GILPATRIC EXPLAINS 'STRETCH-OUT'

The Payoff 5 for 1

As of 29 February, USAF planes had shot down 223 Russian-built MiG-15 jets while losing only 43 of their own jets in air-to-air combat over Korea. USAF aircraft's superiority over Russian-built, swept-wing jets in aerial combat is 5 to 1.

Manufacturers and AMC Step up Tempo
Of Efforts to Cut Costs of Airplanes

Cost reduction achievements of the nation's aircraft manufacturers have saved the American taxpayer millions of dollars, according to an Aircraft Industries Association report to Lt. Gen. E. W. Rawlings, Commanding General, Air Materiel Command. The preliminary report was submitted at the request of General Rawlings, who is scrutinizing possible economy measures consistent with meeting the country's air mobilization goals. As head of the Air Materiel Command, which will spend billions of dollars for Air Force procurement this year, General Rawlings has instituted a broad-scale cost-cutting drive, both in industry and in the Air Materiel Command, in an effort to realize the maximum return for the air procurement dollar.

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CALLS TOOLING OF SECOND SOURCES
Production Insurance for Future

Written Especially for PLANES
by Hon. Roswell L. Gilpatric, Under Secretary of the Air Force

The Air Force's 1952 program has two major objectives. One is to provide the United States with adequate air power as early as possible. The other is to see to it that there are in being the plant facilities for producing modern aircraft in even greater numbers should all-out war make it necessary.

It is true that the present buildup of air strength—or, in other terms, of aircraft production—has been "stretched-out." The decision to do so, made necessary by budgetary limitations, will delay equipping a 126 combat wing Air Force with modern first line planes. But the new program has advantages, not generally understood, which were not inherent in the old program of rapid buildup and rapid letdown.

These advantages are two:

1. Extending high-level production rates over a longer time will insure that the Air Force and Naval air arm will continue to be supplied with the latest and most advanced combat aircraft, though the 126 combat wings of the Air Force and the Navy air arm may not be fully modernized until late 1955 or early 1956.

2. The aircraft industry will maintain production rates at a higher sustained level and should emerge from the build-up period with the greater stability both it and the nation need for long range security. During the near term, the industry will not, however, expand as rapidly or attain production rates as large as originally planned.

Under the "stretch-out" program, the Air Force peak delivery rate is reduced from 1,250 planes a month to 900, and the attainment of this peak will not occur until 1955. As presently planned, this level of production in terms of units will be continued for several years, gradually declining to some 500 or more planes per month for the Air Force alone. In terms of airframe weight as well as numbers of jet powered as contrasted with piston engine aircraft, the curve continues upward for even a greater period of time.

"Production Insurance"

These new goals are substantial, particularly when it is recalled that total military aircraft production when war broke out in Korea was only slightly more than 200 planes per month, most of which were of the lighter, less complicated types.

U.S. Jets Outscore MiG's; Twelve New Planes Even Better

U.S. aircraft have shot down five MiG-15's for every one Air Force jet destroyed in air-to-air combat in Korea. Latest figures (as of February 29) reveal that the Reds have lost 223 Russian-built MiG's, while only 43 USAF jets have been destroyed by Chinese Communist planes.

Superiority of the American jet in air-to-air combat has been attributed to their superior firepower, better gunsights and highly-trained pilots. These advantages, plus the fact that the U.S. planes have greater range and more reliability, have more than offset the MiG's speed and high rate of climb over 30,000 feet.

At least twelve new U.S. fighters in, or approaching, production are expected to outspeed and outgun the MiG in all categories while sacrificing none of the better features in current American military aircraft.

Roswell L. Gilpatric
Undersecretary of the Air Force
Proprietary Rights In The Aircraft Industry

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

The aircraft industry has had an extraordinary record, in the interest of the national security and defense, for sharing its designs and inventions, its engineering accomplishments, and its manufacturing know-how. This cooperation was one of the major factors during World War II which helped to make aircraft manufacture in the U.S. the world's biggest single industry and enabled it to produce the air power without which our enemies could not have been defeated.

Under the present mobilization program the aircraft industry again recognizes and cooperates fully with the Government's policy of broadening the industrial base and establishing second sources for emergency purposes. This involves licensing alternate sources other than the original designer, for the production of aeronautical material ranging from complete airframes and engines, to diverse components and small parts. However, one aspect of the problem which is new is that the current licensing time element is undefined and thus is different from wartime licensing which normally is expected to end with the cessation of hostilities.

Under these circumstances the proprietary and patent rights of the designers and developers of aeronautical material could be infringed seriously in many cases.

It is very encouraging, therefore, that the Patent Policy Review Board has taken cognizance of the necessity for preserving proprietary rights and has issued recommendations to the secretaries of the three military services urging uniformity in the interpretation of "rights" clauses in procurement contracts. This refers principally to Section 9 of the Armed Services Procurement Regulations dealing specifically with patents and proprietary rights. The Navy already has issued a directive to this effect along this line, and as this was written it was understood that the Air Force and Army planned similar directives.

Government policy has consistently supported proprietary design rights for contractors. In the aircraft industry this is exemplified by the establishment of a Government-sponsored cross-licensing agreement in 1917, by the Air Corps Act of 1926, and by recommendations of the President's Aviation Committee in 1935, and the President's Air Policy Commission in 1948.

The purpose of protecting proprietary rights is to encourage research and development. In both war and peace the Government relies upon industry for advances in aviation. Without such rights it would become unattractive for industry to sponsor research and development of the type most needed by the Government.

In the manufacture of today's complex airplanes—including engines and highly technical instruments and components—research and development play a vital part. Continuity of development effort is most essential. Competent technical organizations must be held together.

Over many years, the manufacturers in this industry have built such organizations based on continuous development with their own funds for the general advancement of aviation, irrespective of whether the first applications were to be commercial or military. In war or threat of war military applications take priority. It is happy to license reputable Government contractors for the manufacture of their products when alternate sources are needed to meet production requirements or broaden the base for emergency expansion, the giving up of background and proprietary rights should never be made a precedent to award of a Government contract.

Only through the maximum encouragement of inventiveness, initiative and research can this country hope to be first in military efficiency and research and protection of private rights can such encouragement and simplifying a crate for shipping 20,000 drop fuel tanks.

This same company saved $100,000 in one year in the cost of blueprints by introducing a new-type camera for filming engineering drawings.

Another plane manufacturer reduced the cost of riveting on 100 airplanes by $15,000, through perfecting an automatic riveting machine.

The same company saves $150,000 a year by using key-punch cards which eliminate routine engineering hand-lettering and drafting.

The difficulties of meeting airplane production schedules are illustrated by the World War II record when all engines were devoted to military production. In 1942 a schedule was set up calling for 522 heavy bombers to be built during 1943. This bomber had been designed well before Pearl Harbor. Yet in 1943, only 92 were actually built—less than 30% of the schedule.
The peak rates nonetheless are below original Air Force estimates for the 2,000-unit-a-day production, envisioned on the assumption that national security required rebuilding the then-average 48-wing Air Force in the shortest possible time. Those original schedules were modified when it became apparent that factors beyond Air Force or aircraft industry control would prevent their attainment unless the national economy and supporting civilian industry were to be impaired.

Second Sources

An integral part of our present planning, designed to provide rapid expansion in the event of war, is the so-called "Production Acceleration Insurance Program." An integral part of the program is the "base broadening" program for spreading aircraft production wide through industry, it contains maintenance of secondary sources of supply (formerly method of production, it can be used as active producing units. These second sources will be equipped with larger quantities of tooling than those going rates of production would justify from the standpoint of current operation. They will continue, however, in production although at greatly reduced schedules. Schedules of prime contractors although reduced have not been cut so sharply.

Machine Tool Orders

A significant part of the new program is placement of additional large machine orders when the Air Force realizes that all production requirements are met. Not only will this stabilize the economic boom, but it will afford a substantial backlog of work for the machine tool industry. Long lead time tools (tooling, equipment, high pressures, skin and spar, large forgings), and other complicated tools) will be installed with the aircraft engine and component builders.

Cuts Make-Ready Time

By late 1956 or early 1955, when the Air Force expects to have in being an augmented 126 combat wing force equipped with latest-type planes, the industry should therefore have the facilities as well as the engineering and production personnel ready to expand quickly to any all-out production that the circumstances might call for. This, in the event of war, by virtue of the "Production Acceleration Insurance Program," our national production potential can be mobilized, and make-ready time to produce aircraft in larger numbers.

Achieving Safety Factor

This safety factor cannot be achieved without some increase in cost, in terms both of more tooling that can be justified for the immediate buildup as well as higher unit prices for aircraft and engines to cover the costs of plants operating at below optimum rates. Nevertheless, many manufacturers report that they will be able to quote lower prices as overtime and shift differential pay is reduced, as more efficient production is obtained from the labor force as they get down the learning curve, and as some of the laboriously planned schedules to "farm out" are recalled or diverted to subcontractors already in production.

Many of us, within as well as without the Air Force, have become impatient over the time it has taken since Korea to step up deliveries of combat aircraft. It is encouraging to note that production objectives in January and February of this year were substantially met. Of even greater significance is the fact that the proportion of combat-type aircraft, particularly jets, and the average airframe weights, are constantly increasing. In February, over 5,000,000 pounds of airframe weight were delivered to the Air Force alone. This is more than one-third of our anticipated peak.

Price of Security

The aircraft industry still must recruit thousands of scientists, engineers, and technicians. The build-up program will continue to absorb materials which could otherwise be used for civilian production. The requirement for military machine tool requirements will delay deliveries of tools to non-defense industry for months to come. This is the price of our national security. It will require the cooperation of every American.

EDITOR'S NOTE

The 126 Air Force wings referred to by Mr. Gilpatrick will be combat wings. In addition, under the goal approved by the Joint Chiefs of Staff, there will be 17 transport wings —for a total of 143.

Air Quotes

"As long as American airatomic superiority stood in the balance against the superior Soviet position and power on the ground, the world-wide peace appeared to be relatively secure. But the rapid rise of Soviet airatomic power began to upset the balance, and we were unable to get action in this respect.

Also, the fact that we must maintain a definite airatomic superiority over the Soviet Union is beginning to be recognized.

Efforts to obscure and ignore this fact have resulted only in our having to pay a far heavier price for the air power that represents our principal hope of countering the massive Soviet threat on the ground..."—General Nathan F. Twining, Vice Chief of Staff, U.S. Air Force, Jan. 13, 1953.

The number of agricultural planes in actual use increased 15% in 1951.

U.S. Public Health Service lists 988 approved sources of milk delivered for airline passengers in the U.S. and Canada.
Little Known Army Aviation Playing Vital Role in Combat Zone in Korea

Written Especially for PLANES
By Lt. Col. R. R. Williams, USA

Army pilots, flying light, unarmored aircraft, have completed over 140,000 missions in Korea. More than 64,000 of these were flown over enemy lines with a minimum loss of planes and men.

Extensive use of organic aircraft (assigned within units as normal equipment) in Korea is indicative of growing requirements for Army aviation to expedite and improve surface transport as commonplace is natural.

Light, fixed-wing aircraft proved their relative immunity in the air early in the North African Campaign. It was proved again in Korea where only ten Army planes were lost to enemy action. Originally employed for artillery fire, they fitted 90 percent of observed fire missions in World War II.

The Helicopter's Role

Since that time, planes have proved invaluable for reconnaissance, observation, emergency supply, courier service, and evacuation of medical personnel. Helicopters were the first to arrive in front of NBC (nuclear, biological, and chemical) casualties and also for evacuation.

One reason is that the job we do is not spectacular—not glamorous. Our aircraft are not supersonic. They don't fight in the air or attack from the air, a reporter for the National Air Races put it this way: "Your airplanes aren't big enough or fast enough to make good news copy."

No Duplication

Another reason for obscurity is the public's frequent misinterpretation of "aviation" as an Air Corps, or a part of the U.S. Air Force. Actually, it is not planes separate branch or corps but is distributed among the branches of the service like automatic and surface transport equipment.

Our aircraft are employed for reconnaissance and troop and cargo-carrier under organic equipment within units. They do not duplicate these functions with respect to the Air Force. To perform that type of visual and photographic reconnaissance which may be accomplished within the combat zone by light aircraft.

Advances in mass killing power of weapons have made battlefield dispersal an indispensable part of tactics and techniques. Units, down to the smallest size, now must be capable for extended periods independent of the normal surface lines of communication, and must have a mobility herebefore unknown.

Improvement in design, flight and payload characteristics as well as operational ability of organic aircraft and the development of larger and more versatile helicopters have progressed to the extent that their acceptance as vehicles for surface transport as commonplace is natural.

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Three Army units, operating 12 helicopters, have evacuated about 6,000 casualties thus far in Korea.

Like planes, however, helicopters have proved invaluable for more purposes than were ever anticipated. Army commanders have been particularly pleased with them as a means for getting around the battlefield. This caused one officer in Korea to remark that “the helicopter has robbed the battlefield of its privacy.”

Two Problems Solved

They provide an effective solution for two problems I believe are unique to the Army. Most Army radar sets have what is known as “line of sight” characteristics. A helicopter, flying near two radio sets which are closely enough spaced but separated by a hill mass, easily establishes the line of sight communications otherwise impossible and can act as a relay station.

When Army units must occupy high, inaccessible ground for survey operations, helicopters cut the time of accomplishment to a fraction of that required when ground transportation means are employed.

The Army is now taking steps to incorporate the rather astonishing capabilities of the helicopter into a transportation system through transportation companies, each having 21 cargo helicopters and two small utility helicopters.

This should overcome most of our historical difficulties — removing the barrier that has left the armies of the world to the ground throughout their histories.

The AUTHOR

Lt. Col. R. R. Williams is a senior army aviation officer assigned to the Office of the Assistant Chief of Staff, G-3, Department of the Army. He is one of the group of officers who started the present Army aviation program in 1940.