ALL MATERIAL MAY BE REPRODUCED

PLANES

MATS OF ALL CHARTS ARE AVAILABLE

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U. S. Needs Long-Range Plane Program

Written especially for PLANES

By Senator Chan Gurney, South Dakota, Chairman, Armed Services Committee, U. S. Senate

Every appraisal of our national security points to the need for maintaining military aircraft production at a high enough level to permit rapid expansion of output in an emergency.

Industrial mobilization studies show that our present production is so small it would take several years of intense and costly effort to reach effective volume output. We need a rate of output that will guarantee effective volume quickly in time of emergency. No one doubts that America would be hit first by any future aggressor. We can hope for no more than one year's notice, even with the best of intelligence report-

Output Too Low

y aircraft output is so low —less than 2,000 this year—that it will meet only one-fourth of the replacement needs of our air forces. With normal use, military planes wear out in about five years. And to this the fact that accidents occur, and it is apparent that even without buying a single new design our 28,000-plane air forces need about 7,000 replacements a year.

From the standpoint of ability to expand in an emergency, our aircraft potential is even worse. If we were turning out 3,000 military planes this year it would take us a year to jump our rate of output to 25,700. World War II required a peak production rate of 108,000 planes in 1944.

Not only are we turning out too few planes, but despite the fact that it takes five years to develop a new plane our buying is done on a year-to-year basis. This wastes money and slows progress. Such step-by-step methods make it extremely difficult to procure raw materials and attract and hold skilled personnel. It is impossible to employ the kind of high production techniques necessary to an expandable industry.

Short-term Program

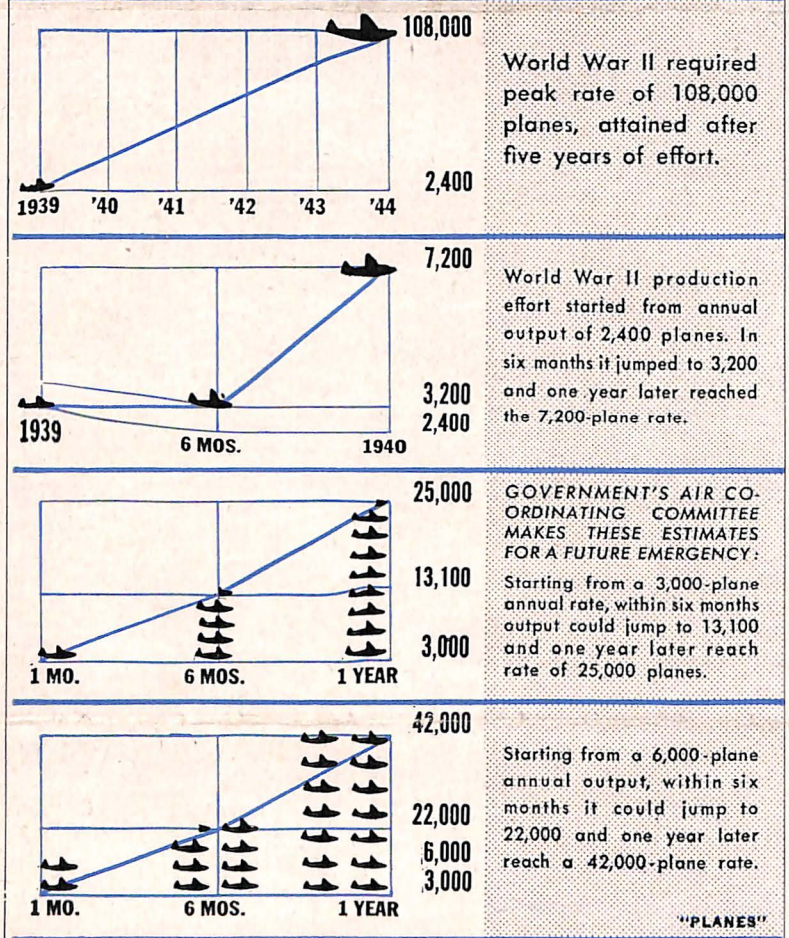
term program means un- s in the flow of production. W output stops on one model before the next order is placed, the production line halts. There is a costly dry spell, during which personnel and equipment are idle. Such dry spots in current production, according to one producer, have cost in the case of a large transport, $14,000,000, and in the case of a jet fighter, $8,000,000.

When planes are ordered by the handful, they are produced by hand methods. Thus, the current trickle of production is causing the aircraft industry to convert to shop methods. If an emergency comes, planes must be re-designed for mass production.

Our ability to expand military plane output in an emergency is entirely dependent upon keeping aircraft production facilities ready. The only way to stay ready is to keep producing.

WHY NATIONAL SECURITY DEPENDS ON PEACETIME PLANE OUTPUT

RATE AT WHICH WE PRODUCE PLANES IN PEACETIME IS KEY TO VOLUME DELIVERY IN AN EMERGENCY



Air Army a Problem

Army chiefs estimate they will need 5,000 large transport planes on a minute's notice to meet a future emergency like World War II. Enormity of the production problem this would entail is shown by estimates of the producer of a huge new military transport.

Taking his own four-motored model as an example, this manufacturer finds it would take his own and 12 additional companies more than six years to produce 5,000 planes. If only one company produced them, it would take more than five years to turn out the first 300 planes.

How to Expand Plane Output Is Big Problem

Worried, lest our nation face a future emergency with paper planes as in Pre-Pearl Harbor days our troops trained with wooden guns, government policy makers currently are wrestling with a $64 question of "industrial expansibility."

Experience shows the biggest bottleneck in mobilizing our air forces is delivery of equipment, not recruiting and training personnel. Industrial expansibility, therefore, is the key to adequate security at low cost.

One of the principal problems is the strain on management when technical leadership has to be spread out. The World War II nucleus of 6,000 people trained in engineering supervision eventually was spread over an employment of more than 2,000,000. Starting from 16 plants, this talent was sprinkled among 46 plants. Much time was lost and costs mounted because experinece was spread so thinly.

"For Want of a Nail—"

Another time-consuming difficulty is that of speedily expanding the chain of suppliers for materials and parts. Ordinarily 85 per cent of a plane is produced right in the shops of the peacetime aircraft industry. During World War II, 45 per cent of the processing was farmed out. Unless suppliers, by practicing production, are kept abreast with the aircraft industry, they cannot deliver when needed. Fast, efficient production depends on flow of castings, forgings, and other processed materials from suppliers to the producer.

Keep Factories Ready

One of the most troublesome problems, created by a trickle of output, is that hand-made planes must be completely re-designed for mass production. When Pearl Harbor struck, we had just one model ready for production. It cost $5,000,000 to redesign one heavy bomber model for mass output. Largely for this reason, President Roosevelt's 50,000-plane goal, announced in 1940, was not reached until 1943.

The principle behind industrial expansibility is as simple as the fact that an idling engine guarantees quicker get-away. Only by keeping factories moving can top-speed plane production be reached in an emergency.

3000 Schools Air-equipped

Approximately 3,000 U. S. schools have acquired, practically free, millions of dollars worth of war aircraft and equipment, government surplus sales records reveal.

Among the states, Ohio's school system has absorbed the most surplus, with California and Illinoi next in line.

Only planes and equipment which cannot be sold on the commercial market have been offered to the schools. Restricted to non-flight use. this surplus includes planes, engines, parts, instrument trainers and even electronic devices.

More than 1,000 planes have been sold at prices ranging from $50 to $350. Hundreds of instrument trainers have gone at $550 each, and several thousand engines have been shipped to schools at $10 apiece.

A minimum of red tape has featured the government's disposal of aeronautical equipment to the schools. Where delivery has been delayed, state laws prohibiting advance payment have been mainly responsible.

This equipment apparently has spurred aviation interest in the schools. A marked increase in aviation emphasis is noted in the programs of teacher training workshops and institutes scheduled by many states this summer.

Air-wise Congress

If any proof were needed of public support for a strong air power. it is adequately supplied by the House of Representatives debate on the 1948 Army Air Forces' plane procurement program.

During about five hours of debate 29 Congressmen rose in direct support of Air Power. The occasion came when Congressman Mahon introduced an amendment to restore a cut of $40,000,000 in plane procurement funds that had been proposed by the House Appropriations Committee. While the 29 members supported economy in general, none wanted cuts in our forces. When the final vote was taken at the conclusion of debate, the House unanimously adopted the amendment eliminating the suggested funds-cut.

Not only did the House accept without change the new-planes program submitted by the President but many Congressmen took the floor to declare that the President's budget was far below actual AAF needs.

PLANES QUIZ

A 70 per cent score on this quiz is excellent. Sixty per cent is good. Answers on page 4.

1. Bomb bays of a new U. S. bomber have space equal to that of (a) two; (b) four; (c) eight freight cars.

2. The XS-1, first U. S. plane designed for speeds above 1,000 m.p.h., has a range of (a) 500; (b) 750; (c) 100 miles.

3. Twenty-five years ago about 1,300 U. S. civilians knew how to pilot planes. By 1947, however, there were (a) 25,000; (b) 85,000; (c) 400,000 civil pilots in the U. S.

4. Twenty years ago a military plane could be developed from scratch for 15 - $20,000. Today a new combat plane will cost from (a) 15 to 20 million; (b) one to five million; (c) seven to 10 million.

5. Present world speed record is 616 mph. This is (a) 10 times; (b) 15 times; (c) more than 20 times faster than the first Wright plane in 1903.

6. Of all the Jap ships sent to the bottom in World War II, (a) 36 per cent; (b) 29 per cent; (c) 51 per cent were sunk by our naval and military planes.

7. True - False. All planes in combat during World War II were designed before we went to war.

8. During 1946, (a) 8,000,000; (b) 6,500,000; (c) more than 14,-000 000 passengers traveled by air transport in the U. S.

9. Since 1939, hourly wages in the aircraft industry have increased (a) 62 per cent; (b) 50 per cent; (c) nearly 90 per cent.

10. True - False. Aircraft engines once required complete overhaul every 100 to 220 hours but today they can run up to 1,000 hours between overhauls.

ANNUAL PEACETIME PLANE OUTPUT DETERMINES WHETHER OUR AIRFORCES ARE UP TO DATE

In war or peace, planes wear out. Normal replacement, based on 5-year life of planes, accidents, etc., calls for 25% new equipment each year. Our air forces now have 28,000 planes.

"PLANES"

G-Men Take Wing

If criminals figure on shifting from autos to planes in this air age. they'll find the G-Men there ahead of them.

Congress has given the FBI equal authority over the airways, railroads, highways and high seas. The Motor Vehicles Theft Act now covers aircraft as well as automobiles. In addition, a new law protects air shippers and passengers against larceny and fraud.

The new laws can step into the atomic age. They cover any contrivance used, or designed for, navigation of or flight in the air—which could include atomic-powered craft.

PEACETIME PLANE OUTPUT DETERMINES ABILITY TO REPLACE HIGH COMBAT LOSSES IN AN EMERGENCY

Based on World War II studies, a combat emergency, requiring large equipment pool as cushion against setbacks, plus high losses, would demand a 300% replacement rate the first year.

"PLANES"

$ for Luxury— ¢ for Security

Program covering all phases of aviation development and guaranteeing America's security can be brought for less than the annual tobacco bill, government reports show.

Department of Commerce figures reveal that in 1946 Americans spent $3,700,000,-000 for tobacco. This contracts to official estimates of about $3,000,000,000 needed to support all U. S. aviation development.

We could buy all the airports, planes and research necessary to insure American air superiority for about one-third of the annual liquor bill, which last year totaled $8,-770,000,000.

The 1948 budget for new equipment for the Army and Navy air forces, our first line of defense, is $710.000,000. This is much less than the $1,239.000,000 we spent for jewelry last year.

Uncertainty Costs Industry Many Millions

Financial reports show Am[illegible]'s aircraft Industry is in a serious predicament, owing largely to lack of a definite, long-range national air policy.

Seven of the 12 major producers report losses for 1946, attributable mainly to mounting development costs and the strain of trying to maintain vital production facilities with a trickle of output.

Four smaller companies have undergone reorganization, and most of the manufacturers have started converting their facilities to such things as plastics, trailer homes, motorcycles, rowboats, etc.

Awaits Decision

Awaiting top-level government decision as to just what plane production facilities are to be retained to back up national security, the industry has hesitated to liquidate arbitrarily or convert to non-aviation products. Result: financial reserves built up during war years are being consumed because volume facilities cannot be supported by the handful of current orders.

Without a long-range military production program, the industry shortly will be forced to disband its staffs of highly-trained technicians and divert its facilities generally to non-aviation products. Once diverted, it will take lots of time and money to reassemble these na[illegible]l security assets.

The largest industry during the war, aircraft manufacturing has shrunk to 16th in size. No other industry has been compressed so much. Last year, military production which normally makes up 75 per cent of total business, was at the lowest point since 1937. Airline losses also reacted against the manufacturers. One company spent more than nine million dollars developing a new transport, only to have production stopped when airlines orders were cancelled.

Last year, while earnings of manufacturing corporations in general climbed 36 per cent, those of the aircraft industry dropped 95 per cent. The entire industry, including light plane and parts makers, showed a profit of a half cent on the sales dollar.

Low Profit Rate

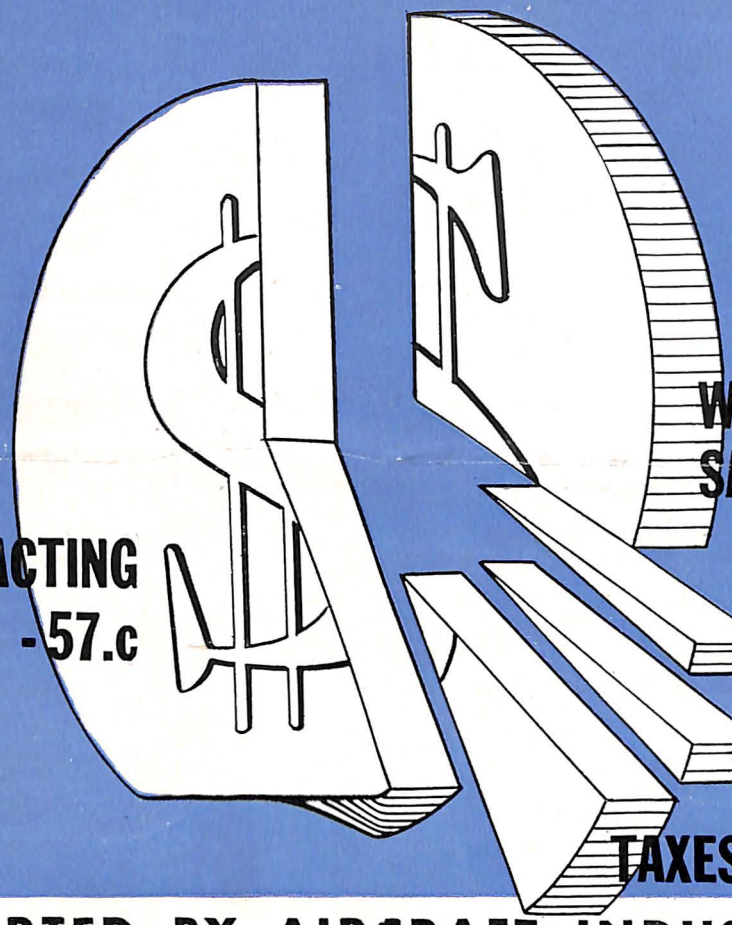
During 1945. twelve major producers in the industry made a total profit of $68 million on sales of about $4 billion. Last year this same group of producers had a net loss of more than $8 million, even after tax carrybacks.

The industry faces serious working capital problems. Without a stable. continuing program it is difficult if not impossible to attract new capital. whereas a lot of money is needed to launch new pl[illegible]. Eleven years ago the most advanced bomber cost $600,000 to develop, but today's latest type runs about $13,-000.000. The engine that powers our newest four-motored transport cost more than $30 million to develop.

How Your War Plane Dollar was Spent

Distribution of Revenue Sales Dollar 1942-45 *

(12 MAJOR AIRFRAME COMPANIES REPORTING IN AN AIA SURVEY)



MATERIALS, PARTS and SUB-CONTRACTING -57.c

WAGES and SALARIES - 32.7c

NET PROFIT - 1.5c

OVERHEAD and CONTINGENCIES - 1.8c

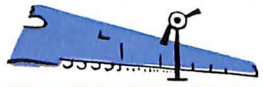
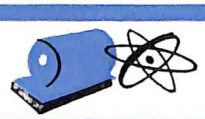
TAXES - 7.c

* THE 1946 NET PROFIT IS SHARPLY BELOW 1945, WITH 7 OF 12 COMPANIES SHOWING ACTUAL LOSSES.

AS REPORTED BY AIRCRAFT INDUSTRIES ASSOCIATION

RATE OF PROFIT LOWEST OF WAR INDUSTRIES 1942-45

(25 COMPANIES, INCLUDING PARTS MAKERS)

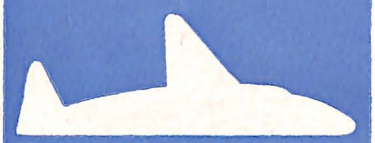
4c		AUTOS
3.9c		MACHINERY
3.3c		R. R. EQUIPMENT
3.1c		ELECTRICAL EQUIPMENT
2.9c		IRON & STEEL
1.8c		AIRCRAFT & PARTS

"PLANES"

AS REPORTED BY NATIONAL CITY BANK, NEW YORK

PEACETIME SAFETY "MINIMUMS" VS. 1948 BUDGET PROVISIONS

(ANNUAL PROCUREMENT)



5780 PLANES

* Needed to back up U.S. guarantees until world peace established.

3000 PLANES

* Needed after world peace assured.

1324 PLANES

Quantity provided by 1948 Budget.

(Congress Expected to Revise Upward)

* RECOMMENDATIONS OF GOVERNMENT'S OFFICIAL AIR COORDINATING COMMITTEE

"Planes"

Atlantic Flown 91,000 Times

The Atlantic has been crossed by air approximately 91,000 times since "Lindy" made it solo to Paris 20 years ago, according to data compiled by "Planes."

Most of the crossings were made during World War II, when thousands of planes were flown across for delivery to the Allies. The total represents flights between Europe, North America, South America and Africa. It includes both passenger and ferrying flights.

"Planes" checked all available records of U. S. scheduled airlines, the Army's Air Transport Command, the Naval Air Transport Service, and the RAF and RCAF.

In contrast to the wild jubilation greeting Lindbergh's May, 1927 hop, no eyebrows will be raised this summer as airlines fly more than 150 flights weekly across the Atlantic.

Farmers Gaining Long-Due Credit for Air Pioneering

With aerial delivery of the daily newspapers spreading among rural communities, evidence is piling up that farmers as a group are the nation's most die-hard aviation enthusiasts.

Typical of publishers in many areas of the country are E. M. Marvin, of the Beatrice, Neb., *Sun*; P. T. Anderson, Jr., who heads both the *Telegraph* and the *News* in Macon, Ga.; and Carl A. Rott, of the Winfield, Kans., *Courier*. They are using light personal planes to speed delivery to outlying communities.

Many Farm Pilots

Aerial newspaper service is but one of the aviation developments pioneered in agricultural areas.

Among the first jobs performed by planes were agricultural weather flights and forest patrols. In suceeding years the airplane has become a handyman of the farmer, until now thousands are in daily use on farms and ranches.

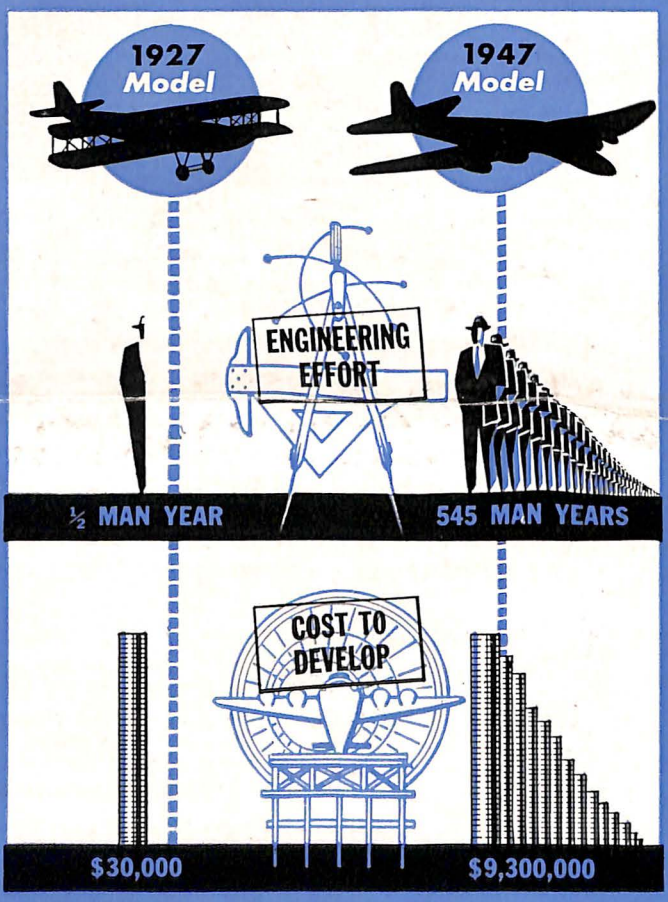
In addition to the thousands of farm pilots, more than 5,000 farmers serve as volunteer weather observers, enabling the Weather Bureau to accurately chart storms for military, personal and commercial pilots. Estimates on future farm use of planes run as high as 60 per cent of personal plane sales in the next five years.

Opening New Markets

The airplane has proved itself as a valuable implement for soil conservation and land utilization. It is opening up new markets for farm products, and is a growing influence toward stabilized marketing.

All this adds up to the fact that farm flying has become one of the most important ingredients of a strong national defense.

WHY TODAY'S COMPLEX PLANES REQUIRE LONG-RANGE PLANNING



"PLANES"

Cost of $9,300,000 is only to prototype stage. Heavy additional development costs would be required before plane could be delivered in quantity.

Facts and Figures

Pine tree seeds now are planted by air. Inserted in split lead weights, they sink upon reaching the ground.

The Navy's new elec[illegible] pult can launch a fou[illegible]ne airliner at 120 miles per hour within 500 feet.

Mrs. Oscar Winchell, only registered nurse in a 600-square-mile area around McGrath, Alaska, tends to the sick by plane.

To avoid a second-hand air power, 25 percent of military planes should be replaced each year.

From five to seven years are required to bring a new military plane through the design stage to production and combat testing.

Twenty-five years ago there were no international airlines. In 1946,, however, 1,040,000 Americans made trips abroad by air.

Aerodynamicists are working toward 7,500 mph speeds. That's about 25 minutes coast-to-coast.

Size of the World War[illegible] craft industry is indicated fact that 92 aluminum were built to supply raw materials to wartime aircraft producers.

The V-2 bomb can reach 3,500 mph within 71 seconds after takeoff.

Best aircraft engine of 1926 generated 225 h.p. Today's best delivers 3,500 h.p.

In World War II the aircraft industry had the lowest profit rate of any war producer. Its average rate of profit from 1942-1945 was less than two cents on the dollar.

In 1946, approximately 3,500,000 women traveled by air transport.

Answers to Planes Quiz

1. (b).
2. (c).
3. (c) In addition, 170,000 student pilots were certificated in 1946.
4. (c).
5. (c) The Wright brot[illegible] about 30 mph. in first [illegible]
6. (c).
7. True. Original B-29 develop[illegible] contract was let in 1935.
8. (c).
9. (c).
10. True.