

LEADING PARTICULARS—COMET 4B

Overall length	118 ft. 0 in.
Overall span	107 ft. 10 in.
Wheelbase	53 ft. 2 in.
Usable fuel capacity	7,840 imp. galls.
Maximum all-up weight	152,500 lb.
Maximum zero fuel weight	98,500 lb.
Equipped Take Weight	
1st Class 84 seats	73,755 lb.
Tourist 99 seats	73,846 lb.
Mixed 84 seats	73,789 lb.
Capacity payloads (including freight)	
1st Class 84 seats	19,680 lb.
Tourist 99 seats	22,240 lb.
Mixed 84 seats	21,624 lb.

The Continental Comet

A new version of the de Havilland Comet, the 4B, has been announced by the de Havilland Aircraft Co. Known as the "Continental" Comet, the 4B represents a development of the earlier 4A, which it is to replace.

The Comet 4B offers a 10% increase in seating capacity, (84 first class, 99 tourist) and the first cost of the aircraft is reduced in line with manufacturing economies based upon quantity, with the result that cost-per-seat mile is some 15% less than for the 4A.

Principal changes in the 4B as compared to the 4A are as follows:

- An extension of the fuselage by 38 in. and a re-arrangement of the seating plan to allow for two extra rows of passenger seats.

- Removal of the nacelle tanks resulting in lower drag and in improved lift in the landing configuration. Fuel consumption and landing speed are both reduced accordingly.

- The maximum zero-fuel weight of the aircraft has been increased by 2,500 lb. to 98,500 lb.

The 4B has the same all-up weight as the earlier version and therefore the flying characteristics are not prejudiced. The new aircraft also retains the large measure of operational flexibility which was a feature of the Comet 4A. This flexibility may be achieved by the use

of alternative methods of cruising the aircraft. For maximum block speed over relatively short stages the aircraft can be flown at medium altitudes, thus increasing the true airspeed at the limiting Mach number.

This procedure enables the aircraft to cruise at speeds of between 520 mph and 545 mph at its optimum altitude of 23,000 ft. With this operating procedure the 4B can carry a capacity payload of 20,000 lb. over stages of up to 2,000 miles.

The alternative method of cruising in which the aircraft is climbed to 38,000 ft. and cruised at 490-500 mph, will extend the range to about 2,600 miles with a capacity payload of 20,000 lb.

Fig. 1 illustrates the practical block speed of the 4B using the high speed and the long range cruising techniques.

For the purposes of comparison, the operating costs of the 4B have been calculated according to the current SBAC formula and the results are illustrated in Fig. 2. These cost curves have been based on fuel prices and labor rates applicable in Europe; no allowance has been made for freight revenue.

Fig. 3 illustrates the break-even load factor of the 4B with a first class seating layout of 84 passengers. This curve is derived from the same set of figures used in Fig. 2.

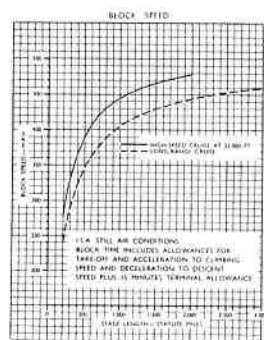


FIG. 1

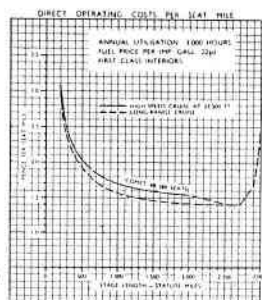


FIG. 2

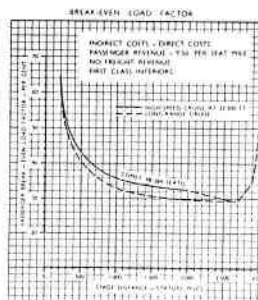


FIG. 3

regularly? Are the tolerances realistic? The determination of natural process limits and the charting of process variation are valuable tools for measuring the efficiency of operators and machines.

Carry out quality improvement experiments, and collect scientific data. Juran suggested in his "Handbook" that the scientific investigator should "never believe people, only facts." Facts are the food of the quality engineer. Of course the experiments carried out as well as the data collected are valueless without accurate data analysis.

Design sampling plans. Statistical methods are now being recognized as an invaluable tool to the inspector, since in many instances, more economic and accurate inspection results from controlled sampling.

Train the staff. The results of quality engineering must be passed both up and down. Top management, production, sales, inspection, and engineering all have a need to know the results of the vital work carried out by the prevention staff.

(c) **Quality Assurance.** The assurance function is a management tool designed to indicate to top management the efficiency of the quality department, or at a lower level, to advise the quality manager of the efficacy of his own procedures. Quality assurance fulfills exactly the same function as does the audit in accounting.

The progressive contractor who has a quality assurance group is benefiting directly because he, through quality audit, actually knows whether or not his quality control organization is working. His assurance organization has been assigned certain fact-finding functions, as follows:

Study of Field Complaints. The RCAF uses the Unsatisfactory Condition Report; the industry the customer complaint. Both are equally valuable in determining errors which have not been caught before shipment.

Product Check Inspections. By this means the assurance group determines the actual outgoing prod-

(Continued on page 90)