

Conclusion

I would conclude my remarks by saying that our current forecasting approach is highly eclectic or non-doctrinaire but that our forecast process

does not end with a set of projections. Rather it becomes a working management tool that can locate areas of strength or weakness and encourage marketing and pricing initiatives.

U.S. AIRCRAFT MANUFACTURERS METHODOLOGY

Jack Howard
Boeing Commercial Airlines

Air Travel Growth and Airplane Replacement Rate Drives Forecast.

The demand for commercial airplanes is dependent on two drivers -- air travel growth and replacement of the current fleet.

Air Travel Growth The Boeing forecast for air travel growth is driven by two parameters -- airline yields and disposable income (GNP is used

as a surrogate) -- as can be seen in Figure 1. First, Gross National Product is projected to grow at an average rate of 3 percent per year worldwide. No attempt is made to project cycles in the long term. However, recognition of the U.S. Federal Reserve Bank's announced intent to drive down the U.S. economic growth rate to 2.0 - 2.5 percent in the short term, an economic slowdown bottoming out at 2 percent is included in the forecast. This economic forecast defines the growth in air traveler income.

Next, an assessment of airline operating costs is made. These operating costs are projected to decrease at a rate of 2.1 percent per year. These reductions are driven by a 1.7 percent per year

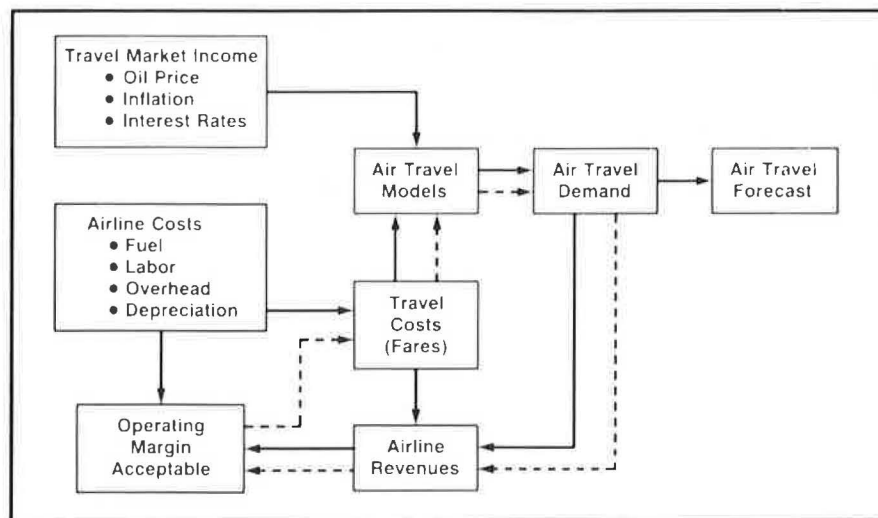


FIGURE 1. Air Travel Demand

reduction in unit labor costs and a 2.5 percent per year reduction in unit fuel costs. In both labor and fuel cost, forecasted decreases are significantly less than that attained in recent history.

The airline traffic forecast is derived from an iteration model that, given the economic and airline cost forecasts, establishes an airline traffic and yield that satisfies an input airline financial return target. (Figure 1) The result of this model is a 5.4 percent annual growth in revenue passenger miles, worldwide, through 2005.

Replacement of Aging Aircraft As indicated in Figure 2, the above revenue passenger mile forecast along with projections of load factor, utilization and departures, defines the future airline fleet requirements. That fleet requirement minus the current fleet defines the growth demand for new airplanes which accounts for 70 percent of new airplane demand in the current

Boeing forecast. The remaining 30 percent, is of course, for replacement of aging airplanes which are currently assumed to retire at 28 years of age. The result of the forecast is a world fleet of 12,000 airplanes by the end of 2005 compared to 7,800 airplanes at the end of 1988. In order to provide for this fleet growth and replacement, airlines will require 8,400 airplane deliveries through 2005.

Conclusion

In conclusion, the above describes the forecast methodology and baseline forecast currently used for long-range planning at Boeing Commercial Airplanes. However, the scenario described therein is just that, a baseline. Since no one is a perfect prognosticator, it is therefore essential to test the plan derived from the baseline forecast against alternative scenarios in order to confirm the effectiveness of the plan for all reasonably possible environments.

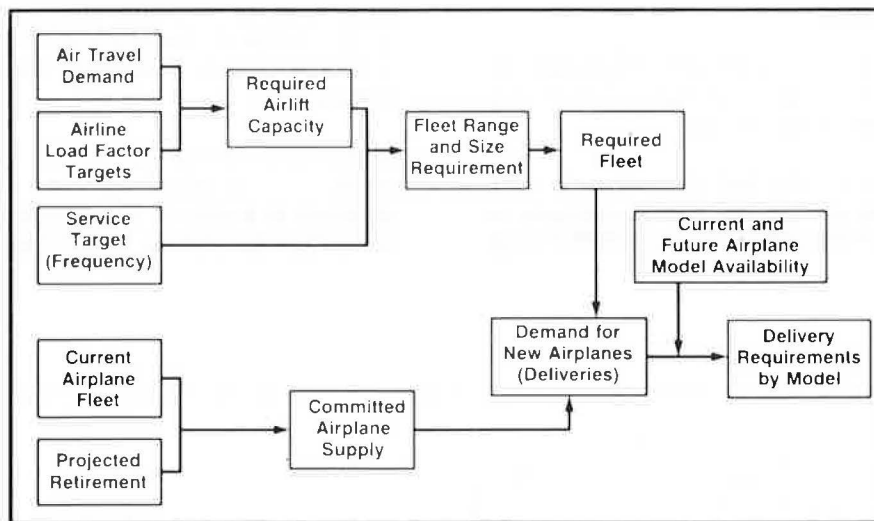


FIGURE 2. Demand For Airplanes