
WPB  War Production Board.
Chapter I


2. This delegation and redelegation was from AS/W (US/W after August 1941) to GC/AG (Headquarters, AAF after June 1941) to Materiel Division, Washington (Material Command, March 1942; AG/AS MDS, July 1944; AG/AS-L, August 1945) to Materiel Division, Wright Field (Material Center, March 1942; Material Command, April 1943; ASA, August 1944) to Procurement Districts (three in 1939; six in 1943).


7. Memo for C/AG, 10 June 1940, in AAG 10013, Purchase Orders.

8. CIRC. 1TR. "IT WAS ON WHICH IS NOTICE OF INTENTION TO PURCHASE IS REQUESTED," 8 Aug. 1941, in AAG (U) 400.13, Purchase Orders.


10. AG Pol. 45-1, 1 Jan. 1942, in AAG (U) 161C, Contracts.


15. Exec. for Procurement, Materiel Center, to CG Met. Com., 1 Apr. 1943, in ATSC Central Files 321.9, Contract Audit Administration.


17. AG Pol. 45-1, 1 Jan. 1942, in HAG (U) 161, Contracts.


23. AG/TS WPB wrote to CG Met. Comd. on 23 Apr. 1943 as follows: "Some of the project engineers at Wright Field have decided that these were the final authorities on requirements for all technical data, and have in some instances deleted requirements from contracts for technical data and have held no action on authorities for purchase prepared by the headquarters in an attempt to secure such needed technical data. The most recent in technical data required for the YF-12 airplane. Approximately 50 of these airplanes are being procured, yet the project engineers insisted that if they carried an 'X' designation that no technical data was required. Several instances of cancellations of technical data, with all supporting information, are being collected with a view of requesting higher authority for corrective action if the Materiel Command does not take satisfactory action in the matter." (AG WPB Weekly Activity Report, No. 7 of AG Patterson Field.


---

**RESTRICTED**

SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
25. CM 20-3, AAF Mat. Cmd., 20 Nov, 1944, in ATSC Central Files 321.9, Scheduling and Priorities Unit.


27. Ibid., pp. 63 ff.

28. The district offices had sections dealing with contracting, accountability, finance, price adjustment, terminations, royalties, price inspection, government property, audit, inspection, and small war plants. (AAF Mat. Cmd., Hist. Southeast Procurement Dist. 1942, additions 8, 10, 11, 15; Hist. Midcentral Procurement Dist. 1943, pp. 97-107; Hist. Western Procurement Dist. 1943, p. 10; and Hist. Midwestern Procurement Dist. 1943, p. 4.)

29. Draft, Hist. Western Procurement Dist. 1943, p. 12. These sections had branches for price inspection, property accounting, audit, and inspection. See chart for June 1943 in ATSC Central Files 321.9, Decentralization.

30. CO 4, 9 Oct, 1941.


33. Memo for US/3 from S/7, 16 Dec, 1941, in AAG (U) 400.12J.

34. 2d inc. (basic missing but subj.: Decentralization of Procurement), CO/IO to US/7, 7 Jan, 1942, in AAG (U) 400.12J.


36. T.E 13, CO/IO to (7), 19 June 1943, in ATSC Central Files 321.9, Decentralization.

37. The following breakdown shows the amounts by district: Eastern, 13 contracts valued at $3,821,718.13; Central, 122 contracts valued at $2,215,751.26; Midwestern, 12 contracts valued at $180,327.82; and Western, 32 contracts valued at $79,578.92. (Chief, Dist. Procurement Sec., Wright Field, to Chief, Procurement Div., Wright Field, 16 Dec, 1943, in ATSC Contract Files 373.11, Decentralization.)
38. 


40. In the Central District the contract section negotiated, prepared, and executed 3,586 contractual instruments representing $3,561,353, and in addition supervised 75 CFP contracts for $6,697,673,558.92. (Central Dist. ATSC, 1944 Annual Rpt., pp. 8-9, in TS HIS-3 Files.) The contract section of the Western District made net procurement of $28,000,000 of material while supervising the administration of 82 CFP contracts worth $6,596,000,000 and 709 FP contracts worth $9,325,000,000. (Western Dist. ATSC, 1944 Annual Rpt., pp. 12-13, in TS HIS-3 Files.)


43. Memo for Chief of Laboratories, Wright Field, from Chief of Proc., Div., 12 Sept., 1943, in ATSC Central Files 321.9, Decentralization.


49. Daily Diary, ATSC Procurement Div., 5 July 1944.

50. ATSC Reg., 70-33, 24 Jan., 1945, in ATSC TS HIS-3 Files.


52. Capt. G. W. Mitchell was detailed to screen the 201 Files and to draft anyone suitable. Actually about 180 were drafted. (Interview at Wright Field with Capt. Mitchell, Procurement Div., ATSC, 17 Dec., 1945.)
53. Ibid.

54. Hears interview.

55. Chief, Procurement Div., Wright Field, to CG AAF, 17 July 1943, in AAG (U) 161, Contracts.


57. Status of Expenditure Program, FY 1945; Special File, CFFT Contracts, p. 2, in ATSC Control Room Files.


59. Ibid.

60. Prepared by Budget and Fiscal Office, Mat Comd., Wright Field, 20 July 1944, in ATSC TS HIS-3 files.


64. Testimony of US/A Patterson in hearings cited in n 63, p. 667.

65. AAF Aircraft Procurement Programs 1941-1945, 31 July 1945, in AAG (U) Bulk 452.1, General.

66. Special File, CFFT Contracts, p. 2, in ATSC Control Room Files.


73. Memo for CG Mat. Comd. from AC/AS M&BD, 19 June 1943, in AAG (C) 161F, Contracts.


76. Testimony of USWA in Hearings cited in n 63 (7 March 1942), pp. 688-689.


78. Interview with Col. H. H. Henrie, Chief, AC/AS-4 Contracts Div., 7 Nov. 1945.

79. 54 Stat. 676, 26 June 1940.


82. For 1943 the fee percentage for all CFIT contracts was 4.9.


84. Ibid.

85. Memo for TAI from Chief, Procurement Div., AC/AS, 30 May 1945, in AAG (C) 161, Contracts.

86. Special File, CFIT Contracts, I, 6, in ATSC Control Room Files.

87. Ibid.

89. Control Br., Services Section, Production Sec., ATSC, Listing of Completed Cost and CFFT Contractors as of 31 March 1945, in AC/AS-4, Contract Div. Files.


91. Ibid., Sec. 5.

92. Ibid., passim.

93. Sec. 3709, R. S.; U. S. Code, Title 41, Sec. 5.

94. 31 Stat. 905.


97. 44 Stat. 787.


101. Lyon Project Book 4, Tab 1.


106. Ibid., pp. 21-22.

107. Ibid.

108. Ibid., pp. 22-23.
109. Memo for TAG from Asst. Sec., General Staff, in AAG (C) 121, 5 Yr. Replenishment Proc.

110. 54 Stat. 145.

111. 53 Stat. 1080.


113. 54 Stat. 712.

114. Memo for C/G from AS/W, 9 Oct. 1940, in AAG (U) 400.12, Procurement.


116. Chief, Eng. Unit, Aircraft Sec. OPM to Chief, Procurement Div., CC/IC, 29 Nov. 1941, in AAG (U) 400.12, Procurement.


118. 53 Stat. 560.


123. AAG 164 (bulk), Special European & Swedish Contracts.


127. 39 Stat. 213.


RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958


Chapter II


9. AFS-17, pp. 96-110.


12. Letters in AAF (U) 165, Bidders.


18. Martin took a $300,000 loss in a bomber competition; Seversky was in a "very strained financial condition" in 1939 because of private research; and while the large engine manufacturers charged their development costs to overhead, smaller manufacturers could not afford such work. (Memo for O/AO from Maj. E. Meyers, 21 Nov. 1939, in AAP (bulk) 337.8.

19. AHS-80, Extension of Industrial Facilities under AAF Auspices, 1940-1945, pp. 61ff.


21. Ibid., n. 150.

22. Ibid., no. 211ff.

23. Ibid., pp. 135ff.

24. Ibid., n. 234.

25. AHS-47, p. 10.


27. AHS-47, p. 179.


32. Ibid., pp. 375ff.

33. Ibid., pp. 23ff.
34. 56 Stat. 351.


37. Ibid.


40. Memo for Chief, 8/Pbr., Purchases Div., n.d., Nov. 1943, in AAG (U) 400/12, Procurement.

41. Ibid. Memo 55-1/5-4/3, 28 July 1943, in AAG (U) 300/8, Procurement Regulations.

42. Memo for CG Mat. Gmd. to Chief, Procurement Div., 24 Nov. 1943, in ATSC Central Files 004/4, American Small Business.

43. AHS-41, p. 216/8.

44. Ibid. See AHS-51, p. 251. Bendix is also placed in this category.

45. Production Analysis Report, Douglas-Santa Monica, Summary, pp. 52-53, in ATSC TS HIS-3 Files.


49. Daily Diary, W/3 Procurement Div., 22 June 1944.


52. Daily Diary, W/3 Control Office, 31 Jan. 1944.
53. Rpt. on Prices of Military Aircraft, 30 July 1940, in AAG (Bulk) 452.1-192.


55. Memo for AS/II from O/AC, 8 Mar. 1939, in AAG (U) 452.1 Cost of Airplanes.


57. Ibid.

58. Table in Hearings Before the Committee on Military Affairs, H. S. Sec., on 81723, 7 Apr. 1938.


61. Memo for Nat. Academy of Science from O/AC, 16 May 1940, in AAG (U) 452.1, Cost of Aircraft.


63. Ibid.


65. Charts prep. by Prof. Prof. Sec., Wright Field, Sept. 1939, showing bidding rates, in Lyon Project Book 6, Tab 1.


68. This diagram was suggested by one drawn by the Bureau of the Budget, 30 Mar. 1942, to illustrate proposed steps for airplane procurement. An attempt is made here to simplify the chart somewhat.

70. Indc., 28 Apr. 1944.

71. AFDG Rep. 7-17, 9 May 1945.

72. Rpt. of Procurement Cons., Steepord Field, for May 1942, in AAG (U) 400.13, Local Purchase.


76. Ref., AFDG to AFDG thru AFA B, 18 Dec. 1942, in AAG (U) 161, Contracts.

77. Memo for CSS/7 by Col. Heiss, 22 Apr. 1942, in AAG (U) 400.12, Procurement.

78. CG Rpt. Cond. to CG SCS, 18 June 1942, in AAG (U) 400.12, Procurement.

79. AFDG to CG SCS, 2 Jan. 1943, in AAG (U) 400.12, Procurement.

80. Coordination of Procurement Between the War and Navy Depts., Feb. 1944, Vol. I, p. 9, in AAG (Bulk) 400.12, Procurement.


82. Asst. Exec., Mat. Cond., to Chief, BuAer, 19 Apr. 1942, in AAG (U) 400.12, Procurement.

83. Coordination of Procurement Between the War and Navy Depts., Feb. 1945, Vol. I, p. 31, in AAG (Bulk) 400.12, Procurement.


85. The Development of Bombing Equipment, p. 82; Coordination of Procurement Between War and Navy Depts., Feb. 1945, Vol. I, p. 51, in AAG (Bulk) 400.12, Procurement.

AHS-68, Notes, Chap. II

87. OAC/ES LiaD to Chief of Engineers, 21 Apr. 1943, in AAG 113,131, Transfer of Funds.

88. 16 Sec'T, 391.

89. JD Memo, 25 June 1942, in AAG (U) /60,136, Purchase Orders.


92. 55 Sec'h. 331.

93. Ibid., Sec. 3 (a).

94. Ibid., Sec. 8.


96. Directive to CG All Missions, C/EC, Chiefs of all Supply Arms and Services, 18 Feb. 1942, in AG 160, Contracts.

97. Officers of the Internet, Br. of Supply Div., GC/ES-1 available for all material overseas by requisition through ASF channels, and that ASF actually procured the necessary items. (Interview with Maj. Robert Abbey, 15 Nov. 1943.) The evidence of ASF documents, however, is certainly in variance with this statement.

98. Hist. V AFSC May 1941, no. 27, 38.


103. Ibid., 17 May 1942, 1 Jan. -1 June 1943.


RESTRICTED SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
105. Hist. V AASC Feb. 1944, Exhibit XIX.
111. WD Memo 15-41, 1 Jan. 1945, in AAG (U) 161, Contracts.
113. Daily Diary, WD Procurement Div., 29 May 1943.
114. Interview with Lt. Col. A. J. Yates and Maj. M. F. Atkey, 
115. Observations of Gen. Brewster in Report of the Special Committee 
Investigating the National Defense Program, No. 10, Pt. 2 (16 Feb. 
1944), p. 49.
116. Report of the Special Committee Investigating the National Defense 
117. Ibid., p. 19.
VOTES

Chapter III


5. Orgn. Charts, 27 May 1941, in ACG 321.95, exhibit C.


7. TI-115, to *at, Chief Hist. Div., 15 Nov. 1940 in ACG (U) 321.95, Procurement Inspectors.


10. Daily Diary, Mid-Procurement Div., 1 Nov and 16 June 1942.


18. See AAG (0) 165, Supplement, 1941, for numerous examples.


20. ABS-17, p. 193.

21. Hist., Eastern Procurement Dist. 1944, p. 82, in ATSC TS HIS-3 Files.


31. AAF Aircraft Procurement Program 1944-1945, 31 July 1945, in AAG 152.4 (Bulk), General.


24. Chief, Procurement Div., Wright Field, to C 


27. "AEC Inspectors' Familiarization Manual" in Ann. to Hist. Mid-


31. AEC-54, n. 247.

32. Production Analysis Rept., Douglas-Santa Monica, Summary, p. 51, in ATSC 15 HIS-3 Files.


34. Rept., Chief, Development Eng. Br., Mat. Div., to Requirements Div., OCM, 18 Apr. 1943; R.O., Contracting Officer, Douglas-

35. Inksy transformers were installed at Lorrison Field, Florida, and the manufacturer, Jefferson Electric Co., was held accountable.


RESTRICTED
SECURITY INFORMATION

NOTES

Chapter IV

1. 18 Stat. 505.

2. 49 Stat. 1926.

3. Testimony of S/5 Tooring in Hearings before the Committee on Military Affairs, United States Senate on H. R. 3701, 17 Jan.–22 Feb. 1939, p. 12.


6. 54 Stat. 677.

7. 57 Stat. 1003.

8. 54 Stat. 975, Title II, Subchap. E.


15. AAF Contract Handbook 203.5-5.

16. Ibid. 203.6-2.


22. Henrie Interview.

23. 53 Stat. 92.


27. 56 Stat. 275.

28. Testimony of US/7 Frederick in Hearings before a Subcommittee of the Committee on Finance, U. S. Senate, on HR 6868, 22-23 Sept. 1942, p. 23; testimony of Mr. Morbury in same hearings, pp. 15ff; Report of the Special Committee Investigating the National Defense Program (30 Apr. 1943), No. 10, Pt. 5, p. 8.

29. 56 Stat. 982.

30. Testimony of Mr. Morbury in Hearings Before a Subcommittee of the Committee on Finance, U. S. Senate, on HR 6868, 22-23 Sept. 1942, p. 3.


34. Ibid., p. 7.

36. 58 Stat. 78.

37. Daily Diary, N&S Control Office, 30 Nov. 1943.

38. Executive Order 2631.


43. Tobriner Interview.

44. Daily Diary, N&S Control Office, 12 Apr. 1945.


51. Ibid.

52. Ibid.


61. Ibid.


2. Chief, Field Service Sec., to CG ASC, 28 Nov. 1942, in AAG 164 (U), Non-Performance.

3. AAF Contract Handbook 207.7-l-1.


7. CG/AC to HCG, 28 Nov. 1940, in AAG 164 (U), Non-Performance.


11. Ibid., pp. 69-87.


13. Memo for the files, H. C. Sec't, 10/10, in HCG 161 R, Contracts.


20. 58 Stat. 785.


26. Ibid., p. 173.


33. AEC FPOs Officers Pr., Hist. Rep., week ending 3 June 1944.

25. Form for Chief, Contracts and Procurement Div., OUS/I, from
Acting Chief, Contract Termination Br., Resources Div., AC/CG
105, 3 Nov. 1964, in AC/CG-2, Record Div. Files, "Personnel."


27. Chief, Resources Div., OUS/I, to Chief, MSG, Procurement Div.,
31 July 1965, in AC/CG-4, Record Div. Files, "Delegation of
Authority." 

28. AC/CG-4, Record Div. Files, "Delegation of Authority."

29. 10/26/62 to Dir. OUS/I, Peterson Field 10 Aug. 1966, in
AC Files (6) 1701.12(F), Procurement.

30. Speech by Col. E. R. Metcalf, Chief, Procurement Div., Wright

31. Form for Brig. Gen. F. H. Jenkins, Jr., Acting Chief, 
Files, "Western District." 

AC/CG-2, Record Div. Files, "Labor Contracts-Procedure for
Settlement."


34. McFadlan Report, July 1965, n. 11.


36. Form for US/I from Chief, Resources Div., AC/CG-2, 26 May 1965,
in US/CH (6) 1701.12, Procurement.
LIBRERIOGRAPHY*

Official Publications

Army Air Forces Contract Handbook, prepared by the Judge Advocate, Material Command, Wright Field, Oct-10-12-3-290. This work is particularly useful in explaining contractual clauses and citing pertinent decisions of the Judge Advocate General.

Air Inspector's Familiarization Manual, 1 March 1943.

Hearings Before the Committee on Finance, U.S. Senate, on H.R. 10/14, 3-5 September 1930.

Hearings Before the Committee on Military Affairs, U.S. Senate, on S.1739, 7 April 1939.

Hearings Before the Committee on Military Affairs, U.S. Senate, on H.R. 2761, 17 January-22 February 1939.

Hearings Before the Committee on Naval Affairs, H. of Rep., on H.R. 9822, 14-21 May 1920.

Hearings Before a Subcommittee of the Committee on Appropriations, H. of Rep., on H.R. 6868, 21 March 1922.

Hearings Before a Subcommittee of the Committee on Banking and Currency, U.S. Senate, on S.2250, 17 February-7 March 1922.

Hearings Before a Subcommittee of the Committee on Finance, U.S. Senate, on H.R. 6592, 22-23 September 1922.

Hearings Before a Subcommittee of the Committee on Military Affairs, U.S. Senate, on S.1263, 1250, and S. 76 Res, 60, 10 October-10 November 1923.

Hearings Before Subcommittee No. 3 of the Committee on the Judiciary, H. of Rep., on H. R. 1725 and S.1762, 37th Leg 1917.


* Items in this bibliography are supplemental to the sources cited in the chapter footnotes.

Report of the Special Committee Investigating the National Defense Program, No. 700, Pt. 5, 16 January 1942; No. 110, Pt. 6, 30 March 1943; Pt. 15, 16 February 1944; Pt. 16, 6 March 1944; No. 110, Pt. 7, 6 July 1945.

Report of the JIC-Contracts Subcommittee to the Committee on Military Affairs, March 1944.

Special Studies

Case History of the C-76 Airplane.*
Case History of the YBT-12 and ET-12 Airplanes.
Case History of the XB-33 and B-33 Airplanes.
Case History of the YF-69 Series Airplane Projects.

Files

JAC Classified Files (Bulk):

161
/00.1
/50.1-191

Contracts
Procurement
Prices of Military Aircraft

JAC Classified Files (Regular):

113.3
160
161
400.12
400.13

Transfer of Funds to Other Departments
Contracts, Miscellaneous
Contracts, Formulations
Procurement
Purchases

JAC Unclassified Files:

159
161
161
161
1610
163
166
167
222.22
300.8
323.3
/0.12
400.13
400.136
452.1

Accounts in Favor U.S.
CIFF Contracts
Purchasing and Contracting Officers
Negotiated Contracts
Contract Regulations
Awards to Contractors
Non-Performance
Advance Payment
Procurement Inspectors
Procurement Regulations
Procurement Districts
Procurement
Purchase Orders
Purchase from Foreign Government
Cost of Airplanes

* All case histories are in Archives Br., USAF Hist. Div.
RESTRICTED
SECURITY INFORMATION

MTSC Central Files:
- 004/4
- 321.9
- 321.9
- 321.9
- 321.9

MTSC Control Room Files:
- Special File, Cost-Plus-Fixed-Fee Contracts (10 volumes).

MTSC Contract Files:
- 323.73
- Decentralization

AC/AS-L, Contract Division, Office Files.
AC/AS-L, Office of Plans and Policies, Price Adjustment Branch,
Office Files.
AC/AS-L, Readjustment Division, Office Files.
OAC/AS-L Files: Lynn Project Books 28, 7, 5, 6, 7A, 34.

Interviews

Abbey, En. Robert, 15 November 1955, in AC/AS-L, Surplus Division,
International Branch

Alberi, En. Albert, 27 November 1955, in AC/AS-L, Readjustment
Division

Division

Herrie, Col. H. H., 7 November 1945, in AC/18-L, Contracts Division

Mincer, Lt. L. A., 18 December 1955, in Legal Division, MTSC. Mr.
Mincer had been Dean of the school for contracting officers at
Wright Field and his reminiscences on the subject were extremely
valuable.

Mitchell, Capt. G. M., 18 December 1955, in Procurement Division,
MTSC. Captain Mitchell selected suitable AAF officers for
training as contracting officers at Wright Field.

Tobriner, Lt. Col. J. J., 8 November 1955, in AC/AS-L, Office of
Plans and Policies, Price Adjustment Branch

Yates, Lt. Col. A. J., 15 November 1955, in AC/AS-L, Surplus Division,
International Branch

RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
Authority for Purchase Con., 9
Avion Corp., 15

B

Baker Board, 27
Bell Aircraft Corp., 18, 52, 68
Bell Aircraft Corp., 15
Bendix Aviation Corp., 70, 12, 84
Bendix Radio Div., 100
Bendix-Beaumont Div., 100
Boeing Aircraft Co., 22, 24
Braskin, Brig., Gen. C. F., 7, 8, 10
Brunner, J. F., 31
C

Canada, 50
Central Procurement Dist., 6, 72-75, 81, 100
Central Procurement Agency
on Lumber, 56

Chrysler Corp., 19
Chevrolet Motors Div., 56
Chevrolet Motors Corp., 19
Chrysler Corp., 24, 33, 87
Civil Aeronautics Authority,
57
Civil War, 25
Commercial Airplane, 102
Contracts, 13-15, 19, 27-31,
30, 37, 12-73, 69, 57, 72, 97,
103
Consolidated Aircraft Corp.,
21, 33
Contract Audit Br., (Interior Div.), 7
Contracts, Finance, and Analysis
Br., 19
Contract Settlement Office of,
95-97

Contract Settlement Review Board, 97
Contracts 50, (Wright Field), 7, 40-41
Contracts Settlement Advisory Board
96-97
Contract types: See Cost-Plus-Fixed-fee;
Fixed-price; Cost-Plus-Percentage-of-
cost; Target-price; No-profit-no-loss.
Cost and Price Analysis Unit (Wright
Field), 50
Cost-Plus-Fixed-fee contracts, 2, 13, 15-22, 24, 33, 34-77, 59-60,
62-63, 66-68, 70, 71, 77, 80, 86, 87, 92, 93,
96, 102
Cost-Plus-Percentage-of-Cost contracts,
16-17, 19, 80
Curtiss-Wright Corp., 24, 47, 65

D

Daniels, Jocques, 19
Davis-Bacon Act, 39
Dayton, 63, 85
Dennison Engineering Co., 84
Deere-Chicago Div., 18
Douglas Aircraft Co., 24-25, 21-33,
65, 101
Douglas-Santa Monica Div., 15, 70
Douglas-Tulsa Div., 103

E

Eastern Procurement Dist., 6, 12-16, 63,
74, 84-85, 100
Eaton Manufacturing Co., 87-93
Edson, Maj. Gen., 55, 46
Emerson Electric Co., 66
Engineering Div. (Wright Field), 10, 19

F

V Air Force Service Cond., 59
Firestone and Electric Co., 63
Federal Reserve Bank, 23
First Jr. Power Act, 23
Film Director, 25
Fisher Body Div., 45, 68, 75
Fixed-price contracts, 15, 16, 18-19, 21-25,
14, 16, 66-68, 71-75, 79, 89, 92, 95, 99,
102
Fleetwings, 63
AHS-68, Index

RESTRICTED
SECURITY INFORMATION

Navy Ordnance Div., 56
Navy, Secretary of, 56, 56, 82
Navy, U.S., 33-34, 42, 51, 56, 57, 70, 72-74, 77-78, 80, 90, 92, 96, 100, 102
Netherlands, 60
Non-profit-no-loss contract, 22
North American Aviation, Inc., 32-33
North American-Lansas City Div., 75

0
Cació Ltd., 93

P
Packard Motor Co., 24, 87
Preston Whitney Aircraft Div., 19, 87
Price Adjustment Board (AIF), 87-89
Price Adjustment Board (War Dept.) 79-81, 85-87, 89
Price Adjustment Board, 81, 83, 89
Price Adjustment Sec. (Procurement Div.), 74, 82-83, 85
Procurement and Distribution, Director of, 55
Procurement Div. (AEC), 11
Procurement Div. (Navy Field), 8-10, 49
Production Control Sec. (Navy Field), 4
Production Engineering Div., 63, 69
Production Engineering Sec. (Navy Field), 4-5, 39
Production Management, Office of, 2, 33, 12
Production Resources Sec. (Navy Field), 4, 13
Purchases, Div. of (OSI), 2

Q
Quartermaster General, 55-56

R
Redivisio Div. (10/AS-7), 97

S
Scientific Research and Development, Office of, 23, 57
Services of Supply, 55, 58. See also Army Services Forces.
Skeveld Aircraft Corp., 48, 539
Sielce Inc., 71
Signal Corps, 56
Small War Plants Corp., 43
Smith Corp., A.D., 68
Smotherman Procurement Dist., 6
Scribner Gyroscope Co., 70, 100
State, Dept. of, 61
Statutory Office of Contract Settlement, 96
Stinson, Harry E., 7
Studebaker Corp., 15, 87
Supplies and Accounts, Bureau of, 56
Swatland, Col. Donald C., 11

T
Target-prize contract, 20
Thomas and Elsas Co., 34
Treasury, Sec. of, 82
Treasury, U.S., 25, 72-73, 77-78
Truman Committee, 12, 91

U
United Aircraft Corp., 32, 81
United Kingdom, 61
U.S. rubber Co., 87

V
Vickers, Inc., 40

RESTRICTED
SECURITY INFORMATION

THIS PAGE Declassified IAW EO12958
Vinson-Tremmel Act, 72-73

Weaco Aircraft Co., 52, 65

Wachocki Act, 39, 57

War, Asst. Sec. of, 1-2, 21, 28, 29, 53. See also War, Under Sec.

War Contracts Price Adjustment Board, 80-82, 90

War Department, 3, 15-16, 73, 75, 77-76, 87, 87, 92, 93-95, 97-99, 100, 102. See also War, Sec. of; War, Under Sec. of; War, Asst. Sec. of.

War Price and漫 Claims Board, 92

War Mobilization and Reconversion, Office of, 96

War Mobilization, Office of, 96-97

War Production Board, 2, 45, 33, 33, 72, 77, 82, 95, 103

War Purchasing, 98

War, Sec. of, 1, 96-27, 29-31, 33, 36, 56, 58, 76, 79, 81-82, 96. See also War Department.

War Supplies Ltd., 60

War, Under Sec. of, 1-2, 12, 34, 50, 53, 55, 64, 79, 83-84, 86, 89. See also War, Asst. Sec. of.

Weber Showman & Fixture Co., 45

Weiser, Maj. Gen. O. H., 28

Western Procurement Dist., 6, 8

Wentworth Tats. & Mfr. Co., 40

Wesley, Maj. Gen. O. C., 27

Whiting, Harry H., 65

Worle War I, 1, 76, 19, 39

Wright Aeronautical Corp., 19, 21, 70, 76, 87

Wright Field, 3, 12, 19, 37-47, 43, 19, 50, 62, 70, 79, 81, 82, 85, 86, 92-100. See also Material, Mfr. of, Air Technical Service Group, Wright-McMillen Div., 18