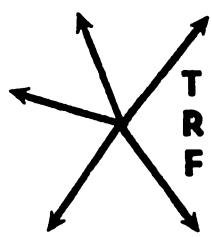
PROCEEDINGS —
Eighteenth Annual Meeting

Theme:
"Transportation in Transition"

October 17-18-19, 1977
Colony Square Hotel
Atlanta, Georgia

Volume XVIII • Number 1 1977



TRANSPORTATION RESEARCH FORUM

Transport Pricing — A Regional Air Carrier View

*by David O'Brien**

A TRANSPORT pricing system exists to recover from users the cost of providing the service and must in the long run achieve full cost recovery.

Canadian air carriers, including Transair, presently operate in an economic environment where the supply/demand curves relating to their service intersect below long-run average cost. This has deprived carriers of the ability to generate either sufficient capital internally or a sufficient return on investment to attract external capital in order to finance the replacement of the existing fleet of aircraft with the more energy-efficient units that will be required. We are in effect living off of our rapidly depreciating assets in order to compensate for current revenue deficiencies.

It is in such an environment, existing since late 1973 and continuing well into the foreseeable future, that the pricing of air transportation becomes one of the most critically important functions of carrier management.

NATURE OF DEMAND

Prefacing any examination of transport pricing is the necessity to understand the nature of demand for that unit of trade. While carriers endeavour to have air transportation contribute to the aggregate utility of a trip it remains a derived demand, (i.e.), arising out of demand for the larger commodity of which it is a factor of production. Given then that transport demand is one or more steps removed from direct demand it is less price-sensitive. Balancing that however is the fact that modal demand is more price-sensitive or elastic than aggregate transport demand. The presence of economic alternatives, including to an increasing extent telecommunications, is especially relevant in the short-haul regional markets served by Transair where the average scheduled passenger travels 300 miles. Accordingly we have found that our developmental or promotional fares largely attract diverted demand rather than a stimulated increase in aggregate demand.

PRICING PRINCIPLES

Dealing now with basic pricing principles underlying the construction of tariffs at Transair we find a divergence between classic pricing theory and the practice within our company. Pricing theorists generally fall into two distinct schools of thought (i.e.), pricing based on cost of service and pricing based on value of service. Transair pricing is a hybrid of these two approaches.

(i) Cost of Service

This concept reflects supply considerations and in practice establishes the floor price given that short to long run variable costs must be met by means of the pricing mechanism if the carrier is to continue operating. The proportion of fixed and variable costs is very relevant to cost-based pricing and since in scheduled air carrier operations costs relate primarily to capacity, high fixed costs and low variable costs are evidenced. This fact makes promotional fares, to be dealt with at a later point, an attractive management option.

(ii) Value of Service

This concept reflects demand conditions as they relate to pricing or as it is more commonly referred to—"what the traffic will bear." Value of service accordingly establishes the price ceiling despite the fact that there is some difficulty in determining the value of service and the stability of that determination over time. Value of service is admittedly set through a reasonably crude averaging process.

The hybridization of these two concepts means that in practice price must be adjusted to effective demand in the market while also taking into account supply conditions if a normal profit is to be generated. We find that in construction of the Transair tariff while average costs have little influence in the derivation of specific fares and rates, the actual tariff which emerges to deal with demand variations is set with total cost elements very much in mind.

An example of this hybrid construction is evidenced in short-haul fares where the very real problem of diversion to surface modes restrains the maximum price to a level that does not meet fully distributed costs but which is well in excess of variable or marginal cost.

SITUATIONAL PRICING CONSIDERATIONS

Having briefly covered theoretical considerations relating to pricing I propose to discuss the practical or situational

**Transair Limited.*

considerations which are incorporated in the pricing of Transair services and some of the obstacles to an optimum pricing structure.

(i) Determination of fully distributed unit costs involves some elements that can be assigned with certainty but the allocation of overhead or non-identifiable costs is difficult in light of their joint origin. The basic production unit of Transair is the aircraft; overhead or non-identifiable costs are allocated to each aircraft type on the basis of its ability to produce available seat miles (ASM's). From this we derive the cost per mile for that unit which in turn is incorporated into schedule, pattern and frequency decisions.

(ii) Fully distributed cost per unit of production varies greatly with volume; accordingly a "normal" load factor is assumed. Generally a 50% load factor on scheduled services and an 80% load factor on charter services properly reflects the characteristics of those markets.

(iii) Internal cross-subsidization through pricing is prevalent in developmental markets such as the northern resource regions; in large part this is attributable to the absence of direct carrier subsidies which would reflect provision of non-compensatory services in situations where both the carrier and the nation have significant investment interests.

(iv) Proximate markets are commonrated to allow double-looping (bi-directional multi-stop circuits) of aircraft without violating the intermediate point rule (i.e.), the fare to the distant point may not be less than the fare to the intermediate point.

(v) Given that the fully distributed cost per unit varies with volume and given that large seasonal demand variations exist in Canada, consideration could be given to the concept of increasing price in the low demand (winter) period to reflect the higher cost of maintaining an adequate schedule and reducing the price in the high demand (summer) period to reflect the higher load factor and lower unit costs. Conversely and more reasonably one could consider decreasing prices in the low demand (winter) period and increasing prices in the high demand (summer) period, as on the North Atlantic, to smooth discretionary intra-Canadian demand and obtain better utilization of air carrier facilities.

(vi) Pricing must reflect all increases in total transportation costs including the passenger tax, now at 8%, levied by the Federal Government.

(vii) The supply/demand curve depicted clearly in economics texts and never in reality must be developed from a time series, yet only one point of intersection is known with certainty. While one attempts to obtain data to plot another point the entire curve may shift without one being aware. Accordingly, those responsible at Transair for pricing work from belief rather than knowledge; a situation which will continue until far more extensive research with respect to air transport price elasticity is undertaken.

(viii) Competition from other air carriers and modes must be continually acknowledged.

(ix) In the Canadian industry, the mainline fare formula is established by Air Canada and duplicated by other carriers, including Transair, on competitive sectors. This practice of price leadership may ultimately be scrutinized critically by the regulatory agencies.

REGULATORY CONSTRAINTS

Pricing must be conducted within certain qualitative parameters as set out in Section 45 of the Air Carrier Regulations and administered by the Air Transport Committee of the Canadian Transport Commission. In determining whether a pricing structure is "just and reasonable" that agency is concerned with two questions:

(1) is the overall rate of return earned by the carrier in line with public policy relating to utilities, and
(2) under substantially similar circumstances and conditions and with respect to all traffic of the same description, is a fare or rate being charged equally to all persons.

Dealing first with the macro question (i.e.), the carrier rate of return, most Canadian air carriers, including Transair, have in the post-1973 period had little difficulty in justifying fare increases on the basis of need. Generally, a tendering of a current income statement and balance sheet represents an irrefutable basis for the increase. It should be noted that the Air Transport Committee has an additional macro concern having been delegated authority by the Anti-Inflation Board to monitor and if required to restrain carrier net margin. However, because the base period upon which the allowable net margin is calculated covered years of reasonable profitability, Transair has not been affected by price restraint as contemplated by the Anti-Inflation Regulations.

The second question, dealing with micro pricing or internal equity causes carriers substantially more difficulty in that the lack of a homogeneous unit of output yields a relationship between price and cost that is uncertain and likely to vary. Further, in tight financial periods carriers are more acutely aware

that discriminatory pricing (i.e.), the sale of two or more similar transportation services at prices which are in differing ratios to marginal cost yield higher revenues than a single price system because of the decrease in consumer surplus. Because differential pricing is so contentious Transair has always ensured that price differences could be directly and proportionately attributed to cost elements and not demand elasticity.

Transair has established, essentially on a formula basis, historical relationships between the markets it serves. In the post-1973 period we have implemented across-the-board percentage increases thereby retaining what was by implication just and reasonable market relationships. While this method generally ensured less difficulty before the Air Transport Committee in a period of very frequent increases, it ignores relative changes in cost elements which ultimately must be corrected through an extensive justification of amended market relationships. The relationship of Transair and the Committee with respect to pricing has been quite satisfactory; having recognized the very real need of carriers for additional revenue they have cooperated as fully as their responsibility to users of transportation has allowed.

CHARTER AND CARGO SERVICES

The preceding discussion has dealt primarily with scheduled passenger services which form the revenue base of Transair. Supplementary to that activity is the provision of charter and cargo services which I propose to deal with separately at this point.

(i) Charter Services

Comprising approximately 35% of Transair revenue, charter services are provided with aircraft acquired for scheduled purposes but during periods of the day and week when scheduled demand declines and charter demand is strong.

Accepting that the price which a market will yield for a service may be under or over its fully distributed cost, charter services are priced very much on the basis of value of service with a lower parameter being set by short run marginal cost. We believe the incremental pricing of charter services reflects the incremental nature of that activity given that the aircraft and supporting infrastructure exist to provide scheduled services.

Our B737 aircraft can be readily marketed as a price while falling short of fully distributed costs still yields a significant contribution to overhead after meeting all short-run variable costs. The F-28 aircraft however with 65 seats or only slightly more than 50% of the capacity of the B737 evidences short-run variable costs not significantly less than those of a B737. Accordingly the value of service of that latter aircraft in charter operations is generally less than its short-run variable costs and accordingly it is not utilized extensively in that role.

(ii) Cargo Services

Contributing significantly to Transair's total revenue, cargo is still viewed as a source of incremental revenue and is priced on the basis of what the traffic will bear essentially as it relates to urgency of movement.

PROMOTIONAL FARES

The areas I have dealt with to this point are generally applicable not only to air carriers but all transport enterprises and accordingly will be discussed by a number of other speakers at this Forum. The one area with respect to which a speaker from Transair can contribute fresh insight is that of promotional fares.

We believe a more effective use of air carriers is promoted by a pricing structure which takes into account the varying utilities of the users and the effect on total cost of the addition of a further amount of traffic that is not able to pay the average total cost per unit but which is able to pay more than the marginal cost of handling. That is to say, a carrier can expand its traffic to advantage as long as the increase in marginal cost (including dilution of full fare paying passengers) is less than the increase in marginal revenue.

The significant impact of promotional fares on air carriers arises from the fact that inherent in scheduled operations are high fixed and low variable costs. Carriers must however guard against increasing fixed costs to handle the demand stimulated or diverted by the promotional fare.

These fares are based on a discount from the basic or Y Class fare and contain conditions designed to make them largely unattractive to those passengers already paying the basic fare. The conditions relate to the differing travel characteristics of the non-discretionary traffic which is presently moving and the discretionary traffic which is sought to be stimulated. Included among the conditions are:

- limited validity (time of day, week, year)
- minimum/maximum duration of trip
- groups
- age
- round trip (advance payment of return portion provides working capi-

tal; ties passenger to a return with that carrier)
— family (unfortunately tends to accentuate demand peaks)
— urgency of movement (difficult to select the optimum rate of discount/diversion of full fare passengers)
— tour based (advertising spin-off benefits)

Transair offers a conventional package of promotional fares including family, senior citizen, youth standby, group and tour-based. Additionally we have introduced to Canada a domestic advance purchase excursion fare which warrants more extensive discussion in light of the beneficial impact it has had on Transair.

DOMESTIC APEX FARE—B CLASS

Acknowledging that demand for scheduled air transportation services is less than supply, Transair undertook in conjunction with Boeing an inquiry into how these surplus seats could be managed. The statistical distribution of Y Class traffic over preceding periods was examined and the probable number of surplus seats on any given day and sector was calculated. A two-class computerized reservation inventory was then established; entered into the inventory were the probable number of Y Class seats which would be sold, the remainder being allocated to the domestic APEX or B Class fare. The latter class of available seats are sold at a 35% discount and subject to the following conditions:

— minimum two day/maximum 30 day return
— 14 day minimum advance booking
— payment within 10 days of booking and at least 14 days prior to initial flight
— $15 amendment or cancellation charge

These conditions and in particular that condition relating to the 14 day minimum advance booking have been very successful in preventing dilution of non-discretionary traffic.

While up to 50% of any aircraft may be dedicated to B Class seats only 15-20% of total capacity (depending on season) is so allocated. Continuous monitoring and adjustment of this inventory division is maintained.

Not only has this fare stimulated air travel, particularly through diversion from surface modes, but the capacity control of B Class has enabled Transair to smooth the demand cycles with a resulting increase in plant efficiency. The extent to which the nature and aggregation of demand has been altered is evident if one examines the profiles of passengers utilizing the two fare bases.

Y Class — 3 to 4 day advance booking
— 70% male
— 20 - 49 years of age
— 70% business travel
— travels more than 7 times per year

B Class — 50% female
— 20 - 60 years of age (broader spectrum)
— 80% non-business travel
— travels less than 3 times per year

While this fare has increased scheduled passenger revenue dilution several percentage points, our system load factor has also increased 5 to 10 percentage points (depending on season) and in 1977 B Class fares will contribute net of dilution $1.2 million to Transair or a 5% increase in total scheduled revenues.

CONCLUSION

I trust the preceding comments and in particular those relating to the B Class fare give additional insight into how Transair as a regional air carrier prices its services.

It will become increasingly clear at this Forum that pricing in a difficult economic environment is a critical variable in the continued existence of the carrier enterprise. Pricing, however, has very definite limitations and in closing I wish to register one caveat.

The cost to users of air transportation in the post-1973 period has escalated at the same disturbing rate as the cost to carriers of providing that service. In many cases we have witnessed price elasticity exceeding unity (i.e.), following a price increase total revenues have declined. In this situation we must not regard the price mechanism solely as a means to extract requisite additional revenue from existing users through price increases but through creative pricing to attain that revenue from increased utilization and efficiency of the existing transport sector.