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# THE PARADOX OF THE AIRLINES\*

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**I**N 1947 the airlines of the United States carried more passengers and cargo, did it more efficiently, and lost more money than ever before in their history. This startling paradox, of which there are few parallels in business history, is compounded from other paradoxes, confusions, miscalculations, and errors on the part of the airlines themselves, their suppliers, their regulating agencies, and the makers of basic government policy. This paradox has grown also out of many uncontrollable factors, such as the complexity of the airplane and its operation, the difficulties of rapid expansion, and the disruptions of the political and economic worlds.

We in airline management cannot alibi for our errors; nor do I think we should blind ourselves to the causes of our plight. We should not deal lightly with the blunders of government nor with the stark realities of basic economic upheavals. Our job is to find out why the paradox exists and to do all in our power to remove its causes. For we do know that a sound network of airlines is just as necessary for the social and economic welfare of this country, as for international security of the United States.

Taking domestic and international flag-carriers as a whole, every class of traffic — passenger, mail, express, and freight — increased in 1947 over any previous year. In 1947, for example, while passenger miles flown by domestic airlines increased only slightly over 1946, they were nearly six times those flown in 1940. Domestic express and air freight increased 112% over 1946 and amounted to a volume of ton miles 20 times the air express carried in 1940. In the international field, the three American flag-carriers handled 85% of all air passengers arriving in this country over the North Atlantic route and 75% of those who departed, over the North Atlantic, for overseas points. If all passenger arrivals from all foreign countries to the United States are considered for the year 1947, we find that the airplane brought in approximately 1½ times as many persons as did surface vessels. This is an increase, in seven short years, of more than eleven times in the volume of international air passenger business.

These traffic increases came despite the return, in 1947, of near nor-

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mal load factors, after a war period when we could handle only priority passengers and those few non-priority passengers with stamina to spend long hours at airports waiting for an occasional seat. The airlines carried the traffic because of a prodigious increase in plane miles which resulted from the adding of hundreds of Constellations, DC-6's, and DC-4's to their operating fleets.

Yet, with all this growth and with the complexities of breaking-in new airplanes, as well as the costs of preparing for the inauguration of others, the number of employees on the domestic airline payrolls at the end of 1947 was approximately 10% less than those on the payrolls a year earlier. In TWA, alone, the total number of employees have been reduced from over 17,000 (in the fall of 1946) to 13,000 at the end of 1947. And this reduction has been accomplished despite a 40.9% increase in the ton-miles of available capacity offered to the public. Despite the record volume of business, and the successful efforts for improving efficiency, the airlines of the United States suffered losses of more than \$22,000,000 in 1947. And, if the overseas airlines are excluded — and certain estimated profits for 1947 still depend upon undecided air mail pay — the loss for all domestic airlines exceeded \$20,000,000.

#### MISTAKES OF AIRLINE MANAGEMENT

This paradox is not a one-year phenomenon. The early months of 1948 indicate that, unless rapid solutions of the underlying airline problems are found, the results for the year 1948 may show a similarly discouraging picture. Why this paradox? While the entire airline losses of 1947 *can* be attributed to governmental policies — both general and those specifically affecting the airlines — I would be less than candid if I did not admit our own mistakes and, at the same time, recognize those uncontrollable factors which have cost the airline business substantial sums of money.

In the wisdom of hindsight, it is easy to chide airline management for its mistakes. And I realize that one of the America's favorite indoor sports has become this criticism of airline management's optimism, errors, and struggles to plan the air transportation business on a sound footing with a vastly increased volume and scope. At the same time, these mistakes have contributed materially to the airline paradox.

One of our principal mistakes was to plan too optimistically. When, in 1944, domestic passenger business was nearly 50% above 1943 and when, in 1945, this same rate of increase continued, it was not easy to estimate where the growth of business would stop. In the last year-and-a-half we have experienced this same kind of problem with air-freight, which has grown at a faster rate than our passenger business ever increased. But in 1944 and 1945, when the airlines had to plan for the post-war fleets and organization to meet their public

responsibility for adequate transportation and their requirements for economic size, we were faced with expert estimates of a post-war passenger potential ranging from approximately 6 billion passenger miles to 25 billion passenger miles.

While, in our own case, we planned for a domestic industry reaching approximately 10 billion passenger miles in 1950 and developed a relatively conservative equipment program, we know that certain carriers placed orders for equipment which, if actually received and properly utilized, would have required at least a 25 billion passenger-mile industry. These equipment plans, many of which have been sharply curtailed in the last year, were altogether too often accompanied by grandiose plans for expansion of organization and personnel and by the development of palatial city ticket offices and other facilities. Plans for bigness have a way of breeding other plans for bigness. One airline ordering an excessive amount of equipment encourages its competitors to do likewise. For the transportation business is one in which the person with the most (even though it may be too much) gets the most. A palatial ticket office, developed on one busy downtown corner by one airline, encourages or even compels a competitor to build a more palatial office to attract customers and to perpetuate the reputation of air transportation.

This expansion, much of which has been warranted by the growth of the airlines, was accompanied in too many cases by a lack of organization and control to hold costs in line with actual expansion plans and the immediate outlook for traffic. I know of cases where the increase in personnel was so rapid that actual employment exceeded future budgets before it was found out how many persons were on the payroll. There have been other times when management attempted to solve the vexing problem of an expanding business by simply adding personnel rather than by solving the basic problem involved. This occurred, I feel sure, with reservations and ground-handling immediately after the war. The influx of passengers and the addition of plane miles so affected the airlines as to cause just public criticism, with the result that thousands of persons were added to the payrolls to handle a problem which revised methods and quality supervision have largely eliminated since.

The competitive fervor in the airline business near the end of the war and immediately after the war, led to flooding the Civil Aeronautics Board (CAB) with route applications. It nurtured the growth of an independent and confidential attitude by each airline on research and the development of facilities. Many route applications, we realize, have been made on a defensive basis, with companies filing for routes they really did not want but for which another company had applied and which, if granted, might impose a serious competitive threat. There have been many cases where independent research and the

development of facilities have been undertaken at the same time and on the same subject and for the same purpose by competitive airlines who could have saved considerable sums had these efforts been pooled. Some of this duplication of effort has even extended to the aircraft manufacturers and there have been cases where both airlines and manufacturers have been undertaking expensive research on instruments, heating and ventilating systems, loading devices, and many other technical developments connected with airline operation.

There has been virtually no combination of efforts with respect to market research, the results of which could easily have been shared by airlines and could have assisted airline management in developing a sound economic basis for future expansion. The competitive urge to keep up with, or get ahead of, "the Joneses" has resulted in some uneconomic scheduling of aircraft, with occasional unnecessary duplication of service. In this sphere of airline operations, like others, an individual airline, acting as an individual, is virtually compelled to keep up because those who offer the most tend to get the most.

I recognize that mistakes have been made by the airlines in not undertaking adequate financing for the tremendous expansion programs planned. There are clearly many reasons for this. The principal reason perhaps is that we under-estimated future increases in the costs of new facilities. For example, as late as 1944, TWA felt it was making a conservative estimate when it forecast the cost of acquiring Constellation equipment at \$550,000 per airplane. But, these airplanes cost \$800,000 when they were delivered early in 1946.

Another probable reason for this lack of financing is that we simply could not believe that as much money would be required as has turned out to be the case. In a few years, the gross assets of this country's scheduled airlines increased 500%. As a result, the financing programs required were so vast that they called for costly caution and delays for which the favorable financing markets of 1945 and early 1946 did not wait.

Another costly and needless error which can be laid to the door of airline management, is the unwise domestic passenger rate reductions made in 1943 and 1945, during which the average passenger revenue per passenger mile dropped by approximately 1¢ or 18%. Most of this drop occurred in 1945. Profits of the airlines in 1945 were soaring, and passengers were clamoring for airline seats. Clearly, with passenger load factors at 90%, there was no valid reason for lowering the fares and the possible excess profits tax cost to a few airlines of holding the fare level would have been more than offset by the desirability of building up financial reserves for the future and of saving passenger fare decreases until passenger loads should drop off or the future trend of airline costs should justify.

## FACTORS BEYOND CONTROL OF AIRLINES

This paradox of the airline business was due, in part, to certain factors beyond the control either of airline management or the government. In general, they are due to the fact that the airplane is perhaps man's most complex machine. And this complex machine engenders complex procedures for its maintenance, for passenger handling, for its operation, and even for accounting. I sometimes think that the airline business, because it is built around the complexities of the airplane, is the most complicated business of all.

The introduction of new airplanes of increasing complexity has cost the airlines of America tremendous sums of money, in addition to the cost of the airplanes themselves. The cash outlay for placing new aircraft into service cannot be absorbed over a long period of years. When it is realized that the DC-4 is estimated to be nearly 2½ times as complex as the DC-3 and the Constellation over 1½ times as complex as the DC-4, a program which involves placing such a complex machine into smooth, safe, and profitable operation involves many costs. In the case of TWA's Constellation aircraft, even though years had gone into the airplane's design and testing, and long months of careful planning have gone into the inauguration of service, the cost of introducing these airplanes was far beyond that which we had any reason to expect. During the year 1946 alone, we have estimated conservatively that the cost of introducing these and our international DC-4 airplanes was more than \$8,000,000 and this figure is in addition to any costs for equipment or spare parts and to the fact that the Constellation grounding contributed approximately \$7,000,000 to our net loss in that year.

Therefore, in one year alone, the introduction of new airplanes cost TWA, in loss of revenue not offset by cost reductions, and in non-recurring additional expenses, approximately \$15,000,000, *in addition to the capital cost* of purchasing the airplanes and equipping the airline for their operation. It will be some time before the airlines operating the DC-6's can properly estimate the cost of inaugurating these airplanes, including the losses suffered by their grounding, although every airline in this country which inaugurated this new equipment in the post-war period has suffered considerably.

Another factor which has contributed to the airline paradox, and one which has interfered with most businesses in this country, is labor leadership. Altogether too often, loyal groups of employees are led into wasteful and harmful strikes, and costly make-work operating agreements by irresponsible or uninformed union leaders. It is a strange commentary on the American scene when a group of employees, such as airline pilots, earning upwards of \$12,000 per year and working 80 hours per month, use their strategic position to cripple the business which makes possible their high salaries and to harm the

great majority of employees whose earnings average a quarter as much for twice the time.

There are, of course, many other factors beyond our executive control. We are still hampered by weather, operating delays, and the costs and confusions of off-schedule operations.

Our costs are still affected by shortages of various kinds. For the lack of an adequate supply of a particular type of bushing, for example, we have often been required to cannibalize a spare engine or an airplane to keep our overhaul shops producing a rate necessary for our operations. Nearly three years after V-J Day, these parts shortages increase our costs and keep us from the efficiencies which we know can be attained.

Perhaps the greatest single cause for the paradoxical situation of the airlines arises from the inflation of prices, particularly in the last few years. We have analyzed the effects of these increased prices on TWA. By taking the principal items of 1939 operating expenses and applying the cost per unit to our 1947 experience, we found some startling results.

The increases in the *rates* we pay for salaries and wages and the *prices* of materials and supplies, including gasoline and oil, account for almost \$12,000,000 of our 1947 expenses. In other words, without inflation of prices, our \$8,000,000 loss experienced in 1947 would have been a \$4,000,000 profit, despite the fact that passenger rates were somewhat lower than in 1939, and mail pay was but a fraction of the 1939 rates per ton mile. A part of this inflation in prices can be laid to the disruptions of war. But a large part of it must be laid at the door of government policy which encouraged undue wage increases during and especially immediately after the war, and which also encouraged wasted funds through many unnecessary government expenditures.

This inflation of prices has largely nullified our efforts to improve efficiency. New and more efficient airplanes do not yield the profits anticipated because, by the time we have them in service, price increases have wiped out their advantages. Reduction in numbers of employees on our payrolls are offset by increased wages. Improved operating and maintenance techniques which yield savings measured in millions of dollars are offset by increases in the cost of gasoline and oil.

This merry-go-round of price increases which absorbs efficiency increases is intensified by the fact that the airlines are unable to pass much of the cost rise on to the public in higher passenger fares or higher express and freight rates. Passenger and cargo business is highly competitive, not only between airlines, but between airlines and surface carriers. No individual airline is master of its sales price. Even

though the airlines were not shackled with the Anti-Trust Laws and even though customers had no alternative but public air transportation, the competitiveness of this industry would still mean that price increases could not be passed on through higher rates. How different from the sheet steel business or the business of producing automobiles or underwear!

#### MISTAKES IN GOVERNMENTAL POLICIES

The dilemma presented by price increases is sharpened by the government attitude towards mail rates. At the very time post-war inflation was hitting the airlines, in 1945, the CAB reduced the service mail rate of the trunk-line carriers from 60¢ to 45¢ per ton mile. While mail pay has become a decreasingly small percentage of our gross revenue, amounting to 7% domestically in 1947, the fact that the trunk-line operators have been asked to carry mail at a 25% reduction in rate below the amount paid during the war despite higher prices and costs, is strange indeed. Had TWA received even the war-time service rate for the carrying of domestic air mail, its 1947 loss would have been reduced by \$1,150,000; and had the 1939 air mail rate been applied to both domestic and international air mail carried in 1947, TWA would have earned a *profit* of \$3,500,000, instead of incurring a *loss* of \$8,000,000.

Our governmental air-mail policy is confused, unrealistic, and not in accordance with the dictates of the Civil Aeronautics Act of 1938. Few persons realize why domestic air-mail incurs costs far above those which are incurred for freight. Air mail is handled as a top priority load. A carrier is obliged to accept air mail, or risk fines, even if passengers are removed thereby. In order to protect themselves and to give the Post Office the service it needs, most airlines allocate space and weight for air-mail which cannot be sold in advance to passengers. This priority treatment is costly and justifies a service rate for mail well above the rate for passengers.

An interesting inconsistency in government policy arises in international air mail. If an American flag-carrier operating over the North Atlantic handles east-bound mail from the United States, it receives 75¢ per ton mile to the foreign gateways. If a foreign carrier handles the same kind of east-bound mail, it is paid \$2.86 per ton mile. While American flag-carriers handle most of the east-bound mail, we have such startling paradoxes as the United States Government paying a foreign airline this attractive rate for flying thousands of ton miles of mail during a time when our own American Overseas Airline was shut down by a needless strike called by an American labor leader.

It has also seemed a little puzzling to me why the United States Government should place an inexperienced feeder-line operator into a local service and pay mail rates amounting to \$20 to \$100 per ton

mile, when a major airline like TWA is allowed only 45¢ per ton mile for carrying mail over the feeder-type portions of its route. Yet the major airline is generally in a position to give superior mail service.

The handling of air-mail rates has, to a very great extent, disregarded the clear dictates of Congressional intent in the Civil Aeronautics Act of 1938. In this Act, Congress clearly stated that the rates set for air-mail must reflect the need of each air carrier for compensation for the transportation of mail, sufficient to insure the performance of service under honest, economical, and efficient management as well as to maintain and continue the development of air transportation to an extent required for national commerce, the postal service, and national defense. The record speaks for itself. Not only has the service rate for the carriage of mail been below that required by the costs of rendering the service required and, in the international field, below that paid to the competitors of American flag-carriers, but the rate has been far below that required by the dictates of Congress itself.

Even though pending mail rate cases should allow an increase in the mail rate, much of the damage will have been done. The needs of the airlines for a sound credit standing for their development and expansion in this critical time is imperative and has unquestionably been harmed by the government attitude on the mail rate cases.

The delays in handling mail rate cases have been extremely costly. TWA, for example, applied for an increase in the domestic mail rate in March, 1947. More than a year later, our case, based upon an emergency situation growing out of conditions over which we had little or no control, was finally decided—within the past few days, but at a most disappointing figure. How different was this delay from the expeditious handling given to the mail rate reductions nearly three years ago.

Moreover, if the view of the CAB prevails—that no airline should be allowed back pay before the date of officially filing for an increase—then the losses due to such government actions as the grounding of the Constellations will not be reflected in mail pay. In this connection, no reading of the Civil Aeronautics Act or its amendments can lead to the conclusion that Congress intended the payment of back air-mail compensation to depend upon the day when the applicant filed for the rate.

As the President's Air Policy Commission has recognized, the development of the present domestic route pattern has been confused, and has not been accomplished through the careful planning which the outlining of a national route pattern demands. Each case tends to be dealt with as it arises. By not having a definite long-range plan and by yielding to arguments which such a plan would show to be unsound, the CAB has developed a national route pattern replete with duplicating services and routes requiring considerable subsidy. The

spurious requests of every city for one-carrier trunk line service to every other city has altogether too often been met by adding a carrier to an already over-served route, rather than by looking for such alternatives as schedule connections and equipment interchange.

To be sure, some of this blame must fall on the airlines for their applications into territories where they cannot contribute additional and economic service. But much of it has grown out of the Board's insistence upon competition, often beyond that required to protect the public; the slowness with which the Board has acted on route development cases; its delay in establishing and enforcing rules for the control of non-certificated carriers; and, above all, the lack of a consistent plan for a national air route pattern.

Another field of government policy of considerable importance to the airlines is the program for the construction and modification of airports and airways facilities. Most of these are clearly required in the interests of national defense, and many are necessary if we are to obtain a dependable and efficient airline operating system. Most of these improvements are beyond the reach of any single airline, not only because of their expense, but because they are public facilities necessarily open to the use of private flyers, non-scheduled airlines, and military pilots. As a matter of fact, some of our largest airports are used less by the scheduled airlines than by others. In Kansas City, for the year 1947, only 27% of the total landings and take-offs were made by the scheduled airlines. Even at the crowded Chicago Municipal Airport, the scheduled airlines made only 64% of the total landings in 1947. The need for these facilities has been recognized for some time and stand materially in the way of attaining dependable operation. Yet, even though the Federal Airport Program was approved by Congress in 1946, rather little has been accomplished.

There are many other inconsistencies and confusions of government policy which could be mentioned. I have known of cases where one regional government administrator insisted upon us taking a course of action, with respect to the Constellations, that was different from the course of action of another administrator. There are confusing cases where the CAA has changed its mind two or three times in a short space of time on safety specifications, such as cabin linings, for example. For an industry necessarily as closely tied in with the government as the airline business, the confusion and chaos of government policy, from their effects upon price inflation to their effects upon safety modification of aircraft, are costly in terms of long-range planning as well as from the standpoint of daily operating expenses.

#### PROPOSALS FOR RESOLVING DILEMMA

I should be pessimistic indeed if I left with you the impression that the outlook for the airlines is hopeless. It would be a sad outlook if

we, in the airline business, felt we had to look forward to increasing our business and extending air travel to the air public only at increasing losses. Such an outlook would, of course, spell the end to private enterprise in the airline industry. I feel that there is much which can be done by the airlines themselves, their suppliers, their employees, and by state and federal governments. The rude awakening from the easy profits of war-time years and the recognition of the economic problems involved in the post-war period have already led to many actions designed to put the airlines on a sound footing. The main job of airline management today is to improve the quality and dependability of service, and to reduce costs. And by management I include every supervisor in the companies. We *must* improve the quality and dependability of airline service and at the same time we must reduce the capital costs of expansion and the costs of operating our businesses.

I feel certain that when we have done so, public opinion will force such changes in governmental policy that we cannot fail in becoming a sound and integral part of our nation's economic structure. This job on the part of management requires cost reduction through the development of efficient organization and methods of doing business and a cost-consciousness on the part of employees who see their economic security bound up with the efficient operation of their airline company.

Not only does this cost-reduction require this kind of effort on the part of each individual company and its employees, but there are many places where the airlines can reduce costs through the kind of cooperation designed to benefit the public. There has been much talk of consolidating ticket offices and ramp and airport facilities. There has been some action. The airlines are, as you know, undertaking two major experiments on consolidating airport operations at Cincinnati and at Willow Run.

The consolidation of many airport services and downtown ticket offices is still a relatively untouched field for savings. I fear that, in the past, we have attempted too often to look for these savings in the busy airport terminals of large cities where the service is highly competitive and the possibilities for savings small. Considerable possibility for savings does exist, however, in downtown ticket offices of cities large and small and in airport services at medium and small cities, especially where essentially non-competitive services are offered.

We still have a long way to go in sharing the results of technical and economic research. The recent mandatory fire prevention program of the CAB, which required airline operators to undertake considerable modification by May 1 of this year is a good case at point. Virtually no attempt was made between the airlines to agree on how the details of this work were to be accomplished, and engineering and maintenance departments of all the major carriers incurred duplicate

expenses in approaching this problem on an independent basis. Moreover, it is known that power-plant costs represented between 50% to 70% of all direct aircraft maintenance; yet there has been little concentrated effort by the airline industry to act as a group in handling necessary improvements and modification to such engines as the Wright 3350.

Another type of cooperation which may reduce costs is the pooling of maintenance and overhaul of such items as engines, instruments, and accessories. The record of pooled engine overhaul has not yet been impressive but there has not been to my knowledge, a single case where this overhaul was pooled on a large enough scale to make real economies possible.

A further field in which airline management can help in solving the strange airline paradox is through removing the pressure for duplicating route awards and facilities for extending through carrier service. I doubt whether Ball Bearing, Ohio, or Frozen Dog, Wyoming, would be so insistent on one-carrier service to every major point in the country if the airlines could better coordinate their schedules or interchange equipment as TWA is planning to do in cooperation with Delta Air Lines this spring.

On the part of the aircraft, engine, and parts manufacturers, the paradox of the airlines can be assisted materially by a number of important means. Too often transport airplanes have been designed as a fuselage with wings and power plants and later with a view to their adaptability for the carrying of passengers and cargo. I am glad to say that this fault is being corrected and that airplanes of the future will probably be built without such drawbacks. However, as of today, with our so-called post-war airplanes, the preliminary approach to the initial design and development has been one of concentrating upon structure and aerodynamics. This has resulted in designing the airplane so that accessories and systems are forced to fit into a predetermined structure, causing thereby excessively high modification costs, maintenance costs, and mechanical delays.

The airplane of the future must be designed to avoid this costly mistake. It can be so designed if the airline industry will cooperate with the manufacturer in seeing that structure and aerodynamic design is made compatible with simple and dependable accessory and system design. If this kind of concept of design were accompanied by greater efforts toward standardization, I feel that great dividends in cost-saving and flexibility of operation would result. Airline individuality, with respect to cockpit arrangements, accessories, systems, loading devices, and other technical matters, are a costly luxury which I believe we could do away with. It may take a long time to realize results, but airline managements, even so, should prepare for this kind of cooperation now. The manufacturer can help us most at the present time by

taking a more active interest in the production of replacement parts. For, until we can have a smooth flow of parts needed for the overhaul of our aircraft and their power plants and accessories, we can hardly reduce our maintenance costs to the minimum.

Airline labor must recognize that its monetary rewards and economic security depend upon the success of the airline enterprise. This requires labor statesmanship of a high order, as well as an airline management which will effectively give the facts to its employees. I should hope that this labor leadership will not operate on a premise that an occasional strike is a good thing to keep management in line and labor union dues fully paid. I should rather hope that this labor leadership will develop responsibility and a knowledge of the fundamental economic axiom that no one wins from a strike, that no company can long pay wages beyond its ability, and that low cost production of airline service means high wages and steady employment.

Perhaps the greatest contribution to the development of a sound airline industry lies in government policy. This policy must be consistent within itself and over a period of time and must deal realistically with problems without requiring long, drawn-out and expensive hearings and disrupting delays. Over the long period of time, of course, the government can contribute most by making sure that its budgetary and monetary policies do not unduly disrupt the price level. A spiralling inflation of prices has already robbed the fruits of our efforts to increase efficiency. Further material rises in prices are likely to destroy the private enterprise existing in the airline business. This business, being highly competitive and selling a service so sensitive to price rises, cannot resort to the mere expedient of increasing prices each time the price of labor or materials rise. As I pointed out earlier, we cannot pass on labor and material cost increases as can most firms in mining, manufacturing, and retailing.

Government policy with respect to labor still leaves much to be desired. The recently enacted Taft-Hartley Law which removes some of the inequities of 14 years of pro-labor legislation does not apply to the airlines. The airlines, instead, still operate under a Railroad Labor Act which does not particularly suit the airline business and is certainly no answer to the proper government responsibility in airline labor difficulties.

Basic government policy dealing with the economic and safety regulations of the airlines, as this policy is expressed in the Acts of Congress, needs very little overhaul. What is needed is the removal of the chaos and the inconsistencies of the CAB in its interpretation of the clear-cut policies of the Civil Aeronautics Act of 1938.

This Act, at no point, requires the Board to develop an excessively competitive route pattern. This Act, contrary to its interpretation by the Board, does not require airlines to carry air-mail at the rates

imposed nor does it refuse assistance in the proper development of the airline business. This Act does not, in my judgment, hinder the healthy development of air-freight, and its proper interpretation would not permit a system where a few carriers can skim off the cream of the air-freight business by limiting their services to hauls between large traffic generating points.

What is clearly needed under the Civil Aeronautics Act is the recognition on the part of the Board responsible for its administration that (1) excessive competition is not necessary in a business so closely regulated as the airline industry; (2) a master plan for route development must be drawn if the chaos and expense of unduly duplicated services are to be avoided; (3) the national defense importance of the airlines and the expenses of their developmental period require a mail rate high enough to cover proper costs and occasionally a special allowance to cover exceptional costs forced on the airlines through no fault of their own; (4) decisions in the public interest do not require that each city should immediately be given a feeder line route whether it can be supported or not or that each city asking for one-carrier service should be given it if by so doing a sound airline system would not result; and (5) certain routes, particularly in the international field, having been granted primarily as a matter of international policy, should be given special financial support by the government.

The airline paradox of high traffic, high efficiency, and high losses is not inevitable for the future. By recognizing the problems involved and by attacking them head-on, whatever their causes may be, I feel sure that the airline business can develop into the position expected by its optimistic forecasters a few years ago.

But the solution of these problems *is* urgent. The airlines are relatively small in terms of total capital investment. The total capital of all American domestic and international carriers is smaller than the road and equipment account of a single large American railroad. The airlines have no considerable reserves from which to absorb development costs and finance expansion. In their entire 20 year history, the airlines of the United States have had only one good period of earnings — the years 1941-1945 — and high taxes did not permit the accumulation of reserves needed for post-war expansion.

I do not think I have over-emphasized the gravity of the problems besetting our industry. Our country became great by conquering one frontier after another. We advanced from the Atlantic Seaboard across the frontier of the Appalachian range to the fertile lands of Ohio, Indiana, and the middle west. We conquered the frontier of the Mississippi, the great Rocky Mountains, and went on to the Pacific until a continent was ours.

The crossing of these terrestrial frontiers was not easy. It required more than a century of a nation's effort. We cannot expect the cross-

ing of the remaining frontier — the air — to be easy. Yet, the amazing fact is that in 20 short years, the airline industry of the United States leads the world in air service. It carries passengers and cargo around the world and serves virtually every large city on the face of the globe. It brings to the people of the United States a greater volume of dependable and low cost air service than the airlines of any other nation. It has become a major force in the American transportation scene.

This astonishing fact has been accomplished despite untold operating difficulties, disappointing earnings, and business problems which seemed at the time to be beyond solution. This fact dramatizes the virility of an industry which has grown perhaps faster than any major industry in history. And it demonstrates how the Wright Brothers, Pop Hanshue, Jack Maddox, and the many others who have contributed to the progress of the airline industry are the Daniel Boones and John Fremonts of the air — the pioneers of the better world of tomorrow.