PART V
OPERATING DATA

90. **Pressure error corrections**

(i) The ASI sea-level pressure error, over the speed range of the aircraft, is negligible.

(ii) The following are the Machmeter pressure error corrections for all heights.

I.M.N. ...	0.90	0.95	1.0
Correction ...	+0.01	+0.02	+0.025

91. **Endurance**

When flying for endurance, the minimum fuel consumption is obtained at the IAS requiring minimum r.p.m. to maintain height. This speed is approximately 200 knots.

92. **Flight planning chart**

(*To be issued by amendment*)

(i) *Description*

(a) The left hand chart in the centre of the book shows the range obtainable at various altitudes when flying at either

Best range speed, or,

Max. continuous r.p.m. (8,200).

(b) It also shows the:—

Climb data (time to height, distance covered and fuel used).

Amount of fuel used, in gallons, at any stage of flight.

(c) The climb shown on the chart is carried out in accordance with para. 57 (i).

(d) Altitude is plotted vertically and "gallons gone" horizontally. Distance curves are drawn on the charts at intervals representing 100 nautical miles.

(e) Continuous distance curves relate to flights carried out at the best range speed and dotted distance curves relate to flights using 8,200 r.p.m.

(f) The best range speeds and the approximate speeds to be expected at 8,200 r.p.m. are shown graphically on the right hand chart as IAS plotted against altitude. The shaded areas on each side of the best range speed curve represent speed bands, the use of any speed within which should not cause more than a 5% reduction in the range obtainable when flying at the best range speeds. Speeds should not be allowed to fall below those recommended as the range will be adversely affected, particularly at heights above 25,000 ft.

(g) Data for use during QGH and VFR descents is given in tabular form on the right hand chart. Several scales for "gallons gone" are given at the bottom of each chart to make allowance for possible differences in the specific gravity of the fuel in use.

(ii) *Use of the chart*

(a) To obtain a figure for the minimum amount of fuel required to fly a given distance, select the point furthest to the left of the chart on the appropriate distance line (by interpolation if necessary) and read off the "gallons gone" for the particular specific gravity. To the figure obtained, add the fuel required for descent and the landing allowance. This total will indicate the fuel required.

(b) To obtain the maximum distance it is possible to fly for a given amount of fuel, inspect the chart to find the height at which maximum distance for that amount of fuel is obtainable and then subtract the descent and landing allowances for that height. The resulting total should then be applied to the "gallons gone" scale. Moving upwards to the correct altitude line will show the distance to be covered.

93. **Fuel consumptions**

The approximate fuel consumptions in gallons/hour for varying r.p.m. at different altitudes are given below (Fuel AVTUR 8 lb./gall.). The figures should be increased by approximately 4% if AVTAG fuel, 7.7 lb./gall. is in use.

Height	at 8,600 r.p.m.	at 8,200 r.p.m.	at best range speed
Sea level	1,350	1,090	390
10,000 ft.	1,050	830	335
20,000 ft.	750	640	285
30,000 ft.	550	470	220
40,000 ft	380	320	185

94. **Take-off distances**

The approximate take-off distances, in yards, for various wind and temperature conditions are given below.

Temperature °C.		−15	0	+15	+30	+45
Zero wind	Ground run	480	600	720	850	1,050
	To clear 50 ft.	975	1,160	1,380	1,630	1,900
30 knot wind	Ground run	280	350	430	500	600
	To clear 50 ft.	660	780	920	1,100	1,300

For every 1,000 ft. the aerodrome altitude is above sea level increase the above distances by:—

10% for ground run
8% to clear 50 ft.