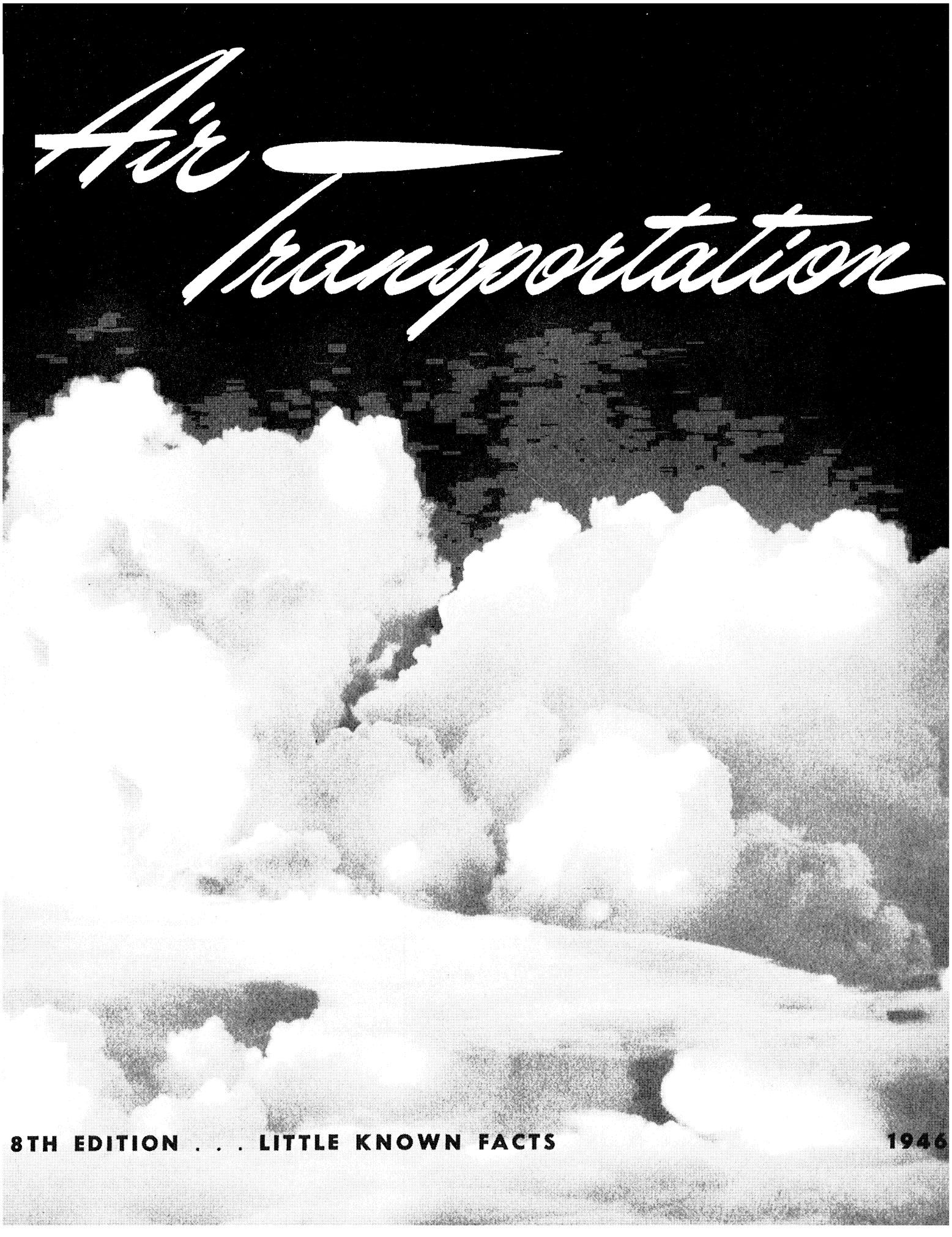
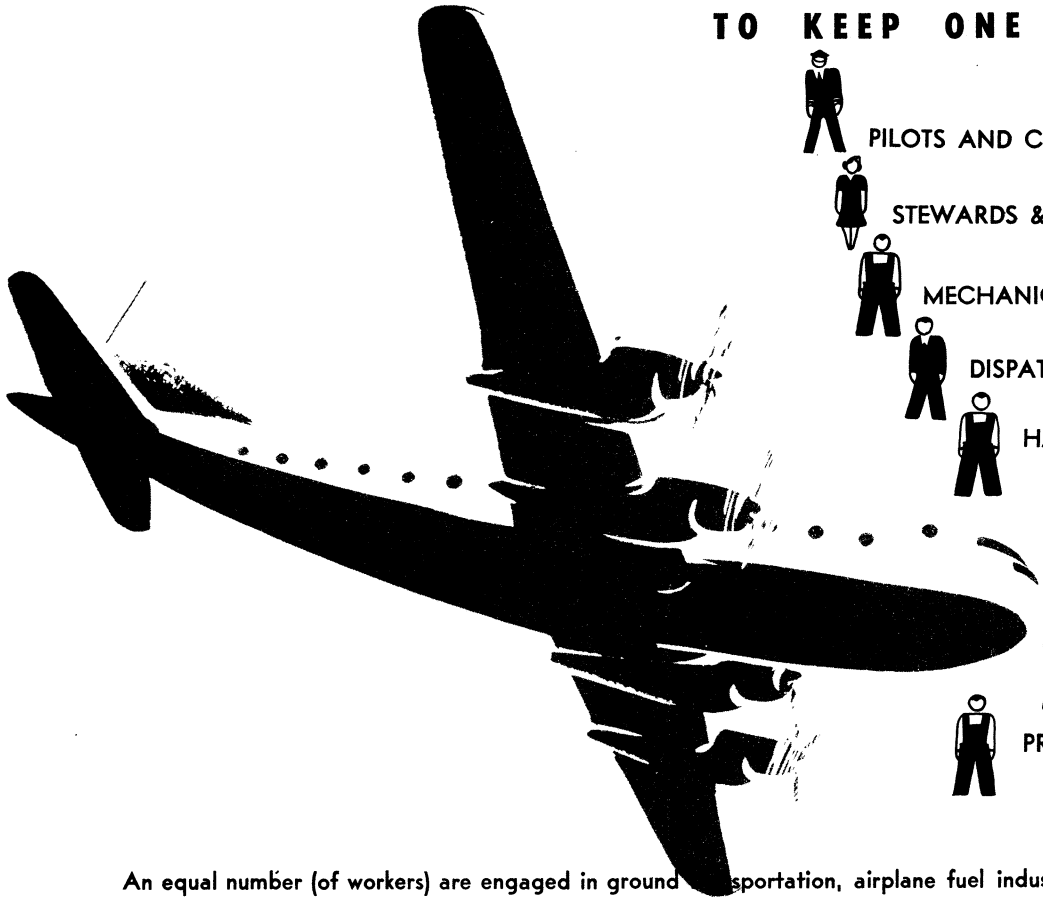
Air Transportation



8TH EDITION . . . LITTLE KNOWN FACTS

1946

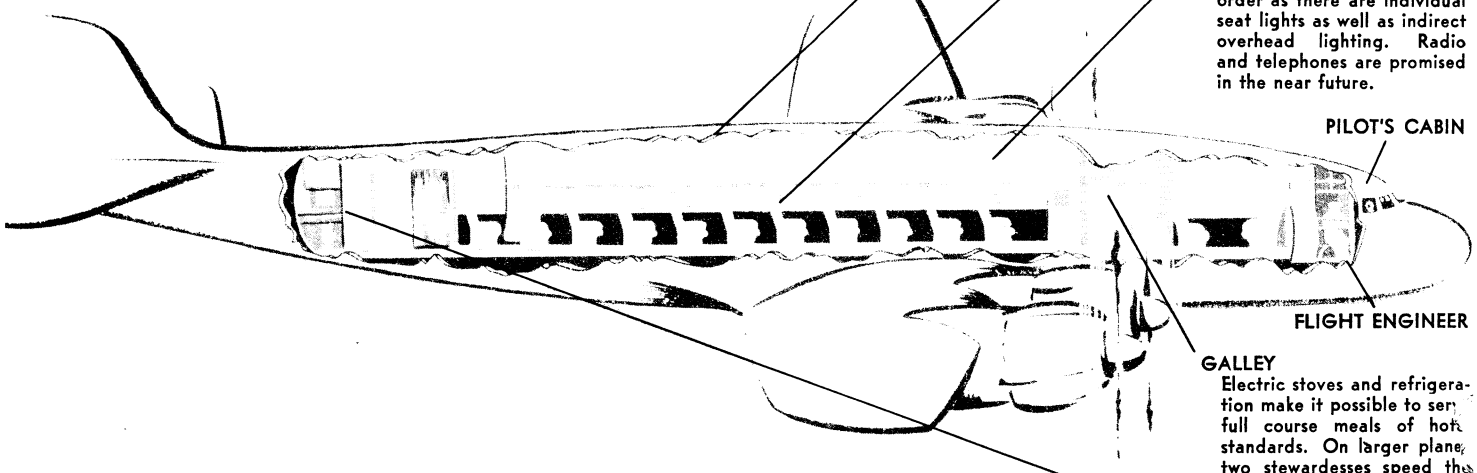
NUMBER OF MEN AND WOMEN NEEDED TO KEEP ONE PLANE FLYING



PILOTS AND CO-PILOTS	8
STEWARDS & STEWARDESSES	3
MECHANICS AND RIGGERS	23
DISPATCHERS	2
HANGAR AND FIELD	14
OFFICE	35
OTHER	6
AIRPORT AND AIRWAYS	18
PRODUCTION	31
	140

An equal number (of workers) are engaged in ground [illegible]sportation, airplane fuel industry, sales and other related activities.

COMFORT ALOFT—CROSS SECTION OF A MODERN PLANE



PRESSURIZED CABIN
While the plane cruises in the stratosphere, high over storms, the passengers enjoy the equivalent of a normal 8,000 foot altitude.

RECLINING CHAIRS
The seats, which are spaced for plenty of leg room, can be tilted at the touch of a finger. Some models provide berths and compartments.

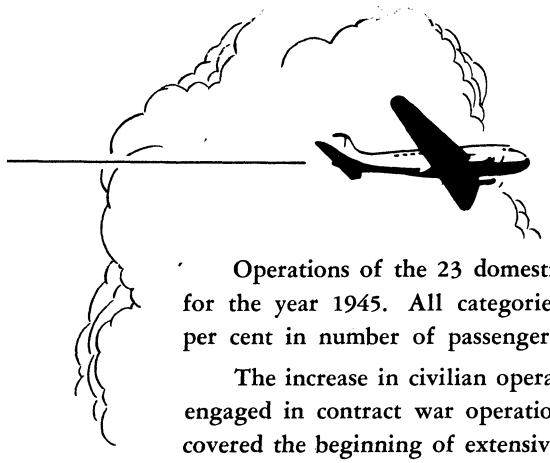
INDIRECT LIGHTING
Either reading or dozing is in order as there are individual seat lights as well as indirect overhead lighting. Radio and telephones are promised in the near future.

PILOT'S CABIN

FLIGHT ENGINEER

GALLEY
Electric stoves and refrigeration make it possible to ser[illegible] full course meals of hot[illegible] standards. On larger plane[illegible] two stewardesses speed the[illegible] serving.

REST ROOMS
Separate rest rooms for men and women are features of the new models. All modern appointments are provided, down to electric razors.



A RECORD BREAKING YEAR

Operations of the 23 domestic and international airlines of the United States broke all records in their history for the year 1945. All categories of traffic registered unprecedented gains over 1944, ranging from about 61 per cent in number of passengers to about 32 per cent in ton miles of express and freight.

The increase in civilian operations occurred during the period while the commercial carriers were still partially engaged in contract war operations for the Army and Navy both in this country and overseas. The period also covered the beginning of extensive contract carrying in the redeployment of troops across the country in Operation "Trans-Con."

The number of planes in daily use of the domestic airlines reached a total of 411, as compared with the pre-Pearl Harbor peak of 359, with scores more in process of reconversion and other new models coming off the production lines. The overseas fleet totalled 107 planes, bringing the total to 518. But the aircraft were still insufficient to handle the steadily increasing demand for seats, particularly on the eastbound transcontinental trips, when in December the Army and Navy temporarily took over 70 per cent of the eastbound space for returning soldiers and sailors.

The principal 1945 operations of the domestic airlines were as follows:

Passenger miles: A total of 3,500,102,057 as compared with 2,264,282,453 for 1944. This was an increase of 54.13 per cent, or 1,235,819,604 passenger miles.

Miles: A total of 224,066,094, as compared with 146,909,765 for 1944. This was an increase of 52.51 per cent, or 77,156,329 miles flown.

Passengers: A total of 7,502,538, as compared with 4,668,466 for 1944. This was an increase of 60.70 per cent, or 2,834,072 passengers. Toward the end of 1945, as more planes became available, the increase in number of passengers ran higher than 62 per cent over the corresponding period in 1944.

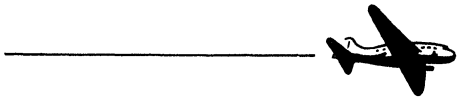
Ton miles of mail: A total of 65,095,548 as compared with 51,138,971 in 1944. This was an increase of 27.29 per cent, or 13,956,577 ton miles.

Ton miles of express and cargo: A total of 22,632,618 as compared with 17,142,677 in 1944. This was an increase of 32.02 per cent, or 5,489,941 ton miles.

The extent of the overseas operations for 1945 was as follows: Passenger miles: 522,764,809. Miles: 37,866,695. Passengers: 784,835. Ton miles of mail: 4,852,466. Ton miles of express and freight: 9,259,136.

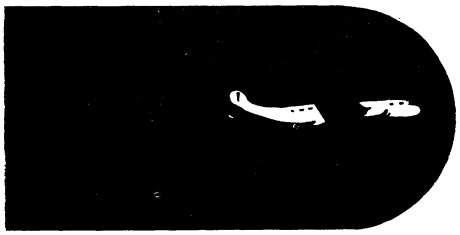
The average number of seats per plane rose to 20.63. Fares had been reduced to 4½ cents per mile, while a reduction of 13 per cent in basic express rates was announced, effective January 1, 1946.

Still with insufficient equipment, the airlines were able to handle as much traffic as they did through continued maintenance of the exceptionally high utilization of aircraft achieved during the war. As compared with 7 to 9 hours before Pearl Harbor, planes in service during the war were flown 11 to 12 hours daily. This figure in 1945 dropped slightly on some lines, but actually improved on others, at least two recording a 12½ hour daily average use. The average use for 1945 was 10.58 hours, or slightly more than the 10.42 figure for 1944.



Similarly, the war-time load factor, which hit a high average mark of 92 per cent, dropped to an average of 88.1, but three lines increased theirs. One line operated in the vicinity of 95 per cent of available seats filled with paying passengers and several held over the 90 mark. The international U. S. carriers were operating at close to an 80 per cent load factor, with average journeys of about 1500 miles.

During the latter part of the year, in addition to their regular civilian operations, the airlines under contract and through seat allotments helped speed the movement of about 126,000 troops. During the earlier part of the year the air carriers completed their direct war job, which all-told amounted to flying 8,000,000,000 passenger miles and 850,000,000 ton miles of cargo under contract for the Army and Navy and in war-tinged civilian operations. On Army and Navy missions alone the commercial carriers flew the equivalent of 26,000 times around the world at the Equator. Eleven airlines continued to operate under contract for the Army and Navy in 1945, some of them for considerable time after the cessation of hostilities.



On contracts for the Army the carriers flew 100,544,961 transport miles. The ton miles flown were 399,928,428; and passenger miles 1,751,763,336, of which 1,603,877,886 were on international routes and 147,885,450 on domestic.

The contract carriers on the Transcon Project for redeployment of returning soldiers and sailors carried 63,376 passengers from August 21 to December 31, 1945. This did not include seat allotments on regular eastbound civilian schedules.

The situation on contract carrying with the Naval Air Transport Service for 1945, was:

Passenger miles	31,686,893	Ton miles	20,843,097
Plane miles	6,798,936	Hours flown	46,972

In mid-September war-time priority restrictions were greatly relaxed, leaving 85 to 90 per cent of airline seating capacity available for passengers without priorities on a "first come, first serve" basis for regular reservations. On October 15 all priorities were abolished. The demand for air travel increased so heavily, however, that on practically all routes it was necessary to make reservations anywhere from several days to several weeks ahead.

The number of airline employes jumped to 55,000 by the end of 1945, which included a 20 per cent increase due to adoption of the 40-hour week by most of the carriers. In 1941 the total personnel of the airlines was about 26,000. Jobs for veterans was the keynote of the airline hiring program.

The domestic scheduled carriers in 1945 had the record of only 2.17 passenger fatalities for each 100,000,000 passenger miles flown. This figure was about that of the 1944 mark of 2.12, when the corresponding rate for automobiles and taxis was 2.9. Only 15 short years ago, in 1930, the number of airline passenger deaths was 28.37 per 100,000,000 passenger miles.

The network of air routes available for the transportation of passengers, airmail, and cargo in the United States was increased by 4,212 miles in 1945. The total number of route miles reached the all-time high of 67,149. There were 129 more applications for scheduled airline service pending before the Civil Aeronautics Board at the end of 1945 than at the end of 1944. The total at Dec. 31, 1945, was 755, as compared with 626.

A WOMAN'S WORLD

The new postwar airline fleet is being planned with particular attention to the increasing vogue for air travel by women. It well should be, for in the record-breaking rise of passengers in 1945, women led all the rest.

Even before Pearl Harbor, 20 per cent of all airline passengers were women. And, in a recent survey of prospective travelers, 62 percent of the women interviewed said that they plan to use the domestic airlines now that the war is over, as compared with 68 per cent of the men questioned.

The aircraft of today and tomorrow have many features which appeal particularly to the fair sex. The new planes are as quiet as your living room. Shock mountings keep vibration to a minimum. Fresh, clean air, cooled or warmed to the needs of the moment, will keep the cabins comfortable on the ground as well as in the air. These pressurized and air-conditioned passenger compartments make flying over the desert or at high altitudes as comfortable as vacationing at the seashore.

One of the features which will please the woman passenger as soon as she enters the plane, is the commodious closet space opposite the entrance where coats and hats may be stowed without wrinkling. There will be luggage compartments where traveling bags may be reached easily during flight.

And no more perching of trays on the lap at meal time. When it is time to dine, the stewardess will attach an individual table to each passenger's chair. The tables are light but strong and large enough to hold a full course

dinner. Many airlines are adding to feminine comfort by increasing the number of stewardesses so that meals may be served more quickly and numerous flight details attended to in the air rather than causing delay on the ground.

If an overnight trip is involved, the woman traveler will be delighted with the roominess of sleeping accommodations. A mother and small child can sleep comfortably in a lower berth. Only 30 seconds are necessary to change the interior of the plane into a flying sleeper.

The ladies' lounge, usually aft, is the high point of feminine appeal. Dressing tables with adjustable mirrors are at either end of most of the models. That a full-length mirror is a must for every woman was not forgotten by the designers. Lighted indirectly, it is built into the back of the door leading into the main cabin in some of the advanced designs. And the lounges are usually large enough to get a full view from every angle. Some lines even go so far as to provide a plunger in the wash basin which releases a fragrant hand lotion.

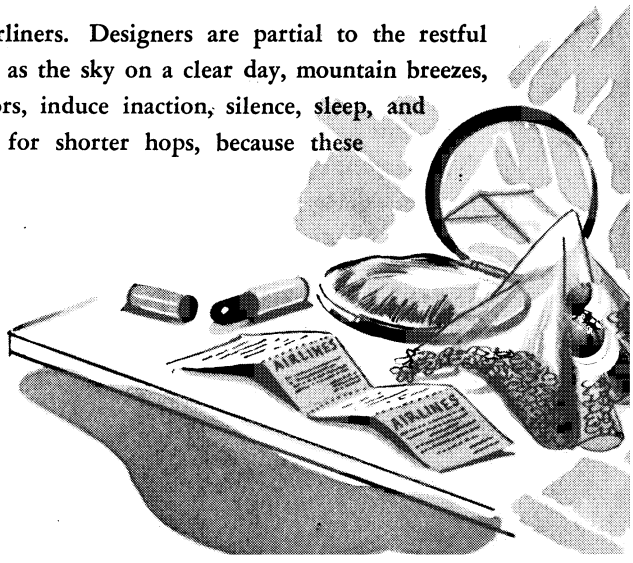
Getting into an upper berth is an easy matter with the aid of the rolling ladder, readily wheeled into position. And the luggage problem, always a handicap to travelers in uppers, has been anticipated. At the foot is a luggage shelf large enough for an overnight bag. Toilet accessories have their own storage place, and there is a small jewel case built in beside the berth. A thermos bottle of cool water is right at hand for the traveler who becomes thirsty during the night.

Roomy and luxurious seats are almost universal features. Many of the chairs are reversible for conversation or cards. Fluorescent lights, overhead, and individual lights for reading, add to the comfort.

The airlines which are buying the new transport models are making plans, too, to attract the woman traveler whether she flies on business or pleasure. For instance, one airline recognizes that American women wherever they go like to sleep on inner-spring mattresses and enjoy the conveniences of modern plumbing. And so, such comforts have been installed at hotels patronized along the route by passengers flying to South America.

Much thought is given also to the interior decor of the new airliners. Designers are partial to the restful shades of blue or green—colors with such pleasant thought associations as the sky on a clear day, mountain breezes, cool water, things growing. The blue-greens, say the plane decorators, induce inaction, silence, sleep, and thus make a trip relaxing. They avoid exciting red tones, except for shorter hops, because these stimulate the mind and body, leaving the passenger weary at the end of a long flight.

Yes, from the looks of things to come, it's a woman's world in the air. And more women than ever before will be flying!



AIR TRAVEL LINGO

Travellers have always prided themselves on familiarity with the usually picturesque language born of every form of transportation. The arrival of the air age has introduced a whole new dictionary of words and phrases. Here are a few:

AIRCRAFT

BOOTS—Hollow rubber surfaces on leading edges of wings and control surfaces which crinkle on application of compressed air to break off ice.

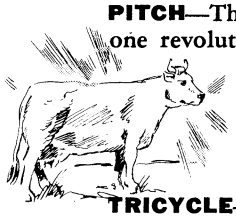
FILLET—A sloping body connection employed to smooth out the flow of air at angular junctions of surfaces, thus reducing wind resistance.

GUN—the throttle of an airplane.

MIXMASTER—DC-8 type of Douglas plane with two counter-rotating propellers at the tail, driven by shafts from two engines in the fuselage.

OFFICE—The pilot's cockpit, usually in a large airplane. (Also called pulpit.)

PITCH—The distance a propeller moves forward in one revolution as determined by the blade angle.

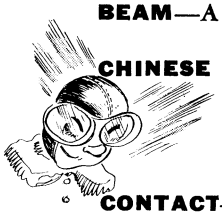


SACRED COW—Popular name for the personal plane of the President of the United States.

TRICYCLE—A landing gear with a third wheel located under the nose of the airplane, the other two being behind the center of gravity.

NAVIGATION AND FLIGHT

BEAM—A directional radio signal.



CHINESE LANDING—A landing made downwind, also sometimes called a one wing low landing, so-named after the fictitious Chinese aviator, Won Wing Low.

CONTACT—Flying a plane when guided solely by a view of the ground or water.

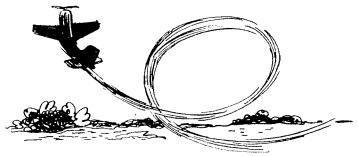
DEAD STICK LANDING—A landing made with a stationary propeller after the engine has stopped.

FIDO

The British war project for fog dispersal at airfields. Experiments are being conducted for practical adaptation to civilian airports.

FIX—In air navigation (or avigation, as many air-minded experts would have it) a definite position of an aircraft, determined by the intersection of two or more bearings or lines of position on a chart.

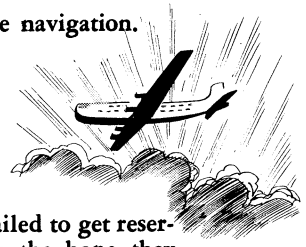
GROUND LOOP — An uncontrollable, violent turn of an airplane while taxiing or during the landing or take-off run.



IRON MIKE—Slang for gyropilot or automatic controls.

LORAN—Radar system for long range navigation.

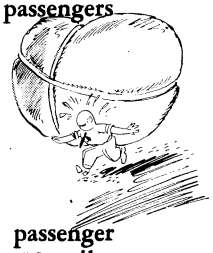
OVER-THE-TOP—Flight of aircraft made above an overcast, usually a cloud formation.



TRAFFIC

GO SHOWS—Extra passengers who failed to get reservations, yet are sent to an airport in the hope they might replace "no shows", or prospective passengers who did not pick up their reservations.

LOAD FACTOR—Ratio of a transport plane's passenger list to its passenger capacity. Before the war, 60% was good; during the war it reached points higher than 95%.

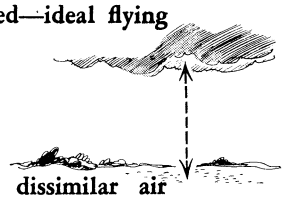


PASSENGER MILE—The carriage of one passenger one mile. A load of 10 passengers flying 10 miles would represent 100 passenger miles.

WEATHER (Meteorology)

AIR POCKET—Really no such thing—what has often been so miscalled is the effect of vertical currents of air, either updrafts or downdrafts.

CAVU—Ceiling and visibility unlimited—ideal flying weather.

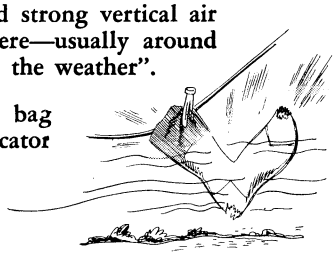


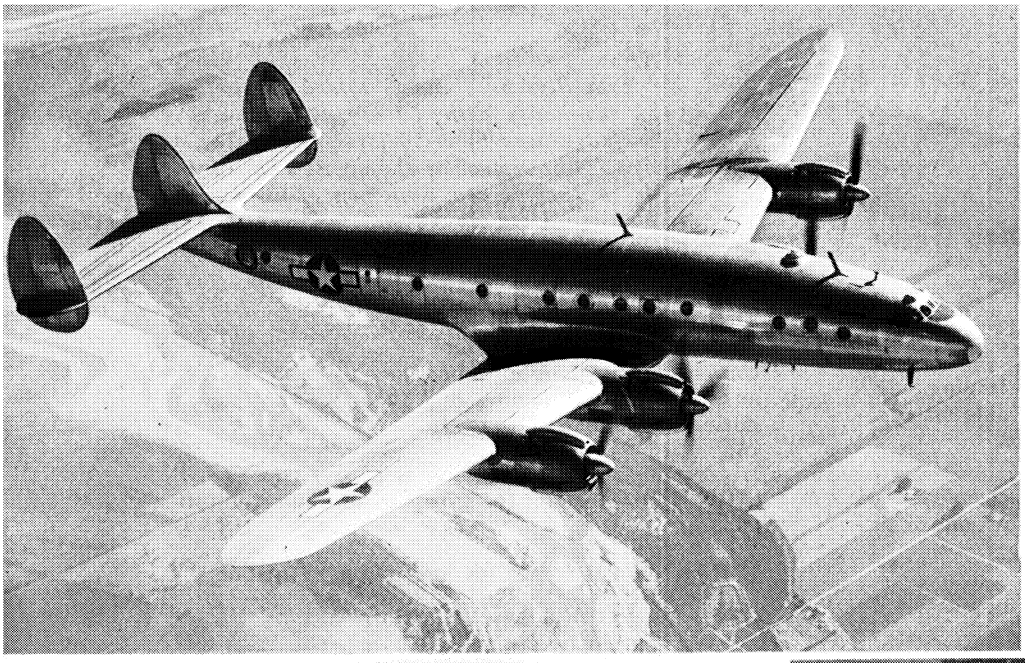
CEILING—Vertical distance from the ground to the lower limits of a cloud base.

FRONT—The mixing zone of two dissimilar air masses. The colder, denser air always pushes its way under the warmer air in the form of a wedge. Icing conditions and severe turbulence are often accompaniments of a cold front.

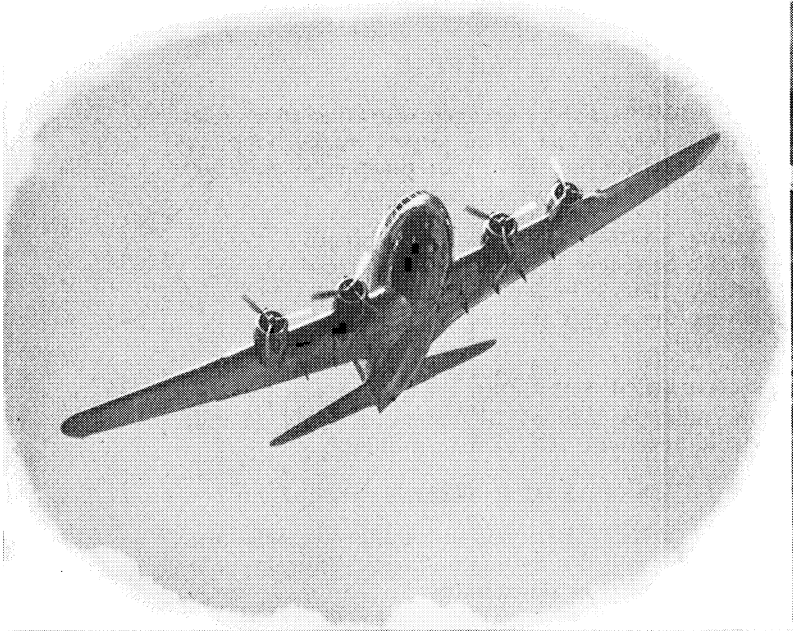
STRATOSPHERE—The upper portion of the atmosphere, virtually free of clouds and strong vertical air currents. Flight in the stratosphere—usually around 35,000 feet—is called "flying over the weather".

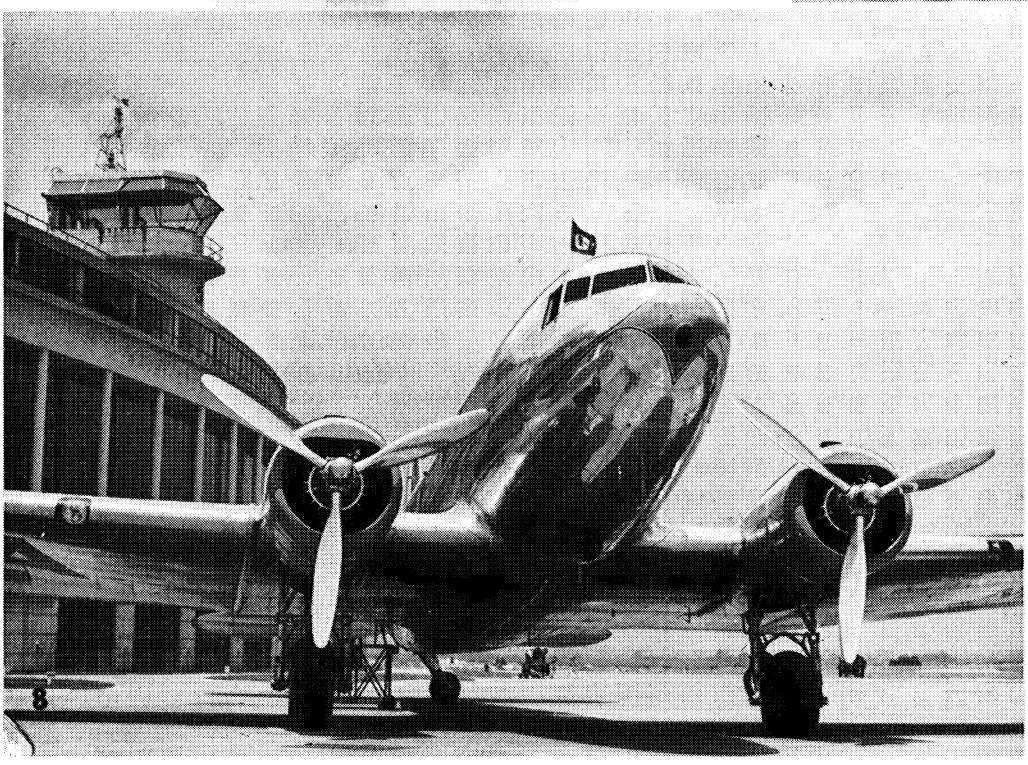
WIND SOCK—A conical fabric bag which acts as a wind direction indicator near a landing field.





THE AIRLINE FLEET





PLANES OF THE YEAR

Types which set the records of 1945.

PLANES OF TOMORROW

Super and normal size—both extra fast—share honors in the new field.

The present date in the history of the airlines of the United States, when it has become in many cases cheaper to travel by air than by rail—and much safer than by automobile—is one of the milestones in the development of transportation. Air travel has outgrown the exclusive stage and has entered the era of mass transportation.

Ushering in the first full year of peacetime travel will be a greatly expanded airline fleet. By the end of 1947 the number of regularly scheduled aircraft is estimated to be a total of more than 1200 planes. The carriers will then seat more than 45,000 passengers and will be capable of operating between 15 and 20 billion passenger miles per year.

Mass transportation does not mean that speed and comfort are going into the discard. The air "coaches" of the immediate future are even faster than today's and just as comfortable. But it does mean that the men who are confident of making "air-liner" a household word are thinking in terms of extra seats rather than super lounges; are carefully calculating speeds which spell economy and can be translated into still lower fares. Significant is the trend of manufacturers to allow for extra seats in the bigger planes.

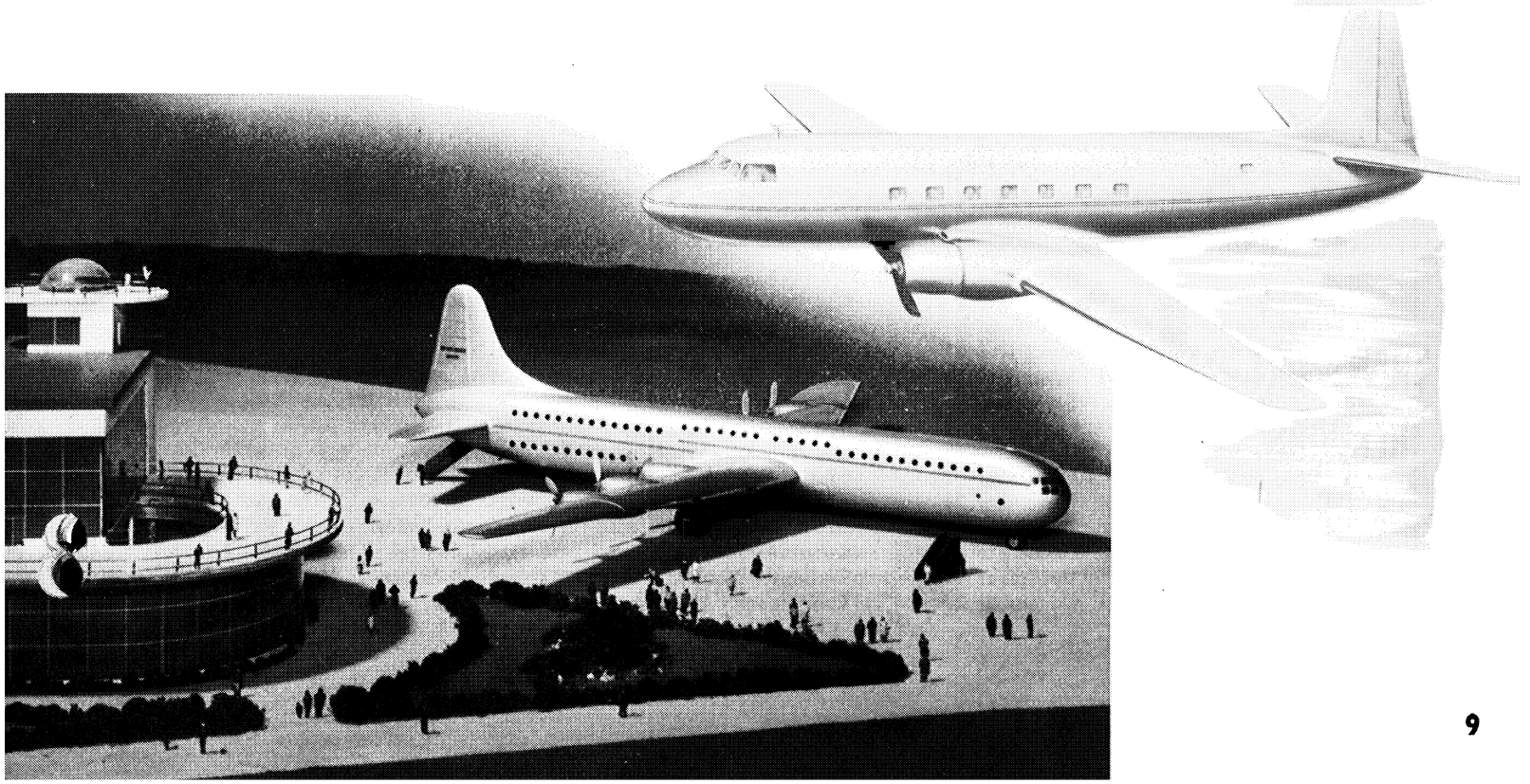
The aircraft on which the airlines are counting to multiply mass transportation cruise at from 200-300 miles per hour, as compared with the pre-war figure of up to 180, and carry 50 passengers as compared with the previous usual capacity of 21. One illustration of the operating economy to be achieved is the calculation that in one day the old planes make one round trip between New York and Chicago, producing revenue from 42 rides each, while the new planes can make three one-way trips, the equivalent of 150 rides each.

For overnight hops, there will be different combinations of staterooms, berths, and reclining seats with opportunity for the traveler to choose varying combinations to suit his pocketbook. There will be plenty of elbow room with space for leg stretching in lounges and snack recesses. There will be separate rest rooms for men and women. There will be pressurized cabins to maintain low altitude conditions at "over-the-weather" heights.

Windows will be larger and better arranged for panoramic observation. Augmented stewardess service will make possible the handling of more flight details en route, saving time at the airports.

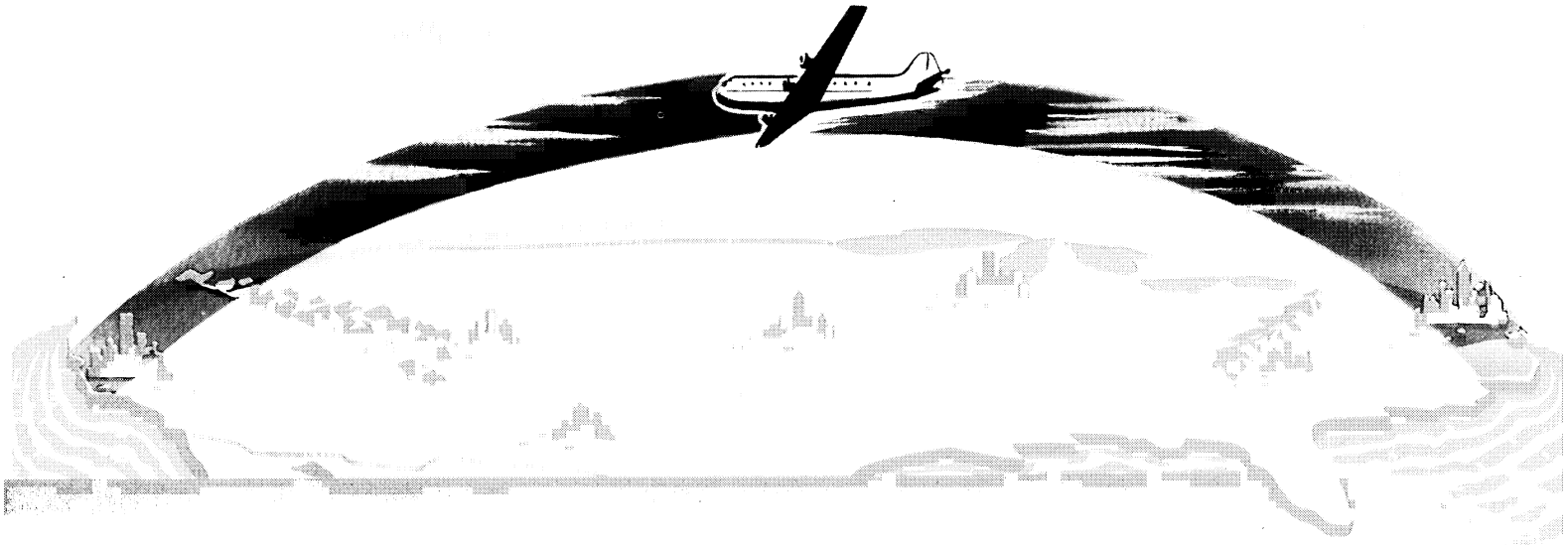
Some of the largest planes will have double decks, speeding loading and unloading of express, mail and baggage. The new planes will have greatly enlarged compartments for cargo, including express and mail, anticipating the time when all first class mail will go by air. There will also be improvements in type and location of hatchways to facilitate loading and unloading. Some of the planes will have quickly adjustable cargo space, so that the number of seats and size of cargo hold can be increased, and decreased depending on the proportions of the load.

The scientific advances already at hand include radar and other electronic devices, which will permit landing under practically zero ceiling and visibility and avoid risk of collision by enabling pilots to see other planes even in the thickest weather. Among the new inventions are the radio altimeter, the gyro synchronized compass, and Loran, long range radar navigation. Then there is also a vastly improved system of weather reporting, and, similarly, a far advanced, radio-aided airway traffic control, which will be vital when planes are landing and taking off six a minute at the larger airports.



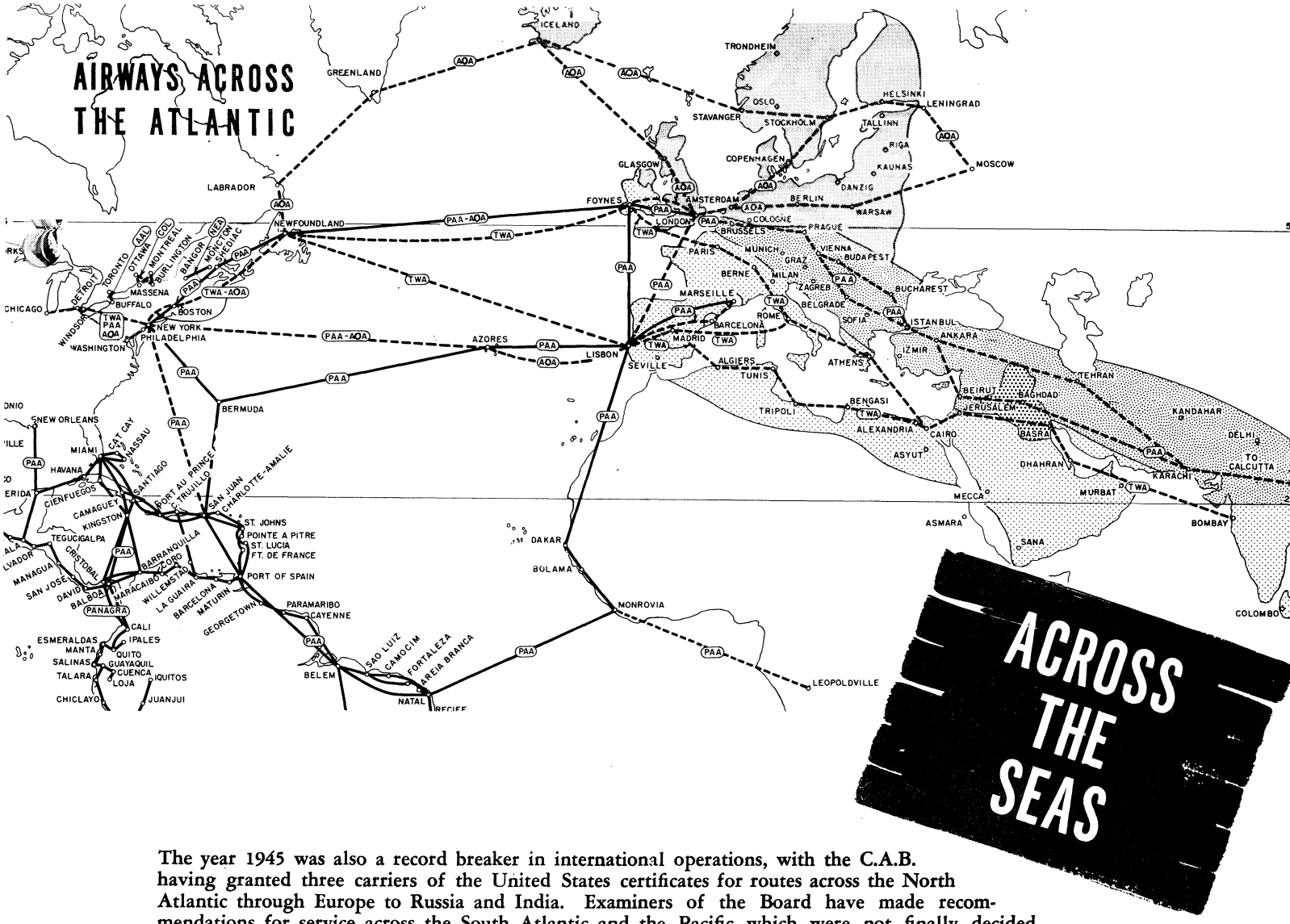
AIRLINE FARE COMPARISONS

From	To	Air Fare	Rail and Lower Berth	Savings By Air
Atlanta	Kansas City	34.75	39.94	5.19
Baltimore	Pittsburgh	8.65	12.74	4.09
Boston	Chicago	39.65	41.63	1.98
Boston	Washington, D. C.	18.40	20.21	1.81
Chicago	San Francisco	85.45	91.43	5.98
Chicago	Washington, D. C.	27.25	31.70	4.45
Cleveland	Los Angeles	99.70	105.28	5.58
Dallas	San Antonio	11.30	12.50	1.20
Denver	San Francisco	45.15	57.80	12.65
Des Moines	Kansas City	10.00	10.30	.30
Detroit	New York City	22.55	27.99	5.44
Kansas City	St. Louis, Mo.	10.65	12.15	1.50
Miami	Chicago	59.00	59.31	.31
New York City	Honolulu	313.30	——	——
New York City	London	375.00	——	——
New York City	Mexico City	114.90	——	——
New York City	Paris	375.00	——	——
New York City	Seattle	118.30	119.10	.80
Omaha	Denver	21.60	22.68	1.08
Philadelphia	Miami	52.25	53.32	1.07
Pittsburgh	Knoxville	17.90	27.92	10.02
Portland, Ore.	Washington, D. C.	111.35	120.37	9.02
San Diego	Denver	49.75	57.80	8.05
San Francisco	Des Moines	72.25	79.48	7.23
Seattle	Denver	54.60	61.88	7.28
Spokane	Los Angeles	52.45	62.66	10.21
Washington, D. C.	Detroit	18.50	24.48	5.98



TRANSPORT RECORDS OF 1945

			Hours	Min.	Sec.
January 10	Seattle - Washington	C-97	6	3	50
September 1	Honolulu - Washington	B-29	17	21	....
September 8	Washington - Burbank	Constellation	8	39	....
October 9	Los Angeles - Washington	B-29	6	45	....
November 1	Hokkaido - Washington	B-29	27	29	....
November 20	Guam - Washington	B-29	35	5	....
December 4	Washington - Paris	Constellation	14	48	....
December 8	Long Beach - Washington	Mixmaster	5	17	34
December 11	Burbank - Brooklyn	B-29	5	27	....
December 27	Long Beach - Honolulu	B-29	9	36	10



The year 1945 was also a record breaker in international operations, with the C.A.B. having granted three carriers of the United States certificates for routes across the North Atlantic through Europe to Russia and India. Examiners of the Board have made recommendations for service across the South Atlantic and the Pacific which were not finally decided on by the full Board, while determination of broad extensions in the Caribbean was still to come.

The international route miles certificated at the end of the year totalled 106,197 miles for the U. S. carriers.

During 1945 international relations in the air were advanced by the signing by 41 natoins of the interim agreement for the Provisional International Civil Aviation Organization. The permanent convention was signed by 8; the transit agreement by 25; and the transport agreement by 12. There were 36 countries which signed varying numbers of the five freedoms of the air (the transit and transport agreements), signed bilateral agreements with the United States, interim agreements, or proceeded well along with negotiations.

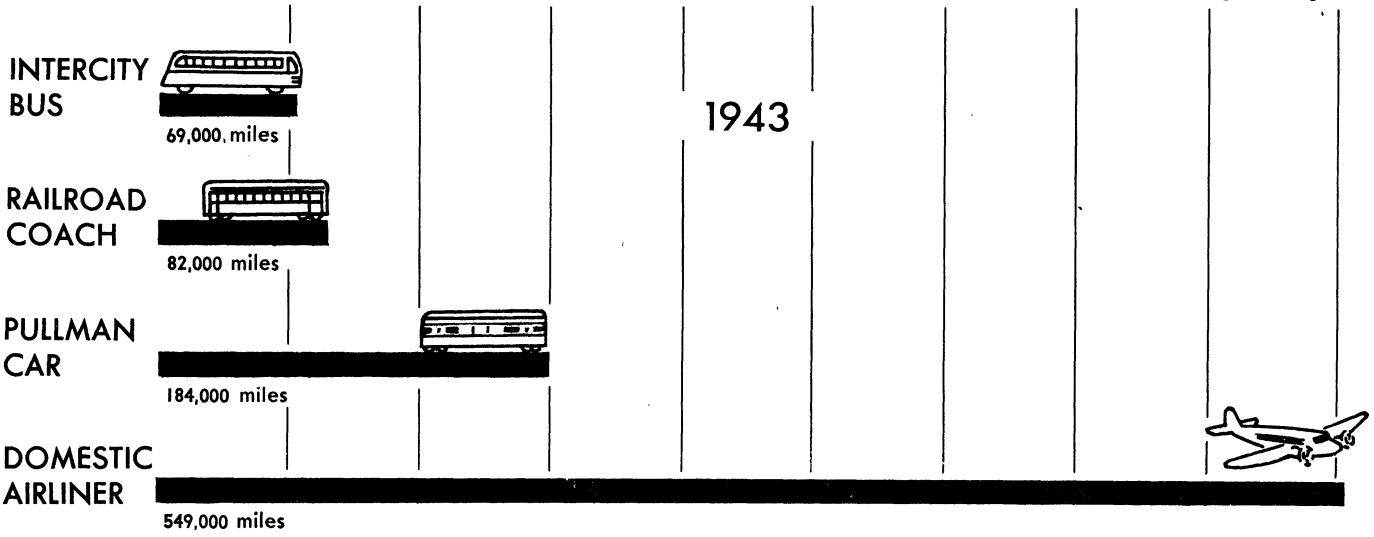
The Civil Aeronautics Board's designation of North Atlantic terminal points within the United States was significant of the passing of the motion that an international airline ends at the coastline and that an airport need necessarily coincide with a seaport. The terminal points named were Chicago, Detroit, Washington, D. C., Philadelphia, New York and Boston. Early in 1946 Baltimore was also designated.

Three lines won trans-Atlantic certificates. American Overseas, formerly American Export, Transcontinental & Western Air (TWA) and Pan-American World Airways.

At year's end American Overseas Airlines and Pan-American were running 14 weekly round trip schedules to London via Botwood and Ireland, using four-engined DC-4 landplanes. Pan-American was operating two additional routes to Lisbon via Ireland, daily trips from San Francisco to Hawaii plus two weekly with cargo and mail only, and from Seattle to Alaskan points on frequent daily schedules, as well as its Caribbean network. Terminals for the trans-Atlantic trips were New York, Chicago, Boston and Washington, and Philadelphia. Pan-American was operating two weekly trips to Bermuda, plus one on alternate weeks, continuing from there to Lisbon by way of the Azores. There were also weekly trips from Lisbon to Monrovia in Africa and from Monrovia to Natal in Brazil. The New York-London fare was $375, one way, with the round trip twice the one-way less 10 percent.

TWA completed survey and preview flights on its North Atlantic route, planning to start service early in 1946 between the United States and Paris, using Constellations. Pan-American also made survey flights in the Pacific beyond Honolulu with a view toward early re-establishment of service to Manila, the Orient and Australia. Plans were being made by all the trans-Atlantic carriers for extending operations into Europe, Russia and Mediterranean as soon as conditions would permit.

Annual average mileage travelled by different vehicles per year



Number of Planes, Miles, Seats

	Number of Planes in Service	Daily Average Miles Flown	Number of Seats
1928	268	28,416	*
1929	442	61,315	*
1930	497	87,651	*
1931	490	117,138	*
1932	456	124,334	6.58
1933	408	133,621	7.59
1934	417	112,207	8.85
1935	356	151,727	10.34
1936	272	174,255	10.67
1937	282	181,018	12.53
1938	253	190,873	13.63
1939	265	226,223	14.63
1940	346	297,269	16.95
1941	359	364,446	17.41
1942	179	301,652	17.60
1943	194	283,840	17.61
1944	228	390,974	18.99
1945	411	588,931	20.63

*Not Available

Fuel Consumed, Domestic

Calendar Year	Gasoline (Gallons)	Oil (Gallons)
1926	*	*
1927	*	*
1928	*	*
1929	*	*
1930	11,457,065	371,459
1931	16,038,887	555,556
1932	19,715,252	631,828
1933	21,839,292	804,961
1934	18,872,057	667,775
1935	27,065,717	707,066
1936	30,392,923	675,655
1937	33,606,700	629,127
1938	37,218,743	644,768
1939	46,554,856	726,507
1940	64,906,284	1,087,208
1941	80,757,892	1,258,983
1942	68,030,246	989,103
1943	63,908,388	878,923
1944	88,143,632	1,238,941
1945	*	*

*Not Available

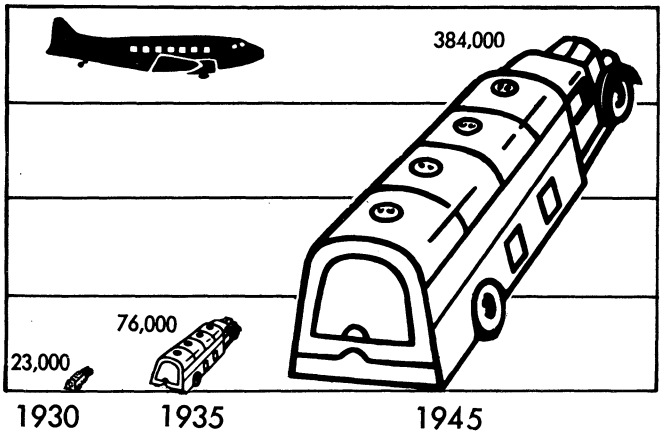
Fuel Consumed, International

Calendar Year	Gasoline (Gallons)	Oil (Gallons)
1926	*	*
1927	*	*
1928	*	*
1929	*	*
1930	3,092,412	81,493
1931	3,118,495	87,424
1932	3,971,696	70,193
1933	4,487,504	119,450
1934	6,264,217	170,981
1935	6,194,892	172,709
1936	6,760,898	197,917
1937	7,817,614	215,443
1938	8,091,449	185,102
1939	9,382,279	194,689
1940	9,628,645	200,599
1941	12,201,504	299,535†
1942	17,652,754	348,039†
1943	14,761,293	256,559
1944	16,912,705	270,512
1945	*	*

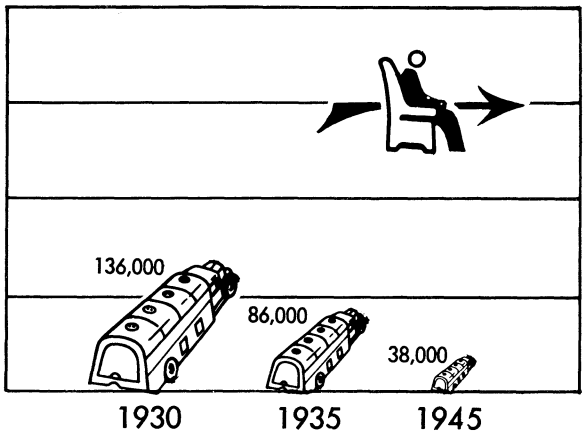
*Not Available †Estimated.

GASOLINE CONSUMPTION (Domestic Airlines)

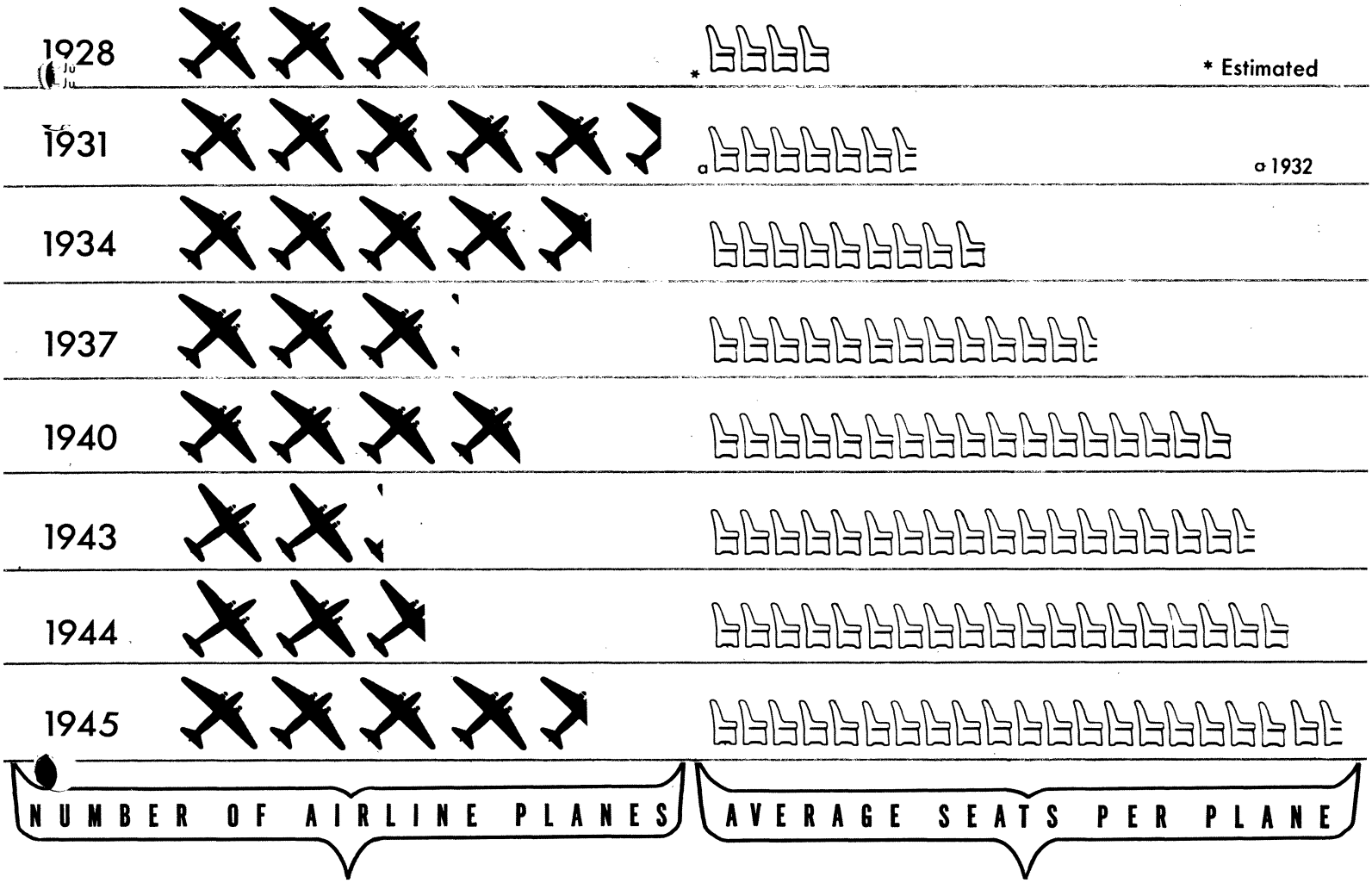
Gallons per plane per year



Gallons per million passenger miles



PLANES and PERSONNEL



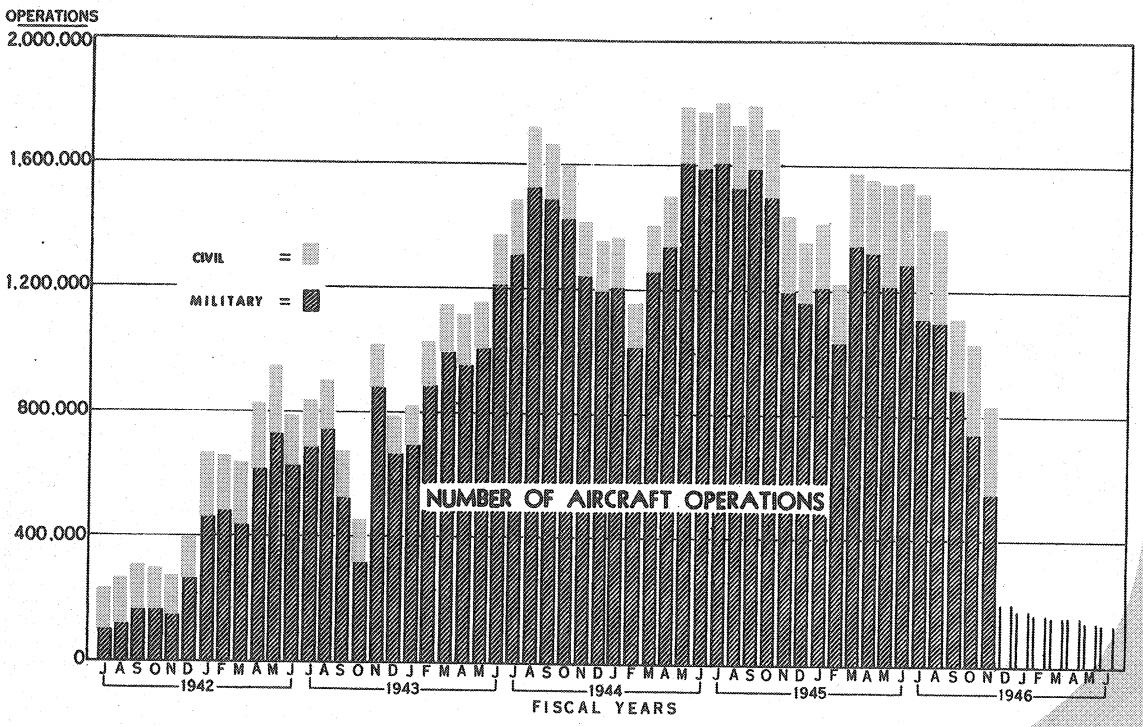
PERSONNEL OF DOMESTIC AIRLINES

	Pilots	Co-pilots	Stewardesses and Stewards	Mechanics and Riggers	Dispatchers, Other Hangar and Field Personnel	Office Employees	All Others	Total
1928	294*	*	.....	503	654	.....	.....	1,451
1929	509*	*	.....	945	482	.....	.....	1,936
1930	580*	*	.....	1,377	783	.....	.....	2,740
1931	621*	*	.....	1,662	1,003	1,014	.....	4,300
1932	489	143	.....	1,634	931	801	.....	3,998
1933	468	206	.....	1,804	1,087	796	.....	4,361
1934	411	248	.....	1,643	931	958	.....	4,178
1935	528	335	213	2,009	467	2,365	.....	5,917
1936	574	468	333	2,152	543	2,975	.....	7,045
1937	629	420	339	2,206	651	3,284	.....	7,529
1938	671	456	358	2,397	891	3,710	472	8,955
1939	691	694	530	2,779	1,042	4,548	225	10,509
1940	893	1,017	910	3,995	2,048	5,815	1,122	15,800
1941	1,065	1,119	1,024	4,333	2,400	7,759	1,284	18,984
1942	974	1,415	788	7,770	3,602	9,883	2,015	26,447
1943	1,005	1,795	835	8,084	5,116	10,800	2,714	30,349
1944	1,282	1,567	1,304	7,419	5,246	12,056	2,220	31,094
1945†	†	†	†	†	†	†	†	59,462

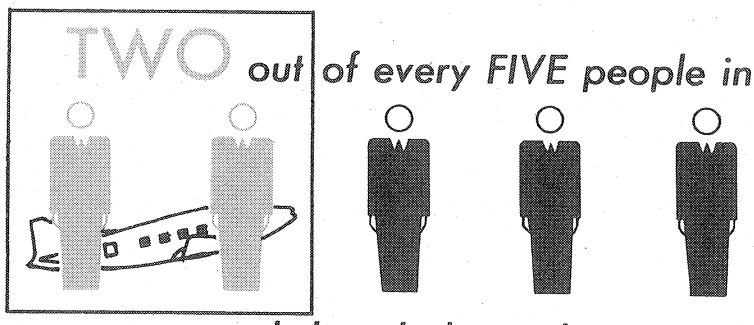
*Co-pilots for the years 1928-31 incl. were included with pilots.
†Not available.

USE OF FEDERAL AIRWAYS

operations reported by CAA Airway Traffic Control Centers

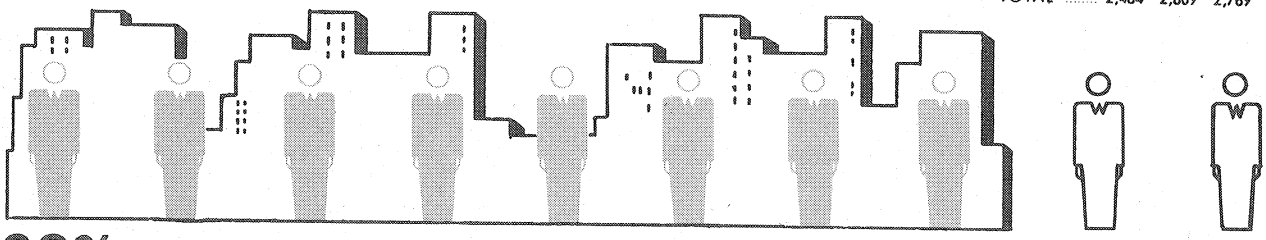


POPULATION SERVED BY AIRLINES



Airports by Classes

Length of runways		As of December 31				
		1941	1942	1943	1944	1945
1800-2700 ft.	Class I	1,523	1,238	910	1,215	1620
2500-3500 ft.	Class II	702	905	774	936	1091
3500-4500 ft.	Class III	187	367	430	464	484
4500- +	Class IV and over	72	299	655	812	831
	TOTAL	2,484	2,809	2,769	3,427	4026



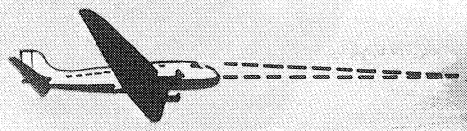
82% of the URBAN POPULATION lives within a 25 mile radius of an Airline stop

The airports of tomorrow will be streamlined as well as expanded. They are being designed or revamped to make possible new time-saving methods of landings and take-offs, of loadings and unloadings, of still further increasing dependability of service and on-time performance, as well as expediting the ticketing of passengers and their transportation to and from the airport. A striking characteristic of the most modern fields will be the central location of terminal buildings with multiple encircling runways to cut time in taxiing to loading platforms.

IT WAS INEVITABLE THAT THE S
BE REAPED IN PEACE . . . AND T
THE SAFER FOR RESEARCH AND

AIRBORNE RADAR (TERRAIN)

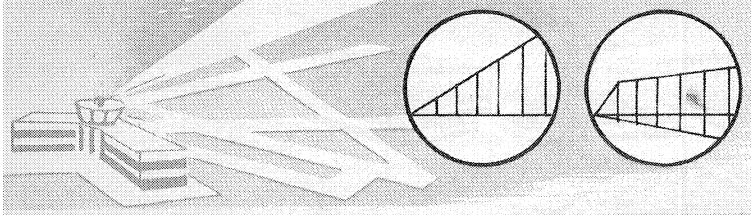
AIRBORNE RADAR
(HORIZONTAL)



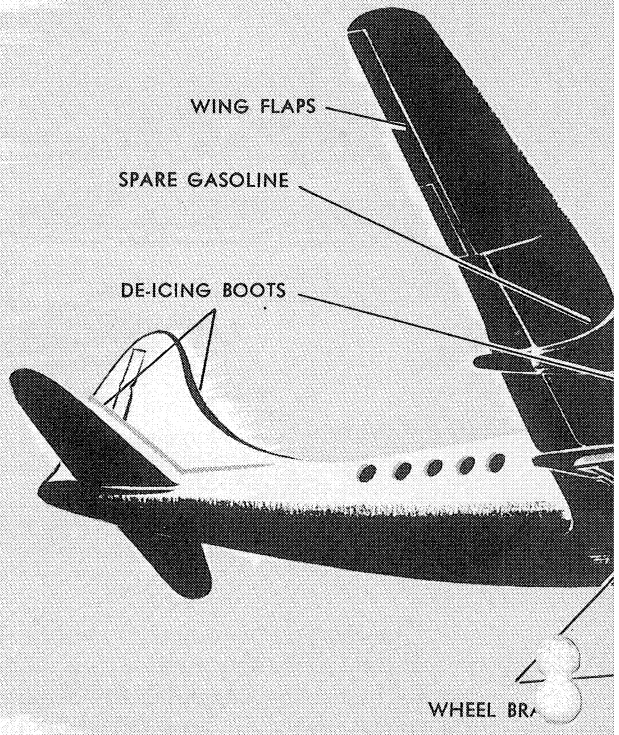
WEATHER . . . RADIOSO

It is now safer to travel by plane than by automobile. Next objective is all-weather flying made possible by more-than-human new electronic instruments and engineering progress. One of the most important is radar, which flashes in the cockpit a picture of all objects from a coast-

RADAR LANDING

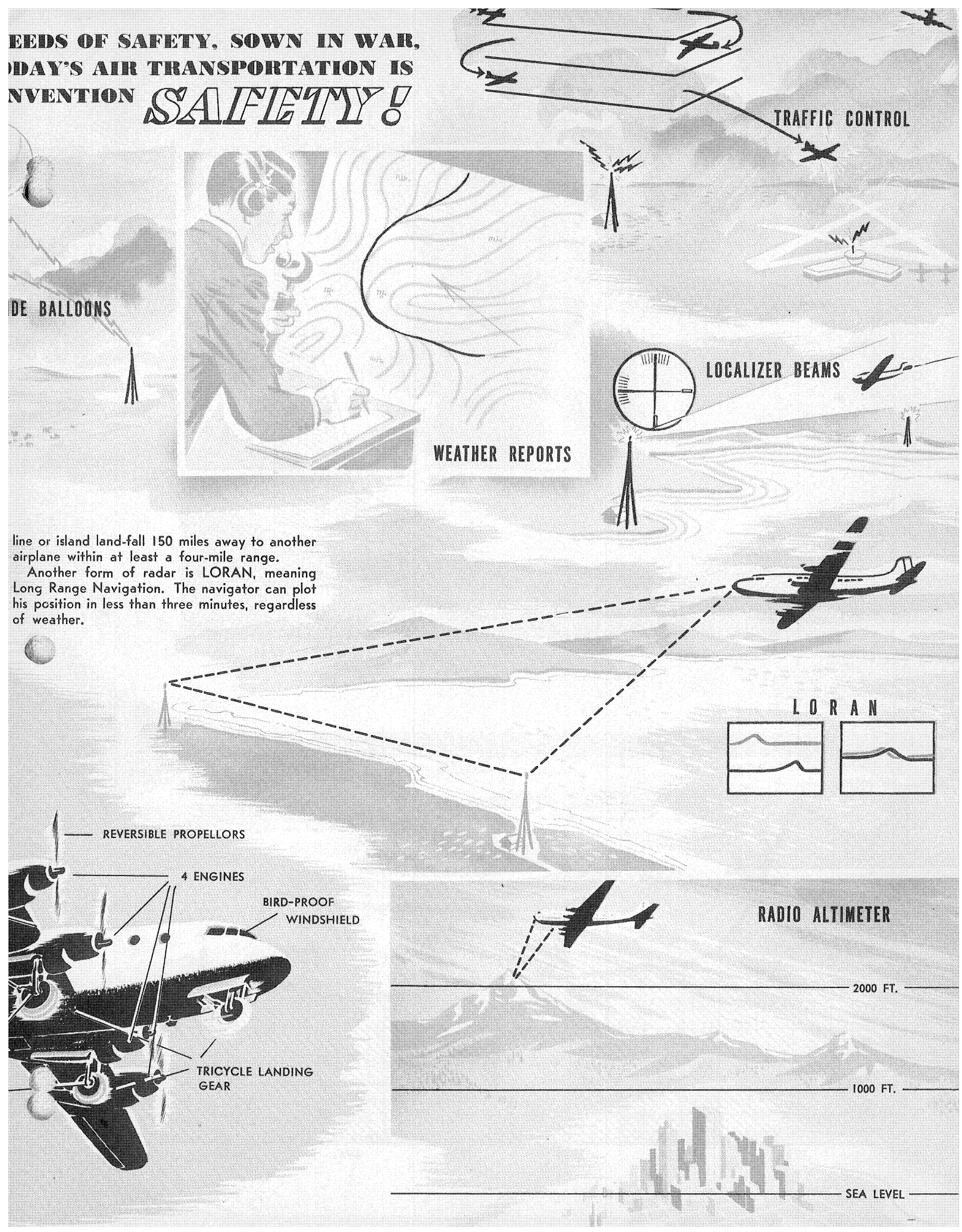


FLIGHT PROGRESS REPORTS



BUILT-IN SAFETY

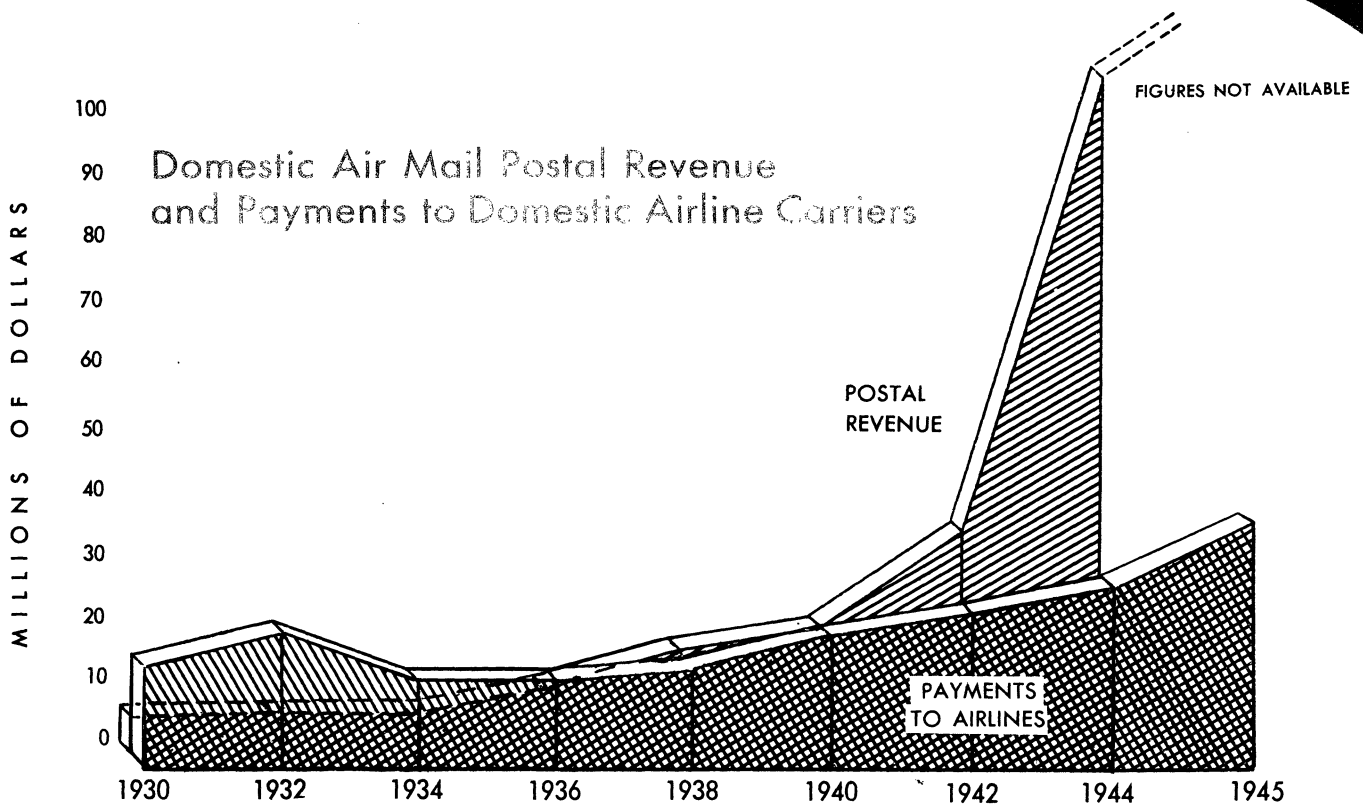
EEDS OF SAFETY, SOWN IN WAR, DAY'S AIR TRANSPORTATION IS NVENTION *SAFETY!*

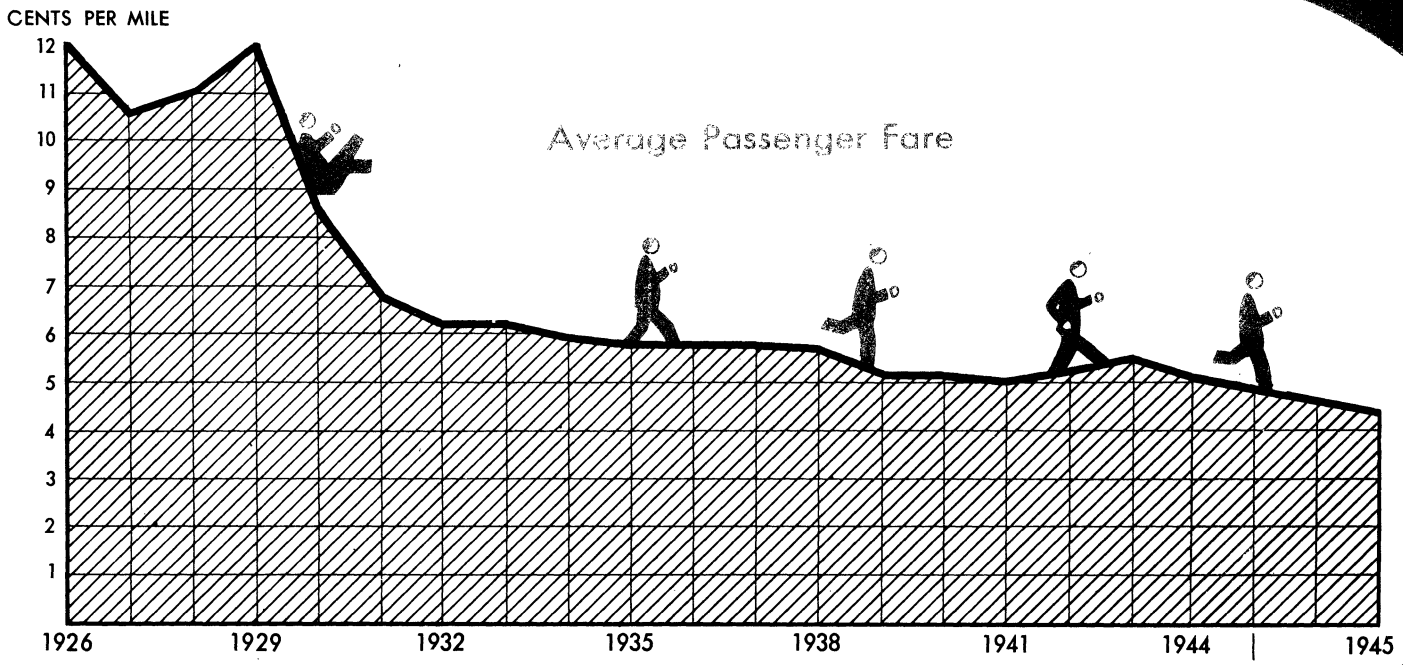


line or island land-fall 150 miles away to another airplane within at least a four-mile range.

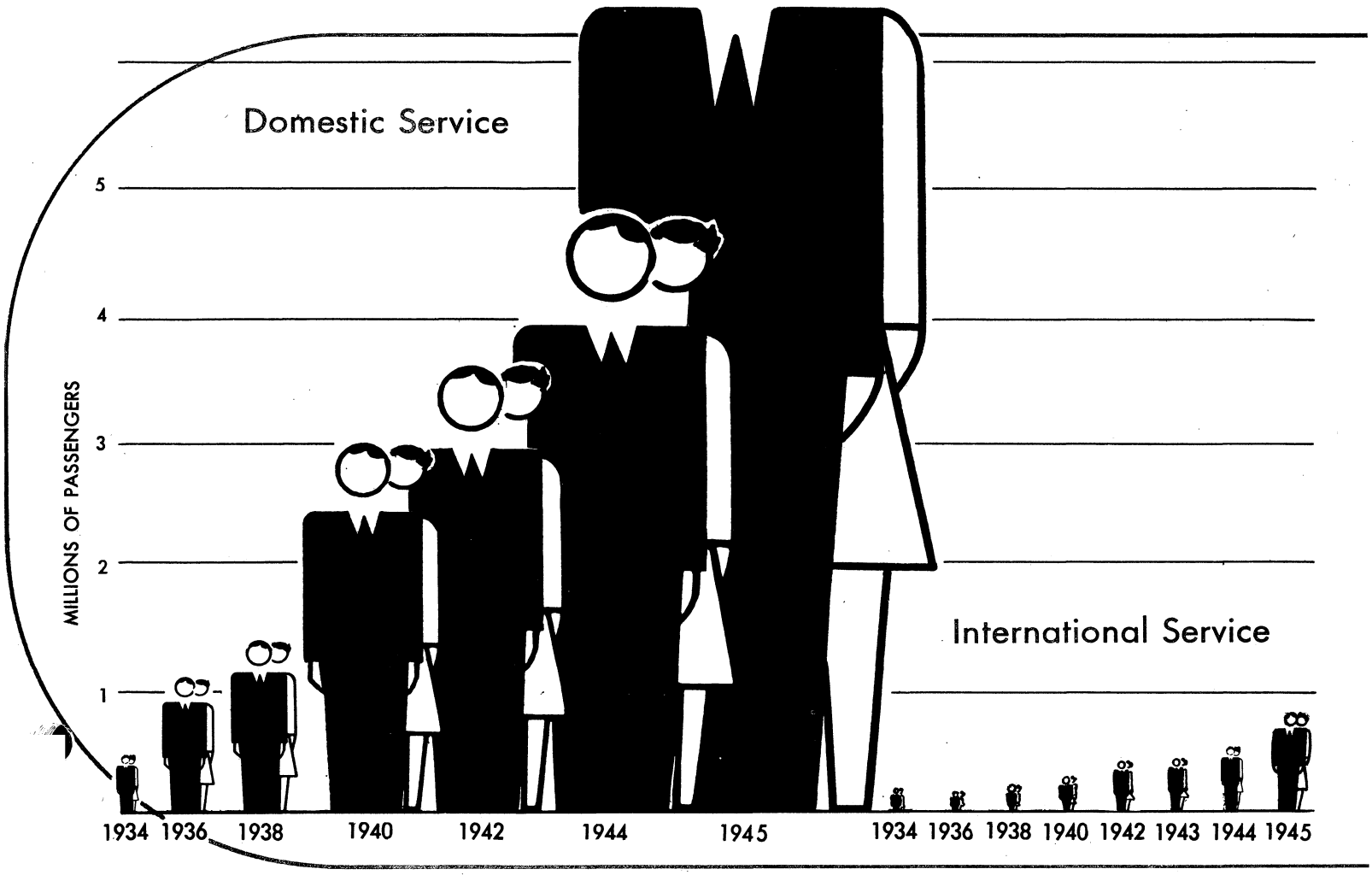
Another form of radar is LORAN, meaning Long Range Navigation. The navigator can plot his position in less than three minutes, regardless of weather.

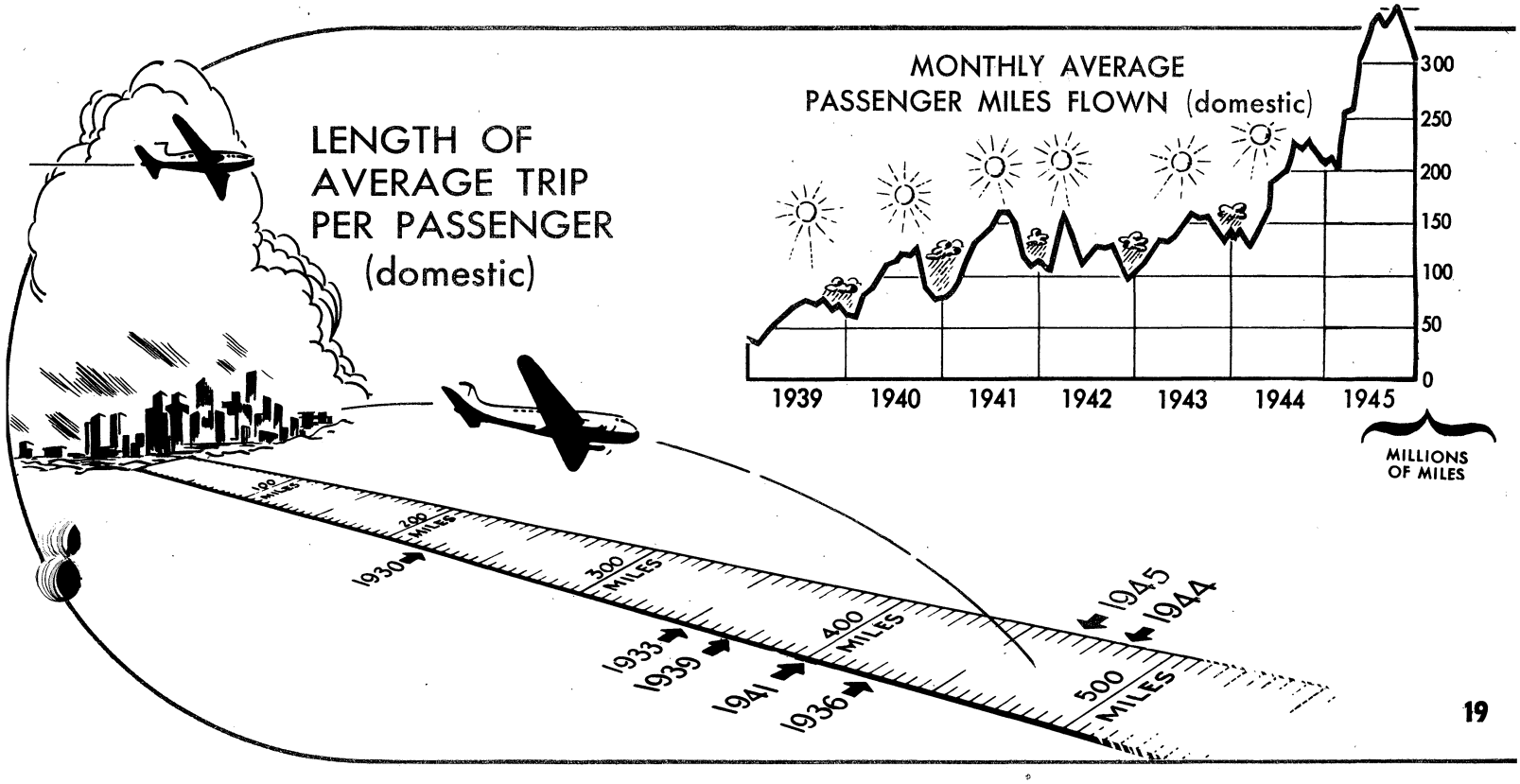
AIRLINE SERVICES





PASSENGERS CARRIED



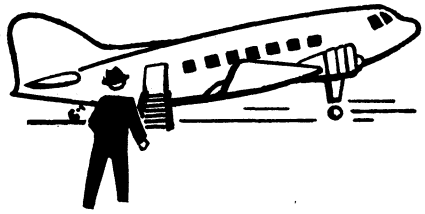


AIRLINE and PULLMAN TRAVEL in the last pre-war years

AIRLINE PASSENGER MILES

16.3% of Pullman Passenger Mileage

Domestic Airline Passenger Service



U. S. FLAG AIRLINES

Total Passengers Carried

DOMESTIC

Calendar Year	Revenue	Non-Revenue	TOTAL
1926	*	*	5,782
1927	*	*	8,661
1928	*	*	47,840
1929	140,581	19,170	159,751
1930	329,943	44,992	374,935
1931	413,366	56,398	469,764
1932	417,366	56,913	474,279
1933	433,964	59,177	493,141
1934	406,334	55,409	461,743
1935	663,261	83,685	746,946
1936	911,148	109,783	1,020,931
1937	958,510	144,197	1,102,707
1938	1,176,858	166,569	1,343,427
1939	1,717,090	158,961	1,876,051
1940	2,727,820	231,660	2,959,480
1941	3,768,892	291,653	4,060,545
1942	3,349,134	202,699	3,551,833
1943	3,351,537	102,503	3,454,040
1944	4,575,852	92,614	4,668,466
1945	7,383,025	119,513	7,502,538

*Not Available.

U. S. FLAG AIRLINES

Total Passengers Carried

INTERNATIONAL

Calendar Year	Revenue	Non-Revenue	TOTAL
1926	*	*	0
1927	*	*	18
1928	*	*	1,873
1929	*	*	13,654
1930	*	*	42,570
1931	*	*	61,681
1932	*	*	73,281
1933	*	*	83,471
1934	*	*	110,522
1935	*	*	127,17[illegible]
1936	*	*	108,83[illegible]
1937	*	*	139,95[illegible]
1938	*	*	144,68[illegible]
1939	161,163	7,807	168,970
1940	216,846	8,952	225,798
1941	311,055	9,010	320,065
1942	383,933	8,213	392,146
1943	424,471	13,486	437,957
1944	507,802	14,957	522,759
1945	763,767	21,068	784,835

*Not Available.

Passenger Miles Flown

DOMESTIC

	1940	1941	1942	1943	1944	1945
Jan.	61,355,485	78,339,567	113,134,990	101,410,602	141,474,106	209,288,931
Feb.	58,937,141	84,639,781	104,219,667	110,982,551	125,088,621	190,324,414
Mar.	80,686,124	96,661,662	139,060,782	124,256,467	142,834,165	251,170,561
April	88,061,683	114,748,987	158,217,575	132,984,531	155,159,351	256,892,372
May	100,044,047	133,979,048	146,234,958	133,266,615	181,038,023	289,846,496
June	110,839,615	141,905,987	110,301,132	140,745,710	193,288,705	306,872,654
July	112,376,882	147,418,618	117,216,147	150,013,387	211,703,804	331,639,158
Aug.	121,602,029	158,068,167	128,429,975	156,873,457	227,350,700	343,928,310
Sept.	118,533,626	158,151,061	126,151,759	153,980,314	225,471,943	329,276,363
Oct.	125,924,103	150,919,895	129,182,369	155,855,938	239,022,033	353,526,547
Nov.	90,697,083	115,825,169	113,048,028	145,104,815	217,338,262	328,599,828
Dec.	78,387,130	111,076,729	96,778,947	137,122,253	204,512,740	308,736,423
Totals	1,147,444,948	1,491,734,671	1,481,976,329	1,642,596,640	2,264,282,453	3,500,102,057

Passengers Carried DOMESTIC

Monthly Averages by Years

1926	481
1927	721
1928	3,986
1929	13,312
1930	31,244
1931	39,165
1932	39,523
1933	41,095
1934	38,478
1935	62,245
1936	85,077
1937	91,892
1938	111,952
1939	156,337
1940	246,624
1941	338,378
1942	295,986
1943	287,837
1944	389,038
1945	625,211

U. S. FLAG AIRLINES

Total Passenger Miles Flown

DOMESTIC

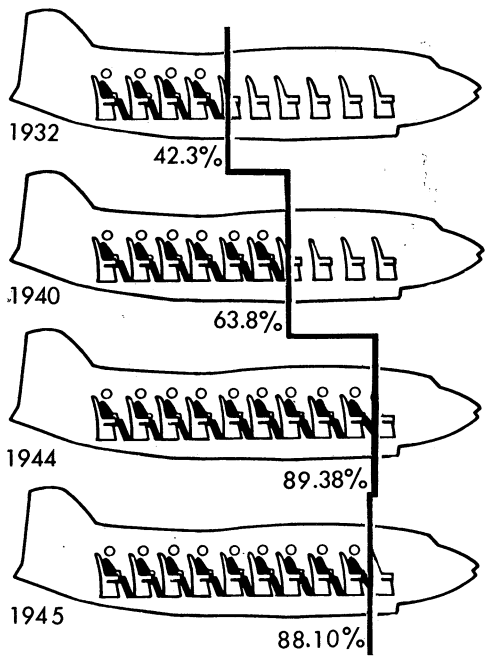
Calendar Year	Revenue	Non-Revenue	TOTAL
1930	*	*	84,014,572
1931	*	*	106,442,375
1932	*	*	127,038,798
1933	*	*	173,492,119
1934	*	*	187,858,629
1935	279,375,902	34,529,606	313,905,508
1936	388,242,120	47,498,133	435,740,253
1937	407,295,893	69,307,272	476,603,165
1938	476,402,280	81,316,988	557,719,268
1939	677,672,955	72,114,141	749,787,096
1940	1,041,173,558	106,271,390	1,147,444,948
1941	1,369,584,231	122,150,440	1,491,734,671
1942	1,398,042,146	83,934,183	1,481,976,329
1943	1,606,119,468	36,477,172	1,642,596,640
1944	2,229,571,113	34,711,340	2,264,282,453
1945	3,452,687,355	47,414,702	3,500,102,057

INTERNATIONAL

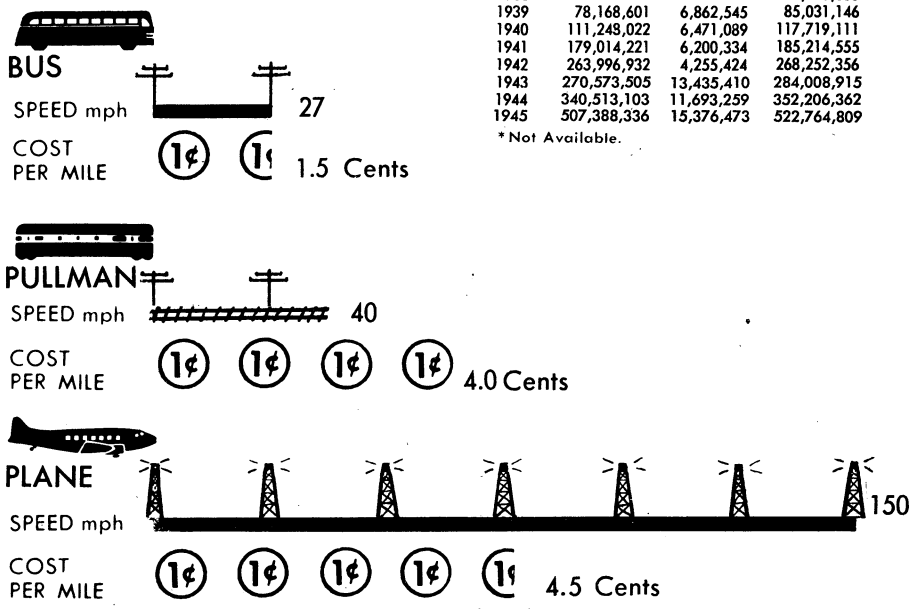
1930	*	*	19,732,677
1931	*	*	14,680,402
1932	*	*	21,147,539
1933	*	*	26,283,915
1934	*	*	38,792,228
1935	*	*	48,465,412
1936	*	*	45,078,586
1937	*	*	58,255,487
1938	*	*	60,110,655
1939	78,168,601	6,862,545	85,031,146
1940	111,248,022	6,471,089	117,719,111
1941	179,014,221	6,200,334	185,214,555
1942	263,996,932	4,255,424	268,252,356
1943	270,573,505	13,435,410	284,008,915
1944	340,513,103	11,693,259	352,206,362
1945	507,388,336	15,376,473	522,764,809

*Not Available.

PASSENGER LOAD FACTOR (domestic)



SPEED vs COST
Los Angeles-New York



Fastest scheduled plane, train or bus (regular fare)
Plane fare includes meals. Train fare includes lower berth but no meals.

Average Passenger Fare per Mile

DOMESTIC

Year	Cents Per Mile
1926	12.0
1927	10.6
1928	11.0
1929	12.0
1930	8.3
1931	6.7
1932	6.1
1933	6.1
1934	5.9
1935	5.7
1936	5.7
1937	5.6
1938	5.7
1939	5.1
1940	5.1
1941	5.0
1942	5.3
1943	5.5
1944	5.1
1945	4.5

Average Trip per Passenger

DOMESTIC

Year	Av. Miles Per Trip
1926	*
1927	*
1928	*
1929	*
1930	224
1931	226
1932	268
1933	352
1934	407
1935	420
1936	427
1937	432
1938	415
1939	400
1940	388
1941	367
1942	417
1943	476
1944	485
1945	468

*Not Available

Passenger Load Factor

DOMESTIC

	Revenue and Non-Revenue Passenger Load Factor, Per Cent
1932	42.34
1933	46.87
1934	51.82
1935	54.83
1936	64.01
1937	57.55
1938	58.74
1939	62.08
1940	63.84
1941	64.40
1942	76.11
1943	90.01
1944	89.38
1945	88.10

Air Mail Postal Revenue & Payments to Domestic Airline Carriers

Fiscal Year Ending June 30	Postal Revenue	Actual Payments to Contractors
1926	*	*
1927	*	*
1928	*	*
1929	*	*
1930	$ 5,273,000	$14,618,000
1931	6,210,000	16,944,000
1932	6,016,000	19,938,000
1933	6,116,000	19,400,000
1934	5,738,000	12,130,000
1935	6,590,000	8,838,000
1936	9,702,700	12,179,000
1937	12,439,600	13,165,000
1938	15,301,200	14,740,000
1939	16,826,400	17,020,000
1940	19,122,900	19,426,000
1941	23,920,500	20,687,000
1942	33,417,400	23,450,000
1943	62,818,600	23,308,477
1944	79,412,510	28,401,373
1945	*	*

Does not include airmail to and from armed forces overseas.

*Not Available. †Estimated

Route Miles of Domestic Air Mail Service

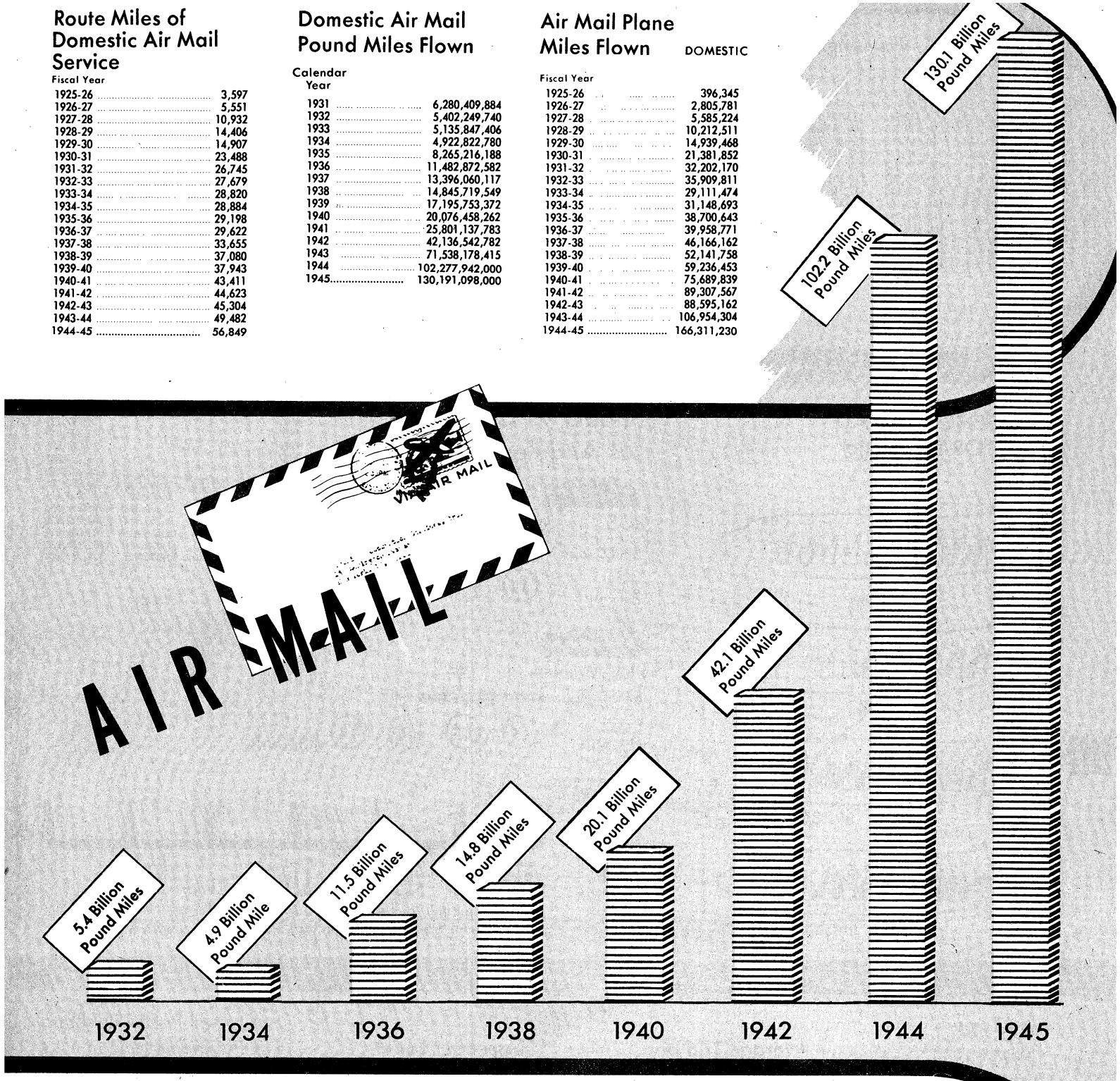
Fiscal Year	
1925-26	3,597
1926-27	5,551
1927-28	10,932
1928-29	14,406
1929-30	14,907
1930-31	23,488
1931-32	26,745
1932-33	27,679
1933-34	28,820
1934-35	28,884
1935-36	29,198
1936-37	29,622
1937-38	33,655
1938-39	37,080
1939-40	37,943
1940-41	43,411
1941-42	44,623
1942-43	45,304
1943-44	49,482
1944-45	56,849

Domestic Air Mail Pound Miles Flown

Calendar Year	
1931	6,280,409,884
1932	5,402,249,740
1933	5,135,847,406
1934	4,922,822,780
1935	8,265,216,188
1936	11,482,872,582
1937	13,396,060,117
1938	14,845,719,549
1939	17,195,753,372
1940	20,076,458,262
1941	25,801,137,783
1942	42,136,542,782
1943	71,538,178,415
1944	102,277,942,000
1945	130,191,098,000

Air Mail Plane Miles Flown DOMESTIC

Fiscal Year	
1925-26	396,345
1926-27	2,805,781
1927-28	5,585,224
1928-29	10,212,511
1929-30	14,939,468
1930-31	21,381,852
1931-32	32,202,170
1932-33	35,909,811
1933-34	29,111,474
1934-35	31,148,693
1935-36	38,700,643
1936-37	39,958,771
1937-38	46,166,162
1938-39	52,141,758
1939-40	59,236,453
1940-41	75,689,839
1941-42	89,307,567
1942-43	88,595,162
1943-44	106,954,304
1944-45	166,311,230



Air Mail Payments per Plane Mile

Fiscal Year Ending June 30	Government Operated	Private Domestic Operation
1926	$1.233	$ .226
1927	.968	.486
1928	.956	.724
1929		1.094
1930		.978
1931		.792
1932		.619
1933		.540
1934	1.308	.417
1935		.284
1936		.315
1937		.329
1938		.319
1939		.326
1940		.328
1941		.273
1942		.263
1943		.264
1944		.266
1945		.214

Air Mail Load per Mile Flown DOMESTIC

Fiscal Year Ending June 30	
1935	218
1936	253
1937	319
1938	306
1939	303
1940	315
1941	295
1942	352
1943	634
1944	786
1945	747

Air Mail Pound Miles per Route Mile DOMESTIC

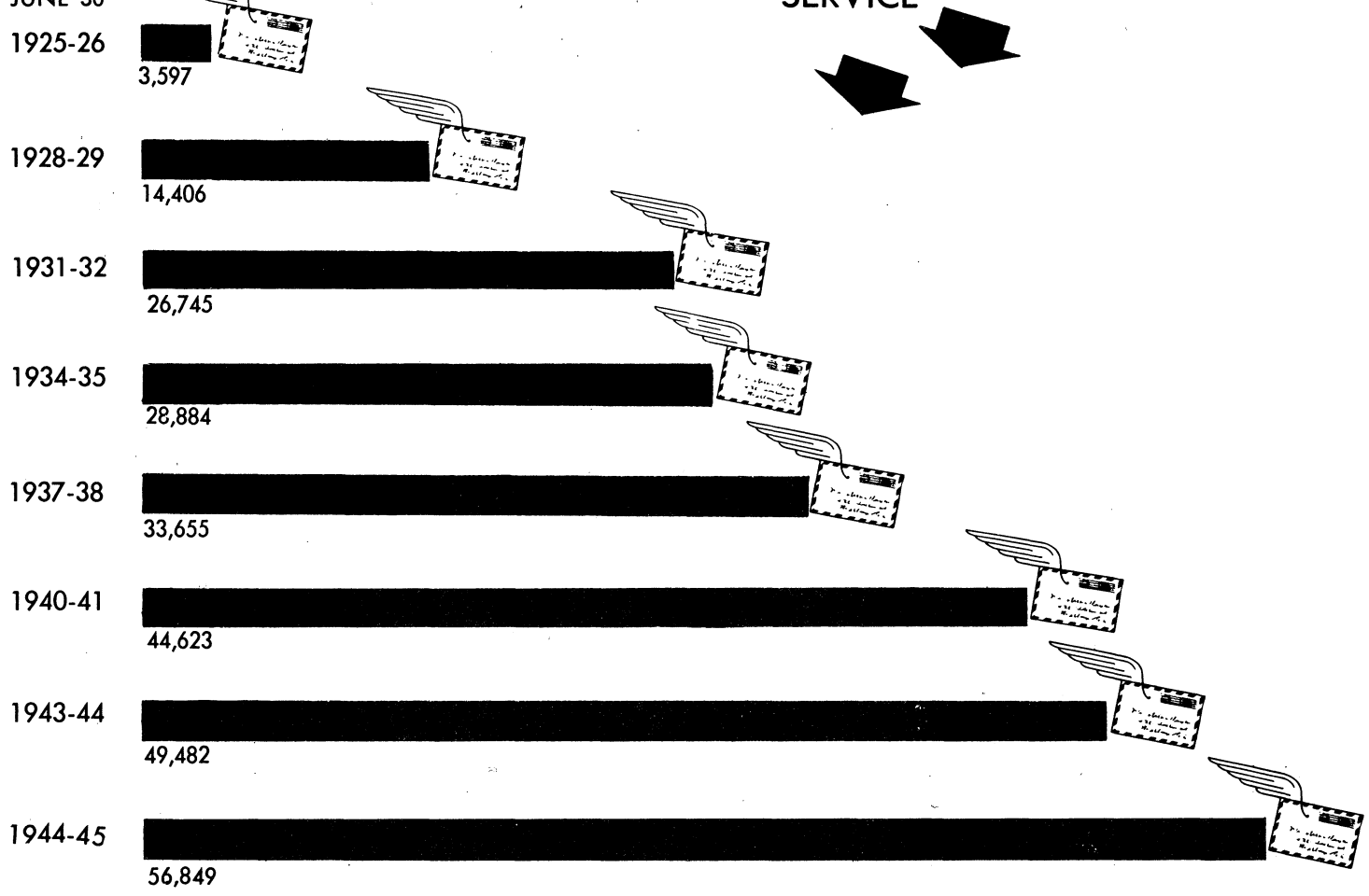
Fiscal Year Ending June 30	
1935	235,095
1936	334,675
1937	429,834
1938	420,067
1939	426,608
1940	492,090
1941	513,579
1942	703,768
1943	1,251,401
1944	1,734,022
1945	2,170,600

Air Mail Pound Miles Performed & Payments per Pound Mile DOMESTIC

Fiscal Year Ending June 30	Air-Mail-Pound-Miles Performed	Payments Per Pound-Mile (mills)
1932	6,275,935,094	3.18
1933	4,834,540,535	4.01
1934	4,513,880,526	2.69
1935	6,790,486,632	1.30
1936	9,771,841,815	1.24
1937	12,732,530,874	1.03
1938	14,137,360,791	1.04
1939	15,818,617,372	1.08
1940	18,671,367,440	1.04
1941	22,294,962,738	.93
1942	31,404,257,960	.74
1943	56,693,450,699	.41
1944	85,802,866,010	.33
1945	123,396,453,046	.28

NOTE: Air-mail pound-miles have been computed by the Post Office Department commencing January, 1931.

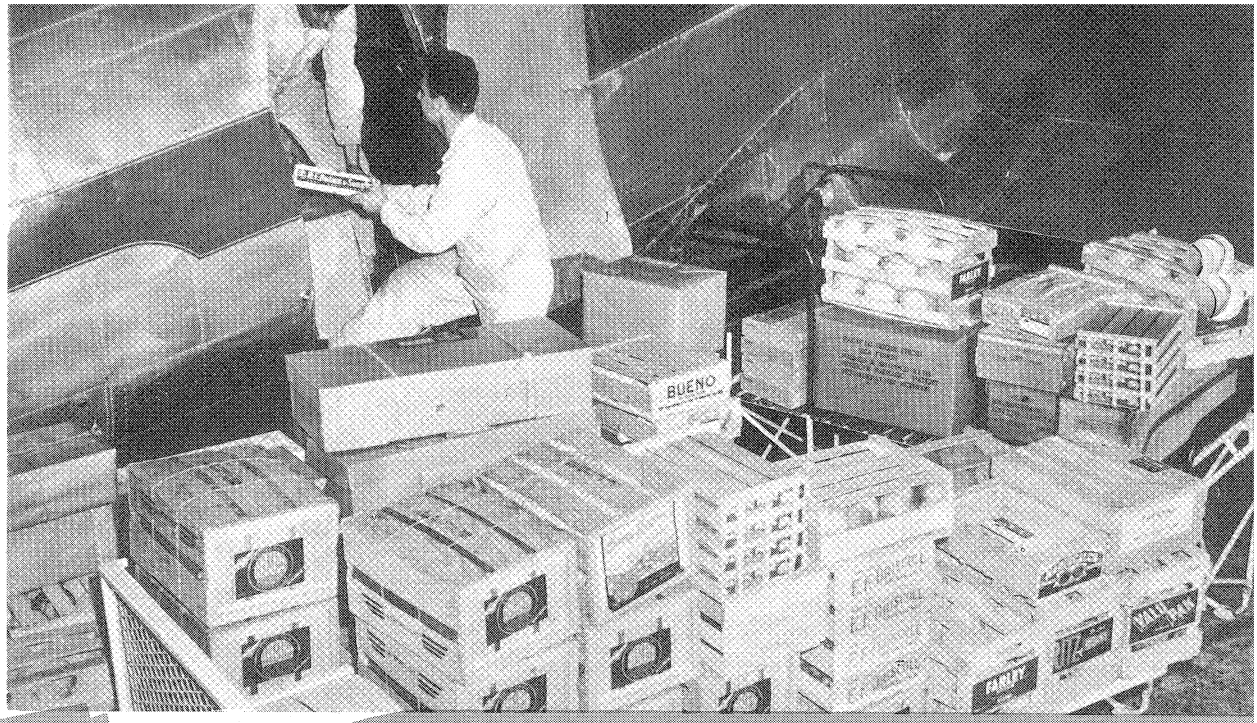
ROUTE MILES OF DOMESTIC AIR MAIL SERVICE



ONE pound mile of domestic AIRMAIL

for every six of first class mail

1



AIR EXPRESS

1 LUNCHEON EXPRESS—A cargo plane ready to cross the continent with 90 varieties and three tons of perishables.

2 FLYING FREIGHT CAR—Aircraft, stripped of passenger furnishings, carry three tons of cargo compared with 1,400 pounds on regular airliners.

3 AERIAL HOTHOUSE—The wide uses of air cargo include shipment of tomato plants for transplanting. Four-day ground travel is cut to four hours.

4 PRIZE PACKAGES—Air express is proving itself invaluable in moving valuables. Penicillin, diamonds, dress goods, machine parts, magazines and newspapers, are favorite cargos.

Express Revenue

DOMESTIC

1931	$ 61,157
1932	130,303
1933	305,645
1934	434,367
1935	642,471
1936	1,012,950
1937	1,272,701
1938	1,264,234
1939	1,618,184
1940	2,148,729
1941	2,996,915
1942	6,925,1[illegible]
1943	8,020,4[illegible]
1944	7,904,50[illegible]
1945*	10,945,506

*12 months to Nov. 30.

Source: Civil Aeronautics Board

2

3

3

Express Pounds Carried

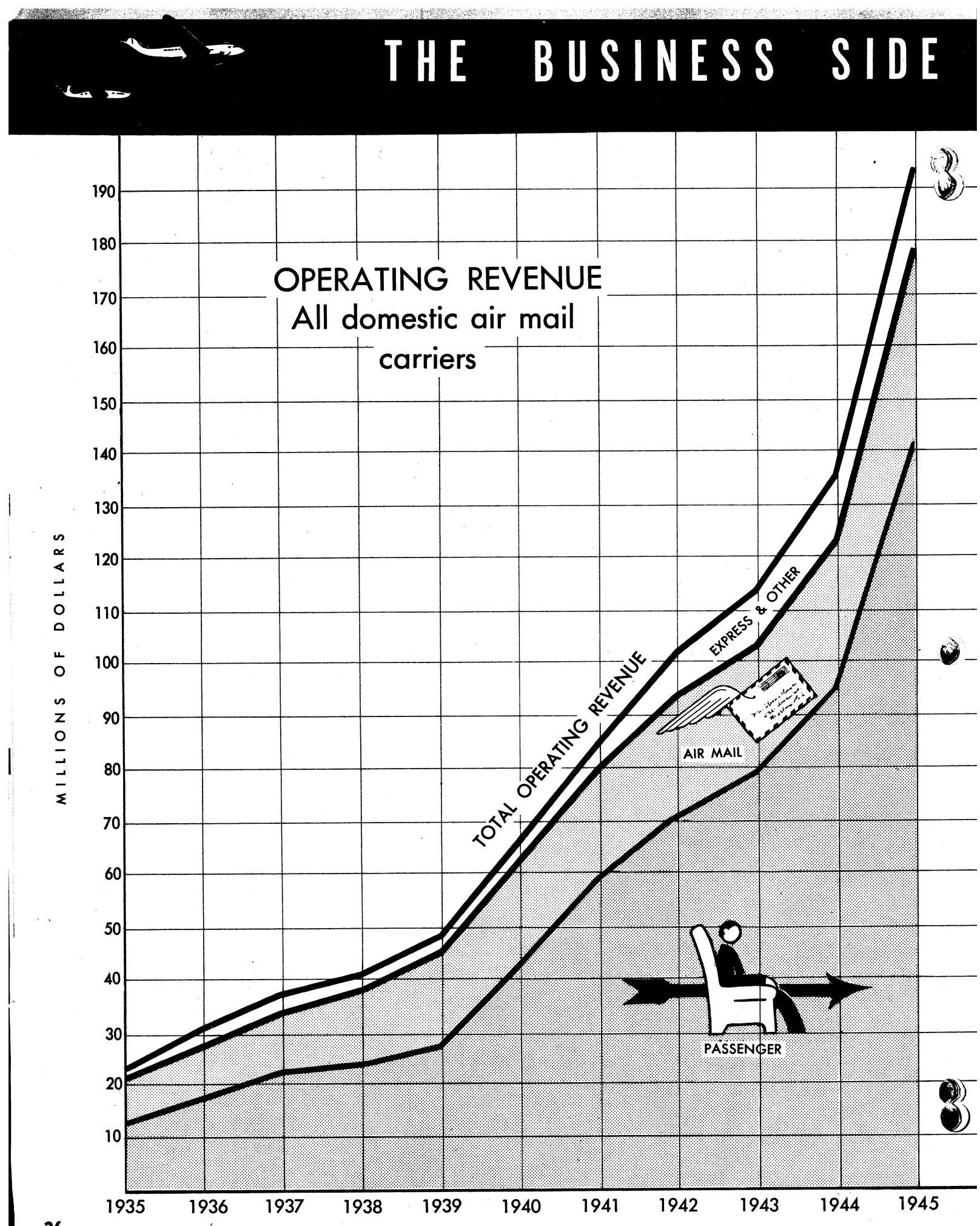
DOMESTIC	Pounds
1926	3,555
1927	45,859
1928	210,404
1929	249,634
1930	359,523
1931	788,059
1932	1,033,970
1933	1,510,215
1934	2,133,191
1935	3,822,397
1936	6,958,777
1937	7,127,369
1938	7,335,967
1939	9,514,229
1940	12,506,176
1941	19,209,671
1942	40,101,657
1943	57,543,591
1944	66,305,427
1945	83,024,000

Express Pound Miles Flown

DOMESTIC	
1935	2,145,483,711
1936	3,632,441,637
1937	4,318,112,453
1938	4,347,411,761
1939	5,411,227,041
1940	6,938,969,170
1941	10,485,058,005
1942	23,435,208,925
1943	30,235,849,171
1944	34,285,353,551
1945	45,265,236,000

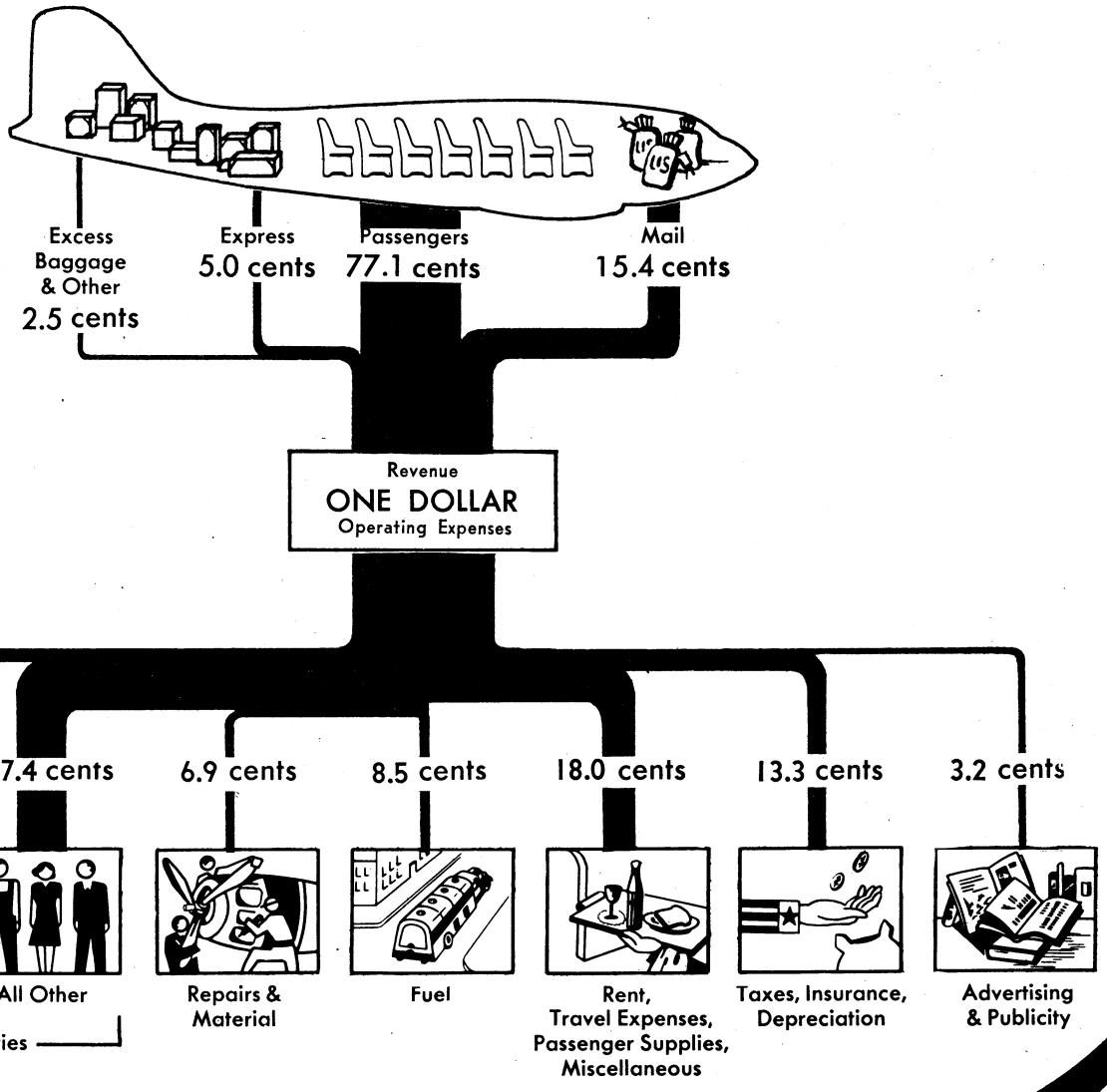
Source: 1935-37—Post Office Department
1938-45—Civil Aeronautics Administration

4


OPERATING REVENUE
All domestic air mail carriers
MILLIONS OF DOLLARS
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
TOTAL OPERATING REVENUE
EXPRESS & OTHER
AIR MAIL
PASSENGER

OF AIR TRANSPORTATION

WHERE THE REVENUE DOLLAR COMES FROM AND HOW IT IS SPENT...Calendar year 1945



Source of Revenues of the Airline Companies

Calendar Year	Mail	Express	Passenger	Total
1931	82.5%	0.3%	17.2%	$24,090,000
1932	77.2%	0.5%	22.3%	25,020,000
1933	65.0%	1.2%	33.8%	25,290,000
[illegible]	42.0%	2.8%	55.2%	15,620,000
[illegible]	39.6%	2.4%	58.0%	27,230,000
[illegible]6	36.3%	2.9%	60.8%	34,330,000
[illegible]7	36.7%	3.5%	59.8%	36,430,000
[illegible]8	36.0%	3.0%	61.0%	40,360,000
1939	32.7%	2.9%	64.4%	54,437,000
1940	26.3%	4.0%	69.7%	76,000,000
1941	21.1%	3.0%	75.9%	94,234,000
1942	21.8%	6.2%	72.0%	112,396,000
1943	20.4%	6.8%	72.8%	118,217,000
1944	21.1%	5.2%	73.7%	157,890,437
1945*	15.4%	7.5%	77.1%	211,458,267

*11 months to Nov. 30.

Operating Revenue... All Domestic Air Mail Carriers

Fiscal Year Ending June 30	Passenger	Mail	Express	Other	Total
1935	$12,275,006	$ 8,837,650	$ 507,624	$ 903,950	$22,524,230
1936	17,413,260	12,179,266	796,171	1,098,896	31,487,593
1937	21,508,325	13,165,179	1,198,387	1,112,639	36,984,530
1938	23,371,376	14,739,929	1,218,250	774,989	40,104,544
1939	28,299,799	17,020,169	1,437,749	913,147	47,670,864
1940	43,428,666	19,425,732	1,805,812	1,077,573	65,737,783
1941	59,430,614	20,687,220	2,434,067	1,569,599	84,121,500
1942	70,697,068	23,450,404	5,528,224	1,443,380	101,119,076
1943	79,056,748	23,347,915	8,472,463	2,949,621	113,826,747
1944	95,262,342	27,949,987	7,772,745	2,809,828	133,794,902
1945	142,475,405	36,929,204	10,704,885	3,139,888	193,249,382

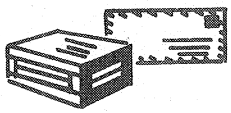
Airline Revenues & Expenses, 1945
(Domestic Members)

(After Reserves for Federal Taxes)

REVENUES	
Passenger	77.1%
Mail	15.4%
Express	5.0%
Excess Baggage, Charter and Other	2.5%
Incidental	.45%
EXPENSES *	
Total Salaries and Wages	49.95%
Repairs and Material	6.95%
Fuel	8.54%
Advertising and Publicity	3.23%
Taxes, Insurance, Depreciation	13.30%
Rent, Travel Expenses, Passenger Supplies and Miscellaneous	18.03%

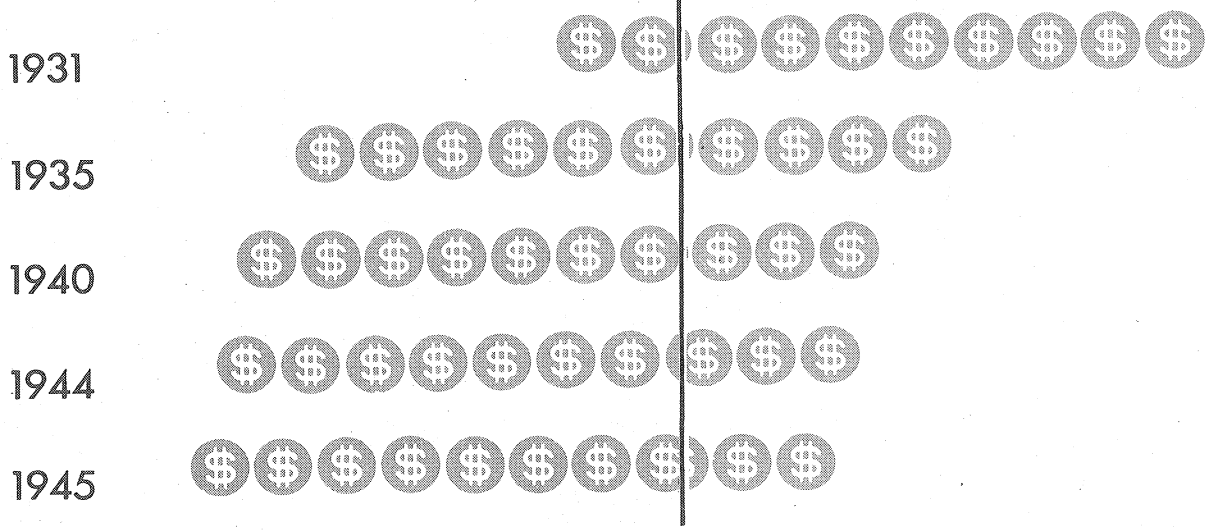
* 11 mos. to Nov. 30.

SOURCE OF REVENUES



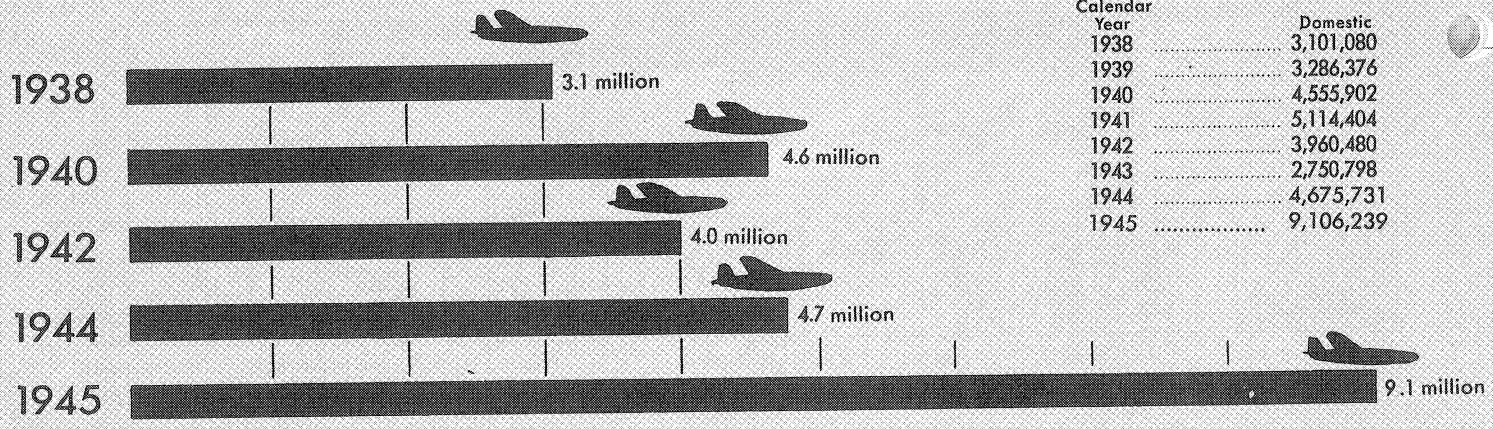
PASSENGERS

MAIL, EXPRESS



Each coin represents 10% of total revenue in each year

TOTAL NON-REVENUE MILES FLOWN (domestic)



Total Non-Revenue Miles Flown

Calendar Year	Domestic
1938	3,101,080
1939	3,286,376
1940	4,555,902
1941	5,114,404
1942	3,960,480
1943	2,750,798
1944	4,675,731
1945	9,106,239

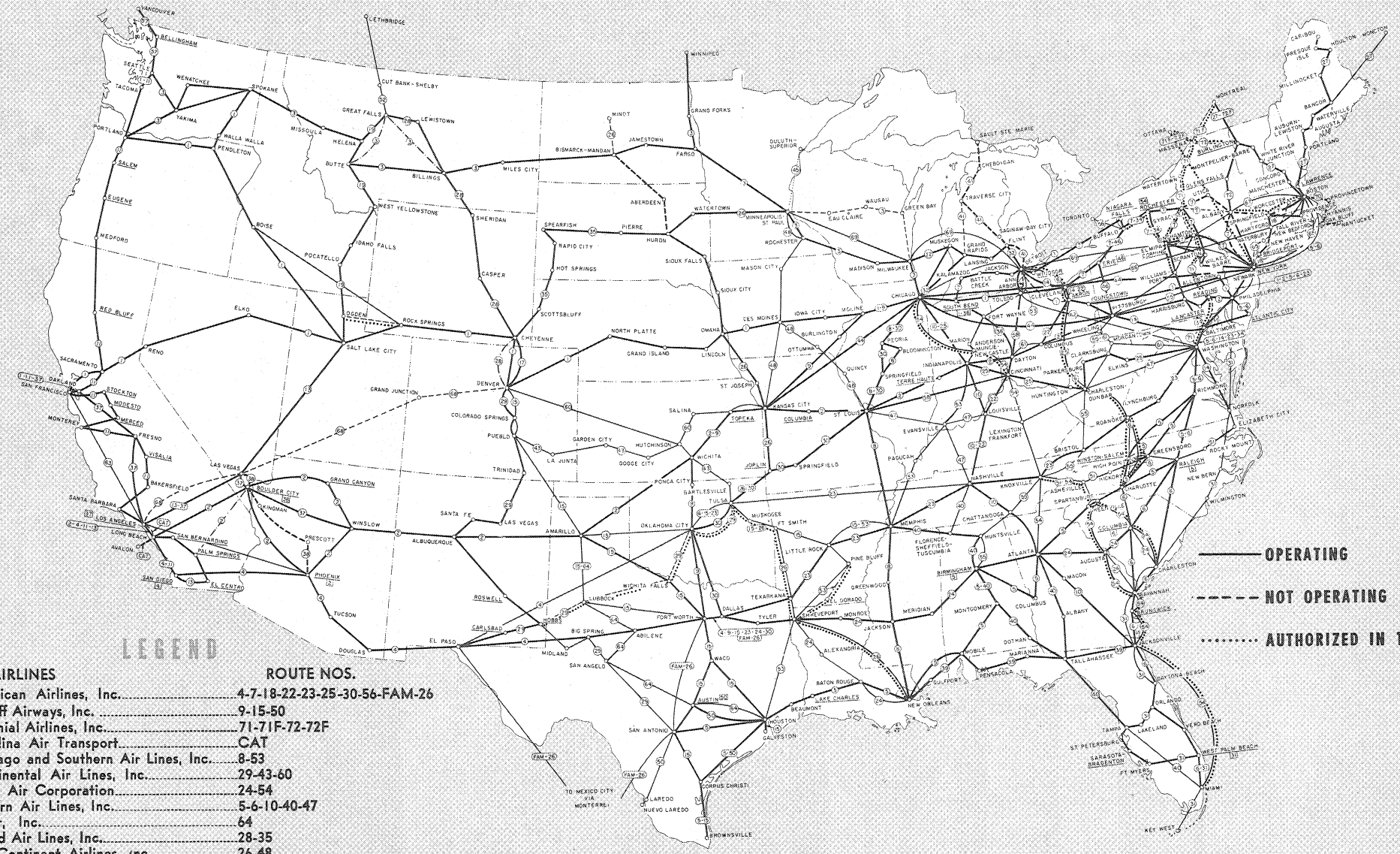
Alaskan Aircraft Operations

	Planes in Service	Pounds of Freight	Pounds of Mail	Passenger Miles Flown	Passengers Carried	Plane Miles Flown
Two-year period ending March 31, 1929	8	94,701	24,250	272,999	2,171	331,591
Year ending June 30, 1930	24	103,043	17,690	684,261	3,654	338,422
Year ending June 30, 1931	26	161,718*	*	947,695	7,947	381,234
Year ending June 30, 1932	31	496,680*	*	942,176	6,637	742,854
Year ending June 30, 1933	42	634,016	151,570	1,222,510	7,743	1,059,155
Year ending June 30, 1934	56	869,398	124,972	1,533,311	10,194	1,126,610
Year ending June 30, 1935	73	1,496,917	225,840	2,148,692	13,318	1,685,654
Year ending June 30, 1936	79	2,138,886	279,730	3,035,018	16,982	2,130,939
Year ending June 30, 1937	102	2,947,726	264,201	4,021,798	20,958	2,209,206
Year ending June 30, 1938	155	3,415,759	342,736	5,634,461	26,885	2,829,258
Year ending June 30, 1939	175	4,010,730	489,574	5,801,787	29,814	3,247,046
Year ending June 30, 1940	†	4,315,660	520,232	5,745,804	31,435	3,598,790
Year ending June 30, 1941	†	4,947,516	611,422	7,918,054	41,703	4,434,232
Year ending June 30, 1942	†	4,630,456	954,026	11,106,122	57,028	4,932,868
Year ending June 30, 1943	†	2,427,107	1,548,902	10,150,469	45,801	3,700,903
‡Year ending June 30, 1944	†	2,568,005	982,901	12,065,139	83,823	4,015,334
Year ending June 30, 1945	†	2,908,978	915,283	15,847,039	53,850	4,986,351

‡Report of one (1) airline for month of May and two (2) for month of June 1944, not received. †Not Available. *Mail and freight combined.

STATUS OF CERTIFICATED ROUTES, UNITED STATES AIR TRANSPORTATION SYSTEM

DECEMBER, 31 1945



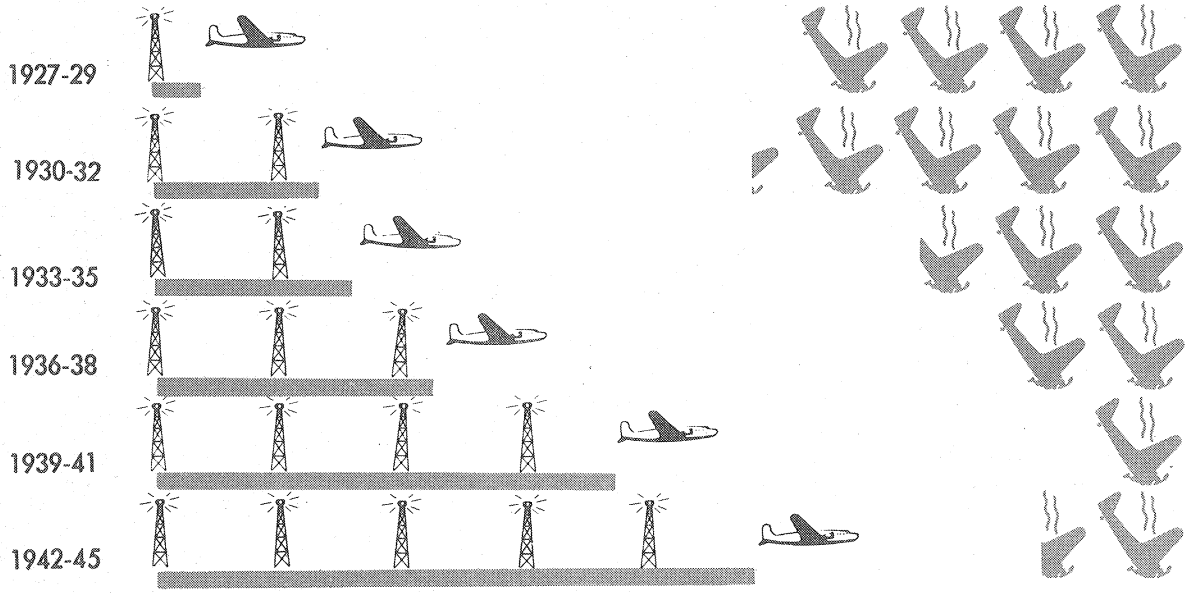
LEGEND

AIRLINES	ROUTE NOS.
American Airlines, Inc.	4-7-18-22-23-25-30-56-FAM-26
Braniff Airways, Inc.	9-15-50
Colonial Airlines, Inc.	71-71F-72-72F
Catalina Air Transport	CAT
Chicago and Southern Air Lines, Inc.	8-53
Continental Air Lines, Inc.	29-43-60
Delta Air Corporation	24-54
Eastern Air Lines, Inc.	5-6-10-40-47
Essair, Inc.	64
Inland Air Lines, Inc.	28-35
Mid-Continent Airlines, Inc.	26-48
National Airlines, Inc.	31-39
Northeast Airlines, Inc.	27-65-70
Northwest Airlines, Inc.	3-45-69
Pennsylvania-Central Airlines Corp.	14-32-34-41-46-51-55
Transcontinental & Western Air, Inc.	2-36-37-38-44-58-61-67
United Air Lines, Inc.	1-11-17-57-62-66
Western Air Lines, Inc.	13-19-52-63-68

CIVIL AERONAUTICS BOARD

MILES FLOWN and FATAL ACCIDENTS (domestic)

Annual Average Revenue Miles Flown



Distance between beacons=30 million miles

Each plane represents 3 fatal accidents

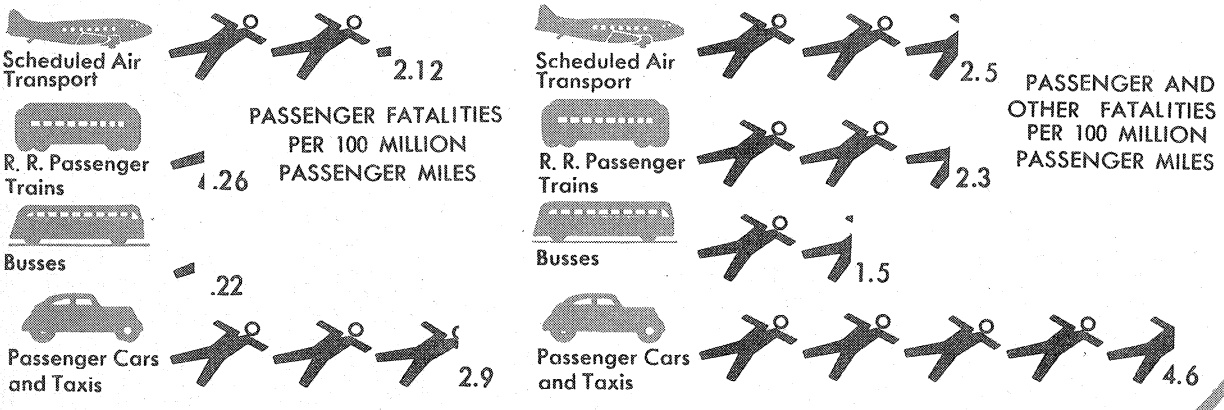
Revenue Miles Flown

Calendar Year	Domestic	International	TOTAL
1927	5,779,863	90,626	5,870,489
1928	10,400,239	273,211	10,673,450
1929	22,380,020	2,761,479	25,141,499
1930	31,992,634	4,952,569	36,945,203
1931	42,755,417	4,890,990	47,646,407
1932	45,606,354	5,565,533	51,171,887
1933	48,771,553	6,106,461	54,878,014
1934	40,955,396	8,109,377	49,064,773
1935	55,380,353	8,487,345	63,867,698
1936	63,777,226	7,434,500	71,211,726
1937	66,071,507	8,628,730	74,700,237
1938	69,668,827	8,528,412	78,197,239
1939	82,571,523	8,404,540	90,976,063
1940	108,800,436	10,716,827	119,517,263
1941	133,022,679	15,188,865	148,211,544
1942	110,102,860	20,390,260	130,493,120
1943	103,601,443	20,059,376	123,660,819
1944	142,234,034	24,278,413	166,512,447
1945	214,959,855	34,836,273	249,796,128

Number of Fatal Accidents, Airlines of United States

Year	Domestic	Foreign and Territorial	TOTAL
1927	4	4	8
1928	11	1	12
1929	21	3	24
1930	9	0	9
1931	13	1	14
1932	16	1	17
1933	9	0	9
1934	8	2	10
1935	8	0	8
1936	8	2	10
1937	5	1	6
1938	5	3	8
1939	2	1	3
1940	3	0	3
1941	4	1	5
1942	5	0	5
1943	2	3	5
1944	5	1	6
1945	8	2	10

TRANSPORTATION ACCIDENT DEATH RATES, 1944



SOURCE: National Safety Council

INDEX

In various tables, the 1944 figures differ from the corresponding data in the 1945 edition of "Air Transportation". The changes represent official corrections based on revised reports by the air carriers.

MEMBERS OF THE AIR TRANSPORT ASSOCIATION OF AMERICA

1107 Sixteenth St., N. W., Washington 6, D. C.

ALL AMERICAN AVIATION, INC. ★ AMERICAN AIRLINES SYSTEM ★ BRANIFF AIRWAYS, INC.

CATALINA AIR TRANSPORT ★ CHICAGO AND SOUTHERN AIR LINES, INC. ★ COLONIAL AIRLINES, INC.

CONTINENTAL AIR LINES, INC. ★ DELTA AIR LINES ★ EASTERN AIR LINES, INC.

ESSAIR, INC. ★ HAWAIIAN AIRLINES, LTD. ★ MID-CONTINENT AIRLINES, INC.

NATIONAL AIRLINES, INC. ★ NORTHEAST AIRLINES, INC. ★ NORTHWEST AIRLINES, INC.

PAN AMERICAN AIRWAYS, INC. ★ PAN AMERICAN-GRACE AIRWAYS, INC. ★ PENNSYLVANIA-CENTRAL AIRLINES CORP.

TRANSCONTINENTAL & WESTERN AIR, INC. ★ UNITED AIR LINES, INC. ★ WESTERN AIR LINES, INC.

ASSOCIATE MEMBERS { ALASKA AIRLINES — CANADIAN PACIFIC AIRLINES, LTD.
CARIBBEAN ATLANTIC AIRLINES, INC. — TRANS-CANADA AIR LINES

OFFICERS OF THE AIR TRANSPORT ASSOCIATION OF AMERICA

In the center is Vice Admiral Emory S. Land, President of the Association. At the left is Brigadier General Milton W. Arnold, Vice President in charge of Operations and Engineering. At the right is Robert Ramspeck, Executive Vice President. Other officers not shown include M. F. Redfern, Secretary and Vice President in charge of Traffic; Stuart G. Tipton, General Counsel; John W. Thompson, Vice President and Director of Information, and Joseph Hintersehr, Treasurer.

The Air Transport Association of America is a cooperative organization composed of the principal scheduled airlines operating in and from the United States and its possessions.

Inquiries may be addressed to the Information Department of the Association.

Published by

AIR TRANSPORT ASSOCIATION OF AMERICA

1107 16th STREET, N. W.
WASHINGTON 6, D. C.

AN AIR TRANSPORT COMMAND PHOTOGRAPH