

15

RENEGOTIATION

of the

AIRCRAFT INDUSTRY

AIRCRAFT MANUFACTURERS COUNCIL

AERONAUTICAL CHAMBER OF COMMERCE OF AMERICA, INC.

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I.

INTRODUCTION

The Industry Faces
1943 Renegotiations

The aircraft industry approaches the renegotiation of its 1943 contracts with considerable concern. Production is at an all-time high. Employment has leveled off. Cut-backs have started. As a result of taxes and renegotiation of 1942 business, the industry is in a precarious financial condition.

The industry realizes that renegotiation is a method of preventing excessive profits and has no desire to derive such profits from the war. In considering profits of the aircraft industry, however, it is essential to analyze its present weak financial position and the vigorous productive condition in which the industry must remain after the war if it is to protect the nation's vital interests. Such analysis indicates that there may be no excessive profits.

Profits Allowed
Have been Small

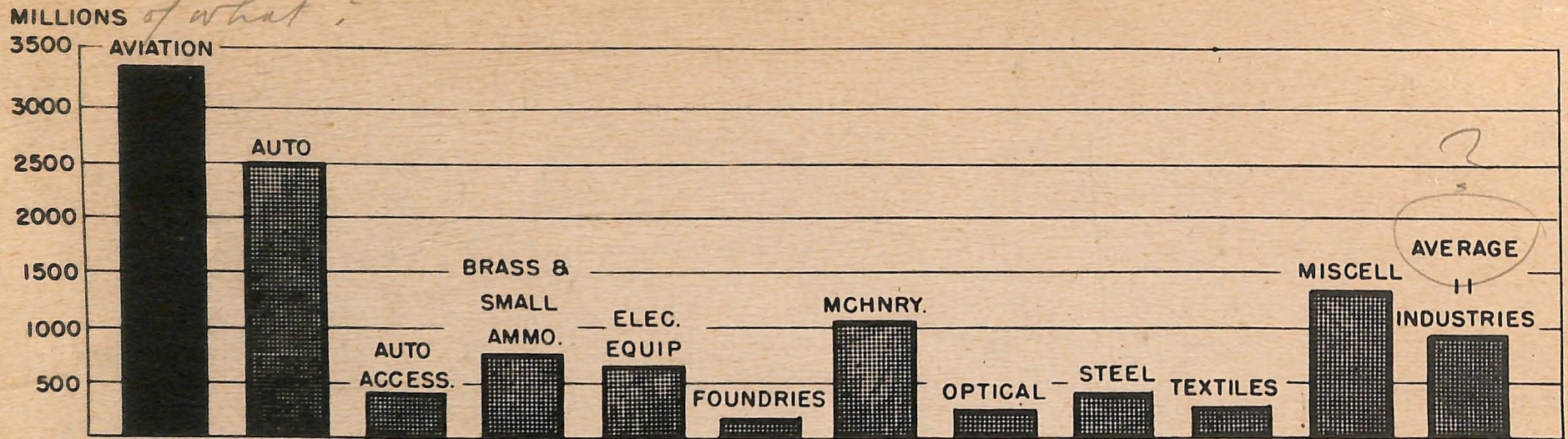
Despite the serious problems of the aircraft industry, the combined effect of taxes and renegotiation has been to allow it much smaller margins of profit than other industries. The Boeing Aircraft Company, which developed with its own capital the Flying Fortress, after

taxes and renegotiation in 1942 retained profits
of only 2% of sales. On the other hand, General
Motors was allowed 8.3%. Eastman Kodak retained
10.5%. du Pont retained 13.8%. Deere and
Company retained 10.6%.

However, Grumman retained only 2.4%; Curtiss-
Wright retained 2.6%; Lockheed retained 2.9%;
and United Aircraft retained 3.3%.

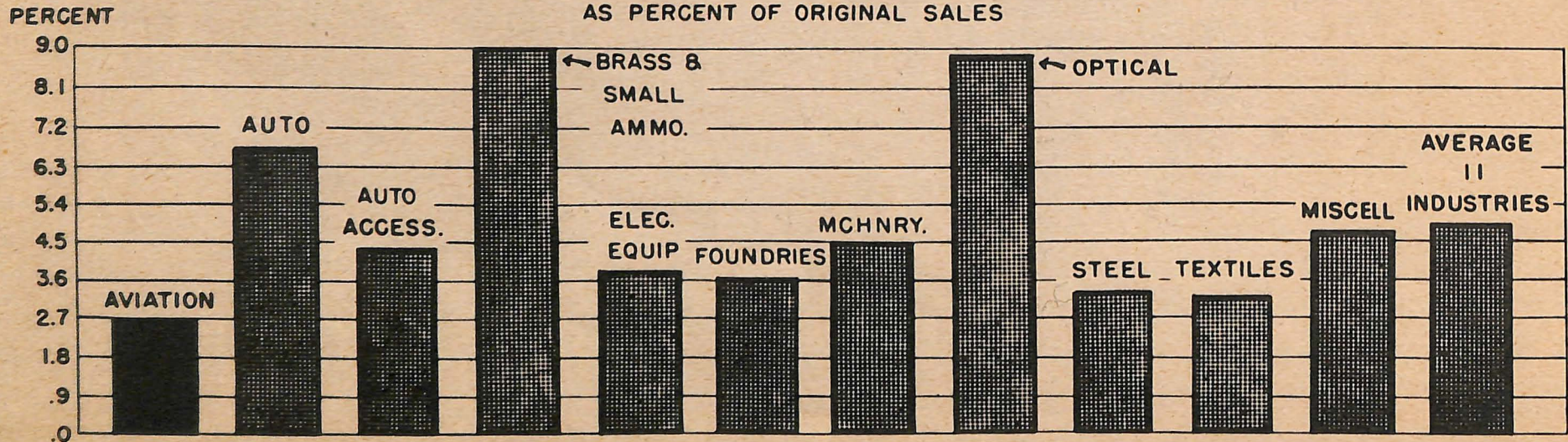
A comparison of the relative position of the
aircraft industry and other industries with
respect to sales and to profits after renegotia-
tion appears from the following chart:

SALES



PROFITS AFTER RENEGOTIATION

AS PERCENT OF ORIGINAL SALES



SOURCE: "SOME EFFECTS OF RENEGOTIATION"
MANAGEMENT PLANNING, INC.

AIRPLANE
IN THE
INDUSTRY

This chart indicates that the aircraft industry has done the outstanding job in the war effort with respect to expanding production to meet war needs. On the other hand, the profit which it has been allowed to retain to meet the risks resulting from such enormous expansion have been the smallest of any important industry.

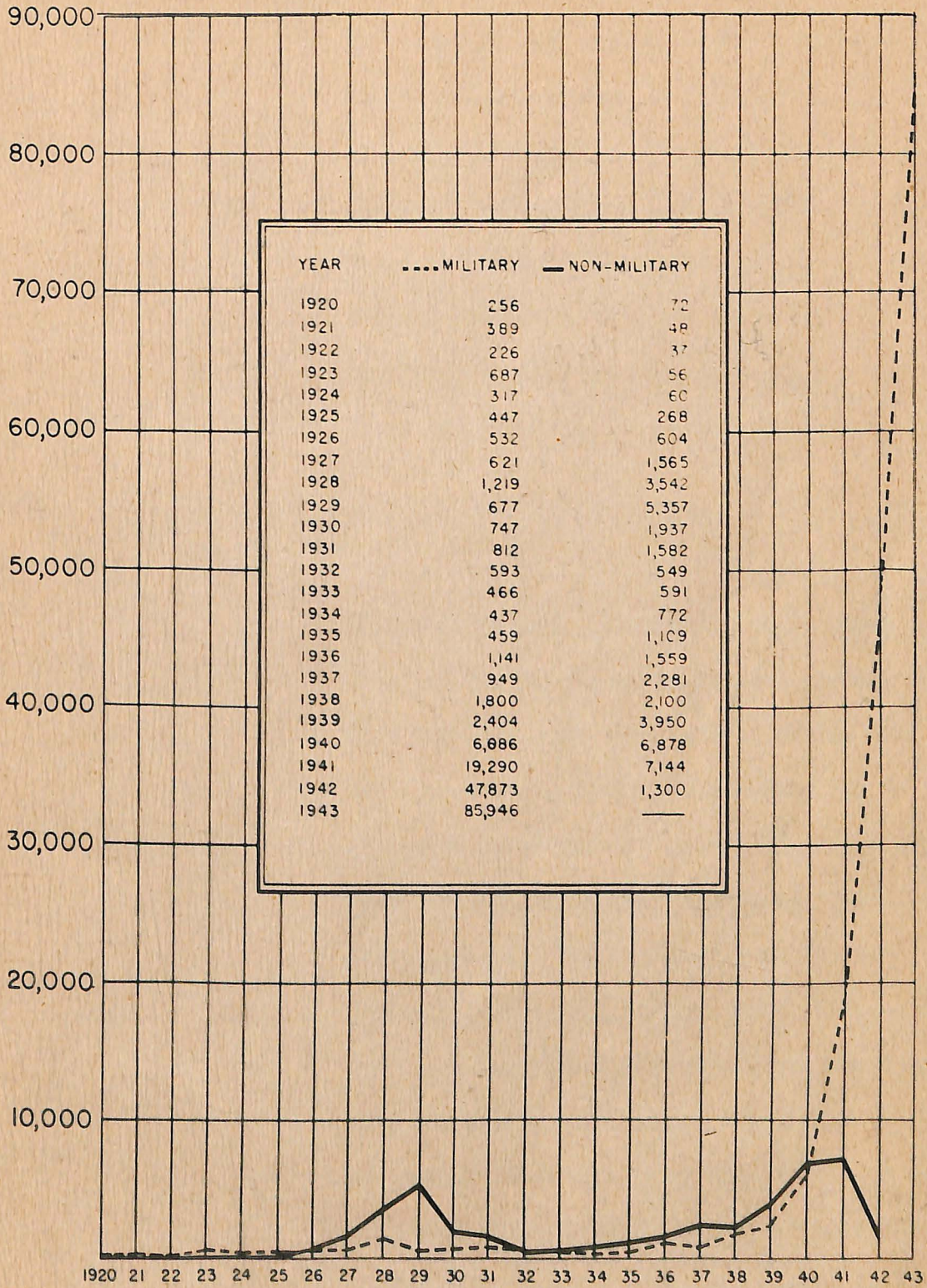
Justification for
Different Treatment

The aircraft industry is unique in many respects. It is the only industry producing major weapons for the war effort which has, itself, designed and developed all of the weapons it is producing. The enormous expansion which it has carried out to meet war needs is unparalleled in industrial history. The risks resulting from such expansion are so great as to threaten the industry's survival. During the present war and the critical post-war period, the aircraft industry will be inextricably concerned with and vital to the nation's defense. These factors seem to justify special consideration of the problems of the aircraft industry by the War Contracts Board. It is hoped that the need for different treatment will be given careful attention by the Board.

"Whereas it should receive added consideration, the industry has actually received considerably less profit than other industries in spite of its greater contribution, as indicated on the chart on Page 4. It should be kept in mind that from the contractor's standpoint, renegotiation cannot be divorced from excess profits taxation, since it is the combined effect of the two that is felt, and the taxation of this industry is above normal because of its low profit operation during pre-war years, when it was laying the

Boeing
Addition

AIRPLANE PRODUCTION IN THE UNITED STATES



ACCA

II.

THE CONTRIBUTIONS OF THE AIRCRAFT
INDUSTRY TO THE WAR EFFORT

Combat
Results

The strategic and tactical results achieved by the overwhelming force of American air power is a matter of record. On every front and in every way called upon, American air power has disrupted enemy production, communication and defense lines. At this writing air power is providing an umbrella of protection for our invading forces on the second front.

*Being
added*

Huge Sc "Besides striking at the production core of its ability
Product to wage war--a function that can be performed by no other
weapon than aircraft."

that made possible the turning of the tide in favor of the Allies was recognized by General H. H. Arnold, commanding general of the Army Air Forces when, in a statement made before the Subcommittee of the Committee on Appropriations, House of Representatives, on Friday, May 19, 1944, he said: "The aircraft industry has done a splendid job. We were told that we were shooting at too high a production volume, but, especially in the heavy bombardment types, production is several times that which was believed possible. This has been accomplished only through the wholehearted cooperation of these manufacturers." The mere size of the

production is astounding. No industry has ever expanded so rapidly. No industry in history achieved such size. In 1939, even with the aid of substantial foreign military orders, aircraft output reached an annual rate of only \$260 million. For 1943, total aircraft output exceeded \$11 billion, of which all but a small percentage was produced by the prewar aircraft manufacturers, a sixty-fold expansion for these companies. By comparison, the peak for peacetime automobile production was less than \$4 billion. It has been estimated that total aircraft production during 1944 will exceed \$21 billion, which is nearly six times greater than the automobile companies' best year.

Comp. - v. auto

most production figures

In 1939 -- the year Germany invaded Poland -- the United States produced less than 6,500 planes -- military and commercial. In 1943, production exceeded 85,000 planes. In 1944, it is expected to reach 110,000 units in spite of a shift to heavier types of planes.

quantity

Aviation has seen the largest expansion of plant and equipment in the war effort. In 1939, there were 17 airframe assembly plants in operation. In 1943, there were 67. In 1939, there were 11 engine and propeller plants. In 1943, there were

CONSTANT "UP" OF U.S. WARPLANT

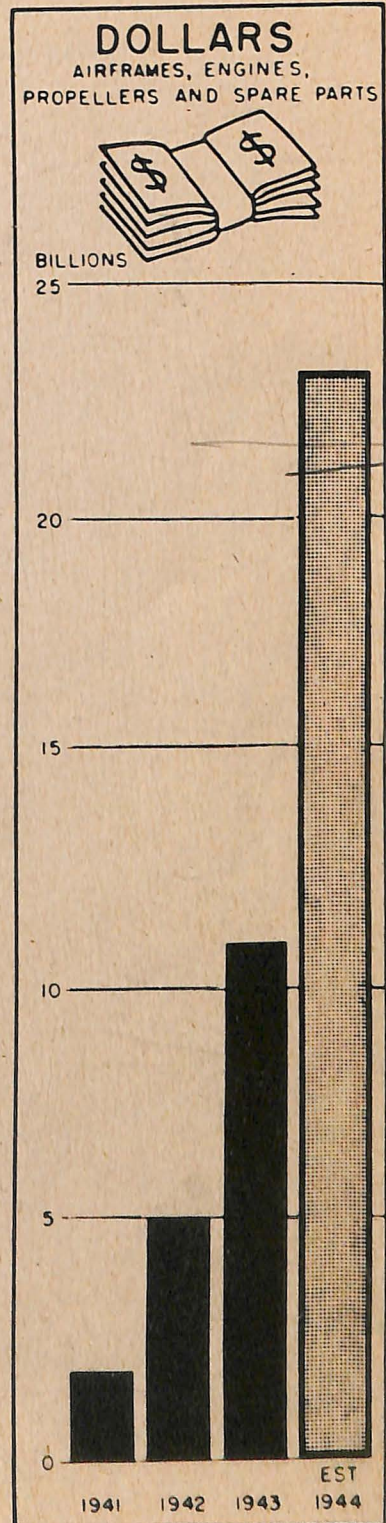
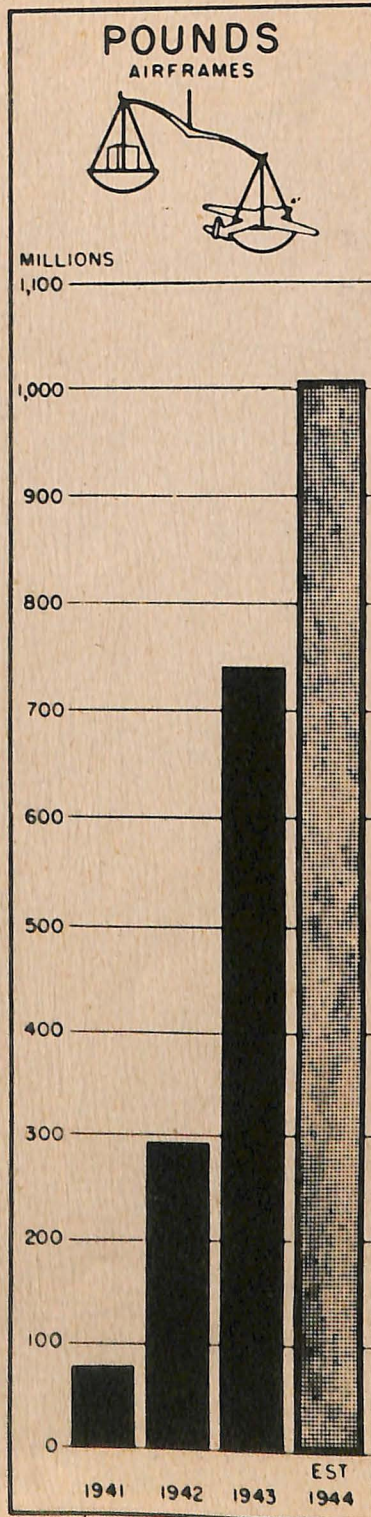
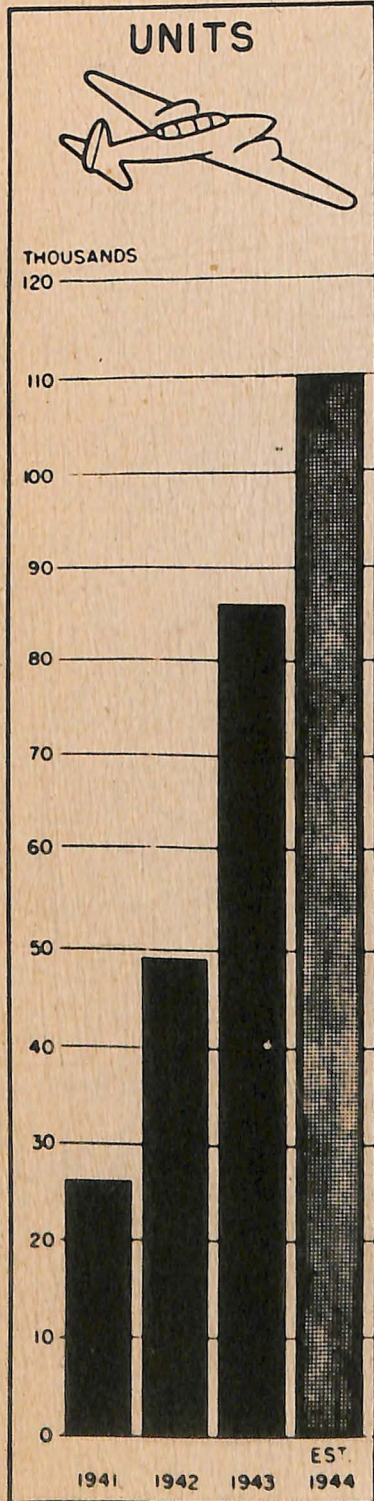
41. More plants now are engaged in aviation war production than in any other war industry.

The following charts indicate the expansion in output and in plants and employees of the aircraft industry:



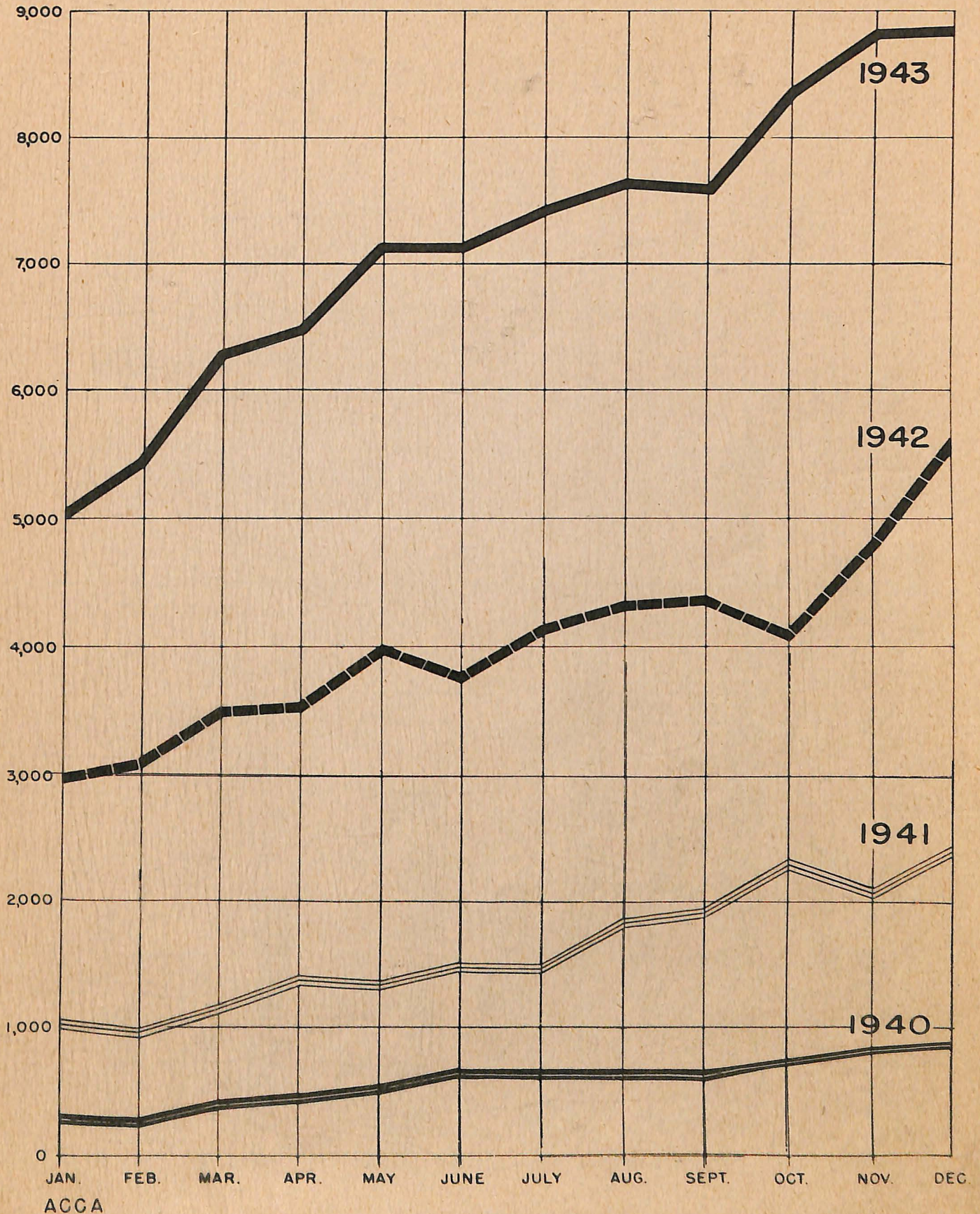
CONSTANT "UP" OF U.S. WARPLANE PRODUCTION

(UNITS - POUNDS - DOLLARS)



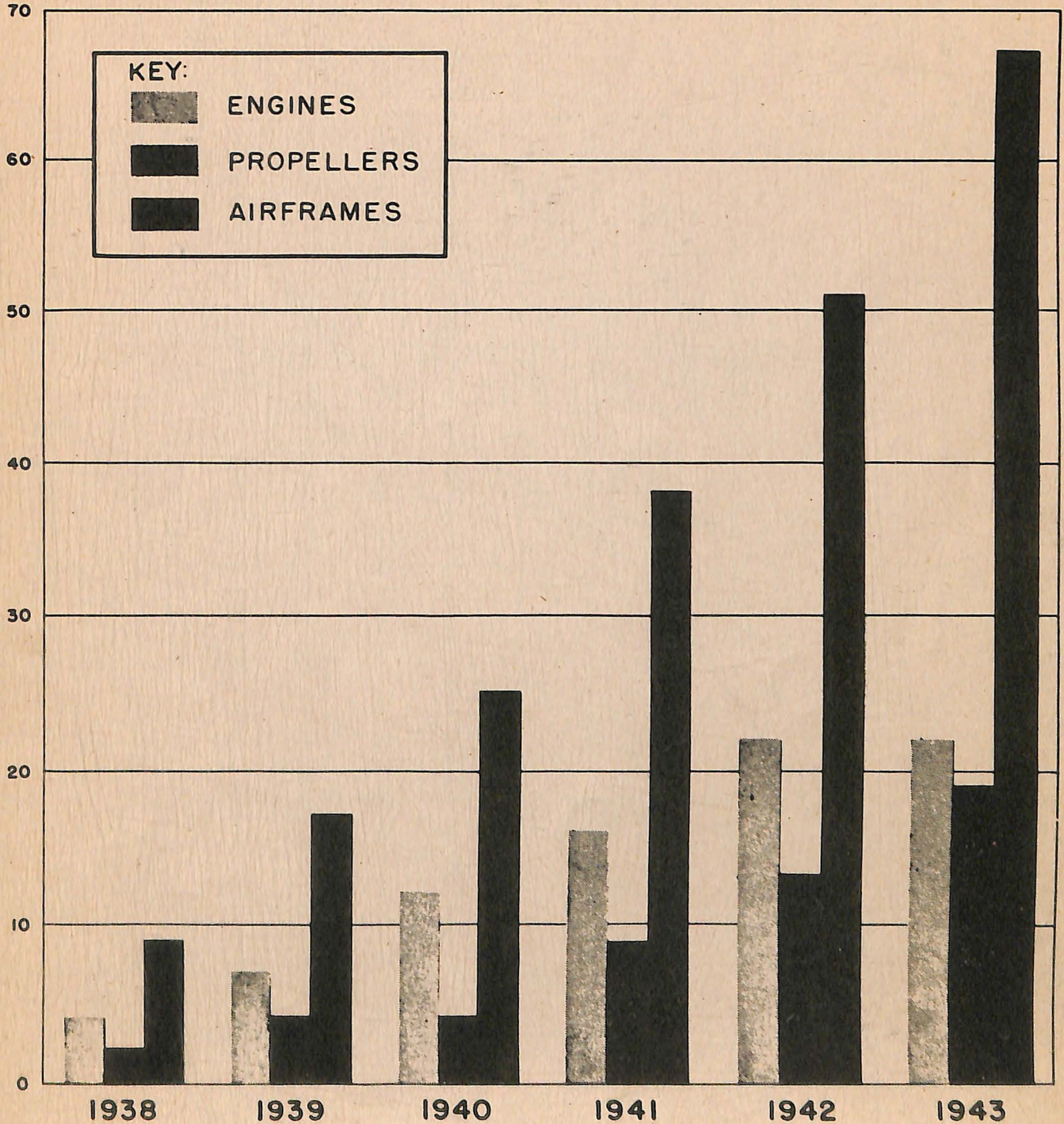
ACCA

MONTHLY OUTPUT OF MILITARY PLANES



U.S. AIRCRAFT FINAL ASSEMBLY PLANTS IN OPERATION

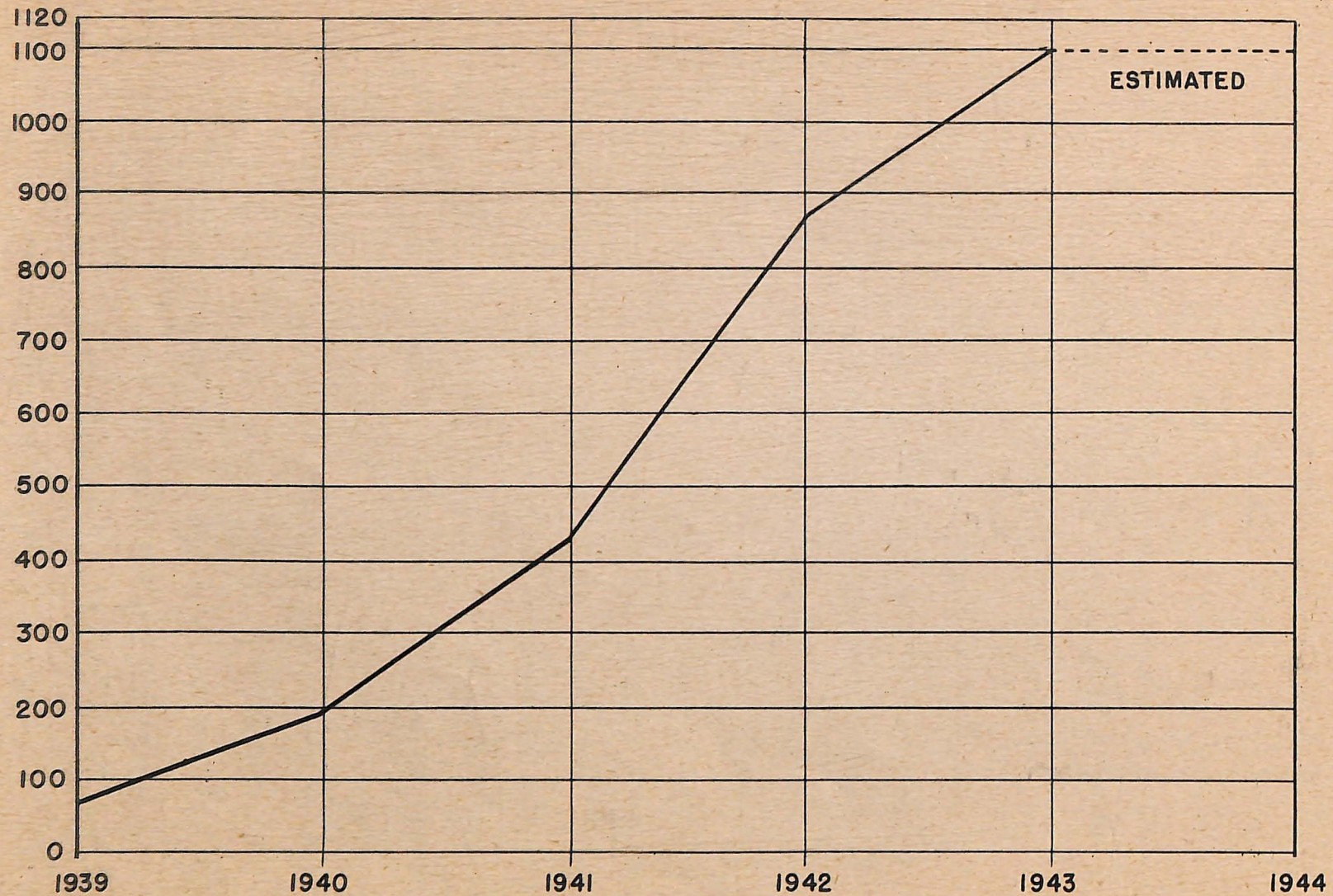
NUMBER OF PLANTS



ACCA

EMPLOYEES IN AVIATION INDUSTRY 23 COMPANIES ONLY

THOUSANDS



SOURCE: 1939 TO NOV. 1943-PROJECTED TO 1944. QUESTIONNAIRES
SUBMITTED BY MANAGEMENT PLANNING, INC.

Contribution of
Design

The aircraft industry is the only industry producing major war weapons which has contributed the greater part of the design and development of those weapons. Most other major instruments of war--ships, tanks, guns-- were designed by the Government and turned over to various industries for production.

There is not a single airplane helping to maintain American superiority in the air which was not primarily designed and developed by one of the private manufacturers. Boeing's experience with the Flying Fortress is a typical illustration of the genius, skill, courage and foresight which constitute a major contribution of the aircraft industry to the war. The first flight test of the Fortress was made by Boeing on July 28, 1935. On October 30, three months later, the Army made its test and because someone forgot to unlock controls, the ship crashed and was a complete loss. It was necessary to start all over again. It took faith and courage and money. The company met continual discouragement from many quarters but it went ahead to perfect a model acceptable to the Army. Today, the Flying Fortress is a triumph in air fighting power.

The other successful American aircraft were perfected in the same manner. The Liberator, Mustang, Marauder, Lightning, Thunderbolt, the sturdy Skymaster and Commando cargo planes -- to mention only a few -- were all completely designed by the private aircraft companies. Certainly they have been contributions of the highest value to the nation.

Improvements
in Quality

Not only did the aircraft industry contribute the designs and then increase production to unheard-of levels, but at the same time, quality was constantly improved. The quality of the product rose ^{despite} with quantity of production. Engineering changes made each successive Fortress, Mitchell, Corsair, Havoc, etc., the most advanced plane of its class. This insistence upon top quality in American warplanes is daily saving the lives of pilots and crews and bringing closer the defeat of the Axis.

personnel possessing the necessary talents and experience to have aircraft industry
Design improvements which pay off in actual battle come only after painstaking research and countless hours of ^{highly specialized} gruelling work on the drafting table. Performance cannot be left to chance when warplanes operate at temperatures ranging from minus 70° to plus 140° Fahrenheit and

at altitudes greater than 30,000 feet. To assure this top quality at all times, aircraft companies have developed costly and highly complicated equipment ranging from the well-known "strato chambers" to machines which measure stresses under hundreds of tons pressure.

Baer's addition

Mass : "Most important, they have developed, through their own effort in past years, the skills and knowledge necessary to accomplish these results."

Despite Complexity
of Product

been achieved by the industry is particularly outstanding when the great complexity of the product is considered. A typical four-motored bomber weighs 56,000 pounds. It is built of 26,000 separate parts. Yet nearly all of these parts must be machined with a watchmaker's exactness. Whereas in the manufacture of automobiles, allowable tolerances are seldom closer than two-thousandths of an inch, in most airplane parts, tolerances have to be as fine as two ten-thousandths of an inch. The finished plane is a huge precision product. Never before has such a large and complicated machine been turned out by mass production methods. The aircraft companies, however, with no previous experience in mass production, performed a production miracle with the most complicated product ever produced in large quantities.

Baer's addition

"In addition to turning out the bulk of the production, they have tutored automobile companies and other industries in the special problems of manufacturing aircraft, aircraft engines and aircraft parts. On such work, automobile companies and others have been allowed to retain reasonable profits, while the aircraft companies have not."

Aircraft War
Production
Councils

How have the aircraft companies been able to achieve such extraordinary production goals and simultaneously improve quality? One answer is to be found in the extent to which they have cooperated with one another. The Aircraft War Production Council, Inc., a non-profit organization, was, at the time it was formed on the West Coast the aircraft industry's answer to the urgent need for a single agency through which to channel all problems related to the war effort. Virtually the entire industry is now represented in War Production Councils which are coordinated on a national basis. Each member company maintains its own identity but freely interchanges information, newly-discovered techniques, materials and manufacturing resources in the interests of top-speed production.

Competition and secret processes are out for the duration. In the belief that they could accomplish more as a coordinated team than as individuals, the manufacturers have pooled all their facilities and use the Councils as clearing houses of ideas and "know-how", as well as a liaison between the industry and the Government war agencies.

Examples Of
Cooperation

This close cooperation has prevented literally thousands of delays in war production. A simple example: At one time there was a shortage of 2,000 feet of binding-braid wire at the Douglas El Segundo plant, which was turning out dive bombers for the Navy. The wire binds the airplane together in one solid metallic unit, eliminating one of the hazards of dive bombing -- static electricity. The wire was found in the stock room of North American and transferred to El Segundo in time to enable Douglas to deliver dive bombers that played a key role in the battles of the Coral Sea and the Midway Islands.

Another example: A hydro press broke down at Consolidated while making parts for wing ribs. A long-distance call revealed that the press in one of the Douglas plants wasn't being used at night. Consolidated loaded its dies and materials into a fleet of trucks, sent along a crew and did the job at night. By daybreak, the parts were flowing back to keep the line moving in the huge Consolidated factory at San Diego.

This information and help has been given not only to members of the Councils, but to manufacturers and Government agencies outside of

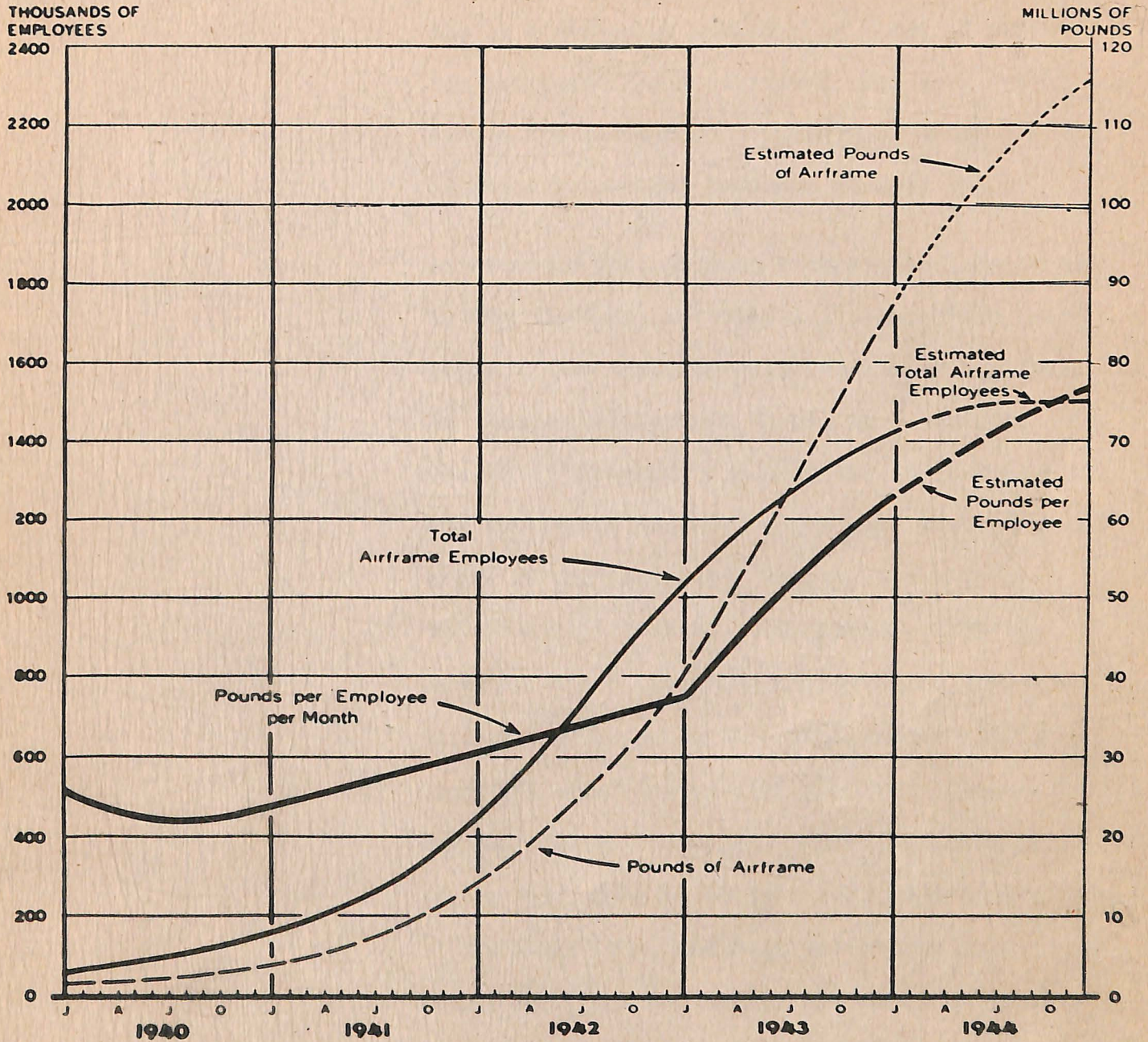
the Councils. This free exchange has brought about vast improvements in manufacturing methods and tooling, greatly increased production, lower costs, and greater economy in the use of materials.

substantially entered into by companies themselves

This cooperative program, plus the strenuous efforts which have been made to obtain the maximum manpower utilization as described below, have made important contributions to the constantly increasing output per worker. This trend is graphically demonstrated by the following chart comparing pounds of output and total employees, and the estimated pounds per employee of the airframe industry:

AIRFRAME

EMPLOYEES, OUTPUT AND POUNDS PER EMPLOYEE



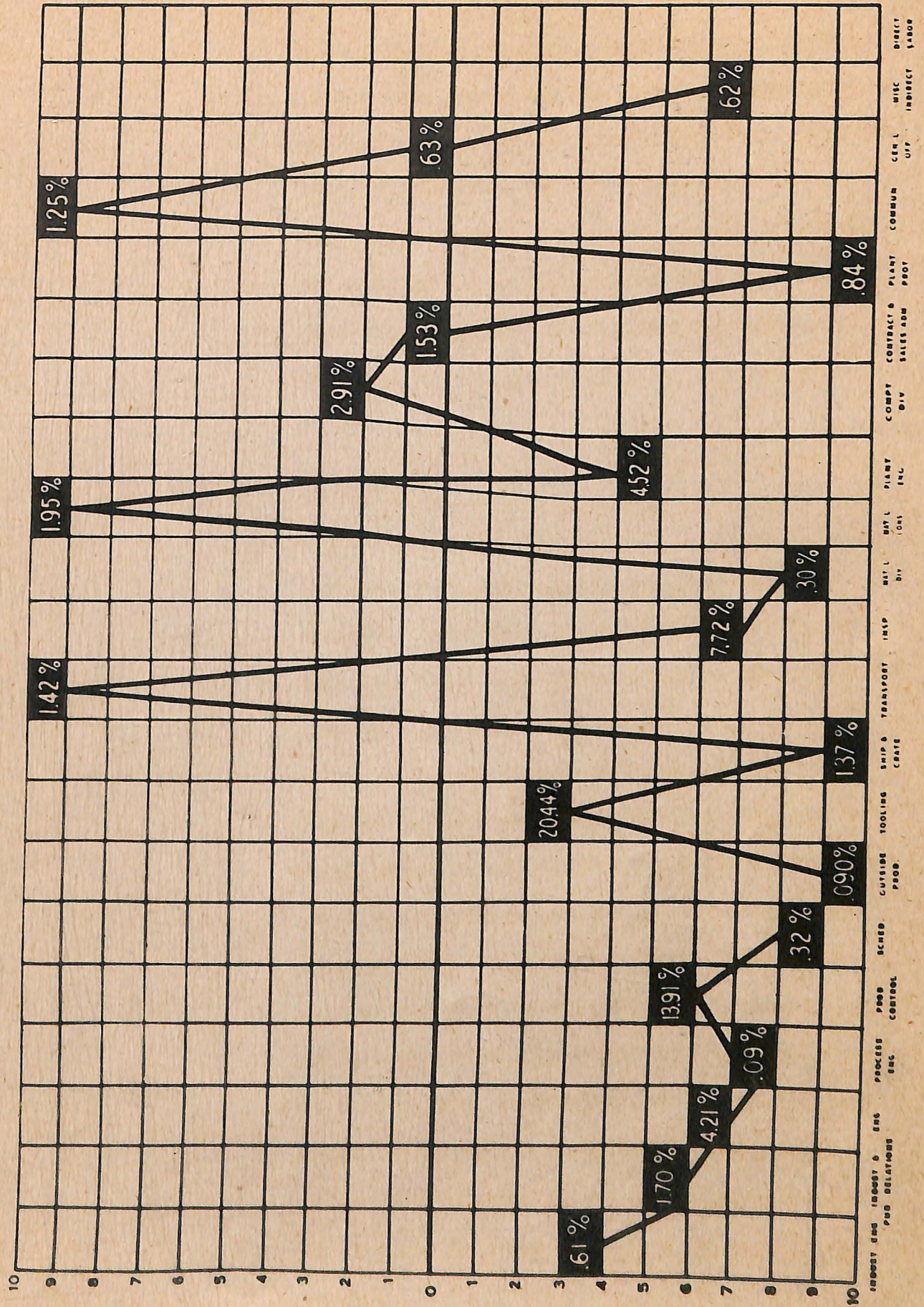
SOURCE: AIRCRAFT RESOURCES CONTROL OFFICE

Manpower Utilization

One of the major aims of the industry, working ^{and through the concerted efforts of individual plant managements} through the Councils, ~~has~~ been to attain maximum efficiency in the use of manpower. Periodic labor utilization surveys are made to evaluate the utilization of manpower in terms of existing equipment and facilities. One such survey showed the allocation of personnel under each of 21 major functional headings at each plant.

A technique used in such a survey is illustrated by the chart on the following page. This chart shows on the zero line the average of employees in various departments in all the companies studied. The curve shown on the chart indicates the variations from the average in these departments of the particular company portrayed in this chart. It shows, for example, that the transportation, material conservation, and communications departments of this particular company are requiring greater manpower than the average of the companies. These departments should therefore be studied for corrective action. At the same time, the high efficiency represented in the plant protection and shipping departments, might indicate that this company, in these departments, may have efficiency ideas which could be profitably used throughout the industry.

COMPOSITE FUNCTIONAL EMPLOYMENT COMPARISON FOR ONE OF THE PLANTS STUDIED



Upon the completion of this type of survey, recommendations are made to each company for its subsequent action. As a result of one such recommendation, personnel in one department of one plant was cut 39%. Cumulative effects of manpower utilization efforts are indicated by a report from the West Coast Council that whereas, in January 1943, it required 1.67 direct man hours to produce one pound of airframe weight, by December the figure had been reduced to .87 man hours.

The pooling principle has been applied to engineering manpower, too. Since Boeing already had embarked on a plastics research project, it took on the work for all of the companies, thus releasing several dozen highly trained technical men for other work. The results of Douglas research into the aerodynamics of wing, fuselage and tail surfaces are normally trade secrets, representing years of experiment and millions of dollars of expense. For the duration, this information is ^{being utilized} available without cost to ^{those} anyone requiring it to build a specific warplane for the United Nations. By eliminating duplicate effort, pooling permits technical brains to go several times as far.

Labor
Dispatch
System

Another method of salvaging manhours which has been generally adopted is the labor dispatch system. If material shortages, schedule revision, changes in specifications or other like causes temporarily should make workers idle in one section of a plant operation, the labor dispatch system routes or loans these workers to departments which have a shortage of help. In one plant alone, this system was credited with salvaging over 1,000,000 manhours during 1943. It drastically reduces losses in workers' time caused by factors over which management normally has little, if any, control.

Employment of
those Ineligible
for Armed Services

Extensive programs have been adopted to employ persons not eligible for the armed services. High school boys and girls have been hired on schedules which have been worked out with the cooperation of school authorities. Business men have been used on after-business-hour shifts. Jobs have been found for the physically handicapped and for persons once considered unemployable. Women and discharged servicemen have constituted important sources of new manpower.

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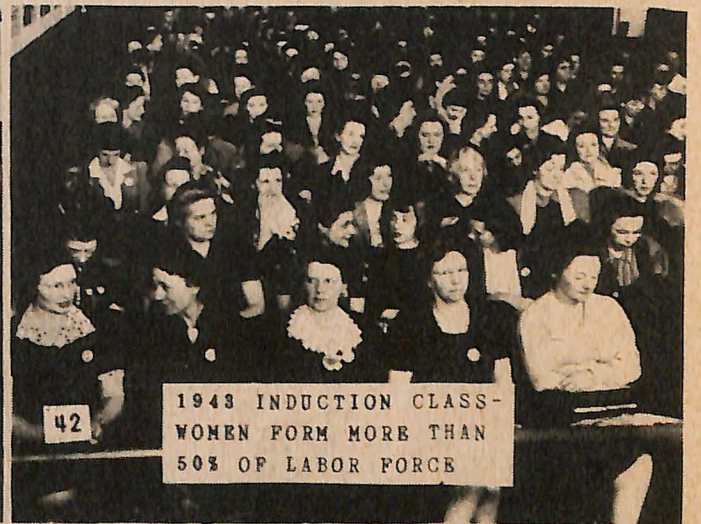
NEW MANPOWER Sources



40 RECRUITING WOMEN



41 1941 INDUCTION CLASS-ALL MALE



42 1943 INDUCTION CLASS-
WOMEN FORM MORE THAN
50% OF LABOR FORCE



43 HANDICAPPED AID IN PRODUCTION



44 UTILIZING WOMEN FOR
COMPLICATED JOBS

Employment
of Women

One of the most satisfactory answers to the industry's manpower problem has been womanpower. Of the 11,275 new employees hired by seven West Coast companies during last December, 5,787, or 51.32%, were women. By the end of 1943 these plants had on their payrolls 125,278 women, or 42.87% of the total personnel. In Great Britain, where war demands brought women into industry earlier than in the United States, the percentage of women stabilized at 40% of aircraft personnel.

Most of the women serve on the production front in assembly line jobs, actually building warplanes. Many also serve in such important factory operations as material handling and tool repairing. Others have replaced men as guards, truck drivers, and munitions handlers. Since the vast majority of engineers leaving the colleges and universities are claimed by the armed services, women have been used as draftsmen, as computers and in nearly every spot a woman can fill engineering-wise. On the average, they constitute about 38% of the engineering staffs.

Rehabilitation
of Veterans

Many months ago the aircraft companies foresaw the need of returning servicemen for jobs and began efforts to place them on warplane assembly lines as the armed services started discharges.

Readjustment programs for the placement of disabled or discharged veterans in jobs which they are physically and mentally capable of handling have been developed to dovetail with policies of government veterans' agencies. The objective is to afford returning servicemen every opportunity to re-establish themselves in civil life and at the same time to utilize most efficiently their old skills or those acquired while in service.

Labor turnover has been a disturbing and expensive factor ^{throughout all war industry} but the rate of turnover has been controlled, as far as possible, by a series of measures designed to promote the health, safety and welfare of employees. The cumulative turnover rate for seven West Coast companies in 1943 was about 80%. Despite this handicap, labor utilization was greatly increased.

see chart 1943

For every 100 workers required to build an attack bomber, a fast interceptor and a medium bomber in 1940, the figures had been brought down by mid-1943 to 9 for the attack bomber, 5 for the interceptor, and 10 for the medium bomber.

Reduction
of Costs

It has not been easy to reduce the prices of aircraft. Frequent changes are necessary on

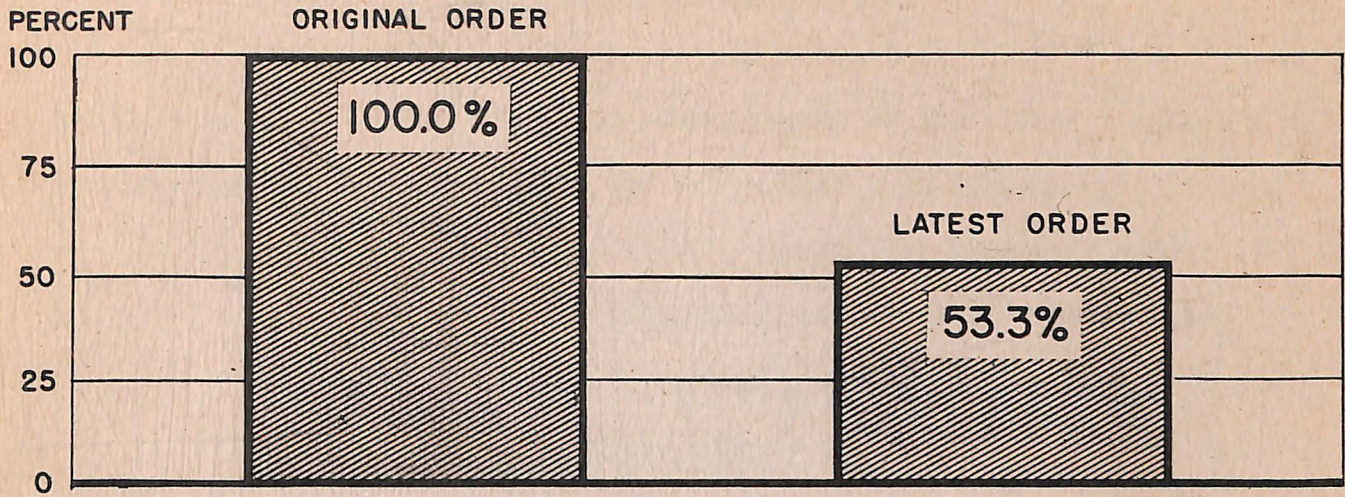
AVERAGE PLANE CONTRACT PRICES

each model and these changes disrupt procurement, interrupt production lines and cause wastage of materials. Turnover and the deterioration of labor have presented continuous and serious problems. The other difficulties which have been previously described all tended to increase costs.

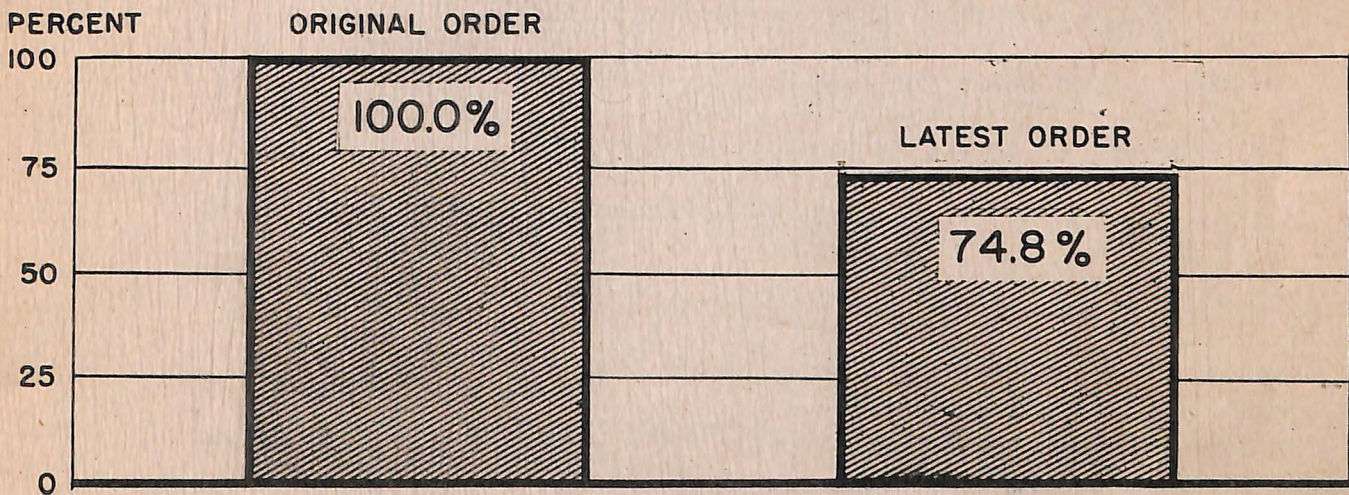
In spite of these deterrents, the prices paid by the Government for constantly improving versions of the various planes have become lower and lower. The approximate price ^{contract estimated cost} to the Government for a Flying Fortress was \$270,000 in 1941, \$240,000 in 1942, and \$125,000 in 1944. The Lockheed Lightning, which cost \$87,000 in 1941, now costs about \$67,000. The Thunderbolt was priced at \$74,000 in 1942, and its price is now about \$57,000. The price of the four-motored C-54 transport was \$390,000 in 1942. By 1944 the price was down to \$208,000, a reduction of 46%. The following chart indicates price reductions which have been effected in average prices of bombers, fighters, and transports:

AVERAGE PLANE CONTRACT PRICES

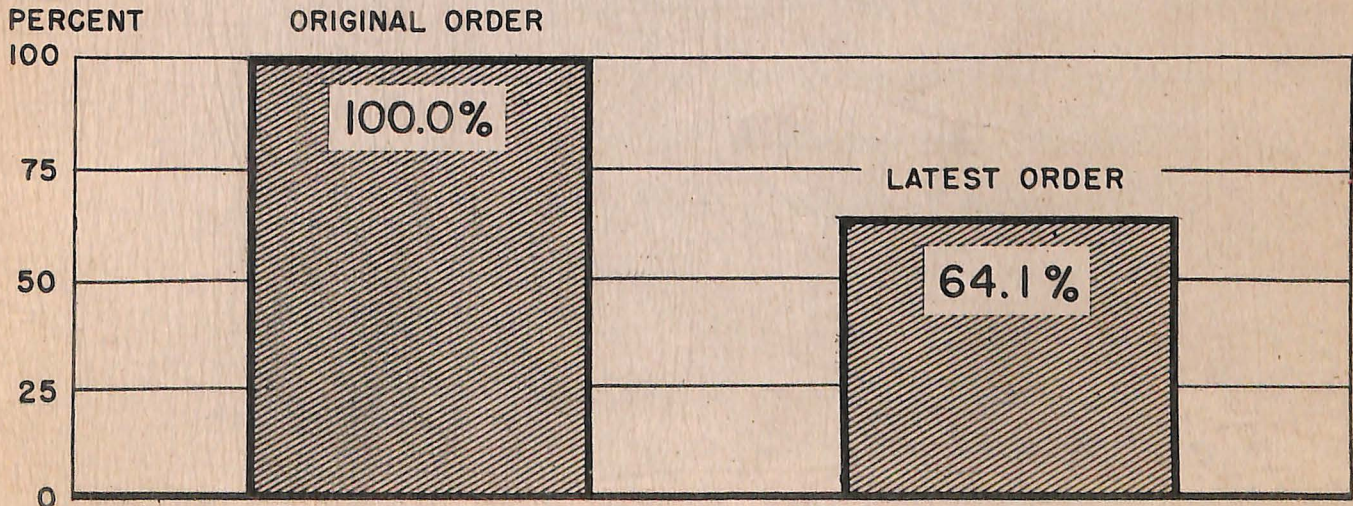
BOMBERS



FIGHTERS



TRANSPORTS



III.

THE WEAK FINANCIAL CONDITION OF THE AIRCRAFT INDUSTRY

No Aviation
Profiteering

These contributions of the aircraft industry to the war effort have been substantial. As has been clearly shown, they were made unselfishly in the national interest and were made without "profiteering". The available facts indicate that the rate of net profits for the industry is probably the lowest of any industry engaged in war production. Even these small paper profits, however, do not tell the whole story. These great contributions were made at the real risk of actual bankruptcy.

To accomplish its large production goals the industry has undergone an enormous expansion which will place it in a position of extreme hazard at the conclusion of the war. The financial problems which will have to be faced at that time have been clearly presented by the Harvard Graduate School of Business Administration in a booklet entitled, "Financial Position of the Aircraft Industry".

In preparing the study Harvard obtained from eleven major aircraft manufacturers their audited financial figures for 1942 (the latest which were

available) and earlier years. These eleven companies represented over three-fourths of total war plane construction in the United States. By dividing the totals of the financial figures by the number of the companies represented, Harvard obtained figures for an "average aircraft company" typical of the industry.

Weak Working
Capital
Position

The most startling fact developed by the Harvard study was the very small margin by which current assets in the aircraft industry exceed current liabilities. Current assets, of course, mean cash, accounts receivable, and inventories. Current liabilities include amounts owed to employees for wages, to suppliers for material and parts, and to Government for taxes, renegotiation refunds, advances, and progress payments received against expenditures on war contracts. The chart on the following page shows that at the end of 1942 the typical aircraft company had only \$1.09 of current assets for each dollar it then owed. On the same date the average for non-aviation industry corporations, selected by Harvard as typical companies for comparison, was \$2.20 of current assets for each dollar owed. In other words, the aircraft companies have only the very narrowest margin or cushion of funds and inventories to meet immediate obligations. Obviously,

any shrinkage in the value of inventories, for example, even a minor amount, would make the industry unable to meet its debts.

RATIO OF CURRENT ASSETS TO CURRENT LIABILITIES

BASED ON MARKETABLE SECURITIES, RECEIVABLES AND INVENTORIES
(ALL RECEIVABLES DUE WITHIN ONE YEAR)

GENERAL INDUSTRY 1933 AIRCRAFT GENERAL INDUSTRY 1942 AIRCRAFT



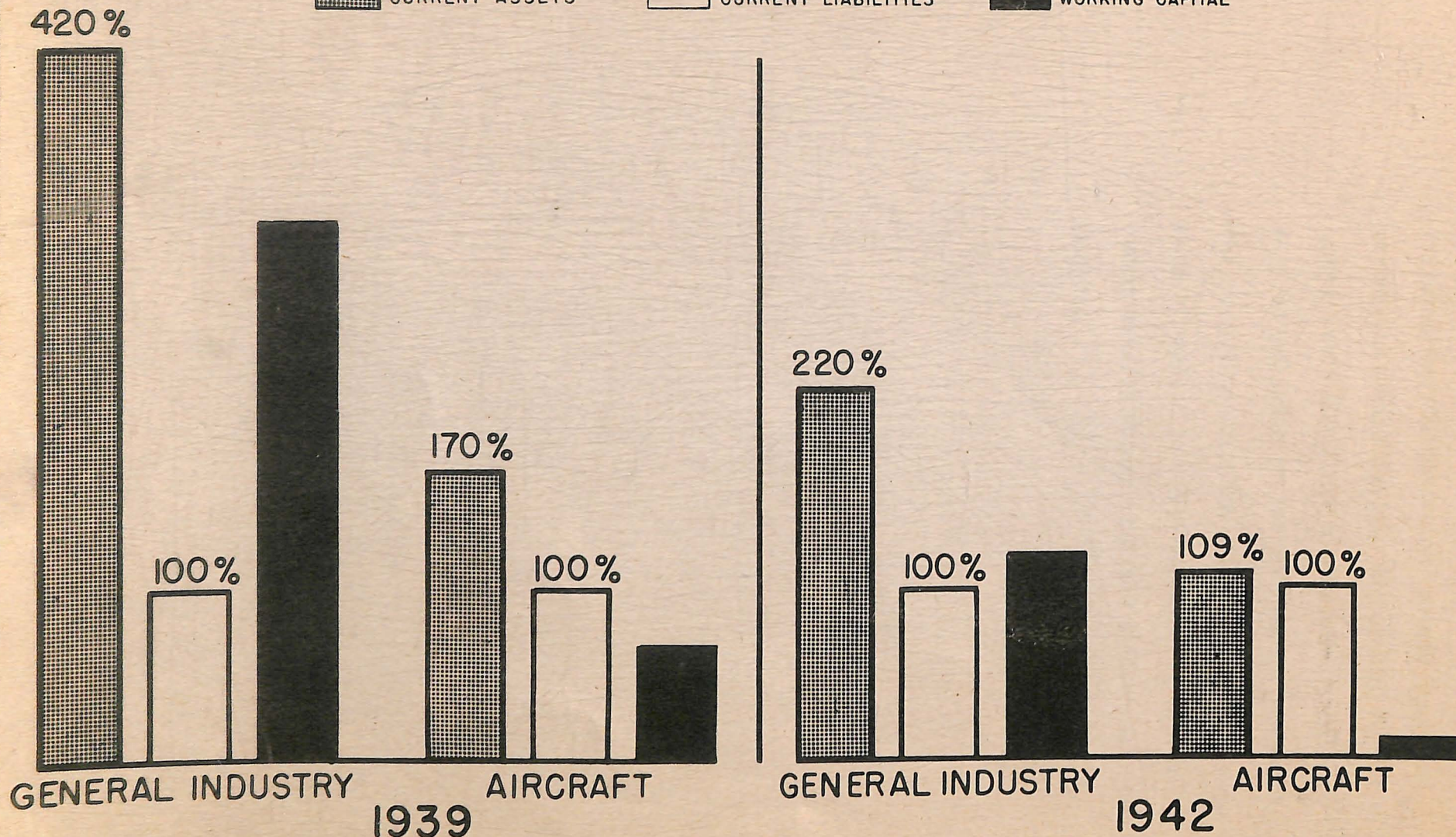
RATIO OF CURRENT ASSETS

(CASH, MARKETABLE SECURITIES, RECEIVABLES AND INVENTORIES)

TO CURRENT LIABILITIES

(ALL OBLIGATIONS DUE WITHIN ONE YEAR)

■ CURRENT ASSETS □ CURRENT LIABILITIES ■ WORKING CAPITAL

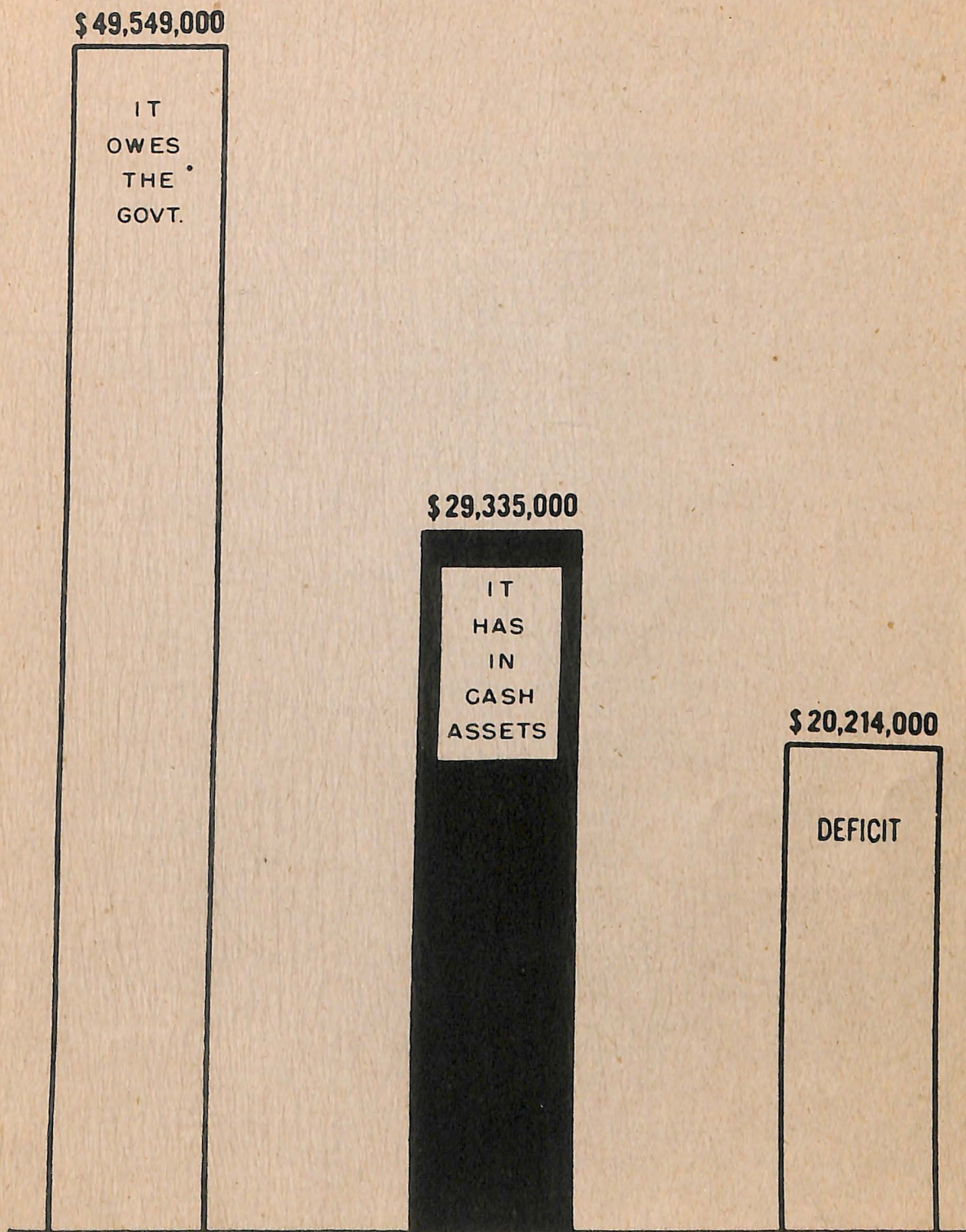


SOURCE: STATEMENT OF RALPH DAMON BEFORE THE HOUSE
WAYS AND MEANS COMMITTEE SEPT. 16, 1943

TYPICAL AIRCRAFT COMPANY OWES
FAR MORE
THAN IT HAS

Furthermore, the quick cash assets (cash and marketable securities) of the typical aircraft company were far short of the amount required even to pay debts to the Government for taxes and renegotiation. The chart on the next page shows a deficit in quick cash assets of over twenty million dollars for the typical aircraft company.

TYPICAL AIRCRAFT COMPANY OWES FAR MORE TO THE GOVERNMENT THAN IT HAS IN "QUICK CASH" ASSETS



SOURCE: STATEMENT OF RALPH DAMON BEFORE THE HOUSE WAYS AND MEANS COMMITTEE SEPT. 16, 1943

Inventory

Risks

The industry is seriously concerned as to the huge amounts of inventory for which they are responsible. The risk of loss upon termination of contracts with respect to inventories is very great. The reasons for this are well set forth on Page 17 of the Harvard study:

"The average company had expanded its production twenty-fold in a period of three years, and under conditions which made it necessary to subordinate all other considerations. The control of inventories has been hampered by such factors as frequent design changes, schedule changes, sudden shifts in the demand for spare parts, a high labor turnover, inexperienced clerical and supervisory personnel, and frequent rearrangements of factories and warehouses.

"All these factors have had an effect on the ability of the average company to maintain inventory records comparable with those which would be kept under normal peacetime conditions. For example, few if any of the major war-plane manufacturers take a physical inventory at their fiscal year end, for such inventory-taking would involve a slow-down of production. Any simultaneous physical checks on all work-in-process are impractical in view of the vast numbers of parts and the interference with production which would be involved. Although the companies do usually employ a crew of men who make a continuous count of raw material items throughout the year, the difficulties of maintaining controls comparable with normal peacetime standards are great.

"Appreciable amounts of obsolete or surplus materials tend to accumulate in inventories under such conditions."

THE AIRCRAFT COMPANIES CAN GO BROKE

8% DECLINE IN VALUE OF
ASSETS WILL WIPE OUT
STOCKHOLDERS'

The chart on the next page shows that an eight percent decline in the value of the total assets for which the eleven aircraft companies are responsible would wipe out the stockholders' capital. It also shows that an 11.6 percent decline in the value of inventory for which the companies are responsible would wipe out working capital.

\$2,982,000,000



\$1,194,000,000



\$1,238,000,000

\$1,330,000,000

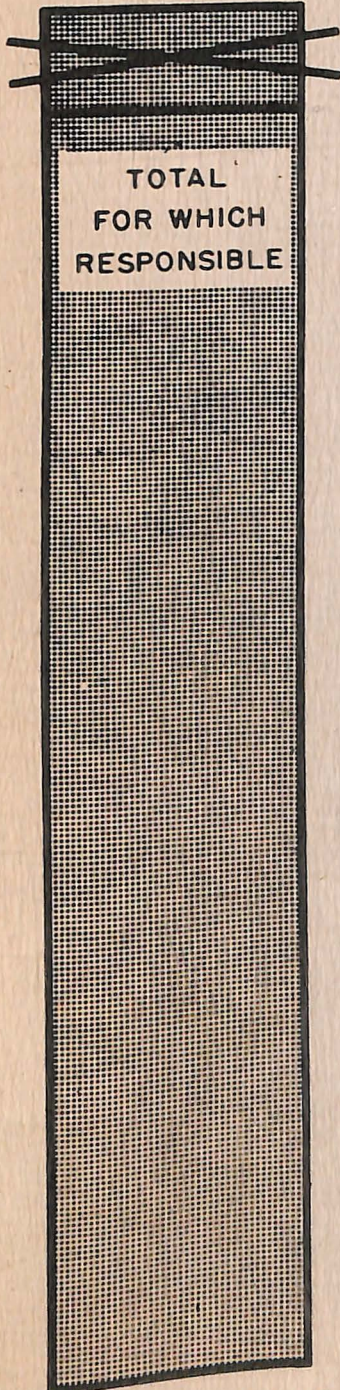
THE AIRCRAFT COMPANIES CAN GO BROKE

8% DECLINE IN VALUE OF
ASSETS WILL WIPE OUT
STOCKHOLDERS

11.6% DECLINE IN VALUE OF
INVENTORY WILL WIPE OUT
WORKING CAPITAL

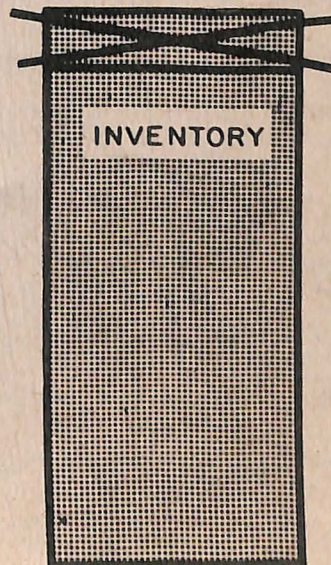
(INVENTORY INCLUDES GOVT.
OWNED FOR WHICH COMPANIES
ACT AS CUSTODIANS)

\$ 2,932,000,000



\$ 238,000,000

\$ 1,194,000,000



\$ 138,000,000

SOURCE: STATEMENT OF RALPH DAMON BEFORE THE HOUSE
WAYS AND MEANS COMMITTEE SEPT. 16, 1943

Increased Risks
Threaten Solvency

The basic reason for the precarious financial position of the aircraft industry is that risks have increased out of all proportion to available resources. As previously stated, the volume of the aircraft industry was far greater in 1943 than in 1942, and was sixty times what it was in 1939. The financial structure of the industry, however, has remained at levels not much above the very modest ones of 1939. This means that present operations of the industry are huge, compared to its financial structure. The risk to working capital and net worth is therefore very great since only a small percentage of loss from operations may equal financial structure.

As a result, each dollar of additional volume increases proportionately the risk of loss. This is a fact generally recognized in business operations, but peculiarly applicable to the aircraft industry. No other industry is faced with such a problem in this war because no other industry, engaged in a regular private manufacturing operation, has achieved such growth as compared to its financial structure. Hazards of cost-plus-fixed-fee disallowances and inventory losses indicate that risks increase with volume under cost-plus-fixed-fee contracts

as well as fixed price contracts.

If these increased risks resulting from increased volume were offset by sufficient profits, there would be no cause for alarm. The figures show clearly, however, that this has not been the case. The profits available after taxes and renegotiation have been grossly inadequate to meet the tremendous losses which threaten. In renegotiation, the need must be recognized for increased profits to match the greater risks resulting from larger volume, whether it be fixed price or cost-plus-fixed-fee volume.

The profits which have thus far been allowed could be wiped out overnight by the potential liabilities facing the companies. What are these risks? Here are just a few of them:

1. Termination Losses. When inventories are liquidated at the end of the war, appreciable losses may be incurred. Most of the material will not be readily saleable in the open market, so the companies must rely primarily on government reimbursement in order to liquidate company-owned inventories promptly at book value. Because of frequent changes in design and difficulties of inventory control at a time when the emphasis was all on production, there are certain

to be losses. A net loss of roughly 11.6% on all inventories would wipe out working capital.

Furthermore, in connection with termination settlements, difficulty will be experienced by the aircraft industry because the strong demands for production and the enormous expansion have made it impossible to establish effective controls and record-keeping such as would be employed in a normal peace-time operation. The great complexities of contract termination, however, have thus far made it impossible to develop methods of recognizing the special operating conditions which have prevailed in the aircraft industry. It therefore appears that the industry may be held to account by reference to normal business standards of record keeping; if so, the aircraft industry is likely to suffer large losses on contract terminations.

2. Disallowances on CPFF Work. Aircraft manufacturers are constantly called upon to make quick decisions on items without knowing in advance what the Army or Navy auditors will decide. Realizing that any delay in production means a loss of lives, they frequently take the action which produces the most planes, regardless of the possibilities of disallowance. These disallowances may amount to a sizeable percentage

of total cost-plus-fixed-fee business and represent a definite threat to working capital.

3. Disallowances by General Accounting Office.

Since the manufacturer is primarily concerned with production and the Comptroller General is primarily concerned with expense, there are many items on which their judgment differs. From past experience, the manufacturer can anticipate probable disallowances on such indirect charges as advertising, legal expenses and surplus materials purchased. These disallowances on small items amount to large totals in many instances.

4. Liability to Sub-contractors. Commitments to sub-contractors run into billions of dollars. These commitments must be met by the prime contractors whether they are reimbursed or not. Some losses are to be expected on these liabilities and even if the percentage is small the actual dollar loss will be large because of the size of the orders involved.

5. Contraction and Conversion Losses. The present rate of production could not be stopped overnight. Current operating costs are so high that if only a few day's expenditures after termination should be unreimbursed, the loss would be very serious to the company. The modified peacetime requirements both for plant and for

personnel will necessitate many expenses which certainly are costs of war production but which are not at present recognized as such. Included in this category are such items as the cost of readjusting physical facilities, retooling and the maintenance of personnel and overhead during the idle period.

6. Market saturation. In a sense, the aircraft industry may be producing itself out of business for the immediate post-war period. It is estimated that there will be 14,000 transport planes available at the end of 1944. There will be at least a five years supply of C-54s alone, and in addition, current production of DC-3s each month is equal to the number used on all lines in North and South America in 1941. The most optimistic aviation enthusiast admits that there will be a lag in the demand for new planes after the war until new and improved designs make obsolete the huge supply of planes that will be available after the war. This loss of the normal post-war market is a cost of war production which should properly be considered in conjunction with allowable profits.

Each of the six items mentioned is an actual cost of war production. There has not been included in this list any of the costs of developing

new planes for the post-war market, such as designing, engineering, research, experimentation and development of sales forces and dealer organizations. These six items listed are contingent liabilities about which management cannot avoid worrying because they conceivably could wipe out the entire net worth and all of the working capital of the average aircraft company. Yet it is not clear that these items are considered by the procurement officers when they determine the costs or by the renegotiators when they arrive at the profits of a particular company.

IV.

THE PUBLIC INTEREST REQUIRES
A STRONG AIRCRAFT INDUSTRY

America Had
Two Years
To Prepare

Ten years before World War II, France had the best planes and the best aircraft industry in the world, but by the time she was invaded by Germany her planes had become inferior and she was producing only 20 planes a month.

In 1939, when England entered the war, our plane production was far below that of Germany. Fortunately, we had two years to get ready before we as a nation were at war against the Axis. During this two year period, our aircraft industry had an opportunity to expand and develop mass production techniques because of the large foreign orders and those of our own Army and Naval forces. By the time the Japs struck at Pearl Harbor we had developed technical skill and "know-how" but production was still on a relatively modest scale. Production since then has been phenomenal.

We May Not
Get Advance
Warning Next
Time

We cannot count on having this much time to get ready for the next war. The national welfare demands that we have a strong, financially independent aircraft industry. Peace time airplanes can be converted to the needs of war. The third Truman report has pointed out that U. S. transport aircraft made possible the success of the African

campaign. Hundreds of thousands of tons of supplies and men have been moved by air to sustain military operations which constitute our great offensive against the Japanese. Cargo and Transport planes were of tremendous value in supplying military operations in Burma; China, Russia, Italy, and now -- the invasion of Europe. The development of transport and cargo aircraft demonstrates that continuing aeronautical research and production through peace time on commercial aircraft lays a firm foundation for military progress in time of war. It is essential to have a sound, solvent aircraft manufacturing industry after the war not only to protect the nation from aggression, but also to help prevent future wars. The industry must have the financial resources to develop continuously more efficient, faster and larger planes.

An American
Air Power
Policy

The United States should maintain an Air Power sufficient (in conjunction with other forces) not only to win this war but also to keep the peace.

- I. By maintaining adequate Air Forces at such strength and in such state of readiness as to preclude a successful assault upon our country or its possessions.
- II. By acquiring and maintaining Air Bases essential to our security and that of overseas trade.
- III. By facilitating the orderly and economic expansion of domestic and international Air Transport and of Private Flying.
- IV. ^{This requires} By preserving a strong Aircraft Manufacturing Industry.

World Leadership

Requires

Resources

Plants should build as much as is necessary to keep operations at a point where quick expansion is possible and facilities permit flexibility of design.

Because of the constant and rapid changes which are forced upon the aviation industry by military events, manufacturers must have a production technique that is flexible enough to meet the demands for improved aircraft. Having entered the production race late, Britain fortunately was able to incorporate the results of later aerodynamical knowledge into its pursuits. German design of fighters had been frozen.

The position of leadership in aircraft engineering and production techniques which we now have can only be maintained if the aircraft industry has ample liquid funds for experimentation and engineering research. The development of new models is extremely costly. It is estimated that a company will have to spend approximately \$15 million to develop a single large-sized commercial transport plane. The industry does not

wish to be dependent upon the Government after the war. There will be a natural reaction against present high taxes after the fighting stops and the Army and Navy will find it increasingly difficult to obtain appropriations large enough to support the development work that will be necessary to keep American aviation in the vanguard. This means a financial strain on the companies in the development of new models. In order to do so, they must have the resources, and the interests of the American people require that these funds be allowed them.

War Contracts Board
Can Consider This
Factor

It is believed that Congress intended the War Contracts Board to consider factors of this type when it provided for consideration of factors which will further the public interest, in section 403(a) (4) (A) (vii). If the Board wishes expressly to recognize these considerations, it might do so by a regulation as follows:

"In this war a few types of weapons have been employed which are of peculiar and key importance in the defense of the nation. To be adequate, some of these types of weapons require constant research, development, testing and production. Certain of the industries engaged in production of such types of weapons are heavily over-extended and have weak financial structures and have rendered outstanding service to the Government in

FACTORS WHICH THE RENEGOTIATORS OF THE
AIRCRAFT COMPANIES SHOULD CONSIDER

The Double
Burden of Taxes
and Renegotiation

At the present time, renegotiation and taxation are making it extremely difficult for the aircraft industry to survive the period of contract terminations, much less be financially able to attack its post-war problems with the vigor which our national security requires.

The excess profits tax falls with exceptional severity upon the industry because of its low average earnings during the 1936-39 base period. Taxes, however, are inflexible. They may be determined with mathematical precision within a very close range and nothing can be done about them except to change the Revenue Laws.

Renegotiation
Determinations
A Matter of
Judgment

Renegotiation, on the other hand, is not susceptible of settlement by a precise formula. It is more flexible. In fact, the regulations provide for the exercise of sound business judgment in arriving at final determinations. For this reason, those who renegotiate the contracts of the aircraft companies can take into consideration those respects in which the industry differs from other industries. Realizing the degree to which the public interest is affected by the financial position of the aircraft industry, they can make

allowances for the unusual factors in its situation.

**Factors Requiring
Liberal Treatment**

An attempt has been made in this study to present the factors which lead to the conclusion that the aircraft industry should be given liberal treatment in renegotiation of its contracts for 1943. For convenience, and in conclusion, these factors will be summarized as follows:

1. Leadership of Products Designed. The aircraft industry contributed the design and development of the aircraft which have proven their leadership in combat all over the world.
2. Enormous Expansion. The industry has met war needs by carrying out an expansion of production unparalleled in industrial history.
3. Results attained through Cooperation. The results attained by the aircraft industry may largely be attributed to the unique cooperation carried on by the industry through the Aircraft War Production Councils.
4. Utilization of Manpower. Through vigorous and continual cooperative efforts, constantly increasing efficiency in utilization of manpower has been achieved.
5. Costs Reduced. Despite the handicaps of constant design change, labor turnover and

deterioration of the working force, cost of products to the Government has been greatly reduced.

6. Profits Small. Profits retained by the aircraft industry have been much smaller than those allowed other industries.

7. Weak Financial Position. The financial position of the aircraft industry, having not greatly improved since the period before the war, is extremely weak when measured against the present level of operations.

8. Risk from increased volume. Increased volume, whether fixed price or CPFF, brings with it commensurate risks, which must be offset by reasonable profit margins.

9. Public Interest Requires a Strong Aircraft Industry. Air power is dominant in insuring safety of the nation. It can only be achieved by having a strong aircraft industry maintaining leadership in design and production of airplanes.

10. Aircraft Industry must have Resources to be Strong. The aircraft industry can only be strong and carry out the requirements of the public interest if it is allowed to retain reasonable profits commensurate with the volume and risks which now exist as a result of the needs of the war effort.

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The aircraft industry sincerely believes that the factors outlined herein are of such significance that full consideration of them by those in charge of renegotiation will lead to more liberal treatment of the industry for 1943 than has heretofore been practiced.

