

change significantly. Based on the previously stated assumption that the commuters will take over additional services from the air carriers, the number of points served exclusively will increase by 30 to 50, reaching a level of 590 to 610.

One additional point which is of interest to industry analysts and the general public is the amount of data that will be released to the general public in the future. Based on policies in effect today, within the next five years the only information that the commuter industry will release is that information available from the companies' annual reports to their stockholders. It is expected that this information would include system RPMs, system ASMs, system enplanements, system revenue and costs, the total of the fleet and the companies profit expectations.

### Airports

The final area investigated was airports and facilities. The operating members of the group suggested quite a long list of problems with airports and the facilities at the airports. Because of the length of the list the group decided to offer a short statement about the overall problems rather than dealing with specifics. The group concluded that the primary problems faced by commuters are access to the airports, the availability of terminal facilities, and the costs of terminal and airport facilities which the operators believe border on discrimination towards the commuters in some areas. The commuter carriers believe that the airport operators do not understand the commuter industry and its needs. The group believes that in the future because of the importance of the commuter airlines to the total air carrier industry, the airport operators will be more cooperative with the commuter airlines in terms of terminal and airport space and costs. However, because of the differences in numbers of passengers carried by air carriers and commuters at the larger airports, it is doubtful the commuter airlines will gain all the improvements they wish.

### BUSINESS AVIATION

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This session considered current market conditions and was dedicated to the subject "Measuring Business Aircraft Market Demand in a Changing Environment: 1980-1985). The participants represented business jet and turboprop manufacturers and associated major suppliers.

The agenda allowed exploration of the market conditions through presentations and discussion leading to a consensus finding regarding the 1983-1985 period. Discussion leaders from the business jet, turboprop and supplier participants essentially reviewed:

1. Aircraft market conditions 1980 to present
  - Economic drivers and indicators
  - Demand factors
  - Constraints (PATCO/fuel, etc.)
2. Market forecast techniques
  - Methodologies employed
  - Observations and/or lessons learned
  - Current methodologies if revised

### 3. Business aircraft sector outlook, 1983-1985

- Macro forecast
- Total market and heavy, medium, light sectors
- Assumptions and key issues

### 4. Market research areas which would benefit both government and industry

### Historical Market Conditions 1980-1983

The period 1980-1983 was characterized as one economically driven with a production and retail market peak in early 1981 followed by steady retail market declines commencing in mid-1981. Increased end year 1981 inventory levels were followed by backlog erosion, and further retail market slowing along with increasing inventory levels. Turboprop production halved in 1982 and again in 1983. Business jet backlog carried production well into 1982 before declining about 30 percent below 1982 in 1983.

Attendant economic recession factors such as general business volume declines, energy related market sector disruption, high real interest rates, and the high dollar value against the international markets were instrumental in the retail market demand decline experienced for business aircraft.

In addition, other related factors were cited as probable factors influencing purchase deferral. These included: the Federal Aviation Administration controller strike and related airways control procedures; potential regulatory issues such as imposition of various additional tax measures on the industry; basically higher fuel and other recurring operational costs; and perhaps the higher list purchase prices although heavy discounting was reported. Positive influences specifically mentioned were the improved investment and depreciation allowances legislated during recent years.

### Market Forecast Techniques

Each participant had an opportunity to present a summation of previous and current forecast techniques employed in determining future market demand.

While these reviews ranged from relatively naive judgemental or internal consensus to advanced econometric models, it became apparent that the market dislocation experienced since 1981 has prompted much more company support for improved forecast methods.

It was found that to the extent the various economic models could currently portray future economic conditions, the use of various orders of economic models was useful in measuring basic market turning points and the relative magnitude of demand change over 6-8 quarters.

Key economic parameters in use and generally recommended during the discussion included:

Real GNP - lagged  
 Real cash flow  
 Real corporate profits adjusted  
 Capacity utilization - manufacturing  
 Rental cost of capital  
 Real interest rates  
 Investment tax credit rate application differential  
 Real business investment - sectorized  
 Industrial production  
 Dollar value - trade weighted

In addition to the econometric forecast measures many other market environmental conditions require analysis as part of the final forecast assessment. These might include:

- Regulatory issues - near term
- Aircraft stock to demand relationships
- Operational cost index analyses
- Fuel availability and cost conditions worldwide
- Distribution system inventory
- Retail delivery trends
- Used aircraft listing and price structure
- New model market entry impact
- Price change - effect on the market
- Share analysis

Some forecasts prepared for internal use utilize three scenario forecasts where the plan process strives to fall within the most probable range of values given market share experience and targeted growth parameters.

#### Business Aircraft Market Conditions and Outlook

Extensive discussions were centered around a pre-completed survey format covering 1983-1985 economic and market conditions. The varied results are summarized below as concisely as possible considering the latitude of certain of the discussion areas:

##### A. Economic conditions:

Basic assumptions relied upon a sampling of those from ORI, Chase, Evans, Wharton and Citibank:

- Stronger than forecast 1983
- Election year policies prevail in 1984
- Positive economic growth through 1985
- No excessive Federal Reserve policy change
- Stabilized interest rates but real rates remain historically high
- 20-25 percent real profit growth 1983-84
- Capacity utilization above 80 percent by end 1984
- Value of U.S. dollar overseas should decline

##### B. Business aircraft industry conditions:

As of early September 1983, the review of business aircraft market conditions in 1983 was essentially summarized as one of dashed expectations and absolute caution. The failure of the retail market during the spring 1983 period again resulted in various production decisions ranging from shutdown to maintenance of a "warm" production line for selected models.

Contributing to a general lack of business aircraft retail activity were replenished inventories, extensive supply of used aircraft at low prices, backlog erosion and key aircraft-using industry depression (oil, etc.).

Cited as positive factors during the 1983 summer period were:

- Interest rate reductions
- Used aircraft sales activity improved
- New aircraft field sales activity up

Surprise sales in quantity (Sears, U.P.S., etc.)  
Select model shortages, new and used.

Accordingly, in preparing to forecast production shipment activity for the 1983-1985 period, a broad consensus view of key aircraft market conditions was developed.

These included:

Strong profits, growth, and lower fall 1983 interest rates.

Production recovery pluses:

1. Industry larger than 1971 - more models/capacity
2. Better marketing - established contacts
3. Empty completion centers
4. Inventory of "green" aircraft
5. Adequate work force still available
6. Finance programs established
7. New models are stimulative at National Business Aircraft Association in fall 1983.

Production recovery constraints:

1. CEO perceptions/caution
2. How large a contract deposit backlog remaining?
3. Raw material queing and supplier capabilities to deliver.

Specifically in response to the survey, the workshop participants determined the following:

Business aircraft retail activity (orders) will turn up during the third quarter 1983, used aircraft sales in the same quarter and production shipments the second quarter of 1984.

Based upon current inventory estimates, about 40 percent of the inventory would sell-off by the end of the first quarter 1984 and about normal inventory conditions would prevail late in the third quarter 1984.

Major supply constraints will not appear unless a decided surge in market demand occurred during the fall 1983 or early 1984 period. Certain aircraft models could under these conditions appear in short supply.

Production levels for fall 1983 and early 1984 were essentially established during the summer of 1983.

A rash of upward 1984 schedule revisions during the fall of 1983 were expected.

The aircraft industry recovery will be uneven among manufacturers and models.

Aircraft prices will but moderately affect market demand in 1984-1985.

Finance programs will remain important.

All current airframe producers will survive in the forecast period.

New design product offerings will significantly affect market demand and share ratios.

New 400 MPH turboprop aircraft will have a small impact upon the overall business turbine market.

A host of external market factors were listed without specific conclusions as to a finite quantitative impact.

At risk was the potential for Federal Reserve policy actions which could affect economic activity and thus contain business market growth as early as mid-1984 or by late 1985.

A basic consensus forecast was developed from an array of all sealed envelope forecasts submitted. The results are provided below. It must be noted that these estimates reflect probable reported retail sales or deliveries which include both production shipments and inventory sales.

	<u>Estimated Actual Market</u>		
	<u>CY 1983</u>	<u>1984</u>	<u>1985</u>
Business Jet	230	310	390-430
Business Turboprop	300-335	450-500	550-600

#### Suggested Market Research Areas by Activity

At the request of the Transportation Research Board staff, a list of potential market research study areas was compiled for business aviation markets.

Impact of used aircraft availability and lower prices on new aircraft demand.

International product competition.

Purchase decision influence factors by type of end users.

Aircraft operational use characteristics by type aircraft and industry application.

Finite impact of investment tax policies.

Export of various airport airways policies on market demand.

Business decentralization trends in the U.S., European and Asian areas and probable effects on aircraft demand versus electronic communications.

Improved determination of used aircraft sales price trends at the retail level.

Active fleet analysis by type user.

Fuel price and availability relationships to retail market demand.

Role of business aviation as a function of air transportation system growth potential world-wide.

In summary, this workshop attempted to assess previous economic and market conditions leading to a consensus of current factors providing the framework for market recovery in the 1984-1985 period. Consideration was given to the various means of measuring the turning point and relative magnitude of change. Economic assumptions and a supportive set of market conditions expected to prevail were developed.

#### THE UNITED STATES ECONOMIC OUTLOOK David Wyss, Data Resources, Inc.

The economy seems to be improving. We have gone through the worst recession in postwar history and are beginning to move into a strong and sustained recovery. The real economy jumped ahead very sharply in the second quarter of 1983. The third quarter is going to show similarly strong growth, and although signs of a slowing of the economy are beginning to creep into the economic horizon, the signs are only about what we would expect at this stage of a recovery. We expect slower but still good economic growth through the next two years.

The recovery has some surprising aspects to it. Consumption is leading the recovery. The consumer has decided that it is time to spend money, and this rise in consumer spending is giving the impetus to the growth of production and the growth of income. Several things have happened to change the consumer's attitude about spending his cash. If you look at Table 1, consumer confidence (the index as measured by the University of Michigan Survey Research Center) rose sharply at the beginning of this year. The consumer decided that the times were improving; it was time to buy, inflation was under control. The consumer proceeded to spend with a vengeance. Real retail sales rose in line with the increase in consumer confidence. Real disposable income has also jumped quite sharply since early 1982. We have had two tax cuts in that period, both of which have added substantially to available disposable income. More importantly, with the rise in production has come a decline in the unemployment rate and a sharp rise in employment. The unemployment rate has dropped from 10.8 percent to 9.5 percent, a large drop for this early in a recovery. On the other hand, there was a very high unemployment rate to start, and 9.5 percent is still a very poor performance by normal historical standards. We have a long way to go before we have unemployment back to normal.

Within retail sales, consumer durables have been by far the most rapidly growing sector of the economy. Automobile sales rose 16 percent in the first half of 1983, and non-automobile durables rose 10.5 percent. There has been some slowing in the auto sales this summer, which has been widely blamed on the low inventory position, but sales of motor vehicles are still very high and rising quite rapidly.

The other side of the sharp rise in consumption was the sharp decline in the savings rate. The savings rate in the second quarter of 1983 fell to 4 percent, the lowest savings rate since the Korean War. There is serious doubt that this level of savings is sustainable, especially in view of all the new incentives to save that were part of supply side economics. Is it really true that supply side economics, which is supposed to increase savings, has led to a reduction in the savings rate? It may be that it has, but it is also quite possible that much of that low savings rate represented a