AIR BUILDUP THREATENED, SAYS FINLETER

Taxpayers Hit By Stiff Rail Rates On Plane Parts

The nation’s defense effort is being penalized by exorbitant rail rates designed to give shipping subsidies to non-defense industries.

As a result, American taxpayers—underwriting the present multi-billion dollar defense buildup—are forced to pay exorbitant rates on rail shipments of aircraft parts, guns and parts, military vehicles and explosives.

Out of 261 commodities shipped on the nation’s railroads, none have higher freight rates than these four categories of defense goods—all of which ultimately are shipped at the taxpayers' expense with funds appropriated to build America's armed forces.

Under present rates, the railroads earn more than twice as much per car (and 27 times as much per ton) in hauling aircraft parts as they do in hauling other commodities, the plane manufacturers have shown in a case filed before the Interstate Commerce Commission.

Lower Tariffs Asked

Asking for rates commensurate with those charged for other rail shipments, the Aircraft Industries Association points out that excessive freight charges become a part of the high cost of today’s military aircraft—and that the money to pay the tariff must come largely from the taxpayers’ pockets.

For every dollar of expense incurred by the railroads in hauling (See RAIL RATES, page 2)

Intelligence Reports Show Heavy Russian Combat Plane Lead

The Soviet Air Force has about 20,000 aircraft in combat units—several thousand more than are in combat units of the U. S. Air Force and naval air arm combined, American intelligence reveals.

This figure does not include an almost equivalent number of Russian aircraft in reserve, nor several thousand more planes in possession of Soviet satellites in Europe.

Moreover, Russia is continuing a great expansion of its long-range air force—planes that will deliver its (See RED AIR FORCE, page 3)

Aircraft Profits Drop Sharply In ‘51; Stay Far Below National Level

Despite the so-called defense “boom,” aircraft profits continue low—substantially under national level, and for below average for defense industries. Average return on sales of 29 aircraft & parts companies in 1951 was 2.2%, compared with 6.2% for all manufacturing industries.

Despite so-called “defense boom,” aircraft profits continue low—substantially under national level, and for below average for defense industries. Average return on sales of 29 aircraft & parts companies in 1951 was 2.2%, compared with 6.2% for all manufacturing industries.

More Cutbacks Due If Planes Funds Limited

Congressional cuts in Air Force appropriations threaten additional delays in rebuilding America’s fighting forces and equipping them with modern aircraft, Air Force Secretary Thomas K. Finletter warned this week.

“There definitely will have to be a cut in the number of ready wings in case of a reduction in the appropriations; this point I want to emphasize,” the Air Force official said on a national broadcast sponsored by the American Legion.

Mr. Finletter subsequently said that limitations on military spending during fiscal 1953 would stretch out the program even further. He referred to recent House of Representatives’ action which placed a ceiling of $46 billion on fiscal 1953 expenditures and reduced aircraft procurement appropriations by $710 million.

The measure now awaits Senate action.

Program Already Cut

Referring to the fact that Air Force plane schedules already have been cut back sharply, Secretary Finletter said the recent production "stretch-out" was caused by budgetary limitations. Air Force planners were forced to change plans to build 1,250 planes per month in September, 1953, "because the money would not be available to buy more than 950."

If appropriations are cut by Congress, he said, Russia's plane production lead can be expected to continue for a longer time. The date on which America will equal Russia's warplane output "depends very largely not so much on our productive capacity, which is very great although not being fully used, but rather on the amount of money we get to buy the planes," the Secretary reported.

Delays Still Possible

He emphasized that the present air buildup is not occurring under conditions of full mobilization.

"This is not an all-out war where you go out to produce everything you can," he said. "This is something which is limited by appropriations."

"You very often hear the question, ‘What with all those appropriations we got in fiscal 1951 and fiscal 1952, aren’t the planes coming (See FINLETTER, page 3)"
The Combat Planes Built since Korea Were Bought from Funds Appropriated to America's Security and Survival Than Is the Aircraft Industry's Potential and Prospective Made for Priorities to Meet Established Schedules, a Future War Could Be Lost Before America's Tremendous Industrial Potential Could Be Mobilized.

In this atomic age, the ability of the aircraft industry to produce 15,000 planes during the first year of an all-out war is more important to America's security and survival than is the aircraft industry's potential ability to turn out 150,000 planes per year after a substantial period of time has elapsed.
Atomic-Powered Plane Could Circle Earth 80 Times on One Pound of Fuel

Atomic-powered airplanes which, conceivably, might beat the clock-fly around the world at local midnight—and complete the circuit 80 times on one pound of fuel, are being developed by two airframe and two aircraft engine manufacturers, each pair working jointly.

Details are veiled by a "top secret" cover-up program, known originally as NEPA—Nuclear Energy for the Propulsion of Aircraft—has now progressed well beyond the theoretical phase. Work is actually under way on a nuclear-powered aircraft and atomic airframe under development contracts awarded by the Air Force and Atomic Energy Commission.

General Hoyt Vandenberg, Air Force Chief of Staff, has stated that atomic flight is closer than most persons realize.

**Could Fly for Days**

The far-reaching implications of an atomic airplane, besides those already mentioned, are that it could stay aloft for many days; could fly at maximum speed at a given altitude for its entire mission. This is all predicated on the relatively low fuel supply which would be required.

One pound of Uranium-235 on undergoing fission gives off heat equivalent to the energy liberated by burning 1,700,000 pounds of gasoline. Thus, when nuclear energy can be converted into thrust, aircraft fuel consumption will be measured in thousands of pounds per hour, but in pounds per day.

An airplane which could encircle the earth under cover of darkness represents a distinct advantage over modern-day bombers. Any target would be within easy reach, and night flying confers lower vulnerability.

Development of materials capable of withstanding the intense heat and the dangerous radiation produced by a nuclear reactor has been a formidable problem in building an atomic powerplant. Construction of the airplane has been complicated by the great weight of a shield that must be installed to protect the crew.

**Proposed Powerplants**

Many types of powerplants have been proposed to harness nuclear energy to propulsion machinery, including a turbo-jet engine in which the reactor would replace the combustion chambers, and a ram-jet with similar substitution of a reactor for the combustion apparatus.

In all cases, except that of the ram-jet and other air cycles, it is required that the heat be transported from the reactor to propulsion machinery in a coolant. Ordinary lubricants cannot be used because radiation causes them to deteriorate or solidify.

It is probable the first atomic aircraft will be a sizable one, perhaps a redesigned bomber. The great weight of the shield required has been estimated from 50 to 100 tons. This might be balanced off against the chemical fuel load normally carried by the bomber.

The fuel loads of modern aircraft range up to the neighborhood of 75 tons or more. Redesigning of the bomber as an atomic plane allows for the concentrated weight of the shield and the nuclear engine at one point in the airframe.

**AIR TRAVEL EXCEEDS FIRST CLASS RAIL**

**FINLETTER**

(Continued from page 1)

off production lines in great numbers?"; the Secretary said, "That question usually carries with it somewhat of an implication that the aircraft industry is not up to what it should be."

"Well, I want to make it entirely clear that there is no justifiable criticism of the aircraft industry. The point is that you can't get planes until you order them and you can't order them until you've got the appropriations."

Because of the long lead-time required in aircraft production, he said, appropriations made after the Korean war began cannot be expected to result in a substantial flow of military aircraft until about January, 1953.

**RED AIR FORCE**

(Continued from page 1)

A-bomb. Several hundred TU-4's—improved adaptation of a U. S. World War II bomber—are now at the Red's disposal.

Even more sobering is the fact that a bomber of original design, reportedly having intercontinental capabilities comparable to the largest U. S. bomber, has been observed in flight over Moscow.

During the past six years, Russia's aircraft production has exceeded by several times production of U. S. military planes.
Savings to American taxpayers through cost-reduction efforts by aircraft manufacturers have far exceeded expectations of the Aircraft Industries Association, which recently undertook a survey of economy methods now being practiced by the aircraft industry. These savings amount to "hundreds of millions of dollars," according to Adm. DeWitt C. Ramsey, president of the AIA.

A recent nationwide check by the Association reveals that cost-reduction efforts extend to all phases of aircraft design and manufacturing— engineering, tooling, production, manpower and new invention. A philosophy of "grass roots" economy has resulted in broad-scale cost-consciousness from top echelons to the production lines.

Industry Works With AMC

The aircraft industry, in continuing its strong emphasis on cost reduction, is collaborating closely with the Air Force's Air Materiel Command. Lieut. Gen. E. W. Rawlings, commanding general of AMC, is known for his vigorous economy measures and has undertaken a broad program both in industry and in the AMC in an effort to obtain the greatest possible return for the air procurement dollar.

The AIA survey shows that one aircraft manufacturer, reduced by more than 100% the selling prices of certain major military items in the past four years, a period during which materials and manpower costs skyrocketed and the general level of prices over the country rose sharply. Another airplane builder saved the Government $17 million by instituting an intensive employee-suggestion system. This same manufacturer was able to cut numbers on a current production aircraft by more than 66%.

Parts Prices Reduced

An aircraft component manufacturer reduced prices on jet engine parts by 50% in the years since 1946, with 10% reduction coming since the Korean War started. This was accomplished in the face of a 54% jump in materials prices and a 63% rise in wage rates.

Last year on the West Coast alone, aircraft manufacturers saved the military services $30 million in production costs by using improved materials and conservation methods.

The AIA survey indicates that the industry's efforts to reduce costs have resulted in constant additions of new and more efficient facilities throughout the country. Obsolete equipment is being eliminated, existing machinery and tools modernized and overhauled, and more economical tooling installed.

Emphasis on Cutting Costs

Throughout the industry, emphasis is placed on review of methods and procedures applicable to engineering, machining and assembly labor. Plant layouts, manufacturing processes, possibilities of replacing critical or expensive materials and simplification—all are under study efforts to give the Government a maximum return for the air procurement dollar.

Commenting on the industry's cost reduction efforts, Admiral Ramsey said:

"Without these efforts aimed at cutting costs and increasing efficiency, aircraft manufacturers and, indirectly, the military services would have suffered greatly from the economic effects of inflation, low and erratic rates of production, and the necessity of developing and procuring complex equipment to the most rigid specifications."

Other Cost Factors

The AIA president pointed out that factors beyond the manufacturers' control have operated to place in obscurity the cost reduction accomplishments of the aircraft industry.

Among these outside influences, all tending to push costs higher, he cited the fact that performance requirements for aircraft have increased tremendously since the end of World War II. Inflation has taken a large bite of the procurement dollar. Low volume has pushed costs higher. Delays in receipt of Government-furnished equipment have forced costly production halts.

Admiral Ramsey added that other factors tending to increase costs include (1) frequent design changes, (2) materials shortages, (3) bottleneck in machine tools, (4) Government controls and requirements, and (5) shortages of skilled manpower and engineers.

"Each of these factors has added an increment of cost," Admiral Ramsey reported. "Even vast savings are overshadowed by tremendous pressures adding to overall aircraft costs."

Today, however, the military services are getting more effective air power for their procurement dollar than ever before in history. The aircraft industry's cost reduction programs add immeasurably to the efficiency of the defense production effort and to the purchasing power of the taxpayer's aircraft procurement dollar."

Amazing Electronic Midget Promises New Advances in Aircraft Equipment

Discovery of the transistor—tiny, simple, yet astonishing new amplifier—promises considerable relief from the bulky burden of ever-increasing electronic equipment required for aircraft and guided missiles.

This electronic midget—the latest model of which is as small as a pea—performs many of the functions of vacuum tubes and is more versatile. As a result, future planes and missiles may carry electronic equipment now too heavy and fragile.

Use Less Current

Unlike the vacuum tubes they eventually will replace, transistors do not need power for heating filaments. Consequently, they use much less current and generate very little heat. No cooling system is required to compensate for their heat. Because they are solids, transistors can withstand much greater shock and vibration than vacuum tubes which, like the ordinary electric light bulb, use glass to seal in a filament. Filament failure has been a major cause of vacuum tube unreliability.

The transistor was developed by Bell Telephone Laboratories in 1948. The original device, known as a "point contact" transistor, consisted essentially of two hair-thin wires resting on a tiny speck of germanium, a semi-conducting metal.

Nearby Ideal Amplifier

These point contacts correspond to the terminals of a vacuum tube, but there is no glass envelope, no vacuum and no heating element to cause warm up delay. The whole apparatus is housed in a metal cylinder about the size of a .22 calibre shell.

Meanwhile, Bell Laboratories have developed an improved device, the "junction transistor," which is described as a nearly ideal amplifier for very low power applications. It has no point contacts, but instead, consists of a tiny rod of germanium, so treated that it embodies a thin electrically positive layer sandwiched between two electrically negative ends.

This new form of transistor is capable of amplifying 100,000 times. It occupies about 1/400 of a cubic inch, in comparison with a typical subminiature vacuum tube, which occupies about 1/5 of a cubic inch. It consumes far less power even than the older type.

The Defense Department's interest in the transistor was demonstrated last October when the Research and Development Board announced formation of a group to study its development and applications to the Armed Services.