



# planes

Vol. 9, No. 11, Nov. 1953

OFFICIAL PUBLICATION OF THE



AIRCRAFT INDUSTRIES ASSOCIATION

## FOUR KEYS TO U.S. AIR SUPERIORITY CITED

### Aircraft Industry Building 13 Planes Daily for Civil Use

Though military aircraft production accounts for more than 90 per cent of the aircraft industry's activity today, American plane builders currently are producing civil airplanes at the rate of almost 13 each 24 hours.

And since World War II, civil aircraft production has outnumbered military production 75,670 to 37,797—more than two to one.

In fact, since the Wright Brothers first flew 50 years ago, the industry has built nearly 123,000 civil aircraft—an overall average of 6.5 non-military planes every day for half a century.

#### Foreign Market

At the present time, U.S. manufacturers are producing aircraft not only for the domestic market, but for nations throughout the world. For every six aircraft absorbed by the domestic civilian market, about one plane is exported. Since World War II, U.S. aircraft producers have supplied 90 per cent of all airline transports sold throughout the world.

At today's rate of delivery, 20 manufacturing companies—operating 23 plants about the country—will feed approximately 3,825 planes, including helicopters, to America's civil air fleet and another 875 to foreign buyers this year.

#### Business Use Increases

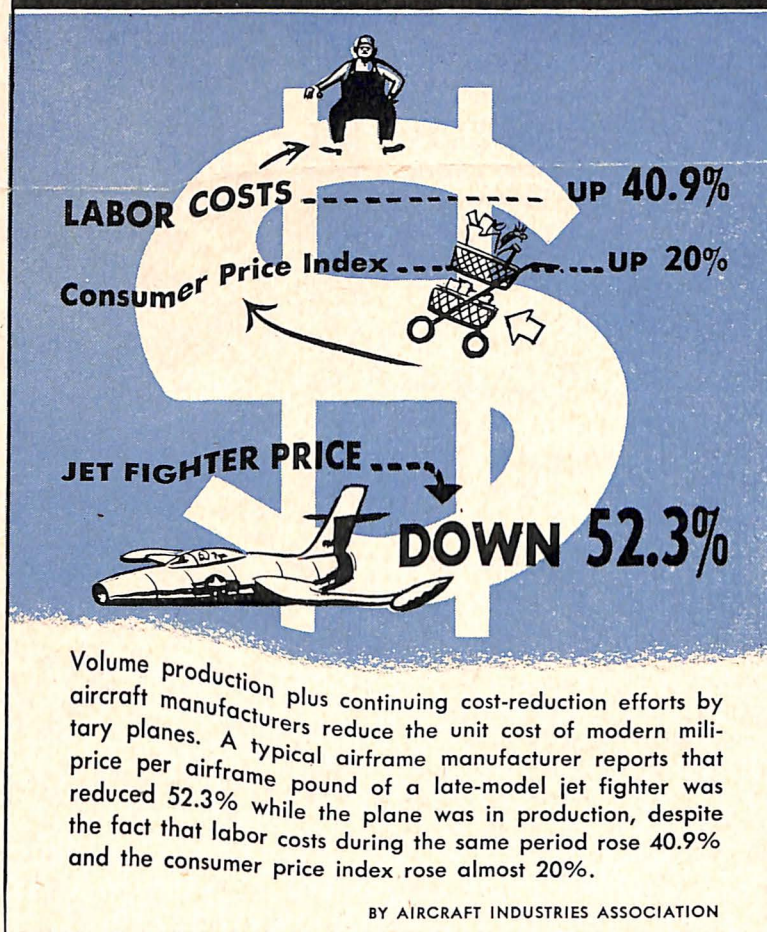
Most of these planes are utility aircraft carrying from one to five persons, weighing under 3,000 pounds and with individual ratings of less than 400 horsepower per plane. Many of these will join the rapidly growing corporate aircraft fleet while the others will be used in varied industries such as air taxi services, crop dusting, aerial survey—(See HALF OF CIVIL, page 2)

#### More Passengers Turning To Aircraft for Ocean Trips

A single U.S. international airline recently flew 4,106 persons across the Atlantic in a seven-day period.

That's more passengers than were carried during the same week by the world's two largest passenger ships, the United States and Queen Elizabeth combined.

### COSTS UP — JET FIGHTER PRICES DOWN



### \$50 Million Weekly Spending of Air Workers Bolsters Nation's Economy

Almost \$50 million a week are being channeled into the economic structure of the nation through payrolls of the aircraft manufacturing industry.

The industry—second-largest manufacturing employer in the country—has an annual payroll of a little more than \$3.2 billion.

#### Survey Shows Spending

A survey by the Aircraft Industries Association, based on the 1952 personal consumption expenditures of U.S. citizens (as reported by the Office of Business Economics of the Department of Commerce) discloses that this year:

- Aircraft workers will spend more than \$2.6 billion in business establishments such as shops, auto agencies, clothing stores, real estate offices, and groceries.

- Aircraft workers will pay personal taxes to the Government amounting to more than \$400 million.

#### Savings Are High

- Aircraft workers will save close to \$200 million in the nation's banks, by buying insurance policies, and through other personal savings channels.

The greatest single slice of the aircraft workers' \$50 million weekly spending goes to operators of U.S. grocery stores, and through them to wholesalers, distributors and farmers. Each week, the men and women who build planes spend \$12.4 million for food. That's enough money to feed about 475,000 four-person families. Carrying the comparison

(See \$50 MILLION, page 4)

### Long-Range Plan Called Best Way To U.S. Security

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

President, Aircraft Industries Association

With military sales estimated in excess of eight billion dollars for 1953, the United States aircraft industry has reached the approximate scheduled peak of military plane production under present procurement programs.

To achieve this peak rate of production—about 1,000 military aircraft per month—the Congress has appropriated since mid-1950 more than 43 billion dollars for aircraft and for other related procurement. A significant portion of these funds have gone to rebuild an industry virtually wrecked by the demobilization which followed World War II.

#### Decline In Prospect

Beginning next year, a downward trend in production is in prospect—with the probability that by mid-1956 the aircraft industry's monthly output will be substantially below the current rate. This contraction over the next several years will quite obviously necessitate a reduction in facilities and personnel—and will bring with it a lower volume of sales and consequent curtailment of industry earnings. In the past 10 years, the aircraft industry's average rate of profits on sales has amounted to only about 41 per cent of the average for all U.S. manufacturing industries.

#### Long-Range Program

In view of the history of chaotic demobilizations which have followed previous expansions of the aircraft industry, it would seem apparent today that action is long overdue in establishing a long-range aircraft procurement program which would insure a sound production base for future emergencies.

The nation's highest military and civil leaders, recalling the costly mistakes of the past, have repeatedly gone on record in favor of establishing such a program—but specific action to accomplish this objective remains to be taken.

On two occasions in the 50-year history of aviation, America has discarded its air power leadership at the end of a war. Following both World War I and World War II,

(See LONG-RANGE, 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.

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.

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## Air Safety Is No Accident

Perhaps the most safety-conscious individuals in the nation are the thousands of engineers in the aircraft industry responsible for making modern airliners one of the safest means of present-day transportation.

Several months ago, the Aeronautical Engineering Review, while calling for "constant vigilance and continuing research," pointed with some pride to airline operating records for the preceding five years: "During this period, the scheduled airlines of the United States have flown 99.99 per cent of their passengers without accident. (A pilot flying one of these airliners for 1,000 hours a year would have a life expectancy of 400 years.)"

The unremitting engineering efforts to make America's reliable and high-performance aircraft the world's safest have sometimes been overlooked—primarily because it is the aggregate of innumerable gains which results in the spectacular safety records achieved by air transportation.

Most of these mechanical and technological advances are not apparent to the casual observer because they cannot be seen by the untrained eye. They include such important airborne and ground developments as automatic feathering and reversible pitch propellers, anti-skid braking, steerable nose wheel, high-strength nylon cord tires, very high frequency (weather-proof) communications, omni-range navigation, ground control approach, instrument landing systems, thermal anti-icing systems, electrical windshield de-icing and de-fogging, underwing refueling, evolutionary improvement of engines, cockpit standardization advances, improved exterior lighting, fire detection and extinguishing systems, non-flammable hydraulic fluid, fire-resistant materials, and a host of others.

Each of these developments has added its important bit to the continuing increases in aviation safety.

Beyond the specific contributions to air safety, there is the unceasing effort of every segment of the industry to assure that each aircraft produced meets the highest safety specifications.

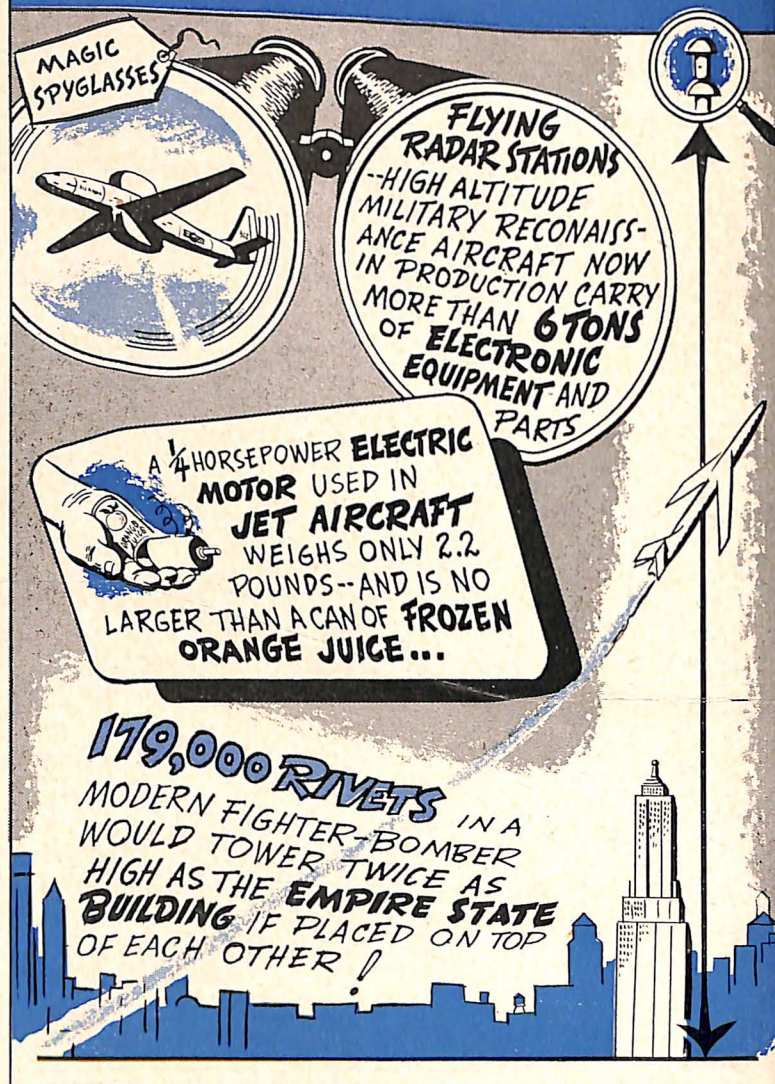
A recent survey shows that more than 1,100 research projects aimed at increasing flight safety—and representing an annual expenditure of more than \$60 million—are underway in this country and abroad. More than 92 per cent of these projects are being conducted in the United States.

It is probably without question that the aircraft industry and its suppliers, the U.S. airlines, the airline pilots' organization, and the aviation agencies of the government contain the broadest array of safety talent that exists in any major industry.

The net result of the combined and intensive approach to the problem is evidenced by the safety records themselves. For every one hundred million passenger miles flown by the domestic scheduled airlines last year, the passenger fatality record was only .35.

With air travel by the scheduled airlines already far safer than driving in the family automobile, the present safety records stand only as achievements which the aviation industry intends to better in the future.

## PLANE VIEWS



## Over Half of Nation's Civil Airplanes Built Since World War II

(Continued from page 1)

ing, prospecting and other utility flying.

For five straight years following World War II, unit production of civil aircraft was greater than that for the military. Not until the Korean build-up began did military production surge ahead. In fact, substantially more than half of all civil aircraft built in America have been built since 1945.

Latest surveys indicate that there are almost 90,000 civil planes in the United States today. Nearly 580,000 pilots are authorized to fly these craft.

### Engine Builder Cuts Costs By \$1,000,000 in 9 Months

In a recent nine-month period, the American taxpayers were saved an average of more than \$154 every hour by cost-reduction activities of a major engine manufacturer.

These savings, totalling more than \$1,000,000, came as the result of improved manufacturing and mass production techniques, and as part of an industry-wide drive to reduce aircraft costs.

In one instance, voluntary price cuts on a single item reached a 34 per cent reduction.

## PLANE FACTS

- Approximately 10,000 persons earn their living at the Washington, D. C., National Airport—an employment center big enough to support a city the size of Boise, Idaho.
- One Army helicopter company, operating in Korea during the prisoner repatriation and truce operations, carried more than 10,000 passengers in their versatile "choppers" in a single month.
- A U.S. aircraft instrument manufacturer produces an Automatic Altitude Controller with sensitivity capable of detecting changes in altitude of five feet in planes flying as high as 50,000 feet.
- Four-hundred thousand pounds of bombs, rockets and napalm—and 100,000 rounds of 20 mm. ammunition—were delivered against Communist targets in Korea by one Marine jet fighter plane. This same plane later was turned over to the Navy—and flew an additional 96 missions. Today, it is still operational in the Pacific.
- This year, domestic airlines will carry nearly 1,500,000,000 letters.

# LONG-RANGE PROGRAM SEEN KEY TO SECURITY

(Continued from page 1)

abrupt cancellations of orders and lack of concern for the future brought the aircraft industry to the verge of destruction.

Three times during those same 50 years, the industry has been called upon to perform almost impossible tasks of expansion and production—in each case at tremendous, and unnecessary, cost. Each time, America had sufficient warning to gear for high-level aircraft production over a period of several years.

## Time Element

We can never again expect to have such advance warning. The first atomic blows of any future war may well be struck at the U.S. heartland with only hours—and perhaps only minutes—to prepare for the onslaught. Modern aviation development has brought with it the possibility that we may suffer devastating aerial attack at any time; and the United States will continue to be the logical primary target of the enemies of freedom.

Confronted with this peril, we cannot afford to lose sight of the fact that the aircraft industry is the foundation upon which both our defensive and our retaliatory air power rests.

## Strong Industry Important

Without ample, and expansible, aircraft production, the national security must certainly be in jeopardy. A weakened, impoverished industry cannot restore its potency in the time that modern conditions must specify. Nothing can alter the fact that it takes from five to seven years to develop a single combat aircraft from drawing board to production.

It is essential, therefore, that a

national air policy be established and constantly reviewed, and that a long-range program of aircraft research, development and procurement be undertaken and maintained at all times in accordance with existing and prospective conditions.

## Major Objectives

If the objectives of maximum air security at minimum cost are to be attained, such policy and programming must assure:

1. A virile and active research and development program, in the full competitive environment of a resourceful aircraft industry.

2. A going rate of production, sufficient to enable retention by the aircraft industry of its important teams of engineers and production experts, and adequate to provide the military services with the most advanced combat aircraft.

3. A sufficient number of competitive aircraft production organizations to provide a broad mobilization base within the industry, capable of rapid expansion in the event of emergency.

## Strong Industry

4. In order to have the most modern aircraft at the lowest possible cost, there must be continuing recognition of the vital importance to national security of a healthy, stable, private aircraft industry, financially strong and unhandicapped by procurement policies which limit its earnings to rates far below the national average.

The fourth point is one which has, in the past, been relegated to secondary importance in times of relative international calm. It has major significance, however, in times when the aircraft industry is producing at high levels. To contribute toward

industrial stability in the national interest, any remedy must be applied before there is a considerable degree of decline in aircraft production.

## Early Warnings

In the past, as previously indicated, the aircraft industry has led a precarious and uncertain existence—dismantled and reconstructed as the current of international affairs flowed smoothly or turbulently. As early as 1919, the American Aviation Mission, appointed by Secretary of War Newton D. Baker, reported that “because of the lack of a definite, intelligent and sympathetic policy in our governmental aircraft organization since the armistice, our American aeronautical industry, built up at such great expense of money and of effort, is rapidly disappearing.” The group’s evaluation proved correct. Practically the entire industry was wiped out by financial disaster which overtook it in the 1920’s.

## Peak and Valley Cycles

The pattern was repeated after World War II. Between 1937 and 1944, sales of the 12 major airframe manufacturers increased more than 93-fold; between 1945 and 1947, they shrank by 91 per cent. In this latter period, a substantial part of the industry’s reserve, built up during World War II, was wiped out during the post-war readjustment.

Today, at another peak, the peculiar nature of this industry must at last be recognized in formulating a national air policy. Other industries, performing war or emergency service, are able to return after each crisis to starved markets. The aircraft industry, lacking such advantage, must have enough earned re-

serve to maintain its facilities, hold together its experienced scientific and technical personnel, attract a flow of new capital into the business, and invest in the new tools and plants required as technological advances continue.

## Adequate Reserves Needed

If the industry operates under policies which allow it to establish and maintain adequate financial reserves and working capital, it will be better able to design and develop new models, conduct essential research programs, keep its technical forces and facilities in a state of readiness, and stand prepared to answer—on its own—any future emergency call.

## Statistical Study Of U. S. Aviation To Be Published

A complete statistical study of the aircraft industry, today the nation’s second-largest manufacturing industry, will be published on Nov. 20.

The book, the 1953 edition of *Aviation Facts and Figures*, contains 256 pages of analysis and statistics on all phases of aviation—including such subjects as aircraft production facilities, labor, production, utility aircraft and helicopters, finance, safety, research and development, military aviation, exports, foreign aviation and others.

## AIA Publication

The book is edited by Dr. Rudolf Modley and Thomas J. Cawley, and is an official publication of the Aircraft Industries Association.

The current edition, the second produced by AIA, reports that the estimated 1953 aircraft production of 12,000 military planes and 4,700 civil planes will total about 151 million airframe pounds—140 million military and 11 million civil. This is about three and a half times the airframe weight produced in 1950, when the Korean War began, but is less than 16 per cent of the 1944 World War II peak.

Floor space of airframe, engine and propeller facilities is reported as 135.8 million square feet in June, 1953, more than double that of 1950.

## Export Figures

The editors report that since 1950, more than 4,000 military aircraft have been shipped overseas to U.S. allies under the Military Defense Assistance Program.

Approximately \$900 million worth of aeronautical products (Military Defense Assistance Program, Foreign Operations Administration, and regular commercial and utility aircraft shipments) are expected to be exported during 1953.

The book is published by Lincoln Press, Inc., 511 - 11th Street, N.W., Washington, D. C. It sells for \$5.00.

## Auto-Pilots Lessen Human Flight Chores In Modern Aircraft

If you look overhead at the next military aircraft you see in the skies, the odds are greater than even that the “pilot” at the controls is a little black box consisting of 47,000 precision parts.

Today, the human pilots in military aircraft use auto-pilots for flying their craft a much greater percentage of the time than they handle the controls themselves.

## Increases Safety

This gives the human pilot time to monitor all controls, to maintain constant safety checks, and to scan the skies for other aircraft.

One major U.S. manufacturer of auto-pilots has produced more than 40,000 of the nerve-sensitive electronic systems, which make possible greater speed and performance, and at the same time increase safety and efficiency.



### FIFTY YEARS OF FLIGHT

1903 - 1953

#### NOVEMBER 1, 1920



U. S. international passenger service started between Key West, Fla., and Havana, Cuba.

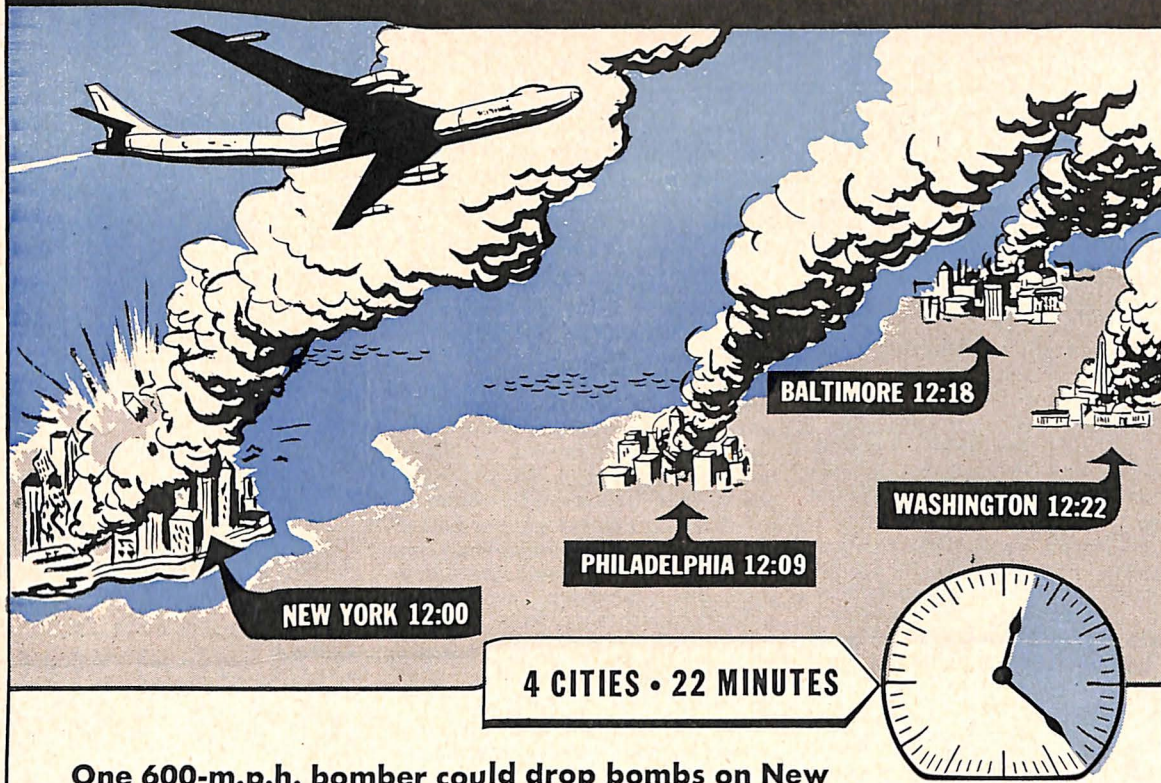
#### LAST YEAR . . .



more than **1,300,000** international passengers arrived at or departed from U. S. airports via commercial airlines last year.

BY AIRCRAFT INDUSTRIES ASSOCIATION

## STRIKING SPEED OF MODERN BOMBERS



One 600-m.p.h. bomber could drop bombs on New York, Philadelphia, Baltimore and Washington . . . all in a period of only 22 minutes.

BY AIRCRAFT INDUSTRIES ASSOCIATION

## U.S. Fleet of Utility Planes Flew Equivalent of 900 Years During '52

America's fleet of civil non-airline planes flew over eight million hours last year—the equivalent of more than 900 years of flying.

Business flying by an estimated 10,000 corporate and business aircraft accounted for 38.2 per cent of all hours flown by general aviation during 1952, with a total of 3.1 million hours.

### Variety of Business Planes

These business aircraft range from light single-engine utility airplanes to the largest transports, equipped with the most modern instruments and electronic aids available.

Commercial agricultural planes, used for dusting, spraying and similar crop control activities, flew 707,000 hours during the year.

And industrial flying—such as pipe-line patrol, surveying and aerial advertising—increased by 31.5 per cent over the previous year, for a total of 315,000 hours.

### Other Flying Increases

The biggest increase in general flying—more than 50 per cent greater than in 1951—was registered in the miscellaneous category which includes such activities as testing, experimental flying, ferrying, and Civil Air Patrol operations. The amount of flying done by this group rose from a 1951 figure of 135,000 hours to 203,000 hours last year.

This information, recently released, is contained in a Civil Aero-

navics Administration report on flying in 1952.

At the beginning of 1952, the CAA reported, there were 87,391 airplanes in the U.S. general aviation fleet. California alone, with 9,845 planes, had nearly eight times as many civil aircraft as are owned by the U.S. domestic and international airlines.

## Thousands of Lives Saved During War By Mercy Aircraft

Thousands of U.S. soldiers are alive today because the airplane and helicopter played a life-saving role in the Korean War.

The Commander of the Military Air Transport Service, Lt. Gen. Joseph Smith, recently reported that the fatality rates for battle casualties were cut in half during the Korean War by airlifting wounded soldiers to hospitals in the U.S., where they could receive specialized treatment. Fatality rate for wounded in World War II was 4.5 per cent, and in the Korean War 2 per cent.

Using helicopters and MATS' big transports, the men were in most cases returned to the U.S. in less than five days. If it had been necessary to use surface transportation for the trip, General Smith said 15 to 18 days would have been needed for the move.

More than 63,000 combat casual-

## \$50 Million Weekly Aircraft Pay Check Bolsters Economy

(Continued from page 1)

farther, the U.S. aircraft worker's food dollars are ample to put provisions on the tables of a large industrial city the size of Detroit.

Other weekly expenditures by aircraft workers include:

- Approximately \$6,000,000 a week for household operation, including items such as furniture, fuel and household appliances.
- About \$5,540,000 a week for housing.
- Approximately \$5,530,000 a week for clothing.
- Almost \$5,000,000 a week for transportation.
- And \$1,800,000 a week for purchases of new and used cars—an amount sufficient to cover the entire purchase price of 900 low-priced new cars each seven days.
- About \$600,000 a week for personal care, such as toilet articles and beauty parlor services.
- About \$600,000 a week for education, religion and welfare activities.

These expenditures by aircraft workers are exclusive of the sums spent by the manufacturing companies themselves with businesses throughout the country. The total impact of the \$50 million weekly aircraft payroll makes the industry one of the basic elements of the national economy.

ties and other military patients were airlifted during the conflict.

## Air Quotes

"... atomic bombs enable one airplane to cause as much destruction as a hundred planes using weapons of the old type. This does not mean that a few airplanes can do a job for which hundreds were formerly required—far from it. Large numbers of airplanes are still required to disrupt and overwhelm enemy air defense, to provide air refueling, and to absorb heavy losses. We must expect, of course, to lose a portion of our Air Force in attacks against our bases, as well as large numbers of planes in the air during the first desperate encounters.



"The multiplied striking power of one long-range airplane carrying an atomic bomb does mean, however, that the destruction caused by one plane can more than justify the loss of that plane and many others.

"For this reason, it is no longer possible to stop air raids by imposing heavy losses on the attackers. Seldom in history has any one raid been stopped by air defenses but it has sometimes been possible to stop the repetition of raids by imposing losses as heavy as 10 per cent on the attacking force. Now, because of the tremendous destructive power of atomic bombs, unprecedented losses as high as 50 or even 100 per cent of the attacking force would be considered a good investment by a ruthless enemy if just a few of the bombs reached their targets."—Gen. Thomas D. White, USAF Vice Chief of Staff, October 15, 1953.

## Aircraft Producers' Spare Parts Service Keeps Planes Flying

After modern aircraft roll off the assembly line and go into service, aircraft manufacturers continue to supply the operators with the spare parts and technical assistance needed to keep the planes operating at the highest efficiency.

One manufacturer recently reported that representatives of its Commercial Spare Parts Department will travel a total of 65,000 miles this year, submitting proposals, providing technical assistance and seeing that inactive aircraft are returned to an available and paying status in the shortest possible time.

This company reports that during 1952, more than 32,400 individual parts "ranging in size from hair springs to entire wings" were delivered to airline operators all over the world. This year, the company expects to receive approximately 26,000 spare parts orders.