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INTERNATIONAL REVIEW

THE PROMOTION OF CIVIL AERONAUTICS AND THE CAB†

BY ALAN S. BOYD††

Many things are up in the air these days. In the future, more things will be up in the air, and still more are on the drawing boards.

What Is Coming?

The things up in the air that I am talking about are airplanes—particularly new ones. There will be the supersonic transport whamming along at up to 2000 miles per hour with over 200 seats on board. Hopefully, a good proportion of these new-designed seats will be full of old-fashioned people. Then there may be the C-5A, a military plane formerly called cargo experimental—heavy logistics support. Perhaps its civilian version could more aptly be called an ocean liner with wings, since it could carry as many passengers as all but the plushest superliners ever booked. We also are getting “stretch” versions of the subsonic jets like the DC-8 and the B-707. They will be stretched out longer to hold more people and operate at lower costs per seat-mile—excellent if the seat-miles will be reasonably full of people-miles. Under development is the vertical or short take-off aircraft, known in our shorthand as V/STOL. In the more distant future they may fly from city center to city center and eliminate long drives to airports. And there is our perennial problem child, the DC-3 replacement, to serve efficiently and economically the small places and light traffic routes otherwise deprived of air transportation.

Why should the CAB get exercised about the promotion of new aircraft? Why shouldn't we just stick to our old and time-honored regulation of air transportation?

Problems, Problems, Problems

Well, let's look at the problem of the future, and let's try to figure out who gets stuck with responsibility for their solution. To illustrate this I will go into the “what if” approach I advocated two years ago.¹

“What if” the supersonic aircraft moderately lives up to current hopes but the airlines lose money on their other routes because the cream has been skimmed off by the SST? Does the CAB approve higher fares to the

† Condensed from an address given before the Aviation/Space Writers Association in Albuquerque, New Mexico, on 20 May 1965. The *Journal* wishes to thank Mr. Boyd for this condensation.

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¹ The Issues and Challenges of Air Transportation II: “The Impact of New Technology,” the transcript of a symposium in the public interest sponsored by Connecticut General Life Insurance Company in Hartford, 15-17 May 1963, p. H-5.

accompaniment of not too illogical screams of the passengers? Or does the CAB go to Congress asking for subsidies in a storm of criticism for allowing such a mess to happen? If some foreign national airlines cannot then afford the SST and refuse to let our SST's into their country, does the CAB knuckle under or try to convince our State Department to denounce our international air agreements?

"What if" the C-5A is built for both military and civil uses? How many markets can stand thousand-passenger vehicles? What happens to convenient frequency of service? With nineteen airlines across the North Atlantic, can we favor only semi-weekly sailings by each carrier? If our three transcontinental carriers cannot each economically sustain morning, noon, and night departures, does the CAB okay a strange new "red, white and blue" service, with each C-5A flying a red section allocated to American Airlines, a white section to United Airlines, and a blue section to TWA?

"What if" the V/STOL comes along satisfactorily? What if it needs subsidy, as is quite possible? I won't at this time go into what is happening on subsidies for a far smaller VTOL development, the helicopter. All I will say is, the CAB is the good old man in the middle—our front side banged on by those who want this service retained or expanded, and our back side beaten bloody by those who want to cut out their subsidy entirely.

Compact Air Transport

"We believe that the primary public service need for the local service airline system is to provide convenient scheduled airline transportation between small- and intermediate-size communities and their major traffic center or centers, giving due consideration to the use made of the service and the cost to the taxpayer of consequent subsidy payments. This is our interpretation of Congressional intent"²

This primary public service requires what has been known as the "DC-3 replacement," although this title is misleading. I like to term it the "compact air transport" since directly replacing the DC-3s first put in service in 1934 is no more logical than directly replacing automobiles first put in service in 1934. These small- and intermediate-size communities require frequent and convenient schedules. They need at last two daily round trips to and from their major traffic centers. Often they generate very little traffic—many with only one or two passengers per departure. Most of their flights don't use even half of a DC-3, much less larger and more modern aircraft.

The problem stays with us. As we said, "There has been considerable discussion of possible subsidy savings through acquisition of new local service aircraft. Our investigations offer little hope of success. There is no DC-3 replacement in existence that appears capable of reducing sub-

² Report to the President on Airline Subsidy Reduction Program pursuant to Transportation Message of 1962, Civil Aeronautics Board, Washington, D.C., June 1963, p. 8.

sidy."³ Every year the CAB wrestles with the problems of local service airline subsidies. We constantly look at alternatives to achieve the promotion, encouragement and development of civil aeronautics for an economical compact air transport.

V/STOL Aircraft

The Armed Forces are developing a whole stable of V/STOL's to meet essential military requirements. How many of these entries in the race will finally wind up "in the money," we do not know. We know still less when it comes to the question of which winners in the military race will prove economical for civil operation. Obviously, the odds against any single one must be quite high. But the potential payoff is tremendous. It could revolutionize short- and intermediate-haul air travel. It could eliminate the downtown-to-airport journeys which now take longer than many flights themselves.

If V/STOL's work out, our entire air transportation system would be drastically changed. Our local service carriers would have to change. Their landing areas would change, making obsolete many existing smaller airports, insofar as commercial service is involved. Our trunklines would also be drastically affected. Almost one-third of their passengers fly less than 300 miles.

Here again I have raised tough questions, which seem to call for economic answers.

Intermediate Haul Aircraft

The Douglas DC-9 and British Aircraft Corporation BAC-111 are either now flying or almost ready for commercial service. Boeing has made its decision to go ahead with the B-737.

We are concerned with service to the intermediate points served by the trunklines. When the long-ranged jets came in, the trunklines are said to have paid too much attention to the long-haul markets. The advent of these new and economically efficient intermediate-haul aircraft may eradicate this problem. However, these planes will also bring to a head extremely important policy choices for the CAB. A large number of smaller points have been transferred from the trunklines to the local service airlines. The local service airlines want even more, veering more sharply away from their original purpose to serve the small- and intermediate-size places. They are buying these intermediate-range jets. The Federal government subsidizes the local service carriers. We will have to decide whether:

(1) to allow wide open competition between these two classes of carriers,

(2) to allow local service carriers to serve denser markets but only on a non-subsidy basis, or

(3) to eliminate the trunklines from these markets.

³ *Ibid.*

The "Stretch" Subsonic Jets

Both Douglas and Boeing are planning to stretch the fuselage of the DC-8 and the B-707. The stretched jets will seat far more passengers than current models. There should result a substantial improvement in potential efficiency to the airlines. This might then be reflected in reductions in price to the customer, with full allowance for reasonable profit to the airlines.

We heartily approve of fare reductions based on and permitted by cost reductions. However, this will bring more regulatory problems. The larger aircraft will be uneconomical for light-density routes and short-haul traffic. Should we then allow or require pricing on routes flown by these larger planes to reflect their full benefit? If so, a transcontinental flight may be a great deal cheaper than a flight going a shorter distance with present jets. Do we allow long-haul fares to drop only part way, and use their profits to cross-subsidize the same reduction in short hauls? Carried a step further, should each operation earn only its own costs plus a reasonable return? Then should shorter and lighter density segments raise their prices even to the extent that in some cases they effectively price themselves out of the market?

The Liner With Wings

There is another and huger new animal on the drawing boards. The C-5A is an enormous transport being designed for the military services to haul hundreds of troops and all their heavy equipment whenever needed on rough landing areas throughout the world. Considerable thought is being given to possible commercial adaptations of these giants. If successful, the cost per available seat-mile would again be drastically reduced. The big question for commercial application of these C-5A's is inherent in their size. Costs per seat-mile mean nothing if most of the seats are empty. There are now very few markets which could come anywhere near supporting operations with this size aircraft. Even those which could would risk the sacrifice of flight frequency which makes air transport convenient and attractive to the customer.

Again, more questions than answers.

The Supersonic Transport

Your government, with considerable help from industry, is actively evaluating the safety and economics of flying passengers and property at speeds faster than sound. Our accident reports and safety work bear more and more on technical development and improvements for newer aircraft. Also we are working with ICAO on the economic and technical problems of the SST. The proposed supersonic aircraft is programmed for the early 1970s.

The question requiring CAB attention is still as I said on 16 October 1963 in hearings before the Aviation Subcommittee of the Senate Committee on Commerce, "A commercial supersonic transport aircraft should be what its nomenclature implies, a commercial transport. There is no doubt our technicians can design and produce supersonic aircraft. The

concern of those of us charged with economical, safe air transport is with the integration of a vehicle designed to carry man faster than the speed of sound into our air transport common carrier system." Our concern has not changed. It is still to develop programs to deal with safety, public service, operating cost, and financial feasibility of the operation.

Where Are We Now?

We have felt these problems closing in on us for some time.

Two years ago I wrote, ". . . the technological revolution has had to be met by the managerial revolution. . . . Keeping pace means, for us, staying well ahead of the technology, charting it, forecasting it, and out-guessing it, rather than leaping into emergency actions as we are buffeted about after we are overtaken by the storm."⁴

A year ago I wrote, "It is within this context of dramatic growth and explosive technological improvement that the functions of the CAB must be viewed Economics must precede and follow technical improvements, interlocking at every step . . . and so, in conclusion, do not consider the Civil Aeronautics Board as only a 'regulatory' agency. This is not the half of it."⁵

Up to now, the CAB has had only part of the time of its small Planning Office on these projects that I have discussed: the DC-3 replacement, keeping track of the V/STOL work headed up by an FAA group, the intermediate-haul planes, advisor to the Department of Commerce for its SST economic analysis and the FAA's evaluation of SST proposals, and the development of the C-5A. No one in the Board has had the time for much evaluation of the stretched subsonics. We have not studied the extremely important cargo versions of any of these aircraft, or their economic role.

However, the Planning Office has recently begun two other projects to help determine the broad outlines of where new aircraft, along with many other CAB economic policies, fit in to airline economics. One of these is only in the preliminary stages: an attempt at valid forecasting. Many manufacturers, airlines, and Government agencies have produced an amazingly wide range of traffic forecasts. The object is to determine the basic causes and effects of air transport, underlying economic conditions, and passenger and shipper motives. It is an attempt to quantify these causes and effects, and ultimately to devise objective relationships, or mathematical "models." This will involve calling on experts outside air transportation to make their best forecasts of the underlying non-aviation factors. Hopefully, a general consensus on the best methodology by which to forecast traffic will evolve.

This does not mean unanimity of forecast. Although a method may be agreed on, there will be no attempt to prevent others from exercising their judgment on the different factors. In addition, forecasts are no better than the underlying assumptions. It may be that projections of the

⁴ The Issues and Challenges of Air Transportation II, *supra* note 1, at H-2.

⁵ Boyd, *Limitation by Adjective*, 73 Pub. Util. Fort. 15 at 17, 21 (18 June 1964).

underlying economic information from other sources could prove to be far from the actual result. We would hope to keep track graphically and currently of the forecast and of its underlying factors.

Another project of our Planning Office is to provide a platform of the past and present from which we can take off in our estimates of the future. We have only begun with our first elementary presentation of Airline Economic Trends. We expect the entire CAB staff to contribute to this project.

The Members of the Civil Aeronautics Board are increasingly aware of the billions of dollars to be spent on these aircraft by manufacturers, airlines, passengers and shippers. These huge programs, with vastly expanded investment, will soon outweigh the cumulated expenditures of all air transportation in the past. If we direct our efforts in proportion to relative economic weight, our look to the future must come to outweigh our look at the past. Our promotional efforts will have to grow greatly relative to our regulatory efforts. In fact, what is today a problem of promotion will become a magnified problem of regulation when the new aircraft are flying.

Awareness of the CAB Members has grown rapidly. For the first time in history, all five of us took an entire week on the West Coast to see at first-hand what the technological developments are. I can assure you this was a time-crowded, hard-working business inspection, and not any junket. Our time was booked up solidly from morning to night.

We looked at or were told about palletized aircraft interiors, permitting quick conversion from passenger to cargo and reverse; seating mock-ups of small twin-engine jets; the DC-9 instrumented for flight test; elongated versions of present subsonics; cockpit and cabin mock-ups of SST's; cockpit and cabin mock-ups of the C-5A's; wind tunnel tests of supersonic and subsonic models; structural testing of SST materials and systems; demonstration of noise suppression devices for SST propulsion systems; the XB-70 and X-15 at Edwards AFB; testing of SST lubes, hydraulic fluids, paints, etc.; and equipment used to form titanium sections, tubing, etc. I might add we even squeezed in breakfast at 7:00 a.m. with our Seattle and Los Angeles safety investigators.

Where Should The CAB Now Be Going?

Times change. Technologies change. Economic promotion and regulation must also change. In all technological developments, economic engineering must be just as important as physical engineering. The most brilliant technical advance is useless in practice if it cannot find an economical use, just as the best economic goal is useless if a technical means can not be found by which to accomplish it. The CAB should project the public service requirements and the economic thresholds over which the engineering development will have to leap if it is to be of practical value in our practical world.

The Civil Aeronautics Act of 1938 was excellent and remarkably far-sighted for its day. As a framework, it is still valid. However, the emphasis

must change. The traffic of 1965 is almost 100 times greater than the traffic of 1938. The routes and cities served are vastly different. The types, speeds, numbers, and complexities of aircraft, organizations, and the people who manage and operate them, have changed tremendously from the days when the latest blue-ribbon queen of the skies was the "hot" new DC-3.

The CAB has its problems in adaptation too. We have been fighting the "war on waste" called for by President Johnson. In the last year we eliminated several dozen jobs, and this is not easy in an agency numbering little over 800 people. We have done all we can to increase the productivity of our people. This is as it should be.

The CAB now faces a tremendous problem. We see this vast area of promotion as essential for the future health and development of civil air transportation, air commerce, safety, and civil aeronautics. To change the emphasis in the Board from backward-facing regulation to forward-facing promotion will require a tremendous wrench in our entire organization. I have discussed this with the other Board Members. We believe that it can be done, with still greater sweat and still greater effort. We must eliminate lower priority work. To do so will require among other things questioning the institution of every new proceeding and limiting the number of issues which engage CAB staff, other than our Hearing Examiners. We will leave to the interested adversaries all issues which they can explore adequately. And over a period of years it is my hope that the CAB will increase its rightful emphasis on promotion.

This is how the CAB should plan to carry out the policy Congress has declared for the Board in all six of its aspects:

"the encouragement and development of an air transportation system,"

"the regulation of air transportation,"

"the promotion of adequate, economical, and efficient service,"

"competition to the extent necessary," and

"the promotion of safety in air commerce."

And, while carrying out these five, we will also carry out the sixth, section 102(f), that has been the subject of my talk:

"the promotion, encouragement, and development of civil aeronautics."