



planes

Vol. 9, No. 9, Sept. 1953

OFFICIAL PUBLICATION OF THE  AIRCRAFT INDUSTRIES ASSOCIATION

America Produces 90% of Airliners Built Since 1946

American aircraft manufacturers, who have built four of every five commercial airliners operated by the world's air carriers, currently have orders for nearly half a billion dollars worth of late-model air transports, according to a survey by the Aircraft Industries Association.

The survey shows that U.S. manufacturers today have orders for 324 transports of 36-passenger or greater capacity. During the first six months of this year, 89 of the large airliners were delivered to U.S. and foreign purchasers.

Dominate World Market

American air transport producers have dominated the world market during the postwar years, with some 90 per cent of all airliners sold during the period produced in this country. The International Civil Aviation Organization estimates that approximately 1,000 new transport aircraft were delivered to world airlines in the years 1946-52. Approximately 900 of these planes were built in the United States.

Increased Performance

Using the world airline fleet of some 4,000 aircraft, an average of 123,000 persons fly more than 67 million miles each day over scheduled routes. While aircraft are flying faster and farther, and with constantly increasing dependability, air fares have steadily lowered. Recent figures show that domestic airline fares are 40 per cent lower today than in 1939, expressed in terms of the 1939 dollar.

In the United States alone, airlines employ more than 100,000 persons and have entered the ranks of the billion-dollar industries.

40,000,000 Passengers in '60

In a recent speech, Fred B. Lee, Administrator of Civil Aeronautics, reported that "the decade ahead will no doubt witness a great increase in the volume of air commerce traffic." He predicted that 40,000,000 airline passengers will be carried in 1960—almost twice the number hauled in 1952. And his prediction did not include an estimate of the potential number of helicopter passengers.

The CAA Administrator pointed out that, as a rule of thumb, most U. S. cities with adequate air service today can expect their 1952 airline passenger traffic to approximately double by 1960.

He added: "Aviation is potentially one of the great social forces of our time."

AIR CARGO LINES EXPECT TO CARRY ALL-TIME RECORD TONNAGE IN 1953

U.S. Businesses Find Air Freight Jumps Earnings

By Emery Johnson
Vice-President and General Manager
Air Cargo, Inc.

A record-shattering 275 to 300 million ton-miles of air freight will be carried by U. S. domestic airlines during 1953 if present business trends continue.

In performing this unprecedented industrial and business airlift—more than 21 times the volume of the first postwar year, 1946—the youthful U.S. air freight industry is continuing an expansion which has been uninterrupted every year of its existence.

Although the first scheduled all-cargo flight was made only some 20 years ago, and concentrated air freight efforts did not actually begin until World War II ended, increasing numbers of U.S. businesses are turning to the speed and dependability of airborne shipments as an avenue to increased efficiency and higher profits.

Emery Johnson, vice-president and general manager of Air Cargo, Inc., is one of the nation's top authorities on air freight. He has spent 25 years in the aviation industry, serving with various airlines prior to World War II. Since then, he has been with the Air Transport Association and with Air Cargo. He became secretary of Air Cargo in 1945, and vice-president and general manager in 1949.

The growth of air freight operations has been consistent. In 1946, less than 15 million ton-miles were flown. By 1949, this figure had increased to more than 100 million ton-miles; and last year, it approached 225 million ton-miles.

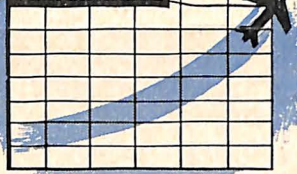
Yet despite its rapid growth, future air cargo potential is virtually unlimited—as attested by the fact that 1953's air freight business still will account for only about 1/10th of 1 per cent of the nation's total freight movements.

The 275-300 million ton-mile prediction is predicated on three basic factors.

1. A steady growth of air freight during the first half of 1953, pushing (See AIR FREIGHT, page 3)

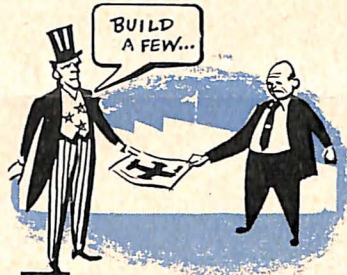
FOUR REASONS FOR HIGHER AIRCRAFT COSTS

PERFORMANCE



1 BETTER AIRPLANES

Today's planes fly higher, faster, farther and are more reliable than those of World War II. Greater performance calls for spending more dollars—but saving more lives.



2 SMALLER ORDERS

World War II orders were for thousands of planes of one type. Today's orders are for hundreds—or less. This means that each plane costs more.



3 CHANGES

Design changes—though necessary to keep pace with constant technological, scientific and engineering advances—mean rework, delay, and are costly.



4 INFLATION

Your dollar today buys only half as much as a 1941 dollar. Even a 1941-model aircraft would cost twice as much today as it did then.

'PLANES'

Source: 'Economy in Air Power', AIA booklet

Aircraft Profits Below Average

Research Group Says Good Earnings Needed to Support Production Base

Heavy investments in plants and equipment during the Korean buildup have cut the aircraft industry's working capital to the point where today it is adequate to finance little more than one month's sales, compared with three months only two years ago, according to a recent study of the aircraft industry's financial situation by the National Credit Office.

"To meet the schedules established for them," the NCO reported, the manufacturers in the last two years invested \$132,000,000 in fixed assets. Of the funds used to pay for the new buildings and machinery, \$79,000,000 was derived from rein-

vested earnings; \$12,000,000 from long-term borrowings; \$11,000,000 from the sale of additional stock—and \$27,000,000 was taken from working capital."

The use of a large part of earnings to finance this program, said the report, made it impossible to increase dividends, despite substantially higher profits. Furthermore, "continued good earnings are necessary to support such a structure."

The NCO pointed out that one "obvious consequence of the diversion of earnings and working capital into plant" is the fact that cash and receivables are now equivalent to (See RECENT STUDY, page 2)

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.

Publication Office: 610 Shoreham Building, Washington 5, D. C.

New York Office: 350 Fifth Avenue, New York 1, New York.

Los Angeles Office: 7660 Beverly Boulevard, Los Angeles 36, California.

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

The Key Factor: Time

By DeWitt C. Ramsey (Adm., USN, Ret.)

President, Aircraft Industries Association

"The long-range bomber and the atomic bomb with its terrible destructive capacity turn the factor of time against the defender. Every important target in even the world's largest nation can be reached at the most within two hours after bombers cross its frontier. Time is of utmost value. There may not be enough of it once at atomic attack is launched . . ."

These sobering words of Gen. Curtis E. LeMay, commander of the Air Force's Strategic Air Command, highlight the fact that—in the final analysis—all of America's present defense plans and efforts are aimed at buying time.

We can never again hope to have the years of advance warning which preceded our entry into World War I and World War II. We can never expect to have time to rebuild defense industries from scratch. If an attack comes, we must operate from the mobilization base in existence on the day the war starts.

Recent statements by the nation's highest officials have spelled out in plain terms the frightful power at the disposal of our potential enemies. We know, for example, that the atomic bomb dropped at Hiroshima was the equivalent of 200 B-29 loads of conventional bombs—and that it was but the forerunner of the far more powerful atomic and thermonuclear weapons of today. We know, too, that damage equal to that inflicted on Germany in three and a half years of World War II could be inflicted *overnight* with present aerial weapons.

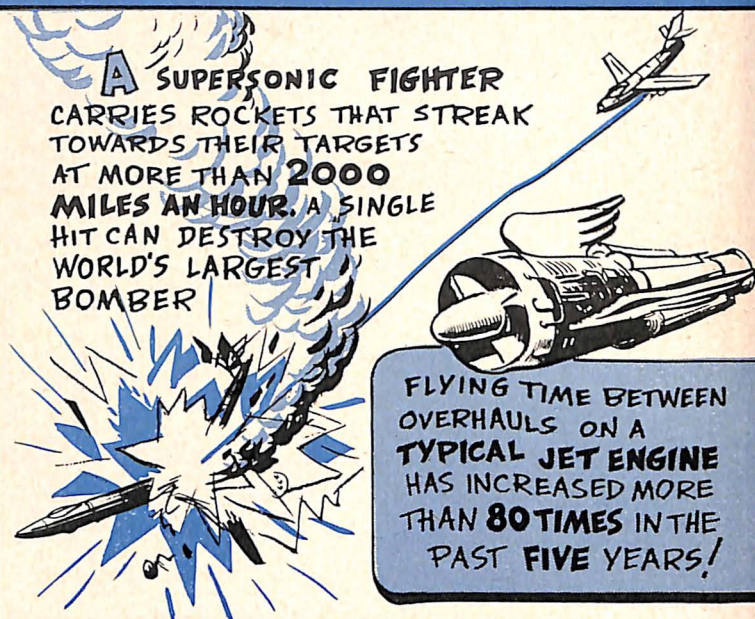
Possession of such destructive capability by a ruthless enemy means only one thing—*time, as never before, has become the key factor in our planning for national survival in an age of peril.*

In no field is the necessity for advance planning more crucial than in the development and manufacture of the high-performance aircraft needed to defend America. No matter how much money is spent once a war starts, no matter how many thousands of workers are employed or how much effort is devoted to the undertaking, we cannot hope to lessen materially the time required for the basic steps in aircraft production.

The wisdom and far-sightedness of those Congressional and military leaders who have called for a program of long-range aircraft procurement is more apparent today than ever before. It has long been their position that maintenance of a stable and consistent aircraft procurement level, capable of being adjusted to changing requirements without violent fluctuations and waste, would combine economy with prudence in the creation of an adequate level of air power.

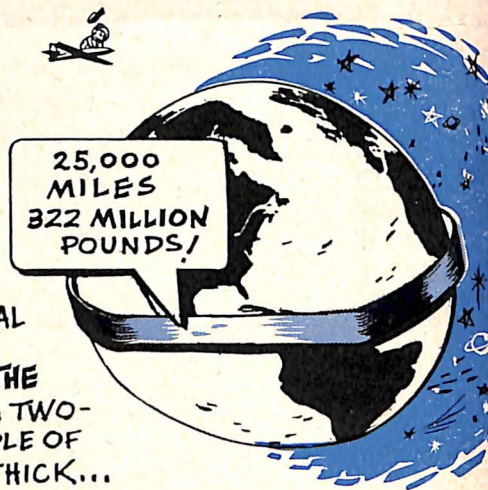
The vast production potential of American industry is a prime national asset, and one of the greatest deterrents to potential aggressors. We must always be aware, however, that *time* is required to bring into operation every element of production not in existence on the day it is needed for our defense.

PLANE VIEWS



FLYING TIME BETWEEN OVERHAULS ON A TYPICAL JET ENGINE HAS INCREASED MORE THAN 80 TIMES IN THE PAST FIVE YEARS!

A SINGLE U.S. AIRCRAFT COMPANY HAS BUILT MORE THAN 25,000 AIRCRAFT IN 21 YEARS... THE 322 MILLION POUNDS OF METAL IN THESE PLANES WOULD **CIRCLE THE EQUATOR** WITH A TWO-FOOT WIDE GIRDLING OF METAL $\frac{1}{8}$ INCH THICK...



by Aircraft Industries Association

Recent Study Shows Aircraft Profits Are Below U. S. Average

(Continued from page 1)

less than 30 per cent of current indebtedness.

Reporting on the industry's profits, the study said:

"The ratio of 2.32 per cent of sales was nominally better than in 1951. This is the average for the entire industry. The lowest rate reported by an individual company was 1.91 per cent, and the highest, 4.04 per cent, but the latter manufacturer had no income tax to pay because of losses in the preceding year. Despite this indicated improvement in earnings, it might be argued that the trend actually was in the other direction, for if the very large loss reported by one manufacturer in 1951 were excluded, the profit ratio for that year would have been 2.98 per cent."

(A survey by the National City Bank of New York showed that the national ratio of profits to sales for all manufacturing concerns was 5.4 per cent in 1952.)

The NCO study predicted sales of approximately \$6,000,000,000 for airplane manufacturers in 1953.

Air Quotes

"The strategic position of the free world face to face with the forces of Communism remains essentially unchanged over that of last month, or for that matter, last year. The enemy is ruthless and is determined, by one means or another, to exploit any weakness we may show. To meet this challenge, we must plan carefully, spend our money wisely, and take every possible step to make certain that our Air Force is qualitatively superior at all times; well-manned, trained, and balanced for any possible threat, and that to back it up we have a poised and powerful technology and an industry ready to wage the production war which has been, and will continue to be, our main strength."



—Roger Lewis, Assistant Secretary of the Air Force (Materiel), August 21, 1953.

Air Freight Lines Expect To Carry Record Cargo Tonnage During 1953

(Continued from page 1)

ing shipments 18 per cent ahead of the same period in 1952. Tonnage for the first half of the year exceeded 119.8 million ton-miles (compared with 101.6 million for the same period of 1952), and seasonal shipments are always greater during the latter part of each year.

2. A recent 15 per cent increase in rail express rates, which is expected to influence many rail shippers to convert to air freight during the fall and winter.

3. The likelihood that the Korean truce will permit the return of many cargo aircraft to domestic service, giving the carriers added capacity to handle available traffic. More than three-quarters of the four-engined cargo aircraft owned by U.S. airlines have been flying the Pacific airlift since 1950.

It has been estimated that today more than 2,000 different items are carried by air freight, with the bulk of shipments breaking down into auto parts, apparel, electrical goods, flowers and nursery stock, drugs, machinery, printed matter, and aircraft parts. A recent survey indicated that 18 per cent of gross air freight revenue comes from auto parts, 17 per cent from apparel, 14 per cent from electrical goods, 9 per cent from flowers and nursery stock, 6 per cent from drugs, 5 per cent from machinery, 4 per cent from printed matter, and 3 per cent from aircraft parts. The remaining 24 per cent of revenue comes from miscellaneous shipments, ranging from television films through hundreds of items that include white mice, baby chicks, and even lady-bugs for insect extermination!

The steady rise in air freight volume over the years has been attributed to a growing realization by shippers that the airplane has become a tool of distribution efficiency—which, of course, results in reduced costs. Rapid delivery of many types of goods provides greater profits to sellers and significant savings to buyers because it permits merchandisers to (1) increase turnover, (2) maintain lower inventories, (3) reduce warehousing and packaging costs, (4) minimize markdown losses, (5) prevent obsolescence and deterioration, and (6) expand sales volume by opening new markets.

Because distribution costs account for about 59 cents of the consumer price on most products, the nation's businessmen are turning increasing attention to marketing efficiency and to distribution cost accounting.

Some typical examples give an indication of air freight savings.

Increased turnover. A west Coast manufacturer of greeting cards had been limited to that area alone until he utilized the speed of air freight to stock and replenish his rapidly changing line. Now he sells on a nationwide scale with more than 20 times the volume he had when he used surface shipping.

Lower inventories. A St. Louis shoe manufacturer with a chain of retail shops across the nation

switched from surface transportation to air freight and reduced his inventory exactly 50 per cent, resulting in savings 3½ times as great as the additional shipping costs.

Reduced warehousing costs. The Los Angeles branch office of a mid-western drug manufacturer cost \$8,961 a year, including surface transportation. Substitution of air freight, at a cost of \$5,326, saved \$3,635 annually.

Reduced packaging costs. A Washington agency for a high-priced automobile teletypes his parts order to the factory every afternoon. It is shipped the same night by air freight, with small parts in the original containers, and with large items (such as fenders) not packaged at all. The cost is less than that of slow but securely packaged surface shipments.

Minimized markdown losses. A survey of the apparel field shows that retailers located 3,000 miles from their manufacturers can realize markdown savings of \$12.70 per 100 pounds of sportswear through use of air freight instead of surface transportation.

Prevention of obsolescence and deterioration. A producer of ethical drugs valued his goods at an average of \$10 a pound, and figured obsolescence costs due to out-of-date returns at three per cent of sales. Air shipments cut obsolescence by one-third—to two per cent—and gave immediate net savings of \$10 per 100 pounds shipped in this one category alone, not counting a considerable additional economy in reduced inventory and financing expenses.

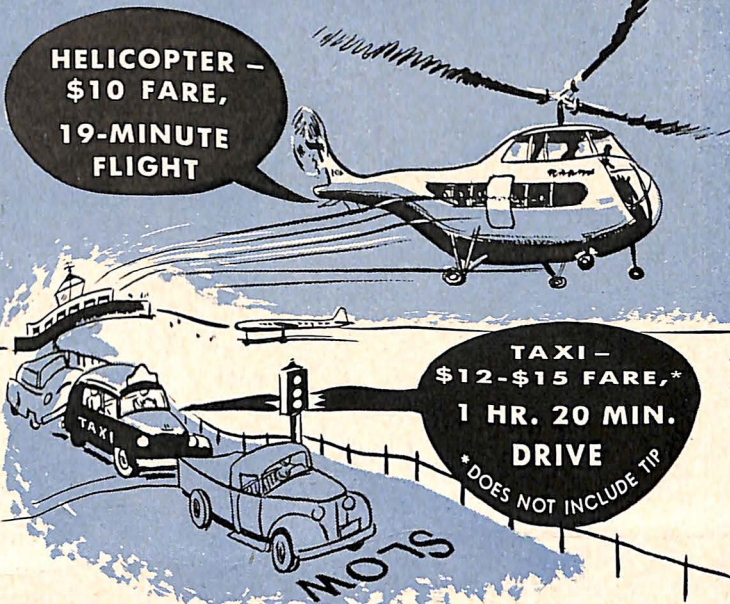
Expanded sales volume through opening new markets. A prominent financial publication was limited in its circulation area to those cities it could reach on the day of issue, for nothing is as perishable as news. Printing plants were set up in Chicago, Dallas, San Francisco, and New York; but still this did not reach fringe markets. Air shipments were used, and now the publication has a national readership, its circulation having expanded from 29,000 in 1940 to 255,000 today.

It is true, of course, that the airplane will not supplant the train or truck in hauling some commodities such as coal or wheat. It will be a long time, in fact, before air freight rates drop to a level with those of most surface transportation, but even at a premium level they are a bargain because they offer a premium service: speed and dependability.

Today, an East Coast manufacturer is as close to a Chicago customer by air as to one in Utica by rail or road. The airplane has brought Seattle comparatively as close as Buffalo, and Los Angeles as near as Pittsburgh. Until air freight opened new vistas of distribution efficiency, the relationship of time to profit had been little explored—but many industries now know that reduced time of goods in transit means faster turnover and extra sales on the one hand, and lowered merchandising

CHEAPER THAN A TAXI

Idlewild Airport to Newark Airport:



Travelers using the newly-inaugurated helicopter passenger service between Idlewild Airport and Newark Airport in the New York area reach their destination more than an hour quicker than by taxi—and the trip costs from \$2 to \$5 less!

"PLANES"

Source: New York Airways, Inc.

costs on the other. The net result is added profits.

As planes designed and manufactured for use as air freighters replace today's cargo aircraft (which are largely on second tours of duty after years of service as passenger carriers), we can expect both efficiency and economy of air cargo operations to increase.

Air freighters—and many other improvements—will come, but even so, air freight offers profits to many users right now, based on existing services and facilities, and at present costs.

While air freight carriers do not pretend to have a panacea for all the problems of American business, they do know they have one solution to the prohibitive distribution markup between the shipping room and the sales rack. And on a foundation of speed and economy, they are bound to expand because a broad American market needs the services they have to offer.

PLANE FACTS

- A mechanized assembly line, with 22 separate stations, cuts final assembly time on a new jet training plane by approximately 25 hours.
- Some 14,000 pounds of aluminum are used in the manufacture of a typical jet fighter-bomber airframe.
- A typical modern aircraft test laboratory contains 2,500 to 3,000 pieces of technical equipment and instruments, and an inventory of at least 500 items of standard operating supplies, exclusive of chemicals.

U.S. Oil Industry Has More Planes Than Do Airlines

The United States oil industry operates more planes than do the nation's scheduled domestic, international, territorial and local-service airlines combined.

The 1,723 planes in the industry fleet vary from helicopters to the latest four-engined transports—and last year flew an estimated 60 million miles.

Several of the larger petroleum companies operate their own "airlines." One, for example, owns 21 planes to transport personnel and supplies across two continents, carrying an estimated 5,000 passengers each year on trans-Atlantic flights alone. This oil-company airline employs 325 persons, including two aeronautical engineers and 42 pilots.

The oil industry planes have also made the old-time prospector and his burro a part of the past by prying deep into the earth's crust with airborne magnetometers in search for oil and mineral deposits. In 1951, one Oklahoma operator flew 1,500 hours in prospecting alone.

The tedious and expensive task of patrolling thousands of miles of pipelines has also been made easier and less costly through use of light utility planes to check for breaks and leaks.

In 1951, 96 communities in 25 states had operators engaged in chemical and oil company transportation. Pipeline patrol activities were reported in 84 towns in 25 states, and 39 communities in 15 states reported operators engaged in mineral and oil prospecting.

Industry's Production of 'Spares' Assures Combat-Ready Air Strength

*"For want of a nail, the shoe was lost,
 "For want of a shoe, the horse was lost,
 "For want of a horse, the rider was lost,
 "For want of a rider, the battle was lost."*

Modern combat aircraft must be ready to fight at a moment's notice—24 hours a day. Even the latest-model plane on the ground, if it is laid up for repairs, cannot defend American cities in event of attack.

For this reason, the aircraft industry's total production is measured not alone by the number of complete aircraft produced, but also by the thousands of parts and components that keep these planes able to fly at all times.

For every 100 complete aircraft furnished to the military services, the equivalent of 47 airplanes is manufactured and delivered as spare parts—the "nails" that one day could well spell victory or defeat for U.S. fighting forces.

These spare parts enable the Air Force, Navy and Marine Corps, to maintain planes in combat-ready status at times when normal wear and combat damage would otherwise drastically reduce the number of operational aircraft.

Without spares, hundreds of planes would either have to be retired from service or would have to be pulled out of action and grounded while repairs are made.

The number of parts that go into today's complex aircraft is astounding. One modern bomber has 155,000 separate parts, (exclusive of nuts, bolts, rivets, etc.), of which approximately 87 per cent are removable or replaceable. Every week, replacements for thousands of these items are delivered by aircraft manufacturers and subcontractors to air bases where they are available to keep America's air power in the air.

During a single 23-month period of the Korean War, one major West Coast airframe manufacturer delivered the equivalent in spares of 1,000 planes—shipped at the rate of a quarter million spare parts per month.

To assure that these parts are at the places needed at the right time, the Air Force alone must carry an inventory of 600,000 spares in its 15 domestic and five overseas depots. The value of these articles ranges from a fraction of a cent to more than \$20,000 each.

Under present schedules, it takes close to four months from the time some parts are removed for repair until they can be shipped back to a depot, repaired, and returned to service. With spare parts on hand at bases, however, time lost by grounded aircraft can be reduced to hours.

Adequate production of spares also prevents "cannibalization," stripping one airplane of parts to keep others flying, and thus assures the availability of all aircraft.

At the outbreak of World War II, America's air services were seriously crippled by the shortage of spare parts. Again, during the Berlin and Korean crises, the fighting ability of the forces was hampered because some parts were not available when needed.

To prevent a recurrence of such shortages in the future, the Spare Parts Committee of the Aircraft Industries Association has at least a dozen projects under way, looking toward new methods and improved forecasting of spare parts requirements.

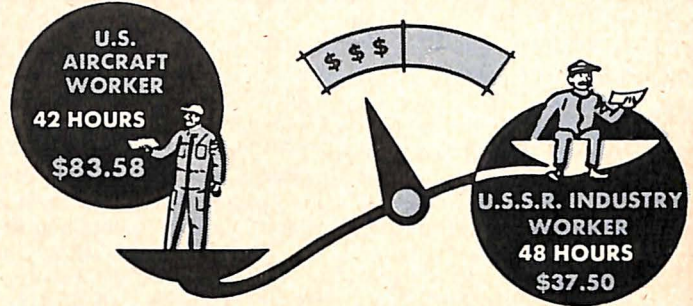
This committee works closely with representatives of the Military Services to determine what parts and how many are most urgently needed to keep aircraft in the air—and to assure the most air power per dollar.

World Aviation Pioneers To Gather in Washington

Aviation pioneers from throughout the world will be honored at a dinner in Washington, D. C., on October 14, as a part of the celebration of the 50th anniversary of powered flight.

The dinner for international air pioneers will bring together early aviation enthusiasts from countries affiliated with the Federation Aeronautique Internationale, world aviation organization. FAI will celebrate its 48th anniversary at the dinner.

RUSSIANS WORK MORE FOR LESS



American workers lead the world in purchasing power. The 750,000 wage earners in the U.S. aircraft industry make more than double the wages of the average Soviet industry worker, work one day a week less, and get better quality merchandise for their dollars.

WORK HOURS REQUIRED TO BUY:	U.S.	USSR
	AIRCRAFT WORKER	INDUSTRY WORKER
SIX-TUBE RADIO	12 HRS. 51 MIN.	32 DAYS
MAN'S WOOL SUIT	2 DAYS 2 1/2 HRS.	47 DAYS
CAKE OF TOILET SOAP	2 MIN. 36 SEC.	30 MIN.
ONE POUND OF SUGAR	2 MIN. 54 SEC.	84 MIN.
ONE POUND OF BEEF	21 MIN. 24 SEC.	117 MIN.
ONE OUNCE OF TOBACCO	3 MIN. 6 SEC.	9 MIN.

AMERICANS GET MORE FOR LESS

'PLANES'

Source: Department of Labor & AIA

A single manufacturer of aircraft components is currently producing 600,000 parts every thirty days.

Early Airmen Coined Payday Watchword —'The Eagle Flies'

Last year, the U. S. air transportation industry did more than a billion dollars worth of business—quite a contrast to the early days of the airlines, when their employees never knew for sure whether they could count on taking home a full wallet on payday. The frequent insolvency of many air carriers in those early years, coupled with the uncertainty of flying weather, kept many an airline man on edge to within hours of payoff time.

So common were the payday jitters that employees at home offices—where the checks were made out—kept a wary eye on the treasury department activities and the weather. When the checks had been written and placed in company mail sacks for forwarding to each station across the route, somebody would call the company radio operator.

Since personal messages and other business not connected with flying operations were banned from the air, radio operators used a simple code phrase that has since invaded other fields. Picking up his microphone, the broadcaster would utter the words, "The eagle flies today." In a matter of minutes, the good news would filter throughout the organization and many a mind would be put at rest.

To thousands of men now working in other industries "the eagle flies"—now used casually to designate payday almost anywhere—brings back pungent memories. Memories of the years when nobody knew for sure the payday and the paycheck would arrive together.

FIFTY YEARS OF FLIGHT

1903-1953

A LETTER FROM NEW YORK TO LOS ANGELES...

IN 1903 TOOK 100 hrs. 29 minutes . . .

BUT TODAY IT TAKES ONLY 10 hrs. 55 min.

In 1903, the year the Wright brothers invented the airplane, it took 100 hours, 29 minutes—well over four days—by the fastest means of transportation for a letter mailed in New York to reach Los Angeles. Today, just 50 years later, a letter that leaves New York in the morning arrives in Los Angeles just 10 hours, 55 minutes later—the same day.

'PLANES'

Source: Department of Commerce