

Figure 31. LLV1 Simulation Results with Best-Fit Shaping Constants	71
Figure 32. f-Ratios for Ranges from 1 to 25 Miles	86
Figure 33. Percentage of Impacts Between Flight Line and Any Radial	87
Figure 34. Percentage of Impacts in 5-Degree Sectors.....	88
Figure 35. Exponential Weights for Fading-Memory Filters	93
Figure 36. Recursive Filter Factor for Last Data Point.....	94
Figure 37. Atlas Launch Summary	102
Figure 38. Delta Launch Summary.....	135
Figure 39. Titan Launch Summary.....	148
Figure 40. Thor Launch Summary	164

Table of Tables

Table 1. Effects of Mode-5 Shaping Constant A on Atlas IIA Risks.....	10
Table 2. Predicted Failure Probabilities for Representative Configurations.....	17
Table 3. Predicted Failure Probabilities for All Configurations.....	18
Table 4. Comparison of Weighting Percentages	19
Table 5. Filter Factor Influence on Weighting Percentages.....	21
Table 6. Failure Probabilities for Atlas, Delta, and Titan.....	24
Table 7. Number of Atlas Failures - All Configurations (532 Flights).....	25
Table 8. Number of Delta Failures - All Configurations (232 Flights).....	25
Table 9. Number of Titan Failures - All Configurations (337 Flights).....	25
Table 10. Number of Eastern-Range Thor Failures (85 Flights)	25
Table 11. Number of Failures for All Vehicles (1186 Flights).....	26
Table 12. Date of Most Recent Failure	26
Table 13. Percentage Weighting for Sample of 1186 Launches	27
Table 14. Response-Mode Occurrence Percentages.....	27
Table 15. Recommended Response-Mode Percentages for Flight Phases 0 - 2.....	28
Table 16. Recommended Response-Mode Percentages for Flight Phases 0 - 1.....	29
Table 17. Absolute Failure Probabilities for Response Modes 1 - 5	29
Table 18. Percent of Response Modes 3 and 4 That Tumble.....	30