DON'T RISK AIR SECURITY - MAHON

By Hon. George H. Mahon
Democrat, Texas, Chairman

Subcommittee on Military Appropriations
U.S. House of Representatives

We are studying the new defense budget critically. We intend to do everything possible to eliminate waste and unnecessary spending and to hold down the cost of defense. At the same time, the Congress has an overriding responsibility to see to it that our national security is not jeopardized.

While we must scrutinize each aspect of national defense in its proper perspective, I believe that our air power program, and I include the Navy air arm, is of particular significance in the new budget. Air power is still our first line of defense. This is not to say that I discount the importance of the Army and that part of the Navy which is not associated with the Navy air arm.

However great our reliance upon the atomic bomb, and whatever steps we have actually made toward the so-called "wonder weapons," air power is still the only vehicle which today can carry these weapons of destruction to the heart of the enemy. And air defense is far and away our best hope of softening hostile blows at the heartlands of our country and its allies. As far as we can see into the future, it will continue to be the one essential and deciding force in home defense and in carrying the war to an enemy.

Russia Ought Us for 5 Years

We have the bitter picture in Korea right now of Red air forces numerically stronger than our own, and it is clear we cannot rush masses of fighting planes there from bases at home and abroad lest we weaken our strength as to invite new threats of aggression in other vital spots of our defense position. Meanwhile, we know that behind the Iron Curtain, Russia up to very recently has been turning out modern, high-performance aircraft much faster than the United States. We hope we are now gradually closing the gap. Nevertheless, the planes built by Russia and the United States during the past five years determine the relative air strength of the two nations today.

Must Anticipate Events

We know, too, that the fighters and bombers we buy this year cannot be built and sent into the air before 1954 at the earliest. Therefore, the reaction of Congress to the budget must be based on anticipating events some two to three years in the future. An important installment on our insurance against possible overwhelming air attack a few years hence must be bought now!

The Price of Security

Clearly there can be no meat cleaver economy approach to the question of air power, and I am sure the Congress has no disposition to use such tactics. Unfortunately, the cost of modern airplanes is high. Ways to reduce the price must be sought with greater energy. But if we are going to have air power, we have got to pay a high price for it. This is a part of the price of our quest for security.

One reason our present costs are high is because we are trying to replace some 8,000 obsolete planes and at the same time provide additional new planes for the expanded program. The very low levels of aircraft production in the past required every man to maximum output. (See "MAHON," Page 3)

Extended Plane Parts Delivery Retards Output

During 1951 delivery time for virtually all aircraft parts and raw materials was extended—in some cases more than doubled. The longer time required for the fabrication of these essential items has extended production lead time and has postponed delivery of completed planes.

This delay in deliveries of critical parts is not the fault of the suppliers, but is due to the tremendous increase in requirements of our expanded military aircraft production program, acute shortage of machine tools, scarcity of materials, and lack of adequate priorities to assure a steady flow of these "ingredients of production."

For example, orders for air speed indicators placed in January 1951 could then be filled in five months. Manufacturers must now wait twelve months for the same items. Seven months has also been added to delivery time for electrically-driven fuel pumps since January a year ago.

Other parts selected at random show, for the same period, corresponding increases in delivery time required.

Delivery time for gear boxes jumped from five to ten months; pilot controls, from three to eight months; and flame arrestors from four to nine months. (See "PARTS," Page 3)
**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.

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

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**Aircraft Production to Increase—Despite “Stretch-Out”**

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

Target dates for the air power build-up have been delayed some 18 months. The minimum strength officially pronounced necessary to national security will not be achieved in late 1954, as planned, but in 1956.

These revised goals, which involved a 143-wing Air Force and a proportionate increase in naval air, became public knowledge when Secretary of Defense Lovett and Secretary of the Air Force Finletter so advised a committee of Congress recently. This followed notification to the aircraft industry that its production rates would be slowed to fit the new schedules provided for in the 1953 Federal Budget.

There is no question that this change eases the ultimate burden of the aircraft industry to a considerable extent. To attain the earlier schedules would have required a much heavier draft on the lifeblood of consumer industries—materials, manpower and machine tools. We would have required priorities far higher than any we have had so far. The national policy, founded on the theory that a healthy civilian economy is needed to support rearmament and the maintenance of a large military establishment over an unpredictable number of years, would have had to give way to a serious extent.

The American aircraft industry proved that it could expand rapidly and outproduce the world in warplanes. In World War II the industry’s production rose from 6,000 military aircraft in 1940 to 96,000 in 1944, and in effecting this achievement it became the largest industry the world has ever known. But no such record can be imposed on a business-as-usual economy. And, tense as the world situation is today, our leaders see no need yet for the privations that would be inflicted by the staggering debt which all-out wartime production efforts would have required.

But it is important that, in the readjustment of the nation’s air power sights, we do not lose sight of the magnitude of the task as it stands. The industry has not slowed down; it is still building up. Our production rates are increasing and must continue to increase for at least another two years. Our materials and machine-tool and manpower needs have not slackened. Indeed, they will continue to grow. The bottlenecks which have plagued us in the last year show promise of giving way under increasing production of basic materials and machine tools, but they will recur without the constant vigilance of the industry, the military and the civilian Government agencies.

There is no allocation in the serious shortage of engineers, of which the aircraft industry has warned again and again. The output of graduates of engineering courses in the colleges and universities is still diminishing, year by year. While the need will not be so great, there will still be an insistent demand for skilled manpower. Before the end of 1952, the total manpower of the industry will increase to about 750,000, as compared to current employment of some 600,000.

So important a readjustment in scheduling, however realistic it may be, cannot help but have some adverse effects. There is certain to be an increase in the unit cost of aircraft, produced in lower monthly quantities. And there will be losses among many subcontractors and suppliers as prime contractors recall some of the production work farmed out in the broad-based preparations for heavier schedules.

The industry recognizes that the Government is taking a calculated risk in stretching out the air power build-up. It recognizes the economic basis for such a move. It will do everything possible to maintain these new schedules and at the same time to prepare itself for greater production, if the march of events should demand it.

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**GLOBAL**

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The planes will be part of a pool of equipment and supplies available to the Food and Agriculture Organization of the United Nations, which can be moved readily as needed among countries which are infested.

The aircraft pool idea was adopted at the FAO International Conference on Desert Locust Control, convened in Rome last October, and attended by delegates of 13 governments. The Conference agreed that the locust was an international problem and sought means to combat it on that basis. Locust-spraying operations under Point IV, in 1951, were most extensive in Iran which reportedly suffered its worst plague in 80 years. The U. S. acted promptly on an urgent appeal for assistance from the Iranian government, and spraying was begun about two weeks after the appeal was made.

**Foot Areas Covered**

Over 190,000 square miles of cultivated lands were threatened by swarms of locusts which evaded local ground control efforts to contain them and reached the valuable barley, wheat, date and other crops. Trees were killed.

Eight spray-type small planes, tons of insecticide, nine pilots and a mechanic were delivered to Iran by a private U. S. airlines charter service which flew the small planes, disassembled, to Tehran, then reassembled them. In all, 18 localities were sprayed in 632 trips by the pilots for a total of 691 flying hours. More than 54,000 acres were sprayed, and locusts were killed on more than 50,000 acres.

The Iranian government provided fuel for the planes and housed and fed the pilots. For the spraying operations and the training of Iranian pilots in locust control, the airlines charter service received U. S. subsidized contracts in the amount of $213,000.

**Program Means Good Will**

Reporting on the success of the operations in Iran, which he directed, W. B. Mabee, U. S. entomologist, states that aerial spraying with Aldrin has proved a valuable supplement to the long-range locust control program in that country.

He said also that the mission was well received, popular, and has done much to promote good will between our nations. It is believed that the aerial spraying projects in three countries last year will generate new markets for U. S. products.

One large aircraft company has a training course in electronics for radio and radar technicians. It runs eight hours a day, five days a week for a total of 600 hours and pays the students $1.75 per hour to start. Four hundred trainees are needed.
“Air Quotes”

“Life has been spent in solving production difficulties and I am not going to quit now. But I wish people would get the idea that, when Congress appropriates money for clouds of jet planes to be directed by electronic elves, you don’t order them from a Sears-Roebuck catalogue and expect delivery by return parcel post.”

“The Jet Age might be called the high temperature age. This fact very profoundly distinguishes the materials and metallurgical problems that exist today as compared with those that existed during World War II . . . .”

“Production of jet engines and air defense has been better achieved. . . . So, along with the jet engine revolution we have also the electronics revolution. Electronics must find the target, direct the gun and pull the trigger . . . .”

“The fact is that the nation is paying all the bills. We are buying the policies. . . . We are buying the power. . . .”

“Military strategists are generally agreed that the atom bomb is our air power and our production capacity have been the greatest deterrent to a third world war. But Russia’s emergence with numerical superiority and her known possession of the atomic ‘secrets’ are causes enough for the gravest concern as to the adequacy of our defense preparations. Without supremacy in the air, all our other defense measures would be of minimum value.”

“Aerial Applicators Association Formed

Improved agriculture through adaptation of the airplane to its problems is the purpose of the Aerial Applicators Association, recently formed in Oklahoma City as today’s cost picture put a high price tag on air power. With the safety of our nation—its very existence—at stake, we can’t afford to buy security in a bargain basement.”
Amazing Metal May Be Key to Faster Flight

Tomorrow's supersonic aircraft-guided missiles and engines may fly faster and higher because of an amazing metal five times as strong as aluminum, 40% lighter than steel, and capable of withstand­ ing extremely high temperatures.

Research engineers in aircraft plants throughout the nation are investigating the properties of this new metal—titanium—in the constant search for aircraft materials that can maintain strength under the high temperatures of super­ sonic speeds.

It is still too early to determine titanium's precise applications—but if it can be produced in aircraft quality and at reasonable cost, engineers believe it may well solve some of the biggest problems in current high-speed aircraft and missile design.

Great Savings in Weight

They believe approximately 8% to 10% may be saved in weight by using titanium alloys in highly stressed parts such as lower wing skins.

Up to 43% in weight could be saved, it is estimated, by substituting pure titanium for corrosion-resistant steel in firewalls, shrouds, and other non-structural parts. Similarly, titanium alloys could be substituted for low-strength steel fittings, high-strength corrosion-resistant steel sheet or armor plate.

Ultimate Potentials

One-fourth of the present weight could be saved, engineers believe, by using titanium alloys in landing gears, machined forgings, fittings and tubing—as a substitute for highly heat-treated steel parts.

And the metal has virtually unlimited potentials in the engine field—in turbine blades, for example, and afterburners.

Today, however, world output of the metal is only about 600 tons per year, insufficient for appreciable use by the aircraft industry. Though the world's fourth most abundant metal, it is still scarce because of the technique of converting it from ore to usable metal which still has not been completely mastered.

Better Techniques Sought

Big problems still face the aircraft industry before the metal can come into widespread use. Fabrication and forming techniques have to be developed. Additional service experience with present experimental applications is needed. The present low rate of titanium production must be increased. And the high cost of the material must be reduced. (Today titanium sponge costs about $5 per pound and titanium sheet about $25 per pound.)

If these problems are overcome—and the industry is working constantly to solve them, while at the same time titanium costs tend to lower as production in­ creases—titanium may well be­ come a key metal of the super­ sonic age.

High Performance Planes Require Complex New Systems

The accompanying photographs graphically show the complexity of one of the major systems in today's high speed, high performance air­ craft when compared to its World War II counterpart.

The thousands of additional feet of wire, hundreds of additional instruments, relays, resistors, actuators, generators and other comparable equipment provide greater performance, require more space, and increase the cost of today's modern aircraft.

Not only have the requirements of modern aircraft greatly increased the need for improved electrical systems—as illustrated here—but also for hydraulic systems, new bomb release systems, armament systems, electronic systems, and various other aircraft components and equipment.

1951 Aircraft Annual Tells Industry Story

Carrying the longest and most comprehensive report on the industry since it was first published 22 years ago, the 1951 Aircraft Year Book appears this month.

The edition is keyed with a foreword by Admiral D. C. Ram­ sey, president of the Aircraft Indus­ tries Association.

Chief of the industry problems, he points out and the Year Book documents, were over-optimism in scheduled plane production, ma­ terial shortages, and gun-and­ butter economy.

The Year Book totals 464 pages reporting in detail 1951 aircraft production activities, as well as those of the airlines, personal air­ craft, records and statistics, and biographical briefs. A chapter is devoted exclusively to technical progress.


Answers to Planes Quiz

1. [c] One major manufacturer reports that an engineering man hour, in­ cluding overhead, now costs $4.50.
2. [c] A jet fighter recently stayed aloft 12 hours and five minutes, re­ fueling four times in the air.
3. [c] In 1950 a total of 10,555 com­ mercial flights were made across the North Atlantic, not including those stopping at Bermuda and the Azores. This is almost 29 per day.
5. (b) With 20,000 pounds of thrust, a new single stage rocket will be fired this spring and is expected to better the altitude record of 135 miles.
6. (c) 25% of the plane (by weight) is sub-contracted.
7. (b) True. This plane has two turboprop engines and can carry the atom bomb.
8. (c) Equal to 340 home refrigerators. It has a capacity of 17 tons of refrigeration.
9. (c) It can carry 134 troops and is fully pressurized.
10. (c) The largest U. S. helicopter now in use carries 10 passengers, pilot and co-pilot.