17.2.11 Effect of Wind on Cruise and Loiter

In 1975 Boeing published two important documents:

- Winds on United States Domestic Routes (Report W3410, June 1975)
- Winds on World Air Routes (Report W3412, June 1975)

These documents assembled data in tabular format for winds for individual city pairs in both the United States and worldwide at different pressure altitudes:

- Route distance: 0 – 499 nmi Alt: 10,000/20,000/30,000/40,000 ft
- Route distance: 500 – onward Alt: 20,000/30,000/40,000/53,000 ft

Data are provided for:

- 50% reliability winds (i.e. the wind will not be exceeded for 50% of the time) for four seasons: December-February, March-May, June-August, and September-November
- Annual wind values for 50%, 75% and 85% reliability (e.g., the wind will not be exceeded for 85% of the time on an annual basis)
- Wind standard deviations for each of the four seasons.

If a performance analyst came across a reference to “85% Boeing Annual Winds”, he or she would have to find the document and look up the wind data for a given city pair. These data are now available as a computer program (Boeing PC WindTemp) that can be integrated as a subroutine into an airline’s performance prediction program.