**AIR POWER BUILD-UP ONLY HALF COMPLETED**

**Gen. Hoyt S. Vandenberg Warns—**

Airline Capacity Jumps Ten-Fold
In Past Decade

Washington (D.C.)—America's greatly expanded fleet of high-capacity domestic scheduled airlines today can carry ten times as many passengers as it could ten years ago.

During the past decade, the airlines have registered a steady growth in numbers of transports, in seating capacity, and in revenues.

Five times as many airliners are operating from the nation's 607 air lines today as were operating in 1943. Moreover, the average airliner is capable of carrying twice as many passengers—twice as fast—and with constantly increasing dependability and safety.

Ten years ago, the domestic scheduled fleet consisted of 204 transports with a total seating capacity of 3,974. Today, after the most phenomenal decade of growth in air transportation in aviation's history, the fleet consists of 1,016 aircraft with a total seating capacity of 38,436.

Public acceptance of air travel has soared during these ten years, as airliners have registered steady increases in speed, dependability, safety and economy.

Last year, for the first time in history, commercial air transportation in the United States became a billion-dollar industry with passengers accounting for more than 80 per cent of the industry's revenues. Preliminary estimates indicate that this year more than 26 million passengers—equivalent to 1/6th the population of the United States—traveled by air.

Passenger Capacity Rises

During the ten years, the aircraft industry built more than 1,900 commercial transports, ranging in capacity from five-passenger executive planes to the latest airline types capable of carrying more than 90 passengers. A military transport built in the United States can carry 200 passengers.

Today, these large, fast postwar piston-engined planes are the world's most economical transports—and fly virtually all the world's express and passenger business. Eighty per cent of the aircraft operated by world airlines are produced in this country.

**USAF Chief Says Relaxation Could Be ‘Catastrophic’**

Written Especially for PLANES

By Gen. Hoyt S. Vandenberg
Chief of Staff, U. S. Air Force

A little over 29 months ago, the United States began an air power buildup, designed to recreate an Air Force capable of fulfilling global responsibilities in an era of international strain.

In these 29 months we have doubled our air strength in being. We have not, however, accomplished miracles—and we are not yet near our objective, which is air strength adequate to insure the security of the free world.

Half Obsolescent

Especially significant is the fact that more than half the aircraft in the United States Air Force today still are obsolescent. Although the aircraft industry now is largely tuned up and has reached a high level of production, we do not yet have strength adequate to fulfill our responsibilities.

In Korea, the Soviets have given more jet fighters to the Chinese forces than they have been able to assign to our own units. In Europe, the Russians have many more jets in combat units than we can muster for NATO forces.

During the past five years, in fact, (See VANDENBERG, page 3)

**Guided Missiles Assume Increasing Share of Aircraft Industry Effort**

Secret weapons in America's air arsenal—most of them only hinted at in official military statements—are under development in most of the nation's aircraft plants.

These weapons—guided missiles with incredible performance capabilities—are being designed, developed or produced in installations located in at least one-third the states in the union.

Problems Are Immense

More than 44 major industrial and scientific organizations are working on prime contracts in the field. They include at least 17 airframe plants, five engine plants, nine component plants, and 11 laboratories or plants of organizations not ordinarily engaged in aviation production.

Problems faced by these manufacturers and their thousands of suppliers are immense—but an indication of the strides being made in the field is given by the rise in funds spent by the Air Force for guided missile procurement. In 1950, the USAF earmarked $12 million to buy missiles; the 1953 fiscal budget calls for 25 times that sum.

Future Capabilities

Missiles being produced today are forerunners of the intercontinental pilotless weapons which eventually will be available. Although detailed information regarding them is secret, a leading missile manufacturer reports that the intercontinental missile is "just over the horizon." He says such a weapon "will be capable of accurately delivering to any point on the surface of the earth in a few hours a warhead carrying infinite destruction, and which because of its speed and altitude will be impossible to intercept."

Among features of these new (See MISSILES, page 4)
The Case for Fair Rail Rates

By DeWitt C. Ramsey (Admiral, U.S.N., Ret.)

President, Aircraft Industries Association

The outcome of one of the most significant rail rate cases in aircraft manufacturing history, presently before the Interstate Commerce Commission, directly affects the American taxpayer — as well as the broad cost-reduction program undertaken by aircraft manufacturers and the military services.

Under the prevailing rail rates, the nation’s railroads earn more than twice as much per car (and more than 15 times as much per ton) in hauling aircraft parts as they average for hauling all other commodities. No other commodity handled in volume on the railroads is assessed rates as high as aircraft parts. Establishment of rates consistent with those charged for transportation of other goods would result in savings of millions of dollars, not only to the aircraft industry but to the Defense Department and to the taxpayer.

It is, of course, true that the burden of defense expenditures in a prolonged period of international tension inevitably is heavy. Rearmament imposes a drain upon national resources; and a financial sacrifice, through taxation, on the part of every American.

It is obviously incumbent upon defense industries to exert every effort to assure that the cost to the taxpayer remains at a minimum consistent with accomplishment of assigned mobilization tasks.

Since Korea, the aircraft industry — highly conscious of its responsibilities — has quickened the tempo of its continuing economy activities. Much has been accomplished. Much remains still to be done to ease the tremendous impact of mobilization.

A case in point is the above-mentioned complaint before the ICC, filed in an effort to secure reasonable rail rates for shipments of aircraft parts. The case had its inception in 1946, when the late Robert Patterson, then Secretary of War, asked the Justice Department to bring action before the ICC to recover “excessive” rail charges for military shipments during World War II. In the case of aircraft parts, the Justice Department also asked the ICC to establish “reasonable” future rates.

The Aircraft Industries Association joined vigorously with the Government in this effort to secure equitable rates for the future. The need for fair rates became even more pressing when the Korean War caused a tremendous acceleration in the volume of aircraft parts shipments.

In 1950, when it became apparent that the Government’s case might become entangled in endless litigation over rates which prevailed years earlier in World War II, the aircraft industry filed a separate complaint with the ICC. The industry (with strong Air Force backing) asked specifically that the reasonableness of present and future rates be determined. These are the rates that contribute to the high cost of the current mobilization, and that are a factor in today’s high taxes.

In a recent surprising move, however, the ICC announced its purpose to withhold a decision in this case until it decides the Government’s case — including the prolonged questions of rates and reparations dating back to World War II.

Such an eventuality would, of course, mean an indefinite continuance of the present excessive rates on defense shipments — at a time when Congress, the military services and the aircraft industry are attempting to cut all military costs to a minimum.

The aircraft industry has strongly urged a prompt disposition of this case, to the end that the interests of the American people and the present defense establishment will not be impeded by further delay.

Every day a decision is withheld, these rates must be paid — and add their burden to the high cost of national rearmament.

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**PLANES**

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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.

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VANDENBERG SAYS REDS EQUAL U.S. OUTPUT

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the Soviet Union has produced five times as many planes as has the United States. Even today the Russians are ahead of our output, or perhaps bettering it.

Such a situation at a time when our entire strategy of defense is dependent upon general air superiority points up vividly the fact that America's air power expansion is far from complete.

These facts are important to every American, and weigh heavily in an assessment of our capabilities. The struggle to build an adequate defense force is today reaching perhaps its most critical phase. At this juncture, production and mobilization must be sustained, or we stand to lose the ground gained during the laborious and costly post-Korean buildup.

America Took 'Holiday'

The fact that the Soviets have been able to produce greater quantities of modern aircraft than has the United States stems directly from the post-Korean air power decline of which the American public is only aware by reading the newspapers. The United States, which can produce greater quantities of modern aircraft than has the United States, was able to do so because it was able to produce greater quantities of modern aircraft than has the United States, but it was not able to do so because it was unable to produce.

During those years, while America took a holiday, the Soviets continued military spending at a rate which was 55 percent that of their wartime peak. They raced forward in developing advanced military aircraft, expanding production facilities, and turning out the thousands of modern jets which now equip the Red Air Force.

In the face of this postwar threat, the United States reduced the rate of its defense expenditures to 15 per cent of what it had been in World War II. In 1948, the President's Air Policy Commission and the Strategic Air Command urged immediate steps to overcome the critical deficiency in U.S. air power. But funds to implement this policy, which was adhered to in the face of wide criticism, permitted the United States to capitalize on its temporary monopoly in atomic bombs and to prevent major Communist aggression at a time when we were weak in all other respects.

Today, with the atomic bomb in the possession of the Soviet Union, we are entering a period of increased tension and, in some parts of the world, of acute crisis.

We have, of course, increased our strength since Korea. When the North Koreans crossed the 38th Parallel, America had a 48-wing Air Force — a force which I once referred to as "choosing the Air Force" because its resources were so limited in comparison to its responsibilities. Since then, we have activated and equipped 48 additional wings. In other words, we have come halfway in our program to create a 143-wing Air Force, although many of the wings we now have are not yet fully modernized.

During these two and a half years, the aircraft industry has delivered some 15,000 military aircraft of all types to the armed services. This is a commendable record, attained under trying semi-mobilization conditions which frequently hampered production. But it falls far short of the more than 60,000 planes delivered during the comparable period of World War II when the nation devoted its maximum energies to the output of war goods.

Greater Aircraft Performance

It is true, of course, that today's military aircraft fly farther, higher and faster — and are capable of inflicting with conventional explosives several times as much destruction as those of World War II, while with atomic weapons their destructive power has been multiplied enormously. Yet to build these complex fighting machines takes years from the time a production contract is placed — at least two years for a fighter, and considerably longer for a bomber. Add to that the years of essential design and development which must precede manufacture, and the time required to train units once these planes are delivered, and the total is the lengthy "lead-time factor" which makes the creation of air power a long-range project.

No Substitute for Production

Although America's productive capacity is vast, it is impossible to cut back production today and in some future crisis ask that this production rate be restored overnight. Ingenuity may shorten lead-time a little, but nothing can circumvent it.

There is no real substitute for maintaining productive capacity by producing.

Without the greatest constancy of purpose on the part of the aircraft industry, the armed forces, other government agencies and, most important, the American people who support and direct them, we could find ourselves before the job is fully accomplished. Such a relaxation of effort could be catastrophic.

We must meet our air power goals if we are to have the strength to counter the threats to our national security and the peace of the world. The goals can be lowered no further. We dare not postpone the date of their attainment.

Air Quotes

"We must plan ahead. It requires years for modern weapons to progress through the design and development stages and into mass production. To the fullest possible extent, we must develop now the best of delivering atomic explosives in the future. The security of this nation rests on the combined wisdom of our military leaders, our scientists, our industrialists and our Government in selecting the right devices, producing enough of them, and constantly improving upon them. No matter how large our stockpile of atomic bombs may be, our A-bombs will do us no good unless we are able, despite opposition, to deliver them accurately against the heart of an aggressor."

— James H. Doolittle, Special Assistant to the Secretary of Air, November 11, 1952.

West Coast Women Leave Kitchens To Build Complex Bomber Assembly

A highly-complex aircraft assembly containing more than 600 individual parts is being produced by women who were West Coast housewives only a short time ago.

Today, because of the nationwide shortage of skilled technicians and aircraft workers, these women are employed by a major aircraft subcontractor in Southern California. One of these women is a former dancing teacher. Another once worked in a cabinet shop. Only five of the women in the entire production line had ever worked previously with sheet metal.

Yet they are producing and assembling the maze of 600 separate parts required for a wing for this modernized F-100 fighter. In assembling the parts, they must "shroud" the "hot parts" of the plane's exhaust system. And they are doing the job with efficiency hitherto undreamed of in unskilled personnel. Only the most difficult welding is handled exclusively by men.

The answer to the production problem faced by this manufacturer, confronted with shortages of trained and skilled personnel, has been a short intensive period of training (sometimes conducted in a local vocational school). Following this training period, workers are assigned production-line jobs under a system in which highly-simplified operations have been achieved through careful operational breakdown and floor layout by the company methods department.

PLANE FACTS

- In 13 years, a single airline has made more than 40,000 transatlantic flights — equal to flying the entire population of the world once around the world.
- A new streamlined bomb designed for modern combat planes enables some present-day fighters to fly 50 miles an hour faster than when World War II type bombs are used.
- A single aircraft auxiliary power system, now under development, can furnish enough electrical power for 40 average houses.
- Altogether, 1,412 firms (983 of them small businesses) in 28 states participate directly with a major airframe manufacturer as suppliers of materials in a jet bomber. Some 79 percent of the resultant purchases by these subcontractors, in turn, were made with small business firms.
- A 36,000-pound precision jig-borer — essential to build tools for a late jet aircraft — is accurate to 0.00005th of an inch, less than half the thickness of a human hair.
Airlines and Government Laying Plans For Advent of 'Copter Passenger Lines

The airlines, Government agencies, and state aviation officials in three separate actions during December focused attention on the prospect of early helicopter passenger service in the United States.

In late November, L. Welch Pogue, former Civil Aeronautics Board chairman, announced that helicopter passenger service would be started in 1953 in New York, Los Angeles and perhaps Chicago.

ATA Organizes Committee

Shortly afterwards, the Air Transport Association—composed of scheduled U. S. airlines—organized a committee to study possibilities of regular certificated helicopter routes. Said ATA President, Vice Admiral Emory S. Land: "Helicopter operations ... have been under observation by the airlines for some time. The advent of larger helicopters gives promise of providing a means whereby the airlines can continue improvement of their short-haul operations."

NASSA Acts

Meantime, the National Association of State Aviation Officials formed a Helicopter Committee with instructions to suggest State actions to "prepare intelligently and wisely for the widespread operation of helicopters in the future." NASSA also urged formation of a Joint Helicopter Committee of national, state and municipal groups to work out cooperation "made necessary by the coming of the helicopter." NASSA called for a review of state laws and regulations applicable to helicopters. "This is particularly required with respect to airport planning, the establishment of public and private heliports, visibility limitations, minimum altitudes of flight, airport traffic patterns, and other matters where the differences between helicopters and fixed wing airplanes justify regulatory treatment."

While these two national organizations paved the way for early 'copter passenger operations, the Civil Aeronautics Administration began a survey of estimated helicopter operations in the period from 1955 to 1960. The CAA survey should be completed in about six months.

MISSILES

(Continued from page 1)

weapons, now under development, are powerplants with amazing new power, aerodynamic and structural designs without engineering precedent; and guidance systems containing electronic devices more sensitive than any previously developed. One of the latter, for example, is capable of "thinking" at a rate 10,000 times the speed of the human brain.

In the foreseeable future, these missiles will probably be powered by engines developing about 500,000 pounds of thrust — or 125 times the power of today's greatest piston engine. Such power should enable flight at speeds approaching 20,000 miles per hour — more than 15 times the speed of the rotation of the earth.

VOLUME OUTPUT INCREASES EFFICIENCY

Production Efficiency up 88%!

VOLUME production and new manufacturing techniques developed by the aircraft industry enable production of a modern jet bomber in just 12 per cent of the manhours required to build the first production model. This represents a saving per plane substantially greater than the normal improvement expected as production rates increase. Greater production efficiency has decreased unit price of the bomber according to original estimates, despite higher costs of labor, materials and subcontracted parts.

MISSILES

(Continued from page 1)

workers in the aircraft industry continued to record an outstandingly high safety record during the first six months of 1952. The industry's low injury-frequency rate reflects wide-scale safety programs underway in aircraft plants, and the use of modern fabricating machinery equipped with safety devices.

Civil Air Force Has 8,200 Planes Ready for Action in U. S. Defense

Comparatively few Americans know that a 206-group civil air force backed by the nation's largest non-military radio network and 80,000 volunteers is ready for action in national defense at a moment's notice.

More than 8,200 light utility-type aircraft—largely the same types used daily by American businessmen for speedy, economical transportation—are available to this organization, known as the Civil Air Patrol. And 9,500 radio stations (7,000 of them mobile) stand ready for lightning transmissions in event of an attack on the United States or other emergency.

Emergency Roles

If this country were bombed tomorrow, these thousands of Civil Air Patrol aircraft would be operating within hours in all parts of the nation — performing emergency transportation tasks, photographic missions, ambulance service, traffic control, reconnaissance, police patrol, air search and rescue, decontamination and other missions.

Even under peacetime conditions, CAP — an official auxiliary of the Air Force — performs numerous emergency tasks and conducts an intensive air training program. During the first 10 months of 1952, for example, pilots in CAP's 1,664 squadrons flew 15,590 hours on official missions, 5,600 hours on air search and rescue flights, and 5,250 hours on other missions, such as participating in exercises for the ground observers corps. Over 18,000 CAP members participated directly in these operations.

Answers to Planes Quiz

1. (c) 8,000 miles.
2. (a) 300 civil airports.
3. (b) 1,250 M.P.H. At November 24, this figure broke down as follows: 503 destroyed, 88 probably destroyed, 675 damaged.
4. (c) 9 hours.
5. (c) 699.9 M.P.H. On one of the speed runs, the jet exceeded 700 M.P.H.
6. (a) October 1, 1942.
7. (b) 1,000 miles.
8. (a) 125 feet. It is jet powered.
9. (c) four times. Deliveries in November, 1950, were 2,000,000 pounds compared with 8,000,000 pounds in November, 1952.
10. (c) approximately one-third.