DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
SURVIVABILITY COST EFFECTIVENESS TRADEOFF STUDIES REPORT	DI-RELI-81500

3. DESCRIPTION/PURPOSE

3.1 This report presents the results of three interdependent analyses. These are used to indicate the probability that aircraft will survive specified combat missions against specified threats and to provide measures of cost effectiveness and design tradeoff studies by which candidate survivability enhancement techniques may be evaluated. These studies are

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4. APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
951030	N/AIR-4.1.8		

7. APPLICATION/INTERRELATIONSHIP

7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract.

7.2 This report should be acquired whenever an evaluation of the survivability of a system is required.

7.3 This report applies to both developmental and non-developmental items.

7.4 This DID supersedes DI-R-21498A.

8. APPROVAL LIMITATION	8a. APPLICABLE FORMS	8b. AMSC NUMBER
		N7170

10. PREPARATION INSTRUCTIONS

10.1 Format. The report shall be in contractor's format.

10.2 Content. The report shall consist of two sections:

10.2.1 Survivability Assessment Section. This section shall include data that permits determination of the effectiveness of the system and all existing and proposed survival enhancement techniques under a variety of encounter conditions and also provides quantified levels of system survivability.

a. This section shall contain a description of the threat and encounter conditions, a description of all the survivability enhancement techniques considered, identification of the source of all data used in the calculations, description of the methodology used, and results.

b. The report shall describe the effects of observables, threat warning and avoidance capabilities, active and passive countermeasures (both on-board and off-board), electronic warfare techniques, maneuvering, speed, flight altitude, threat tolerance (i.e., vulnerability reduction realized with respect to specified threats and kill criteria), day/night and weather, and armament performance, tactics, and doctrine shall be determined.

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DISTRIBUTION STATEMENT

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

Block 3, Description/Purpose (Continued)

:igned to support cost and operational effectiveness studies which help define basic operation concepts as well as systems engineering studies which define and refine the sys configuration and effectiveness in detailed mission scenarios.

3.2 The primary purpose of this report is to support the assessment of the operational effectiveness and suitability of systems design concepts and characteristics in threat environments. The results of these studies may be used in comparing alternative systems or force mixes such as in cost and operational effectiveness assessments and to assist in evolutionary requirements definition and in the systems engineering process. They are indispensable in comparing alternative concepts in the pre-Milestone I timeframe and in identifying and quantifying critical survivability characteristics which must be included in operational requirements.

Block 10, Preparation Instructions (Continued)

Flight profiles and tactics used by the air vehicle shall be identified to include: (1) base escape (departure); (2) ingress and egress speed and altitude; (3) threat avoidance maneuvers; (4) use of countermeasures; and (5) target area profiles including target acquisition, re-acquisition, weapon delivery, and post delivery. The report shall recommend the testing required to verify the achievement of the assessed survivability related operational effectiveness and suitability characteristics. The analysis shall be based on applicable results of the mission-threat encounter and vulnerability analyses.

10.2.2 Survivability enhancement tradeoff studies section. This section shall identify the effects of variations in each significant survivability analysis parameter (e.g. threat, :sions, operational utilization, performance, system baseline characteristics, and :orporation of survivability enhancement techniques) on overall operational effectiven and suitability, acquisition cost and schedule, and life cycle cost. This section shall describe the results of cost and operational effectiveness trade studies of the variable listed below:

a. all of the parameters described in 10.2.1b above

b. Impacts on weight performance, cost, reliability, maintainability, safety, ease of reparability, and producibility.

c. Recommendations and alternatives regarding optimum design configuration and other survivability enhancement techniques or doctrine.

d. Details concerning installation and removal, if "kit form" techniques are recommended for use.

10.2.3 Identification of the following shall be included:

a. Level(s) of analysis to be performed (i.e., one-on-one, few-on-few, campaign, base escape).

b. Missions, targets/target arrays, weapons carried, delivery profiles, and threats/threat arrays to be analyzed.

c. Analysis methods and models to be used.

ock 10, Preparation Instructions (Continued)

d. Support systems (e.g., AWACS, Wild Weasel, EA-6B, etc.) to be considered.

e. Scope of effort for campaign analyses (e.g. single mission blue air versus red defenses over time, fully two-sided theater level, etc). A multiple scope analysis can be specified as discrete tasks to provide visibility into key issues being investigated.

f. Specific trade area(s) to be addressed.

g. Specific measures of effectiveness to be used.

h. Analysis methods or models to be used.