1958

Projections of Flight Personnel Employment, 1960

Stephen P. Sobotka

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PROJECTIONS OF FLIGHT PERSONNEL
EMPLOYMENT, 1960

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The air transport industry is now undergoing the most drastic technological change since its beginnings. Within the next three or four years, most major cities in this country will be served by new types of aircraft not previously used in commercial service. Starting late this year or early next year, Pan-American Airways will begin scheduled service with a Boeing-built jet aircraft which is even now undergoing flight testing by the manufacturer.

In the course of the changes now underway, there also will be great and significant changes in the employment of flight personnel by the various airlines. A great deal of interest is focused on the changes in the numbers and types of persons who will be so employed. A recent publication by the U. S. Bureau of Labor Statistics1 has attempted to forecast employment in the air transportation industry during the next few years. This article will develop another such forecast which appears to differ greatly with the one referred to above.

Manufacturers of aircraft are currently holding orders for about 225 turbo-jet and 169 prop-jet aircraft which will be delivered during the next several years for use by the United States carriers. With the delivery of these aircraft the capacity of the air transportation industry will increase to about 190 per cent of its 1956 level. It is not likely that the demands for air travel and air cargo will increase in equal proportion. Forecasts which have been made indicate roughly a 41 per cent increase in traffic in 1956-60.2 It appears, therefore, that there will be a relatively large excess of aircraft in the hands of present operators in the United States. It is likely that these aircraft will be sold out of the industry either for business use within the country or to foreign flag line operators.

As we have pointed out, the capacity of the industry is growing at a faster rate than the demand for its services. Inasmuch as the new types of aircraft being introduced are significantly faster and very much larger than those they are replacing, the output of the industry per

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* Dr. Sobotka recently directed an extensive study of the economic implications with respect to manpower of the advent of jet aircraft into commercial use, at the Transportation Center at Northwestern University. He was assisted in the documentation of this paper by Margaret Wiesenfelder, also on the research staff of the Center.


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employee or, more specifically, per flying employee, will be increasing at a very rapid rate.

In order to estimate the likely employment in the industry, one first must estimate the composition of the fleets which are likely to exist. While most of the new planes are very big and fast, one cannot simply assume that they will be replacing present large planes and base employment estimates on these assumptions. It is likely that these new planes will replace some of the current larger types of aircraft such as Constellations, DC-6s, or DC-7s, and that the replaced aircraft will replace, to some extent, still smaller aircraft such as the Convairs, Martins, and DC-3s. The Curtis Committee has published estimates of the types of aircraft likely to be used in 1960-62, 1965, and 1975.³ Since the publication of this study, further orders for aircraft have been placed by the airlines, and it is therefore necessary to revise the figures somewhat.

**PROJECTIONS OF U. S. CERTIFICATED AIR CARRIER FLEET COMPOSITION 1956 AND 1960**

<table>
<thead>
<tr>
<th></th>
<th>1956*</th>
<th>1960†</th>
<th>1960-62 (Curtis Report Estimates)‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small, Reciprocal</td>
<td>962</td>
<td>990</td>
<td>449</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>557</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>331</td>
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<tr>
<td>Small, Turboprop</td>
<td>28</td>
<td>108</td>
<td>192</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>523</td>
</tr>
<tr>
<td>Medium, Reciprocal</td>
<td>633</td>
<td>494</td>
<td>474</td>
</tr>
<tr>
<td>Medium, Turboprop</td>
<td>—</td>
<td>633</td>
<td>182</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>182</td>
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<td></td>
<td></td>
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<td>743</td>
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<tr>
<td>Medium, Turbojet</td>
<td>—</td>
<td>44</td>
<td>87</td>
</tr>
<tr>
<td>Large, Turbojet</td>
<td>—</td>
<td>181</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>163</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>163</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,623</td>
<td>1,412</td>
<td>1,429</td>
</tr>
</tbody>
</table>

† Estimates based on Curtis Report and recently placed aircraft orders.

The Curtis Committee estimates that during the 1960-62 period there will be about 1,429 aircraft in the domestic fleets (see table). Using subsequent orders as a guide, it is likely that the number of aircraft will be on the order of 1,400, or even somewhat less than that. These estimates are arrived at by assuming the above-mentioned rate of growth for the industry and aircraft utilization figures based on airline experience in 1956.⁴ If one then also assumes that the conditions

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of employment of pilots, co-pilots, and engineers, insofar as they affect
the number of flight hours per month, will remain stable, one arrives
at a pilot employment figure of about 11,000 pilots by 1960 as opposed
to approximately 12,000 in 1956. Further delivery of new aircraft in
the 1960-62 period should result in some further decline in pilot
employment.

Civil Aeronautics regulations now require third crew members in
the cockpits of all planes having a gross weight of more than 80,000
pounds. This includes all four-engine planes now in use in the United
States except DC-4s and Viscounts. Since the new planes being intro-
duced are rather large, one must assume that they will be required to
be flown with three men. As a consequence, the employment of third
crew members\(^5\) will not change in the same manner as the employment
of pilots.

The 1956 fleets were composed of about 1,620 aircraft.\(^6\) These air-
craft required the use of 3,384 third crew members. We have estimated
that 1960 fleets will include about 1,400 aircraft, yet because these
aircraft are heavier, it is likely that they will require approximately
4,500 third crew members.

Total pilot, co-pilot and engineer (or pilot-engineer) employment
of about 15,595 is projected as a result of the above computation, as
against about 15,382 in 1956. While it appears that the employment
of cockpit personnel as a whole will remain essentially stable during
the next several years, industry output is rising at the very rapid rate
of almost 10 per cent per year. Moreover, the change in the relative
numerical significance of pilots and co-pilots versus third crew members
is perhaps the most striking aspect of the changing pattern of airline
employment of flying personnel. Recent attempts by the Air Line
Pilots Association (AF of L-CIO) to seek jurisdiction over third crew
members on turbo-prop and turbo-jet equipment can easily be under-
stood in the context of the changing employment pattern discussed
above.

\(^5\) On some airlines the third crew member is an engineer, on others, a pilot-
engineer. We are not separating these two groups since no matter what the nomen-
clature, the third man performs essentially the same task on all airlines.

\(^6\) CAA Statistical Handbook, 1956.