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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

* 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.

¹ Branch of Skilled Manpower and Industrial Employment Studies, Division of Manpower and Employment Statistics, U. S. Bureau of Labor Statistics, U. S. Department of Labor, April 1, 1957.

² CAA: "1960-1965-1970 Civil Aviation and Federal Airways Forecasts," December 1956.

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

	1956*	1960†	1960-62	(Curtis Report Esti- mates) ‡
Small, Reciprocal	962	449	331	523
Small, Turboprop	28	108	192	
Medium, Reciprocal	633	494	474	743
Medium, Turboprop	—	136	182	
Medium, Turbojet	—	44	87	
Large, Turbojet	—	181	163	163
TOTAL	1,623	1,412	1,429	

* CAA Statistical Handbook, 1956.

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

‡ National Requirements for Aviation Facilities: 1956-75, Vol. III, Part I, p. 35.

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

³ National Requirements for Aviation Facilities: 1956-57. Vol. III—Aircraft Characteristics, Part I—Civil Aircraft, May 1957.

⁴ Monthly Report of Air Carrier Traffic Statistics; March, June, September and December 1956.

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 introduced 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 members⁵ will not change in the same manner as the employment of pilots.

The 1956 fleets were composed of about 1,620 aircraft.⁶ These aircraft 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 understood 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 nomenclature, the third man performs essentially the same task on all airlines.

⁶ CAA Statistical Handbook, 1956.