Planes Materials, Parts Delivery Is Serious Problem

Deliveries on many raw materials, parts and components for aircraft are now stretching well into the future, as a result of the semi-mobilization program, and have created one of the most serious problems in production planning ever faced by the aircraft industry.

At the same time costs of some parts and materials have zoomed as much as 80% since Korea, fed by a round of price increases in December running from 5% to 15% as a result of the hike in the base price of steel and actions taken by the Economic Stabilization Agency towards controls, according to delivery and price trends compiled by the Industry Planning Service of the Aircraft Industries Association.

Schedules Affected

The extended delivery dates on materials are now threatening a breakdown of the aircraft delivery schedules planned to meet the sharply increased demand of the military services.

Normally the aircraft industry relies upon warehouses to supply most of the many raw materials needed. But such basic items as aluminum, magnesium, steel and copper have reached such a low point in warehouses as a result of depletion between the start of fighting in Korea and the initiation of a priorities system in October it is impossible for them to replenish inventories under present procedures.

Some Deliveries 'Indefinite'

"Some means will have to be found to give these warehouses priority assistance in order that they may continue to perform their normal and vital function in the distributing system," the AIA's Industry Planning System warns.

Steel mills are now taking orders for delivery with no guarantee of any particular month. The three major aluminum producers by mid-December had closed their schedules on DO rated orders through April.

No solution is yet in sight for critical shortages in many special components, such as radio tubes for both aircraft and missiles now required at the very last minute. All orders are promised "indefinitely" even on rated orders. Practically all electrical components are going into the same category, and the industry believes that a compromise is needed.

Headaches of Air Power Expansion Softened by Association's Activity

The expansion of aircraft production called for under the defense program has brought about a sharp increase in the number of industry-wide problems that must be coordinated and administered by the aircraft industry's national trade association—The Aircraft Industries Association of America.

The AIA organized new committees to deal with the problems of materials, priorities and allocations; another on improved manufacturing methods, and still another to participate in the research and development programs to be carried on by the Air Force's Arnold Engineering Development Center.

In addition, the established committees of the Association which regularly cooperate with the

Management And Adequate Skills Are Top Factors

Written especially for PLANES

By Rep. Carl Hinshaw
Republican, Calif. Member Interstate and Foreign Commerce Committee

In coping with the preparedness problems facing us today, air power is of paramount importance. The way in which we go about building up our air power and assuring an adequate potential for the unpredictable needs of the future is therefore a vital consideration for the military planners, the industry, and the Congress.

We have had sufficient experience to meet this problem in an orderly and realistic manner—and the first requisite, as I see it, is to broaden the base of the basic, experienced aircraft industry.

This was clearly recognized by the Congressional Air Policy Board of the 80th Congress, and their recommendations were intended to be implemented by appropriations made by the Congress to increase the construction of aircraft. As is well known, the fleet is now directed the impounding of the additional funds appropriated in 1948 and 1949.

Fortunately, we still have the management skills and knowledge which built aircraft production during World War II into the biggest single industry the world has ever known.

Assuring Future Capacity

We are fortunate, also, in our mass production industries which can ably supplement the aircraft industry as the need arises. In the last war, automobile firms produced about 10% of our planes and half of the total engines, and again will have a substantial part if complete mobilization comes.

Because no one, except possibly the men in the Kremlin, can tell us whether we may find ourselves in a real war situation next fall, next year—or never—our present mobilization is aimed primarily at the expansion of production capacity. We need to produce as an accelerated rate our best planes in any quantity for defense and adequate striking power while making sure we have

See HINSHAW page 4—
Aircraft Goals and the NPA

By DeWitt C. Ramsey (Admiral, U.S.N., Ret.) President, Aircraft Industries Association

Information to the effect that organizational changes in the National Production Authority will elevate its aircraft section to divisional status is welcomed by the aircraft manufacturing industry as a step in the right direction.

This is an improvement, to be sure. Aircraft material matters have been handled heretofore under the Transportation Equipment Division of NPA. Now, they move up an echelon. The industry is happy to go along with this change and hopes it will aid in the solution of many of our pressing problems.

But we are still far from the high-priority level which the Aircraft Production Board gave us during World War II, when bottlenecks were broken almost as fast as they developed. Because the production of aircraft for America and her allies was considered of major importance, the Aircraft Production Board was placed directly under the War Production Board. In fact, its chairman was Charles E. Wilson, the present Director of Defense Mobilization, who then was also executive vice-chairman of the War Production Board.

Without the magnificent work of the Aircraft Production Board, our industry could never have achieved the rate and excellence of production which did so much toward hastening the end of the war. Every phase of aircraft planning, scheduling, procurement, manpower and production was kept under constant control through the several divisions of the Board. Priority ratings for facilities and materials were handled wisely and promptly.

One after another, the problems which successively threatened production of aircraft were attacked with the full powers of the Board. Through its executive agency, the Aircraft Resources Control Office, under Mr. T. P. Wright, the Board, coordinating with the Armed Services, scheduled and published all aircraft and engine programs. It dealt with components, materials, tools and priorities. It coordinated conservation and standardization of materials.

During the early days of the war, machine tools became the critical item in aircraft production. Later, they combined with plant facilities to plague the industry. Then, early in 1943, materials became the chief worry; but before the year was out, and largely through the efforts of the Board, this problem was solved and gave way to the manpower bottleneck. Again, through cooperation with the services, most aircraft manufacturing was brought into reasonable balance.

One of the most important functions of the Aircraft Production Board was sound scheduling. Working closely with industry, the Air Force and the Navy, it so allocated materials that the precise requirements of various technical and hand-processed aircraft types were filled promptly, and the waste of over-allocation was avoided.

Effective utilization of plant personnel through APB programming contributed largely to manufacturing efficiency. This system measured labor utilization in terms of pounds of output per day per employee, and the index of the industry was kept to such an extent that the equivalent of hundreds of thousands of persons was saved in 1943-44.

Today, the aircraft industry again is charged with the responsibility of building rapidly the aircraft needed to assure the country adequate air defenses and adequate striking power, as well as with developing a production potential which can be quickly utilized to build the most powerful air force in the world. Current schedules allow little time for a measure of the speed of flight?

Military aircraft may actually cost less this year. Why?

7. What is the origin of the term "Mach number" as a measure of flight?

5. Federal taxes paid by airlines sometimes exceed the amount of mail pay received from the government. True? False?

6. What famous airplane is called "Glamorous Glennis"?

2. A Russian aircraft worker would have to work (a) five, (b) ten, (c) fifteen times longer than an American aircraft worker to buy the following groceries at today's prices: 2 pounds beefsteak, loaf of bread, 5 pounds sugar, 2 quarts milk, pound of butter, 2 dozen eggs, 5 pounds flour, 3 pork chops and 5 pounds of potatoes?

3. U. S. civilian pilots in the teen ages now total (a) 3%, (b) 5%, (c) 10% of all civilian pilots.

4. How far can a person see from an airplane flying at heights of 10,000 feet and 20,000 feet?

1. Today's military plane types weigh more than twice as much as on the average as their World War II counterparts. True? False?

9. What is the origin of the term "Mach number" as a measure of the speed of flight?

10. Military aircraft may actually cost less this year. Why?
EXPANSION
(Continued from page 1)

armed services in transmitting industry views and recommendations on such procurement specifications, standardization of parts used in military planes, procurement regulations, renegotiation regulations, spare parts procedures, and other procedures affecting military contracting had all had their work load increased substantially.

In turn, this has meant a substantial increase in activity on the part of Association personnel who staff and administer the work of the various committees.

One measure of the increase in Association activities is that of the number of bulletins transmitting and expediting specifications and regulations prepared and sent out by the Association to its members. For the last six months of 1960, the total number of bulletins rose by 33 per cent compared to the number issued in the same period of the preceding year.

Most of the increase in bulletins issued occurred in the Industry Planning Service and the Technical Service, the AIA agencies most concerned with military contracts and procedures, and exchange of industry-wide technical information.

The Industry Planning Service acts as liaison on matters of industry-government cooperation and legislation, and mobilization planning. In the first six months of 1960, the Industry Planning Service prepared and distributed 338 bulletins and memoranda at the rate of nearly three per day—to help the aircraft industry shift into higher production on short notice despite the terrific hurdles.

Many Technical Bulletins

In addition, committees staffed by this Service were concerned with developing recommendations with regard to selective service, recall of reservists, new policy with regard to crop dusting, standardization and other industrial relations problems, patents and product liability issues, and matters closely related to military contracting. This Service also developed interpretations of existing policies and to be followed under wage stabilization.

During the first six months of Korean war, AIA's Technical Service issued 88 bulletins, circulars, and memos—an increase of 100 above the normal rate for a similar "peace" period.

Increased accent has been given the handling of materials in the emergency and extending to the whole industry experience gained in extensive previous projects for improvement of production and fabrication techniques.

Major committees in the Technical Service are Aircraft, Airworthiness Requirements, National Aeronautics Standards, Research and Testing, Engine and Propeller Committees.

FACTS AND FIGURES

California farm workers are the largest users of aerial crop dusting in the United States, while several hundred thousand acres were treated in that state in 1950.

Post Office Department reports that helicopter mail delivery to the Chinese interior of China requires a first morning delivery six to 24 hours on approximately 90 per cent of the mail carried.

Air Evacuation Speeds War Casualties to "Home" Care!

A The route below shows how on "average" war casualties was flown from "typical" battlefronts to Walter Reed Hospital in Washington, D.C., in less than 55 hours.

B Dotted line shows "streamlined" route over which double-decked MATS hospital ships can now fly patients from Tokyo to Kelly AFB, Texas, in 26 hours with only one stop.

Newest Long Range Flying Hospitals
Develop Global Life Saving Service

Long range flying hospitals have become one of the greatest vehicles for life saving in the tragic history of wars and military evactuations.

Here is the capsule story of what they did for one man, and it can be multiplied by many thousands:

On a bitter November day as a battlefront of the First Cavalry Division slugged forward in Korea, a Red anti-tank shell crashed through a Jeep. Seconds later, Lt. Robert L. Engleien, 27, of Gary, Ind., lay in a roadside ditch, one foot shattered into pulp. Medical corpsmen got him back to an evacuation hospital at Pyongyang and in a few hours he was lifted into a transport plane which sped him and other wounded to Osaka, Japan. There preliminary hospitalization included amputation of the shattered foot, and Lieut. En­geleien was introduced to the marvel of large scale air evacuation as developed by the Military Air Transport Service.

On the morning of Dec. 2 a four-engined MATS hospital ship took off from an Osaka runway with Lt. Engleien and 31 other litter patients aboard, Including a nurse and two corpsmen. Three days later he was in a comfortable bed, with the maximum of medical care, in the Army's Walter Reed Hospital in Washington, D.C.

The stages of the air journey were: Osaka to Wake Island, 10½ hours; Wake to Honolulu, 12 hours; Honolulu to Travis AFB, California, 12½ hours; Travis to Westover AFB, Mass., 13 hours; Westover to Washington, 3 hours.

Flight Time Reduced

Since then, with our most modern double-decked four-engined planes MATS has streamlined its magnificent life-saving operation, making many of its flights one-stop trips to hospitalization "back home." These big planes make the flight from Tokyo, Japan, to Honolulu in 13 hours, and thence to Kelly AFB, San Antonio, Tex., in another 13 hours.

Not only the fastest, it has proved the most comfortable, most efficient and most medically desirable method of transportation. It saves money and time and provides an incalculable lift for morale of the wounded and sick and their families.

3,192 Moved in 6 Hours

During the U.N. withdrawals in North Korea, the Fifth Air Force and the Troop Carrier Command flew 14,182 patients from Korea to Japan in one eight-day period, 5,192 of them in six hours.

MATS hospital ships returning to Japan from the U.S. make it a two-way pay route carrying such high priority cargo as blood plasma, rockets, medical supplies, 60 caliber ammunition, tank parts, aircraft parts, machine gun mounts, radio batteries and medical supplies—sometimes up to 40 tons a day.

Following is the statistical story of patients flown by MATS from the Pacific during the first six months of the Korean war:

<table>
<thead>
<tr>
<th>Month</th>
<th>Casualties</th>
<th>Other Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>80</td>
<td>455</td>
<td>535</td>
</tr>
<tr>
<td>Aug.</td>
<td>935</td>
<td>443</td>
<td>1,378</td>
</tr>
<tr>
<td>Sept.</td>
<td>2,680</td>
<td>554</td>
<td>3,234</td>
</tr>
<tr>
<td>Oct.</td>
<td>1,889</td>
<td>749</td>
<td>2,638</td>
</tr>
<tr>
<td>Nov.</td>
<td>1,736</td>
<td>416</td>
<td>2,152</td>
</tr>
<tr>
<td>Dec.</td>
<td>5,492</td>
<td>870</td>
<td>6,362</td>
</tr>
</tbody>
</table>

Total: 12,462

Answers to Planes Quiz

1. True. Besides weighing twice as much on the average, they are flying more complex and take four times as many hours to build.

2. (c) 18 times. The average California aircraft worker would have to work 4 hours and 42 minutes, the average Russian 57 hours and 29 minutes. Other comparisons: In Canada, 6 hrs. 2 min.; England, 6 hrs. 58 min.; Sweden, 7 hrs. 48 min.; France, 18 hrs. 36 min.; Italy, 24 hrs. 36 min.

3. (a) 2½'s. Thus we have fewer teen-age pilots now than at the start of World War II when the U.S. pilot total had been doubled annually by the end of the war.

4. Tests indicate that at 10,000 feet the range of vision is approximately 123 miles, and at 20,000 feet, 173 miles.

5. True. During 1950 one transcontinental airline received $5,077,000 mail pay, and paid $11,400,000 in federal income and excess profits tax.

6. The X-1, first U.S. rocket-powered supersonic plane; now in the Smithsonian Institution.

7. (c) Jan. 18, 1911, Navy pilot Eugene Ely landed a Curtiss biplane on a platform on a Navy ship in San Francisco Bay and later took off successfully.

8. True. The Navy announced recently that one of its major helicopter prototypes had successfully met all needs for automatic flying at all altitudes.

9. The Mach number is the ratio of the speed of flight to the speed of sound (Thus Mach 1 is flight at the speed of sound). The ratio was first established by photographs on cannon balls, in the 1800's by Prof. Ernst Mach, German physicist.

10. It is estimated average B-36 flyby cost of an Air Force plane in fiscal year 1955's will be less than $190,000 because of cost savings due to quantity production, and despite steep increases in materials of prices and components.
I must emphasize that modern fighters and bombers cannot be rolled off production lines like standard automobiles, for instance, or refrigerators or ovens and plates. Today's modern fighter plane—the only kind with which we could successfully face such a power as Russia—weighs on the average twice as much as its World War II counterpart, and it contains two times as much sensitive and complicated electronic equipment. Its engineering and manufacture require a higher degree of skills, higher even than required in the last war, and far higher than we realized in our justly famous mass production industries.

Up to now, the airframe industry has necessarily maintained a minimum of experienced manpower. However, these forces now are being expanded, and must be expanded further as the program progresses. But we must realize that the quality of skills used in the last war are inadequate now for the manufacture of high speed, high performance planes. Just being good at bucking rivets isn't enough, and training women and other unskilled workers to do mass aircraft jobs will not be easy. Higher skills are required, too, in the plants of subcontractors.

The Obsolescence Factor

Production and management talent obviously is limited. Therefore, in broadening the base, great care must be taken to see that this experience is not unduly diluted.

The lessons learned in World War II should not be forgotten. The Air Materiel Command of the Air Force estimated that the average time lag from go-ahead on a plane model to the completion of volume production contracts was 14 months. But as the obsolescence of the aircraft industry increased half the aircraft industry, and accounted for 90 per cent of the aircraft assembled, using their own fabrications as well as sub-assemblies produced by outside sources.

Given the necessary materials, tooling, and manpower (and we must not lose sight of these needs under whatever Government controls continue to evolve), the basic aircraft industry can make a reasonably accurate forecast of its future production rates.

Anyone who has kept even partially informed of the tremendous technological advances in aeronautics during the past few years knows that an airplane can become obsolete almost as quickly as yesterday's newspaper. A second best airplane is a second best poker hand: it seldom wins, and can be very expensive. That is why we must keep our basic aircraft industry in a position to continue its research and development unerringly. That is also why we should be reluctant to build vast numbers of airplanes, short of certainty of a shooting war. We must have an adequate number of our current best, and we must be ready with tools, jigs, dies and fixtures to build more and better ones in ever increasing quantities if the need arises.

Aircraft Year Book

Climax of a three-decade campaign "for adequate peace-time air defenses" is featured in the 1950 Aircraft Year Book, official annual of the Aircraft Industries Association. The 1950 edition of the Year Book, America's standard aviation volume for over three decades, contains a complete review of the events and developments in military and civil aviation, a directory of aircraft statistics, a complete aviation chronology for 1950 and years past, an encyclopedia of little-known facts and historical sidelights. In addition there are chapters on aircraft in production during the year, brief biographies of over 1,600 personalities, outstanding technical developments in the design, manufacturing and research fields, complete official aviation records.

Building Aircraft is a Nationwide Job

As Mobilization Program Increases, Manpower and Plants in More and More Areas Are Put into Production.

New Skills Needed

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It contains 480 pages. Copies may be obtained for $6.00 through the Lincoln Press, Inc., publishers, Warner Bldg., 13th & E Srs., N.W., Washington 4, D. C.