

Because the aircraft was to be used for highly publicized long-distance flights, Lockheed had a stake in seeing that its full performance potential was realized. The company therefore assigned one of its brightest young engineers, Clarence L. "Kelly" Johnson, to assist Earhart in working out the most advantageous power settings for various situations in order to achieve maximum range. □

The power management program Johnson developed for Earhart shows a profile familiar to any long-distance aviator: high power settings early in the flight to accommodate the overweight condition and the need to climb to an efficient cruising altitude. As fuel and weight are burned off, power is progressively reduced until the engines' most efficient setting is reached and fuel consumption is stabilized at peak economy. In Earhart's case the optimum profile looked like this:

<u>TIME</u>	<u>ALTITUDE</u>	<u>MANIFOLD PRESS.</u>	<u>R.P.M</u>	<u>GAL./HR</u>
1 hour	0-8,000 ft.	28.5 inches Hg	2,050	100
3 hours	8,000 ft	28 inches Hg	1,900	60
3 hours	8,000 ft	26.5 inches Hg	1,800	51
3 hours	8,000 ft	25 inches Hg	1,700	43
Rest	10,000 ft	24 inches Hg	1,600	38 <sup>10</sup>

According to these figures, with a full fuel load of 1,151 U.S. gallons aboard, NR16020 could theoretically remain aloft for 25 hours and 30 minutes. At Earhart's flight-planned cruise speed of 130 knots (150 mph),<sup>11</sup> in still air this would yield a maximum range of 3,315 nautical miles (3,815 statute miles).