Airlines Set Travel And Safety Record

Air Travel Market To Soar in 1955

The scheduled airlines of the United States in 1954, carrying an all-time record of 34,131,000 passengers, also established the best safety record in the history of airline travel.

During the 12-months beginning January 1, through December 31, 1954, the airlines, on domestic and international routes, flew 34,131,000 passengers more than 20,413,689,000 passenger miles.

The scheduled airlines proved that they are one of the safest means of transportation in the world. Although there were 34,131,000 passengers carried by these airlines, there were only 15 passenger fatalities. This is the equivalent of flying 1.3 billion passenger miles for each passenger fatality.

The scheduled airline passenger fatality rate was .66 per cent for every 100 million passenger miles flown. This is within .01 per cent of the fatality rate recorded by the railroads with 21 passenger fatalities during 1954.

This tremendous achievement in providing safe transportation by the airlines is highlighted by the recent disclosure of the American Automobile Association that 36,300 Americans lost their lives during 1954 in automobiles and buses traveling the nation’s highways and city streets.

Safety Is No Accident

Safety in airplane travel is no accident. Providing safety for the air traveler is the prime objective of the airline and aircraft industries, and the government.

Perhaps the most safety-conscious individuals in the nation, along with airlines operating and maintenance personnel, are the thousands of engineers in the aircraft industry who are responsible for making the airliner one of the safest means of public transportation. Their efforts are largely overlooked because the air traveler simply knows that his safety “is being looked after.”

Mechanical and technological advances in airplane safety are not apparent to the passenger. They include such developments as automatic feathering the reversible pitch propellers, anti-skid braking, steerable nose-wheel, high-strength nylon cord tires, very high frequency (weather proof) communications, omni-range navigation, ground-con-
Quid Pro Quo

The following Editorial Comment is quoted from the British publication AVIATION REPORT. It appeared on 11 February, 1955:

"Any salesman who has tried competing with the British knows what an advantage it is to have the Government foreign office "selling its hands" with commerce. U.S. State Department men overseas are not actually rude to visiting American salesmen, but they literally couldn't care less what they do, so long as they behave in the country. They will not lift a finger to help them sell U.S. merchandise. British Ambassadors can naturally sell through to high places while American salesmen are sitting outside waiting for (and hoping to get) an interview.

"Americans take this difference in Government outlook quite philosophically and they feel the best hope of doing business is to sell on technical merits. The policy is to try and get in at the highest level especially where sales deals have a political aspect to them, but to put the main efforts into selling the engineers who have to equip them. Britain's main emphasis is placed at the high level political contact end, and technical merit in such talk is not mentioned, it being taken as read that products are comparable.

"The reason British technique is so powerful is that major military or civil sales deals do involve the buying country moving economically and technically closer to the seller, and the British are prepared to make all kinds of quid pro quo finance arrangements with a government willing to do this. It has been shown in some cases that even if the British product were technically less effective than a competitor's, a favourable finance deal for a poor country would be enough to swing a decisive advantage.

"Thus the most effective British aviation sales people are a small number of British leaders (and indeed one or two wives of these men) who take a vacation to a country and discuss informally long term credit on a massive scale. An aviation deal then becomes an incidental part of such credit arrangements as can be fixed up between courses at a banquet."

For the record, the American aircraft industry and its salesmen are proud that American aviation products are purchased by the free nations of the world on the basis of technical merit alone.

It is the spirit of competition and free enterprise that has made this country the leader among nations. As a result of this competition within the aircraft industry for a better product—as well as in international sales—potential buyers know that "Made in America" means quality and imagination.

The American aircraft industry salesmen need no crutch to sell their merchandise. While American salesmen have been eminently successful in their efforts as the record shows, obviously they would appreciate—and welcome—a greater degree of interest on the part of our government representatives at home and abroad.

Despite the aids offered to the British Aircraft Industry in selling their wares, the aviation export records of both nations speak for themselves. During 1954, Great Britain exported $56,050,333 pounds sterling ($156,940,904 U.S.) in aircraft, engines, parts, electrical equipment, tires and instruments (including both military and civil sales export).

During the first ten months of 1954, (complete year sales figures compiled by the U.S. Census Bureau not yet available) United States aviation exports amounted to $539,604,000—nearly three and one-half times the British aviation export for the entire year.

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Enemies Are Red...Friendlies Are Blue

A new color radar system, capable of distinguishing between friendly and enemy aircraft, is now undergoing evaluation tests by the military services.

The color radar can now indicate the position of unidentified aircraft in two colors (depending upon flight altitude), over earth surfaces which appear in another color.

The jet fighters and bombers needed to maintain U.S. air supremacy are becoming capable of such speeds that split second methods of identifying and tracking their positions on radar can be vital to the national security.

The military services believe that color may be the answer to assist the radar operation in "sorting" the "blips" traced out on the radar screens.

The new color radar indicates aircraft as bright orange dots traveling over chartreuse colored land areas. The indicator shows planes flying at high levels over the chartreuse land areas in bright orange while those flying at lower altitudes show up with a more greenish hue. Current radars, now in operation, indicate aircraft only as colorless "blips" at any altitude.

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PLANE FACTS

- Commercial airline sales of one major aircraft company exceeded in 1954 the value of all United States gold produced in 1954. Yet those sales represented only 2% of that aircraft manufacturer's total business for the year.
- Each sweep-back wing of one of this nation's latest jet bomb-ers contains 14,696 bolts and rivets.
- One Air Force flying tanker squadron transferred more aviation fuel (563,273 gallons) in sixteen flying days of aerial refueling operations than the average automobile service station would pump in three years. The same squadron has delivered 6,000,000 gallons of aviation fuel in aerial refueling operations to USAF bombers and fighters during the last four years.
- A new military air transport plane, which the United States Air Force classes as a "medium combat transport," has a clear cargo compartment longer and wider than a standard railroad freight car. It can carry a 20-ton payload and its engines develop enough horsepower to pull four 40-car railroad trains.
Aircrafts Set Highest Air Travel And Best Safety Record In History

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brings a gross revenue of $2,314,00 to the Department. Of that amount $134.66 is paid to the airlines; the balance, 94.2 per cent, is retained by the Post Office to pay for its operating ground expenses.

Military Air Travel

The Defense Department, responsible for the mass movement of personnel, is probably more conscious of efficiency and economy than any other "business" in the world. Prior to 1949, only two per cent of the military establishment's official group movements of 15 or more individuals traveled by air. Today, more than half of all military group movements, in that quantity, are made by the airlines.

For example, in 1953, the scheduled airlines handled more than 818,000 military passengers. The fast movement of these officers and men saved the government 22,054,325 man hours, representing a manpower saving of approximately 8,797 men working 48 hours per week for an entire year. This is the equivalent to the productive time of more than one-half of an Army division.

In terms of the base pay of an Army private, in productive time alone, the savings to the military would amount to $2,467,000.

The largest scheduled airline movement of military personnel to date involved over 3,000 men. Transcontinental air movements of 650 or more mean a routine to the scheduled airlines.

Airline Costs Rise, Fares Drop

Despite the spiraling upward costs of operation, travel fares continue to decrease. In 1953, a scheduled airline passenger traveled at 5.2 cents per passenger mile, but he can now travel at 4.1 cents per passenger mile. This saving to the traveling American public has been achieved despite a 90 per cent increase in the general consumer price level since January 1, 1947. In addition, the vast improvement of service, comfort and safety is virtually inescapable.

"TIME IN ITS FLIGHT . . ."

News travels rapidly. But if news is to keep abreast of the progress in aircraft performance, it's got to become superersonic.

On January 25, 1955, one of this nation's latest jet fighters climbed to 10,000 feet, from a standing ground start, in 83 seconds—considerably less than two minutes.

This fact was charted and rushed to press (see chart). In the span of time between press and issue date, February 7, that remarkable record was shattered three more times by fighter-interceptors of three aircraft manufacturers.

Hoping that the ink on these pages has time to dry before any other climb-to-altitude record is set, PLANES reports that the latest unofficial climb record to 10,000 feet, from a standing ground start, is 56 seconds—four seconds less than one minute!

The "New Look" in Utility Aircraft Means More Comfort, Safety

A typical manufacturer of modern military jet aircraft reports that 55 per cent of its subcontractor and supplier dollars were spent with small business concerns in 1954.

Aircraft industries association

BIG BUSINESS FOR SMALL BUSINESS

The "New Look" in Utility Aircraft Means More Comfort, Safety
Specialists on 32 Committees To Reduce Costs, Improve Quality

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Engine and component manufacturers serve on the Aircraft Manufacturers Committee of AIA, eleven presidents or board chairs serve on the Utility Airplane Committee, and eight company chief executives serve on the Helicopter Council.

Standardization of a simple bolt as a result of one group's efforts has resulted in savings exceeding a million dollars a year in aircraft manufacture.

Ideas for the uses of new adhesives and plastics has resulted in the savings of thousands of man-hours of effort and have made modern planes lighter and tougher. Even methods of conservation, salvaging of waste materials and packaging units for shipment have been coordinated among companies and have resulted in additional cost reduction formulas.

The men who serve on these industry committees represent 38 manufacturers of aircraft, aircraft engines and airframes and 55 manufacturers of accessories, parts and materials.

Typical of these committees and the problems to which they are assigned is the "Aircraft Technical Committee," whose members are concerned with the research, engineering, design, development, construction, testing and operating safety of both civil and military aircraft.

This committee places particular emphasis on representation of coordinated industry views regarding design productivity, Government research policies, possible consolidation of Government regulations and methods of preventing duplication in technical data requirements.

Another is the "Aircraft Research and Testing Committee," dealing with problems of technical development offering possibilities for cooperative endeavor in applied research and testing.

The emphasis of this committee is placed on elimination of undesirable duplication of effort in company laboratories through providing a means for exchange of technical data among aircraft companies and through cooperative testing of new structures, new materials and new processes.

A further example is the "Noise Control Committee" which is concerned with sound-control problems, particularly engineering aspects of noise problems related to the manufacture, testing and operating of such products as jet engines, afterburners, rockets and propellers.

It works on problems incident to the control and suppression of noise affecting plant personnel, as well as noise affecting areas external to the plants, and engages in cooperative efforts in this field with other interested aviation agencies.

Aircraft Company Efforts Cut Costs

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One college are presently working or have just completed work on 90 of these research projects.

These contractors are typical businesses of some large, some small, but representing a cross-section of American industrial strength. Not only are they contributing to cost-reduction in the defense program, but they are contributing to the economic health of the 50 cities in 17 states in which they are located. They span the nation from New Hampshire to California and from Wisconsin to Texas.

The program on which these companies are handling range from determining the potential and extended use of casings in airplane manufacture to re-designing a jet engine to reduce the requirements for critical material.

Typical of the savings being developed through these research projects:

- Tow targets fabricated of fiber glass reinforced plastic laminates will save an estimated 60,000 pounds of aluminum per month based on current procurement.
- Development of high-volume production of plastic dropake fuel tanks will save $50 per tank in addition to conserving many pounds of aluminum.
- Development of high-volume production of certain Klyatron tubes, resulting in improved quality of the air, and a cost reduction from $7,500 to $2,500.
- Designing, developing and constructing an exhaust machine for electron receiving tubes, representing a potential yearly savings of $14,250,000.
- Designing a process for producing hollow forged parts. Reduction of up to 60 percent in material used and 50 percent in machine time anticipated.

Tow Targets Today

Tattle On Pilot Error

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and highly complex fire control systems of current production fighters and bombers have to know the faults of individual fire-controllers. Because the system is unable to "speak for itself" the job of tattling on an aircraft pilot's fire control has been turned over to the tow targets.

With the installation of many ingenious electronic devices, three dimensional streamlined targets towed at high subsonic speeds not only record the "hits" but record the "misses." Through electronic metering, one target system is able to tell for the misses, measure the distance of the miss, the angle of the miss, record it, and transmit the data to armament engineers on the ground.

In this way the fire-control engineer can tell why his "speechless" fire control system is erring and make the necessary zeroing-in modifications.