the other end. It is possible, however, to obtain fairly close agreement over sectors* from ±80° to ±180°, as seen in Figure 9. Since for Atlas IIAS there are few, if any, significant population centers in the launch area outside these sectors (i.e., within ±80° of the flight line), failure of the curves to match closely near the flight line is of little consequence. If a better data match is considered desirable for computing risks to population centers within ±80° of the flight line (e.g., ships), either a different A can be selected for use with B = 1,000 or other values of A and B can be derived. If only a single value of B is used, no matter what the value, a good match between theoretical and simulated data is not possible over the entire 180° sector for various breakup $q\alpha$'s.

Before becoming too concerned about lack of a data match between 0° and 80°, it should be remembered that many types of Mode-5 responses cannot be simulated, so that the malfunction-turn impact distributions plotted in Figure 9 are only a subset of all possible Mode-5 impacts. Based on twelve Mode-5 failure responses for which impact data are available, it is believed that inclusion of the "non-simulatable" Mode-5 responses would considerably improve the match in the sector from ±10° to ±80°. Another mitigating factor is that risks near the flight line are totally dominated by Mode-4 failure responses.

To see how data matching is affected by selecting widely differing values of B, the theoretical Mode-5 impact distributions were computed for B = 50,000, 100,000, 500,000, and 5,000,000. Best-fit values for A were again determined by trial and error. Results are shown in Figure 10 through Figure 13 along with the same impact distributions for random-attitude turns plotted in Figure 9.

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* For other values of B and $q\alpha$, close agreement is possible from ±60° to ±180°.