Vinson Warns Against Cut in Air Program

Aircraft Makers Employing Unique Methods to Overcome Obstacles

From the standpoint of complexity, today's high-performance planes and their pre-war predecessors are no more alike than a grandfather's clock and the new atomic chronometer. A survey of industry engineering advances would indicate.

While performance has increased sharply since V-J-Day, so has complexity, and manufacturers must employ every bit of ingenuity they have in order to solve near-baffling engineering problems.

Flight near and above the speed of sound has created difficult challenges for both the designer and builder. The designer has had to devise thinner yet stronger wings and structures, new fuselage shapes, and provide for many complicated control systems and devices. The airframe producer has had to develop machines for forming new metals, new tools and processes for machining these metals, and new type production tools and jigs for assembly.

Glass Tools

As a means of avoiding tie-ups occasioned by critical metal shortages, one manufacturer has developed a method of making production tools and parts from molded laminates. Several thicknesses of fiberglass cloth are treated with special resins, molded to shape, and baked until strong as steel. This development will save both time and expense, and protect the industry from shut-downs should our supply of strategic metals be cut off in a future war.

A plane that flies 11 miles a minute must have super-thin wings, both in structure and surfacing, yet strong enough to withstand stresses as high as 18 tons per running inch.

Explosive Rivets

In developing thin wings it has been necessary to use thick skins and then mill them down to a taper to save weight. For strength, double-skin construction has been employed. This has required development of explosive rivets to fasten the inner skin in position, for ordinary rivets could not be fastened from inside the enclosed structure.

Since aircraft require so many different un-conventional shapes, metal forming has long been a problem. But one company has come up with—See "Unique Methods" page 4—

U.S. Forest Service Men, Airplanes Team Up to Guard Our Resources

Use of planes for wildlife management and forest fire fighting has increased about 1,000 per cent in the last 30 years, from a few patrol flights by Army planes in 1910 to more than 5,000 hours of flying in 1948, the U.S. Forest Service reports.

Among the leading pioneers in the development of new uses for planes, the Forest Service, a branch of the Department of Agriculture, now is using a wide range of models, particularly for spotting and fighting fires. When they started fire patrols in 1919 they relied on World War I Jennies. Today either under contract or owned by the Forest Service, are several dozen aircraft, mostly late model transports, jungle-hoppers and helicopters but including four Ford tri-motors.

Extend Foresters' Reach

Chief value of planes in wildlife management is that they make it possible to extend activities to remote areas and largely overcome inaccessible winter weather. Planes are used for counting animals on ranges, such as elk, moose, antelope and sheep. They spot beaver dams and houses and by radio hookup with a ground officer, the aerial forester can make it tough on fish and game law violators.

Major role of planes in managing America's 600,000,000 acres of forest land has been transportation of supplies, such as medicine, food, camping equipment, and tools into isolated regions.

Probably the only airplane saw mill in the world is operated by the Forest Service out of Missoula, Montana. When they need a ranger station or lookout built in the back country, this portable mill is flown in, assembled, put to work, and then flown out again.

Besides showing farmers and—See "Forest Service" page 4—

Planes Industry Is Vital Factor in U.S. Defense

Written especially for Planes by Honorable Carl Vinson

Among the plants that should now take action to remove whatever doubt may remain as to what we intended doing last spring. Perhaps a five-year program is not enough. It may be that we should have a seven-year program in order to develop a plan for our security in the air providing us the maximum in both safety and economy. Certainly the five-year program is the minimum, and I am going to insist that we press ahead to it and take action to make that program as fixed and definite as can be done under our Constitution. In return for such we will look forward to and will demand substantial improvement in efficiency of production with—See "Aircraft Program" page 2—

Demonstrating how aviation has extended the forester's reach, a helicopter under contract by the U.S. Forest Service lands atop a burned-out California peak.
**Engineering and Continuity**

The airplane is one of the most carefully engineered products used by man. It goes almost without saying, therefore, that the aircraft industry places more reliance upon scientific research and engineering skill than any other manufacturing industry.

This is by no means an overnight development. The relatively simple airplane of World War I became a pretty complex piece of machinery by 1939. In the early '30s, one engineering expert could design and develop an airplane. By 1939-40 dozens were required. Now, for the modern, complex mechanical marvel, powered by revolutionary new turbo-jets, equipped with radio, radar, and electronic firing controls, able to operate up to 60,000 feet and under all conceivable types of climatic conditions, literally hundreds of researchers and engineers are required.

Obviously, nothing is more important to national security than that a nation possess at all times the complement of engineering talent required to keep the nation in the forefront of aeronautical progress.

Yet various members of this Association have found that shortages of engineers and tool makers are becoming increasingly serious. The major aircraft companies are seeking qualified engineering designers, draftsmen and laboratory specialists, as well as template, die, pattern and form block makers, jig tool designers, die finishers, master layout men, and mill machinists.

Quite a paradox results. The aircraft industry is undergoing the greatest scientific revolution it has ever experienced. The nation faces one of its more critical periods in international relations. Our aircraft companies have just initiated an expansion program. Yet under these conditions, the companies are already troubled by a shortage of engineers and skilled technicians.

The paradox well illustrates one of the basic problems of our national security—the need for continuity in aircraft development and procurement. Engineers and other technicians in the past have been reluctant to go into the aircraft industry because of the uncertain nature of employment. Moreover, it has been easy for the relatively stable peacetime industries to recruit and take away the trained technicians, skilled craftsmen and engineers of the aircraft industry because these civilian industries could promise more stable employment along with other benefits.

Memory of the swift demobilization of production “teams” in 1945-6 is a major barrier to recruiting and retaining the skilled craftsmen, scientists and engineers the industry needs.

Easily the most encouraging recommendation to come out of the surveys conducted last year by the President's Air Policy Commission and the Congressional Aviation Policy Board was their emphatic assertion of the need for continuity in aircraft development and procurement. Their forthright pleas were more responsible than any other factor for the start of the five-year program adopted by Congress when it passed the Supplemental National Defense Appropriations Act of 1948. The statements issued by the Board and the Commission and repeated on the floor of Congress, concerning the need for continuity and for a long-term program, gave considerable basis for feeling that the principal problem in aircraft designing and engineering—namely retention of the necessary corps of skill and knowledge—could be solved.

The current difficulties of the aircraft companies in trying to recruit skilled labor and the necessary aeronautical scientists and engineers high-lights, as perhaps nothing else does, the all-important need for a sustained program.

Oliver P. Echols
President, Aircraft Industries Association of America, Inc.
Whole Population of Williamsport Turns Out for "Air Power Day"

Written especially for Planes

By John E. Person, Jr.
Secretary, Sun-Gazette Company
Williamsport, Pa.

Seven inmates of the city's jails were allowed to leave their cells to watch the aerial demonstration by the Air Power Day at Williamsport, Pa.—first community in the nation to hold such an observance.

Purpose of the event was to help bring to every individual in the community a realization of the importance to our national security of Air Power—a modern air force, a stable aircraft industry, and sound air commerce. It was sponsored by the Aviation Committee of the Williamsport Community Trade Association—the local chamber of commerce.

Big Air Show

At the committee's request, the U. S. Air Force participated in the observance. It provided speakers, a ground exhibit, and aerial demonstrations by P-80 jet fighters and a six-engined B-36 bomber—world's largest. The 148th Fighter Squadron, U. S. Air Force, also took part, flying in over a flight of six P-47's.

Modern aviation's speed and reach was brought strikingly home to the public in the aerial demonstration. The huge B-36 flew up from Fort Washington and over the grounds and offices and factories around town, along with sirens and whistles at industrial plants and fire stations sounding. School children marched into class to school grounds and offices and factories returned to work. Jail inmates were allowed to go into the courtyard and up onto the roof. Hardly had this alerting been completed when the jets made their first pass over the city.

Whole City Watched

An estimated nine-tenths of the city's 50,000 population watched from streets, windows and house tops.

Thousands also saw the ground exhibit set up on a roped-off downtown street. It consisted of a B-29 fuselage along with special windows cut into the sides and a special ramp built alongside, to simulate modern guided missiles.

Civic leaders at a luncheon heard Mr. John E. Person, Jr., Deputy Chief of Staff, Materiel, USAF, discuss the 70 Group Air Force program as it is now a reality in the aircraft industry. A brochure distributed at the luncheon described Air Power and Williamsport, Pa.—first city in the nation.

The Air Power Day program was carried into the city's schools with motion pictures, assembly speeches, and special classroom projects. Such things as bulletin board displays, aircraft hobby displays, class visits to the airport, pupil talks, and scrapbook collection of newspaper clippings on Air Power were utilized.

The Proposed U. S. Budget and Military Aviation

THE NATIONAL DEFENSE BUDGET:
(submitted by the President January 10, 1949)

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<th>Category</th>
<th>1949 Current</th>
<th>1950 Proposed</th>
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<tr>
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<tr>
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AIRCRAFT PROCUREMENT AND THE BUDGET:
(millions of dollars)

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<th>Aircraft</th>
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<td>1,640</td>
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<tr>
<td>Naval Aviation</td>
<td>475</td>
<td>693</td>
<td>Down 8%</td>
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RECOMMENDED MINIMUM ANNUAL MILITARY AIRCRAFT PROCUREMENT AND THE BUDGET:

Air Coordinating Committee—1945

Airplanes

Minimum "after" world peace is well assured 30,000,000

Minimum to "cooperate in maintenance of world peace" 60,000,000

President's Air Policy Commission—1948

Recommended for 1949 (calender year) 34,000,000

Recommended for 1949 (calendar year) 56,000,000

Congressional Aviation Policy Board—1948

"Initial strength to maintain presently successful air offensive" 110,000,000

"Strengh not necessary to prevent the loss of a war" 63,000,000

Stanford University Survey (quoted by Associated Press 12/26/48)

Minimum annual production level 80,000,000

*Volume provided by Proposed Budget 34,000,000
[Estimated actual deliveries in 1948 calendar year 22,000,000 - 25,000,000 pounds]

New Metal in Sight

U. S. metallurgists are nearing the development of a metal to withstand temperatures of 2,000 degrees Fahrenheit, fond hope of Jet engine designers, according to Hiland G. Batcheller, Pres. Allegheny Ludlow Steel Corporation, Pittsburgh, Pa.

Planes now flying are operating at something near 1,600 degrees. Mr. Batcheller testified recently before a joint Congressional committee. In another year or two, he predicted, metallurgists will be up to 1800 or 1900 degrees, and eventually to 2,000.

"Big 3" Vets Ask More Air Power

As a special project, the Amvets are endeavoring to get restrictions lifted from giving of flight instruction under the GI Bill of Rights. In connection with their campaign, Amvets National Commander Harold Keats repeatedly stated "I submit that anything contributing substantially to our world aviation leadership is worth every cent it costs. I submit that anything which assists at this contribution to our supremacy is a cause for alarm and serious misgivings."

The Legion has called for a 70 Group Air Force, together with an adequate Naval air arm, and a succession of five-year aircraft procurement programs, to give America "the strongest aircraft in the world."

It recommends procurement of 6,000 planes annually and states that a long-range aircraft program is needed for "maintaining a rapidly expandable industry."
Facts and Figures

Marshall Joseph Stalin's son, Vasily, is a major general and jet pilot in the Soviet Air Force.

CAA tests of a new big transport consumed two miles of movie films, recording as many as 12,000 meter-readings a minute.

In its first 22 months of operation the new Los Angeles airport handled 2,000,000 passengers.

The Turkish government has recently allocated 15,000,000 dollars for the construction of new airports.

There are 102 CAA-licensed aircraft mechanic schools in the U.S.

First flying time between Miami and Buenos Aires was 11 days. Today it is less than 22 hours.

A new 70-ton luxury airliner has been dive-tested at a speed of 490 mph.

An electronic slide rule has been developed that will solve about 90 percent of all computations required by research engineers.

About 7,600 different tools were required to manufacture one of the latest turbo-jet aircraft engines.

All the planes ordered this year by the armed forces represent less than two weeks' output of the aircraft industry at peak war capacity.

Industry Schedules

Plane Owner Survey

Industrial and agricultural users of personal aircraft will have a chance to tell manufacturers their ideas on improving the utility of these planes, the Personal Aircraft Council of the Aircraft Industries Association announces.

Now being readied for distribution by the PAC are 4,000 questionnaires, to be directed equally to industrial and agricultural interests.

A similar survey conducted on a smaller scale last year evoked considerable comment, provided much valuable data useful to designers, and gave the producers a much-needed insight into the problems of their customers, the PAC reports. This year's special effort will be made to determine how many employers consider ability to fly an important qualification for prospective employees.

From replies to this query it is hoped to find evidence strengthening the position of veterans seeking to take flight instruction under the GI Bill of rights.

The new survey will be the first concentrated user survey aimed at the great agricultural and ranching areas, where aircraft now are considered as necessary a piece of equipment as tractors, reapers, etc.

Japanese Wings

To Stay Clipped

Any re-birth of civil aviation in Japan, even for such peaceful uses as forest patrol, crop dusting, or disaster relief, must await the writing of a peace treaty with Japan, according to the Far Eastern Commission of the Allied Powers.

Can't Own Planes

For the duration of the occupation the USAF or Army is responsible for any such services that normally would be performed by civil planes.

Policies developed under the Potsdam Declaration prohibit the re-establishment of war industries during the period of occupation. This extends to "the development, manufacture or assembly of civil aircraft; and the participation by the Japanese Government or Japanese nationals in the ownership or airborne operation of civil aircraft," says the Commission.

Answers to Planes Quiz

1. (b).
2. False. To qualify for a pilot certificate a foreigner must be a citizen of a government which grants reciprocal pilot privileges to U. S. citizens.
3. (b).
4. (c).
5. (a).
6. (a). In June, 1936, the German dirigible Hindenburg crossed from Ireland to Newfoundland in 22 hours, 50 minutes.
7. (b). In July, 1971, seven U. S. Army bombers sank the German vessel Ostfridland off the Virginia Capes.
8. (a).
9. (c). And the British were hauling an additional 1,100 tons per day.
10. True.