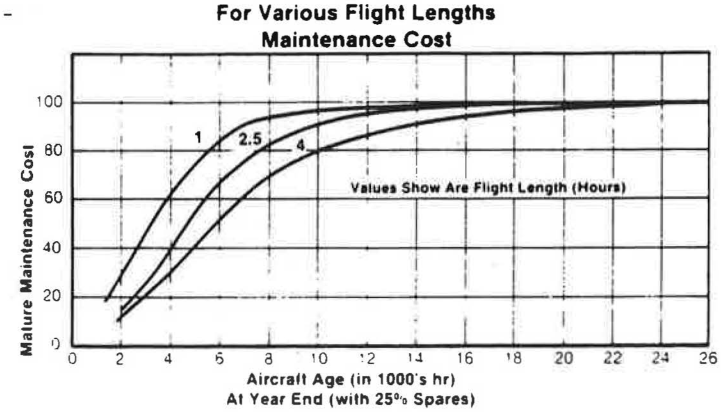
Figure 9. CF6-50 aging characteristics - dilution consideration.



Alternatives If There Is No Public Source For CAB Data

Alternative sources will have to be developed for key airline statistics such as fleet composition, travel demand, load factor, etc., from member airlines through IATA/ICAO, to permit basic industry trend forecasting.

Operational and economic data considered to be of general interest and of significant value may be collected and provided by selected government agencies (FAA/DOT) or industry associations (ATA/AIA).

Maintenance cost statistics and related cost elements could be obtained directly from individual airlines for the products involved by consulting with each airline.

Statistics of general interest to many groups (government, manufacturers, financial, academic) may be collected and organized by data vendors to provide continuity with earlier CAB data if discontinued.

USE OF SELECTIVE CAB DATA IN AIRPORT TRAFFIC FORECASTING

Johannes G. Augustinus, Port Authority of New York and New Jersey

Summary

As an airport operator, the Port Authority of New York and New Jersey has regularly used many segments of the Civil Aeronautics Board data base for forecasting and planning airport requirements in the New York area and in regulatory proceedings. The CAB data series became increasingly more important to the forecasting process as the aviation industry matured and there has been a growing need to supplement local with national data. Continuation of a minimum level of data collection in areas indicated appears vital to intelligently analyze, interpret and forecast regional traffic developments.

As an airport operator, the Port Authority of New York and New Jersey in the past has mainly used many segments of the large body of CAB data for forecasting purposes and, in the past, for presentations in regulatory proceedings. With the use in regulatory areas likely to diminish, the discussion will focus mainly on the use of these data in forecasting and related areas.

Airport operators, by definition, are primarily interested in passenger and/or cargo volumes rather than passenger miles (cargo ton miles), although some aspects of their operations such as fueling and average weight of aircraft are also a function of length of haul.

In order, however, to have a frame of reference for trends in the industry at large, the Port Authority also maintains some national models based on passenger mile (cargo ton mile) measurements, as done in many other sectors of the industry.

Although theoretical shortcomings can be recognized in such aggregate models (e.g., no market segmentation, either by volume or price levels) such models have proven to be useful tools in analyzing past trends and evaluating future prospects. Figure 1 shows the results of one such model, based on historical data from 1950 through 1973, and projecting domestic passenger miles for the period 1974 through 1979, assuming that the growth of the U.S. economy (GNP) and the airline yield levels had been accurately known in advance in 1973. The comparison with traffic growth as it did actually occur during that period, is, at its least, encouraging.

As pointed out by other panelists, it may be extremely difficult today to forecast accurately, or even approximately, some of the input variables in such a model, specifically a future yield variable. Nevertheless, comparisons as indicated here, at least serve the purpose of pinpointing the real problem areas in these kinds of forecasting activities, in this case forecasting the independent variables, rather than major shortcomings in the structure of the forecasting model itself.

In the fifties and part of the sixties, with most emphasis in planning work being on long term growth rather than short term fluctuations, and data series for econometric projections being in "short" supply (limited time periods), the Port Authority relied heavily on survey methods focusing on the demographic aspects of long term market growth. With the advancing maturity of the air travel market and its increasing sensitivity to business cycle fluctuations and pricing policies, econometric modeling techniques focusing on these aspects of market growth have become increasingly important, thus making many of the CAB data series much more vital to the forecasting process.

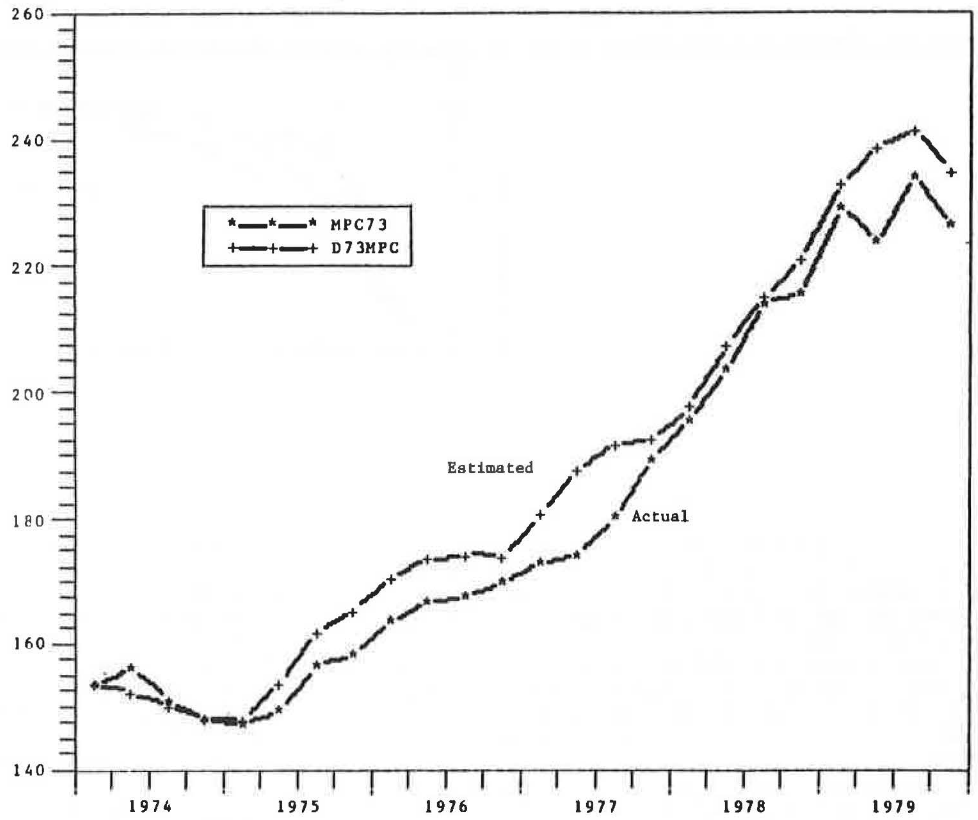


Figure 1. Model test assuming perfect fare and GNP knowledge.

In some of the more formal modeling techniques, many CAB data are also used for input into the more judgmental aspects of forecasting as e.g. some of the data in Figure 2, which show changes in the competitive pricing structure of various markets and an example of their impact on market distribution (Figure 3). Obviously, the natural ambition of econometricians is to make their models all encompassing and all explanatory, but not yet having attained such an ultimate goal, data as shown here are valuable inputs in judgmental evaluations of current and past trends.

Other data to be monitored continuously are series on trends in operating cost, and profit, and in load factors, to evaluate the long range economic viability of e.g. discount fare strategies so as to arrive at as realistic as possible projections of future yields.

Although airport traffic forecasting would appear to be a typically local problem, this does not mean that the job can be accomplished with local data alone. In the first place, a major hub city like New York will normally have a major component of visitor travel besides travel that is generated by local residents. Inflight surveys indicate the visitors component in the New York area to be in the order of 50 percent of total traffic and for resort cities such as Miami this component constitutes the overwhelming share of the market. Secondly, even locally generated traffic will be affected by national and industry trends such as economic fluctuations and airline pricing trends. Therefore, some of the aggregate forecasting procedures of the national market are an integral part of the local forecasting process.

Besides these data on the national level, data on local traffic trends are also a vital ingredient of local forecasts. Tables 1-3 and Figures 4-6 show set of data compiled over many years from various sources of CAB and other data which relate directly to traffic trends.

Table 1 and Figure 4 show New York's traffic of the nation's total enplanements over the period 1950 through 1979. As is clear from Figure 4, this share started to show an alarming decline during the second half of the sixties, which trend continued well into the seventies. An initial enplanation seemed to be found in the declining share of the regional economy relative to the nation (Figure 5), but closer analysis suggested that the decline in the region's air travel share was much more precipitous than would be indicated by the economic variable alone.

An analysis of the destination composition of the New York air traffic hub, as derived from compilations of CAB origin and destination (O&D) data, clearly indicated that a major stagnation was occurring in New York's short haul markets (Tables 2 and 3), which until the late sixties accounted for more than 35 percent of New York's traffic (this was substantially more than in the nation, because of New York's location in the middle of the Northeast corridor). This led to a closer look at airline pricing trends in various markets and Figure 6 shows that during the late sixties and early seventies a major differential trend had been developing in the pricing level of short haul versus long haul services. Use of simple regression model incorporating both the regional economy variable (as share of the U.S.) and the differential pricing trend, made a major contribution to understanding the precipitous drop in New York's share of the nation's traffic. As part of its continuous analysis, the Port Authority is exploring whether factors other than the one incorporated in this model may also have been contributing to this trend,

Table 1. Percent of domestic enplaned passengers at 79 air traffic hubs.

	1950	1955	1960	1965	1967	1969	1971	1973	1975	1976	1977	1978
Atlanta / Georgia	2.34	2.71	2.24	4.21	4.68	5.17	5.99	6.56	6.94	6.91	7.05	7.48
Boston / Massachusetts	2.66	2.32	2.74	2.94	3.01	2.94	2.80	2.68	2.52	2.49	2.43	2.45
Chicago / Illinois	8.49	9.63	9.48	10.18	9.63	9.35	9.15	8.93	8.94	9.10	8.94	8.78
Cleveland / Ohio	2.07	2.10	2.00	1.85	1.72	1.73	1.61	1.60	1.50	1.50	1.48	1.44
Dallas-Ft. Worth / Texas	2.61	2.29	2.60	3.12	3.30	3.36	3.49	3.69	4.01	3.99	3.94	3.89
Denver / Colorado	1.44	1.51	1.79	1.87	2.01	2.26	2.58	2.85	3.12	3.27	3.33	3.68
Detroit & Ann Arbor / Michigan	2.86	2.80	2.59	2.22	2.28	2.45	2.33	2.23	2.01	1.99	2.02	2.00
Houston / Texas	1.35	1.33	1.25	1.42	1.35	1.48	1.54	1.52	1.62	1.66	1.81	1.87
Kansas City / Missouri	1.70	1.41	1.40	1.45	1.37	1.41	1.32	1.17	1.21	1.19	1.16	1.16
Las Vegas / Nevada	0.25	0.58	0.70	0.97	1.03	1.11	1.19	1.32	1.45	1.40	1.38	1.43
Los Angeles / California	4.91	4.87	5.71	5.70	5.64	5.17	5.05	4.91	4.86	4.86	4.93	5.08
Miami & Ft. Lauderdale / Florida	2.18	2.85	3.10	2.62	2.75	2.93	3.09	3.19	3.09	3.01	2.94	3.14
Minneapolis / St. Paul / Minnesota	1.74	1.45	1.55	1.62	1.67	1.69	1.74	1.77	1.85	1.83	1.80	1.61
New York City / Newark	12.14	11.88	11.86	11.1[illegible]	10.52	9.55	8.89	8.36	7.55	7.41	7.36	7.34
New Orleans / Louisiana	1.19	1.40	1.26	1.26	1.27	1.26	1.25	1.23	1.17	1.17	1.22	1.21
Philadelphia / Pa. / Camden / N.J.	1.19	1.45	1.85	1.92	1.97	2.07	2.06	1.91	1.77	1.76	1.70	1.67
Phoenix / Arizona	0.51	0.60	0.82	0.88	0.89	0.93	1.03	1.10	1.14	1.17	1.21	1.27
Pittsburgh / Pennsylvania	2.16	1.99	1.95	1.99	1.90	1.99	2.05	2.04	1.97	2.00	1.98	1.92
St. Louis / Missouri	1.51	1.61	1.78	1.79	1.95	2.17	2.06	1.85	2.01	1.95	1.93	1.96
San Francisco / California	3.74	3.52	3.89	3.93	3.94	3.39	3.32	3.27	3.24	3.23	3.22	3.31
Seattle / Washington	1.69	1.32	1.37	1.11	1.40	1.38	1.54	1.38	1.50	1.56	1.54	1.65
Tampa & St. Ptsbg / Clwtr & Lklnd / Fla.	0.55	0.72	0.97	0.94	0.89	0.97	1.09	1.33	1.32	1.28	1.24	1.28
Washington / D.C.	4.79	4.63	4.11	4.21	4.19	3.90	3.84	3.70	3.47	3.47	3.43	3.25
SUB-TOTAL LARGE HUBS - 23	64.07	65.12	67.05	69.35	69.36	68.66	68.99	68.60	68.27	68.19	68.03	68.85
Albany / New York	0.37	0.39	0.35	0.31	0.31	0.35	0.30	0.33	0.29	0.27	0.23	0.28
Albuquerque / New Mexico	0.32	0.30	0.34	0.35	0.38	0.39	0.41	0.43	0.45	0.45	0.47	0.46
Baltimore / Maryland	0.43	0.45	0.71	0.97	0.96	0.98	0.88	0.76	0.65	0.66	0.65	0.65
Birmingham / Alabama	0.52	0.54	0.39	0.30	0.27	0.32	0.33	0.32	0.33	0.33	0.33	0.32
Buffalo & Niagara Falls / New York	1.14	1.12	0.98	0.79	0.78	0.76	0.69	0.76	0.78	0.78	0.72	0.72
Charlotte / North Carolina	0.74	0.75	0.52	0.63	0.50	0.54	0.58	0.63	0.66	0.67	0.64	0.60
Cincinnati / Ohio	1.31	1.33	1.07	1.01	0.93	0.86	0.82	0.78	0.71	0.6[illegible]	0.65	0.64
Columbus / Ohio	0.54	0.64	0.68	0.57	0.55	0.57	0.58	0.56	0.54	0.53	0.53	0.53
Dayton / Ohio	0.46	0.59	0.59	0.49	0.46	0.48	0.46	0.44	0.44	0.43	0.42	0.41
Des Moines / Iowa	0.35	0.31	0.32	0.28	0.26	0.28	0.27	0.27	0.28	0.28	0.28	0.27
El Paso / Texas	0.35	0.43	0.39	0.30	0.34	0.35	0.32	0.31	0.31	0.30	0.32	0.33
Greensboro / High Point / N.C.	0.17	0.18	0.19	0.24	0.24	0.26	0.27	0.28	0.25	0.26	0.26	0.25
Hartford / Springfld / Westfld / Conn.	0.40	0.43	0.50	0.52	0.54	0.58	0.59	0.64	0.62	0.62	0.61	0.61
Indianapolis / Indiana	0.73	0.83	0.80	0.67	0.69	0.67	0.70	0.70	0.69	0.67	0.66	0.65
Jacksonville / Florida	0.76	0.76	0.59	0.58	0.47	0.47	0.46	0.47	0.42	0.40	0.37	0.34
Louisville / Kentucky	0.74	0.92	0.75	0.65	0.64	0.62	0.58	0.50	0.47	0.45	0.44	0.44
Memphis / Tennessee	0.85	0.79	0.72	0.85	0.88	0.93	1.02	1.03	1.04	1.03	0.98	0.97
Milwaukee / Wisconsin	0.69	0.70	0.73	0.55	0.54	0.56	0.64	0.63	0.65	0.64	0.63	0.60
Nashville / Tennessee	0.65	0.59	0.48	0.43	0.44	0.45	0.44	0.45	0.47	0.46	0.47	0.48
Norfolk / Virginia	0.59	0.46	0.31	0.35	0.38	0.42	0.41	0.39	0.37	0.38	0.39	0.37
Oklahoma City / Oklahoma	0.58	0.40	0.41	0.39	0.40	0.43	0.43	0.40	0.44	0.43	0.43	0.43
Omaha / Nebraska	0.66	0.48	0.58	0.54	0.54	0.45	0.45	0.43	0.41	0.41	0.40	0.38
Orlando / Florida	0.15	0.19	0.31	0.29	0.30	0.31	0.41	0.77	0.88	0.89	0.92	1.00
Portland / Oregon	1.17	0.84	0.82	0.78	0.80	0.82	0.82	0.81	0.84	0.83	0.86	0.85
Raleigh / Durham / North Carolina	0.27	0.27	0.26	0.26	0.28	0.32	0.35	0.34	0.33	0.32	0.33	0.33
Reno / Nevada	0.22	0.24	0.26	0.27	0.26	0.26	0.25	0.28	0.29	0.29	0.33	0.42
Rochester / New York	0.40	0.40	0.45	0.44	0.49	0.48	0.44	0.45	0.42	0.40	0.39	0.37
Salt Lake City / Utah	0.52	0.53	0.61	0.66	0.68	0.62	0.71	0.75	0.77	0.78	0.81	0.84
San Antonio / Texas	0.51	0.48	0.45	0.45	0.49	0.52	0.50	0.48	0.43	0.42	0.42	0.43
San Diego / California	0.47	0.53	0.62	0.58	0.58	0.61	0.63	0.70	0.73	0.75	0.79	0.84
Spokane / Washington	0.49	0.28	0.26	0.24	0.27	0.29	0.27	0.29	0.31	0.32	0.32	0.29
Syracuse / New York	0.54	0.45	0.52	0.47	0.49	0.47	0.44	0.42	0.36	0.36	0.35	0.35
Tucson / Arizona	0.20	0.22	0.25	0.23	0.26	0.29	0.31	0.32	0.35	0.33	0.33	0.35
Tulsa / Oklahoma	0.65	0.51	0.40	0.35	0.34	0.34	0.35	0.35	0.38	0.38	0.39	0.40
West Palm Beach / Palm Beach / Florida	0.14	0.18	0.18	0.17	0.16	0.22	0.26	0.36	0.37	0.38	0.37	0.37
SUB-TOTAL MEDIUM HUBS - 35	19.08	18.51	17.79	16.96	16.90	17.27	17.35	17.80	17.75	17.59	17.53	17.56
Akron / Canton / Ohio	0.30	0.25	0.19	0.10	0.13	0.12	0.12	0.14	0.12	0.12	0.13	0.12
Amarillo / Texas	0.24	0.19	0.16	0.13	0.12	0.11	0.11	0.11	0.12	0.12	0.11	0.12
Austin / Texas	0.22	0.17	0.15	0.15	0.15	0.18	0.18	0.19	0.21	0.22	0.24	0.21
Boise / Idaho	0.18	0.15	0.16	0.13	0.16	0.17	0.19	0.19	0.19	0.20	0.19	0.19
Charleston / West Virginia	0.41	0.34	0.24	0.19	0.17	0.14	0.14	0.13	0.13	0.13	0.12	0.11
Chattanooga / Tennessee	0.19	0.20	0.17	0.13	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Columbia / South Carolina	0.11	0.15	0.13	0.15	0.16	0.18	0.20	0.20	0.19	0.19	0.18	0.17
Evansville / Indiana	0.21	0.19	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10
Grand Rapids / Michigan	0.26	0.23	0.20	0.14	0.15	0.15	0.15	0.16	0.16	0.17	0.17	0.17
Harrisburg / Pennsylvania	0.13	0.15	0.15	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.13
Jackson / Mississippi	0.15	0.18	0.17	0.15	0.15	0.16	0.19	0.19	0.18	0.18	0.18	0.18
Little Rock / Arkansas	0.19	0.21	0.19	0.20	0.20	0.20	0.21	0.22	0.23	0.23	0.23	0.23
Madison / Wisconsin	0.09	0.11	0.14	0.13	0.14	0.14	0.14	0.14	0.15	0.16	0.16	0.15
Midland / Texas	0.18	0.13	0.13	0.14	0.10	0.12	0.11	0.11	0.14	0.12	0.13	0.12
Mobile / Alabama	0.16	0.22	0.17	0.14	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.14
Moline / Illinois	0.10	0.14	0.15	0.13	0.14	0.14	0.13	0.13	0.14	0.14	0.14	0.14
Richmond / Virginia	0.41	0.38	0.27	0.24	0.23	0.22	0.24	0.23	0.23	0.22	0.23	0.23
Roanoke / Virginia	0.17	0.19	0.17	0.15	0.15	0.15	0.18	0.20	0.17	0.18	0.18	0.16
Shreveport / Louisiana	0.31	0.25	0.21	0.17	0.17	0.19	0.19	0.18	0.20	0.18	0.18	0.18
Toledo / Ohio	0.23	0.25	0.24	0.16	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.14
Wichita / Kansas	0.31	0.29	0.24	0.19	0.20	0.22	0.21	0.22	0.24	0.23	0.23	0.24
SUB-TOTAL SMALL HUBS - 21	4.55	4.37	3.78	3.16	3.15	3.24	3.35	3.40	3.47	3.47	3.48	3.36
GRAND TOTAL ALL HUBS - 79	87.70	88.00	88.62	89.47	89.41	89.17	89.69	89.80	89.49	89.25	89.04	89.77

Large traffic hub-community enplaning 100% or more of total enplaned passengers.
Medium traffic hub-community enplaning from 25 to 99% of total enplaned passenger.
Small traffic hub-community enplaning from 5 to 24% of total enplaned passengers.
Rows may not add to total because of rounding.

Table 2. New York region domestic air passengers (percent distribution by length of haul), 1957-1978.

	Mileage Range (Miles)				
	0-299	300-799	800-1599	1600 +	All
1957	33.6%	30.8%	24.6%	11.0%	100.0%
1958	34.2	31.4	24.0	10.4	100.0
1959	33.1	31.3	23.6	12.0	100.0
1960	33.4	31.5	23.0	12.1	100.0
1961	33.7	31.7	23.0	11.6	100.0
1962	35.9	31.4	21.4	11.3	100.0
1963	37.7	30.6	21.1	10.6	100.0
1964	36.8	30.9	21.2	11.1	100.0
1965	35.9	31.1	21.6	11.4	100.0
1966	35.6	31.3	20.9	12.2	100.0
1967	35.6	30.4	21.7	12.3	100.0
1968	34.0	31.8	22.4	12.4	100.0
1969	31.5	32.1	23.6	12.8	100.0
1970	29.2	32.3	25.4	13.1	100.0
1971	28.8	31.8	26.6	12.8	100.0
1972	27.4	31.2	28.5	12.9	100.0
1973	26.8	31.0	28.8	13.4	100.0
1974	26.3	31.0	28.9	13.8	100.0
1975	25.1	29.8	30.3	14.8	100.0
1976	24.5	30.1	30.2	15.2	100.0
1977	24.1	29.4	30.7	15.8	100.0
1978	22.9	28.5	32.1	16.5	100.0
1979	22.3	27.3	32.3	18.1	100.0

Mileages represent city center to city center distances starting 1963.
Mileages represent airport to airport distances 1957 through 1962

Source: CAB Origin and Destination Surveys.

Table 3. Percent distribution of New York's domestic air passengers by major destinations and mileage ranges.

	1950	1955	1960	1965	1967	1969	1972	1973	1974	1975	1976	1977	1978
Philadelphia	0.6	0.5	0.64	0.73	0.65	0.47	0.47	0.45	0.22	0.34	0.37	0.32	0.27
0-99 Miles	1.0	0.7	0.78	0.81	0.72	0.64	0.49	0.47	0.24	0.34	0.38	0.32	0.28
Albany	0.8	0.8	0.84	0.81	0.84	0.68	0.55	0.53	0.63	0.46	0.43	0.43	0.40
Baltimore	N.A	-	-	-	-	1.21	0.97	0.84	0.80	0.74	0.77	0.77	0.69
Boston	12.5	7.6	8.85	11.22	11.04	9.73	8.42	7.18	7.57	7.30	6.81	6.73	6.43
Hartford	0.9	0.8	0.97	1.03	0.66	0.31	0.31	0.35	0.43	0.45	0.45	0.45	0.43
Providence	2.1	1.2	1.18	1.08	1.09	0.87	0.77	0.73	0.62	0.56	0.56	0.51	0.55
Scranton	0.6	0.5	0.43	0.25	0.23	0.15	0.09	0.06	0.05	0.01	0.01	**	**
Syracuse	1.9	1.7	1.84	1.59	1.65	1.45	1.29	1.35	1.37	1.17	1.17	1.11	1.01
100-199	23.2	17.6	17.78	19.32	19.25	16.31	13.54	12.21	12.56	11.67	11.10	11.09	10.20
Buffalo	2.6	2.5	2.87	2.39	2.17	2.29	2.10	2.30	2.27	2.07	2.12	1.84	1.79
Rochester	1.2	1.3	1.51	1.60	1.63	1.69	1.62	1.72	1.76	1.52	1.46	1.34	1.31
Washington	8.9	7.4	7.26	8.93	8.84	7.77	7.05	6.53	6.91	6.79	6.64	6.81	6.60
200-299	16.9	15.4	14.84	15.73	15.62	14.59	13.39	13.22	13.49	13.13	13.01	12.66	12.43
Pittsburgh	3.9	3.1	3.05	3.04	2.96	2.92	2.51	2.51	2.56	2.50	2.46	2.37	2.30
300-399	5.4	5.0	4.71	4.18	4.35	3.98	3.69	3.70	3.67	3.57	3.28	3.18	3.27
Cleveland	2.6	2.7	2.92	3.02	2.82	2.83	2.53	2.46	2.41	2.21	2.15	1.99	2.00
Detroit	3.8	3.6	3.80	3.77	3.42	3.63	3.17	3.26	3.20	2.84	2.92	2.74	2.67
400-499	8.5	8.8	9.02	9.26	8.81	9.62	8.91	9.09	8.95	8.17	8.54	8.21	7.77
Cincinnati	1.1	1.1	1.15	1.17	1.12	1.09	1.08	1.06	1.03	1.1	1.01	0.96	0.94
500-599	2.3	3.3	3.35	3.71	3.61	3.79	3.36	3.50	3.71	3.56	3.59	3.45	3.33
600-699	2.3	2.9	2.98	2.80	3.09	3.32	3.36	3.50	3.31	3.18	3.20	3.26	3.02
Atlanta	1.0	1.2	1.27	1.42	1.51	1.82	2.22	2.37	2.41	2.39	2.48	2.68	2.65
Chicago	8.7	8.4	8.37	7.96	7.21	7.70	7.24	7.07	7.03	6.92	6.92	6.64	6.50
Milwaukee	0.9	0.8	0.90	0.80	0.74	0.72	0.68	0.66	0.67	0.67	0.70	0.64	0.56
700-799	11.3	11.4	11.43	11.19	10.53	11.35	11.37	11.35	11.40	11.32	11.46	11.34	11.05
St. Louis	1.3	1.4	1.49	1.53	1.50	1.47	1.37	1.36	1.31	1.34	1.40	1.31	1.28
800-899	2.5	3.1	3.21	3.34	3.29	3.40	3.44	3.45	3.37	3.44	3.45	3.30	3.28
900-999	0.9	1.1	1.31	1.24	1.31	1.54	2.33	2.44	2.62	2.77	2.90	3.20	3.23
Miami/Ft. Lauderdale*	9.4	10.7	9.31	7.87	7.82	8.60	11.36	11.06	10.64	11.15	10.66	10.32	12.39
Minneapolis	1.2	1.0	1.19	1.20	1.22	1.20	1.09	1.08	1.09	1.09	1.14	1.09	1.02
Tampa	0.6	1.0	1.14	0.94	0.89	1.07	1.61	1.82	1.79	1.91	1.85	1.86	1.90
West Palm Beach	0.7	0.8	0.61	0.63	0.58	0.68	1.15	1.37	1.45	1.44	1.50	1.48	1.32
1000-1099	12.4	14.3	12.91	12.22	12.15	13.40	16.56	16.74	16.32	16.99	16.67	16.58	18.11
New Orleans	1.0	0.9	0.83	0.84	0.83	0.90	0.90	1.00	1.03	1.07	1.06	1.12	1.13
1100-1199	2.1	2.0	2.11	1.29	1.29	1.38	2.10	2.19	2.19	2.32	2.36	2.27	2.38
1200-1299	0.5	0.7	0.73	0.57	0.60	0.59	0.54	0.58	0.59	0.61	0.63	0.74	0.59
Dallas	0.7	0.9	1.22	1.13	1.22	1.24	1.41	1.50	1.49	1.66	1.69	1.77	1.76
1300-1399	1.0	1.3	1.53	1.45	1.55	1.57	1.72	1.82	1.79	1.98	2.05	2.11	2.09
Houston	0.9	1.0	0.88	0.96	0.96	1.10	1.22	1.31	1.40	1.47	1.52	1.75	1.69
1400-1499	1.1	1.3	1.08	1.01	1.02	1.20	1.32	1.41	1.50	1.58	1.63	1.84	1.79
1500-1599	0.1	0.2	0.17	0.46	0.51	0.51	0.48	0.51	0.52	0.57	0.58	0.61	0.57
1600-2299	2.2	2.6	2.79	2.63	2.83	3.32	3.66	3.80	3.91	4.19	4.30	4.08	3.82
Los Angeles	3.2	4.1	4.74	4.26	4.45	4.49	4.43	4.58	4.65	5.06	5.18	5.79	5.76
San Francisco	1.9	2.9	3.04	2.99	3.24	2.88	3.16	3.31	3.39	3.56	3.57	3.96	3.81
2300 +	6.3	8.5	9.29	8.79	9.47	9.52	9.28	9.73	9.88	10.61	10.86	11.78	12.78
Total Passengers	3456.9 100%	7186.8 100%	10003.8 100%	16316.3 100%	20821.1 100%	24065.6 100%	24668.3 100%	24410.4 100%	24324.8 100%	23092.4 100%	24356.2 100%	26298.9 100%	30024.8 100%

** Less than .01%

* Fort Lauderdale included after 1967

Source: CAB - O & D Survey Reports

Figure 2. Fare comparison (U.S. airlines).

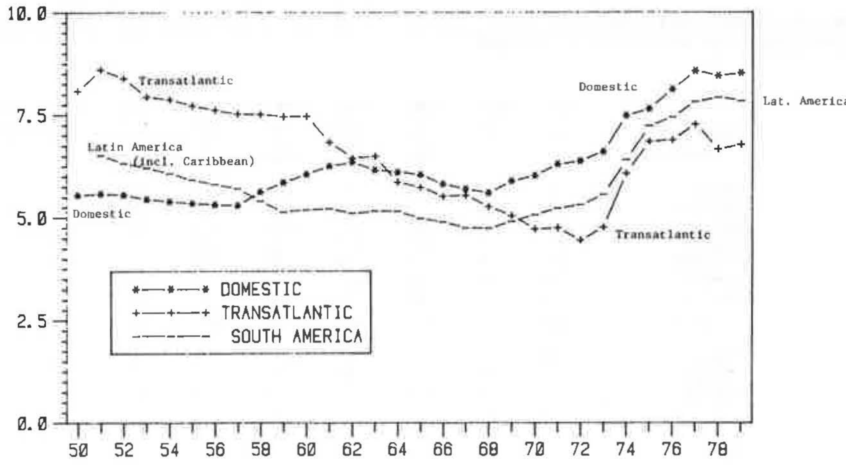


Figure 3. Transatlantic/Latin American fare versus passenger ratio.

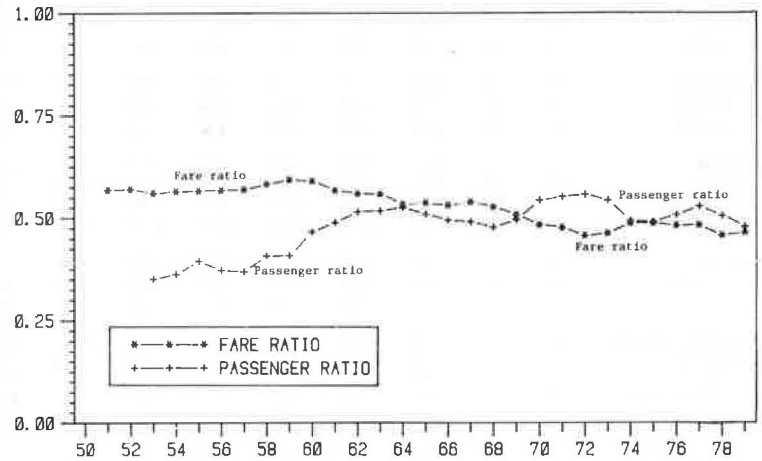
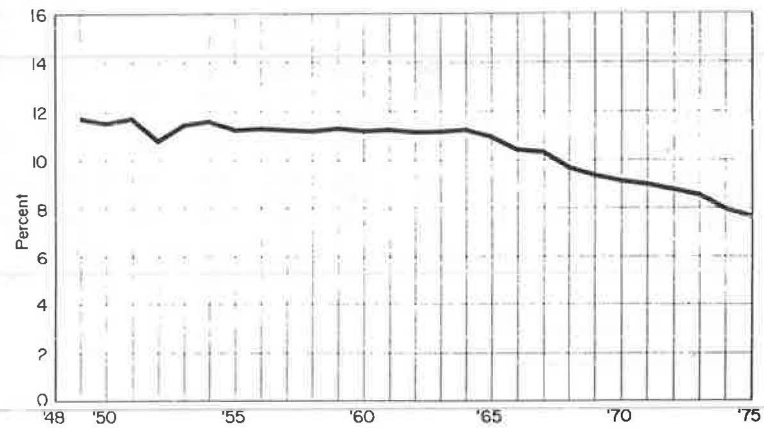


Figure 4. New York/New Jersey share of domestic air passengers.



such as e.g., the effect of overseas transfers on domestic enplanements at the New York gateway.

On the basis of alternate assumptions with respect to the regional economy, and assuming no further changes in the fare structure, further projections of the region's share for the 1980's and 1990's, as seen in 1975, have been made. Not enough CAB data are available yet on the detailed effects of the recent deep discount fares on transcontinental services to permit an evaluation within the framework of this model. On the basis of nine month data, however, it may be estimated that in 1980 the New York area for the first time reversed the long declining trend and is expected to show an upturn of approximately 1/2 percent. The just developing intense price competition on the New York/Newark-Washington route could further aid in reversing the trend, assuming the low fares can economically be sustained in the longer run.

Regardless of any specific model, the main thrust of presenting these charts is to demonstrate how, in combination with other data sources, many of the CAB data have been extremely useful in understanding major developments at the local level.

Other CAB data of considerable usefulness to the airport forecaster, are the aircraft departures by aircraft type. Such data play a major role in projecting the future composition of the aircraft fleet serving an area, and thus future aircraft activity levels resulting from projected passenger volumes (Figures 7 and 8). Obviously the aircraft operating cost statistics by aircraft type are another significant piece of input information inasmuch as they can be related to the economic life span (or obsolescence) of certain aircraft types.

It should be noted that at the local level the Form 41 data are not the only source of information for these data, as many of the same data are generated routinely as part of the landing fee accounting process, and, of course, a reasonably close approximation can be obtained from published schedules. However, the availability of local data consistent with national totals as developed from Form 41 provides an additional frame of reference for preparing projections at the local level.

Finally, airline employment and payroll (compensation) data have been used, in combination with occasional local surveys, to monitor trends in

Figure 5. New York/New Jersey metropolitan area income and employment as percent of total U.S.

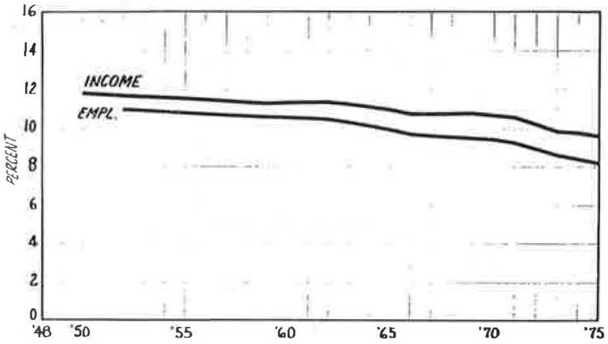


Figure 6. History of air fares on selected New York routes (cents per mile).

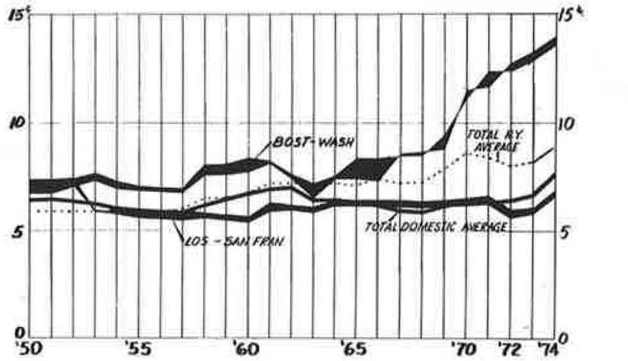


Figure 7. Average seats per aircraft departure at Port Authority airports.

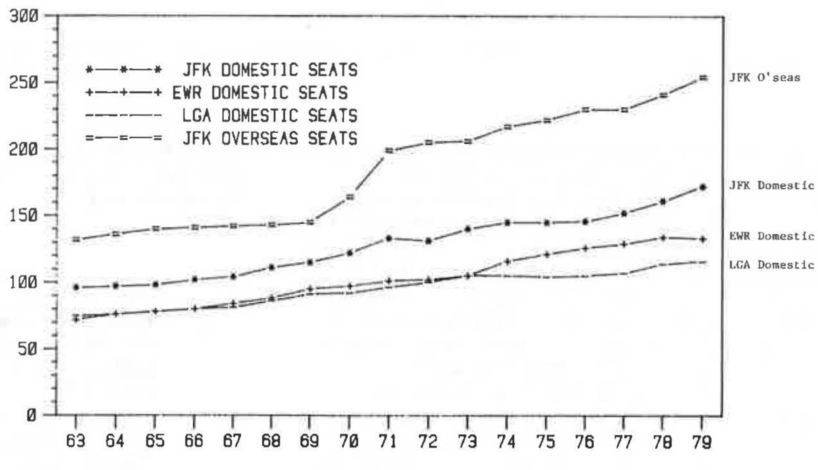


Figure 8. Passenger movements versus aircraft movements at Port Authority airports.

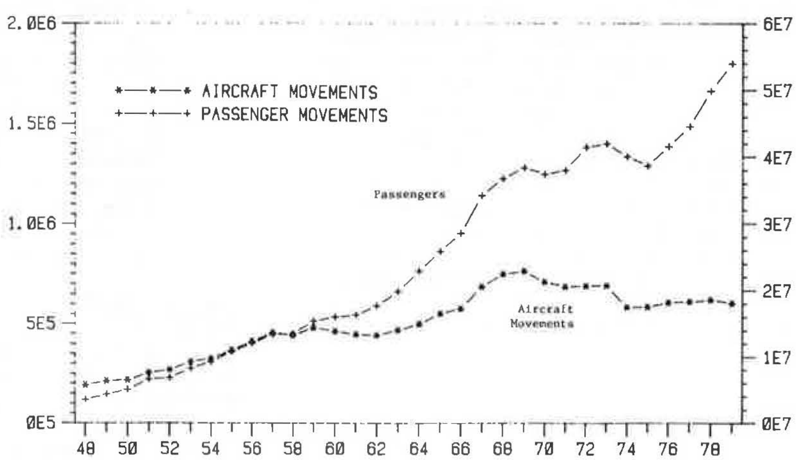


Figure 9. Employment and estimated payroll at Port Authority airports.

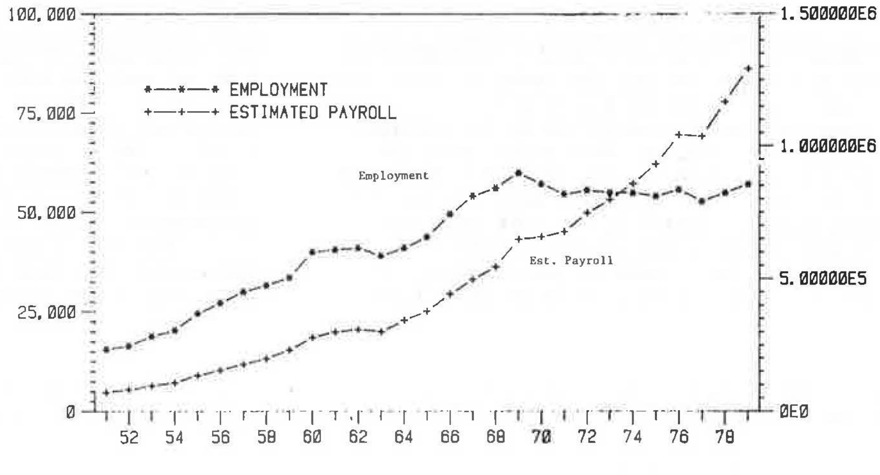
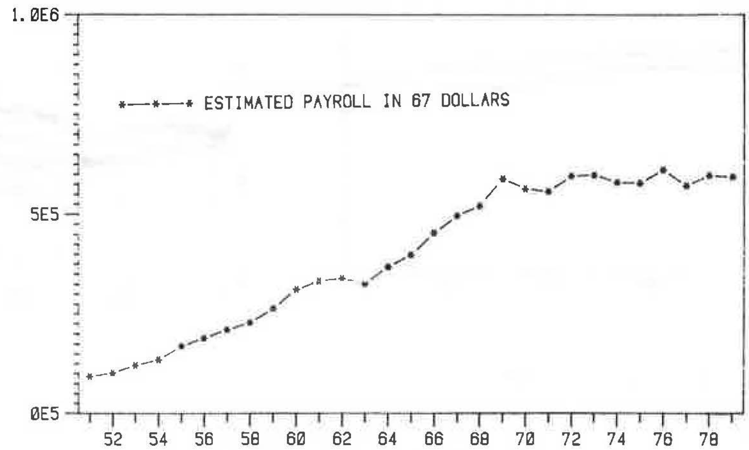


Figure 10. Estimated payroll in constant dollars at Port Authority airports.



airline wages and to estimate local payrolls resulting from airport employment (Figures 9 and 10). Although national data are not necessarily directly applicable to local wage levels, it is reasonable to assume that trends at the regional level would be fairly similar. Current (1979) employment at the three Port Authority airports of some 57,000 workers is, thus, estimated to represent a regional payroll in the order of $1,300,000,000. These data are used as inputs in various economic impact studies.

In summary, this discussion has attempted to illustrate with examples of studies done at various points in time, how many CAB data have been of great value in the analysis and interpretation of development at the local level, although some of the charts used as illustrations, admittedly, are somewhat dated they still appear to represent problem areas which are as real and in many cases even more urgent today as they were a few years ago, especially in the light of many recent developments in the marketplace as a result of deregulation. Continuation of, at least, a minimum level of data collection in the areas indicated appears vital to our ability to intelligently analyze, interpret and subsequently forecast regional traffic developments.

Although, in the words of one of my co-panelists "we wouldn't cease to function" if the body of available data were greatly reduced, there is no question that loss of a number of vital data would greatly impair that ability.

DATA REQUIREMENTS OF PILOT REPRESENTATION

Jill Kastris, Air Line Pilots Association International

Summary

The Air Line Pilots Association which negotiates employment agreements with the 29 airlines whose pilots it represents, makes continuing and widespread use of Civil Aeronautics Board data to support the collective bargaining process. It publishes a quarterly "Negotiator's Factbook of Selected Statistics." All data in this report is from CAB Form 41 Schedules B1, P1, P3, P5, P6, P7, P8, T1, T2 and T3. ALPA also produces a quarterly "Hard Hours Report" using T schedule data. In other industries lack of data slows competitive bargaining. The CAB Uniform System of Accounts does not disclose competitive information, provides data essential for labor purposes, minimizes reporting burdens and should be preserved.

What Is ALPA?

The Air Line Pilots Association (ALPA) is both a labor union and a professional organization. The Association maintains its national headquarters in Washington, D.C., and operates 13 other offices as well. In addition to contract negotiation and grievance services, ALPA provides representation