Government Units
In 43 States Use Modern Airplanes

A substantial fleet of publicly-owned non-military airplanes is now in service throughout the United States in specialized work where the use of planes not only has become routine but has been established as the most economical and practical methods available.

A total of 343 airplanes are owned and operated by states, cities and other political subdivisions, police departments, colleges, health commissions and similar public agencies, a study of Civil Aeronautics Administration records reveals.

All but five of the 43 states have fleets of publicly-owned civil air-planes, according to the current license records of CAA.

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Air Forces Shrink

USAF

Based on aircraft procurement levels established in the 1951 Budget, the Air Force will continue to operate with only 45 of its 48 groups equipped with modern planes.

NAVY AIR

By 1961, based on currently proposed procurement levels, the Navy and Marines will be able to operate only 3,000 airplanes compared with 6,225 in 1951 and 10,713 in 1949.

Source: Hearings before House Appropriations Sub-committee.

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Use of Air Force Jets Urged
For Tests In Airline Service

Written Especially for Planes

by C. R. Smith, President
American Airlines

America is today the undisputed leader in world air transport operations. However, developments of others, including our British and Canadian friends, in the field of modern jet propulsion, dictate prompt action on our part if we are to retain our leadership.

A long first step in the right direction can be taken by early prosecution of one of the several proposals to operate current military jet aircraft in a long-haul civil cargo operation. Such a pilot plant operation should start at the earliest date consistent with the absolute and recognized need for an acceptable safety standard with respect to design and operation of the aircraft and jet power plant. To start without such a consideration could do untold dam-
age to the long range jet transport program of the nation.

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British Government's Jet Transport Program Costly in Time and Money

The British have spent at least $300,000,000 in government money over the past eight years to design and build their postwar civil transport planes, including their jet and turbo-prop prototypes.

The program started with a definite government plan as far back as 1942 and frequently has been referred to by the Ministry of Supply as "that vast national venture."

Plans were changed frequently as the undertaking progressed and where late designs were developed many of them were taken over and added to the government program. Consistent support in time and money has been given by the British government since 1942 to aircraft designers and builders for 10 types of transports. Precise figures on the cost cannot be compiled due to drastic changes in valuation of the pound sterling.

American manufacturers have designed, financed and produced five transport types in the postwar era—the Lockheed Constellation, the Douglas DC-6, the Martin 2-0-2, the Consolidated Convair-Liner, and the Boeing Stratoliner. The Beech aircraft, on the other hand, has been operated as a feeder. Virtually all of the world's major airline companies operate transport types.

The Lockheed plane was already announced for production when World War II started. Announcement of the other designs or potential postwar aircraft came in 1944-45, but under U.S. military policy construction of civil transports as such was not commenced until after the war ended.

In 1942, as officially reported by the British Select Committee on Estimates, "the Government decided to take anticipatory action to safeguard the postwar development of British civil aviation." Originally five types of transports were conceived as necessary but changing concepts and developments resulted in a total of 11 types for passenger and cargo service, as well as for military service.

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MODERN AIRPLANES REQUIRE 4 TIMES AS MANY MAN-HOURS

WORLD WAR II TYPE

TODAY'S TYPE more costly and complex

The construction of today's military airplanes requires four times as many man-hours as comparable World War II types. A modern plane weighs twice as much and its greater complexity requires twice as many hours per pound of airframe weight.

SOURCE: TYPICAL AIRCRAFT COMPANY.

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3. Navigation and Traffic Control—What are the solutions for navigation and traffic control problems? The navigation problems created by the introduction of 500 mph jet aircraft into our present patterns? Efforts to work out these answers on paper are meaningless; full exploration and practical operation are the ways to be sure of what we are up against.

4. Upper Air—High altitude soundings give us a theoretical picture of the upper air conditions—velocity and direction of movement, temperature, turbulence, etc. But again only actual tests with adequately instrumented aircraft and intensive flight crew debriefing, will give us the real picture. Without such data we must predicate future aircraft designs as well as criteria for passenger and crew safety and comfort.

5. Ground Operations—Jet operating problems are not all in the air. We may need to modify aircraft design, ground facilities and operating procedures as a result.
The Increased Importance of Preparedness Planning

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

The aircraft industry has long regarded realistic, up to date industrial mobilization plans as among the most important requisites of our national defense. Conscious as aircraft manufacturers are of their own responsibilities for increased production in an emergency, they are particularly anxious that everything be undertaken in the way of advance planning which is shown by experience to be helpful in the mobilization task. A large proportion of the testimony submitted by aircraft manufacturers to the President's Air Policy Commission was devoted to this important subject of planning for the mobilization of our resources: manpower, materials and equipment.

In the present situation there are several new factors that more than ever increase the importance of preparedness planning. These factors suggest the need for fully staffing the planning agencies, beginning with the National Security Resources Board and, in turn, for industry to lend its full effort in providing those government agencies with the assistance they require.

As new factors not experienced in any previous emergency we may cite our obligations under the North Atlantic Treaty and the Mutual Defense Assistance Program. In World War I our allies produced much of the material we used and in World War II our nation gained a head start on the production task in advance of actual involvement owing largely to the orders placed here by the British and the French. Now the situation is reversed. Under MDAP we in this country are to constitute in effect the industrial arsenal before any fighting begins.

We thus may face a material production problem in the event of emergency much greater than that with which we were confronted in either World War I or World War II. Moreover we must assume the burden of expanding our production immediately without any hope of the substantial assistance received from our allies in World War I or World War II. This clearly heightens the importance of the planning Board and the industries charged with the production of war material.

The budget situation and the need for economy provide still other potent arguments for intensified preparedness planning. Great Britain is the only one of our allies possessing a substantial aircraft production industry. Yet, because of the financial strains imposed on Britain's economy, aircraft production in that country is being sharply reduced. Here in America the procurement for the Navy and the Air Force has been reduced to levels causing real concern to General Eisenhower as expressed in recent Congressional hearings.

The meaning of these reductions to the preparedness planner should be quite clear. The lower the strength of the air striking arms the greater is the task of re-equipping and re-building those arms in an emergency. The bottleneck in any such re-building task usually results from the lack of competition for materials, manpower, and machinery rather than the training of pilots or crews.

Thus the economy-forced reductions in our air striking arms and in the procurement of weapons such as aircraft focus special emphasis on the need for comprehensive mobilization planning to reduce the period required to expand production in an emergency.

But there are other factors that make the situation markedly different from that which prevailed in World War I and World War II. The advent of turboprop powered aircraft has made the modern
Preparedness Planning
(Continued from page 2)

combat plane one of the most complicated instruments known to man and
the production of this weapon is a vastly more complex procedure
than has been the case in the past. A great amount of special purpose
machinery, specialized training and more costly and better tooling than
that utilized in World War II is involved.

There are, of course, many other types of war material that im­pose
heavy drains on our scientific and industrial techniques and re­sources.
The atomic bomb program, the radar networks, the technical
requirements of anti-aircraft warfare, the newest tanks and missiles
will also demand special purpose machinery, skilled manpower, and
many of the identical critical materials. So, too, will many civilian
lines which must be continued even in war.

This is, of course, the fundamental problem for the National
Security Resources Board to resolve. It is the task of that agency
to determine how much of our raw material, of our manpower, and
our industrial machinery can be devoted to military production
and how much must be reserved for civilian needs. In view of the
factors that make the whole mobilization task so much more urgent
and so much more difficult than ever before, it is imperative that gov­ernment and industry join together and expedite the planning pro­cedures with every facility available to them.

Proposals to Foster Jet-Powered Air Transports

Following, in capsule form, is the current status of the various
proposals which have been under consideration for the development
of jet transport aircraft in the U.S.—a field in which Great
Britain is generally conceded to be far in the lead:

1. Complete financing by the Government of prototype and
design and development. Embodied in Brewster-Hinshaw
bills. Approved by Aircraft Industries Association and
Air Transport Association. Favorably by Defense Depart­ment, provided funds are appropriated separately from
regular military appropriation. Disapproved by Budget
Bureau as not in conformity with President's program.

2. A Government purchasing corporation which would buy
the aircraft and lease them to users. Embodied in Johnson-
Kennedy bills. Not widely favored.

3. Government financing of testing and certification costs
(exclusive of manufacturing costs). Unanimously favored
by Air Coordinating Committee. Now before Budget
Bureau to determine if it conforms with President's pro­gram.
Also favored by AIA and ATA.

4. Use of current jet bombers for airline type tests. Engine
and airframe builders anxious to participate in such tests.

5. Plans for jet transports so far announced: Consolidated
Vultee Aircraft Corp. and Allison Division of General
Motors now fitting up Convair-Liner turbo-prop version
for tests. Douglas, Boeing and Martin have announced
designs and are going ahead with the tests. Lockheed and others have developed
design studies of pure jet transports, and a formal an­nouncement has been made by Boeing.

U.S. AIR POWER DECLINES

<table>
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<th>YEAR</th>
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<th>ACTIVE COMBAT INVENTORY</th>
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<td>22,000</td>
<td>17,500</td>
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<tr>
<td>1948</td>
<td>21,000</td>
<td>14,500</td>
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BRITISH

(Continued from page one)
types financed very largely by the
government.

Planning was under the direc­tion of a government committee
headed by Lord Brabazon of Tara.

In February, 1943, after some 60 meetings, it recommended "im­mediate action on the design of five new types of aircraft." It
assigned priority to a London-New
York express landplane which became the Brabazon I.

In August, 1943, the committee brought out its first interim re­port urging that "no time be lost in the issue to specific designs," adding, that "if the exacting operational requirements of this service are to be met, fin­ancial considerations must neces­sarily be subsidiary."

Estimates Quadrupeled

History of this plane is typical of others in the program. The
Brabazon Committee proposed originally a 150,000-pound;
25-passenger landplane with complete sleeping berths. As studies
proceeded, upon recommendation of the authoritative British
Aeroplane Co., this was increased to a 250,000-pound plane
capable of carrying 70 pas­sengers worldwide across the At­lantic and 100 eastbound. Piston engines were used in the first one,
but with greater development of gas-turbines, plans were revised in
November, 1943, to use eight turbom­pros in the second. Changes in
fuselage and wings were then re­quired and the undercarriage had
no re-designed. In March, 1943,
decision was reached to build two prototypes.

Target date for the first flight was April, 1947, but the Brabazon
I did not actually fly until Sept.
1948. Target date for Brabazon II was the Autumn of 1949; it is
still under construction.

The authoritative British maga­zine "Flight," reporting on costs
of the project, said "Some 8% million for the Princeton assembly hall and runway, represent about four times the estimated cost of the two prototypes now on order, granted an adequate operational
life, a small fleet of Brabazons may yet earn millions in dollars." The
Brabazon is still labeled experimental, though intended for use on Atlantic and Empire air
routes.

Bought by Government

The deHavilland Comet, the world's first transport to fly has a similar history. It is a
36-passenger, four-engined plane developed concurrently with the Brabazon and first flew in
July, 1949. As of last November authoritative estimates estimated
that the Ministry of Supply had
spent around $1,000,000 on the airframe alone, and "agreed that the project to cost more from govern­ment funds as time goes on."

Eighteen of the Comets are on or­der by the Government-owned
airlines.

Other transport types developed largely with government funds in­clude: the Ambassador, Viscount,
Apollo, Tudor, Hermes, Bristol
175, Saunders-Roe 45 Princess, and
Cleve Air Horse, a transport heli­copter. These planes range from the
small 14-passenger feeders up to
50-passenger craft for Atlantic
Empire routes.

Britain's biggest bid to date in the small transport market is the
Dove, a feeder-type plane de­veloped privately by deHavilland. It has
been sold in several countries and a total of 300 are being built.

Facts and Figures

A rocket developed by an eastern
aircraft manufacturer is designed
to attain a maximum speed of
5,800 miles per hour. (The moon
could be reached in 4 1/2 hours at
that speed.)
Answers to Plane Quiz

1. (c) A USAF heavy bomber has carried two 42,000-pound bombs from Fort Worth to Muroc, Calif., dropped them, and returned to Fort Worth non-stop.

2. True. In one typical fighter the jet engine develops about 4,600 horsepower at 375 miles per hour, but at 600 mph turns out eight to 10 thousand hp.

3. (c) One-half. One of the best-known passenger planes has components made from thin aluminum rivets at 80 a pound to engines at $43,000 each.

4. (a) Pennsylvania authorities estimate the cost of crop dusting by ground methods at $25 per acre, by air at $1.25 per acre.

5. (b) Three Army planes flew around the world in 1924 with elapsed time of almost six months. Actual flying time was 11 days, 11 hours. It is now possible to go around the world by scheduled airline in four days, 3 hours, 42 minutes.

6. (a) Thirty-four modern groups. Attrition and obsolescence will continue existing planes faster than the rate of replacement.

7. True. John Robinson of Arcadia, Calif., soared to a record altitude of 33,800 feet in a single place sailplane early this year.

8. (c) 250 miles for a two-stage rocket fired at White sands, N.M., 47 miles.

9. (c) Moisture. Neither heat nor cold has much effect upon a propeller's resistance to fatigue. Moisture can reduce fatigue, strength but engineers have developed protection against corrosion.

10. (c) Air mail revenue produced by the airlines last year was 42% greater than in 1946, a gross increase of about $125,000,000.

First Time in History

SAN FRANCISCO

Los Angeles

Aircraft

BY AIR-43.1%

BY RAIL-32.7%

BY BUS-24.2%

SOURCE: California P.U.C. "PLANES"

Budget Slashes U.S. Navy Defense; Must Use Many Second Line Planes

The 1951 budget will result in a sharp decrease in the naval defense of the United States. In recent testimony before the House appropriations subcommittee, both the Secretary of the Navy and General P. Matthews and the Chief of Naval Operations, Admiral Forrest Sherman, pointed out that the provisions for naval aviation and anti-submarine warfare in the budget were not "adequate."

With only 817 aircraft scheduled for procurement during 1951, compared to an attrition rate of approximately 840 aircraft per year, Secretary Matthews said the rate of modernization of the Navy's air arm would be "below the standard required to maintain this force in first line condition."

The testimony brought out the extent of the severe reductions in combat effectiveness of Naval aviation from the 1950 levels, which in turn represented substantial reductions from 1949. Carrier groups are reduced over 35%, Marine air squadrons over 47%, patrol aircraft squadrons over 33%, anti-submarine squadrons over 12%.

Will Drop to 3,000

Rep. Robert L. F. Sikes, D., Fla.) brought out in that 1949 Congress had authorized the Regular Navy air arm to operate 8,035 aircraft, by 1950 only 3,839 were flying, and that the new budget would only permit the operation of 4,339 aircraft because of procurement difficulties, nearly 50 per cent. In discussing this reduction, Rep. Sikes inquired if the Department of the Navy had ever been able to operate 3,839 aircraft.

Women Qualified For Many Aviation Roles

Recent years have brought a marked gain in the number of women taking an active part in the technical aspects of everyday aviation.

The latest count, published by the Civil Aeronautics Administration in February, 1950, showed a total of 9,678 women pilots—compared to 5,122 in July, 1945.

Of the current list, 8,115 held private pilot certificates, 1,581 held commercial ratings, and two had airline transport pilot ratings. California reported the largest number of women pilots with 1,154. Texas was next with 473.

Other airmen ratings held by women included: 1,911 air traffic control operators; 1,231 ground instructors; 400 parachute instructors; 47 mechanics; 16 glider pilots; and four dispatchers.

Women had approximately 20 per cent of all the air traffic control operator and parachute technician certificates on record.

WHY AIRPLANE COSTS ARE HIGH

AIRCRAFT

$11,225

ALL OTHER

MANUFACTURE

$7,900

PER WORKER

PER WORKER

COMPARATIVE AMOUNTS INVESTED FOR EACH END PRODUCT: WAGES, INVESTMENT IN MACHINERY, EQUIPMENT, PLANT AND MATERIALS

Aircraft

UNIVERSITIES AND COLLEGES

Texas (32)—Universities and colleges, game and fish and game commissions, two; Wharton County sheriff, one; State Forestry Service, two; State Agricultural Commission, one; State Public Safety Dept., one.

Utah (3)—State Agricultural College, two; State Aeronautics Commission, one.

Virginia (13)—Game and Fish Commission, one; State Police, four; State Aeronautics Division, two; Virginia Polytechnic Institute, five; Commission of Fisheries, one.

Washington (9)—State Game Dept., one; Department of Fisheries, one; public schools, one; Washington State University, seven.

West Virginia (9)—State Conservation Commission, one; State Aeronautics Board, one; West Virginia University, seven.

Wisconsin (2)—State Aeronautics Commission, one; State Conservation Dept., one.

Wyoming (1)—State Adjutant General’s Dept., one.

WHAT CLASS OF WORKER PAYS MOST?

Source: National Assn. of Manufacturers and Typical Aircraft Plant.

"PLANES"