Another way to show how the value of A affects Mode-5 impacts is illustrated in Figure 34. For the same values of A used previously in Figure 33, the graphs in Figure 34 show the percentages of impacts in any 5° sector between radials that make angles of θ° and (θ + 5)° with respect to the flight line. **It is interesting to note that if A is set equal to 1.0 with B = 1,000, impacts in all 5° sectors are approximately the same, thus resulting in an impact-density function that is essentially uniform in direction.**

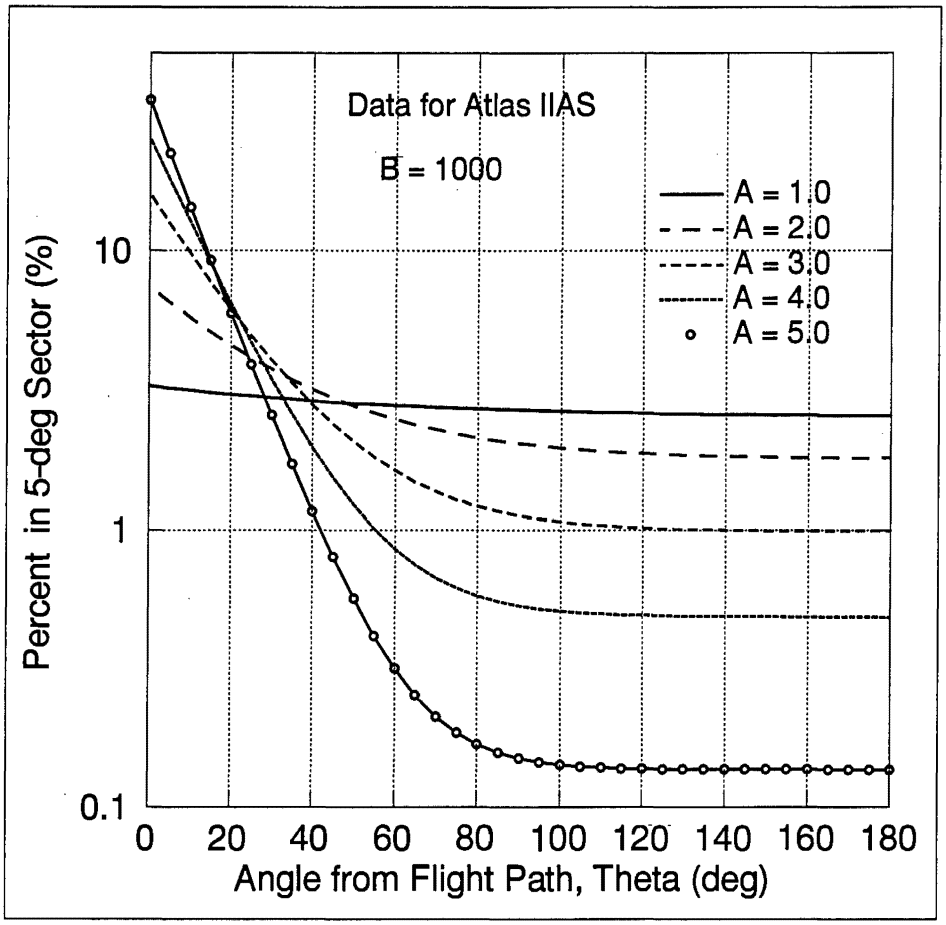

Figure 34. Percentage of Impacts in 5-Degree Sectors

For A = 1, the Mode-5 impact-density function is essentially the same as a density function formerly used in the Launch Risk Analysis (LARA) Program at the Western Range to model gross azimuth failures. This response mode was called the Gross Flight Deviation Failure (GFDF) mode. In LARA the range and azimuth portions of the GFDF density function were assumed to be independent. Impact azimuths were uniformly distributed, while the range density function can be represented as

$$f(R) = \frac{p}{T_B \dot{R}} \tag{8}$$