

1956

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Recommended Citation

E. Thomas Burnard, *Airport Planning and Jet Transports - The Operators' Viewpoint*, 23 J. AIR L. & COM. 5 (1956)
<https://scholar.smu.edu/jalc/vol23/iss1/2>

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AIRPORT PLANNING AND JET TRANSPORTS—THE OPERATORS' VIEWPOINT

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IN RECENT MONTHS, forty-one airlines have announced orders for at least 672 turbine engine transports to be delivered by 1959-1961, the total value of which is placed at over a billion dollars. Many of them, the turbo-prop transport types such as the British Viscount and the Lockheed Electra, are in service or will be in service considerably before then. The firm orders for the 120 to 160 passenger DC-8s and Boeing 707s exceed 190. There are at least 35 additional Boeing 707s and Douglas DC-8s on which options are held and which will probably round out the total long-range jet fleet by most of the world airlines. Shorter range DC-9s, Convair "Skylarks" and a smaller 707 have just been announced by the manufacturers. These new aircraft have been ordered by airline officials during the last several months at an unprecedented rate. They are expected to be the work horses of the airlines from 1960 until approximately 1975.

Jets Announced Without Advance Planning

Most of these new aircraft of the larger types are reported to require longer and stronger runways than have been built in the past, particularly when used on long hauls. Manufacturers and airlines have given assurances that noise suppressing devices will be perfected for civil use, because without them, the jets are a noisier type of airplane than current piston engine planes. They are expected to require new and additional ground handling facilities, and in a number of other ways require modification of airport facilities if they are to be used to the fullest economic advantage to their airline owners.

A DC-7C, by contrast with the contemplated jets, carries approximately 60 people and has a gross weight of approximately 140,000 pounds. This is one of the "biggest" planes flying today from our commercial civil airports. The new larger jet transports are expected to operate at 250-300,000 pounds gross weight and will carry at least double the number of passengers.

Some idea of the impact of these new and larger types of aircraft can be obtained by imagining that the operators of the intercity busses that serve your community have just announced that the busses are to be doubled in size within the next 3-5 years; that they will be nearly

twice as fast and that they will burn diesel fuel instead of gasoline; that your principal city streets will have to be widened and strengthened in order to accommodate them; and that whether you ride the busses or not, you, the taxpayers, will be expected to contribute your share to getting the streets ready for these new busses.

Imagine further that this announcement is made by the bus company, without prior consultation with or permission by those responsible for city planning. And then imagine that the city planners are asked: Will your city be ready for these new busses by 1959 or 1960?

The airports of this country, for the most part, have been built by public funds estimated at over \$3 billion and are owned and operated through some form of local government or an instrumentality thereof. These range in type from an integral part of a city or municipal department (such as the Department of Public Works), through semi-independent organizations, agencies or instrumentalities such as a Park Board or Commission; a two-city Joint Commission; a joint County Board; a Port Commission; a Port Authority; a bi-state agency; or an independent airport authority. In each case, however, no matter what the degree of independence from political control or lack thereof, the airport operator is nevertheless operating a publicly provided facility for which it is responsible to the public for efficient operation.

It is these bodies, which own and operate most of our nation's airports, that have read in the press for the first time in recent months, that the airport planning that they have been doing, based upon agreed federal government standards, may soon be obsolete.

The management of the nation's airports have contributed greatly to the tremendous progress of aviation to date, and many of the individuals have pioneered in this field along with the pioneers in the airlines. It is the foresight and planning of these airport management organizations, who through many lean years of trying to get local public support for their airport development and federal support for the integration of these airports into the national transportation system, that have made possible the tremendous increases in revenue passenger miles flown by the airlines in the last decade.

The Airport Operators Council represents nearly all of the 22 "large air traffic hubs" and about half of the 39 "medium air traffic hubs" of Continental U. S. plus the principal international airports at Hawaii and Puerto Rico. These Airport Operators Council member airports handle nearly 75% of the nation's scheduled enplaned passengers and about 95% of the enplaned scheduled overseas and international. They have work in process or definite future plans for approximately 500 million dollars of airport development based upon anticipated growth of air traffic before the jet transport announcements.

Developments planned for some of the larger type of airports range from \$100 million at an airport such as New York's International, and \$59 million at Los Angeles to expansion programs of \$33 million at Minneapolis-St. Paul, \$12 million at Atlanta, \$10 million at Miami,

\$8 million at Cleveland, \$7 million at Columbus, \$14 million at Dallas, \$5 million at Houston, \$10 million at Kansas City, \$7¾ million at St. Louis, \$11 million at San Francisco, over \$8 million at Portland, and so on across the nation. Based upon the apportionment of Federal Airport Program funds to date, these cities can expect about \$1. Federal to \$3. local. The local funds include, of course, airport revenues as well as funds from local taxes.

These plans, it must be remembered, have been made on the basis of existing standard orders of the Federal Government and on the basis of traffic growth estimates which come for the most part from Federal Government sources. Because of these extensive and well-laid plans, the announcements of the new large type jet transports, which may not conform, raise many questions.

Technical Solutions Needed First

It is doubtless true that the jet transports will expedite commerce and trade throughout the world. The airplane, more than any other vehicle devised by man, is capable of going more places and stimulating trade than anything since the creation of the boat or the wheel. The trade and communications lines made possible by the airplane reach farther and farther into the hitherto unknowns of the earth's surface, and the potentials to be developed as a result thereof defy the human imagination.

Yet, notwithstanding this romantic thought, it is axiomatic that air commerce grows in proportion to the other aspects of economic growth at the trade centers of our country and of the world, and before these centers can be served with jet transports there are many serious technical, financial, legal, and community relations problems which must be solved. The technical solutions must come first and these are to a very large degree the responsibility of the airframe and engine manufacturers and the airline operators.

For instance, the matter of noise is one for which the manufacturers are best suited to find solutions; and the airlines, as the operators of these noise-producing machines, must insist upon acceptable solutions if they are to be operated into airports near our densely populated metropolitan areas. Both the manufacturers and the airlines recognize this problem and are doing a great deal to solve it.

Next is air traffic control, which has been talked about, thought about, and discussed at great lengths for years in government and industry circles, and although there is currently promising talk about some solutions just around the corner, antiquated air traffic control procedures may yet be the greatest limiting factor on the economic use of the jet airplane.

Jet fuels are of several types on which the industry has yet to finalize. The volatile properties of these fuels differ and will, to a large extent, determine the type of ground facilities which will be needed to handle them. The huge quantities of fuel required by these new

aircraft also require a complete redesign of fueling facilities and procedures.

Jet blast, both heat and velocity, can do serious damage to property and cause injury to personnel unless adequate protection or adequate precautionary measures are taken. This, too, is a field about which the aircraft manufacturers and airline operators must learn a great deal more.

Runway length and strength requirements are something also on which the manufacturers and the airlines must complete a great deal of work. Currently, the airline operators and manufacturers are seeking changes in the federal performance standards applicable to the new types of jet aircraft, the determination of which will greatly influence the runway requirements. And, of course, the ultimate official determination of runway requirements will not be made until the CAA issues a Certificate of Airworthiness for individual aircraft, and authorizes the inclusion of these aircraft on the airline operators' Operating Certificate. And after that has been accomplished, the airline still has the flexibility of adjusting payloads and fuel loads to conform with available runways.

Not the least of the many problems of a technical nature which the airlines must answer relate to the handling of enplaning and deplaning passengers, and their baggage. Most air passengers have had their moments of serious aggravation while trying to check in for a flight of perhaps a DC-6 or 7 or even a Convair, and most of us have experienced even greater exasperation in trying to get our baggage from a flight on a plane of conventional dimensions. Imagine, therefore, doubling the number of passengers who are seeking to check in for a particular flight, or who are trying to get their baggage after arrival. At ports of entry additional problems will arise when the customs, immigration and health services are confronted with clearing the passengers from many of these new-sized aircraft—particularly when they arrive simultaneously. Those of you who have experienced attempts to get clearance in the past will have some idea of the kind of problems which exist for the future.

These are some of the technical problems, along with many others, which must first have solutions from the airlines or the manufacturers before the airport planners can even begin to draw the blueprints to accommodate the facilities which will be needed.

Financial Problems

The taxpayers insist, in most communities, that their airports be made self-sufficient. In order to do this, airport management has gone to great lengths (some people say too far) in developing "non-aviation revenues." These are the revenues from the taxicabs, the limousines, the restaurants, the bars, the snack shops, the gift shops, the haberdasheries, the bank, the drug store, the coin machines, the game rooms, the nurseries, the rental cars, the insurance machines, the display cases, the observation deck turnstiles, and the myriads of other things

at our air terminals. These have been developed largely because the aviation users of our airports have insisted that the expense of the airport should be spread over all users and activities at the airport. Yet, even with all these measures, most airports do well to break even on their operating expenses, and rare is the airport that can break even or turn a profit if the amortization of its capital investment and its debt service, are taken into account.

Thus, although the airport management uses every device possible to produce revenue, it must still go to the taxpayers in most instances to obtain the capital to make the improvements to keep up with the growth of air transportation.

These appeals to the taxpayers normally are in one of two forms. The traditional and most popular form is that of general obligation bonds of the community, proceeds of which are used for capital improvements of the airport. These bonds pledge the resources of the municipality and although highly desired by bond buyers, are not as popular with the taxpayers who must assure their payment.

The second type—the airport revenue bond—is receiving much more attention in communities because the taxpayers are saying in effect that the airport revenue must pay off the bonds which they underwrite. This type of bond cannot be issued until feasibility reports show that the airport is capable of paying it off. Consequently, airport management must show the methods by which it expects to produce revenues which will assure the payment of these obligations.

Bank loans for short term capital improvement programs provide another source of financing, which again can be obtained only upon a showing by the airport management that it is capable of paying off these loans in accordance with the terms thereof.

Another form of financing is that of tenant financing by prepaid rentals. In this case, a tenant, such as an airline, may elect to finance the construction of a hangar which it will put up with its own money, with perhaps ground rental fee to the airport operator. By the terms of most agreements the building at the end of a period of time, such as twenty years, will revert to ownership by the airport. But, in the meantime, of course, the tenant has the exclusive use thereof on terms which are spread out over the long term agreement.

Legal and Community Relations Problems

On the purely legal side, are many problems related to acquisition of land by condemnation or negotiation for airport expansion; the rights of the federal government in many of our airports which preclude certain types of development, expansion, or modification; and the rights of adjoining land owners or those in the immediate vicinity who may consider that their property is being trespassed or that their right to quiet enjoyment is being violated by aircraft flying over their land. This is a field of law which is as yet unsettled, but there are

scores of cases which have arisen and will no doubt continue to arise in this field.

And last, but not least, is that matter of community relations. Major airports throughout the country are faced with this type of problem where the increase of air traffic alone will be enough in some communities to put the situation in a very precarious position and where the premature introduction of jet aircraft without noise suppressing devices could be just enough to break the camel's back and to render useless the public facility which has been built up over many painstaking years with many millions of taxpayers' dollars.

Conclusion

The question, "Will the airports be ready for the jet age?" can be answered only by asking the manufacturers, "Are you doing everything you can to make these aircraft acceptable to the community?"; and by asking the airline operators "Are you doing everything you can to assist the airport operators in providing facilities for future aircraft?"

It is only the fullest cooperation by the manufacturers, the airline operators and the airport operators, as well as the Federal government, that will assure that the aircraft and airports of the jet age will best serve the public interest.