POSSIBILITIES FOR LOWER AIRLINE COSTS

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With the close of the war, interest is quickened in commercial air transportation. The forecasting of passenger fares at rail rates has become widespread. Juan Trippe, President of Pan American World Airways System, stated, sometime ago, that his company could offer passenger fares to Latin America of 3½c a mile and cargo rates as low as 10c a ton mile when improved planes are available.[1] Other airline spokesmen have made similar statements.

However, improved planes, engines and fuels offer only a partial answer to the question of lower fares and rates. Lying beyond the control of the designer, yet important in the total cost of transporting passengers and cargo, are ground and indirect expenses.[1a] In fact, if planes flew at no cost at all, the fares promised by these optimistic prophets would fail in many instances to cover ground and indirect expenses. Even with the large volume of operation the average 1943 ground and indirect cost for 15 domestic airlines was 27.7 cents per ton-mile, or 64.1% of total operating costs. In the case of international "American Flag" lines, the ton-mile cost was over $1.00. Pan American Airways in November, 1945 proposed a fare of $275 between New York and London based on permission to fly four trips instead of two per week. This still would have left passenger fares about 10 cents a passenger-mile.

During the past five years direct costs per ton-mile for domestic airlines have been cut in half chiefly because of increased utilization, heavier loads per plane and reductions in depreciation charges. The per ton-mile ground and indirect expenses in the same period have only been reduced about 11%. From 1938 through 1943, there was a 7.8% increase in ground and indirect expenses for every 10% gain in revenue ton-miles. Unless overhead shows a tendency to decrease more rapidly than the increase in volume of business done, it is likely to wipe out all the economies of the proposed new planes.

A formula for determining the operation cost of new types of aircraft was developed in 1938. At that time overhead was about 80% of direct flying cost. Some aircraft manufacturing companies, in calculating the performance costs of their

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[1] New York Times, August 8, 1944.

[1a] Operating expense categories as established by the Civil Aeronautics Board are as follows:

Aircraft Operating Expenses (direct)

Flying Operations	Flight Equipment Maintenance—direct
Depreciation—Flight Equipment	

Ground and Indirect Expenses

Ground Operations	Passenger Service
Ground Equipment Maintenance—direct	Traffic and Sales
Equipment Maintenance—indirect	Advertising and Publicity
Depreciation—Ground Equipment	General and Administrative

projected ships, have fallen into the error of still basing overhead at 80% of direct operating cost. As a matter of fact, direct operating costs and overhead do not maintain a fixed relationship as the following table shows:

1939-1943 CALENDAR YEAR TOTAL, GROUND AND INDIRECT COSTS[2]

	Direct Flying Actual	Direct Flying Per Ton Mile	Ground and Indirect Actual	Ground and Indirect Per Ton Mile
1939	$26,021,921	32.91¢	$24,513,239	31.01¢
1940	34,789,659	29.36	34,712,139	29.30
1941	43,931,956	28.07	44,193,940	28.18
1942	35,410,275	20.26	46,943,996	26.28
1943	33,324,946	15.51	59,507,624	27.71

In most businesses fixed charges per unit of production go down as volume increases but the airlines have experienced a rise in ground and indirect expenses almost as fast as tonnage volume.

INDEX OF TONNAGE VOLUME VS. GROUND AND INDIRECT COSTS
(1939 = 100)

	Tonnage Volume	Ground and Indirect Costs
1939	100.0	100.0
1940	149.9	141.6
1941	197.9	179.9
1942	221.1	191.5
1943	271.7	242.8

Between 1939 and 1943, despite the 172% increase in ton-miles performed, total ground and indirect expenses declined only 11% on a ton-mile basis. Such items as passenger service and general and administrative expenses actually increased. In contrast, direct operating expenses declined 53%.

COMPARATIVE AIRLINE OPERATING EXPENSES FOR CALENDAR YEARS 1939 AND 1943
(Showing per cent of increase or decrease in various categories of ground and indirect expense)

	1939 Cents Per Ton-Mile	1943 Cents Per Ton-Mile	Per Cent Decrease
Aircraft Operating Expenses	32.91	15.51	53
Ground and Indirect Expenses:			
Ground Operations	11.30	9.13	11
Ground Equipment Maintenance—Direct	.74	.67	9
Equipment Maintenance—Indirect	2.55	2.48	3
Passenger Service	2.32	3.17	27*
Traffic and Sales	5.06	4.32	14
Advertising and Publicity	2.78	2.05	26
General and Administrative	5.11	5.25	3*
Depreciation—Ground Equipment	1.15	.64	44
Total Ground and Indirect Expenses	31.01	27.71	11
Total Operating Expenses	63.92	43.22	32

* Increase.

[2] All tables and quoted statistics, for this and subsequent data in these pages, unless otherwise noted, are developed for the same 15 domestic airlines from C.A.B., ANNUAL AIRLINE STATISTICS, DOMESTIC

From 1939 to 1943 all business costs have risen, but in the case of airlines, indirect costs have actually increased 124.2 per cent as against 110.6 per cent in revenues. Such a jump in indirect costs would be understandable when high promotional and educational expenses are necessary to develop new business. Today, that situation for the airlines does not exist. Passengers are being turned away. Because overhead in this period of peak traffic has risen faster than revenues, its reduction is uncertain after the war when airlines are again seeking business. Will a continuation of past air carrier policies work toward high costs?

A policy contributing to high costs has been the addition of unprofitable stops and routes producing small revenue. It is natural for an airline to want to expand and many new stops have been installed with the hope of building up traffic. Still other stops or extensions have been inaugurated as defensive methods to prevent one airline from invading another's territory. However, where traffic does not exist, the initiation of new routes and stops has been costly.

The following table lists air mail routes showing continuous losses for the four fiscal years 1938-1941, despite the large proportion of revenue derived in most instances from air-mail payments:[3]

Line	Route	4-Year Total Revenues	Per Cent Mail	4-Year Total Losses	Points
American	A.M.21	$1,567,488.87	41.20	$ 221,934.09	Boston-Cleveland
Braniff	A.M.50	245,647.00	27.34	107,397.34	San Antonio-Corpus Christi
Inland	A.M.35	445,453.39	79.35	72,249.74	Huron-Cheyenne
Penn-Central	A.M.32	1,538,392.60	34.71	181,015.79	Detroit-Chicago-Milwaukee
Penn-Central	A.M.34	273,551.00	48.77	212,805.70	Washington-Buffalo
Penn-Central	Non-mail routes	215,740.58		323,793.93	
TWA	A.M.36	720,049.71	22.92	351,262.15	Dayton-Chicago
TWA	A.M.37	561,952.74	43.09	684,277.56	Winslow-San Francisco
TWA	Non-mail routes	2,373,576.19		791,677.62	
United	A.M.17	352,759.94	67.86	229,345.83	Cheyenne-Denver
United	A.M.57	231,583.26		239,163.26	Seattle-Vancouver (no mail revenues)
Western Air	A.M.19	1,482,527.08	73.07	172,559.93	Gt. Falls-Salt Lake City
	Total	$10,008,722.36		$3,587,482.94	

This four-year record indicates the difficulty of building up traffic between points where its does not already exist. Although these routes averaged a loss of about 21 cents per revenue-mile for the period and diverted earnings from surface carriers, airline prestige and political pressure makes their continuance almost a necessity.

Despite their experience with unprofitable routes, practically every airline is seeking extensions to numerous small cities or in directions where traffic flow is small. The applications before the C.A.B. for new route mileage on January 1, 1944, were practically double the existing railroad trackage. The airline, in considering expan-

CARRIERS CALENDAR YEARS 1938-1942 (1943). The calendar year of 1943 developed from C.A.B.'s monthly airline statistics. As a common denominator for volume all traffic has been converted to ton-miles. Each passenger and baggage equals 200 pounds.

[3] C.A.B., ANNUAL AIRLINE STATISTICS, FISCAL YEARS 1936-1941 (1942).

sion, might benefit from the history of railroad expansion when efforts were made to link every hamlet. The least profitable branch lines were the first to succumb to the competition of the automobile, truck and bus, and the amount of trackage abandoned is testimony to the danger of expanding to areas of low traffic density.

The economic sphere of air transportation is to provide rapid service between large cities hundreds of miles apart. As a consequence, airline profits are determined by an inter-relationship of speed, distance and most important of all, size of population served. In the scramble for new routes the airlines are forgetting that they cannot get profitable traffic at the bottom of the population barrel. Eighty-eight of the one hundred and ninety-two cities receiving passenger air service in September, 1940, accounted for only 6 per cent of the total passenger traffic. About 15 cities with a population between 10,000 and 20,000 averaged 5 passengers or less per day. Yet TWA, for example, has filed applications for new routes to serve 13 Ohio cities[4] in addition to the four already served, and in Illinois, 13 stops in addition to its single stop—Chicago. A recent study made by United Air Lines reveals that with 15-minute stops every 50 miles, feeder planes have an average speed little better than that of a private car or train. If stops are reduced to 5 minutes, the speed would average 60 m.p.h. or about 20 m.p.h. faster.[5]

In transportation economics local tariffs have always been much higher than through rates because terminal costs, physical and clerical, are a large part of the total cost for the short haul. If many of the routes proposed by the airlines go into operation, a lowering of airline rates will be impossible. These attempt to cobweb sparsely populated and closely located areas will encounter four major difficulties: (1) new cost levels will be started as a result of additional investment in facilities; (2) lower traffic density or the revenue ton-miles per route mile will be encountered; (3) numerous stops impair the benefit of speed; (4) frequent schedules of surface transportation will offset the speed advantage of the airplane if flights are infrequent.

In spite of the high cost of terminal charges, airline spokesmen have preached against a co-ordinated transportation system. Dr. John H. Frederick has stated: "Sales and advertising policy to sell cargo transportation services . . . should be completely divorced from the railroads and rail express."[6] This viewpoint overlooks the higher costs involved when the airlines take on the functions of other existing agencies. Furthermore, flying air cargo differs from flying passengers or mail in that two profits are required—one for the airline and one for the patron who pays the charges. Likewise, this viewpoint overlooks the fact that approximately 30 per cent of all air express is transported by rail in some part of the journey. The very fact that airports are so far from central city points is basic for co-ordinated air-surface transportation. For illustration, St. Louis airport is located 17 miles from the busi-

[4] TRANSCONTINENTAL & WESTERN AIR, INC., YOUR AIRLINE AND YOUR COMMUNITY (1944).

[5] (June 5, 1944) 1 AVIATION NEWS 37.

[6] Dr. John H. Frederick, address before Air Cargo meeting of the Society of Automotive Engineers, November 10, 1943, Chicago.

ness district, Los Angeles is 15 miles distant, with the national average between 7 and 8.

Instead of opposing co-operation which offers possibilities of bettering the national transportation system, airlines should recognize the value of it. In the final analysis, public convenience and necessity, not the airlines, should determine the type of transportation of greatest benefit. To attain a greater volume of traffic, enabling lower costs, some form of integration or co-ordination may be forced upon airlines by competition, just as it was on the railroads in adopting bus lines and door-to-door delivery of freight.

The high cost of airline operation has been abetted by governmental rate-making theories. Because transportation has been treated as a monopoly by governmental agencies, rates have been regulated by decree rather than by competition. Rates charged by railroads in the early stages of their development could make or break an industry or community because it was often wholly dependent upon railroad services and so government regulation of rates came into being. Today, communities and industries are competitively served not only by railroads but by public motor carriers, trucks and cars privately owned and, to a certain extent, the airplane and water carrier. We have outgrown the necessity or regulating rates.

Rate setting, based on a fair return on invested capital, has encouraged the larger fixed investments that are characteristic of publicly-regulated utilities and has resulted in a certain lack of cost-mindedness. This is evident in the government's inclusion of Depreciation of Flying Equipment as a direct cost in the "2780" report forms submitted by airlines to the C.A.B. If depreciation were properly classified in airline accounting the 1943 ground and indirect costs per ton-mile would be over 2 cents higher. Furthermore, if total overhead expenses in 1943 had been properly allocated to passenger-transportation, which gives rise to the greatest share of airline overhead, a fare-rate of at least 4 cents per passenger-mile would have been needed to meet this item of per passenger-mile expenses. This rate would have been necessary in spite of the highest volume of traffic ever carried and a load factor of 88 per cent. In 1940, with a load factor of 58 per cent, a fare of nearly 6 cents was needed to cover overhead.

Today, with the many optional methods of transportation available, rates should be regulated by competition, safeguarded by enforcement of the Sherman Anti-Trust Act. This is particularly true for air transportation where public regulation has gone beyond its requirements. Transportation is no longer a monopoly. A comparatively small investment is required to launch an air service or to extend one line into the territory served by another. Unlike the railroad, the airline maintains no rights-of-way, terminals or grade crossings. Yet the Civil Aeronautics Board is regulating rates for this new competitor in the transportation field in terms of the monopoly concept evolved many years ago by the Interstate Commerce Commission. By adjustments in the mail pay, the C.A.B. regulates the return on invested capital for airlines to approximately 8 per cent for domestic operations and 10 per cent for

foreign carriers. When airlines have shown increased earnings through efficient management, their mail rates have been cut. As a consequence, ground and indirect expenditures have risen with earnings.

In addition to the threat of governmental encroachment on the airlines in the immediate post-war period, there is the more distant danger of competition from the private airplane in both the passenger and cargo versions, whose effects on the air transport industry may resemble those of the motor vehicle on the railroad. Already former air force pilots, with surplus equipment, have started in business as taxi operators and contract carriers. Their lower direct and overhead costs give them a distinct competitive advantage over the airlines. These threats, both immediate and remote, provide a further need to constantly strive for lower costs and fares.

With the tapering off of the largest proportion of today's business, travel and mail generated by the services, airline operations will become increasingly high-cost as traffic approaches the saturation point for present fare and express rates. Studies of potential air express business show relatively small expansion occurring until present rates are cut in half. According to a recent study[7] prepared for the United Fresh Fruit and Vegetable Association, air carriers must reduce their rates to below 10 cents a ton-mile, which is about one-third the present overhead, if they are to develop any appreciative market for air-borne fruit and vegetables. This is less than one-sixth the basic rate for air express of 61.4 cents per ton-mile.

Economies are possible through the joint or co-operative operation of ground facilities. The sale of tickets, the handling of traffic, dispensing of weather information and the dispatching of planes could be operated jointly by two or more airlines, instead of separately 24 hours a day. After the initial effects of the invasion of one line into another's territory are over, consolidation of ground facilities might succeed the joint operation. C. R. Smith, Chairman of American Airlines, has even proposed[8] running planes like buses, say between New York and Chicago, within a few minutes apart so that the overflow of passengers from one company's flight would be cared for by the next flight of whatever it might be.

Luxury is the keynote of present air travel. Evidence of the importance some airlines place on service is a statement of Jack Frye,[9] President of Transcontinental & Western Airlines: "I am convinced that we cannot now, if ever, lower our standards of service. Quality service built up our business and is necessary to maintain customer loyalty." He went on to indicate that mass transportation by air was a matter of fifteen or more years. With the necessity of maintaining their load factor, especially as more and larger planes become available, the airlines will be forced to decide whether they are to stress a super-personalized service, or to attract the butcher, the baker and their families. When the airlines go after this type of business, lower

[7] Ralph E. Myers and Glenn F. Phillips, "Shipment of Perishables Made by Ralph E. Myers Co." (1945).

[8] C. R. Smith, *What We Need Is a Good Three-Cent Airline* (Oct. 20, 1945) SAT. EVE. POST.

[9] Address before the National Aviation Clinic, Oklahoma City, Nov. 19, 1945.

fares rather than chrome trimmings and the proposed cocktail bars will be the far more powerful inducement to travel. A type of operation more closely resembling the inter-city bus lines offers the possibility of lower fares through lower indirect costs. A comparison of 1943 figures for Southeastern Greyhound with those of three transcontinental airlines illustrates the bus line's operating economy:

DIRECT AND INDIRECT EXPENSES[10]
(in cents per passenger-mile)

	Direct	Indirect	Total
(a) Southeastern Greyhound[11]	.50	.43	.93
(b) 3 airlines—TWA, United and American	1.51	2.64	4.15

The indirect costs of bus line operation were only one-sixth those of the airlines. While it is not suggested that air and bus travel service are strictly comparable, the bus carriers' costs provide a goal toward which airlines could conceivably strive. Emphasis on price rather than on service has been the keynote of appeal to the masses, not only of bus transportation, but also of self-service markets, variety stores, cafeterias and tourist camps. Expansion in the commercial aviation field is a matter of national concern, particularly to the more than 2 million men associated with the operation of military aircraft and the 2¼ millions more engaged in manufacturing planes and accessories. From such a large group trained in the industry there is likely to arise political pressure to provide jobs through government subsidy or operation. Expanding industries have generally been associated with progressively lower costs. Adherence to this pattern will be necessary if air transportation is to achieve its place among major United States industries.

[10] Derived by converting mail, express and excess baggage pound miles flown into ton-miles and reconverting this total into passenger miles on the basis of 200 pounds per passenger and baggage.

[11] I.C.C. Docket 32783 (1943), Report to Interstate Commerce Commission.