

**FUTURE FINANCIAL PROBLEMS OF
CONVERSION
IN THE AIRCRAFT INDUSTRY**

By

TOM LILLEY

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L. LAVERNE HORTON



*Business Research Studies
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HARVARD UNIVERSITY
GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
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MELVIN T. COPELAND, *Director of Research*

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FOREWORD

A year ago a report on the *Financial Position of the Aircraft Industry*, prepared by Professor Bollinger and Professor Lilley of our aviation research staff, was published by the Harvard Business School. Since then several research projects relating to the aircraft industry, including a report to the United States Army Air Forces on *Surplus Aircraft and Major Components Thereof*, have been carried on at the School. The results of one of those projects are presented in this bulletin.

One purpose of the present study is to bring up to date the basic financial data presented in last year's report. Because of the very real progress made during 1944 by the government and by the aircraft industry in planning for conversion to peacetime operations, the industry's transition problems now can be evaluated in more specific terms than were possible a year ago. Hence in the present study an attempt has been made to appraise quantitatively the financial problems which will influence the industry's technical progress, its production, and its employment levels in the immediate postwar period.

Because of the rapidity with which the aircraft industry has been forced to expand its operations during the war years, the problems of postwar readjustment for the industry not only are particularly difficult but they have far-reaching ramifications into many parts of the American business structure. No one can know now when the war will end, or just what conditions will be faced when the end does come, and the authors of this report, Professor Lilley and Mr. Horton, make no predictions on those subjects. The authors do analyze the industry's financial problems of postwar reconversion in the light of information now available. Periodically, as further changes in conditions warrant, members of the School's aviation research staff plan to re-examine the industry's current status and prospects.

The cost of this research project was met from funds contributed by the aviation industry.

MELVIN T. COPELAND
Director of Research

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The authors wish to acknowledge their indebtedness to the many persons whose cooperation and advice made possible the publication of the present report. The accounting departments of ten leading manufacturers of airframes furnished the basic 1943 financial data presented herein. Many individuals in the aircraft industry, in government agencies, and in banking institutions contributed extremely helpful information. We are also grateful for the assistance of many members of the School's faculty, particularly for the aid of Professor Lynn L. Bollinger. The authors are, of course, solely responsible for the estimates made in devising projected future financial statements, and for the conclusions of this study.

TOM LILLEY
L. LAVERNE HORTON

Boston, Massachusetts
November, 1944

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SUMMARY

During the past year, industry and government leaders have given increasing recognition to the vital importance of an orderly conversion of the aircraft industry to peacetime operations. The influence which orderly and prompt contract termination settlements will have on postwar levels of employment in the major aircraft production centers of the country is generally recognized. Increasing attention is being paid to the importance of keeping alive aeronautical development work and a nucleus of production facilities and skills at the time when large-scale wartime contracts are being canceled. Recognition is given to the effect on our national air power of continued development, not merely in military aircraft, but in transports which must compete in world markets.

Despite this increasing recognition of the importance of an orderly conversion, many problems remain to be solved. Any forecast of the effect which the transition from war to peacetime production will have on the financial position of the aircraft manufacturers is extremely difficult to make, for much of the detailed planning necessary for an orderly transition remains to be done. A danger still exists that the lack of coordinated industry and government preparations and the sheer mechanics of contract termination procedures will so delay conversion that future employment and development will be harmed.

From a narrow point of view, one purpose of this study is to analyze the ability of the airframe manufacturers to meet the financial problems of the conversion period by estimating the resources they will possess at that time and by estimating the nature and magnitude of the problems of conversion. From a more important point of view, it is hoped that such an analysis may be useful to both the industry and the government organizations which must make the detailed plans essential to a sound conversion program.

The industry's financial position will be reflected by presentation of the financial statements of an average airframe manufacturer, based on the individual statements of ten leading airframe manufacturers. The financial position of each of the ten companies and the problems they face are sufficiently similar so that the average company's statements afford a useful measure of financial condition which, in essentials, is typical of each of the companies.

For the benefit of readers interested in a brief statement of the results of this study, over-all conclusions are stated and each section of the study is summarized below.

Over-all Concl

1. The average airframe manufacturer is able to survive the immediate conversion period with a reasonably satisfactory financial position if these conditions are met:

- (a) if contract terminations are handled with a reasonableness which is consistent with the broad policies set forth in the Contract Termination Act of 1944;
- (b) if the company sets up its own accounting organization to handle terminations prior to the end of the war, concentrating on effective inventory management;
- (c) if the management curtails expenses realistically and rapidly.

The progress made during the last year in planning for contract terminations and conversion affords some grounds for optimism that these conditions may be fulfilled.

2. The risk is great, however, that uncertainties and delays during the conversion period will unnecessarily impede the constructive developmental work required to promote maximum peacetime production. In order to eliminate confusion and unnecessary curtailment during conversion, the following steps are suggested:

- (a) Uncertainties regarding contract termination procedures can be reduced by a concerted effort on the part of industry and government organizations to preplan the methods, standards, and bases for making quick termination settlements well in advance of large-scale terminations.
- (b) Uncertainties regarding the loss carry-back provision of the tax law can be reduced by adoption of a Treasury proposal to accelerate payments of loss carry-back refunds.
- (c) Uncertainties regarding future aircraft production and development can be reduced by making every effort to determine future national air-power policies in advance of the end of the war, particularly Army-Navy procurement policies and policies for lease or sale of government-owned plant and equipment.

Changes in Financial Position during 1943

Before the important problems of the conversion period are considered, Section II outlines the major changes, summarized below, in the average airframe manufacturer's financial position during 1943.

of the average company in 1942, net profits increased to 1.8% of sales, and profits as a percentage of sales decreased from 34% to 31%. The inventory position of the average company improved moderately in 1943.

These improvements, the basic financial characteristics of the average company were unchanged. The magnitude of most assets and liabilities increased; their relative size changed. The government continued to furnish directly and indirectly over 70% of the average company's working capital and over 80% of its plant and equipment.

Projected Balance Sheets at End of First Postwar Year

In order to indicate the possible effect of conversion on the average company's future financial position, projected balance sheets as of December 31, 1946, are presented in Section III, based on the assumption that large-scale war production will cease in December, 1945.¹ The conclusions indicated by these projected statements are summarized below.

1. If termination and conversion risks are considered to be small, the average airframe manufacturer could be in a reasonably satisfactory financial position in December, 1946, one year after the assumed date of major terminations. Based on favorable assumptions, it is estimated that net termination losses would be about \$1,100,000, or 1% of total inventories, and that unreimbursed expenditures in 1946 would be \$11,200,000, or 2% of war peak annual expenses. In spite of these cash outlays, profits retained during 1944 and 1945 and the conversion of the postwar tax refund into cash could increase net working capital from the December, 1943, level of \$18,100,000 to \$23,600,000 in December, 1946. This working capital should be sufficient to meet reasonable contingencies and, if no further decreases occur, to finance adequately postwar sales at a level equal to 10% of war peak sales. In addition, if the loss carry-back provision of the tax law remains in effect, tax refund claims would be about \$9,600,000. Under the present law, however, these claims cannot be considered as a current asset because they are not likely to be converted into cash until several years hence.

¹All the assumptions upon which the projected balance sheets are based and the methods used in deriving these statements are explained in Appendix B, pages 38-44.

2. If unreimbursed expenditures during the first postwar year reached a level of \$29,000,000, equivalent to less than three weeks' expenses at the early 1944 rate, all the average company's cash would be eliminated, even though termination settlement losses remained at the assumed \$1,100,000 optimistic level. Or if unreimbursed expenditures remained at the optimistic level, all cash would be eliminated by termination losses of \$18,900,000, or 17% of total inventories. Under either set of assumptions, net working capital would decrease to \$5,800,000, and the company would face a serious threat of insolvency. The chances of obtaining bank credit would probably be remote, in spite of large loss carry-back and other tax claims.

3. Because of the financial difficulties involved, company executives must exert every effort to keep losses and unreimbursed expenditures near the reasonably optimistic levels during the first postwar year. Because they probably cannot be converted into cash, tax carry-back claims are likely to be of little assistance at the time of most urgent financial need.

4. Of the ten individual airframe manufacturers studied, eight show only moderate variations from the estimated postwar financial position of the average company. Two of the smaller companies are likely to be in an appreciably poorer position than average. Their working capital position must be considered as barely adequate, even if termination and conversion financial needs are considered in a reasonably optimistic light.

5. The basic variables which may either increase or decrease the ability of all the companies to absorb conversion losses and expenditures are as follows:

- (a) the level of cash profits retained from wartime operations;
- (b) the extent to which future termination and operating losses can be offset against current tax liabilities—this will be influenced by the gradualness with which war contracts are canceled and by the timing of large-scale cancellations relative to the fiscal year of the companies;
- (c) the rapidity with which postwar tax refunds may be converted into cash and the extent to which current tax liabilities can be reduced by allowable accelerated amortization of fixed assets;
- (d) the extent of liquidation of current assets and liabilities from war peak levels;
- (e) the rapidity with which termination settlements are made and the extent of interim financing of termination claims available to the companies.

These major variables will determine the resources with which the companies will meet the

financial needs of the conversion period. The nature and magnitude of the termination and conversion problems to be faced are outlined below.

Contract Termination Settlement Problems

Two projected statements have been presented, one forecasting a reasonably optimistic postwar financial position and the other forecasting an "out-of-cash" position. The two forecasts differ only in their assumptions regarding the magnitude of contract termination losses and the magnitude of the unreimbursed expenditures the companies must absorb in the immediate postwar period. Section IV outlines the factors which will influence one of these variables, the losses involved in contract terminations.

1. The prospects for limiting the losses on termination settlements are substantially better than they were a year ago. The companies have had an opportunity to improve their control of inventories and have begun to set up organizations to deal with termination problems. The Contract Settlement Act of 1944 has been passed, and within the framework of this act a structure of detailed regulations is being built.

2. Nevertheless, because of the many remaining uncertainties and the uncompleted administrative preparations, the risks involved in large-scale terminations are still substantial for the airframe manufacturers. It is conceivable that the average airframe manufacturer's termination losses might approach the \$18,900,000 level, which would eliminate all the company's cash.

3. Long delay in reaching termination settlements is still a real danger, unless the government and the individual companies take every possible step to avoid it. The sheer mechanics of terminations could hold up final settlements for many months or even years, with unfortunate results for both the companies and the government.

4. In preparing for large-scale contract terminations, the companies clearly have these responsibilities:

(a) Constant pressure should be exercised to improve the control of inventories, to clean out obsolete and surplus items, and to improve the records kept.

(b) The companies' administrative organizations to handle terminations should be placed under the leadership of a top executive and should be set in action to handle current terminations and to plan for the larger terminations of the future.

(c) In preplanning for terminations, the companies have the obligation, not only to cooperate

fully with the government and with subcontractors, but to take the initiative in making plans and presenting them to the proper officials.

5. Likewise, the government has important responsibilities:

(a) Within the framework of the broad policies of the Contract Settlement Act, the government must work out detailed regulations under which large-scale terminations will be administered.

(b) An administrative organization, competent to accept responsibility and to understand realistically the problems involved, must be carefully trained and placed in the field in time to work out detailed plans with the individual companies in advance of large-scale cancellations.

(c) The men in local field organizations must be given the maximum encouragement to preplan detailed procedures with individual companies.

Unreimbursed Expenditures in First Postwar Year

Probably the most important single difficulty of the conversion period will be the curtailment of expenditures from wartime levels to drastically reduced peacetime levels. Section V considers the magnitude of unreimbursed expenditures which the companies will have to absorb in the first postwar year, treating separately the so-called "momentum" or "slow-down" expenses, which will unavoidably continue immediately after large-scale cancellations, and the "constructive" expenditures, which will be incurred in developing future peacetime business.

1. The magnitude of unreimbursed "momentum" expenses which the average airframe company must absorb during the immediate postwar period will depend on three major variables:

(a) the ability and willingness of the company's management to curtail expenses;

(b) the extent of advance notice of contract terminations given by the government;

(c) the extent to which post-termination expenses are reimbursed by the government.

2. A real risk exists that unreimbursed momentum expenses of the average airframe manufacturer may substantially exceed the optimistic estimate of \$2,200,000. Government policy on advance notice of termination and on reimbursement of post-termination overhead expenses is uncertain, and much detailed planning of related termination procedures still remains to be done by both the industry and the government.

3. The average manufacturer can probably assure his company's financial survival in the postwar

years by close control and, if necessary, virtual elimination of all expenditures other than the inevitable momentum expenses. Because of the magnitude of the wartime organization of the airframe companies, realistic, closely controlled curtailment of expenditures will be essential.

4. Overcurtailment, however, with unnecessary elimination of constructive expenditures for development of future business, would be undesirable from the point of view of the companies and the national interest. During the first postwar year, unreimbursed constructive expenditures in the magnitude of \$9,000,000 are probably close to the minimum necessary if the average manufacturer is to do a constructive job of developing future aircraft business.

5. At present, the risk appears great that constructive developmental expenditures will be overcurtailed. Three types of uncertainties may influence management decisions in favor of greater curtailment:

- (a) uncertainties regarding the timing of the termination settlements and the magnitude of the losses to be incurred;
- (b) uncertainties regarding federal tax laws, particularly with reference to the loss carry-back provision;
- (c) uncertainties regarding national aviation policies.

In each case, there appears to be a real opportunity to narrow the scope of these uncertainties by means of government and industry planning in advance of the end of the war. Industry and government responsibilities in preparing for large-scale contract terminations were suggested in the preceding section.

6. All conversion problems would probably be lessened by the adoption of a proposal to accelerate payments of loss carry-back refunds. One method of accelerating payments would be to postpone tax payments incurred in the year prior to the period when losses are made to the extent of currently accruing carry-back refunds. Also, technical uncertainties regarding the postwar tax refund could be eliminated by prompt action in issuing postwar tax refund certificates and by a prompt declaration of the official cessation of hostilities.

7. Entirely apart from termination and tax problems, the basic question facing each aircraft manufacturer is: conversion into what? The answer will be vitally affected by the postwar aviation policies adopted by the government, including policies for Army-Navy procurement, plant and equipment disposal, surplus aircraft disposal, and Civil Aeronautics Board certification of new transport routes. Every effort to narrow the zone of uncertainty regarding these policies in advance of the end of the war will eliminate confusion and unnecessary curtailment in the conversion period.

INTRODUCTION

The key financial problems of the aircraft manufacturing industry are not the problems of the immediate present but the future problems of converting to peacetime operations. The primary purpose of this study is to analyze the ability of the aircraft manufacturers to meet the financial needs of the conversion period and to indicate the factors which will determine the magnitude of these needs.

This investigation is limited to the major independent manufacturers of airframes. These manufacturers assemble completed aircraft, the individual parts of which are produced by thousands of subcontractors and suppliers. The airframe companies are, in effect, the apex of a pyramid which consists of manufacturers, large and small, from almost every industry in the nation. The conversion of the airframe manufacturers to peacetime operation will therefore directly affect this large segment of American industry.

Scope

In part, this is a sequel to a study published a year ago on the *Financial Position of the Aircraft Industry*.¹ Financial statements based on composite 1943 statements of leading airframe manufacturers are presented herein similar to the statements published last year. Primary emphasis, however, is placed on a quantitative analysis of specific problems which may be encountered in the transition from a wartime to a peacetime economy. Thus, the 1943 financial statements are used primarily as a starting point for forecasting the ability of the airframe manufacturers to meet the problems of conversion.

Projected, or pro forma, balance sheets are presented to show the effect of possible contract termination and conversion needs on the postwar financial position of the manufacturers. The resources which the airframe manufacturers will possess at the time large-scale war production ceases will be affected by many variables. For example, it is obvious that the length of the war and the rate at which aircraft production is tapered off during the war will have a vital influence on the companies' financial position. The best practical way to measure the comparative importance of the many interrelated unknowns is to make specific estimates regarding the probable effect

¹Lynn L. Bollinger and Tom Lilley, *Financial Position of the Aircraft Industry* (Harvard Business School, Division of Research, Business Research Studies, No. 28, 1943, out of print).

of each important variable and, by combining all the estimates in a financial forecast, to observe their influence on the over-all position of the companies. The projected balance sheets shown herein as of the end of the year following large-scale contract terminations are based on such interrelated assumptions.

One basic fact about these projected statements must be very clearly understood. The complex circumstances which will face the airframe manufacturers at the end of the war make completely impossible any exact forecasts. The course of the war itself, strategic needs for various types of aircraft, and the multiplicity of individual company and government decisions which must be made after terminations can be foreseen by no one. The usefulness of projected statements is therefore not one of giving complete, accurate descriptions of what will happen. Business writing is littered with the wreckage of precise attempts to forecast the unknowable.

The device of the projected statement is nevertheless extremely helpful and, in fact, the best available statistical method by which one can narrow the possibilities of what may happen. The projected statements which follow are designed to meet these objectives:

- (1) to indicate the financial position of the airframe manufacturers a year after major contract terminations if reasonably optimistic assumptions are made regarding their cash outlays during that year;
- (2) to indicate the maximum cash outlays which the companies can absorb before eliminating all their cash in the year after major terminations;
- (3) to isolate and more accurately to define the major variables which will affect the companies' future financial position;
- (4) to provide a method or framework for studying conversion problems which may still be useful even after hindsight has indicated changes in many or all of the individual assumptions; and
- (5) to stimulate interest, disagreement, and further study of the industry's conversion problems, both by the companies and by public agencies.

The attempt has deliberately been made to simplify the presentation in order that the major variables and their significance can be clearly presented. Detailed month-by-month statements based on individual contracts have been made up and are con-

stantly being revised by the individual companies and government agencies for their own internal use. A number of such statements have been examined in the preparation of this study. The purpose of this report, however, is to highlight the major problems of the industry as a whole, without presenting confidential data or a multiplicity of details.

Attention is concentrated on the year immediately following the end of large-scale war production. During this first postwar year the companies are likely to meet their most crucial problems in making termination settlements, in converting from inflated wartime operation, and in beginning developments for peacetime operation.

Procedure

Comparable financial data based on the individual statements of 10 major airframe manufacturers are shown for the fiscal years 1942 and 1943. These 10 companies are believed to represent over three-fourths of total warplane assembly in the United States. The 1942 statements differ from those presented in last year's study because of three minor changes. First, 2 of the 11 companies included in the 1942 study were merged in 1943; hence, reference is made in this study to 10 companies, although the data actually represent the same 11 manufacturers referred to in last year's study. Second, since the required financial data for one of the companies included in the 1942 study were not available for 1943, it was necessary to exclude this company from the data for both 1942 and 1943 and to substitute a company of comparable size for which data were available. Third, minor adjustments in the 1942 data were made to reflect slight modifications in the final renegotiation settlements made by two of the companies.

The basic sources of the data were audited statements obtained from the accounting departments of the 10 manufacturers. Adjustments and reclassifications of certain items shown in the published statements were made in order to achieve greater uniformity in the data of different companies. In inter-

preting the basic information presented herein, advice and assistance were obtained from many well-informed persons in the Federal Government and in the aircraft industry and from bankers interested in the aviation industry.

Financial statements based on individual statements of the 10 companies were constructed. The methods used in deriving these statements are discussed in Appendix A. For simplification, all data in the text of this study are presented as data of the "average airframe manufacturer." These average data simply represent the composite financial figures reduced to an average by dividing the totals by 10 (the number of companies represented).¹ Data based on the statements of individual companies are also presented anonymously in order that confidential data of individual companies will not be revealed.

After a brief comparison of the 1942 and 1943 financial statements, projected balance sheets of the average airframe manufacturer at the end of the first postwar year are presented. The resources which the average company will have at the time of termination and conversion needs are thus estimated. Likewise, estimates are made of the probable minimum cash outlays of the first postwar year and the maximum outlays which the average company can meet without eliminating all its cash. Variations in the postwar financial position of individual companies from the average are shown. Finally, the factors which will determine whether the cash outlays of the conversion period approach the minimum or the maximum level are analyzed. Section IV discusses contract termination settlement problems, and Section V discusses the factors influencing the level of unreimbursed expenditures which the companies will absorb in the first postwar year.

¹The ten individual companies vary substantially in size. However, the financial position of each of the companies and the problems each faces are sufficiently similar so that the average company's statements afford a useful measure of financial condition which, in essentials, is typical of each of the companies. Appendix B of *The Financial Position of the Aircraft Industry* presented a detailed analysis of variations of individual company 1942 statements from the average. The general conclusions stated there regarding 1942 data are also applicable to 1943 and 1942 statements presented herein.

CHANGES IN FINANCIAL POSITION IN 1943

Compared with the major adjustments which the airframe manufacturers face in the future, the changes which occurred in their financial position in the year 1943 seem relatively unimportant. Nevertheless, the additional financial resources obtained in 1943 may be of vital importance in meeting the future problems of conversion to peacetime operations. By briefly examining the 1942 and 1943 financial statements of the average airframe manufacturer, one can obtain a measure of the average extent of improvement in the resources of the manufacturers and the average extent of increase in their obligations. Before the vital problems of conversion are considered, therefore, the 1943 operations of the average company and resultant changes in its balance sheet position will be summarized.

Tables 1 and 2 show, respectively, the income statements and the balance sheets of the average airframe company for 1942 and 1943.

Return on 1943 Operations

In 1943 the average airframe manufacturer's net profits after renegotiation refunds to the government increased 18% while its sales were expanding 86%. Hence, net profits as a percentage of sales decreased from 2.8% in 1942 to 1.8% in 1943. The wider use of cost-plus-fixed-fee contracts was one of the major reasons for the decline in the rate of return on operations. These cost-plus-fixed-fee contracts usually provide the manufacturer with a smaller profit margin than do fixed-price contracts. For example, among ten individual airframe manufacturers, the range in the rate of net profit on sales varied from a high of 2.5% for a company using predominantly fixed-price contracts to a low of 1.1% for a company using predominantly cost-plus-fixed-fee contracts. Net profit as a percentage of stockholders' capital (net worth) also decreased, from 34% in 1942 to 31% in 1943.

Effect of Taxation and Renegotiation

In both 1942 and 1943, federal income and excess profits taxes were a major determinant of the level of net profits. As indicated in Table 3, the approximate effect of these federal taxes was to reduce profits 72.8% in 1943 and 72.5% in 1942. These percentages reflect the effect of federal taxation before any

adjustment for renegotiation refunds which were made under the Price Adjustment Act of 1942 as amended.

The effect of renegotiation, however, was considerably less during 1943. Renegotiation refunds to the government accounted for a net reduction in profits before renegotiation and taxes of only 7.1% in 1943 versus a similar figure for 1942 of 11.1%. A principal reason for these lower refunds was the previously mentioned increase in the use of cost-plus-fixed-fee contracts with their smaller profit margins. Moreover, voluntary price reductions reduced profits, and the added experience acquired in pricing airplanes in large-scale production enabled companies to negotiate prices on new contracts more in line with actual production costs. Hence, renegotiation refunds were smaller.

Most Profits Retained in Business

The average airframe manufacturer during 1943 continued to forego large dividend payments and to conserve a large percentage of profit in the company. In both 1942 and 1943, only 22% of profits were disbursed to the stockholders in the form of dividends, the remaining 78% being reinvested in operating assets.

Improvements in Financial Resources

Although the net profit earned in 1943 failed to keep pace with the expansion in the volume of operations, the profits retained nevertheless were ample to strengthen the average company's financial resources. As indicated in the Source and Application of Funds Statement in Table 4, retained net profits were the principal source of new funds.¹ The largest part of these funds was applied to increase net working capital (\$4,329,000), the postwar tax refund (\$2,488,000), and company-owned plant and equipment (\$2,089,000). Because of these various changes, in the year 1943 net working capital increased 31%, net worth increased 31%, and the postwar tax refund more than tripled.

¹The changes in depreciation and amortization reserves provided an additional \$1,656,000. The increased reserves for amortization of emergency facilities constructed under certificates of necessity furnished about 75% of this amount. The fact that most fixed assets were owned by the government kept the effect of changes in reserves from being even larger.

Table 1. Income Statement for the Fiscal Years 1942 and 1943, and Average Monthly Expense Items for the First Quarters, 1943 and 1944, for the Average Airframe Manufacturer¹

INCOME STATEMENT					
Items	1943		1942		Percentage Increase in 1943 over 1942
	Amount (In thousands)	Percentage of Net Sales	Amount (In thousands)	Percentage of Net Sales	
NET SALES:					
Fixed-Price Contracts.....	\$197,798	36.74%	\$160,543	55.42%	23.21%
Cost-Plus-Fixed-Fee Contracts.....	340,579	63.26	129,159	44.58	163.69
Total Net Sales.....	\$538,377	100.00%	\$289,702	100.00%	85.84
OPERATING EXPENSES:					
Fixed-Price Contracts.....	\$167,110	31.04%	\$136,198	47.01%	22.70
Cost-Plus-Fixed-Fee Contracts.....	335,367	62.29	123,271	42.55	172.06
Total Operating Expenses.....	\$502,477	93.33%	\$259,469	89.56%	93.66
Operating Profit.....	\$ 35,900	6.67%	\$ 30,233	10.44%	18.74
OTHER INCOME (NET).....	90*	0.02*	234	0.08	.....
NET INCOME BEFORE FEDERAL INCOME AND EXCESS PROFITS TAXES.....	\$ 35,810	6.65%	\$ 30,467	10.52%	17.54
PROVISION FOR FEDERAL INCOME AND EXCESS PROFITS TAXES (NET OF POSTWAR REFUND).....	26,152	4.86	22,303	7.70	17.26
NET PROFIT.....	\$ 9,658	1.79%	\$ 8,164	2.82%	18.30
DISPOSITION OF EARNINGS:					
Dividends Paid.....	\$ 2,156	22.32%	\$ 1,808	22.15%	
Provision for Postwar and General Contingencies	4,257	44.08	3,306	40.49	
Balance to Surplus.....	3,245	33.60	3,050	37.36	
Total Net Profit.....	\$ 9,658	100.00%	\$ 8,164	100.00%	

AVERAGE MONTHLY EXPENSES FOR WAGES, SALARIES, AND MATERIALS

	Amount (In thousands)	
	First Quarter, 1944	First Quarter, 1943
	Wage and Salary Expense.....	\$16,170	$12,393
Material Expense.....	26,860	14,865
Total.....	\$43,030	\$27,258

*Other deductions (net).

¹These statements were derived by compiling composite figures for ten companies and then dividing each aggregate dollar amount by ten to obtain the results for the "average airframe manufacturer." The figures were adjusted to show the effect of renegotiation under the Price Adjustment Act of 1942 as amended by Section 701 of the Revenue Act of 1943. Net profits are shown before the deduction of provisions for postwar and general contingencies.

Improvement in Inventory Position

An improvement in the average company's overall inventory position is indicated by the improved relationship of inventories to monthly operating expenses, as shown in Table 5. This relationship indicates that approximately 3.4 months of inventory were on hand at the end of 1943, compared with 3.9 months at the end of 1942. It should be remembered, though, that such a ratio conceals the possible unbalanced condition of inventories; that is, some

individual material items are overstocked and others understocked. The managements of most of the companies have been devoting considerable time and effort to the solution of these inventory problems, particularly the disposal of surplus and obsolete inventories. As a result, the condition of inventories is undoubtedly becoming more nearly balanced as time passes.

In some respects the relative decrease in company-owned inventories indicated below also might be

Table 2. Comparative Balance Sheets of the Average Airframe Manufacturer: End of Fiscal Years, 1942 and 1943¹

(In thousands)

ASSETS	1943	1942	LIABILITIES	1943	1942
CURRENT ASSETS:			CURRENT LIABILITIES:		
Cash, Unrestricted.....	\$ 26,782	\$ 27,096	Due Creditors other than U. S. Government:		
Cash, Restricted.....	13,350	15,759	Accounts Payable and Miscellaneous		
U. S. Government and Other Marketable Securities.....	19,416	5,613	Current Liabilities.....	\$ 37,861	\$ 21,509
Accounts Receivable:			Wages and Salaries Payable.....	6,255	3,883
U.S. Government Fixed-Price Contracts	\$ 19,729	\$ 18,992	Notes Payable to Banks.....	16,720	4,291
U.S. Government Cost-Plus-Fixed-Fee Contracts (unreimbursed expenditures, accrued fees, and advances to subcontractors under cost-plus-fixed-fee contracts).....	80,221	46,717	Provision for Taxes other than Federal Income Taxes.....	4,613	2,288
Miscellaneous U. S. Government and Other Accounts Receivable.....	7,249	3,594	Advances other than U. S. Government	258	2,957
Total Accounts Receivable.....	\$107,199	\$ 69,303	Total.....	\$ 65,707	\$ 34,928
Advances to Vendors.....	551	1,218	Due U. S. Government:		
Inventories:			Provision for Federal Income and Excess Profits Taxes.....	\$ 36,490	\$ 23,693
Raw Materials and Supplies.....	\$ 26,476	\$ 19,101	Refunds Due U. S. Government.....	22,048	31,656
Work-in-Process.....	18,881	27,933	U. S. Government Advances and Progress Payments.....	70,279	61,944
Total Inventories.....	\$ 45,357	\$ 47,034	Total.....	\$128,817	\$117,293
Total Current Assets.....	\$212,655	\$166,023	Total Current Liabilities.....	\$194,524	\$152,221
PLANT, PROPERTY, AND EQUIPMENT:			NONCURRENT LIABILITIES:		
Regular Facilities (other than emergency facilities).....	\$ 5,361	\$ 5,199	Bank Loans under Emergency Plant Facilities Contracts.....	\$ 470	\$ 3,699
Emergency Facilities Constructed under Certificates of Necessity.....	7,414	5,487	Other Noncurrent Liabilities.....	...	68
Gross Plant, Property, and Equipment.....	\$ 12,775	\$ 10,686	Reserves for Specific Liabilities.....	311	221
Less: Reserve for Depreciation and Amortization.....	4,698	3,042	Total Noncurrent Liabilities.....	\$ 781	\$ 3,988
Net Plant, Property, and Equipment.....	\$ 8,077	\$ 7,644	NET WORTH:		
EXPENDITURES UNDER EMERGENCY PLANT FACILITIES CONTRACTS, NET OF AMORTIZATION.....	810	3,923	Reserves for Postwar and General Contingencies.....	\$ 8,699	\$ 4,690
POSTWAR TAX REFUND.....	3,473	985	Capital Stock and Capital Surplus.....	8,360	8,513
DEFERRED CHARGES AND MISCELLANEOUS ASSETS.....	1,821	1,680	Earned Surplus.....	14,472	10,843
TOTAL ASSETS (COMPANY-OWNED).....	\$226,836	\$180,255	Total Net Worth.....	\$ 31,531	\$ 24,046
GOVERNMENT-OWNED ASSETS:			TOTAL LIABILITIES (DIRECT).....	\$226,836	\$180,255
Government-Owned Inventories (under cost-plus-fixed-fee contracts).....	112,268	67,191			
Government-Owned Plant, Property, and Equipment.....	74,258	38,766			
TOTAL GOVERNMENT-OWNED ASSETS	\$186,526	\$105,957			

¹This balance sheet was derived by compiling composite figures for ten companies and then dividing each aggregate dollar amount by ten to obtain the results for the "average airframe manufacturer."

considered as an improvement in the average company's financial position:

	1943		1942	
	Amount (in thousands)	Percentage of Total	Amount (in thousands)	Percentage of Total
Company-owned inventories	\$ 45,357	28.8%	\$ 47,034	41.2%
Government-owned inventories (under cost-plus-fixed-fee contracts)	112,268	71.2	67,191	58.8
Total inventories	\$157,625	100.0%	\$114,225	100.0%

Informed opinions differ regarding the relative risks of termination losses on government and company-owned inventories.¹ The decrease in the latter probably does to some degree indicate a lessening of risk. As measured by the relationship of net working capital and inventories in Table 6, the company's ability to absorb termination losses on total inven-

¹An analysis of the types of risks involved in terminations of fixed-price and cost-plus-fixed-fee contracts is stated in Section IV.

Table 3. Approximate Effect of Renegotiation on the Average Airframe Manufacturer: Fiscal Years, 1942 and 1943

Items	Amount (In thousands)		Percentage of Profit before Renegotiation and Federal Taxes	
	1943	1942	1943	1942
Profit before Renegotiation and Federal Taxes.....	\$48,115	\$49,813	100.0%	100.0%
Less: Estimated ¹ Federal Income and Excess Profits Taxes on Profit before Renegotiation	35,029	36,125	72.8	72.5
Net Profit If No Renegotiation Refund Had Been Paid.....	\$13,086	\$13,688	27.2%	27.5%
Less: Estimated ¹ Decrease in Net Profit to Allow for Gross Renegotiation Refunds of \$12,305,000 in 1943 and \$19,346,000 in 1942.....	3,428	5,524	7.1	11.1
Net Profit after Renegotiation.....	\$ 9,658	\$ 8,164	20.1%	16.4%

¹Exact figures were not available for several companies.

NOTE: This statement indicates the approximate net effect of renegotiation on net profits. Thus, net profits are first shown approximately as they would have been had no renegotiation refunds been made. The \$12,305,000 in 1943 and the \$19,346,000 in 1942 of gross renegotiation refunds decreased net profits only by an additional \$3,428,000 and \$5,524,000, respectively, because the remainder would have been paid as taxes if earnings had not been reduced by renegotiation.

Table 4. Analysis of Source and Application of Funds for the Average Airframe Manufacturer: Fiscal Year, 1943
(In thousands)

Funds Provided	Funds Applied
By Increase in Net Worth:	To Increase Net Working Capital..... \$4,329
Net Profit, before deducting Provision for Postwar and General Contingencies..... \$7,502	To Increase Postwar Tax Refund..... 2,488
Less: Miscellaneous Adjustments..... 17	To Increase Fixed Assets..... 2,089
Total Increases in Net Worth..... \$7,485	To Increase Deferred Charges..... 141
By Increase in Depreciation and Amortization Reserves.... 1,656	To Other Miscellaneous Uses (Net) ¹ 94
Total Funds Provided..... \$9,141	Total Funds Applied..... \$9,141

¹This adjustment results from a \$116,000 decrease in bank loans under Emergency Plant Facilities contracts, net of the reduction in the unreimbursed expenditures under such contracts, and a \$22,000 increase in other noncurrent liabilities.

Table 5. Relationship of Inventories to Monthly Expenses for the Average Airframe Manufacturer: End of Fiscal Years, 1942 and 1943

Items	1943	1942
Total Inventories, including Government-Owned Inventories (under cost-plus-fixed-fee contracts).....	\$158,000,000	\$114,000,000
Estimated Monthly Rate of Operating Expenses at End of Fiscal Year.....	46,000,000	29,000,000
Ratio of Total Inventories to Estimated Monthly Rate of Operating Expenses.....	3.4	3.9

NOTE: A similar computation based on cost of sales for the full fiscal years, 1942 and 1943, was not made because it would be misleading. Sales and costs in the first half of 1942 and 1943 were low in relation to the rate of sales and costs at the year end and could not properly be compared with year-end inventories.

It should be noted that estimated operating expenses include some expenses not charged into inventories, though the amount is small. In addition, operating expenses include expenditures under cost-plus-fixed-fee contracts, while only costs applicable to deliveries are included in operating expenses under fixed-price contracts.

Table 6. Relationship of Net Working Capital and Stockholders' Capital (Net Worth) to Inventories for the Average Airframe Manufacturer: End of Fiscal Years, 1942 and 1943

Items	1943	1942
Net Working Capital as a Percentage of:		
Inventories, Company-Owned	39.97%	29.34%
Inventories, Total	11.50	12.08
Stockholders' Capital (Net Worth) as a Percentage of:		
Inventories, Company-Owned	69.52	51.12
Inventories, Total	20.00	21.05

tories changed little between 1942 and 1943, but the ability to absorb losses on company-owned inventories substantially improved.

Balance Sheet Interrelationships Virtually Unchanged

In spite of these improvements, the basic financial characteristics of the average airframe company changed little in 1943; in effect, it simply became a larger company. The absolute *magnitude* of most assets and liabilities increased, but their *relative size* remained approximately the same.

Changes in Financial Ratios

The more common financial ratios shown in Table 7 changed only moderately between 1942 and 1943.¹ Net worth and net working capital as a percentage of sales declined appreciably because of the large

¹Table 7, in addition to giving these ratios for the average airframe company, also shows the highest and the lowest ratios for the 10 companies studied. The variations from 1942 to 1943 in the range of these ratios were not generally significant.

increase in sales. The decline is smaller, however, if the postwar tax refund is added to current assets, as it may be at the time of large-scale contract terminations.² On the other hand, the current ratio (current assets divided by current liabilities) was unchanged at 1.09. Similarly, in both 1942 and 1943, cash and marketable securities comprised approximately 28% of total current assets and were sufficient to meet about one-third of total current liabilities.³

Large Government-Furnished Fixed Assets and Working Capital

The average airframe manufacturer continued to occupy a position almost unique in American industrial history by having an overwhelming proportion of its plant, equipment, and working capital supplied by the Federal Government. The gross

²The technical factors determining the time when the postwar tax refund will be available for company use are outlined on p. 32.

³Cash and marketable securities include restricted cash which can be used only to meet expenditures for specific contracts.

Table 7. Financial Ratios of Airframe Manufacturers: End of Fiscal Years, 1942 and 1943

Items	Average Company		Range for Ten Companies			
	1943	1942	1943		1942	
			High	Low	High	Low
Current Ratio (Current Assets to Current Liabilities).....	1.09	1.09	1.17	1.03	1.17	1.01
Stockholders' Capital (Net Worth) as a Percentage of Net Sales.....	5.86%	8.30%	7.41%	2.76%	10.22%	6.29%
Net Working Capital as a Percentage of Net Sales.....	3.37%	4.76%	5.11%	1.52%	6.87%	0.78%
Net Working Capital (Including Postwar Tax Refund as a Current Asset) as a Percentage of Net Sales.....	4.01%	5.10%	5.67%	2.28%	7.06%	0.87%

Table 8. Analysis of Plant, Property, and Equipment Operated by the Average Airframe Manufacturer: End of Fiscal Years, 1942 and 1943

Items	1943		1942		Percentage Increase in 1943 over 1942
	Amount (in thousands)	Percentage of Total Plant	Amount (in thousands)	Percentage of Total Plant	
Company-Owned Plant, Property, and Equipment:					
Regular Facilities, Gross Value.....	\$ 5,361	6.09%	\$ 5,199	9.71%	3.12%
Emergency Facilities, Gross Value.....	7,414	8.42	5,487	10.25	35.12
Total Company-Owned Plant, Property, and Equipment...	\$12,775	14.51%	\$10,686	19.96%	19.55
Government-Owned Plant, Property, and Equipment, Gross Value and Gross Expenditures under Emergency Plant Facilities Contracts ¹	75,281	85.49	42,844	80.04	75.71
Total Plant, Property, and Equipment.....	\$88,056	100.00%	\$53,530	100.00%	64.50

¹The facilities represented by the expenditures under Emergency Plant Facilities contracts are included with government-owned plant facilities even though title nominally remains with the company until the full cost is reimbursed by the government.

Table 9. Current Liabilities and Net Working Capital Compared with Total Current Assets for the Average Airframe Manufacturer: End of Fiscal Years, 1942 and 1943

Items	Amount (in thousands)		Percentage of Total Current Assets	
	1943	1942	1943	1942
Due U. S. Government:				
Provision for Income Taxes and Refunds Due U. S. Government.....	\$ 58,538	\$ 55,349	27.53%	33.34%
Advances and Progress Payments Due U. S. Government.....	70,279	61,944	33.05	37.31
Total Due U. S. Government.....	\$128,817	\$117,293	60.58%	70.65%
Due Other Creditors:				
Loans Payable to Banks.....	\$ 16,720	\$ 4,291	7.86%	2.59%
Advances Other than from U. S. Government.....	258	2,957	0.12	1.78
All Other Current Liabilities.....	48,729	27,680	22.91	16.67
Total Due Other Creditors.....	\$ 65,707	\$ 34,928	30.89%	21.04%
Total Current Liabilities.....	\$194,524	\$152,221	91.47%	91.69%
Net Working Capital (company's equity in current assets).....	18,131	13,802	8.53	8.31
Total Current Assets.....	\$212,655	\$166,023	100.00%	100.00%

value of plant, property, and equipment operated by the average company increased approximately 65% during 1943, as shown in Table 8. With the largest part of the increase occurring in the government-owned category, the percentage of total plant, property, and equipment furnished by the government increased during the year from 80% to 85%.

The share of total working capital supplied directly by the Federal Government decreased appreciably in 1943, but the decrease was minor if government-guaranteed bank loans are considered as indirectly supplied government capital. Table 9 shows that the percentage of current assets provided directly by the government declined from 71% in 1942 to 61% in 1943. Since most bank loans outstanding are guaranteed by the government, they may be considered in effect as an alternative to additional government advances. If these bank loans are considered as government-furnished funds for both 1942 and 1943, the amount of working capital supplied by the government declined only moderately, from 73% to 68% of current assets.

Actually, the government is supplying an additional amount of working capital through the use of cost-plus-fixed-fee contracts. Company receivables include the expenditures under cost-plus-fixed-fee

contracts for which the company has not been reimbursed. They do not, however, include the inventories under such contracts, for which the average company has already been reimbursed by the government. If at the end of 1943 this reimbursed portion of inventories is taken into account, approximately 72% of the current assets were furnished by the government. The comparable figure for the end of 1942 was 76%.

Future Changes in Financial Characteristics

The future will undoubtedly bring more substantial changes in the basic financial position of the average airframe manufacturer. For example, as expansion tapers off in 1944, the increased working capital obtained from retained profits will probably not be matched by large increases in all categories of assets and liabilities. The company's resources may gain without corresponding increases in its obligations. Later, when the need for large-scale war production ceases, the shrinkage in the airframe industry will inevitably create a basic change from the wartime financial characteristics of the industry. The remaining sections of this report will consider the nature and magnitude of these future changes.

PROJECTED BALANCE SHEETS AT THE END OF THE FIRST POSTWAR YEAR

The crucial question about the financial position of the airframe manufacturers is not what their balance sheet is today but what it may be after most war production contracts are canceled. To present possible answers to this question, assumptions have been made regarding future events, and projected pro forma statements for future dates based on these assumptions are presented below.

In the preceding section, the 1943 balance sheet of the average company and ratios based on this balance sheet were shown. Such static balance sheet ratios can be of only limited usefulness, however, in pointing out the problems of the future. For example, by the time any such statement is published, it is out of date; any quantitative measure of the financial problems of reconversion must take into account profits made since 1943. Then, during the period of contract terminations the various assets and liabilities will be liquidated at varying times. Even more important will be the flow of cash expenditures which will continue after major contract terminations. To reflect these interrelated elements, it is necessary to project operations into the future, using the varying assumptions which appear most reasonable in the light of current knowledge.

For purposes of financial forecasting, it has been assumed that large-scale aircraft production will be moderately curtailed during 1945 and will cease by December, 1945. Obviously, industry and government leaders responsible for meeting the problems of conversion to peacetime operations must be prepared for an earlier end of wartime production. On the other hand, the progress of the war, particularly in the Asiatic theater, could require large-scale aircraft production well after 1945. The forecast of an end of large-scale production in December, 1945, however, appears to be a useful assumption for present purposes.

Attention is concentrated on the year following major terminations, the year 1946, because this appears to be the crucial period. By the end of that year, major cash outlays for conversion will have been made, and yet stabilized peacetime operations are not likely to have been established. And unless the tax law is amended, refunds under the loss carry-back provisions will not have been converted into cash.

First, projected balance sheets of the average airframe manufacturer as of December 31, 1946, are

presented and their significance is discussed. Second, the projected 1946 financial position of the ten individual manufacturers is analyzed through a presentation of the variations of each company's statements from the average. Last, the ways in which conditions may differ from those assumed are outlined and the factors listed which may improve or weaken the manufacturers' projected financial position.

Final Balance Sheet, Year after End of War Production

In summary form, Table 10 shows the average airframe manufacturer's balance sheet on three bases, one being the actual balance sheet at the end of 1943, the other two being projected balance sheets one year after large-scale contract cancellations. The two projected statements differ only because of differing assumptions regarding two key variables: (1) the extent of losses incurred in making contract termination settlements; and (2) the extent of the unreimbursed cash expenditures made during the year following the end of large-scale war production.¹ In all other respects, the two projected balance sheets are based on identical assumptions; i.e., they both reflect the same estimates of cash profits retained from continued wartime operations, of tax benefits received, and of liquidation of wartime current assets and liabilities. The basic assumptions underlying both statements are summarized in the note following Table 10, and the detailed adjustments made in deriving the statements are shown in Appendix B, pages 38-44.

The reasonably optimistic balance sheet (column 2 in Table 10) shows the average company's financial position a year after major contract terminations, if

¹In the two projected balance sheets, these two factors are varied while reasonable uniform assumptions are made for all other possible variables. It would be possible, of course, to make maximum and minimum estimates for all the many variables involved and derive a "best possible" and a "worst possible" balance sheet. Such a combination of all the best possible or worst possible conditions, however, is not likely to occur. Moreover, the primary purpose of this report is to outline the nature and importance of contract termination and conversion problems.

In contrast to such unknowns as the duration of the war, termination losses and post-termination expenditures are to a considerable degree within the control of the manufacturers and the government. Later, in Sections IV and V, the nature of the factors influencing termination and conversion losses is outlined. The purpose of the two projected balance sheets is to show quantitatively the importance of termination and conversion losses and the results of extreme assumptions regarding their magnitude.

Table 10. Actual Balance Sheet on December 31, 1943, and Projected Balance Sheets on December 31, 1946, of the Average Airframe Manufacturer¹
(In thousands)

Items	Actual Balance Sheet December 31, 1943	Projected Balance Sheets December 31, 1946 (year after assumed end of war production)	
		"Reasonably Optimistic" Balance Sheet	"Out-of-Cash" Balance Sheet
ESTIMATED TERMINATION LOSSES AND UNREIMBURSED EXPENDITURES IN YEAR 1946 UPON WHICH BALANCE SHEETS ARE BASED:			
Termination Losses.....	.....	\$ 1,103	\$ 1,103*
Unreimbursed Expenditures.....	.....	11,200	29,004*
BALANCE SHEET ACCOUNTS:			
<i>Assets</i>			
CURRENT ASSETS:			
Cash and Marketable Securities.....	\$ 59,548	\$17,804	.....
Accounts Receivable.....	107,750	8,081	\$ 8,081
Inventories.....	45,357	4,536	4,536
Total Current Assets.....	\$212,655	\$30,421	\$12,617
FEDERAL TAX REFUND CLAIMS.....	.....	9,645	20,301
POSTWAR TAX REFUND.....	3,473	.....	.....
PLANT, PROPERTY, AND EQUIPMENT, LESS RESERVE FOR DEPRECIATION AND AMORTIZA- TION ²	8,887	3,299	4,189
CAPITALIZED DEVELOPMENT EXPENDITURES.....	.....	2,800	7,251
DEFERRED CHARGES AND MISCELLANEOUS ASSETS.....	1,821	455	455
TOTAL ASSETS.....	\$226,836	\$46,620	\$44,813
<i>Liabilities</i>			
CURRENT LIABILITIES:			
Accounts Payable and Miscellaneous Current Liabilities.....	\$ 48,729	\$ 2,436	\$ 2,436
Provision for Federal Taxes and Refunds Due U. S. Government.....	58,538	.....	.....
Advances, Progress Payments, and Bank Loans.....	87,257	4,363	4,363
Total Current Liabilities.....	\$194,524	\$ 6,799	\$ 6,799
NONCURRENT LIABILITIES.....	.....	.....	.....
NET WORTH.....	781	78	78
TOTAL LIABILITIES.....	31,531	39,743	37,936
TOTAL LIABILITIES.....	\$226,836	\$46,620	\$44,813
NET WORKING CAPITAL (CURRENT ASSETS LESS CURRENT LIABILITIES).....	\$ 18,131	\$23,622	\$ 5,818

*If unreimbursed expenditures are kept at the \$11,200,000 "reasonably optimistic" level and termination losses increase to \$18,907,000, a similar "out-of-cash" position will result. See Appendix B, p. 38, for a detailed balance sheet based on these assumptions.
¹For convenience, specific balance sheet dates are used herein. The average company balance sheet was derived from the published statements of ten companies, most but not all of which close their fiscal year on December 31. Hence, a minor error is involved in describing the 1943 balance sheet as a December 31 statement.
²Includes expenditures made under Emergency Plant Facilities contracts, net of amortization.

Note to Table 10

The detailed methods used in deriving the projected balance sheets shown above are set forth in Appendix B, pages 38-44. Herein are summarized the more important assumptions on which the projected statements are based. The assumptions applicable to both the "reasonably optimistic" and the "out-of-cash" statements are stated first. Then the assumptions regarding the 1946 level of unreimbursed expenditures and termination losses which are applicable only to the "reasonably optimistic" balance sheet are stated, followed by the assumptions applicable only to the "out-of-cash" balance sheet. Under each statement of assumption, relevant specific data of the average airframe manufacturer are shown.

I. Assumptions Applicable to Both the "Reasonably Optimistic" and the "Out-of-Cash" Balance Sheets

Continued Wartime Operations

1. Large scale wartime operations will continue until

December 31, 1945, but cutbacks and partial cancellations will reduce 1945 sales 30% below the 1944 level. Retained profits (net profits less dividends) in 1944 will be the same as in 1943, while cutbacks and partial cancellations will reduce 1945 retained profits to 50% of the 1944 level. Final termination settlements on contracts partially cancelled in 1944 and 1945 will be made before December 31, 1945, but further large-scale cancellations will not occur until that date.

Specific data, average airframe manufacturer:

Year	Profits Retained (net profits less dividends)
1943	\$7,502,000
1944	\$7,500,000
1945	\$3,750,000

2. During 1944 and 1945, an amount equivalent to 40% of total depreciation and amortization charges for the period will be expended for new plant and equipment.

Specific data, average airframe manufacturer:

Total depreciation and amortization charges, 1944 and 1945	\$4,000,000
Expenditures for new plant and equipment	\$1,600,000

Immediate Postwar Tax Benefits

1. Before December 31, 1946, the airframe manufacturers will convert their postwar tax refunds into cash at a 5% discount. These refund certificates become negotiable after the declared cessation of hostilities; because they pay no interest and will mature at varying periods several years hence, they would have to be sold at a discount. Approximately the same effect on cash would result if the company borrowed 95% on the face value of its refund certificates.

Specific data, average airframe manufacturer:

Postwar tax refund carried on balance sheet, December 31, 1945	\$7,568,000
Amount converted into cash	\$7,190,000

2. The amortization of emergency facilities constructed under certificates of necessity will be recomputed after the cessation of hostilities in such a manner as to amortize fully the cost of these facilities. As a result, the federal taxes on 1945 profits paid in 1946 will be reduced and refunds claimed for prior years' taxes. It is further assumed that government payments under emergency plant facilities contracts will be accelerated.

Specific data, average airframe manufacturer:

Increase in net working capital resulting from accelerated amortization and accelerated payments under emergency plant facilities contracts	\$1,049,000
Increase in tax refund claims (considered a noncurrent asset)	\$1,116,000

Liquidation of Current Assets and Liabilities

1. By December 31, 1946, all federal tax liabilities and renegotiation refunds will be paid. All other current assets and liabilities will be reduced to levels considered normal for a volume of sales equal to 5% of the 1944 level.

2. By December 31, 1946, final termination settlements will be made on all cancelled contracts. Prior to final settlements, government advances or bank loans up to 90% of total termination claims will be available to the companies.

II. Assumptions Applicable Only to "Reasonably Optimistic" Balance Sheet.

Termination Losses

The net loss on termination settlements will be limited to 1% of total inventories on December 31, 1945, including government-owned inventories connected with cost-plus-fixed-fee contracts. Inventories on December 31, 1945, are estimated to be 30% lower than actual inventories on December 31, 1943. The loss on terminations excludes any loss arising from disallowance of post-termination expenses.

Specific data, average airframe manufacturer:

with the total company-owned and government-owned inventories, December 31, 1945	\$110,340
less termination losses (1% of total inventories)	\$ 1,103

Unreimbursed Expenditures

Unreimbursed expenditures during the year 1946 will total 2% of the war peak level of annual expenses. Unreimbursed expenditures include all expenditures for which the companies are not reimbursed during the year either by the government or by commercial customers. For example, they include unreimbursed "momentum" or "slow-down" expenses incurred after major terminations, unreimbursed expenses incurred in the promotion of future business, and unreimbursed expenditures for developmental work and for plant equipment.

Part of these expenditures will be charged to current operations, reducing net worth, and part will be capitalized, increasing fixed assets and capitalized developmental expenditures. It is arbitrarily assumed that 70% of total unreimbursed expenditures will be charged to current operations, 25% will increase capitalized developmental expenditures, and 5% will increase fixed assets.

Specific data, average airframe manufacturer:

War peak annual expenses (estimated total expenses in year 1944)	\$560,000,000
Total unreimbursed expenditures (2% of war peak annual expenses)	\$ 11,200,000

Tax Refund Claims

In 1946 claims will be accrued for federal tax refunds under the loss carry-back and excess profits credit carry-back provisions of the law. On December 31, 1946, these tax refund claims will be carried on the books as a non-current asset.

Specific data, average airframe manufacturer:

Federal tax refund claims due to loss and excess profits credit carry-backs in 1946	\$8,257,000
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III. Assumptions Applicable Only to "Out-of-Cash" Balance Sheet

In deriving the "out-of-cash" balance sheet, adjustments are made identical in nature to those made in determining the "reasonably optimistic" balance sheet. The magnitude of unreimbursed expenditures, however, is increased to a level sufficient to reduce the companies' cash balance to zero. The magnitude of termination losses remains unchanged at the "reasonably optimistic" level. In this manner is indicated the maximum level of unreimbursed expenditures which the companies' cash balance could sustain.

Specific data, average airframe manufacturer:

Total unreimbursed expenditures	\$29,004,000
Net termination losses (same as reasonably optimistic estimate)	\$ 1,103,000
Federal tax refund claims due to loss and excess profits credit carry-backs in 1946	\$18,913,000

it is assumed that termination losses December, reimbursed expenditures during that year e Average at levels which appear optimistically low light of current knowledge. The "out-of-cash" balance sheet (column 3 in Table 10) represents other extreme. The purpose of this statement is to icate the maximum cash outlays for termination osses and unreimbursed expenditures which the average company could absorb in the year after a major terminations, under the assumption that other factors remain unchanged. Using both the "out-of-cash" and the "optimistic" projected statements, one can establish a range between the probable maximum cash outlays that could be absorbed by available company funds and the probable minimum outlays.

Under the conditions assumed, the optimistic balance sheet would result if the average airframe manufacturer's termination losses were limited to approximately \$1,100,000 (1% of total inventories) and if unreimbursed expenditures during the first postwar year amounted to \$11,200,000 (2% of war peak annual expenses). These estimates of losses and expenditures are based on a study of estimates made by individual companies, on investigation of plans of individual companies, and on discussion of the many variables involved with industry and government executives.

Termination losses, as defined herein, include all losses on final termination settlements except those connected with disallowances of claims for post-termination expenses. Because of the substantial progress made in government and industry planning for terminations in the past year, the prospects appear good for keeping such losses at a level as low as 1% of total inventories.¹

Unreimbursed expenditures include all expenditures made in the year following major terminations which are not reimbursed during that period by the government or commercial customers. They include so-called "momentum" or "slow-down" expenses not reimbursed by the government and unreimbursed expenditures made for the development of peacetime business, including expenditures for new aircraft development and for plant and equipment.²

Even after absorbing \$1,100,000 of termination losses and \$11,200,000 of unreimbursed expenditures, the average company's net working capital a year after the end of war production would still be above its 1943 level. As shown in Table 10, net working capital would increase from \$18,131,000 at the end of 1943 to \$23,622,000 in the reasonably optimistic statement of December, 1946. The reasons for this

¹The elements included in "termination losses" and "unreimbursed expenditures" and the underlying reasons for the estimates made are discussed in detail in Sections IV and V.

²Ibid.

increase, described in detail in Appendix B, pages 38-44, may be summarized as follows:—

The actual balance of net working capital on December 31, 1943, is:	\$18,131,000
Cash profits retained from continued wartime production in 1944-1945 will increase net working capital. If the unexpended portion of 1944-1945 depreciation and amortization charges is included, the increase is estimated to be:	Add 9,555,000
Net working capital will also increase because the postwar tax refund may be converted into cash, the cost of emergency facilities reimbursed, and 1945 tax liabilities decreased by allowable accelerated amortization of fixed assets. The estimated increase would be:	Add 8,239,000
The peak net working capital, before allowing for decreases due to termination losses and unreimbursed 1946 expenditures, would then be:	\$35,925,000
Termination losses and unreimbursed expenditures, estimated on the reasonably optimistic basis, would decrease net working capital by:	Deduct 12,303,000
The estimated balance of net working capital on December 31, 1946, a year after war production ceases, would be:	\$23,622,000

The same increases in working capital would occur on the "out-of-cash" basis. However, termination losses and unreimbursed expenditures totaling approximately \$30,000,000 instead of \$12,300,000 would eliminate all of the company's cash and reduce net working capital to less than \$6,000,000 (see Table 10).³ This maximum cash outlay could result from any combination of termination losses or expenditures totaling \$30,000,000. As indicated heretofore, termination losses are not likely to decrease below \$1,100,000. If they remain at this low level, unreimbursed expenditures in the first postwar year could be as high as \$29,000,000 before all cash is drained from the company. Or, if unreimbursed expenditures remain at the optimistic level of \$11,200,000, total termination losses could be \$19,000,000 before all cash would vanish.

While these estimated maximum or "out-of-cash" outlays bulk large in total dollar magnitude, they are relatively small compared with the volume of wartime operations. As shown in Table 11, the indicated maximum annual unreimbursed expenditures in the year 1946 would be less than one month's expenses at the war peak rate. Estimated average monthly expenses in 1944 are used as the measure of war peak

³Just as in the case of net working capital, the average company's cash will increase because of profits retained from wartime operations and the conversion of the postwar refund into cash and will be reduced by termination losses and unreimbursed expenditures. Cash will also be radically changed, however, by the liquidation of most current assets and liabilities which will inevitably occur when war production ceases. The effect of this liquidation is shown in detail in Appendix B, p. 38.

Table 11. Relationship of Estimated Unreimbursed Expenditures in 1946 to War Peak Average Monthly Expenses of the Average Airframe Manufacturer

(Amounts in thousands)

Items	Amount or Percentage
Unreimbursed Expenditures in Year 1946 (year after end of war production):	
Reasonably Optimistic Estimate.....	\$11,200
Estimated Maximum Expenditures Company Could Absorb before Being "Out-of-Cash" ¹	29,004
War Peak Average Monthly Total Expenses (estimated average expenses in year 1944).....	46,700
Unreimbursed Expenditures in 1946 as a Percentage of War Peak Average Monthly Total Expenses:	
Reasonably Optimistic Estimate.....	24%
Estimated Maximum Expenditures Company Could Absorb before Being "Out-of-Cash" ¹	62%

¹This estimate is based on the assumption that termination losses in 1946 will remain at the optimistic estimate of \$1,103,000. If termination losses are higher, the average company will be out-of-cash before unreimbursed expenditures reach this maximum level.

expenses. The maximum unreimbursed expenditures are equivalent to 62% of war peak monthly expenses, or 2.7 weeks' expenses at the war peak rate.¹

If termination losses are measured as a percentage of total inventories, including government-owned inventories, the maximum losses before an out-of-cash position was reached would amount to 17% of total inventories (see Table 12).² This relationship of losses to total inventories should be considered only as a crude measure of the magnitude of losses. As discussed in Section IV, potential termination losses on cost-plus-fixed-fee contracts depend on a number of variables and are not directly related to government-owned inventories.

The Significance of the Optimistic Postwar Position

When the financial results are considered, the conclusion is inescapable that the management of the average aircraft company will and indeed must make every effort to keep expenditures and termination losses near the "optimistic" level during the first postwar year and must in any event avoid approaching the out-of-cash position. The reasons can be made clear by a brief inspection of the two balance sheet positions resulting from the optimistic and pessimistic extremes.

¹The estimate of maximum unreimbursed expenditures is based on the assumption that 1946 losses on termination claims will remain at the optimistic level of \$1,100,000.

²The estimate of maximum termination losses is based on the assumption that 1946 unreimbursed expenditures will remain at the optimistic level of \$1,200,000.

If the company emerges in the first postwar year with the reasonably "optimistic" results, it should be in a position to meet any most probable contingencies; and if no further positions on working capital are necessary, it will have sufficient capital to finance comfortably a sales volume of about 10% of the war peak level. Just how good this financial position would be depends primarily upon how soon postwar operations of the company reach a self-sustaining basis. If the company can operate on a break-even basis or better throughout the second year, and makes no large expenditures, its net working capital will continue to be over \$23,600,000 and, if all tax claims are later paid in full, will increase to \$33,300,000.

The first column of Table 13 shows the estimated current assets and liabilities of an airframe manufacturer with \$60,000,000 of annual sales, which is 10% of the average company's war peak sales. With net working capital of \$24,000,000, or 40% of sales, the company would, it is estimated, still need to obtain some advances or loans, but its over-all financial position appears satisfactory. On a similar basis, if the reasonably optimistic estimates are correct, the average company, with \$23,622,000 of net working capital, could adequately finance postwar sales amounting to 9.8% of the war peak level. According to most appraisals of the market for aircraft in the first few postwar years, this is a relatively high level of sales. Such estimates typically vary between 5% and 10% of war peak dollar volume.

Table 12. Relationship of Estimated Contract Termination Losses in 1946 to Estimated Total Inventories for the Average Airframe Manufacturer: December 31, 1945

(Amounts in thousands)

Items	Amount or Percentage
Termination Losses in Year 1946 (year after end of war production):	
Reasonably Optimistic Estimate.....	\$ 1,103
Estimated Maximum Losses Company Could Absorb before Being "Out-of-Cash" ¹	18,907
Estimated Total Inventories, December 31, 1945: ²	
Company-Owned Inventories.....	\$ 91,750
Government-Owned Inventories.....	78,590
Total Inventories.....	\$110,340
Termination Losses as a Percentage of Total Inventories:	
Reasonably Optimistic Estimate.....	1.0%
Estimated Maximum Losses Company Could Absorb before Being "Out-of-Cash" ¹	17.1%

¹This estimate is based on the assumption that unreimbursed expenditures in 1946 will remain at the optimistic estimate of \$11,200,000. If unreimbursed expenditures are higher, the average company will be out-of-cash before termination losses reach this maximum level.

²It is estimated that inventories on December 31, 1945, will be 30% lower than actual inventories on December 31, 1943.

Table 13. Estimated Working Capital Needs of the Average Airframe Manufacturer in the First Three Postwar Years

Items	Estimated Satisfactory Postwar Working Capital Position		Estimated Minimum Necessary Postwar Working Capital Position	
	Amount (in thousands)	Percentage of Sales	Amount (in thousands)	Percentage of Sales
Estimated Net Sales.....	\$60,000 (10% of estimated 1944 sales)	100.0%	\$30,000 (5% of estimated 1944 sales)	100.0%
Current Assets:				
Cash and Marketable Securities.....	\$18,600	31.0%	\$ 5,700	19.0%
Accounts Receivable ¹	5,000	8.3	2,500	8.3
Inventories ¹	20,000	33.4	10,000	33.4
Total Current Assets.....	\$43,600	72.7%	\$18,200	60.7%
Current Liabilities:				
Accounts Payable and Miscellaneous Current Liabilities.....	\$ 6,000	10.0%	\$ 3,000	10.0%
Provision for Federal Taxes.....	3,600	6.0	1,200	4.0
Advances, Progress Payments, and Bank Loans.....	10,000	16.7	5,000	16.7
Total Current Liabilities.....	\$19,600	32.7%	\$ 9,200	30.7%
Net Working Capital (Current Assets less Current Liabilities).....	\$24,000	40.0%	\$ 9,000	30.0%
Net Cash (Cash and Marketable Securities less Current Liabilities).....	\$ 1,000*		\$ 3,500*	

*Negative amount.

¹The estimates of accounts receivable and inventories are based on the assumption that the use of cost-plus-fixed-fee contracts will have been discontinued. No past experience in the use of such contracts during peacetime is available for study. It will be noted that the projected balance sheets in Table 10 show relatively higher receivables and lower inventories because it is assumed that the use of cost-plus-fixed-fee contracts will be continued in the first postwar year.

NOTE: These estimates of individual accounts are based on a study of the relationship of sales to current assets and liabilities of a number of airframe manufacturers in the prewar years 1936-1939.

On the other hand, if operating losses continue into the second and third years after the war, if new plants or equipment are purchased, or if large expenditures are made to develop either aircraft or nonaviation business, the \$23,622,000 of working capital might prove inadequate. The very fact that a company kept its cash outlays within the optimistic level during the first postwar year, however, would be evidence that the company's management was sufficiently able to keep later losses within reasonable bounds. If the company wished to make substantial expenditures for aircraft developmental work, for plant purchases, or for development of nonaviation business, it might, if profit prospects were good, obtain new capital or possibly obtain additional loans or advances until its loss carry-back and other tax claims were paid. So long as the company maintains a current position close to the optimistic level, it is in a position to make moderate expenditures itself and it has a reasonable possibility of obtaining new capital.

The Significance of the Out-of-Cash Position

In sharp contrast, if a company completes the first postwar year near the out-of-cash position, shown in Table 10, it cannot adequately finance sales of even

5% of the wartime level, it can make no additional outlays, and, in spite of its large tax refund claims, its prospects for raising new capital are poor. In effect, its chances of survival depend primarily on obtaining government advances to finance its business. Any company even approaching this position must be considered in grave danger of insolvency.

As shown in Table 13, the minimum net working capital adequate to finance sales of \$30,000,000 (5% of the war peak level) is estimated at \$9,000,000. This net working capital is 30% of sales, the approximate relationship of working capital to sales during the prewar years, when liberal use of customer advances was necessary. With less than \$6,000,000 of net working capital, the company which is in the "out-of-cash" position can rely only on large-scale advances from the government to tide it over. Even with such advances, expenditures would have to be pared immediately to a self-sustaining level. Long before cash was finally drained, any prudent management would almost certainly attempt to curtail all possible expenditures.

The company's net worth would decrease only moderately because most of the losses incurred would be offset by the claims for tax refunds. Under the carry-back provisions of the tax law, the company could file claims for refunds of 1944 and 1945 tax

payments if losses were incurred in 1946.¹ The claims would not be likely to aid the company's need for funds in 1946, however, because actual payment of the refunds will probably not be made for several years. Under present law, the company would not even file its claim for a refund until March, 1947.

In such a position, the chances of obtaining new capital or even short-term bank loans appear remote. Neither the current position, the past record, nor—barring new products with remarkable profit potentialities—the immediate prospects of the company would be likely to justify investor or banker confidence. The suggestion has been made that the company might borrow funds using the tax loss carry-back claims as collateral. Informed opinion indicates that this would probably not be practical unless the current position and the profit prospects of the company were improved. The risks facing the lender are: (1) that the loss and unused excess profits credit carry-back laws may be repealed, even retroactively; (2) that the amount to be refunded is uncertain until the company's books are audited by the Bureau of Internal Revenue; and (3) that the time of payment of the refund is unknown. In general, the banks are likely to regard tax refunds as an extra safeguard for loans they would make in the normal course of business, but not as the principal security for a new loan.

Variations of Individual Companies from Average

To reflect the typical financial position of the airframe manufacturing industry, data of the average manufacturer have been presented. In this manner, the balance sheet position of the members of the industry can be indicated in a simplified form, without giving detailed consideration to special individual company problems and without revealing confidential company information. It is desirable, however, to determine the extent to which the position of each individual company differs from the average. While certain basic financial problems are common to all the companies, their ability to meet these problems naturally will vary. In order to indicate these variations of specific companies from the average, projected statements based on the same assumptions as those used for the average company have been constructed for each of the ten major airframe manufacturers.² The results of these pro-

¹In addition to the loss carry-back provision, the Federal tax law also provides for an unused excess profits credit carry-back. To the extent that 1946 net profits are below the company's excess profits credit, as defined by the regulations, a claim for a refund of prior years' taxes may be filed. Because of the small excess profits credits of most airframe manufacturers, such a refund would not be of significant size.

²These are the ten companies whose financial statements were averaged to form the statements of the average airframe manufac-

jected statements have been summarized without mention of individual company names.

The estimated financial position of the average company on December 31, 1946, a year after the assumed end of war production, may be considered reasonably typical of each of the individual manufacturers, with the possible exception of two smaller companies. Table 14 shows the estimated volume of postwar sales that each company can adequately finance if the reasonably optimistic assumptions hold true. As previously indicated, it is optimistically estimated that the average company's net working capital on December 31, 1946, will be \$23,622,000, which is sufficient to finance a postwar sales volume amounting to 9.8% of war peak sales.

Under similar conditions, six of the individual companies could finance a larger volume of sales. The improvement is only moderate, however, since

Table 14. Estimated Volume of Postwar Sales Which Ten Airframe Manufacturers Can Finance Adequately with Net Working Capital Available on December 31, 1946¹

Company	Percentage ¹ of War Peak Sales
Average Airframe Manufacturer	9.8%*
Individual Airframe Manufacturers:	
Company A	13.4
B	12.6
C	12.2
D	11.8
E	11.4
F	11.0
G	7.3
H	6.9
I	5.5
J	4.7

*Computation: Estimated net working capital of \$23,622,000 will be adequate to finance sales of \$59,055,000 (40% of \$59,055,000 equals \$23,622,000). This sales volume is 9.8% of the estimated \$600,000,000 war peak level.

¹Based on reasonably optimistic estimate of 1946 losses and unreimbursed expenditures.

²The measure of war peak sales used is actual 1943 net sales or estimated 1944 sales, whichever is higher.

NOTE: Projected reasonably optimistic balance sheets have been constructed for each of the ten airframe manufacturers studied, based on the assumptions summarized on page 15. In this manner, the level of each company's net working capital on December 31, 1946, has been estimated. The companies should be able to finance postwar sales adequately if net working capital is 40% of those sales (see Table 13). Above is stated the estimated postwar sales volume each of the ten companies can finance adequately, based on these assumptions.

turer. In the construction of projected balance sheets for the ten companies, the basic assumptions stated on page 15 were used. All these assumptions are stated in the form of percentages (such as termination losses as a percentage of total inventories, and 1944 and 1945 profits as a percentage of 1943 profits). These assumed percentages will undoubtedly vary for individual companies. For example, some companies will have better access immediately than others to postwar commercial markets, the timing of major terminations will be more favorable to some companies than to others, and the managements of some companies will be better qualified to meet conversion problems.

Hence, the projected statements summarized herein cannot be considered as exact forecasts of the financial position of individual companies; rather, they are estimates of the relative financial ability of each company to meet similar conditions in the immediate postwar period.

Table 15. Estimated Maximum Unreimbursed Expenditures Which Ten Airframe Manufacturers Can Absorb in 1946 without Being "Out-of-Cash," Shown as a Percentage of Their War Peak Average Monthly Expenses

Company	Percentage ¹ of War Peak Average Monthly Expenses
Average Airframe Manufacturer	62%
Individual Airframe Manufacturers ² :	
Company C	82
A	80
B	73
E	69
D	66
F	56
G	55
H	49
I	43
J	41

¹The measure of war peak expenses used is 1943 actual expenses or estimated 1944 expenses, whichever is higher.

²Each company is designated by the letter used in Table 14.

NOTE: Projected "out-of-cash" balance sheets have been constructed for each of the ten airframe manufacturers studied, based on the assumptions summarized on page 15. In this manner, an estimate has been obtained of the maximum unreimbursed 1946 expenditures each company can absorb before all its cash is eliminated. This estimate is based on the assumption that termination losses will remain at the reasonably optimistic level (1% of total inventories).

the company in the best position, Company A, could finance only 13.4% of war peak sales. Hence the extreme upward variation is an increase from 9.8% to only 13.4%. Of the four companies whose position is poorer than average, two show a moderate variation below average of about the same magnitude.

Two of the smaller companies, however, Companies I and J, will have sufficient working capital to finance only 5.5% and 4.7% respectively, of war peak sales. Various estimates indicate that the industry has a good chance of obtaining a postwar dollar sales volume of about 5% of the war peak level. Hence, the working capital position of these two companies must be considered as barely adequate, even if termination and conversion financial needs are considered in a reasonably optimistic light.

The out-of-cash projected balance sheets of the ten manufacturers indicate similar variations in the ability of the companies to absorb postwar losses. Table 11 shows that the maximum unreimbursed expenditures the average company can absorb in 1946 before eliminating all cash will be approximately \$29,000,000, or 62% of one month's expenses at the war peak level. Similar statements for individual companies show that five of the companies can absorb moderately higher expenditures (see Table 15). The company in the best position, Company C, can absorb expenditures equivalent to 82% of war peak monthly expenses, or about 3½ weeks' expenses at the wartime rate.

This basis of comparison also indicates that the

two smaller companies, Companies I and J, will be in an appreciably poorer position than average. The maximum unreimbursed expenditures these companies can absorb will be equivalent to only 43% and 41% of war peak monthly expenses, or less than 2 weeks' expenses at the wartime level.¹

Thus, both the projected reasonably optimistic statements and the out-of-cash statements of the individual airframe companies indicate that the postwar working capital position of eight of the ten companies will vary only to a moderate degree from the average. Among these eight manufacturers, there is little correlation between their size and the adequacy of their estimated financial resources. In a ranking of the companies in the order of their indicated postwar financial strength, some of the largest companies appear well down in the list, while others appear close to the top. Two of the smaller companies, however, will be in an appreciably poorer position to absorb losses in the immediate postwar period, and even under favorable conditions their working capital position will be barely adequate to finance a moderate level of sales.

Major Variables Affecting Ability to Meet Future Cash Outlays

Each of the optimistic and the out-of-cash balance sheets projected above is based on a fixed set of assumptions regarding all factors other than the magnitude of termination losses and unreimbursed expenditures of the first postwar year. These assumptions are believed to be reasonable in the light of presently known facts. Anyone familiar with the many uncertainties regarding future aircraft production and related financial problems must recognize, however, that actual future events will undoubtedly differ in greater or lesser degree from any fixed set of assumptions made now.

Appendix C presents an analysis of each major type of possible variation from the assumptions upon which the projected statements were based. In this section, the results of that appendix will be briefly summarized. Persons interested in a more detailed analysis of the major variables involved and estimates of the possible effect of each variable on the average airframe manufacturer's working capital position may turn to Appendix C (pages 45-49).

The financial position of the airframe manufacturers will be better than that indicated in the projected balance sheets, and their ability to absorb termination losses and unreimbursed postwar ex-

¹The estimate of maximum unreimbursed expenditures is based on the assumption that 1946 termination losses will remain at the optimistic level, amounting to 1% of total inventories.

penditures will be greater, if any of these variations from the basic assumptions occur:¹

- (1) if cash profits retained from continued wartime operations are higher than estimated either because large-scale production ends later than December, 1945, or because the rate of profits is higher than that estimated for 1944 and 1945 (retained profits for these two years are assumed to be 100% and 50% of the 1943 rate, respectively);
- (2) if wartime expenditures for plant and equipment are less than 40% of total 1944 and 1945 depreciation and amortization charges;
- (3) if contracts are terminated more gradually than estimated, thereby enabling the companies to offset resulting losses against profits from continuing wartime contracts;
- (4) if large-scale contract cancellations occur in the middle of a fiscal year and any resulting losses are established in that year, thereby enabling losses to be offset against profits earned earlier in the year;
- (5) if cash balances are larger than estimated because a smaller amount of working capital is tied up in receivables and inventories at the end of 1946.

Conversely, under a number of circumstances the financial position of the airframe manufacturers would be worse than that indicated in the projected balance sheets. The companies' ability to meet termination losses and unreimbursed postwar expenditures will be decreased if any of the following variations from the basic assumptions occur:²

¹See pp. 14-15 for a summary of the basic assumptions made.
²Ibid.

- (1) if cash profits retained from continued wartime operations are lower than estimated either because large-scale production ends before December, 1945, or because the rate of profits is lower than estimated in 1944 and 1945;
- (2) if wartime expenditures for plant and equipment are more than 40% of total 1944 and 1945 depreciation and amortization charges;
- (3) if contract cancellations are more sudden than estimated, with less than the assumed 30% cutbacks and partial cancellations occurring during the war;
- (4) if losses resulting from partial cancellations are not established before the end of war production, thereby preventing the companies from offsetting such losses against profits on continuing contracts;
- (5) if the postwar tax refund cannot be converted into cash in the first postwar year or if allowable accelerated amortization of fixed assets cannot be partially offset against current tax liabilities;
- (6) if cash is reduced more than estimated because a larger amount of working capital is tied up in receivables and inventories in 1946;
- (7) if termination settlements are not made within the first year after large-scale terminations or if advances or loans up to 90% of termination claims cannot be obtained.

These major variables will determine the resources with which the companies will meet the financial needs of the conversion period. In the following sections will be considered the factors influencing the nature and magnitude of the termination and conversion problems to be faced.

IV

CONTRACT TERMINATION SETTLEMENT PROBLEMS

The difference between the forecast "optimistic" postwar financial position for the airframe manufacturers and a position approaching out-of-cash depends, as the foregoing statements indicate, primarily on the magnitude of contract termination losses and unreimbursed expenditures in the immediate postwar period. The purpose of this section is to outline the factors which will influence one of these variables, the losses involved in contract termination settlements.

Termination losses, as considered herein, are limited to the net losses incurred in liquidating inventories and receivables or any failures to receive compensation for expenditures made *before* actual

contract terminations.¹ Practically, termination settlements will also involve reimbursement of post-termination expenses; but because the problems connected with reimbursement of expenses incurred *after* actual termination differ somewhat from the problems of repayment for prior expenditures, they will be considered separately in Section V.

Primary emphasis will be placed on the termination problems to be encountered at the time of large-

¹As defined herein, termination losses represent the reduction in net working capital which will occur in making termination settlements. Hence, they are net losses rather than total disallowances of the companies' termination claims; that is, they represent gross disallowances of claims less profits allowed on the terminated contracts less reserves for such losses already on the companies' books.

scale cancellations after the cessation of all hostilities occurs (or is anticipated). Similar problems will of course be faced as contracts are canceled prior to that time; and the following discussion is also relevant to these during-the-war cancellations. The emphasis, however, is placed on the later cancellations for two reasons. First, final large-scale cancellations are likely to involve the more pressing financial difficulties both because of their magnitude and because losses cannot then be offset against profits on continuing large military contracts. Second, although the contrary is optimistically assumed, settlements on during-the-war cancellations may well be postponed and finally made only at the time of other later settlements, further accentuating the uncertainties of the immediate postwar period.

Grounds for Optimism

The prospects for limiting the liquidation losses of termination to small amounts are substantially brighter than they were a year ago. Both within the airframe companies and within government agencies, the problems of contract termination have been recognized and immediate actions and future plans have been initiated to meet these problems. Several examples will indicate the progress made.

First, the airframe manufacturers have spent substantial time and effort improving their control of inventories, endeavoring particularly to eliminate surplus and obsolete material.¹ Likewise, they have spent considerable effort in bringing their records up to date and improving their accuracy. They have been aided in these efforts by the fact that material shortages have become less acute and therefore more normal purchasing procedures can be adopted. During 1945 even greater improvement should be made, enabling the companies to approach terminations with substantially smaller and better-balanced inventories than could possibly have been achieved during the first few years of wartime production.

Second, the passage of the Contract Settlement Act of 1944 was an important milestone marking progress in the preparation for contract terminations. A year ago there were no clear-cut statements of government termination policy. The publication of the Baruch-Hancock report and the passage of the Contract Settlement Act provided a broad framework of policy within which the military services and the companies could operate. For example, the Act made specific provision for adequate interim financing and set forth principles to encourage rea-

¹Arrangements have been made by at least one company to sell excess stocks of unusable materials to an agency of the government, the Metals Reserve Company, for the nominal sum of one dollar. Under a ruling from the Treasury Department, the resulting losses will be allowed as inventory losses for tax purposes.

sonably prompt and equitable negotiated settlements of termination claims.

Third, within the last year both the government and manufacturers have had an opportunity to set up special organizations to deal with the problems of termination. In general, the men responsible for determining termination policies within both the government and industry have exhibited an attitude of reasonableness. The government is in the process of building a structure of detailed regulations in accordance with the Contract Settlement Act. An outline of procedures for preplanning terminations has been established, and if implemented, it promises to resolve many of the more controversial issues and to determine necessary methods in advance of actual large-scale terminations.

Last, from a strict accounting point of view, a number of the airframe companies have set up substantial reserves to meet the losses involved in liquidating inventories and receivables. The adequacy of these reserves varies among companies, but the net figures shown in the statements used herein are after deduction of these reserves. Hence, the companies could liquidate receivables and inventories at somewhat less than gross value without decreasing the net book value of their assets.²

For all these reasons it has been estimated on the "optimistic" basis that the average airframe manufacturer will suffer contract termination losses of only \$1,100,000, or 1% of total company- and government-owned inventories. As the projected statements of the preceding section clearly show, the companies could absorb such a loss without undue harm to their financial position. The companies should be able to limit their termination losses in this manner, if the promising progress outlined above is continued and if the day of major terminations is sufficiently far away to permit adequate plans to be made.

The Risks Remaining

The conclusion cannot be drawn, however, that no contract termination risks remain. A promising beginning has been made on all fronts, but both government and industry leaders admit that they are far from ready for large-scale terminations.

²An analysis of the adequacy of these reserves has not been attempted because the varying inventory and receivables accounting practices of the different companies would have to be studied in detail before intelligent conclusions could be reached. Some companies have currently written off certain costs, while other companies have included these costs in inventories, simultaneously setting up reserves against which inventory losses can be written off in the future. Likewise, in receivables accounting, some companies have continued to carry doubtful receivables on their books but have set up reserves against future losses, while other companies have excluded similar doubtful receivables from their books entirely. Hence, an analysis of the size of reserves would not necessarily indicate their adequacy; one would also have to make a detailed analysis of all inventory and receivables accounting practices.

For example, while the inventory control methods of the airframe manufacturers are improving, they still cannot be appraised by normal peacetime standards and indeed are not likely to achieve those standards completely even several years hence.¹ So long as large-scale war production exists, rapid changes in plane designs, schedules, and hence material requirements will continue. These changes, made necessary by battle conditions, make impossible the low-volume, smooth-flowing inventories associated with standardized mass production. Likewise, the limitations on quality of manpower available for record keeping and material handling will continue to limit the quality of the job done, unless wartime production continues long after the manpower situation is substantially eased. Even with several more years of wartime production, the airframe manufacturers would not be likely to duplicate the performance of experienced, long-established manufacturers in other industries.

Within the government, administrative regulations cannot be said to be fully developed to handle all the many problems likely to be incurred at the time of large-scale terminations. One has only to explore a few of these specific problems in order to realize the wide differences of opinion which exist regarding termination procedures. Much will depend on the times when the European and Asiatic wars come to an end. If the companies and the government have time to work out their difficulties on small-scale terminations, they may be able to meet the period of large-scale terminations with a well-defined pattern of action. Probably one of the biggest single risks, however, is that they will not have the opportunity to plan their procedures adequately in advance. Even with a completely reasonable attitude on the part of the companies and the government, the sheer lack of preplanned procedures is likely to create great confusion at the time of large-scale terminations.

Another major difficulty will be the maintenance of a close liaison between centralized government offices in Washington and Dayton and the local government field offices, and between top management personnel of the companies and the employees responsible for the actual administration of termination settlements. Even if complete agreement on the part of the top management personnel of the companies and the top government officials should exist, termination settlements could still be long delayed and confused. The actual administration of terminations will have to be done by local officers of the con-

¹For a more detailed discussion of the problems of inventory and material control in the airframe industry, see Howard T. Lewis and Charles A. Livesey, *Materials Management: A Problem of the Airframe Industry* (Harvard Business School, Division of Research, Business Research Studies, No. 31, 1944).

tracting agencies and by many individuals well below the top management level within the companies. It is inevitable that these men down the line will be reluctant to make many of the important decisions necessary to achieve quick final settlements. This reluctance emphasizes the necessity for having clear-cut, well-defined policies and procedures planned in advance and organizations set up so that problems can be passed up the lines of authority and prompt decisions returned.

A most promising solution to some of these problems is preplanning of methods, standards, and bases for making future settlements well in advance of large-scale terminations.² Individual companies and the local officers assigned to those companies could define the major areas of controversy and, when necessary, allow these problems to flow to the top personnel in government and industry for solution prior to the time when large-scale terminations are made. An outline of procedures for obtaining such pre-termination decisions has been established. At present, however, the procedures have not been implemented in detail. The companies have the opportunity to take the initiative in suggesting solutions to specific termination problems, but there are indications that they are not yet taking full advantage of this opportunity. If preliminary decisions on termination problems cannot be obtained now, the likelihood of obtaining decisions quickly after terminations is open to very serious question.

Specific Types of Termination Risks

A few specific types of termination risks can be cited to illustrate the manner in which government and company plans will affect the actual settlements made. The problems of termination differ somewhat for fixed-price contracts and cost-plus-fixed-fee contracts. In termination settlements of fixed-price contracts the companies may fail to realize the book value of their inventories. Costs of raw material inventories may be disallowed if the companies cannot prove that certain materials are applicable to canceled contracts. Certain items could be considered as not applicable, either because they were not listed in the bill of materials or because they were deemed to have been purchased in excessive quantities. In addition, less than book value of inventories would be realized if the book records overstated the

²In the textile and certain other industries it may be possible to make predetermined agreements regarding the actual amount of lump-sum payments to be made on specific contracts if they are terminated at various stages of completion. In the aircraft industry, such "lump-sum" agreements are not believed to be practical because of the many uncertainties regarding future schedules, design changes, material requirements, and costs. Nevertheless, the opportunity does exist to obtain advance decisions regarding the methods, standards and bases for making future settlements.

value or quantity of material actually in the store-rooms.

In so far as work-in-process inventories are concerned, the government will presumably reimburse the companies for most of the material, labor, and other expenses incurred in creating those inventories. The major risk involved is that substantial items of overhead expense charged to work-in-process inventories will be disallowed, just as they are disallowed currently under cost-plus-fixed-fee contracts; in that event, the amounts paid to the companies will be less than the book value of their claims as reflected in inventories. Difficulties may likewise be encountered in determining the amount of reimbursement for materials owned by the airframe manufacturer but physically located at the plants of subcontractors.

In addition, the disposal of inventories after terminations raises numerous problems. The major uncertainty is the amount of time which will be spent in counting and listing inventories, in obtaining decisions regarding whether material should be retained by the companies, scrapped, sold, or stored, and in physically carrying out these decisions. Unless procedures are established and preliminary decisions made before major terminations, final settlements are likely to be long delayed.

The types of difficulties involved in termination settlements may be illustrated by one specific problem which industry representatives have frequently discussed. The airframe companies purchase many materials which are not directly allocated to particular contracts at the time of purchase. Such materials include indirect factory supplies not used in production (e.g., paint, lumber), tool steel and other tooling materials, perishable small tools, standard production parts (e.g., bolts, rivets), and office supplies. While accounting practices vary, most companies carry inventories of some of these materials on their books. These companies will undoubtedly be allowed reimbursement for a reasonable quantity of these materials at the time of major terminations. The local termination officers will have difficulty, however, in trying to find a just basis for determining what is a reasonable quantity. This is only one of many decisions for which no ready guides exist.

The problem is accentuated by the fact that separate settlements are made for each individual contract. In the event of 100% termination of all the contracts at any one plant at any one time, these indirect materials could be allocated arbitrarily among all the contracts. When only one or two contracts out of a larger number are terminated, however, the problem of allocation to the terminated and the active contracts is more difficult. On the small terminations made to date the companies have tended to waive any claim for such items. This procedure cannot be

carried very far without the risk of a large oversupply of such indirect materials at the time of cancellation of the last few wartime contracts. Such an oversupply would clearly not be a reasonable quantity allocable to these last contracts. No attempt will be made to assess the relative merits of the several methods by which this difficulty can be solved. The point is that the companies and the local officers must face the problem and select some one of the proper administrative devices. If the methods for handling this type of claim are set up in advance and understood by both company and government officials, the final settlement probably can be made without great delay and prior action can be taken to minimize the risks involved. If procedures are not preplanned, losses and unnecessary delays are likely to result at the time of major contract terminations.

The problems involved in the settlement of cost-plus-fixed-fee contracts, which are at present very widely used, differ somewhat from those for fixed-price contracts. Under cost-plus-fixed-fee contracts, the companies at the time of termination will have already received reimbursement for part of their inventories and will have receivables on their books covering the remaining portion. The reimbursables under the cost-plus-fixed-fee contracts of most companies include a number of expense items which have been disallowed by the Army or Navy or by the General Accounting Office but which are still claimed by the companies. While practices differ for individual companies, these claims frequently include such items as federal capital-stock taxes, executive salaries, advertising, and legal fees. Most companies have set up reserves against possible losses on these claims, but the amounts of eventual reimbursement are uncertain and the adequacy of the reserves varies among companies.

Another problem on cost-plus-fixed-fee contracts arises because of uncertainties existing in some quarters regarding the jurisdiction of the armed forces and the General Accounting Office. In making termination settlements on fixed-price contracts, the Army and Navy now have authority under the Contract Settlement Act to make final agreements regarding the costs to be reimbursed to the company, barring fraudulent action. In the case of cost-plus-fixed-fee contracts, however, the services apparently have no such clear-cut authority.

In addition, under these contracts the companies have some risk in connection with their custodianship of government property and their activities in purchasing materials for the government. Presumably the companies might be held accountable for shortages of materials even though reimbursement for the cost of these materials had already been received. Also, the companies might be held liable for

DIGEST

FUTURE FINANCIAL PROBLEMS OF CONVERSION IN THE AIRCRAFT INDUSTRY

No group of manufacturers is more in the spotlight during discussions of contract terminations and postwar conversion than is the aircraft manufacturing industry. The economic and military importance of an orderly conversion of the industry is being increasingly recognized. Moreover, the financial problems of the aircraft manufacturers are, in effect, the problems of all war contractors magnified to an extreme.

This study is, in part, a sequel to a study published by the Harvard Business School a year ago on the "Financial Position of the Aircraft Industry," bringing up to date the financial data presented therein. The primary emphasis, however, has been placed by the authors, Professor Tom Lilley and Mr. L. LaVerne Horton, on specific estimates of the financial adjustments necessary during the transition from wartime to peacetime production.

A brief digest of the study follows.

The industry's financial position is reflected by the presentation of the financial statements of an average airframe manufacturer, based on the individual statements of ten leading airframe manufacturers.

The device of projected, or pro forma, statements is used to show the effect of contract terminations and conversion on the postwar financial position of the airframe manufacturers. These statements are designed to serve the following purposes:

(1) to indicate the financial position of the airframe manufacturers one year after major contract terminations if reasonably optimistic assumptions are made regarding the companies' cash outlays during that year;

(2) to indicate the maximum cash outlays which the companies can absorb before eliminating all their cash in the year after major terminations;

(3) to isolate and more accurately define the major variables which will affect the companies' future financial position;

(4) to provide a method or a framework for studying conversion problems which may still be useful even after hindsight has indicated changes in many or all of the individual assumptions;

(5) to stimulate interest, disagreement, and further study of the industry's conversion problems, both by the companies and by public agencies.

Two projected balance sheets as of December 31, 1946, are shown by the authors, based on the assumptions that major contract cancellations will occur in December, 1945. Without attempting to forecast the many unknowns involved, statements are constructed to show the relative importance of all major variables. The first statement, based on optimistic assumptions, indicates that the average airframe manufacturer can emerge from the war period in a good financial position, capable of financing postwar sales of 10% of war peak level. At the other extreme, the second statement indicates that the average company could be in grave danger of insolvency if unreimbursed expenditures of the first postwar year approach a level equivalent to three weeks' expenses at the war peak level.

Because of the financial difficulties involved, company executives must exert every effort to keep losses and unre-

imbursed expenditures near the optimistically low levels during the first postwar years. The progress made during the last year in planning for contract terminations and conversion affords some grounds for optimism. The risk is great, however, that uncertainties and delays during the conversion period will unnecessarily impede the constructive developmental work required to promote maximum peacetime production. In order to eliminate confusion and unnecessary curtailment during conversion, the following steps are suggested:

(a) Uncertainties regarding contract termination procedures can be reduced by a concerted effort on the part of industry and government organizations to preplan the methods, standards, and bases for making quick termination settlements well in advance of large-scale terminations.

(b) Uncertainties regarding the loss carry-back provision of the tax law can be reduced by adoption of a Treasury proposal to accelerate payments of loss carry-back refunds.

(c) Uncertainties regarding future aircraft production and development can be reduced by making every effort to determine future national air-power policies in advance of the end of the war, particularly Army-Navy procurement policies and policies for lease or sale of government-owned plant and equipment.

Every effort to narrow the zone of these uncertainties in advance of the end of the war will eliminate confusion and unnecessary curtailment in the conversion period.

Soldiers Field
Boston 63, Massachusetts
November, 1944

(Harvard Business School, Business Research Studies, No. 34, 49 pages,
\$1.50)

large oversupplies of materials which they had purchased for the account of the government under cost-plus-fixed-fee contracts. The standards by which these custodianship and purchasing functions will be judged are not fully determined at present.

Somewhat similar risks are involved in the companies' custodianship of plants and equipment maintained by the companies but owned by the Defense Plant Corporation or other government agencies. The companies may also face some risks with regard to suits for patent infringements during the war.

Under both cost-plus-fixed-fee and fixed-price contracts the companies presumably have some obligation in making termination settlements with subcontractors and suppliers. So long as the volume of unfilled orders continues at close to wartime levels, the task of making these settlements will be large and difficult. The reasonably optimistic estimate of termination losses assumes that the companies will suffer no losses in these settlements—i.e., they will be fully reimbursed by the government for all amounts paid to subcontractors after terminations. The magnitude of commitments with subcontractors is such that the companies cannot afford to make final settlements unless assured that they have no appreciable liability to the government for settlements made. In the actual administration of these settlements, all parties—the government, the airframe manufacturers, and their subcontractors—may be faced with uncertainties and long delays unless they make decisions on many issues before major terminations.

In view of these remaining risks, termination settlement losses may have a serious effect on the postwar financial position of the aircraft manufacturers. As previously indicated, it is estimated that all of the average company's cash would be eliminated if termination losses were as high as \$18,900,000. Losses might conceivably approach this out-of-cash level. If the reasonable attitude displayed to date by government and industry leaders continues, however, and if the actions taken to date are followed by the necessary detailed planning, losses of large magnitude are improbable. But the detailed planning required may fail to materialize, and after hostilities cease, public opinion and public

policy could shift radically. Hence, as of today, the risk exists that substantial losses may be incurred because of nonreimbursement for fixed-price inventories, disallowance of cost-plus-fixed-fee claims, and settlements with subcontractors.

Importance of Quick Settlements

Continued reference has been made to the possibility of delay in making final termination settlements. From one point of view, the timing of final settlements has been made much less important by the provision of the Contract Settlement Act for interim financing up to 90% of total termination claims. Thus, the companies will have to carry only 10% of the claims, and the pressure for immediate settlement will be substantially lessened. Even on these grounds, however, there may be administrative difficulties involved regarding the ease and rapidity with which the companies can obtain advances, bank loans, or partial payments. And in the case of the airframe manufacturers, even the necessity for carrying 10% of the claims can be an appreciable financial load if large claims remain unsettled.

The effects of prolonged uncertainty, however, would be the most important disadvantage of long delay in making final termination settlements. So long as the possible losses involved in termination remain unknown, the companies are likely to hold back their development programs until they know what funds they will possess. Thus, a long delay in arriving at a settlement is likely to have a serious effect both on employment and on the extent of developmental work done in the aviation field. From a narrow point of view, such a slackening in development probably would have an unfortunate effect on the future profitability of the companies. From a broader point of view, unnecessary curtailment in aircraft development with the resultant unemployment during the critical first few postwar years would clearly not be to the national interest. From every point of view, it is desirable that the aircraft industry and the armed forces expend their major effort in preparing for the future and not in long arguments over events of the past.

UNREIMBURSED EXPENDITURES IN FIRST POSTWAR YEAR

Probably the most important single difficulty of the conversion period will be the curtailment of expenditures from wartime levels to drastically reduced peacetime levels. Two very different types of risks will be involved. First, the expenditures not reimbursed by the government or recovered by sales in civilian markets may be so high as to constitute a serious threat to the average airframe company's working capital position. Second, the unreimbursed expenditures made to develop new peacetime products may be so low as to do harm not only to the future profit prospects of the average company but to the pace of our national progress in aviation and our level of postwar employment in aircraft production centers.

These two types of risks may be more clearly recognized if total unreimbursed expenditures to be made in the year following major terminations are subdivided into two categories:

(1) so-called "momentum" or "slow-down" expenditures for which the company is not reimbursed by the government and which are incurred only because of the impossibility of curtailing all wartime expenses as of any one moment;¹

(2) "constructive" expenditures, incurred in order to develop new business for the peacetime future.²

Both classes of expenditure will constitute an immediate drain on the companies' cash resources. Because their effect on the balance sheet is similar, both types of expenditure are grouped under "total unreimbursed expenditures" in the projected statements of the first postwar year.

From no other point of view, however, are these two classes of expenditures identical. To both the government and industry, slow-down expenses are a necessary evil, a cost of liquidating wartime operations after the need for those operations is past. It will be to the interest of both government and industry to keep these expenditures to a minimum.

¹A sizable portion of total "momentum" or "slow-down" expenditures are likely to be reimbursed by the government as allowable post-termination expenses. Certain of these expenditures however, will probably not be reimbursed by the government and will therefore constitute unreimbursed "momentum" expenditures.

²Aside from momentum expenditures, the companies will be making expenditures to fulfill active contracts during the first postwar year. These expenditures will be reimbursed by the military or commercial customers in the normal course of business. In addition, however, in order to develop new business for the peacetime future, the companies will undoubtedly make so-called "constructive" expenditures for which they will not be reimbursed during the first postwar year.

In sharp contrast, constructive expenditures are the seed money from which the industry must grow in peacetime. From the manufacturers' point of view, it is essential to their future profitability that new products be developed in order to build future operations. Likewise, the national interest will be served by maximizing developmental work. Technological development in aircraft is essential to our future air power, not merely in military aircraft but in transport craft which will compete in world markets. And the need for minimizing unemployment in east and west coast aircraft production centers is too obvious to require elaboration. Immediately, new aircraft development may not provide large-scale factory employment; in the long run the results of such development can pyramid future employment opportunities.

Hence, while the incentives to reduce momentum expenses rapidly will be great, neither government nor industry has similar incentives to reduce the scale of constructive expenditures in the immediate postwar period. Because of these differences, the factors which will influence the level of momentum and constructive expenditures will be considered separately.

As in the discussion of termination problems, primary emphasis will be placed on expenditures made *after* the actual or anticipated end of all hostilities has resulted in large-scale contract cancellations. Part of the task of reducing wartime expenses and initiating constructive developmental work is likely to take place before then. Certainly such gradual conversion should be encouraged to the maximum degree that war needs permit, for it will cushion the shock for everyone concerned. Nevertheless, a sharp drop in aircraft production immediately following the cessation of all hostilities appears almost inevitable, and an analysis of the industry's future financial problems indicates that this period must be considered the crucial one.

Momentum Expenses

The extent to which the average airframe manufacturer will have to absorb unreimbursed momentum expenses will depend on three major variables:

(1) the ability and willingness of the company's management to curtail expenses realistically and, if necessary, drastically;

(2) the extent of advance notice of contract terminations given by the government; and

(3) the administrative decisions made in determining what post-termination expenses will be reimbursed by the government and what will be disallowed.

In addition, of course, the degree of cutbacks prior to the cessation of hostilities in both war theaters will have an important effect. Obviously, if the scale of operations is gradually decreased prior to final cancellations and cutbacks, the magnitude of slow-down expenses will be smaller. The assumption made, however, that operations will decrease from 70% to 5% of the war peak level at the time of major cancellations appears reasonable in the light of present knowledge.

Estimated Minimum Momentum Expenses

None of the airframe manufacturers will be able to cut off all expenses at the exact moment of large-scale contract terminations. Table 16, showing a breakdown of estimated momentum expenses on the reasonably optimistic basis, will serve as a guide to the type of expenses likely to continue after terminations. Thus, it is assumed that unavoidable momentum expenses will include a full month's expenses for purchased materials at the rate prevailing just prior to large-scale terminations. Similarly, it is assumed that momentum expenses will include about two weeks' payrolls and one month's miscellaneous other expenses at the rate prevailing just before terminations.

One of the first steps usually taken when written notice of contract termination is received is to notify in turn all subcontractors and suppliers to make no

additional shipments on outstanding purchase orders. Even if this notice is telegraphed immediately and the suppliers are allowed no period of grace to make further shipments, the companies will have to accept and pay for the delivery of all material in transit at the time termination notice was received. To allow for the acceptance of material after termination notice, one month's material expense is included in estimated momentum expenses.

Likewise, one month's miscellaneous other expenses are included. These other expenses consist of such items as taxes (other than federal income and excess profits taxes), insurance, advertising, utilities, and a wide variety of miscellaneous items not included under material expense or payroll expense. Many of these expenses cannot be cut off as of any one moment, and certain expense items will continue at a high level for as long as a year. For example, certain companies will probably have to pay state and local franchise and property taxes at the full wartime rate for the year following the cessation of wartime production. Similarly, certain types of insurance and rental expense will continue for a period substantially greater than one month.

The most uncertain item included in momentum expense is payroll. The reasonably optimistic estimate shown in Table 16 includes only about two weeks of payroll expense, at the rate prevailing just prior to terminations. This is probably a minimum figure. The sheer mechanics of discharging a large number of employees after notice of termination will be difficult. Until the companies' plans are better known, until final legislative action on unemployment insurance is taken, and until policies are determined with regard to severance pay, it will be

Table 16. Reasonably Optimistic Estimate of Momentum Expenses for the Average Airframe Manufacturer Following Major Terminations

Items	Materials Expense		Payroll Expenses		Other Expenses		Total Expenses	
	Amount (in thousands)	Percentage of 1945 Average Monthly Expenses	Amount (in thousands)	Percentage of 1945 Average Monthly Expenses	Amount (in thousands)	Percentage of 1945 Average Monthly Expenses	Amount (in thousands)	Percentage of 1945 Average Monthly Expenses
Estimated Average Monthly Expenses, Year 1945 ¹	\$16,000	100.0%	\$14,000	100.0%	\$2,700	100.0%	\$32,700	100.0%
Estimated Momentum Expenses: Unreimbursable Expenses Absorbed by the Company.....	.....	.....	\$ 1,500	10.7%	\$ 700	25.9%	\$ 2,200	6.7%
Expenses Reimbursed by U. S. Govern- ernment.....	\$16,000	100.0%	6,000	42.9	2,000	74.1	24,000	73.4%
Total Momentum Expenses.....	\$16,000	100.0%	\$ 7,500	53.6%	\$2,700	100.0%	\$26,200	80.1%

¹It is estimated that total expenses in 1945 will be 30% less than total 1944 expenses, because of cutbacks and partial cancellations. It is further estimated that payroll expenses will be a larger percentage of total expenses than in 1944 and expenses for materials will be smaller, because the airframe manufacturers will do less subcontracting. As more parts are fabricated by the airframe manufacturers, payroll expenses will increase and materials expense decrease.

virtually impossible to form any precise opinion as to the rate at which payrolls will be reduced in the first few weeks after notice of large-scale terminations.

The \$26,200,000 estimate of the average manufacturer's total momentum expenses (including material, payroll, and other expenses) may be considered as a probable minimum figure in the light of current knowledge. It seems unlikely that the average company will be able to curtail slow-down expenses sharply below this level, which represents 80% of the average monthly expenses in the quarter preceding large-scale terminations.

Advance Notice of Terminations

In the projected statements, reimbursement of momentum expenses is treated entirely as government reimbursement of post-termination expenses. In effect, this assumes that little or no advance notice of terminations will be received. If the government should give the companies one or two months' advance notice of any contract terminations, the method of reimbursement for slow-down expenses would differ, but the final effect on the companies would be similar. Materials in transit at the time advance notice was given would then be received and added to inventories prior to actual terminations. Reimbursement for the cost of such materials could be made in the normal course of business under cost-plus-fixed-fee contracts or as part of the inventory termination settlement under fixed-price contracts. Wages, salaries, and other expenses could be at least partially decreased before terminations. The mechanics would differ, but the net result would be roughly the same. The company would be reimbursed for a portion of the slow-down expenses incurred in the first few months after the government had decided to terminate most war contracts.

The extent of advance notice which will be given at the time of large-scale terminations is at present unknown. A long period of advance notice would be desirable if the government considered solely the problem of giving war plant workers, prime contractors, and subcontractors time to adjust from a wartime to a peacetime economy. The government would have difficulty, however, in justifying large-scale expenditures for war planes long after the need for that equipment had ceased. For example, it would be difficult to justify the large-scale purchase of fighter planes for any extended period in cases where aircraft of the same model were being declared surplus in volume elsewhere. In the final analysis, it will probably be necessary to compromise and use three separate devices for meeting the immediate adjustment problems; these devices include some

advance notice of terminations, unemployment insurance, and reimbursement of some post-termination expenses.

Reimbursement of Post-Termination Expenses

One of the most important and difficult problems of the entire termination procedure will be that of determining the proper reimbursement of post-termination expenses. Certain expense items clearly should be reimbursed, others clearly should not; unfortunately there are many classes of expense items—notably overhead expenses—for which the decision will be extremely difficult. Even if appreciable advance notice of terminations is given, the problem will remain in two forms. First, during the period between notification and actual termination, the problem of determining just what expenses should or should not be reimbursed will be difficult. Second, even with advance notice, some expenses will continue after the actual termination date.

The government clearly should reimburse the companies for post-termination expenses directly connected with the termination settlement and with the protection and disposition of property. For example, the companies could submit documentary evidence to show that certain accounting, legal, and clerical personnel had been directly engaged in the preparation of termination claims, and that factory, warehouse, and clerical personnel had been directly engaged in the protection and disposition of property. The direct labor payroll should likewise not involve too great a problem. The personnel not working directly on active contracts or on property protection or disposition will presumably have to be discharged, although it will be difficult to determine just how fast factory personnel could and should be discharged, particularly if no advance notice is given.

The principal problems will arise from difficulties connected with allocation of overhead. In the case of plant supervisory personnel—the production control department, material inspectors, and maintenance men—the company will have trouble in determining the number of men to be retained and the timing of payroll decreases. Government representatives are likely to have equal trouble in determining whether such expenses are allowable post-termination charges. The problem is even greater in the case of general and administrative employees and such service groups as the welfare and personnel departments. For example, there is a question whether companies will be reimbursed for expenditures made in carrying out adequate employee discharging procedures. It may be possible to account accurately for the time of indirect factory employees such as the maintenance men, but it will be next to impossible to do so for general service departments.

Extent of Company Control of Momentum Expenses

A reasonably optimistic appraisal of presently known factors indicates that \$24,000,000 out of the total of \$26,200,000 of momentum expenses will be reimbursed by the government (see Table 16). The \$2,200,000 which the average company will have to bear is probably a minimum figure. With government policy on advance notice and on reimbursement of post-termination overhead expenses uncertain, a real risk exists that unreimbursed expenses will substantially exceed the estimated \$2,200,000. As shown in Table 16, this amount is only 6.7% of the estimated level of total monthly expenses of the average company prior to major terminations.

As in the case of termination settlement for inventories, the companies as well as the government have an opportunity—and indeed an obligation—to exert the maximum effort to narrow the range of their differences regarding post-termination expenses as much as possible by preplanning termination procedures. For example, procedures can be arranged for keeping detailed records of the time spent each day by members of certain departments, thereby allocating their time to active government contracts, to active commercial business, and to allowable work connected with termination and property disposal. For service departments which cannot keep such records, it may be possible to prorate expenses on a rational basis agreed upon in advance by the individual company and the local service representatives. Even if a purely arbitrary basis of allocating certain overhead expenses must be used, some agreement in advance would be extremely helpful in avoiding unnecessary delay. Little evidence of such detailed planning exists at present.

Neither the companies nor the government will be ready to meet this problem unless detailed procedures are planned in advance, adapted to the individual peculiarities and accounting methods of each company, and understood by the organizations of both the companies and the local government offices. Even the keeping of a record of time spent by members of the accounting and other departments cannot be done properly unless detailed procedures are worked out in advance. The incentives for such advance planning are great for both the companies and the government. Unless such steps are taken, neither organization can intelligently prepare for peacetime activities, and both will face a period of confusion and delay.

Constructive Expenditures

In contrast to momentum expenses, which will occur in some degree under any circumstances, constructive expenditures appear controllable. Man-

agements could “play safe” by ruthlessly cutting these expenditures, thereby probably insuring their financial survival during the critical period immediately following the war. The unknowns which may confront managements at this time may virtually force them to play safe in just this manner. It does not appear probable, however, that the ruthless cutting of these constructive expenditures would be to either the industry’s or the nation’s best interests.

Unreimbursed constructive expenditures of the first postwar year are those expenditures voluntarily made by the managements of the airframe companies and not reimbursed by the government or by sales in civilian markets during that year. Since these companies naturally will not make expenditures which are not directed toward some useful purpose, such unreimbursed expenditures would be constructive; i.e., they would be made with the objective of developing new products and promoting future business.

Specifically, unreimbursed constructive expenditures may include expenditures for such purposes as:

(1) conversion of plants and of administrative organization from wartime to peacetime production;

(2) maintenance of a greater executive and supervisory staff than will be immediately essential in order to preserve a nucleus of trained men for future expansion (e.g., general and administrative, engineering, and sales and service personnel);

(3) development and sales promotion of new civil aircraft and modifications of existing models of aircraft;

(4) development of military aircraft not performed under active experimental contracts with the armed forces;

(5) purchase of plant equipment and tooling from the government or elsewhere;

(6) any development, promotion, or purchase of equipment for use in nonaviation business.

Optimistic Estimate of Constructive Expenditures

As shown in Table 17, the optimistic estimate of the average manufacturer’s expenditures of this type, not reimbursed by the government or others in 1946, is \$9,000,000, or 1.6% of annual war peak expenses. Obviously, the many unknowns involved make such an estimate only an indication of the general magnitude of expenditures rather than a precise forecast. This particular estimate is based on a study of estimates made by some individual companies, and on discussion of the many factors involved with industry and government executives.

The studies made indicate, however, that expenditures in the magnitude of \$9,000,000 are probably near the minimum necessary if the average manufacturer is to do a constructive job of developing

Table 17. Reasonably Optimistic Estimate of Expenditures for the Average Airframe Manufacturer in the Year Following Major Terminations

Items	Amount (in thousands)	Percentage of War Peak Expenses
War Peak Annual Expenses (Estimated Total Expenses in Year 1944).....	\$560,000	100.0%
Estimated Annual Expenses, Year 1945	392,000	70.0
Assumed Reasonably Optimistic Level of Expenditures in Year following Major Terminations (Year Ending December 31, 1946):		
Unreimbursed Expenditures Absorbed by the Company:		
Momentum Expenses.....	\$ 2,200	0.4%
Constructive Expenditures.....	9,000	1.6
Total* Unreimbursed Expenditures Absorbed by the Company.....	\$ 11,200	2.0%
Reimbursed Expenditures:		
Expenditures Allocable to Active Contracts.....	\$ 28,000	5.0%
Expenditures Connected with Terminations Which Are Reimbursed by the U.S. Government:		
Momentum Expenses.....	24,000	4.3
Other Continuing Expenditures	4,000	0.7
Total Reimbursed Expenditures	\$ 56,000	10.0%
Total Expenditures in Year Following Major Terminations.....	\$ 67,200	12.0%

future aircraft business. In addition, some companies may wish to develop nonaviation business. The costs of converting plant facilities to peacetime aircraft production are likely to be substantial. Moreover, costs will be incurred in converting the unwieldy wartime organizations of the airframe industry engaged almost exclusively in large-scale production work to a smoothly functioning organization to produce, sell, and service civil aircraft commercially on a smaller scale. Under present termination regulations, the expenses of conversion of facilities to any use other than war production must be borne solely by the individual company.¹

Most of the airframe manufacturers have definite plans to develop civil as well as military aircraft. Several of the companies are, during the war, developing aircraft which can in peacetime be converted to transport-type aircraft. Some of these companies will make substantial expenditures to purchase work-in-process inventories and tooling from the government. Moreover, substantial design changes and modifications will be necessary before the planes are ready for air-line use, including ing general structural changes because of the different

¹The expenses which the company will bear will of course be subject to reduction to the extent that any tax savings are realized.

use involved, modifications of interior arrangements, and changes to eliminate the many "bugs" which are inherent in any relatively new design. Certain of the overhead expenses necessary to carry on these developments and to exploit them commercially in the future can be charged to operations, but others will probably have to be capitalized for tax purposes.

It is improbable that many companies will make outright purchases of entire government-owned plants during the first year after the end of war production. They are more likely to make arrangements for rental or long-term purchase of these facilities if they have need for any of them. Aside from purchases of government-owned plants, however, it is almost inevitable that the companies, even for their radically reduced scale of peacetime production, will need to purchase a substantial amount of government-owned equipment and tooling located in company-owned plants. In addition, purchase of some new equipment will probably be necessary if new aircraft or nonaviation products are to be developed or manufactured.

One variable is of course the extent to which expenditures will be recouped by sales of military or civil aircraft. As shown in Table 17, it is assumed that total active contracts during the first postwar year, military and nonmilitary, will be adequate to reimburse the average company for \$28,000,000 of expenses, or 5% of the war peak level. If transport planes or private planes should be developed so quickly that civilian sales would substantially boost this total active business of the first year, the unreimbursed portion of development expenditures would naturally decrease. Or if a particular company retains larger government contracts for military aircraft, a greater portion of overhead expenses might be allocated to these active contracts.² In the light of present knowledge, however, the estimates in Table 17 appear to be a reasonable forecast of active contracts of the first postwar year.

Dangers of Large Constructive Expenditures

It is difficult to overemphasize the importance of the management decisions of the crucial first few months after major terminations when the level of expenditures for a postwar developmental program will be determined. The dangers inherent in either too high or too low a level of expenditures makes the proper balance vital.

The dangers of overly large expenditures are clearly portrayed by the out-of-cash position which

²An increase in the government reimbursement of continuing expenses, estimated in Table 17 at \$4,000,000, might also absorb some additional overhead. Since only expenses directly connected with termination settlements and property disposal are likely to be so reimbursed, variations in this item are not likely to affect importantly the constructive developments of the average company.

the average company would face as unreimbursed expenditures approached \$29,000,000. Cash could be drained even sooner if the benefits of the postwar tax refund and accelerated amortization are not promptly realized or if termination losses exceed the estimated \$1,100,000 level.

In curtailing expenditures from the huge wartime levels, the managements of the individual companies will undoubtedly face a temptation to keep more engineering and administrative personnel than business prospects warrant because of the natural reluctance to discharge good men, because of the psychological difficulties of adjusting from a big to a much smaller business, and because of the optimistic hopes for competitive advantage and expansion in the future. Yet, as shown in Table 17, total expenses must be reduced on the average to only 12% of the wartime level if the companies are to stay within the reasonably optimistic level. Lack of realism or lack of close control in curtailing overhead expenses could quickly deplete the companies' available resources.

Dangers of Small Constructive Expenditures

Equally undesirable would be the other extreme of overcurtailment of constructive expenditures. Obviously, the original \$9,000,000 estimate of the average airframe manufacturer's constructive expenditures is not the absolute minimum possible. By ruthlessly cutting every expenditure to the bone, a company could virtually eliminate all post-termination charges except the inevitable momentum expenses. By even approaching this position, however, the company would risk the permanent loss of the key men in its organization, the loss of future markets which can be created only by developmental work, and the loss of its competitive position. Even if all domestic companies curtailed expenditures drastically, the United States industry as a whole would risk the loss of its pre-eminent position to foreign manufacturers. Clearly, it would not be to the national interest to approach complete curtailment of constructive expenditures, thereby allowing aircraft development to become stagnant during the critical immediate postwar period.

Uncertainties at the Time of Management Decisions

At present, the risk appears great that constructive developmental expenditures will be curtailed to a greater extent than is really necessary. The basic problem is that the uncertainties and confusion of the crucial first few months after major terminations may force the managements to cut their expenditures in just such a manner. It appears likely that the

environment during these crucial months would give the maximum incentive for retrenchment rather than for optimism in taking constructive business risks. There are three principal variables which, if they remain as uncertain as at present, will influence management decisions in favor of greater curtailment:

(1) uncertainties regarding the timing of the termination settlement and the magnitude of the loss to be incurred;

(2) uncertainties regarding federal tax laws, particularly with reference to the loss carry-back provision, and to a smaller degree with reference to the postwar tax refund;

(3) uncertainties regarding the whole area of our national air policy, with particular reference to future Army and Navy procurement policies and policies for disposal of government-owned plants.

A real opportunity exists to narrow the zone of uncertainty connected with each of these variables. Such a narrowing of uncertainty would require substantial effort on the part of both the individual airframe manufacturers and the government. In the following paragraphs are cited a few key examples of the type of action which might be taken.

Uncertainties in Contract Termination

Despite the substantial progress made during the last year by both the companies and the government in preparing for contract termination, many uncertainties continue to exist regarding both the magnitude and the timing of final termination settlements. If these uncertainties are still as great during the first few months following large-scale terminations when management must make its crucial decisions, constructive expenditures may be reduced dangerously. At that time, if the average company does not know, for example, whether disallowed momentum expense items will be \$2,200,000 or \$10,000,000, and if the procedures for establishing claims are not planned in advance, its only prudent course will be to curtail all expenditures and wait until at least some of the uncertainty is eliminated. Even with ample bank or government credit, the management cannot afford to spend money it may not really have.

In this respect the reasonably optimistic balance sheet previously presented is misleading. This statement shows that, if net termination losses should be limited to \$1,100,000 and unreimbursed momentum expenses to \$2,200,000, and if the postwar tax refund should be convertible into cash, the average manufacturer could readily afford to absorb constructive expenditures of \$9,000,000. The problem is that at the time decisions will have to be made regarding constructive expenditures, the limits of the other variables—the "ifs"—are likely to be unknown. The companies may, in the long run, have a plethora of

cash; yet, until some degree of certainty exists, they will be in no position to invest that cash constructively.

As discussed in Section IV, the opportunity is present for the aircraft companies and the government to narrow the zone of termination uncertainties appreciably prior to the time when the final decisions must be made. This does not mean that the government should guarantee to the airframe manufacturers the capital to finance their postwar operations. The actual settlement should be based on the merits of the individual company's claims, with every practical safeguard of the government's interests. But agreement in principle on many of the major areas of uncertainty can be made just as well before the event as two years later.

Uncertainties Arising from Federal Tax Provisions

In the completely different field of federal taxation, changes could be made which would have a great effect on the level of constructive expenditures. One of the most important single steps which would ease all the problems involved in conversion would be the adoption of a Treasury proposal to accelerate payment of loss carry-back tax refunds. Likewise, the problems would be eased by removal of uncertainties regarding the time when the postwar tax refunds can be converted into cash. The relevance of these proposals to constructive expenditures can be best understood by referring again to the projected statements of the average airframe manufacturer.

Under present tax law, companies suffering losses during the conversion period can offset those losses against profits of the preceding two years and obtain a refund of those prior years' excess profits taxes.¹ As summarized in Table 18, the extent of relief offered by this and other refund provisions can be huge, amounting to a \$20,301,000 refund for the average company if conversion period losses are at the high, out-of-cash level. Practically, however, this potential relief is likely to have little or no effect on management decisions regarding constructive expenditures during the first postwar year because (1) a legitimate fear exists that the law will be repealed and (2) even if the law stays in effect, actual payment is likely to be delayed for at least several years.

The importance of all the conversion uncertainties,

¹In addition to the loss carry-back provision, the effect of which is summarized above, provision is also made for an excess profits credit carry-back. To the extent that profits are less than the amount of a company's allowable excess profits credit, a claim for a refund of prior years' taxes may be made. The effect of the excess profit credit carry-back would be minor for most airframe manufacturers because of the small amount of their excess profits credit. For a more complete discussion of carry-back provisions and suggested changes in these provisions, see J. Keith Butters, *War Profits Taxation and Special Wartime Reserves* (Harvard Business School, Business Research Studies No. 30, 1944); J. Keith Butters and John Lintner, *Effect of Federal Taxes on Growing Enterprises: Study No. 2, Polaroid Corporation* (Harvard Business School, Division of Research, 1944).

however, would be greatly lessened, if, as proposed by the Treasury, tax payments incurred in the preceding year were postponed to the extent of currently accruing carry-back refunds. As stated in Table 18, most of the refund could then be offset against current tax liabilities. Under these circumstances, uncertainties regarding all conversion losses—including termination losses or disallowed claims for post-termination expenses—could still be great without forcing managements to curtail all expenditures. Under present law, cash would be reduced by the gross amount of losses incurred and some years later a large portion of the loss refunded. Under the Treasury proposal, unless losses were huge, cash would decrease only by the amount of the gross loss minus the estimated refund. Hence, in spite of termination and conversion uncertainties which can never be fully eliminated, managements could afford to make reasonable constructive expenditures without risking the threat of an insolvent, out-of-cash position.

This is not a proposal to obtain greater refunds from the Treasury, for under present law the obligation to pay such a refund exists. It is rather a proposal to make the refund available at a time when it will be most effective in raising the level of business activity and employment. Proper safeguards should be erected to assure that artificially high losses will not be established just because of the carry-back provision. In the airframe industry, some safeguard already exists in that for tax purposes certain developmental expenditures must be capitalized and written off at the time of future sales rather than against current operations; hence, only expenses

Table 18. Estimates¹ of Net Working Capital and Tax Refund Claims of the Average Airframe Manufacturer: End of Years, 1945 and 1946
(In thousands)

Items	Projected Balance Sheet End of War Production December 31, 1945	Final Projected Balance Sheet Year After Major Terminations, December 31, 1946	
		Reasonably Optimistic	Out-of-Cash
Net Working Capital.....	\$27,686	\$23,622	\$ 5,818
Claims for Tax Refunds (due primarily to carry-back of losses).....	.....	9,645	20,301
Postwar Tax Refund.....	7,568	.....	.....
Total of Net Working Capital and All Tax Refunds.....	<u>\$35,254</u>	<u>\$33,267</u>	<u>\$26,119</u>

¹The derivation of the estimates presented herein is explained in Appendix B.

NOTE: At the end of war production, estimated as likely to occur on December 31, 1945, the current liabilities of the average company will include \$15,350,000 of current federal income and excess profits tax liabilities. If tax claims for loss carry-backs could be offset against these current tax liabilities, most or all of the \$15,350,000 would not have to be paid in 1946 and net working capital would be correspondingly increased.

chargeable to current operations, excluding these developmental expenses, could be claimed as losses for which tax refunds would be paid. The Treasury could reasonably insist on any necessary additional safeguards against artificially high expenditures.

This proposed change in the tax law would not be a "cure-all" for all possible problems. If any large termination losses were not established in the first year after war production ceased, the current relief would not be forthcoming, for the tax liabilities incurred during the war would not be postponed. Or if war production tapered off gradually over several years, no large current taxes would exist against which losses could be offset. Under these circumstances, however, the need for relief would probably be lessened. In spite of these limitations, the possible benefits of the proposed change in the timing of refund payments are sufficiently great to warrant its serious consideration.

In addition, aside from the loss carry-back provision, there are other technical uncertainties regarding the time when postwar tax refunds can be converted into cash.¹ The average company's accrued refund will amount to an estimated \$7,568,000 by December 31, 1945, or 27% of total net working capital. In the projected statements, full conversion of these refunds into cash at a 5% discount during the first postwar year has been assumed. If cash cannot be realized in this manner or by obtaining collateral bank loans, a further important incentive will exist to curtail all constructive expenditures. This uncertainty could be removed by prompt issuance of actual refund certificates and by prompt official declaration of final cessation of hostilities, after which the certificates will become negotiable. This is a further example of a change in timing which will aid in eliminating uncertainties during the conversion period without increasing the amount of government obligations.

Uncertainties Regarding Future National Air Policy

The termination and tax refund uncertainties previously referred to are all concerned with the interim conversion period when the aircraft companies will be adjusting from wartime to peacetime production. Entirely apart from these conversion problems, the basic question facing each company is: conversion into what? A detailed analysis of the nature and volume of postwar operations is outside the scope of this financial report. Nevertheless, a few examples of national air policy problems affecting postwar operations will be cited, because (1) these problems will directly influence company action during the

conversion period and (2) an opportunity exists to exert a positive influence on aircraft developmental programs and employment by narrowing the zone of uncertainties regarding national air policy in advance of the end of the war.

The most important uncertainties concern future Army and Navy procurement policies. The end of the war will not mean the end of a close government-industry relationship. Every one of many estimates of postwar aircraft markets examined predicts that over half of the market will consist of military aircraft. The average company will clearly have a much sounder basis for planning its constructive expenditures if it has some idea of the magnitude and nature of military aircraft procurement plans for the permanent military establishment. Again, it will be helpful to visualize the position of the management of the average airframe company during the first few months after the end of war production. Large-scale contract cancellations and cutbacks will have drastically reduced production to a level estimated in the preceding projected statements at 5% of the wartime peak level. Because of the difficulty of an immediate jump to commercial production, this remaining business is likely to consist primarily of developmental contracts and some small-scale production of military aircraft.

In making plans for the first postwar year, the managements will obviously wish to know whether they can count on the then-existing military procurement schedule for one or two months or for several years. In the planning of a developmental program, a question immediately arises as to the type of developmental contract which the services will use in the postwar period. Will the services place direct orders for new models or will the companies themselves design new prototypes on their own initiative and pay for part or all of their cost? In what proportion will our air force consist of heavy, medium, and light bombers, fighters, and trainers during the permanent military establishment? Will strategic plans necessitate the use of midwestern rather than coastal plants, and what plants will be kept in stand-by condition?

A factory manager can make intelligent plans if he is told that a given plant area will turn out about 5 planes a month, or 50, or 1. He is then in a position to determine the manpower, tools, and space needed and to take action accordingly. Without some approximate knowledge of these factors, he can only improvise and "muddle through." If too many unknowns exist, the incentive will be great to discharge all employees except those essential for the immediate business on hand and to curtail all activities until some of the unknowns are resolved.

Another uncertainty affecting conversion plans is

¹See page 45. These are the refunds of 10% of excess profits tax payments currently accruing on the companies' books.

government policy regarding the disposition of government-owned plants and equipment. There will be a natural reluctance to plan peacetime use of war plants and equipment unless it is known that some satisfactory arrangement can be made for their lease or purchase. During the first few postwar years, a plan for lease or long-term purchase with comparatively low annual charges will be almost essential. Because of limited capital, large outright purchase of plants or equipment will almost certainly have to be limited, at least until loss carry-back refunds are made. Financing to obtain new capital is not likely to be practical until some of the doubts of the conversion period are removed. Again, there will be every incentive to hold back on any expansion plans until leasing or long-term purchase arrangements can be definitely known.

Even in the field of commercial aircraft a close relationship exists between government policies and industry planning. Commercial markets will be vitally affected by government policies for disposal of surplus aircraft and by the Civil Aeronautics Board's actions on new transport routes. For example, the timing of the Board's action on international routes will obviously have an important effect on the market for four-engine transport planes. Even in the private flying field, surplus disposal policies, Civil Aeronautics Authority safety regula-

tions, and airport development programs will have an important influence on the market.

Obviously, the many unknowns influencing the future cannot be completely eliminated now or later. The size of our future air force depends on many strategic considerations, on our whole foreign policy, and in the last analysis on the will of the people as expressed through Congress. Similar difficulties exist in developing transport policies and plant disposal policies. Nevertheless, the range of uncertainties can be narrowed by advance planning. In most of the areas of uncertainty, encouraging progress is being made by the armed forces and by the other branches of the government concerned with these problems.

Because all the industry's problems are closely interrelated, it probably will be desirable to establish over-all policies regarding these problems which affect the future of aviation and not to attack each problem on a piecemeal basis. Regardless of the method of approach ultimately used, every possible effort to define national air policy in advance of the end of the war appears desirable. To the extent that the zone of unknowns can be limited, the necessity for improvising and muddling through the conversion period will be correspondingly decreased and the prospects for more extensive aviation development and employment will be improved.

APPENDIX A

NOTES REGARDING INDUSTRY COMPOSITE DATA OF TEN MAJOR AIRFRAME MANUFACTURERS

Summary Notes Regarding Balance Sheet, Income Statement, and Other Data

The Balance Sheets and Income Statements of the average airframe manufacturer for 1942 and 1943 are shown in Tables 1 and 2. A composite statement was compiled based on the individual statements of ten major airframe manufacturers. The average company statement simply represents the composite financial figures reduced to an average by dividing the totals by ten. Composite statements are not shown herein; persons wishing to obtain composite statements may multiply each item on Tables 1 and 2 by ten.

Changes in 1942 Statements

The 1942 statements are essentially similar to those presented in a study published last year on the "Financial Position of the Aircraft Industry."¹ However, three adjustments have been made in the 1942 data as originally published in order to make them comparable with the available data for 1943.

Ten Companies instead of Eleven

During 1943, two of the eleven companies included in the 1942 study were merged. Therefore, reference is made in this study to ten airframe manufacturers, but the data actually represent the same eleven manufacturers referred to in last year's study. In all cases where figures of the average airframe manufacturer are shown, they represent the composite figures divided by ten, because only ten companies are now in existence. The financial ratios and relationships for this average company are not affected by this change.

Substitution of One Company

Since the necessary financial data for one of the companies included in the 1942 study were not available for 1943, it was necessary to exclude this company from the data for both 1942 and 1943. A company of comparable size, for which both 1942 and 1943 data were available, was substituted. This change did not significantly alter the amounts of the composite data; for example, the composite net sales were decreased by less than one-half of one per cent.

¹*Financial Position of the Aircraft Industry* (Harvard Business School, Division of Research, Business Research Studies, No. 28, 1943).

Additional Renegotiation

As stated in the 1942 study, renegotiation settlements were not final for two companies. Since that time, one of these two companies has completed renegotiation on 1942 operations and the other has reached a tentative agreement with the government. In both cases the 1942 financial statements have been revised to take into account the additional amount of renegotiation refund. The effect of these adjustments reduced the composite net profit after taxes less than one per cent.

Sources of Information

The basic sources of information were identical to those used in the 1942 study, that is, the audited statements obtained from the accounting departments of the ten companies. Nine of these ten companies manufactured airframes and spare parts therefor. For the tenth company the audited statements of the Airplane Division were used. Again this year it was necessary to allocate to this Airplane Division an equitable portion of the entire corporation's cash, United States securities, postwar tax refund, provision for federal taxes, and net worth.

The income statements shown in Table 1 are for the fiscal years 1942 and 1943, and the balance sheets shown in Table 2 are as of the end of the fiscal years 1942 and 1943. Of the ten companies included in this study, the fiscal year of six ended on December 31, two on November 30, and two on September 30.

Adjustments

Five types of adjustment were made in the 1942 and 1943 audited statements of nine companies and of the Airplane Division of the tenth company:

(1) Balance sheet and income statement items were reclassified and further breakdowns made in order to obtain uniform classifications of accounts. None of these adjustments involved any change in earned surplus.

(2) Where necessary, income and expense items were adjusted and net profit decreased to allow for the estimated effect of renegotiation of the companies' contracts with the United States Government. The

effect of these adjustments was to reduce net profit after taxes of the ten companies combined by slightly less than 21% in 1943 and 41% in 1942.

One company had already reached an agreement with the Price Adjustment Board regarding its renegotiation refund for the year 1943 at the time its annual report was published. In the case of six companies, either preliminary or final agreements had been reached at the time these data were obtained. In the case of the three remaining companies, the amounts of the renegotiation refunds were estimated, based on statistics furnished by the companies and data regarding refunds made by other companies. Final agreements regarding 1942 renegotiation refunds have been made by all of the companies except one, and that company has made a tentative agreement with the Price Adjustment Board.

(3) In the case of several companies, adjustments were made to obtain uniformity in the accounting treatment of cost-plus-fixed-fee contracts. A majority of the companies took fees under cost-plus-fixed-fee contracts into income on the basis of expenditures made (i.e., amounts billable to the government). Some companies, however, accrued fees on some other basis, such as actual deliveries of aircraft. In these latter cases in 1942, adjustments were made to accrue fees on the basis of expenditures. After this adjustment, net sales of all companies included expenditures and accrued fees, and operating expenses included all expenditures to date under cost-plus-fixed-fee contracts.

Similar adjustments were made in the 1943 statements; however, only those expenditures made in the fiscal year 1943 and the accrued fees thereon were included in the 1943 income statement.

Notes Regarding Specific Balance Sheet and Income Statement Accounts and Other Data

The following notes briefly describe the nature of each account and of each statistical item included in the foregoing statements.¹

Asset Accounts

Cash, Unrestricted. Cash the use of which is not restricted by contract with the United States Government or banks.

Cash, Restricted. Cash the use of which is restricted by contract with the United States Government or banks.

¹A more detailed description of the types of reclassifications and adjustments made in both 1942 and 1943 data is given in *Financial Position of the Aircraft Industry* (Harvard Business School, Division of Research, Business Research Studies, No. 28, 1943), pp. 35-41. With the exceptions noted above, the types of reclassifications and adjustments are the same for both 1942 and 1943.

(4) In 1942 adjustments were made to consolidate into the balance sheet of one company a wholly owned subsidiary formed to construct a plant under an Emergency Plant Facilities contract. This subsidiary had not been consolidated in the published balance sheet. However, the assets of this subsidiary were purchased by the government shortly after the close of the 1943 fiscal year. In order to present a more accurate, up-to-date breakdown between company- and government-owned plant facilities, adjustments have been made in the 1943 balance sheet, giving effect to the dissolution of this subsidiary and the purchase of its assets by the government.

(5) In 1942 only, adjustments were made to eliminate intercompany accounts and items of two companies. One of these companies had a substantial investment in the other at the close of the 1942 fiscal year. Because these two companies were merged in 1943, similar adjustments were not necessary in 1943.

Other Data

Certain additional composite statistics are presented along with the statements. These data are:

Wage and salary expenditures in the first quarters of 1943 and 1944.

Expenditures for materials in the first quarters of 1943 and of 1944.

Government-owned cost-plus-fixed-fee inventories at the end of the fiscal years, 1942 and 1943.

Government-owned plant, property, and equipment at the end of the fiscal years, 1942 and 1943.

In certain companies, precise accounting measures of these data were not available, and company estimates based on statistical data were used.

United States Government and Other Marketable Securities. United States Treasury securities and marketable short-term notes.

Accounts Receivable: United States Government Fixed-Price Contracts. Receivables from the United States Government under the terms of fixed-price contracts.

Accounts Receivable: United States Government Cost-Plus-Fixed-Fee Contracts. Unreimbursed expenditures and accrued fees under cost-plus-fixed-fee contracts, and advances made to subcontractors under such contracts.

Miscellaneous United States Government and Other Accounts Receivable. All accounts receivable other than those due from the United States Government under fixed-price and cost-plus-fixed-fee contracts.

Advances to Vendors. Advances to or deposits with

vendors against unfilled orders for materials and parts.

Inventories. Total company-owned inventories, including shop supplies, perishable tools, and company-owned material in the hands of vendors.

Plant, Property, and Equipment: Regular Facilities (other than emergency facilities). All company-owned fixed assets except emergency facilities covered by certificates of necessity (to be amortized over 60 months) and emergency plant facilities (the cost of which is to be reimbursed by the United States Government over 60 months).

Plant, Property, and Equipment: Emergency Facilities (constructed under certificates of necessity). Emergency facilities covered by certificates of necessity and hence amortizable over a period of 60 months.

Reserve for Depreciation and Amortization. All depreciation and amortization reserves against the above two Plant, Property, and Equipment accounts.

Expenditures under Emergency Plant Facilities Contracts, Net of Amortization. Expenditures under Emergency Plant Facilities contracts, net of amounts reimbursed by the United States Government.

Postwar Tax Refund. Estimated postwar refund of federal excess profits tax.

Deferred Charges and Miscellaneous Assets. Items carried in the audited statements of the companies as deferred charges, and other assets which could not be classified as current assets or fixed assets.

Government-Owned Assets

Government-Owned Inventories (under cost-plus-fixed-fee contracts). Government-owned inventories related to cost-plus-fixed-fee contracts as of the end of the 1942 and 1943 fiscal years of the companies.

Government-Owned Plant, Property, and Equipment. The investment of the United States Government and its agencies in fixed assets used by the companies, as of the end of the 1942 and 1943 fiscal years of the companies.

Liability Accounts

Accounts Payable and Miscellaneous Current Liabilities. Items carried in the audited statements of the companies as accounts payable and all miscellaneous current liabilities which could not properly be classified in the various other current liability accounts shown.

Wages and Salaries Payable. Wages and salaries payable as shown in the audited statements of the companies.

Notes Payable to Banks. Notes payable to banks shown as current liabilities in the audited statements.

Provision for Taxes other than Federal Income Taxes. Provision for all taxes other than federal income and excess profits taxes.

Advances other than United States Government. Advances other than those received from the United States Government.

Provision for Federal Income and Excess Profits Taxes. Estimated provisions for federal income and excess profits taxes before deduction of postwar refunds.

Refunds Due United States Government. Refunds due the United States Government for contract price adjustments and for renegotiation of government contracts.

United States Government Advances and Progress Payments. Advances and progress payments received from the United States Government in connection with fixed-price and cost-plus-fixed-fee contracts.

Bank Loans under Emergency Plant Facilities Contracts. Loans payable to banks in connection with Emergency Plant Facilities contracts, under which the government reimburses the cost of such facilities over a 60-month period.

Other Noncurrent Liabilities. Includes only deferred income.

Reserves for Specific Liabilities. Reserves for self-insurance and service guarantees.

Reserves for Postwar and General Contingencies. Reserves which are not for specific liabilities but for postwar or general contingencies.

Capital Stock and Capital Surplus. Capital stock (including preferred and common stock) and capital surplus (including paid-in surplus) as shown in the audited statements of the companies.

Earned Surplus. Earned surplus as shown in the audited statements of the companies, adjusted to allow for the adjustments made in net profits resulting from changes related to cost-plus-fixed-fee contracts and renegotiation.

Income Statement Accounts

Net Sales: Fixed-Price Contracts. Net sales under fixed-price contracts, less provisions for refunds to the United States Government (including refunds for contract price adjustments and refunds to provide for renegotiation settlements).

Net Sales: Cost-Plus-Fixed-Fee Contracts. Expenditures and accrued fees under cost-plus-fixed-fee contracts.

Operating Expenses: Fixed-Price Contracts. All costs and expenses applicable to products sold under fixed-price contracts.

Operating Expenses: Cost-Plus-Fixed-Fee Contracts. Expenditures applicable to cost-plus-fixed-fee contracts.

Other Income (Net). Miscellaneous income, which it was not considered proper to include in Net Sales, less miscellaneous deductions, which it was not considered proper to include in Operating Expenses.

Provision for Federal Income and Excess Profits Taxes (Net of Postwar Tax Refund). Estimated provision for federal income and excess profits taxes after deducting the postwar refund of excess profits taxes.

Net Profit. Net profit after taxes but before deducting Provision for Postwar and General Contingencies.

Disposition of Earnings: Dividends Paid. Preferred and common stock dividends paid by the companies.

Disposition of Earnings: Provision for Postwar and

General Contingencies. Provision for postwar contingencies and other general contingencies.

Disposition of Earnings: Balance to Surplus. Net Profit less Dividends and Provision for Postwar and General Contingencies.

Average Monthly Expenses, First Quarters of 1943 and 1944

Wages and Salary Expense. Average monthly expenses for all wages and salaries during the first quarters of 1943 and 1944.

Material Expense. Average monthly expenses for all materials, purchased parts, and subcontract items during the first quarters of 1943 and 1944.

APPENDIX B

DERIVATION OF THE PROJECTED BALANCE SHEETS OF THE AVERAGE AIRFRAME MANUFACTURER

Balance sheets showing the estimated effects of conversion from war to peacetime operations upon the average airframe manufacturer's financial status are projected in Tables A, B, and C. These tables show the three following projected, or pro forma, balance sheet statements as of December 31, 1946, one year after the date on which it is assumed most war contracts will be canceled:

(1) *Reasonably Optimistic Balance Sheet, Table A.* The purpose of this statement is to indicate the company's financial status if reasonably optimistic assumptions are made regarding termination losses and unreimbursed expenditures incurred in 1946.

(2) *Out-of-Cash Balance Sheet, Table B.* The purpose of this statement is to indicate the maximum unreimbursed expenditures the company can absorb in the year following major terminations without eliminating all cash. It is based on the assumption that termination losses will remain at the reasonably optimistic level indicated in Table A.

(3) *Out-of-Cash Balance Sheet, Table C.* The purpose of this statement is to indicate the maximum termination losses the company can absorb without eliminating all cash. It is based on the assumption that unreimbursed expenditures in 1946 will remain at the reasonably optimistic level indicated in Table A.

In the derivation of the reasonably optimistic balance sheet, the actual balance sheet of the average airframe manufacturer on December 31, 1943, is used as a starting point and is indicated as Balance Sheet No. 1 on Table A. Adjustments are first made to this statement to reflect the effect of two years of continued large-scale wartime operations; Balance Sheet No. 2, as of December 31, 1945, gives effect to these adjustments. Then adjustments are made to

this No. 2 statement to reflect the liquidation of assets and liabilities during 1946; Balance Sheet No. 3 reflects these changes. The remaining adjustments are then made to reflect the effect of termination losses and unreimbursed expenditures in 1946 (as optimistically estimated). The reasonably optimistic statement as of December 31, 1946, is then shown as Balance Sheet No. 4 in the last column of Table A.

In the derivation of the out-of-cash balance sheets (Tables B and C), the same assumptions are made regarding all factors except that the higher levels of termination losses or unreimbursed expenditures are assumed. Therefore, all of those adjustments reflected in Balance Sheet No. 3 on Table A are the same for both the optimistic and the out-of-cash statements. Hence, Balance Sheet No. 3 is used as the starting point in Tables B and C. On both of these tables, adjustments are made to indicate the effect of termination losses and unreimbursed expenditures sufficiently high to eliminate all cash. In Table B, expenditures are increased while termination losses remain at the optimistically estimated low level. In Table C, termination losses are increased and expenditures are kept at the optimistic level. In this manner, the two out-of-cash balance sheets for December 31, 1946, are derived.

The specific adjustments made in deriving the various balance sheets, the basic assumptions upon which each adjustment is based, and comments thereon, when necessary, are stated below. For the person who wishes to follow in detail each adjustment in Tables A, B, and C, the debits and credits to individual accounts are shown for each specific adjustment.

Table A. Derivation of Reasonably Optimistic Projected Balance Sheet of the Average Airframe Manufacturer: December 31, 1946

(In thousands)

Items	Balance Sheet No. 1	Adjustments for Continued War Operations		Balance Sheet No. 2	Adjustments for Year Following Major Terminations (Year 1946)				Balance Sheet No. 4	
	Actual Balance Sheet December 31, 1943	Retained Cash Profits	Partial Liquidation of Assets and Liabilities	Projected Balance Sheet December 31, 1945	Adjustments for Liquidation of Assets and Liabilities		Balance Sheet No. 3	Adjustments for Unreimbursed Expenditures and Termination Losses		Final Projected Balance Sheet, December 31, 1946
					Tax Adjustments	Other Adjustments	Preliminary Projected Bal. Sheet, Dec. 31, 1946	Losses and Unreimbursed Expenditures	Tax Claims	
ASSETS										
CURRENT ASSETS:										
Cash and Marketable Securities.....	\$ 59,548	{ \$7,155 ^a 2,400 ^b	\$38,052 ^d	\$ 31,051	\$7,190 ^e	{ 340 ^g \$11,195 ^h	\$27,386	{ \$11,200 ^j 1,618 ^k		\$17,804
Accounts Receivable, including Advances to Vendors.....	107,750		32,325 ^d	75,425		67,344 ^h	8,081			8,081
Inventories.....	45,357		13,607 ^d	31,750		27,214 ^h	4,536			4,536
Contract Termination Claims.....	.....		.....	.....		27,214 ^h	27,214	27,214 ^k		.....
Total Current Assets.....	\$212,655			\$138,226			\$67,217			\$30,421
FEDERAL TAX REFUND CLAIMS.....					{ 272 ^e 1,116 ^f		1,388		\$8,257 ⁿ	9,645
NET PLANT, PROPERTY, AND EQUIPMENT.....	8,077	2,400 ^b		5,677	2,535 ^f		3,142	{ 560 ^j 403 ^m		3,299
EXPENDITURES UNDER EMERGENCY PLANT FACILITIES CONTRACTS, NET OF AMORTIZATION.....	810	409 ^c		401		401 ^g	.....			.....
POSTWAR TAX REFUND.....	3,473	4,095 ^a		7,568	7,568 ^e		.....			.....
DEFERRED CHARGES AND MISCELLANEOUS ASSETS.....	1,821			1,821			1,821	1,966 ^m		455
CAPITALIZED DEVELOPMENT EXPENDITURES	.....			.....			.....	2,800 ^j		2,800
TOTAL ASSETS.....	\$226,836			\$153,693			\$73,568			\$46,620
LIABILITIES										
CURRENT LIABILITIES:										
Accounts Payable and Miscellaneous Current Liabilities.....	\$ 48,729		14,619 ^d	\$ 34,110		31,674 ^h	\$ 2,436			\$ 2,436
Provision for Federal Income and Excess Profits Taxes.....	36,490		21,140 ^d	15,350	709 ^f	14,641 ^h	.....			.....
Refunds Due U. S. Government.....	22,048		22,048 ^d	.....		.....	.....			.....
Advances, Progress Payments, and Bank Loans	87,257		26,177 ^d	61,080		32,224 ^h	28,856	24,493 ^k		4,363
Total Current Liabilities.....	\$194,524			\$110,540			\$31,292			\$ 6,799
BANK LOANS UNDER EMERGENCY PLANT FACILITIES CONTRACTS.....	470	409 ^c		61		61 ^g	.....			.....
OTHER NONCURRENT LIABILITIES.....	311			311			311			78
NET WORTH.....	31,531	11,250 ^a		42,781	{ 106 ^e 710 ^f		41,965	{ 233 ^m 7,840 ^j 1,103 ^k 1,536 ^m	8,257 ⁿ	39,743
TOTAL LIABILITIES.....	\$226,836			\$153,693			\$73,568			\$46,620
NET WORKING CAPITAL (current assets less current liabilities).....	\$ 18,131			\$ 27,686			\$ 35,925			\$23,622

NOTE: The assumptions underlying each of the above adjustments are explained in the accompanying notes. For convenience, each set of adjustments is lettered and the notes segregated according to these letters. Amounts in italics are credit entries, indicating a decrease in assets or an increase in liabilities. Amounts not in italics are debit entries, indicating an increase in assets or a decrease in liabilities.

Derivation of Reasonably Optimistic Balance Sheet, Table A

Adjustments to Balance Sheet No. 1 Giving Effect to an Estimated Two Years of Continued War Operations

Adjustment a: adjustment for profits retained in the company during 1944 and 1945.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Cash and Marketable Securities	\$7,155,000	
Increase in Postwar Tax Refund	4,095,000	
Increase in Net Worth		\$11,250,000

BASIC ASSUMPTION:

Retained profits (net profits less dividends) in 1944 will be the same as in 1943, while cutbacks and partial cancellations will reduce 1945 retained profits to 50% of the 1944 level.

COMMENT:

In the construction of estimated profit and loss statements for 1944 and 1945, the assumption has been made that the present federal income tax law will remain in effect throughout 1944 and 1945. No attempt has been made to take into account any changes in the nature of the company's business, such as a further shift to cost-plus-fixed-fee business or to commercial business.

Adjustment b: adjustment to include the unexpended portion of depreciation and amortization charges for 1944 and 1945 as a source of funds.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Cash and Marketable Securities	\$2,400,000	
Decrease in Net Plant, Property, and Equipment:		
Increase in Reserve for Depreciation and Amortization	\$4,000,000	
Less: Increase in Plant, Property, and Equipment	1,600,000	
		\$2,400,000

BASIC ASSUMPTION:

An amount equivalent to 40% of the total depreciation and amortization expense for 1944 and 1945 will be expended to increase plant, property, and equipment. Cash will increase to reflect the unexpended depreciation and amortization charges, the increase being 60% of the charges during 1944 and 1945.

COMMENT:

The estimates of depreciation and amortization charges are based on individual company reports and on Form 10K reports on file with the Securities and Exchange Commission.

Adjustment c: adjustment for the reimbursements received during 1944 and 1945 from the United States Government for reimbursable costs incurred in the acquisition or construction of fixed assets under Emergency Plant Facilities contracts.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Decrease in Bank Loans under Emergency Plant Facilities Contracts	\$409,000	
Decrease in Net Unreimbursed Expenditures under Emergency Plant Facilities Contracts		\$409,000

BASIC ASSUMPTION:

Expenditures under Emergency Plant Facilities contracts will be reimbursed by the United States Government at a rate of 20% per year. Payments received will be used to reduce the bank loan made under these contracts.

Adjustment d: adjustment for a reduction in current assets and current liabilities to reflect 30% cutbacks and partial cancellations during 1945.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Decrease in Accounts Payable and Miscellaneous Current Liabilities	\$14,619,000	
Decrease in Provision for Federal Income and Excess Profits Taxes	21,140,000	
Decrease in Refunds Due United States Government	22,048,000	
Decrease in Advances, Progress Payments, and Bank Loans	26,177,000	
Decrease in Cash and Marketable Securities		\$38,052,000
Decrease in Accounts Receivable		32,325,000
Decrease in Inventories		13,607,000

BASIC ASSUMPTION:

Large-scale wartime production will continue until December 31, 1945, but cutbacks will reduce 1945 sales 30% below the 1944 level. The cutback will decrease accounts receivable, inventories, accounts payable and miscellaneous current liabilities, and advances, progress payments, and bank loans to a level 30% below the December 31, 1943, level. The federal income and excess profits tax liability will decrease to reflect the lower profits during 1945. Refunds due the United States Government at the end of 1943 will be paid and no further liability for refunds will be incurred. Final termination settlements on contracts canceled during 1944 and 1945 will be made before December 31, 1945.

Adjustments to Balance Sheet Statement No. 2 Giving Effect to Liquidation of Assets and Liabilities during 1946

Adjustment e: adjustment for the conversion of the postwar tax refund into cash.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Cash and Marketable Securities		\$7,190,000
Increase in Federal Tax Refund Claim	272,000	
Decrease in Net Worth	106,000	
Decrease in Postwar Tax Refund		\$7,568,000

BASIC ASSUMPTION:

Before December 31, 1946, the postwar tax refund will be converted into cash at a 5% discount.

COMMENT:

The postwar tax refund certificates become negotiable after the declared cessation of hostilities. Because they pay no interest and will mature at varying periods several years hence, they will have to be sold at a discount. Approximately the same effect on cash would result if the company borrowed 95% on the face value of its refund certificates.

It has been assumed that the loss resulting from the 5% discount be considered as a loss incurred in 1946 and that the company will file a claim for a refund of prior years' taxes under the loss carry-back provision of the federal tax law. Therefore, a federal tax claim has been set up. This tax claim is classed as a noncurrent asset. Even if the loss carry-back provision of the present tax law remains in effect, it will probably take considerably longer than one year after December 31, 1946, to submit a claim, to have it processed by the Bureau of Internal Revenue, and to receive payment of the claim.

Adjustment f: adjustment for accelerated amortization of emergency plant facilities constructed under certificates of necessity.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Federal Tax Refund Claim	\$1,116,000	
Decrease in Provision for Federal Income and Excess Profits Taxes	709,000	
Decrease in Net Worth	710,000	
Decrease in Net Plant, Property, and Equipment		\$2,535,000

BASIC ASSUMPTION:

The amortization of emergency plant facilities constructed under certificates of necessity will be recomputed during 1946 and claims for refunds of prior years' taxes will be filed (except for the year 1945). It is assumed that the company will revise its 1945 federal income tax return before making full tax payments in 1946 to allow for accelerated amortization. Hence, the current tax liabilities paid in 1946 will be lowered accordingly.

COMMENT:

The accelerated amortization carried back against 1945 and prior years is estimated on the basis of individual company reports and Form 10K reports on file with the Securities and Exchange Commission.

Adjustment g: Adjustment for the payment of the net unreimbursed expenditures incurred in the acquisition or construction of fixed assets under Emergency Plant Facilities contracts.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Cash and Marketable Securities	\$340,000	
Decrease in Bank Loans under Emergency Plant Facilities Contracts	61,000	
Decrease in Net Unreimbursed Expenditures under Emergency Plant Facilities Contracts		\$401,000

BASIC ASSUMPTION:

Expenditures under Emergency Plant Facilities contracts still unreimbursed by the United States Government on December 31, 1945, will be reimbursed in 1946, and any remaining bank loans made under these contracts will be liquidated. Title to these facilities will pass to the United States Government at that time.

Adjustment h: adjustment to reduce current assets and liabilities to the level necessary for immediate postwar operations.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Contract Termination Claims	\$27,214,000	
Decrease in Accounts Payable and Miscellaneous Current Liabilities	31,674,000	
Decrease in Provision for Federal Income and Excess Profits Taxes	14,641,000	
Decrease in Advances, Progress Payments, and Bank Loans	32,224,000	
Decrease in Cash and Marketable Securities		\$11,195,000
Decrease in Accounts Receivable		67,344,000
Decrease in Inventories		27,214,000

BASIC ASSUMPTION:

By December 31, 1946, all federal tax liabilities will be paid. Cutbacks and cancellations of contracts will reduce other current assets and current liabilities to levels considered normal for a volume of sales equal to 5% of the 1944 level. The following normal levels are expressed as percentages of the December 31, 1943, level: accounts receivable, 7½%; inventories, 10%; accounts payable and miscellaneous current liabilities, 5%; and advances, progress payments, and bank loans, 5%. It is further assumed that contract termination claims equal to the reduction in inventories will be set up, and that additional advances or bank loans will be obtained amounting to 90% of these contract termination claims.

¹The December 31, 1943, level is assumed to be the same as the December 31, 1944, level. Since no end-of-the-year balance sheet is given for 1944, the percentages are expressed as of the 1943 level.

COMMENT:

The levels assumed for accounts receivable, inventories, accounts payable and miscellaneous current liabilities, and advances and progress payments are considered normal for a dollar volume of sales equal to 5% of the 1944 volume. These estimates are based on a study of prewar levels of current assets and liabilities of airframe manufacturers and on discussions of the variables involved with industry and government executives.

It is assumed that the company will submit termination claims in an amount equal to the reduction in company-owned inventories. Actually, claims may not be submitted for all such inventories. This possible decrease may be offset or more than offset by other claims submitted, including claims for profits allowed on work-in-process not yet delivered under fixed-price contracts.

Adjustments to Balance Sheet Statement No. 3 Giving Effect to Reasonably Optimistic Estimates of Termination Losses and Unreimbursed Expenditures during 1946

Adjustment j: adjustment for reasonably optimistic estimate of unreimbursed expenditures during 1946.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Decrease in Net Worth (excluding federal income tax adjustments)	\$7,840,000	
Increase in Capitalized Development Expenditures	2,800,000	
Increase in Net Plant, Property, and Equipment		560,000
Decrease in Cash and Marketable Securities		\$11,200,000

BASIC ASSUMPTION:

Unreimbursed expenditures during the year after major terminations, 1946, will total 2% of the war peak level of annual expenses. It is arbitrarily assumed that 70% of the total unreimbursed expenditures will be charged to current operations, 25% to capitalized development expenditures, and 5% to fixed assets.

COMMENT:

Unreimbursed expenditures include all expenditures for which the company is not reimbursed during the year following major terminations either by the government or by commercial customers. These unreimbursed expenditures could in part be represented by increased inventories. This assumption has not been made, however, since current assets were adjusted earlier on another basis (see *Adjustment h*).

Federal income tax adjustments arising because of the losses incurred are not included here, but are shown separately (see *Adjustment n*).

The company will of course be reimbursed for some expenditures made in 1946. It will receive payments under the terms of any active contracts, and it will receive reimbursement from the government for some post-termination expenses. To simplify the presentation, adjustments are not made to reflect the flow of funds due to these reimbursed expenditures. The crucial factor affecting the company's working capital position is the level of unreimbursed expenditures in 1946, and hence adjustments are made to reflect only these unreimbursed cash outlays.

Adjustment k: adjustment for reasonably optimistic estimate of termination settlement losses.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Cash and Marketable Securities	\$ 1,618,000	
Decrease in Advances, Progress Payments, and Bank Loans	24,493,000	
Decrease in Net Worth (excluding federal income tax adjustments)	1,103,000	
Decrease in Contract Termination Claims		\$27,214,000

BASIC ASSUMPTION:

The net loss on contract termination settlements will be limited to 1% of total inventories on December 31, 1945, including company-owned inventories and government-owned inventories connected with cost-plus-fixed-fee contracts. This loss excludes any loss arising from disallowance of post-termination expenses, which are taken into account in determining the level of unreimbursed expenditures (*Adjustment j*).

COMMENT:

It is estimated that total inventories on December 31, 1945, will be 30% lower than the actual inventories on December 31, 1943, because of the cutbacks and partial cancellations occurring in 1945.

Termination losses, as defined herein, represent the reduction in net working capital which will occur in making termination settlements. Hence, they are net losses rather than total disallowances of the company's termination claims; that is, they represent gross disallowances of claims less profits allowed on the terminated contracts less reserves for such losses already on the company's books.

For tax purposes, the company may be able to consider some

inventory losses connected with termination settlements as losses occurring in 1945, even though the amount of the loss is determined in 1946. If such losses are established before 1945 federal tax liabilities are paid, the company may be able to file an amended 1945 tax return and pay lower taxes. Because of the uncertainties involved, no allowance is made in the above adjustments for such a reduction in current tax liabilities.

Adjustment m: adjustment for partial liquidation of miscellaneous assets and liabilities and for depreciation during 1946.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Decrease in Net Worth (excluding federal income tax adjustment)	\$1,536,000	
Decrease in Other Noncurrent Liabilities	233,000	
Decrease in Deferred Charges and Miscellaneous Assets		\$1,366,000
Decrease in Net Plant, Property and Equipment		403,000

Table B. Derivation of Out-of-Cash Projected Balance Sheet of the Average Airframe Manufacturer, December 31, 1946, with Reasonably Optimistic Estimate of Termination Losses

(In thousands)

Items	Balance Sheet No. 3*	Adjustments for Unreimbursed Expenditures and Termination Losses		Balance Sheet No. 5
	Projected Balance Sheet, December 31, 1946	Losses	Tax Claims	Projected Balance Sheet, December 31, 1946
ASSETS				
CURRENT ASSETS:				
Cash and Marketable Securities.....	\$27,386	{ \$29,004p 1,618q		.....
Accounts Receivable, including Advances to Vendors.....	8,081			\$ 8,081
Inventories.....	4,536			4,536
Contract Termination Claims.....	27,214	27,214q		.....
Total Current Assets.....	\$67,217			\$12,617
FEDERAL TAX REFUND CLAIMS.....	1,388	{ 1,450p 403r	\$18,913s	20,301
NET PLANT, PROPERTY, AND EQUIPMENT.....	3,142				4,189
POSTWAR TAX REFUND.....	.....			.....
DEFERRED CHARGES AND MISCELLANEOUS ASSETS.....	1,821	1,366r		455
CAPITALIZED DEVELOPMENT EXPENDITURES.....	.....	7,251p		7,251
TOTAL ASSETS.....	\$73,568			\$44,813
LIABILITIES				
CURRENT LIABILITIES:				
Accounts Payable and Miscellaneous Current Liabilities.....	\$ 2,436			\$ 2,436
Provision for Federal Income and Excess Profits Taxes.....	.....			.....
Refunds Due U. S. Government.....	.....			.....
Advances, Progress Payments, and Bank Loans.....	28,856	24,493q		4,363
Total Current Liabilities.....	\$31,292			\$ 6,799
OTHER NONCURRENT LIABILITIES.....	311	233r		78
NET WORTH.....	41,965	{ 20,303p 1,103q 1,536r	18,913s	37,936
TOTAL LIABILITIES.....	\$73,568					$44,813
NET WORKING CAPITAL.....	\$35,925			\$ 5,818

*Balance Sheet 3 in Table A.

NOTE: The assumptions underlying each of the above adjustments are explained in the accompanying notes. For convenience, each set of adjustments is lettered and the notes segregated according to these letters.

Amounts shown in italics are credit entries, indicating a decrease in assets or an increase in liabilities. Adjustments not shown in italics are debit entries, indicating an increase in assets or a decrease in liabilities.

BASIC ASSUMPTION:

Noncash adjustments during 1946 will decrease deferred charges and miscellaneous current assets, by 75% and will decrease miscellaneous noncurrent liabilities by 75%. The reserve for depreciation of fixed assets will increase because of the normal depreciation charges during the year. Net worth will decrease to the extent of the difference between these adjustments.

COMMENT:

As the scale of operations decreases, deferred charges will be written off against current operations, and some miscellaneous other assets will be liquidated. Also, the special reserves included in miscellaneous noncurrent liabilities will be decreased as losses are written off against them. In addition, the noncash expense of depreciation will be incurred by the company. Since the unreimbursed expenditures included in *Adjustment j* exclude losses arising from expenses not involving cash, these separate adjustments are necessary.

Adjustment n: adjustment for federal tax refund claims accrued in 1946.

SPECIFIC ADJUSTMENTS:

	<i>Debit</i>	<i>Credit</i>
Increase in Federal Tax Refund Claim	\$8,257,000	
Increase in Net Worth		\$8,257,000

BASIC ASSUMPTION:

The average company will make claims for federal tax refunds under the loss carry-back and the unused excess profits credit carry-back provisions of the law, thus increasing total federal tax refund claims. Because net worth was previously decreased by the amount of gross losses before any provision for changes in federal tax claims, these federal tax adjustments will increase the balance of net worth.

COMMENT:

The total 1946 losses to be carried back are determined by *Adjustments j, k, and m*. In addition to the carry-back of these 1946 losses, the company can also claim a refund of prior years' taxes due to the unused excess profits credit carry-back provision of the law. The resulting federal tax claims are treated as noncurrent assets, as discussed under *Adjustment e*. Data regarding tax computations of individual airframe companies were used in estimating the amount of the tax claims.

Derivation of Out-of-Cash Balance Sheet, Table B

The adjustments made in deriving this out-of-cash balance sheet are identical to those made in deriving the reasonably optimistic balance sheet in Table A, with two exceptions. First, the magnitude of unreimbursed expenditures in 1946 is increased to indicate the maximum unreimbursed expenditures the company can absorb without eliminating all cash. It is assumed that termination losses will remain at the reasonably optimistic level. Second, because of the larger expenditures, the magnitude of the federal tax refund claims is increased.

Balance Sheet No. 3, shown in Table A, is used as the starting point. Adjustments are made to this statement similar in nature to those shown in Table A but differing in magnitude to reflect the above two changes.

Adjustment p: adjustment for "out-of-cash" estimate of unreimbursed expenditures in 1946.

SPECIFIC ADJUSTMENTS:	<i>Debit</i>	<i>Credit</i>
Decrease in Net Worth (excluding federal income tax adjustment)	\$20,303,000	
Increase in Capitalized Development Expenditures		7,251,000

	<i>Debit</i>	<i>Credit</i>
Increase in Net Plant, Property, and Equipment	\$1,450,000	
Decrease in Cash and Marketable Securities		\$29,004,000

BASIC ASSUMPTION:

The magnitude of unreimbursed expenditures will be sufficiently high to reduce the company's cash to zero. The magnitude of termination losses will remain unchanged at the reasonably optimistic level.

Adjustment q: same as *Adjustment k*.

Adjustment r: same as *Adjustment m*.

Adjustment s: adjustment for the federal tax refund claims accrued in 1946.

	<i>Debit</i>	<i>Credit</i>
Increase in Federal Tax Refund Claim	\$18,913,000	
Increase in Net Worth		\$18,913,000

BASIC ASSUMPTION:

The average company will make claims for federal tax refunds under the loss carry-back and the unused excess profits credit carry-back provisions of the law, thus increasing total federal tax refund claims. Because net worth was previously decreased by the amount of gross losses before any provision for changes in federal tax claims, these federal tax adjustments will increase the balance of net worth.

COMMENT:

The losses to be carried back are determined by *Adjustments p, q, and r*.

Derivation of Out-of-Cash Balance Sheet, Table C

The adjustments made in Table C differ in only two respects from those made in deriving the reasonably optimistic statement (Table A). First, the magnitude of termination losses in 1946 is increased to indicate the maximum termination losses the company can absorb without eliminating all cash. It is assumed that unreimbursed expenditures will remain at the reasonably optimistic level (as shown

in Table A). Second, the magnitude of the federal tax refund claims is increased, because of the larger losses.

As in Table B, Balance Sheet No. 3 is used as the starting point. Adjustments are made to this statement similar in nature to those shown in Table A but differing in magnitude to reflect the above two changes.

Adjustment t: same as *Adjustment j*.
Adjustment u: adjustment for "out-of-cash" estimate of termination losses.

Adjustment v: same as *Adjustment m*.
Adjustment w: adjustment for the federal tax refund claim accrued in 1946.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Decrease in Advances, Progress Payments, and Bank Loans	\$24,493,000	
Decrease in Net Worth (excluding federal income tax adjustments)	18,907,000	
Decrease in Cash and Marketable Securities		\$16,186,000
Decrease in Contract Termination Claims		27,214,000

BASIC ASSUMPTION:

The magnitude of termination losses will be sufficiently high to reduce the company's cash to zero. The magnitude of unreimbursed expenditures will remain unchanged at the reasonably optimistic level.

SPECIFIC ADJUSTMENTS:	Debit	Credit
Increase in Federal Tax Refund Claim	\$22,678,000	
Increase in Net Worth		\$22,678,000

BASIC ASSUMPTION:

The average company will make claims for federal tax refunds under the loss carry-back and the unused excess profits credit carry-back provisions of the law, thus increasing total federal tax refund claims. Because net worth was previously decreased by the amount of gross losses before any provision for changes in federal tax claims, these federal tax adjustments will increase the balance of net worth.

COMMENT:

The losses to be carried back are determined by *Adjustments t, u, and v*.

Table C. Derivation of Out-of-Cash Projected Balance Sheet of the Average Airframe Manufacturer, December 31, 1946, with Reasonably Optimistic Estimate of Unreimbursed Expenditures

(In thousands)

Items	Balance Sheet No. 3*	Adjustments for Unreimbursed Expenditures and Termination Losses		Balance Sheet No. 6
	Projected Balance Sheet, December 31, 1946	Losses	Tax Claims	Projected Balance Sheet, December 31, 1946
ASSETS				
CURRENT ASSETS:				
Cash and Marketable Securities.....	\$27,386	<i>\$11,200t</i> <i>16,186u</i>		.....
Accounts Receivable, including Advances to Vendors.....	8,081			\$ 8,081
Inventories.....	4,536			4,536
Contract Termination Claims.....	27,214	<i>27,214u</i>		.....
Total Current Assets.....	\$67,217			\$12,617
FEDERAL TAX REFUND CLAIMS.....	1,388		\$22,678w	24,066
NET PLANT, PROPERTY, AND EQUIPMENT.....	3,142	<i>560t</i> <i>403v</i>		3,299
POSTWAR TAX REFUND.....	.....			.....
DEFERRED CHARGES AND MISCELLANEOUS ASSETS.....	1,821	<i>1,366v</i>		455
CAPITALIZED DEVELOPMENT EXPENSE.....	.....	<i>2,800t</i>		2,800
TOTAL ASSETS.....	<u>\$73,568</u>			<u>\$43,237</u>
LIABILITIES				
CURRENT LIABILITIES:				
Accounts Payable and Miscellaneous Current Liabilities.....	\$ 2,436			\$2,436
Provision for Federal Income and Excess Profits Taxes.....	.....			.....
Refunds Due U.S. Government.....	.....			.....
Advances, Progress Payments, and Bank Loans.....	28,856	<i>24,493u</i>		4,363
Total Current Liabilities.....	\$31,292			\$ 6,799
OTHER NONCURRENT LIABILITIES.....	311	<i>233v</i> <i>7,840t</i>		78
NET WORTH.....	41,965	<i>18,907u</i> <i>1,536v</i>	<i>22,678w</i>	36,360
TOTAL LIABILITIES.....	<u>\$73,568</u>			<u>\$43,237</u>
NET WORKING CAPITAL.....	\$35,925			\$ 5,818

*Balance Sheet 3 in Table A.

NOTE: The assumptions underlying each of the above adjustments are explained in the accompanying notes. For convenience, each set of adjustments is lettered and the notes segregated according to these letters. Amounts shown in italics are credit entries, indicating a decrease in assets or an increase in liabilities. Adjustments not shown in italics are debit entries, indicating an increase in assets or a decrease in liabilities.

APPENDIX C

POSSIBLE VARIATIONS IN ASSUMPTIONS UNDERLYING PROJECTED BALANCE SHEETS

All of the projected financial statements derived in Appendix B are based on a fixed set of assumptions regarding all factors other than the magnitude of termination losses and unreimbursed expenditures in the first postwar year. Obviously, actual future events will differ in greater or lesser degree from any set of assumptions made now. The purpose of this appendix is to analyze each type of possible variation from the fixed assumptions used and to assess the relative importance of these variations.

Four different types of variables will be considered, in the following order:

(1) variations in the amount of cash profits retained from continued wartime production;

(2) variations in the timing of contract cancellations and settlements which would allow any resulting losses to be offset against current tax liabilities to a greater or lesser degree;

(3) variations in the rapidity with which postwar tax refunds can be converted into cash and the extent to which current tax liabilities can be reduced by allowable accelerated amortization of fixed assets;

(4) variations in the extent of liquidation of current assets and liabilities from war peak levels.

Continued Wartime Operations

The length of the war and the future profits retained from wartime operations will clearly have a major influence on the ability of the aircraft industry to meet the financial stresses of conversion. So long as the average manufacturer's profits kept in the business continue near the 1943 level, working capital and cash will rise rapidly. After deduction of dividends, most profits will be added to working capital because expenditures for new plant facilities are almost certain to be small from now on.

In the projected balance sheets it is assumed that large-scale wartime production will continue on a moderately reduced scale until the end of 1945, with 1944 retained profits equal to those of 1943 and with 1945 retained profits amounting to 50% of the 1944 level. Obviously, these events cannot be precisely forecast. The company and government officials responsible for meeting the problems of transition from war to peace must recognize the possibility of a

sudden end of all hostilities and prepare for it. Similarly, gradual cutbacks and cancellations could extend over a longer period of time, with final cessation of hostilities in 1946 or later.

To indicate the importance of these alternatives, two varying sets of assumptions, one more favorable and one less favorable to the company, are stated below, and their effect on net working capital is presented:

1. *Alternative to Basic Assumptions More Favorable to Company*

Assume that wartime production will continue until December 1947. Retained profits in 1944 will equal the 1943 level and in 1945-1947 will be 70% of the 1943 level. An amount equivalent to only 10% of depreciation and amortization charges will be expended for additional fixed assets.

Effect on net working capital, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above More Favorable Assumptions</i>
Actual Net Working Capital, December 31, 1943	\$18,131	\$18,131
Add: Net Profits Retained from Continued Wartime Production	7,155	14,790
Add: Unexpended Depreciation and Amortization Charges during Continued Wartime Operation	2,400	5,770
Estimated Net Working Capital, End of Wartime Production	\$27,686	\$38,691
Increase in Net Working Capital under More Favorable Assumptions		\$11,005

NOTE: In addition, the average company's accrued postwar tax refunds would be \$11,933,000 under the more favorable assumptions instead of the \$7,568,000 estimated in Appendix B.

2. *Alternative to Basic Assumptions Less Favorable to Company*

Assume that wartime production will cease by March 1945. Retained profits in 1944 will be 80% of the 1943 level and 50% of the 1943 rate in the first quarter of 1945. An amount equivalent to 75% of depreciation and amortization charges will be expended for new fixed assets during 1944 and the first quarter of 1945.

Effect on net working capital, average
airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above Less Favorable Assumptions</i>
Actual Net Working Capital, December 31, 1943	\$18,131	\$18,131
Add: Net Profits Retained from Continued Wartime Production	7,155	4,410 ¹
Add: Unexpended Depreciation and Amortization Charges during Continued Wartime Production	2,400	640
Estimated Net Working Capital, End of Wartime Production	\$27,686	\$23,181
Decrease in Net Working Capital under Less Favorable Assumptions		\$4,505

NOTE: In addition, the average company's accrued postwar tax refunds would be \$5,998,000 under the less favorable assumptions instead of the \$7,568,000 estimated in Appendix B.

Variations in Timing of Cancellations and Settlements

In view of its large excess profits tax obligations, the average airframe manufacturer will clearly benefit if contract termination and conversion losses can be offset against current tax liabilities.² This can occur if cancellations and resulting losses are incurred while profits are still being retained on other active large-scale contracts. Then up to 80% of the losses would simply reduce tax liabilities and not constitute a net drain on cash.

In the projected balance sheets, the assumption was made that settlements on 30% partial cutbacks and cancellations would be completed in 1945 and that, after deduction of any resultant losses, retained profits would be 50% of the 1944 level. The completion of final settlements within the year 1945 and the small resultant losses from terminations and volume reduction are probably overoptimistic assumptions.

In another respect, however, the basic assumptions were overly pessimistic, because they stated that

¹The accrued federal taxes on profits during the first quarter of 1945 would probably be offset by losses incurred later in 1945 and hence would never have to be paid. This tax saving is not taken into account in the above computations, which are designed to isolate the effect of variations in profits retained from wartime operations. The effect of such tax savings is considered in the following section.

²Under the loss carry-back federal tax provision, the company can claim a refund of the prior two years' taxes to the extent that losses are incurred. This refund is not likely to be paid for several years and hence will not aid the company's cash position in the immediate postwar period under consideration. One of the recommendations of Section V is that estimated loss carry-back claims should be considered as allowable offsets against current tax liabilities. If this were made lawful, cash from such claims would be available for use at the time of most urgent need, and accidental variations in the timing of losses would be much less important.

Large-scale cancellations would occur just at the end of the 1945 fiscal year. It would be an unlikely accident if these cancellations did occur just at a fiscal year end. If they occurred in, say, June 1946 and if most resulting losses could be established before December of that year, the losses of the latter half could be offset against the profits of the first half of the year.³

The estimated effect of varying the basic assumptions to allow for these variations in timing are indicated below:

1. Alternative to Basic Assumptions More Favorable to Company

Consider that all termination losses and unreimbursed expenditures (except those not chargeable to current operations) can be offset against current tax liabilities. This could occur, because of gradual during-the-war cancellations and/or because losses resulting from large-scale cancellations were so timed that they could be offset against profits made earlier in the fiscal year. Assume, further, that losses are limited to the reasonably optimistic level.

Effect on net working capital, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above More Favorable Assumptions</i>
Estimated Peak Net Working Capital before Decreases Due to Termination and Conversion ⁴	\$35,925	\$35,925
Deduct: Gross Decrease Due to Termination Losses and Unreimbursed Expenditures	12,303	12,303
Subtotal	\$23,622	\$23,622
Add: Estimated Reduction in Current Tax Liability Because of Losses	.....	7,545
Estimated Net Working Capital, Year after End of War Production	\$23,622	\$31,167
Increase in Net Working Capital under More Favorable Assumptions		\$7,545

³One further way in which losses may be offset against current tax liabilities was not considered in the basic assumptions made. The company may be able to claim that inventory losses resulting from termination settlements were actually incurred in the prior year, although the amount was not determined until later. If the average company made final settlements before December, 1946, it might file an amended 1945 tax return claiming the losses were incurred in 1945, thus reducing the December tax payments. On the reasonably optimistic basis, termination losses are only \$1,100,000, and hence the resultant tax savings would be of minor importance. There is also considerable doubt as to the ability of the company to reach final settlements in less than a year.

⁴See Table A, Appendix B, for the derivation of this estimate.

2. *Alternative to Basic Assumptions Less Favorable to Company*

Assume that all contracts will be canceled at the end of the 1945 fiscal year, with no cutbacks or partial cancellations prior to that time. Because cancellations involve a 100% reduction from 1944 volume, instead of the 70% reduction previously assumed, raise the optimistic estimate of termination losses and unreimbursed expenditures proportionately.

Effect on net working capital, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above Less Favorable Assumptions</i>
Estimated Peak Net Working Capital before Decreases Due to Termination and Conversion ¹	\$35,925	\$35,925
<i>Deduct:</i> Gross Decrease Due to Termination Losses and Unreimbursed Expenditures	12,303	17,576
Estimated Net Working Capital, Year after End of War Production	\$23,622	\$18,349
Decrease in Net Working Capital under Less Favorable Assumptions		\$ 5,273

Variations in Immediate Tax Benefits

After the final cessation of hostilities, the average airframe manufacturer may not be able to realize fully the immediate tax benefits which the projected statements assume will be received. These benefits include conversion of postwar tax refunds into cash and a current tax saving due to allowable accelerated amortization of fixed assets.

It is estimated that the average company's postwar tax refund will amount to \$7,568,000 by the end of 1945 or 27% of total net working capital.² The company's liquid resources will obviously be greatly improved if, as was assumed in the projected statements, all of these refunds are converted into cash at a 5% discount.³ Two circumstances may, however, make it impossible for the company to

¹See Table A, Appendix B, for the derivation of this estimate.

²Since 1941, corporations have been allowed a postwar tax refund amounting to 10% of total federal excess profits tax payments, except in instances where the corporation made certain debt reductions in lieu of receiving refund certificates. See Appendix B for details regarding the estimates of the average airframe manufacturer's refund and net working capital at the end of 1945.

³Under the present tax law, postwar tax refund certificates become negotiable upon the official government declaration of cessation of hostilities but do not mature until several years later. Because they are non-interest-bearing, they would have to be sold at a discount. Practically, the company may elect to hold its refund certificates until they mature, several years hence. If it should so elect, the company should be able to obtain bank loans, using its refund certificates as collateral, and thus in effect increase its available cash.

convert its refund certificates into cash in the first year after large-scale war production ends. First, the official declaration of cessation of hostilities may be delayed until well after large-scale production ends, and since the certificates do not become negotiable until this declaration is made, they could not be sold and they might not be regarded as satisfactory collateral for a bank loan. Second, it is rather certain that not all of the actual refund certificates will be issued to the company in the first year after war production ends, for under the present tax law their issuance is not required until later.⁴ Hence, the company may not be able to use part or all of its postwar refunds in the year after major terminations.

In the projected balance sheets, it was further assumed that the company could reduce its current tax liabilities because of accelerated amortization of fixed assets constructed under certificates of necessity. Omitting the details of this transaction, the net effect of accelerated amortization will be to allow the company to claim a refund of federal taxes paid in previous years and, presumably, to reduce the actual tax payments accrued on the preceding year's income. Thus, the tax on 1945 income paid in 1946 is assumed to be reduced. Such a saving in current tax payments, however, may not be realized, either because of postponement of the date when acceleration is permitted or because of inability to file an amended tax return in 1946.

The effect of such variations on the immediate tax benefits received by the average company would be as follows:

1. *Alternative to Basic Assumptions More Favorable to Company*

Under the basic assumptions used in Appendix B, immediate tax benefits would be realized to the maximum probable degree. Hence, no "more favorable" assumptions will be shown.

2. *Alternative to Basic Assumptions Less Favorable to Company*

Assume that postwar tax refunds cannot be converted into cash in 1946 and that a current tax saving

⁴For any given year the actual certificates for postwar tax refunds are not required to be issued to the taxpaying company until three months after all taxes for the year are paid. Since the final payment of taxes on 1945 income will not occur until December 15, 1946, the certificates may not be issued to the company until March 15, 1947. Hence, certificates for that portion of the refund applicable to 1945 income may not be available until March, 1947. In the construction of the projected balance sheets, it was assumed that the certificates would be issued before December 31, 1946, and sold at a discount prior to that time.

cannot be realized because of accelerated amortization.

Effect on net working capital, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above Less Favorable Assumptions</i>
Estimated Net Working Capital, December 31, 1945 ¹	\$27,686	\$27,686
<i>Add:</i> Increase Due to Amortization of Expenditures under Emergency Plant Facilities Contracts	340	340
<i>Add:</i> Increase Due to Conversion of Postwar Tax Refund into Cash	7,190	.....
<i>Add:</i> Increase Due to Current Tax Saving from Accelerated Amortization of Fixed Assets	709	.....
Estimated Peak Net Working Capital before Decreases Due to Termination and Conversion Losses	\$35,925	\$28,026
Decrease in Net Working Capital under Less Favorable Assumptions		\$ 7,899

Variations in Liquidation of Current Assets and Liabilities

In adjusting from inflated war production to the much lower levels of peacetime production, the average airframe company will undoubtedly liquidate most of its current assets and pay off most of its current liabilities. Thus, in the projected balance sheets shown in Appendix B, the following drastic reductions in the average company's current assets and liabilities were estimated:

	<i>Amounts (in thousands) from Balance Sheets for Years Ended December 31:</i>		
	<i>1943 (Actual)</i>	<i>1945 (Projected)²</i>	<i>1946 (Projected—Reasonably Optimistic)³</i>
Current Assets:			
Cash	\$ 59,548	\$ 31,051	\$ 17,804
Receivables	107,750	75,425	8,081
Inventories	45,357	31,750	4,536
Total Current Assets	\$212,655	\$138,226	\$30,421
Less: Total Current Liabilities	194,524	110,540	6,799
Net Working Capital	\$ 18,131	\$ 27,686	\$23,622

These estimates, based on a 1946 level of sales equal to 5% of 1944 volume and based on a study of prewar working capital needs of the manufacturers, are believed to be realistic. They are, however, sub-

¹See Table A, Appendix B, for the derivation of this estimate.

²End of war production.

³Year after end of war production.

ject to a wide degree of error. For example, if postwar sales increased to 10% of the 1944 level or decreased to 2½%, the level of current assets and liabilities in December, 1946, would almost certainly be very different from the above estimates.

In addition, all of the projected statements are based on the assumptions, probably optimistic, that termination settlements will have been made by December, 1946. If final settlements were delayed, the company's December 31, 1946, balance sheet would show some funds invested in unsettled termination claims. Even if advances and loans up to 90% of total claims were used, the remaining 10% would have to be financed by the company.

Aside from losses involved in asset liquidation, which are considered separately, the amount of net working capital would not be affected by changes in the magnitude of individual current asset and liability items. The level of cash could, however, be substantially changed, as indicated by the following sets of assumptions:

1. *Alternative to Basic Assumptions More Favorable to Company*

Assume that postwar sales will decrease to 2½% of war peak sales and that the magnitude of current assets and liabilities will decrease proportionately. While such a low volume of operations will undoubtedly affect the company's profits adversely, more cash will be freed because of the greater liquidation of current assets.

Effect on cash balance, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above More Favorable Assumptions</i>
Estimated Cash Balance, December 31, 1945 ⁴	\$ 31,051	\$ 31,051
<i>Add:</i> Increase Due to Receivables and Inventories Liquidated in 1946	94,558	100,867
Subtotal	\$125,609	\$131,918
<i>Deduct:</i> Decrease Due to Current Liabilities Paid Off in 1946	103,032	106,432
<i>Deduct:</i> Net Decrease in Cash Due to Termination Losses, Unreimbursed Expenditures, and Other Adjustments ⁵	4,773	4,773
Total Deductions	\$107,805	\$111,205
Estimated Cash Balance, December 31, 1946	\$ 17,804	\$ 20,713
Increase in Cash Balance under More Favorable Assumptions		\$ 2,909

⁴Including restricted and unrestricted cash and marketable securities. See Table A, Appendix B, for the derivation of this estimate.

⁵Termination losses and unreimbursed expenditures are based on the reasonably optimistic estimates of these losses.

2. *Alternative to Basic Assumptions Less Favorable Company*

Assume that postwar sales will decrease only to 10% of war peak sales and that the magnitude of current assets and liabilities will decrease proportionately. Under the basic assumption it was considered that all payments connected with terminated contracts would be made by December 31, 1946, and it was further considered that advances and loans up to 90% of total claims would be made available to the company. As a less favorable alternate assume that government payments for company-owned inventories connected with terminated contracts will not have been made by December 31, 1946, and that termination claims for these inventories will remain on the books as a current asset. In addition, assume that advances and loans can be obtained for 80% of these claims.

Effect on cash balance, average airframe manufacturer, in thousands:

	<i>Under Basic Assumptions, Appendix B</i>	<i>Under Above Less Favorable Assumptions</i>
Estimated Cash Balance, December 31, 1945 ¹	\$ 31,051	\$ 31,051
Add: Increase Due to Receivables and Inventories Liquidated in 1946	94,558	59,263
Subtotal	\$125,609	\$ 90,314
Deduct: Decrease Due to Current Liabilities Paid Off in 1946	103,032	78,090
Net Changes in Cash Due to Termination Losses, Unreimbursed Expenditures, and Other Adjustments ²	4,773	4,773
Total Deductions	\$107,805	\$ 82,863
Estimated Cash Balance, December 31, 1946	\$ 17,804	\$ 7,451
Decrease in Cash Balance under Less Favorable Assumptions		\$ 10,353

¹Including restricted and unrestricted cash and marketable securities. See Table A, Appendix B, for the derivation of this estimate.

²Termination losses and unreimbursed expenditures are based on the reasonably optimistic estimates of these losses.

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