



PLANES

OFFICIAL PUBLICATION OF THE AIRCRAFT INDUSTRIES ASSOCIATION OF AMERICA, INC.

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NEXT CONGRESS MUST DECIDE 70-GROUP USAF

"Operation Vittles" Held Invaluable Lesson in Air Transport Logistics

"Bigger planes pay off"

Written especially for *Planes*

By

Major General William H. Tunner

Deputy Commander, Air Transport, Military Air Transport Service, Now Commanding Air Lift Task Force

If there is an elemental lesson to be learned from the Berlin Air Lift, it is that in today's chapter of air transport anything, in any quantity, can be carried swiftly anywhere in the world at any time.

This is no new concept, but the intense activity demanded by "Operation Vittles" has provided an unequalled laboratory for confirming views long held by air transport people.

The operation in Germany has provided the finest possible concentrated training for our airmen. It has demonstrated that an air transport force-in-being is vital to the national Military Establishment. The techniques used in supplying the western sector of Berlin, a section as



General Tunner

"Fly-in" Theatre

For those who prefer their movies in the open air a new wrinkle has been developed—a drive-in theater for planes and autos at Monmouth (N. J.) County Airport. The theater was opened last summer and has space for 900 autos and 25 planes on a hard-surfaced area adjacent to the airport. Individual soundposts are provided for each plane and auto.

large as Brooklyn, by air could be applied just as well, in an emergency, to St. Louis, Missouri, a location on the Polar ice cap, or Tokyo.

The pace of the operation in Germany is fast. For example, on last Air Force Day, 895 Allied flights to Berlin's Tempelhof and Gatow airports carried 6,987 tons of coal, in addition to passengers. Cargo aircraft took off or landed at the rate of one every 48 seconds—despite the fact that the pilots had to fly 18 out of the 24 hours on instruments.

Out of this intensive action, we have learned much of importance about aircraft, personnel and methods. I will discuss them in order.

—See "Berlin" page 4—

Urges 70-Groups



Senator Bridges

Senator Bridges Terms it Basic To U.S. Security

Written especially for *Planes*

By

Senator Styles Bridges (R., N. H.)

Chairman, Senate Committee on Appropriations; Ranking Majority Member, Committee on Armed Services

The 80th Congress this year laid the base for a 70 Group Air Force by making an appropriation that will begin construction of planes necessary to maintain such a force. A first item of business in the next Congress will be the legislation to establish the basic size and composition of the Air Force which the government of the United States is to maintain in its program of national defense.

Striking Arm

The Congress created the 70 Group Air Force against the opposition of the Administration because it believed that in a threatened world in which air power is the acknowledged first line of defense and offense 70 air groups constitute the peacetime minimum for the United States. I took the leadership in the Senate for a 70 group air force because of my own intense conviction that national security demanded such action. Of course our air force must be fitted into a balanced military machine to provide an effective striking arm for America to back up the decisions which America must make for its own security and for the peace of the world.

Basic Pattern Needed

By the National Security Act of 1947 the Air Force came into being as a separate, autonomous arm of our defense. However, we have not yet defined in law just what the basic structure of this force will be. Nor have we given it a guiding framework of law under which to operate.

No long-range planning for the security of the U. S. can be successful until Congress has laid down a basic pattern for a force in-being. A bill I am sponsoring is the answer.

For decades we have constantly been rebuilding and strengthening our sea forces. Sea power for ages has been a vital factor in main-

—See "70 Groups" page 3—

Navy Will Need 17,549 Planes

The Navy's role in America's air supremacy, a modern 14,500-plane air arm required to police the oceans of the world, will require delivery of 17,549 new planes in the next six years, according to U. S. Rep. Chester E. Merrow (R., N. H.).

This plane program for the Navy and the 70-group Air Force program constitute "only the minimum air protection for the United States." "It is not air supremacy. Should we be attacked, vast and immediate expansion would be necessary," Mr. Merrow recently told the House of Representatives.

Using Storage Planes

Taking 3,000 obsolescent war planes out of storage, the Navy plans to reach 14,500-plane strength next July 1. However, to build up a modernized fleet air arm will require delivery of the 17,549 modern aircraft over the period of the next six years.

Once a state of combat readiness is reached, the Naval air arm will require 3,300 new planes a year, or approximately \$1,970,000,000 annually, to keep the Navy up to the minute.

Delivery Requirements

Mr. Merrow said that deliveries of aircraft to the Navy for the next six fiscal years should be as follows:

1949	1,093
1950	1,537
1951	3,622
1952	4,046
1953	3,791
1954	3,760

17,549

Flight Planning at "Vittles" Headquarters

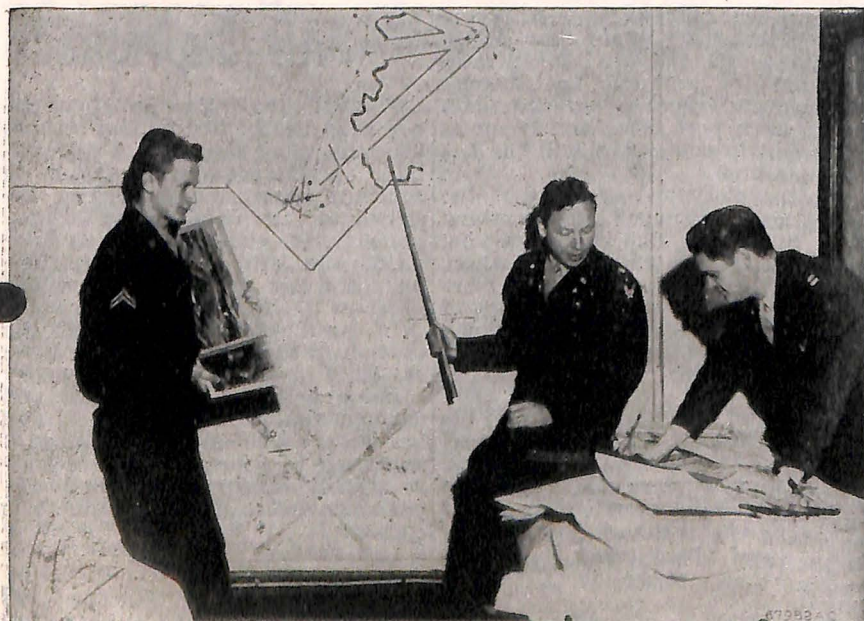


Photo shows USAF navigation experts plotting movement of cargo flights through Berlin corridors. Movements reached a rate of one every 48 seconds last Sept. 18.

PLANES

Planes is published by the Aircraft Industries Association of America, Inc., the national trade association of the manufacturers of military, transport, and personal aircraft, helicopters, flying missiles and their accessories, instruments and components.

The purpose of *Planes* is to:

Foster a better public understanding of Air Power and the requirements essential to preservation of American leadership in the air;
Illustrate and explain the special problems of the aircraft industry and its vital role in our national security.

AIA was founded in 1919 as the Aeronautical Chamber of Commerce, and the name changed to Aircraft Industries Association in 1945.

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ALL MATERIAL MAY BE REPRODUCED—MATS OF ALL CHARTS ARE AVAILABLE

The Aircraft Industry's Responsibilities

While the new national defense program has brought a welcome break in the 1946-7 decline, the aircraft manufacturers realize that the program imposes serious and impressive responsibilities.

These responsibilities are three-fold in nature:

First, the industry must produce new aircraft with *increased performance* surpassing that of the aircraft of any other nation, particularly those of a potential enemy. The performance now being demanded of military aircraft is revolutionary in nature. Some measure of the task ahead of the industry is afforded by reference to the speeds. In the last two years alone, the British have twice raised the world speed record, and three American military planes have each moved the record still higher.

But speed is only one of the performance characteristics of aircraft for which sharp improvement is being demanded. Aircraft must fly at all altitudes from zero to 40,000 feet and better. They must be equipped with instruments enabling them to operate under all types of weather and climate. Strategic bombers now must offer a range double that possessed by the best bombers in World War II. In this search for more and more performance, new planes utilize materials unknown in World War II, radical configurations, and are employing both jet and rocket propulsion simultaneously.

The second responsibility assumed by the industry is to provide these new aircraft at the *lowest possible cost* in order to hold the taxpayers' burdens to a minimum. In tackling this responsibility the industry faces perhaps even more serious obstacles than those that must be overcome in order to better performance. Indeed, every measure taken to improve performance inevitably raises cost. The new powerplants, the new materials, the new instruments, the new designs, all are far more costly. They require many thousands more hours of engineering than were expended to produce the aircraft of World War II. Obviously the inflationary forces affect aircraft wage and material costs just as they do any other industry. With inflationary forces, new and revolutionary developments, and greater performance making for higher costs, the industry's only resources to keep down the burden are careful planning, possible only with a long-term program; and economies possible because production volumes have been increased; and rigid adherence to sound management principles.

The final responsibility is to *deliver these aircraft on time*. No aggressor respects the air force or the military power of any nation equipped with obsolete weapons. Under current international conditions, the modernization of our air striking arms should go forward as rapidly as possible. Here, too, many handicaps stand in the way of the industry's achieving a criticism-proof record in deliveries. We are trying to increase production during a period of all-time record peacetime boom conditions. Every material needed is scarce. A few subcontractors are reluctant to engage in production of parts and components for aircraft when this involves some sacrifice of a more lucrative peacetime market. Engineers and trained technicians, too, are often attracted to the civilian trades. Only by calling upon every resource available to management and with the closest cooperation of the armed services, the government agencies, and our suppliers will we be able to meet our schedules under the conditions now before us.

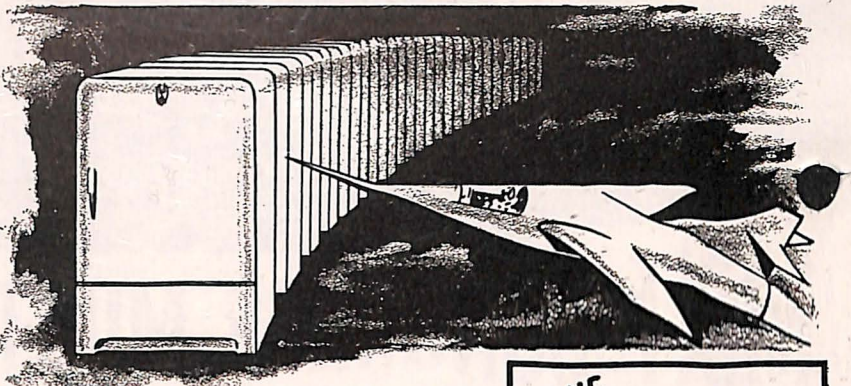
The industry welcomes the challenge inherent in these responsibilities. It is fully aware of the many factors beyond its control which may hamper the prompt fulfillment of its assignments. The industry will continue to do its best to overcome them.

Oliver P. Echols

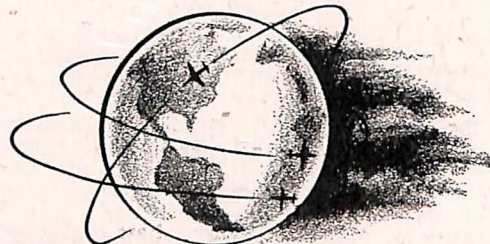
President, Aircraft Industries Association of America, Inc.

PLANE VIEWS

from A.I.A.



A SUPERSONIC PLANE NEEDS
THE REFRIGERATION OF
MORE THAN 20 FAMILY SIZE
ICE BOXES TO
COOL THE COCKPIT FROM HEAT



NEARLY EVERY AIRLINE
IN THE WORLD OPERATES WITH
U.S. BUILT PLANES

AIRCRAFT MANUFACTURING IS A
NATIONWIDE INDUSTRY—PLANE, ENGINE & COMPONENT PLANTS ARE IN 19 STATES

"PLANES"

Helimail Racking Up Perfect Score

This month marks the start of the second year of operations for Los Angeles Airways, Inc., the world's first regularly scheduled helicopter mail service.

Still the only such service certificated by the Civil Aeronautics Board, Los Angeles Airways in its first year of business made more than 40,000 landings and takeoffs. It operates between the outlying Los Angeles Airport and the roof of the main downtown post office and connects 43 suburban communities in the Los Angeles area.

In the statistical department the operation has shaped up something like this: Five helicopters making over 200 landings a day, flying 30,000 miles a month, have carried more than a million and a half pounds of mail in the last year. Interestingly enough, the firm has never missed a schedule because of mechanical delay.

Helicopter pickup and delivery, the firm has found, expedites mail deliveries from four and a half to 19 hours on week days and even more on week-ends. The service has proved so vitally useful that it has built up to the point where it now is speeding better than 10,000,000 letters a month.

Applications are pending for similar services at Chicago and New York. The Post Office Department

PLANE PROFITS BELOW NATIONAL AVERAGE

[RATIO NET INCOME TO SALES
1ST HALF 1948]

400 LARGEST MFG.
CORPORATIONS

NATIONAL CITY BANK OF N.Y.

8.1%

13 MAJOR AIRCRAFT
COMPANIES

34%

COMPILED BY A.I.A.



and the Armed Forces strongly endorsed the Chicago proposal and proceedings to establish it are nearing completion. New York proceedings should begin shortly. As transportation experts see it, these cities are just the first segments of a trans-continental airliner-helicopter system for the U. S.

VFW Again Asks Air Supremacy

The Veterans of Foreign Wars, representing nearly two million combat veterans, voted at its recent 49th annual encampment in St. Louis to continue sponsoring legislation designed to retrieve American air supremacy. To give force to this resolution the VFW ordered establishment of a new "national security section" in its headquarters staff.

In the interests of community education in the meanings of air power, VFW is stepping up its model aviation activities on the post and departmental (state) levels. It also has under consideration a program of assistance to elementary and secondary schools, encouraging them to introduce aviation materials into their curricula.

Last year VFW opened a national drive for air supremacy by asking Congress to provide funds for 6,000 new combat planes this year. Under current appropriations Congress has authorized 4,262 new craft.

The Boss' Desk Flies—Firms Use Hundreds of Large Office Planes

A growing number of the leaders in American industry are adding their names to the rolls of the Corporation Aircraft Owners Association, established last year by a group of industrial companies operating airplanes in their business.

While a few industrial concerns operated company-owned aircraft prior to World War II, hundreds are now finding new uses for aircraft ranging in size from two-place light planes to four-engine flying sales rooms. Surveys have shown that more than 1,000 multi-engined aircraft are now used by private industry, approximating the total operated by all domestic airlines. Light single engine planes and helicopters also are in use in private industry.

Users Organized

The Corporation Aircraft Owners Association is incorporated on a non-profit basis in New York.

Founding members were The American Rolling Mill Company, Middletown, Ohio; Bristol-Myers Company, Hillside, New Jersey; Champion Paper & Fibre Company, Hamilton, Ohio; B. F. Goodrich Company, Akron, Ohio; Howes Brothers Company, Boston, Massachusetts; Republic Steel Corporation, Cleveland, Ohio; and Sinclair Refining Company, New York City.

The main objectives of the Association as explained by William B.

Heads CAO



William B. Belden
Republic Steel Corp.

Belden of Republic Steel Corporation, who serves as CAO's Chairman of the Board, are:

Name Their Aims

1. To guard against discriminatory legislation, regulations and decisions, emanating from Federal, State or Municipal agencies, so that our interests will not be adversely affected;
2. To promote a medium of exchange of information through a monthly bulletin, surveys, meetings and other activities that will bring our members into closer contact and friendly relations to the benefit of all concerned;
3. To enable corporation aircraft owners to be represented as a united front in all matters where organized action is desirable and necessary to protect or foster our interests, and through this means, also to establish liaison with other organizations whose activities are likewise concerned with the aviation industry;
4. To bring about improvements in aircraft, equipment and services through joint, cooperative action among owners, which will result in constructive suggestions to manufacturers, distributors and service agencies;
5. To further the cause of safety and economy in the operation of our aircraft by the accumulation and distribution of data vital to our interests.

More Firms Joining

Since the formation of this Association, unique in the annals of transportation, additional members who have demonstrated their interest in securing full utilization of industrial aircraft include: National Dairy Products Company, New York City; United Cigar-Whelan Stores Corporation, New York City; Reynolds Metals Company, Richmond, Virginia; Corning Glass Works, Corning, New York; General Electric Company, New York City; Good-year Tire and Rubber Company, Akron, Ohio; Burlington Mills Corporation, Greensboro, North Carolina; and Hanes Hosiery Mills Company, Winston-Salem, North Carolina.

Significantly, Chairman Belden and other officials of the Association have heretofore had little or no contact with aviation in any form.

Budgeted plane buying can save taxpayers 40%*

COST PER POUND FOR NEW U.S.A.F. PLANES . . .



ORDERED ONE YEAR AT A TIME



*Secretary of the Air Force,
W. S. Symington

BY PLANNING 5 YEARS AHEAD

EACH SYMBOL EQUALS \$10

"Planes"

Uptrend is Noted In Utility Planes

An accentuated trend toward executive type personal planes used in business and farming highlights the directory of new American civil aircraft just released by the Aircraft Industries Association.

The new directory reports 24 U. S. aircraft producers now offering 55 models on the civil market. A similar directory issued about the same time last year showed 25 producers with 50 models.

The publication lists 17 different executive or family type aircraft being produced by 12 firms. In the preceding directory a year ago only 10 models offering accommodations for four and five passengers were listed.

Executive Types in Demand

The sharp increase in number of models being offered confirms the trend toward this type of plane already evidenced in sales figures reported by the Personal Aircraft Council of the AIA. The latest month for which figures are available, August, shows sales of executive type aircraft actually exceeding sales of two-place, or trainer, types by a substantial margin. August sales of four-place planes accounted for 64% of total sales as compared to 47% for the first eight months combined, and only 37% for the first eight months in 1947.

The new directory lists only ten passenger or cargo type transport plane models compared to 18 listed in the previous directory. The reduction obviously reflects the continued crisis suffered by the domestic airlines which has forced them to temporarily withdraw from the market for new equipment.

Types of Planes

The breakdown by types is as follows:

Airline Passenger or Cargo type: Five companies with 10 models, three of them cargo planes. Capacity of the passenger planes ranges from 36 to 69 people. Useful load of the cargo types runs from 21,500 to 68,500 lbs. One new cargo plane, with 47,500 lb. useful load is under way, its debut scheduled for next summer.

Executive or Family type: Twelve companies with 15 models. These include planes with capacity of three to twelve persons.

Two-place Trainer type: Ten companies manufacturing 24 models.

These are planes with from 65 to 290 h.p., most of which are in the 65-90 h.p. class.

Helicopters: Two companies producing four models. Three of these are two-place and one will carry four people. High speed for the small models is 94 mph. while the four place 'copter will do 103 mph.

70 GROUPS

(Continued from page one)

nance of world stability. Thus, we have come to take for granted the existence of sizable ocean fleets. The ships alone in our present fleet in-being, for example, represent an investment of approximately \$20,000,000,000. We must continue to maintain a well equipped fleet that can guarantee our supremacy on the seas.

Only Economical Way

Recent years, however, have shown that air power must complement sea power and a strong army to provide a complete military instrument of national policy. Our preeminence in air power requires a constant leadership in the rapidly changing technology of aviation. The United States not only must build a strong force in-being, but must ensure constant modernity in that force. We must accomplish in five years, regardless of the world situation, a feat that in the days of sea supremacy took many years.

Because remodeling of a great air force is such a vast job, with expenditure of billions of dollars, it should be conducted upon an efficient, businesslike basis. Here is another strong argument in favor of giving our air chiefs clear-cut authority to manage their research and procurement on a long-term basis, the swiftest, soundest, and most economical basis for developing our air power.

When Congress acts to embody all these considerations into a broad bill of authority, our Air Force should develop into a strong instrument of peace. Its growing potency will be a constant reassurance to the American taxpayers and to the peoples of shattered or oppressed nations whose freedom we are championing.

PLANES QUIZ

Seventy per cent score on this quiz is excellent. Sixty per cent is good. Answers on page four.

1. Which is the largest air force unit, a squadron, wing or group?

2. (True. False.) Only officials of cabinet rank, ambassadors or senators, can have military aircraft assigned to their exclusive use.



3. (True. False.) Congress has authorized a 70-Group Air Force.
4. How many war strength groups did the Army Air Force have in World War II? (a) 110; (b) 156; (c) 243.
5. There are approximately (a) 3,000; (b) 6,000; (c) 4,100 civil airports in the United States.
6. Production of the first two XS-1 rocket planes, the first design to break the speed of sound, cost (a) \$1,300,000;

(b) \$3,000,000; (c) \$4,300,000.

7. (True. False.) More than 600 major terminal airports now operated in the United States have been built since 1939.

8. How many gallons of gasoline will the Air Force consume this year? (a) 600,000 gallons; (b) 1,000,000,000 gallons; (c) approximately 500,000,000 gallons.



9. Nearly (a) 60,000; (b) 2,800; (c) 35,000 blueprints go into the building of a modern big bomber.
10. Where is the headquarters of the 29-nation (ICAO) International Civil Aviation Organization? (a) Cairo; (b) Montreal; (c) Geneva.

NEW AIR PROGRAM WILL TAKE TIME

2 YRS. FOR FIGHTERS



3 YRS. FOR BOMBERS



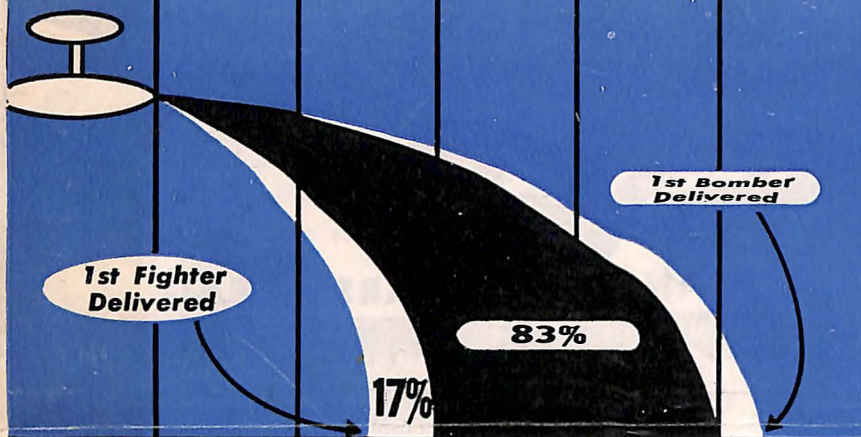
JULY '48

JAN. '49

JULY '49

JAN. '50

JULY '50



"Planes"

According to Air Secretary Symington, the first 140 of 804 jet fighters ordered this year should be delivered by June, 1949, with the rest by July, 1950. First of the big bombers in this year's program is expected in September, 1950.

Sonic Moppets

Memo to kindergarten, elementary and junior high school teachers:

You can expect U. S. school children to ask more questions about aircraft construction than any other phase of aviation. And next to the structure of a plane, pupils are likely to be most interested in what makes them fly (aerodynamics), and how to go about making a career in aviation.

From the early school years to junior high, pupils' interest also switches from recognition of plane types to questions about technological advances, such as atomic and rocket propulsion, supersonic and pilotless flight.

These findings are the result of a survey completed recently by CAA and Stanford University educational researchers. The study was conducted to determine what phases of aviation are of most interest to various grade levels. It covered 4,250 pupils from four years old through junior high school in the city school systems of the nation.

"BERLIN"

(Continued from page one)

The Berlin Air Lift has demonstrated emphatically that bigger planes pay off. In July, General Clay set the requirements of the Western Zone of Berlin at 4,500 tons daily, equal to 135,000 tons monthly, and this goal has been reached.

If we attempted to handle the assignment entirely with two-engined C-47 transports, as was the case in the early days of the Air Lift, it would call for 39,706 flights a month by 899 aircraft. Considering the limitations of air space alone, this would be impossible.

Using four-engined C-54 Skymasters, which have now replaced the C-47's in Operation Vittles, the task can be accomplished by 178 aircraft flying 13,800 trips a month.

Recently, we put one Douglas C-74 Globemaster in service on the Berlin shuttle. This plane carried bulldoz-

New Device Spies On Plane Engines

An "engine analyzer," a new device that detects power plant troubles in flight, is expected to cut delays and minimize routine maintenance of airline and other large planes. This instrument will enable flight engineers to give ground crews at any stop a complete list of things to be checked, making it unnecessary to dissect each engine looking for trouble.

ers, road graders and steam rollers—cargo too bulky for C-54's. From its performance we estimate that only 68 C-74's would be needed to carry the total monthly load. The saving in gasoline, crews, maintenance personnel would be great. For example, those 68 hypothetical C-74's would need 180 crews, as against 465 for the C-54's and 1,765 for the C-47's; and 2,700 maintenance men, as against 4,674 for C-54's and 10,588 for C-47's.

Split-second Timing

Concerning the men doing the job, it soon became apparent that of the whole Task Force team, the key men were First Pilots and Air Traffic Controllers. The pilots, many of them veterans of the A.T.C., require a high degree of skill in handling their heavily loaded aircraft in the congested air space of the corridors where the planes fly with only 500 feet vertical separation, and in the extremely close work on the Berlin air strips.

The Air Traffic Control Centers, operated by the Airways and Air Communications Service of MATS, are manned by controllers—many from CAA—who have the responsibility of making countless split-second decisions involving safety of air crews and determining the success of the operation. Too much credit cannot be given them.

It is axiomatic that a plane doesn't earn its keep when it is sitting on the ground. Civil air carriers understand this problem. In the Air Lift Task Force we have been in the position of having an inexhaustible backlog of cargo. Our problem has been to keep the available aircraft busy for the maximum number of hours. By

39 Teams Fly: 200 Grid Tons

At least 200 tons of the country's most rugged football beef, college and professional elevens are being flown to games during the 1948 season, a PLANES survey reveals.

That tonnage represents estimated heft of traveling squads for 39 teams which will be hauled by the scheduled airlines. This air-borne grid army can be expected to grow as other teams may charter non-scheduled planes.

Hawaii to East Lansing

Twenty-nine college teams, most of them in the Midwest and South, are using the speed and comfort of air transportation to keep players fresh and squeeze in extra pre-game practices. Probably the longest trip for a single game is that taken by the University of Hawaii for its game with Michigan State University.

Ten pro teams are scheduled for airline rides this season, seven in the All-American Conference and three in the National League.

List of Teams

Far West—Utah, Hawaii, Washington, State, Nevada, Southern California, Oregon, Oregon State, Stanford, Washington, UCLA, University of California, Denver, San Francisco; *Mid-West*—Michigan State, Northwestern, Wisconsin, Illinois, Purdue, Kansas State, Wichita, and Youngstown (O.); *South*—Georgetown, Maryland, William and Mary, Clemson, Mississippi State, Kentucky, Louisiana State, University of North Carolina.

Pro teams include the Brooklyn Dodgers, Chicago Rockets, Cleveland Browns, San Francisco 49ers, Baltimore Colts, Los Angeles Dons, and Buffalo Bills of the AA circuit, and the Los Angeles Rams, Green Bay Packers, and Philadelphia Eagles of the National League.

Most Aircraft Plants

California with 28, Pennsylvania with 13, and New York with 11, in that order lead the nation in number of airframe, engine and propeller plants, a directory of producers reveals. Pennsylvania also has more helicopter plants.

cutting seconds from the loading and unloading operations, simplifying the briefing of the air crews and speeding up maintenance we have recently reached our initial goal of 8 hours of flying daily.

Facts and Figures

Air Force weathermen at White Sands, N. M., have sent a meteorology balloon to a record for such devices—120,000 ft.

A World War II fast carrier task force could throw up a concentrated anti-aircraft fire of 6,000 shells a second. That's 200 tons of hot metal a minute!

In the summer of 1910 Army aviation included two officers, nine enlisted men, one airplane, one airship and three balloons.

November 19, ten years ago, construction was started on National Airport in the Nation's Capital.

The Air Force plans to recall 10,000 reserve and air guard officers for specialist jobs in the next few months.

At the start of this year there were 45 government-sponsored flying clubs in Canada.

Sixty-one per cent of all non-airline civilian flying last year was done in two-place planes of 65 h.p. or less.

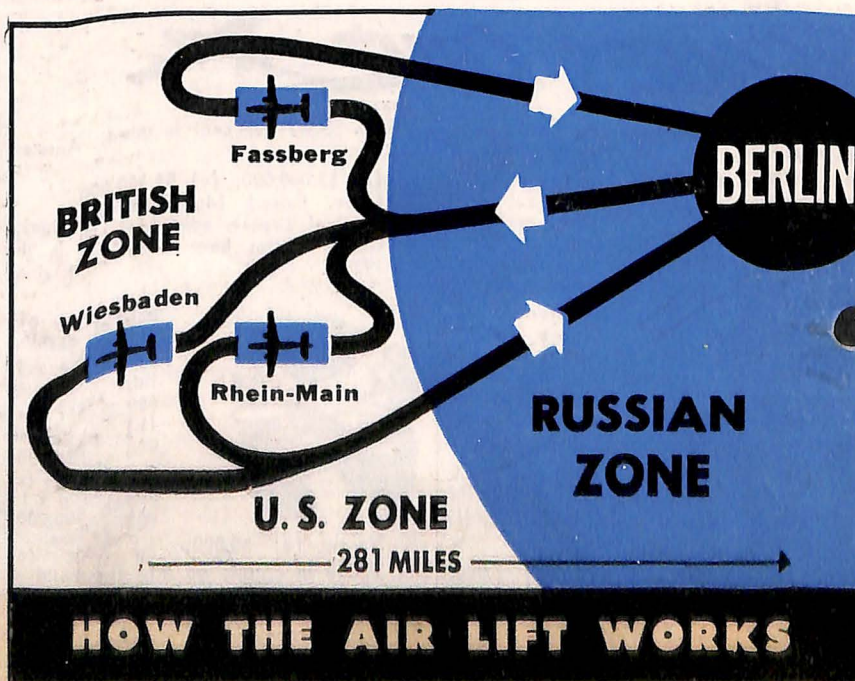
Already famous as the nation's rail center, Chicago has nine airways converging upon it.

The United States has approximately \$6 billion worth of civilian airports, closed 15 per cent of the time because of bad weather.

First airways beacons in the United States were made from automobile headlights mounted in sets of four on wooden poles.

Answers to Planes Quiz

1. Wing.
2. False. Only the President is authorized a plane for his exclusive use.
3. False. What Congress has done is appropriate enough funds for the existing Air Force to start replacing obsolete equipment with new types.
4. (c).
5. (b). 1947 showed a gain over the previous year of about a thousand airports.
6. (c).
7. True
8. (c).
9. (a) And it is a 5-year job bringing a new model from original design to production.
10. (b).



"Planes"