DOCUMENT NUMBER VOY-CO-FR 28 JULY 1967

## VOLUME 5 DATA MANAGEMENT STUDY

# APPENDIX G CONTRACTOR DATA PACKAGE RELIABILI TY ASSURANCE (RA)

PREPARED BY:

٠

J.B. SILVERWOOD K.R. THOMAS

RELIABILITY ASSURANCE MANAGEMENT Voyager Spacecraft System Project APPROVED BY:

AIm (

A. FRANK, COGNIZANT ENGINEER DATA MANAGEMENT AND CONTROL TASK

VOYAGER SPACECRAFT SYSTEM PROJECT

PREPARED FOR

JET PROPULSION LABORATORY CALIFORNIA INSTITUTE OF TECHNOLOGY 4800 Oak GROVE DRIVE Pasadena California

UNDER JPL CONTRACT No. 951112



Valley Forge Space Technology Center P. O. Box 8555 • Philadelphia, Penna. 19101

# PRECEDING PAGE BLANK NOT FILMED.

4

### TABLE OF CONTENTS

Section	n Pa	age
1	INTRODUCTION	-1
2	DATA ITEM LIST/USER MATRIX	-1
3	USER FLOW DIAGRAMS	1
4	DATA REQUIREMENT DESCRIPTIONS (DRD'S)	1
5	DOCUMENTATION RELATIONSHIP TREES	1
6	DATA ITEM PHASING/FREQUENCY	·1

١

#### IN TRODUCTION

This appendix presents the Contractor Data Package (Data Item Matrix, Data Requirement Descriptions, User Flow Diagram, Document Relationship Tree, and Frequency and Phasing Charts) for Reliability Assurance (RA).

These data include plans, procedures, reports, and related information necessary to ensure that a system, subsystem, component, or part will perform its required functions under defined conditions at a designated time and for a specified operative period. This category also includes reliability assessment of test results and tests of a statistical sampling nature.

The complete list of Contractor Data Package appendixes is as follows:

Appendix A	-	Technical Description and System Engineering (SE)
Appendix B	-	Planetary Quarantine (PQ)
Appendix C	-	Manufacturing (MG)
Appendix D	-	Configuration Management (CM)
Appendix E	-	Quality Assurance (QA)
Appendix F	-	Test (TE) and Mission Operations (MP)
Appendix G	-	Reliability Assurance (RA)
Appendix H	-	Logistics and Support (LS)
Appendix I	-	Overall Management (MA), Scheduling (SC), and Manning
		and Financial (MF)
Appendix J	-	Procurement and Contracting (PC)
Appendix J Appendix K	-	Procurement and Contracting (PC) Data Management (DM)
	- -	
Appendix K	- - -	Data Management (DM)
Appendix K Appendix L*	- - - -	Data Management (DM) Facilities (FA)
Appendix K Appendix L* Appendix M*		Data Management (DM) Facilities (FA) Safety (SA)
Appendix K Appendix L* Appendix M* Appendix N*		Data Management (DM) Facilities (FA) Safety (SA) Site Activation for Launch (AL)
Appendix K Appendix L* Appendix M* Appendix N* Appendix O*		Data Management (DM) Facilities (FA) Safety (SA) Site Activation for Launch (AL) Science (SI)

\* Appendixes L through Q prepared under Contract NAS 7-584

(	T	T
,	1 of 3	
DATA ITEM	DATA ITEM	DESCRIPTION
NUMBER	RELIABILITY ASSURANCE	
·		
	DIRECTIVES	
·	DIRECTIVES	
RA-		Formal means of communicating to cognizant groups
001	*Reliability Action Directives	uals regarding required actions to be performed in cc with reliability actions or tasks.
		with remanify actions or tasks.
	LISTS	
RA-	List, Critical and Limited Life	Provides identification and description of critical and life items as proposed for use, serves as a design gu
002	Item	selection, test, etc.
RA-		Provides a common reference for established failure
RA- 003	List, Failure Rate Data	both component or piece part level, used to dissemina
		rate data to design and analysis groups.
RA- 004	List, Flight Critical Processes and Practices	Provides identification of flight critical processes and as a basis for reliability assurance, audits, and appri
RA-	The Amplitudian Data	Provides application data for parts contained on appro
005	List, Parts Application Data	lists, serves as a design guide in selection of items.
	LOGS	
RA- 006	Log, Problem/Failure Summary	
		· · · · · · · · · · · · · · · · · · ·
	MINUTES	
RA- 007	*Minutes, Failure Analysis Review Board (FARB)	Reviews, monitors, and determines the status of the s causes of discrepancies and the required corrective a

\* KEY INFORMAL DATA

•

ì

į.

.

# DATA ITEM LIST/USER MATRIX

.

											_					
				<b></b>			PPLI	CABII AT		TO TRAC			IAL I EL	JSER	S	
	SE	PQ	MG	СМ	QA	TE	RA	LS	МА	sc	PC	MF	мр	DM	FA	SA
or individ- nnection	U	U	U	_	U	U	R	U	A	_	U		-	-		U
limited																
ide for	R	-	U	+	U	U	A	-	U	-	-	-	-	-	-	U
rates on te failure	R	-	U	-	U	U	Α	-	-	-	1	-	1	-	-	-
practices uisals.	U	U	U	I	U	U	A	-	U	-	U	1	R	-	-	U
ved parts	A	U	U	U	U	U	R	U	-	-	-	-		-	-	-
	U	U	U	-	U	U	A	U	U	-	-	-	-	-	-	-
pecific tion.	U	U	U	-	U	U	A	U	U	-	-	-	U	-	-	U

U - USE R - REVIEW AUTHORITY

A - APPROVAL AUTHORITY

PM - PROJECT MANAGER APPROVAL

2-2-1

PAGE NO. 1 of 3

-																	PAG	E NO.			
									APPLICABILITY TO PROJECT BOARDS												
AL	SI	RP	Ам	PRINCIPAL SUB- CONTRACTORS	MAJOR SUB- CONTRACTORS	KEY SUBCON AND VENDORS	OTHER VENDORS	KEY SUPPLIERS	KEY SUBSUPPLIERS	CONFIGURATION CONTROL	CONFIGURATION MANAGEMENT	DATA REVIEW	DESIGN REVIEW	FAILURE REVIEW	INTEGRATED SAFETY	INTEGRATED TEST	MAKE OR BUY	MATERIAL REVIEW	SOURCE EVALUATION	SOURCE SELECTION	
U	_	-	-	NA	NA	NA	NA	NA	NA	-	-	-	U	U	1	U	-	-	-	-	
															-						
																	) 				
U	U	-	U	s	S	s	(S)	C/S	) (S)	-	-	-	-	-		U	-	-	-	_	
-	U	-	U	(C/S)	(C/S)	¢∕s	(S)	C/S)	(S)	-	-	-	-	U	-	U	-	-	-	-	
U		-	-	s	s	(S)	NA	(C/S)	(S)	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	(C/S)	C/S)	(C/S)	(S)	Ç⁄S)	(C/S)	U	U	-	-	U	-	U	-	U	-	-	
-	U	-	_	NA	NA	NA	NA	NA	NA	-	-	-	U	U	-	U	-	-	-	-	
-	U	-	-	NA	NA	NA	NA.	NA	NA	-	-	-	-	Α	-	U	-	U	-	-	

DATA ITEM	2 of 3 DATA ITEM	DESCRIPTION
NUMBER	RELIABILITY ASSURANCE	
	PLANS	
<b>RA-</b> 008	Plan, Reliability Assessment	
RA- 009	Plan, Reliability Program	Provides a totally integrated definition of the reliab requirements and controls to be implemented on bot and day-by-day basis.
R <b>A-</b> 010	Plan, Parts Control Program	
	PROCEDURES	
RA- 011	Procedure, Reliability Operating	
	RECORDS	
RA- 012	Card, Parts Data	
RA- 013	Chart, Reliability Assurance Control	
	REPORTS	
RA- 015	Report, Failure Review	

\* KEY INFORMAL DATA

· · ·

# DATA ITEM LIST/USER MATRIX

	APPLICABILITY TO FUNCTIONAL USERS AT CONTRACTOR LEVEL															
	SE	PQ	MG	см	QA	TE	RA	LS	ма	sc	PC	MF	мр	DM	FA	SA
	R	U	_	-	U	U	R	U	РМ	-	U	-	U	-	-	-
ility program th milestone	R	U	U	-	U	U	R	U	A	U	U	-	U	-	-	-
	R	-	U	-	R	-	R	-	РМ	-	U	-	-	_	-	-
	U	U	U	-	U	υ	A	U	R	-	-	-	U	-	-	U
	A	-	-	-	U	-	R	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	A	-	U	_	-	-	-	-	-	-
	U	U	U	U	U	U	R	U	РМ	-	-	-	U	-	-	U
	U	- USE	.I R -	REVIEW		RITY	<u>і</u> А-	APPROV	AL AUTH	IORITY	<u>т</u> Р	M - PRO	JECT M	ANAGER	APPROV	м'

2-4-1

PAGE NO. 2 Of 3

				· ·																
	APPLICABILITY AT SUBCONTRA TOR/VENDOR/SUPPLIER LEVEL								RAC-		AP	PLIC	ABIL	ITY	TO F	ROJE	ECT E	BOAR	DS	
AL	SI	RP	Ам	PRINCIPAL SUB- CONTRACTORS	CONTRACTORS MAJOR SUB- CONTRACTORS CONTRACTORS KEY SUBCON AND VENDORS OTHER VENDORS KEY SUPPLIERS KEY SUBSUPPLIERS					CONFIGURATION CONTROL	CONFIGURATION MANAGEMENT	DATA REVIEW	DESIGN REVIEW	FAILURE REVIEW	INTEGRATED SAFETY	INTEGRATED TEST	MAKE OR BUY	MATERIAL REVIEW	SOURCE EVALUATION	SOURCE SELECTION
U	-	-	-	(C/S)	(C/S	(C)	NA	NA	NA	-	-		-	-	-	U	-	-	1	-
U	1	1	-	s	S	(S)	NA	<b>(C</b> /S)	NA	1	-	-	U	ł	1	U	-	-	-	-
U	-	-	-	c⁄s	c⁄s	<b>(C/S)</b>	NA	(C/S)	(C/S)	-	-	· _		-	-	-	-	-		-
U	-	-	-	(C/S)	(C/S	(C/S	NA	(C/S)	NA	-	-	-	U	U	-	U	-	-	-	-
-	-	-	-	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-
-	U	-	-	NA	NA	NA	NA	NA	NA	-	-	-	U	R	-	U	-	-	-	-
																	-			

• •

DATA ITEM NUMBER	3 of 3 DATA ITEM <u>RELIABILITY ASSURANCE</u>	DESCRIPTION
	REPORTS (Cont'd)	
RA- 016	Report, Summary, Audit and A <b>p</b> praisal	Provides a summary of audit and appraisal activities processes and practices) which could have a detrime reliability aspects of the program.
RA- 017	Report, Design Review	
RA- 018	Report, Reliability Assessment	Provides periodic growth assessment (evaluation) of as a comparison against reliability design goals.
RA- 019	Report, Reliability Program Status	Provides preestablished control points in the program review, hard design review), a complete summary a status.
	STANDARDS_	
RA- 014	Standard, Rework	Provides description of and allowable limits to rewo components, equipment.

\* KEY INFORMAL DATA

.

2-5

# . DATA ITEM LIST/USER MATRIX

	APPLICABILITY TO FUNCTIONAL USERS AT CONTRACTOR LEVEL															
	SE	PQ	MG	см	QA	TE	RA	LS	ма	sc	PC	MF	мр	DM	FA	SA
<u> </u>																
(i.e., critical ntal effect on the	U	-	U	-	U	U	R	-	РМ	_	U	-	-	-	-	-
	U	U	U	-	U	U	A	-	U	-	U	-	U	-	-	-
systems reliability	U	_	U	-	U	U	A		U	-	υ	-	-	_	-	-
n (e.g., precontract data ssessment of reliability	U - U - U U R - PM - U -													-	-	-
k of parts,	R	-	U	υ	R	υ	R	R	РМ	-	-	_	_	-	_	U
· · ·															+	
			   						<b> </b>							
														<u> </u>		<b></b>
	U - USE R - REVIEW AUTHORITY A - APPROVAL AUTHORITY PM - PROJECT MANAGER APPROVAL $2 - 6 - 1$															

2-6-1

PAGE NO. 3 of 3

-

																		2 110.		
	APPLICABILITY AT SUBCONTR TOR/VENDOR/SUPPLIER LEVE										AP	PLIC	ABIL	ITY	TO F	ROJE	ECT E	BOAR	DS	
AL	SI	RP	Ам	PRINCIPAL SUB- CONTRACTORS	CONTRACTORS MAJOR SUB- CONTRACTORS KEY SUBCON AND VENDORS OTHER VENDORS KEY SUPPLIERS KEY						CONFIGURATION MANAGEMENT	DATA REVIEW	DESIGN REVIEW	FAILURE REVIEW	INTEGRATED SAFETY	INTEGRATED TEST	MAKE OR BUY	MATERIAL REVIEW	SOURCE EVALUATION	SOURCE SELECTION
										CONFIGURATION										
-	U	-	1	NA	NA	NA	NA	NA	NA	-	-	-	U	U	_	U	I	1	1	-
-	U	-	U	s	s	(S)	NA	NA	NA	-	-	-	Α	U	-	U	-	-	Ι	-
-	-	-	-	NA	NA	NA	NA	NA	NA	-	-	-	U	U	-	U	-	-	-	-
-	-	-	U	S	s	(S)	NA	NA	NA	-	I	-	-	-	-	U	-	-	-	-
							_													
-	-	1	1	С	с	С	(C)	(C)	(C)	U	U	-	-	U	-	-	1	U	-	-
													1							
- PREF	PARED	BY CONT	RACTOR		S - PREPARED BY SUBCONTRACTOR/VEN					DOR/SU	PPLIER	(	} - OP1	TIONAL	APPLICA	TION	NA	- NOT A	PPLICA	BLE

\_ . . \_ . \_ \_ \_

This section contains User Flow Diagrams, which include functional tracks for those activities considered to be the major contributors to reliability. The design of these diagrams shows the progressive nature of most reliability functions when the activity continues over an extended period of time or when the documents continually become more complete and complex. Several items are influenced by the various program milestones (e.g., formal design reviews cease when the design is frozen with the HDR, reliability program status reports are periodic entities, and reliability review and approval of engineering documentation or monitoring of manufacturing activities is sporadic in nature). Key interfaces with the functional groups are also shown.

Individual tracks of the major activities are as follows:

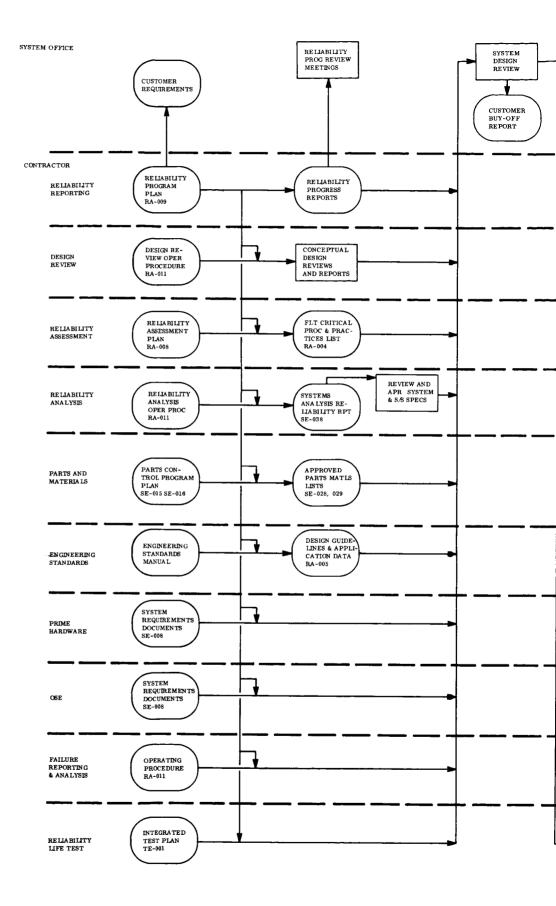
- a. <u>System Office</u> Emphasizes key points of review and control of reliability program.
- b. <u>Reliability Reporting</u> Highlights major reports provided to the customer. These documents accumulate all important reliability data into a few key reports.
- c. <u>Design Review</u> Indicates the period over which contractor design reviews will be held. Beyond the HDR, formal reliability reviews will be ineffective. However, design reviews may be called in case of required critical design changes.
- d. <u>Reliability Assessment</u> Portrays the wide variety of data (reliability analysis reports, performance and failure data, audit and appraisal results, design review results, etc.) which will contribute to the reliability (probability of success) assessment of the system.
- e. <u>Reliability Analysis</u> Illustrates how the initial analysis provides apportioned requirements to the elements of the system and shows how the various data items are used to update the analysis of the inherent reliability of the system. The analysis serves as an input to the reliability assessment until the HDR, when the design is essentially frozen.
- f. <u>Parts and Materials</u> Depicts the growth of activities involved with parts and materials. Quality Assurance is a major contributor to this program due to the extensive test and vendor control requirements. All parts and materials in the final configuration must appear on the Approved Parts and Materials Lists.
- g. <u>Engineering Standards</u> Shows the engineering standards effort which is carried out early in the program, i.e., prior to detailed engineering model design.

3-1

### Reliability User Flow Diagrams

Figure Number	Title
G-1	Reliability Assurance User Flow Diagram - Summary
G-2	Reliability Assurance User Flow Diagram - Contract Award Through Preliminary Design Review
G-3	Reliability Assurance User Flow Diagram - Preliminary Design Review Through Critical Design Review
G-4	Reliability Assurance User Flow Diagram - Critical Design Review Through Joint Flight Acceptance Composite Test

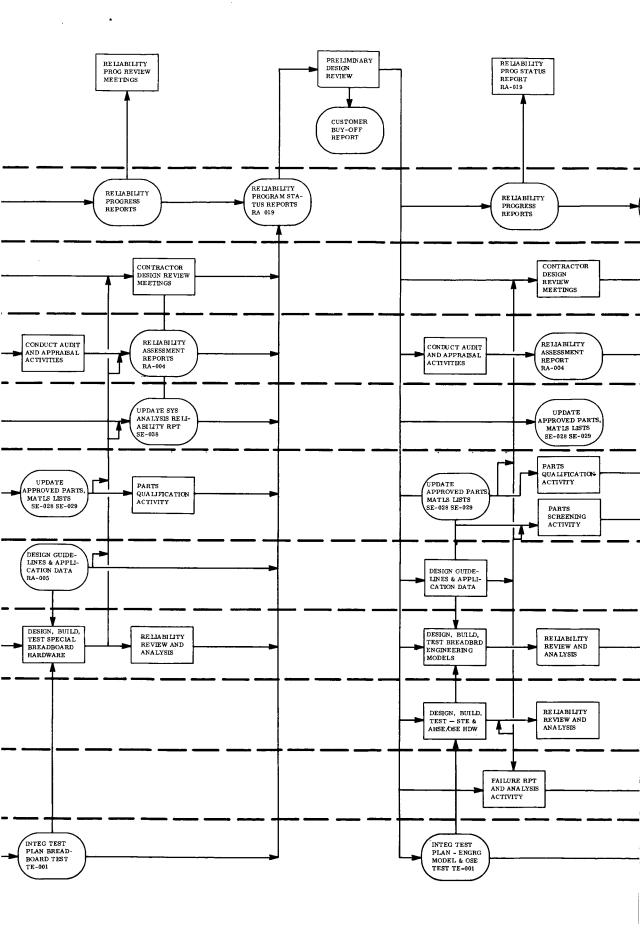
3-3/4

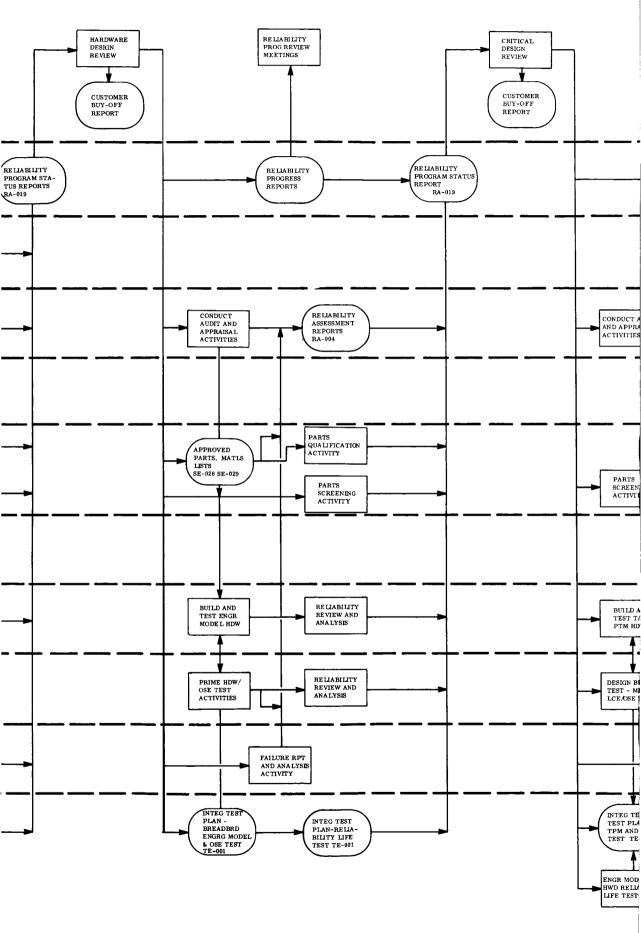


٠

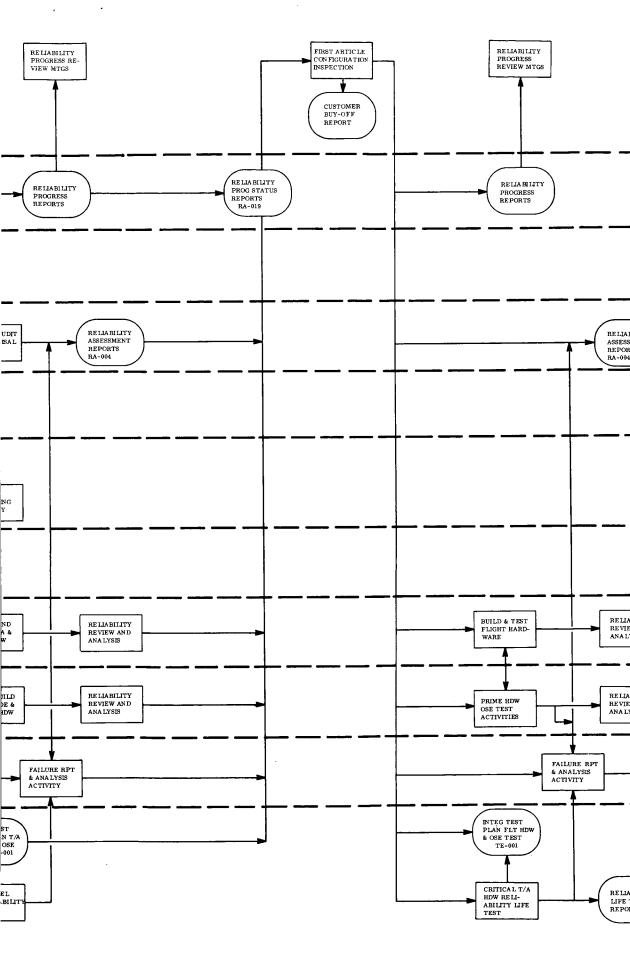
•

• •

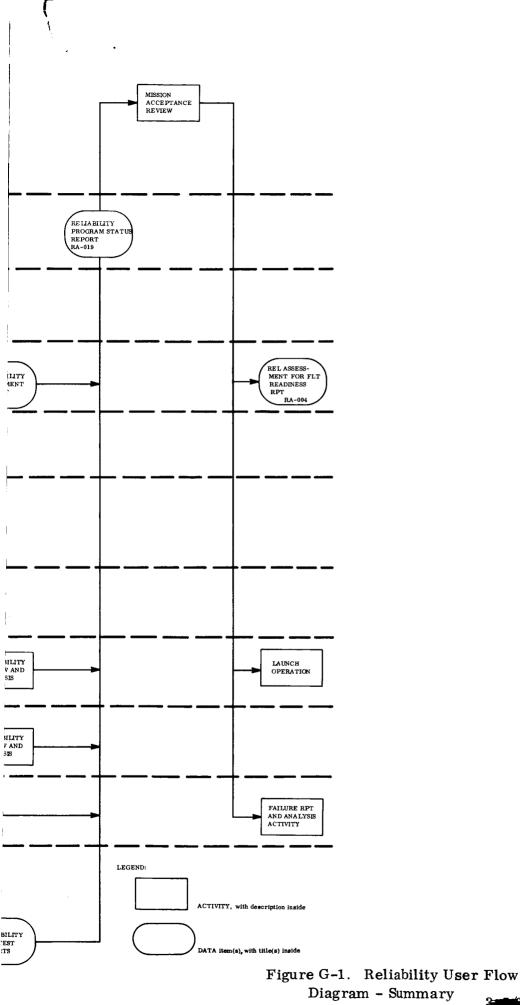




3-6-2



3-6-3



3-1116

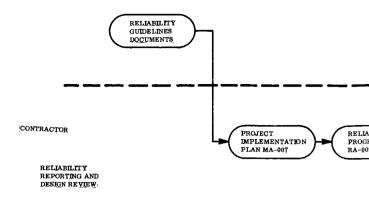
3-6-4

•• · ·

.

.

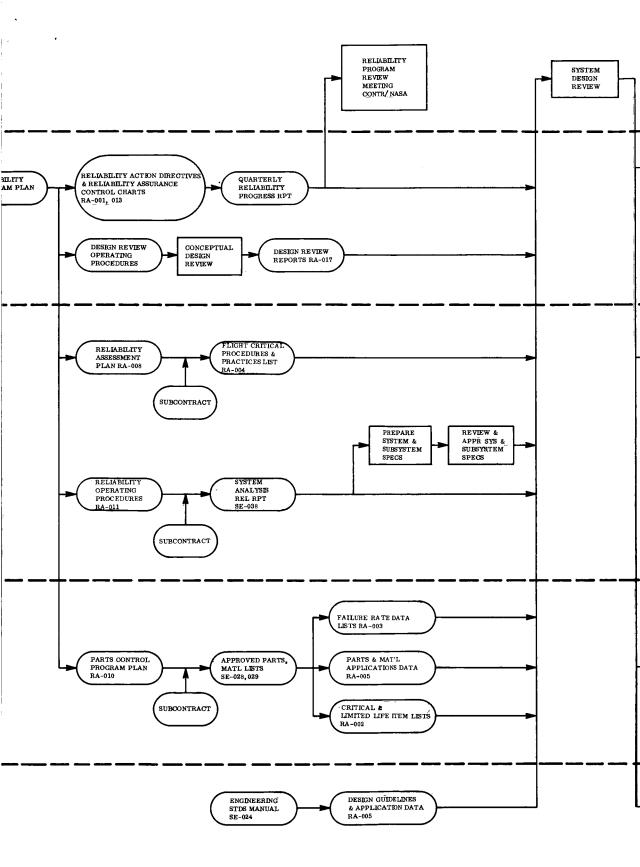
SYSTEM OFFICE

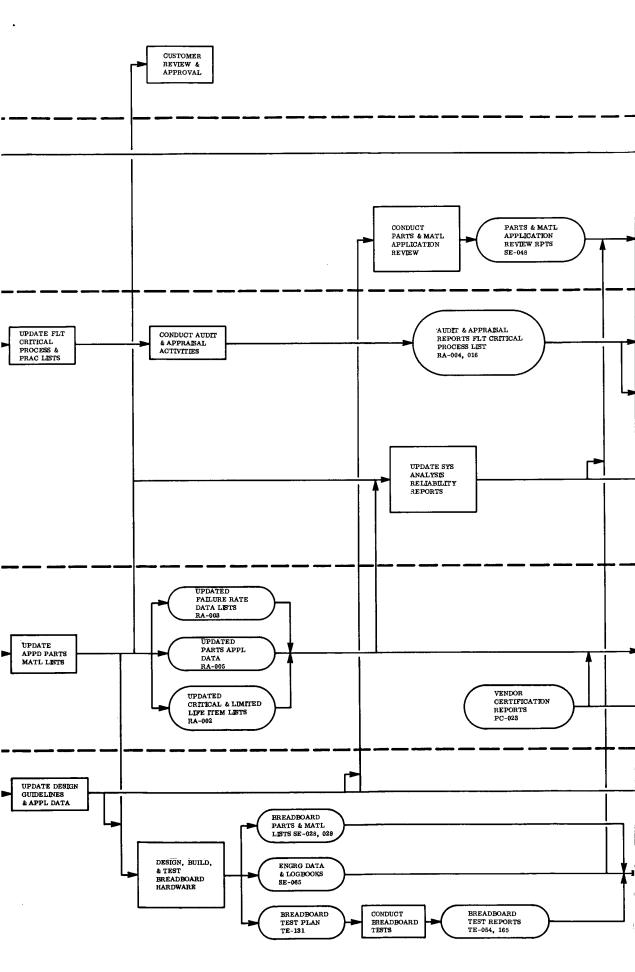


RELIABILITY ASSESSMENT AND ANALYSIS

PARTS & MATERIAL

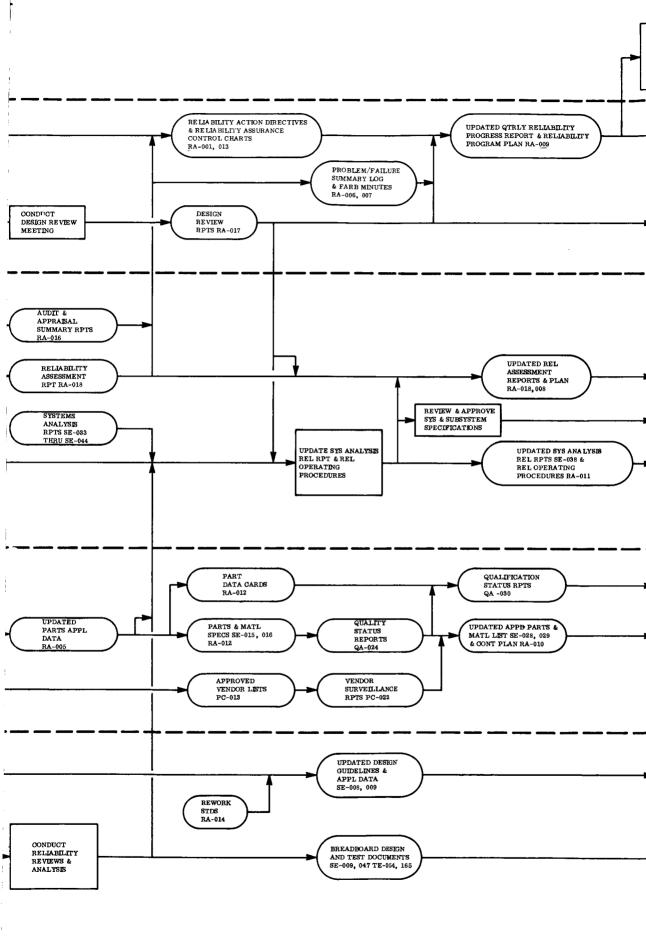
ENGINEERING STANDARDS AND HARDWARE (INCLUDING OSE)



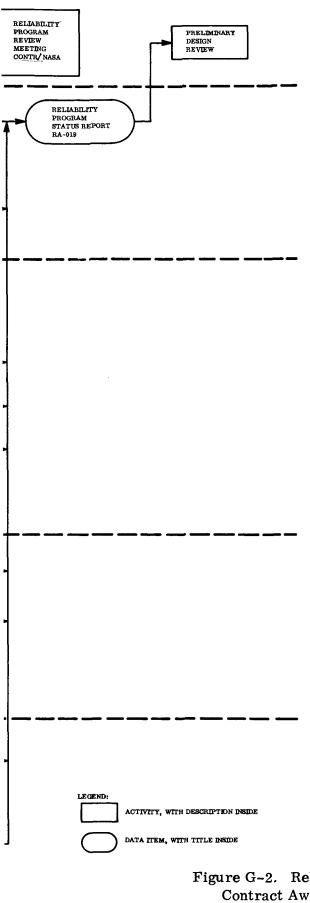


3-8-2

Ì



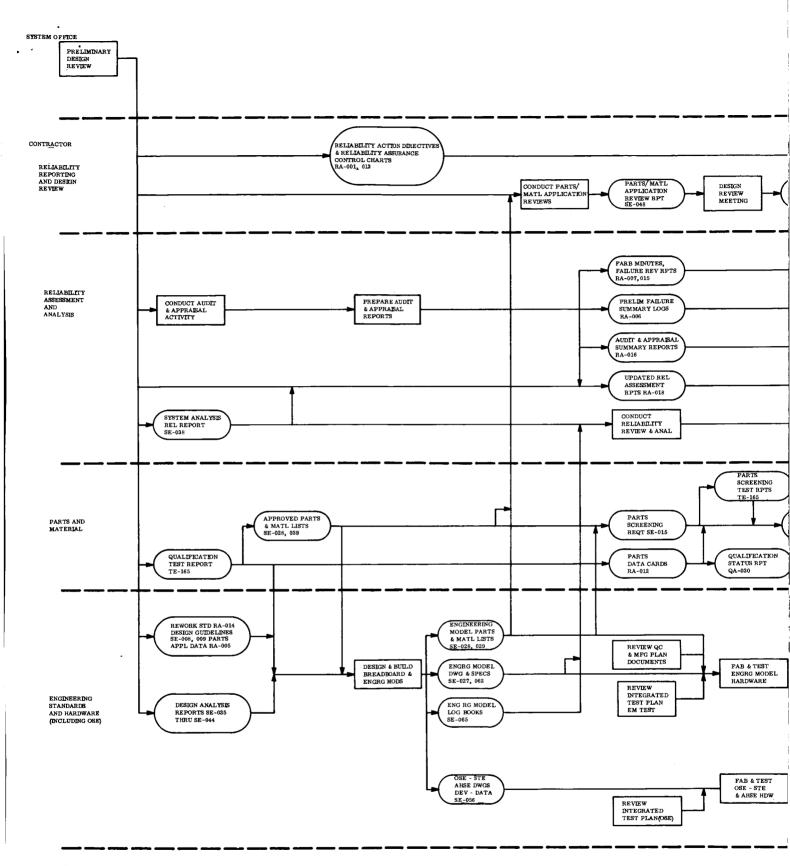
3-8-3



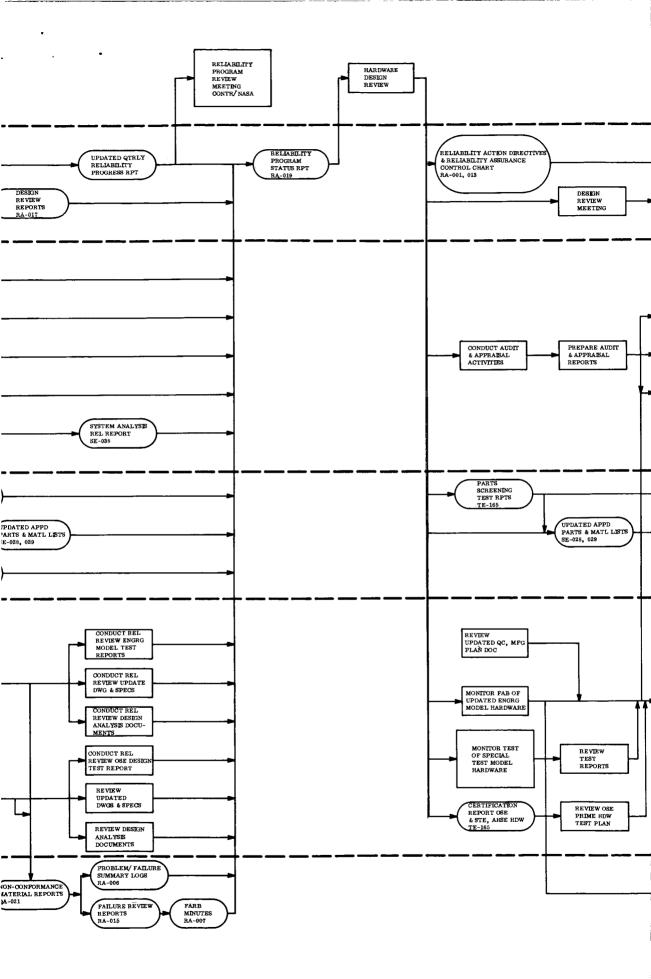
•

.

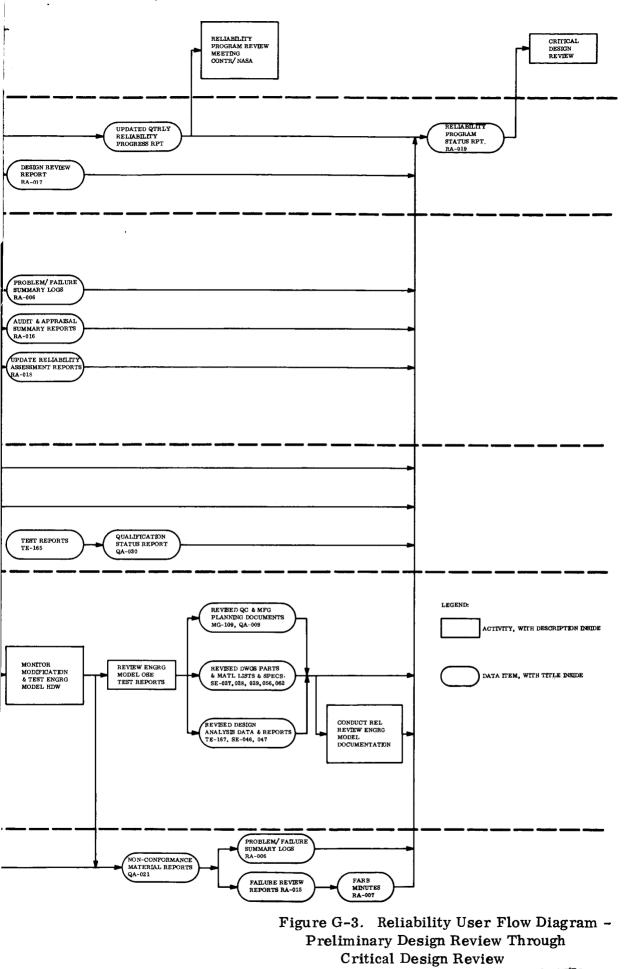
Figure G-2. Reliability User Flow Diagram -Contract Award Through Preliminary Design Review



FAILURE REPORTING & ANALYSIS

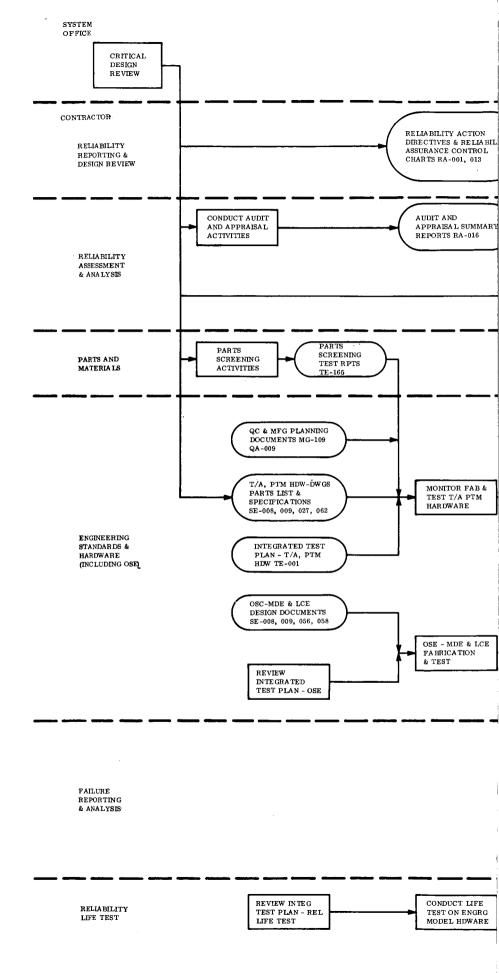


3-10-1



<sup>3-10-2</sup> 

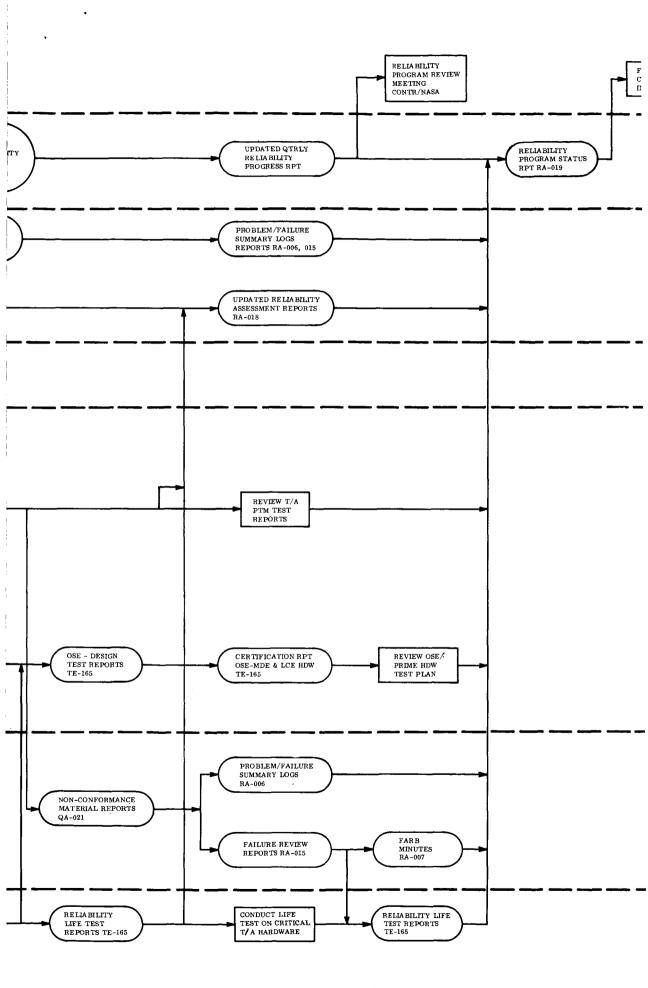
3

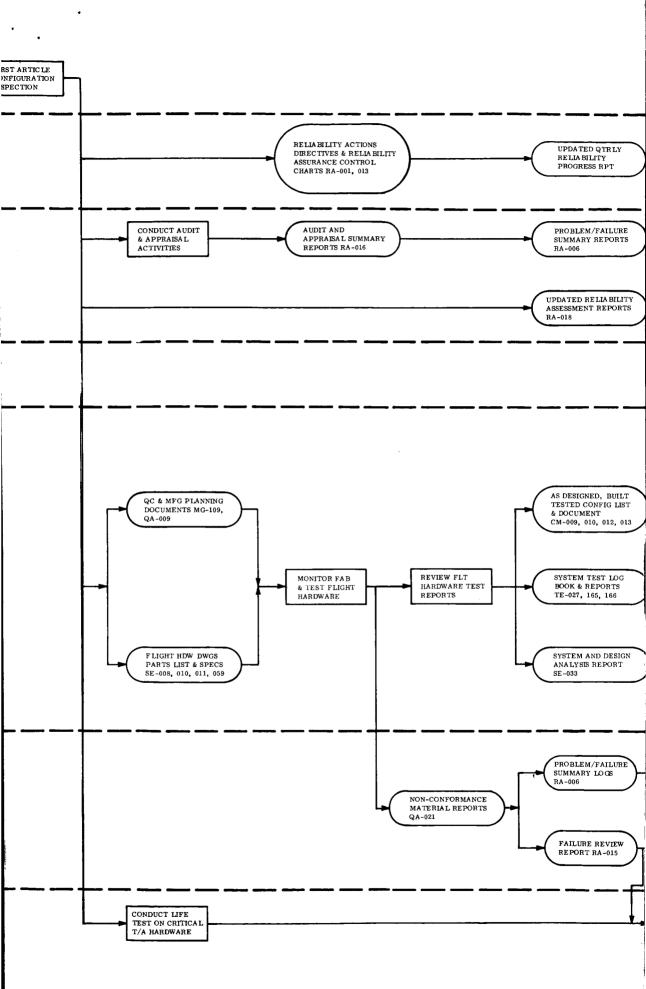


•

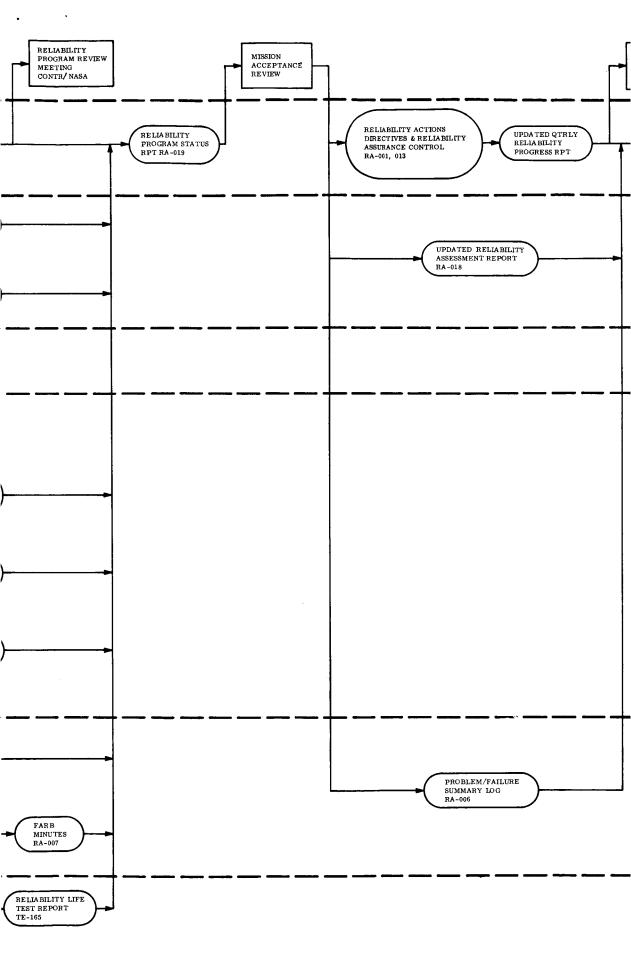
. .

3-11

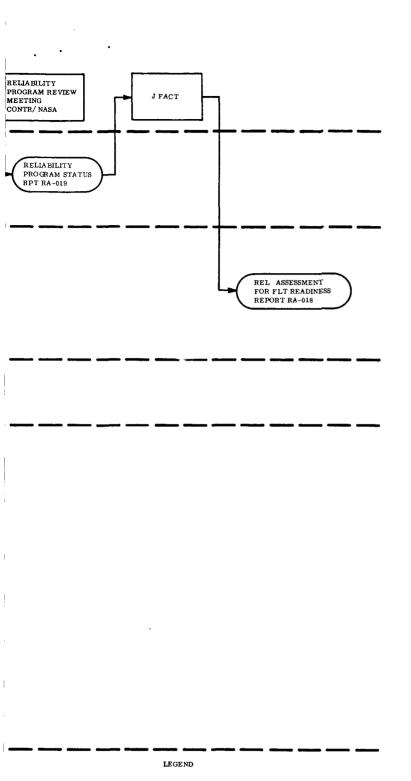


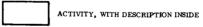


3-12-2



3-12-3







DATA ITEM, WITH TITLE INSIDE

Figure G-4. Reliability User Flow Diagram -Critical Design Review Through Joint Flight Acceptance Composite Test



## Reliability Assurance Data Requirement Descriptions

DRD <u>Number</u>	Title
RA-001	*Reliability Action Directives
RA-002	List, Critical and Limited Life Item
RA-003	List, Failure Rate Data
RA-004	List, Flight Critical Processes and Practices
RA-005	List, Parts Application Data
RA-006	Log, Problem/Failure Summary
RA-007	*Minutes, Failure Analysis Review Board (FARB)
RA-008	Plan, Reliability Assessment
RA-009	Plan, Reliability Program
RA-010	Plan, Parts Control Program
RA-011	Procedure, Reliability Operating
RA-012	Card, Parts Data
RA-013	Chart, Reliability Assurance Control
RA-014	Standard, Rework
RA-015	Report, Failure Review
RA-016	Report, Summary, Audit and Appraisal
RA-017	Report, Design Review
RA-018	Report, Reliability Assessment
RA-019	Report, Reliability Program Status

\* Key Informal Data

•

|

i

i

### GE EXHIBIT DRD RA-001

•		GE EXH	IIBIT	DRI	D RA-00	)1			
VOYAGER DATA REQUIREMENT DESCRIPTION						DRD APPROVED BY		DATE:	DATA CATEGORY:
	LOODE:			oor I	DRD PREPA		1 0 175	CONTRACT	DRD NO.
ORGANIZATION ORIGINATING REQUIREMENT:	CODE: RA	OFFICE RESPONSIBLE FOR		ODE		• Thomas	DATE: 7/28/67	NO.:	RA-001
TITLE OF DOCUMENT:						ORGANIZATION R		TASK OR	DRL ITEM
						FOR DOCUMENT		SUBTASK:	NO.:
						ReliabilityA	ssurance		
*RELIABILITY ACTION DIRECTIVES						ORGANIZATION F		DRL NO.	LEVEL NO
						ORGANIZATION F		DDL NO.;	FILE NO.
TYPE OF DOCUMENT:	FOR DOCUMENT	DISTRIBUTION							
U		EACTION DREFERENCE		FORMA					
USE OF DOCUMENT: Th	is DRD v	will be used as a	forma	al m	ethod	ORGANIZATION F FOR DOCUMEN		NO OF	COPIES
contractors or s	g to cogi ubcontra	nizant groups or actors organizatio	memb	ers	of the	FOR DOCUMEN	I STOWAGE	15	
actions to be per	formed	in connection with	n ior h moli	req	uirea				
actions to be performed in connection with reliability problems or tasks, to ensure the success of the Relia- bility Program. Directives will also provide a record and a basis for follow-up.						ESTIMATED MANHOURS FOR SINGLE PREPARATION		INFORMATION SUTOFF DATE OR MILESTONE	
						ESTIMATED C	OST (\$)	DATE DATA CUE	
INTERRELATIONSHIP WITH RA-009, Plan, F	Reliabilit	ty Program				FOR SINGLE PREPARATION		TO USER	
RA-013, Chart,	Reliabil	ity Assurance Co	ntrol			FREQUENCY OF ISSUE		PUBLICATION DATE	
RA-016, Report,	Audit 8	& Appraisal Sumn	nary			D ANNUALLY			
RA-017, Report,	Design	Review	·			G SEMI-ANNUALLY		SDR	
						BI-MONTHLY		UPDATE (FREQUENCY OR MILESTONE)	
CLASSIFICATION:		GROUP I				SEMI-MONTH	LY	Not app	
CONFIDENTIAL		GROUP 2			ANDLING	BI-WEEKLY			
SECRET RESTRICTED D CONFIDENTIAL RESTRICTED		GROUP 4	D NASA DISCREET D JPL DISCREET SE PROJECT DISCREET			DAILY		ESTIMATED EXPIRATION DATE	
QUNCLASSIFIED	NOILD DAIA	D PUBLIC DOMAIN			DISCREET	One time			
FORM OF DATA:	KIND	O OF DATA:				REFERENCE DOC		L	
IN PRINTED DOCUM				NSTR	JCTION				
				ETTE					
DIAGRAM		D BULLETIN		IST					
		CATALOG		_0G					
E FILM (STATIC OR I	NOTION)	CONTRACT		ANUA	L				
ILLUSTRATION		DIRECTIVE		EMOR	ANDUM				
D MODEL		DISCLOSURE		MINUTI	ES		- <u></u>		
RECORDING (TAPE OR DISC)				PLAN		APPLICABLE STA	NDARDS		
COMPUTER CARD		ORDER		ROCE					
		REQUEST FOR ENGINE							
MICROFILM (W/OR     OTHER	W/Q LARD)			CHED					
		PROPOSAL	-		ICATION				
				TAND					
				олсні					
REVIEWS AND/OR APPROV (LIST IN ORDER OF SUBMI									
	C	DRAFT	DAT	TE		PREPUBLICATION	PROOF	D	ATE
SUBMIT FOR REVIEW TO: -									
-		BY						B Y	
							<u>_</u>	_ <u></u>	
-						······································			<u>,,</u>
-									
SUBMIT FOR -									
APPROVAL TO:		BY						BY	
] ]	Project 1	Manager			_				
. –							· · · · · · · · · · · · · · · · · · ·		

ļ

L

)

. •

PAGE | OF 2

JPL 2568 OCT 65

r

### GE EXHIBIT DRD RA-001

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor and principal subcontractors as a method of communicating reliability actions to be taken throughout the period of the contract.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

Although this document will not have a fixed format, it will contain the following minimum requirements:

- a. Identity of the area or item for action
- b. Mechanism (source) generating requirement for action (i.e., design reviews)
- c. Responsibility for accomplishing action
- d. Schedule for completion
- e. Step-by-step direction
- f. Control number
- g. Authorizing signatures

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

RA-001

### GE EXHIBIT DRD RA-002

VOYAG	DRD APPROVED BY		DATE	DA TA CATEGORY				
ORGANIZATION ORIGINATING	CODE:	OFFICE RESPONSIBLE FO	R DRD: CODE	DRD PREPA	ARED BY:	DATE	CONTRACT	DRD NO.
REQUIREMENT:	RA				Thomas	7/28/67	NO.:	RA-002
TITLE OF DOCUMENT:	1		<b>I</b>		ORGANIZATION RE		TASK OR	DRL ITEM
					FOR DOCUMENT P		SUBTASK:	NO.:
LIST, CRITICAL AND LIMITED LIFE ITEMS					ReliabilityAs			4
				5	ORGANIZATION RI FOR DOCUMENT RE		DRL NO.	LEVEL NO.
	ORGANIZATION REFOR DOCUMENT D		DDL NO.:	FILE NO				
TYPE OF DOCUMENT:	TYPE OF DOCUMENT: CONTROL CACTION CREFERENCE DINFORMATION							
USE OF DOCUMENT: TO pr	ovide	identification of	the criti	cal and	ORGANIZATION R		NO OF	COPIES
limited life items	ised o	r proposed for u	se on the	Pro-	FOR DOCUMENT	STOWAGE	-10	0
gram, together wil where used inform	n data ation	t on criticality, I	limitation	ns and			N. CODMA	TION CUTCEE
line for design, pa	rts or	components sele	ection. to	st	ESTIMATED M FOR SINGLE PRE			MILESTONE
durations, redunda	ncy a	pplication, etc.				_		
INTERRELATIONSHIP WITH OTH	ER DATA	REQUIREMENTS:	—• . <u> </u>		ESTIMATED CO			ATA DUE
QA-020, *Report,								USER
RA-005, List, Par	ts Ap	plication Data			FREQUENCY OF ISSUE		PUBLICATION DATE	
RA-009, Plan, Rel					D ANNUALLY		SDR	
SE-029, List, App	roved	Parts			C SEMI-ANNUAL	.LY	<u> </u>	· · · · · · · · · · · · · · · · · · ·
					BI-MONTHLY MONTHLY			FREQUENCY ESTONE)
CLASSIFICATION:				HANDLING	BI-WEEKLY	.Y	As req	ui red
CONFIDENTIAL		GROUP 3	D NASA DI	SCREET	D WEEKLY			MATED
CONFIDENTIAL RESTRICT	ED DATA	PROPRIE TARY     PUBLIC DOMAIN		DISCREET	One time		EXPIRAL	ION DATE
FORM OF DATA:	KIND	OF DATA;			REFERENCE DOCU	· · · · · · · · · · · · · · · · · · ·	L	
B PRINTED DOCUMENT		D ABSTRACT		RUCTION				
CHART		BROCHURE	O LETT		NPC 250-	-1		
DIAGRAM		D BULLETIN	🙀 LIST			-		
D DRAWING		CATALOG	🗆 LOG					
FILM (STATIC OR MOT	ON)	CONTRACT	D MAN					
D ILLUSTRATION				DRANDUM				
MODEL     RECORDING (TAPE OF	DISC)	DISCLOSURE     ENGINEERING CHANG			APPLICABLE STAT	DARDS		<u></u>
COMPUTER CARD		ORDER						
COMPUTER TAPE		REQUEST FOR ENGINE	EER- 🛛 REGU	LATION				
MICROFILM (W/OR W/	CARD)	ING CHANGE PROPO	SAL D REPO	RT				
D OTHER								
		PROPOSAL		FICATION				
<u>_</u>		I HANDBOOK	STAN					
REVIEWS AND/OR APPROVALS (LIST IN ORDER OF SUBMITTA								
	D	RAFT	DATE		PREPUBLICATION	PROOF	C	DATE
SUBMIT FOR REVIEW TO:							<del></del>	
<del>-</del>		BY			· · · · · · · · · · · · · · · · · · ·	<u> </u>	вү —	
							<u></u>	
			<del></del>		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
SUBMIT FOR			<del>-</del>				вү	
APPROVAL TO:	1900	Reliability Assu	1rance	<u>-</u>			<u> </u>	
	lager,	Tienability ASS		<u> </u>				

ł

•

**،** ۲

Т

JPL 2568 OCT 65

-

GE EXHIBIT DRD RA-002	•
VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET	
SPECIAL INSTRUCTIONS This DRD is applicable to the prime contractor and principal subcontractors responsible for the design of subsystem or components unique to this program.	DRD NO.: RA-002
SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)	

#### OUTLINE OF CONTENTS:

Critical and limited life item lists will identify all items (components or parts) used on the Program which are limited to a specified number of operations, or time period, and which have critical parameters. The list as a minimum shall identify the item by name; common designation; part, drawing, or model number; manufacturer; where used; and description of the limitation (i.e., maximum operating time (hours), number of cycles or other limitations).

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

Ļ

VOY	AGER DATA	REQUIREMENT DESCRIPTI		DRD APPROVED B	Y	DATE	DA TA CATEGORY:	
ORGANIZATION ORIGINATING	CODE	OFFICE RESPONSIBLE FO	OR DRD: C	ODE DRD PREP	ARED BY:	DATE	CONTRACT	DRD NO.
REQUIREMENT	RA			K. R.	Thomas	7/28/67	NO.:	RA-003
TITLE OF DOCUMENT:					ORGANIZATION R		TASK OR	DRL ITEM
					FOR DOCUMENT F		SUBTASK:	NO.:
					ReliabilityA			ļ
LIST, FAILU	RE RAT	Ε DATA			ORGANIZATION R		DRL NO.	LEVEL NO.:
					ORGANIZATION R	ESPONSIBLE	DDL NO.:	FILE NO.
					FOR DOCUMENT D	ISTRIBUTION:		ļ
				FORMATION				<u> </u>
		e a common refe			ORGANIZATION R FOR DOCUMENT		NO. OF	COPIES
tablished failure r The list is used as							4	0
failure rate data t					ESTIMATED M	ANHOURS	INFORMAT	ION CUTOFF
ence in the selection					FOR SINGLE PR			MILESTONE
for specific applic								
predictions.		REQUIREMENTS			ESTIMATED CO			ATA DUE USER:
								JJCN.
QA-013, Procedu	-	-			FREQUENCY	OF ISSUE	PUBLICAT	TION DATE:
RA-005, List, Pa					D ANNUALLY		FUBLICA	IVIT DATE.
RA-009, Plan, Reliability Program				SEMI-ANNUAL	LLY	SD	<u>R</u>	
SE-015, Specifica	11011, P8	irt ( )			BI-MONTHLY			FREQUENCY ESTONE):
CLASSIFICATION:					B MONTHLY	LY	Revise	as re-
CONFIDENTIAL		GROUP 2 GROUP 3		ECIAL HANDLING	D BI-WEEKLY		quire	MATED
SECRET RESTRICTED D		GROUP 4	D J PL	DISCREET	DAILY	S SPECIFIED		ION DATE:
S UNCLASSIFIED					One time	<b>;</b>		
FORM OF DATA:	KINC	OF DATA:			REFERENCE DOCI	JMENTS:		
X PRINTED DOCUME	NT	D ABSTRACT		INSTRUCTION				
CHART		BROCHURE	D	LETTER				
DIAGRAM		BULLETIN		LIST				
DRAWING     FILM (STATIC OR N		CATALOG		MANUAL				
				MEMORANDUM				
D MODEL				MINUTES				
C RECORDING (TAPE	OR DISC)	D ENGINEERING CHAN	GE 🗆	PLAN	APPLICABLE STA	NDARDS		
COMPUTER CARD		ORDER		PROCEDURE				
COMPUTER TAPE		REQUEST FOR ENGI						
	W/U CARD)		_	SCHEDULE	MIL-S	TD-217		
		PROPOSAL		SPECIFICATION				
	<u></u>	HANDBOOK		STANDARD				
	<u> </u>	D INDEX		VOUCHER				
REVIEWS AND/OR APPROV	ALS REQUI	REDI			· · · · · · · · · · · · · · · · · · ·			
(LIST IN ORDER OF SUBMI	TTAL)		<u>.</u>				_	
	C	RAFT	DA	NTE .	PREPUBLICATION	PROOF	D	DATE
SUBMIT FOR REVIEW TO: -		<u></u>						
	<u></u>	BY					8 Y	
		<u></u>						
		·····						
				<u> </u>	·····			
SUBMIT FOR -		BY					вү ——	
APPROVAL TO:				<u> </u>			<u> </u>	
	manage	r, Reliability As	ouran					<u> </u>

JPL 2568 OCT 65

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

This DRD applies to the prime contractor and to principal subcontractors. The document is to be applicable to designs throughout the system. It is to be a growth document, maturing as additional failure rate data is available.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Documents will initially contain failure rate data covering part types on the approved parts list. As the design stages progress, failure rates will be established at the component level and listed by that designation. The list will contain as a minimum the following:

- a. Description of part or component
- b. Common designation (part, or drawing number)
- c. Specification
- d. Characteristics
- e. Failure rate (percent per 1000 hours)
- f. Data source

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

.

.

	VOYAGER DATA REQUIREMENT DESCRIPTION						DATE	DATA CATEGORY:
V01	AGEN DAMA N	LUGINEMENT DESURPTION						
ORGANIZATION ORIGINATING	CODE	OFFICE RESPONSIBLE FOR D	RD: CODE:	DRD PREPA	ARED BY:	DATE:	CONTRACT	DRD NO.
REQUIREMENT	RA			К. R. 1	Thomas	7/28/67	NO	RA-004
TITLE OF DOCUMENT:					ORGANIZATION RE	SPONSIBLE	TASK OR	DRL ITEM
					FOR DOCUMENT P		SUBTASK:	NO.:
					Reliability Ag	surance		
LIST, FLIGHT C	RITICAL	PROCESSES ANI	) PRAC	TICES	ORGANIZATION RE		DRL NO.:	LEVEL NO.
					FOR DOCUMENT RE	PRODUCTION.		
							DDL NO.:	FILE NO.
					ORGANIZATION RI		DUL NO	FILE NO.
TYPE OF DOCUMENT:		ACTION DREFERENCE		IATION				
USE OF DOCUMENT: TO	provide	identification of fl	light cr	itical	ORGANIZATION R		NO. OF	COPIES
processes and pr	actices a	a basis for relia	ability :	assur-	FOR DOCUMENT	STOWAGE:	1	<b>9</b>
ance audits and a	ppraisal	s throughout the P	rogram	. The			···· -	
list identifies tho	would	ESTIMATED MA FOR SINGLE PRE			ION CUTOFF			
result in sources	of unrel	iability.				-	-	
		·			ESTIMATED CO	)ST (\$)	DATE DA	TA DUE
INTERRELATIONSHIP WITH					SINGLE PRE			SER
MG-009, Plan, M		0					L	
	v	surance Program			FREQUENCY C	OF ISSUE:	PUBLICAT	ION DATE:
RA-009, Plan, R	-	•			ANNUALLY	LY	SI	DR
RA-011, Procedu			_		D QUARTERLY			REQUENCY
	Reliabilit	ty Assurance Cont	rol		D MONTHLY	J		STONE)
CLASSIFICATION:				HANDLING	BI-WEEKLY	.1	As requ	ired
CONFIDENTIAL	ATA	GROUP 3	D NASA DI	SCREET	D WEEKLY			ATED
CONFIDENTIAL RESTR			B PROJECT	DISCREET	S OTHERWISE,A		EXPIRATI	ON DATE.
DE UNCLASSIFIED		D PUBLIC DOMAIN			One time			
FORM OF DATA:		OF DATA:			REFERENCE DOCL	MENIS.		
DE PRINTED DOCUMI	INT	BROCHURE						
			DELIST	LN				
			LOG					
FILM (STATIC OR	AOTION)			JAL	{			
ILLUSTRATION		D DIRECTIVE		RANDUM				
D MODEL		DISCLOSURE						
RECORDING (TAPE	OR DISC)	ENGINEERING CHANGE     ORDER			APPLICABLE STAT	NUARUS.		
COMPUTER CARD		REQUEST FOR ENGINEER						
MICROFILM (W/OF	W/O CARD)	ING CHANGE PROPOSA						
			🗇 SCHE	DULE				
		PROPOSAL	D SPEC	FICATION				
		HANDBOOK	D STAN					
	<u></u>	DINDEX		HER				
REVIEWS AND/OR APPRON	ALS REQUIR	ED:						·
(LIST IN ORDER OF SUBM		DAET	0475			00005	~	AT E
1	D	RAFT	DATE		PREPUBLICATION	PROOF	U	ATE
SUBMIT FOR REVIEW TO: -			<u> </u>				<u></u>	
-		BY				- <u></u> -	ВҮ	
-								<u> </u>
			•••	<u> </u>				
SUBMIT FOR -			······				вү —	
APPROVAL TO:					·		·	<u> </u>
	uanager,	Reliability Assur	rance					

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

The flight critical processes and practices list is developed as a result of a detailed review of all processes and practices to be implemented on the Program. The list is dynamic — subject to revision as new conditions develop.

This DRD is applicable to the prime contractor, and in preparation, would be coordinated with major subcontractors.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

### OUTLINE OF CONTENTS:

The list will include those processes and practices which contribute to the reliability of the system and which by audit and appraisal would provide a measure of their accomplishment in terms of reliability. Typical examples of items to be listed include:

- a. Vendor rating system
- b. Problem/failure reporting, analysis system
- c. Traceability procedures
- d. Test monitoring plans

The list will cross-reference published documents used to specify and control the processes and procedures.

The list is a working decover at within reliability assurance. Therefore, specific format is not required.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

vo	YAGER DATA F	REQUIREMENT DESCRIPTION			DRD APPROVED BY	() 	DATE	DATA CATEGORY:
L								
ORGANIZATION ORIGINATING	CODE:	OFFICE RESPONSIBLE FOR	DRD: CODE:	DRD PREPA	ARED BY:	DATE	CONTRACT NO.:	DRD NO.
REQUIREMENT	RA			K.R. TI	homas	7/28/67		RA-005
TITLE OF DOCUMENT:				•	ORGANIZATION RE		TASK OR SUBTASK	DRL ITEM
							_	NO.,
					Reliability As			LEVEL NO.
LISTS, PA	ARTS AP	PLICATION DATA			ORGANIZATION RE		DRL NO.:	LEVEL NO.
					ORGANIZATION RE		DDL NO.;	FILE NO.
TYPE OF DOCUMENT:					FOR DOCUMENT DI	STRIBUTION:		
		DACTION DREFERENCE						
1	-	a common source			ORGANIZATION RI FOR DOCUMENT		NO. OF	COPIES
	-	contained on the A		ł		35		
		ign guide in selec			ESTIMATED MA FOR SINGLE PRE		INFORMAT	ION CUTOFF
	for equipment design, and as a checklist and control docu						DATE OR I	ILESTONE:
ment in the revie	ment in the review and assessment of these designs.							
INTERRELATIONSHIP WITH	OTHER DATA	REQUIREMENTS	<u> </u>		ESTIMATED CO	ST (\$) PARATION	2	ATA DUE USER:
RA-009, Plan, I								
RA-012, Card, I	Parts Dat	ta			FREQUENCY O	F ISSUE:	PUBLICAT	ION DATE:
RA-017, Report,	Design	Review			ANNUALLY			212 W1116
SE-015, Specific	cation, P	art ( )			G SEMI-ANNUAL	.LY		<u>DR</u>
SE-029, List, A	pproved	Parts			BI-MONTHLY			REQUENCY STONE)
CLASSIFICATION:		GROUP I			D SEMI-MONTHL	.Y	Revise	
CONFIDENTIAL		GROUP 2	D SPECIAL	HANDLING SCREET	D WEEKLY			ATED
SECRET RESTRICTED CONFIDENTIAL REST			D JPL DIS	CREET	DAILY	S SPECIFIED	EXPIRATI	
DEUNCLASSIFIED		D PUBLIC DOMAIN	D NOFORN		One time			
FORM OF DATA:	KIND	OF DATA:			REFERENCE DOCU	MENTS		
S PRINTED DOCUM	IENT	D ABSTRACT	D INST	RUCTION				
CHART		BROCHURE	C LETT	ER	1			
DIAGRAM			BALLIST ⊡LOG					
D FILM (STATIC OR	MOTION)	CATALOG		JAL				
I ILLUSTRATION				RANDUM				
D MODEL		D DISCLOSURE	D MINU	TES			<u> </u>	
C RECORDING (TAP			D PLAN		APPLICABLE STAT	NDARDS		
COMPUTER CARD		ORDER			1			
COMPUTER TAPE		ING CHANGE PROPOSA			1			
			_		1			
		PROPOSAL		FICATION				
	<u> </u>	HANDBOOK	D STAN	DARD				
				HER	}			
REVIEWS AND/OR APPRO	VALS REQUIR	RED:			<u> </u>			
(LIST IN ORDER OF SUBN		DAFT			005000000000000000000000000000000000000	00005	-	AT 5
	D	RAFT	DATE		PREPUBLICATION	PROOF	D	ATE
SUBMIT FOR REVIEW TO:		· <u>····</u> ·······························					<del>-</del>	
		BY					ВҮ	
		<u></u>					<del></del>	
		<u> </u>					<del>_</del>	
SUBMIT FOR		BY					вү ——	
APPROVAL TO:	Managar	, Product Enginee						
	manager	, FIGURE LINGING	- mg			<u> </u>		

Ī

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

Prime contractor will be responsible for document preparation, coordination with affected subcontractors, and dissemination of documents. The document will be released as an original issue and updated as additional data becomes available.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

This document contains application data for each item covered by the Approved Parts Lists. Format for the different types of items varies depending upon the specific information to be presented. The data shall be of sufficient detail to ensure a clear understanding of content and ultimate achievement of system design goals. As a guideline document for the application of parts, the document will include the following:

- a. Description of part or material
- b. Common designation
- c. Specification
- d. General application criteria and constraints
- e. Conservative design limit data
- f. Derating data

DRD NO .:

GE	EXHIBIT	DRD	RA-006
----	---------	-----	--------

Network       Construction       Cons	VOYAGE	R DATA	REQUIREMENT DESCRIPTI	ON		DRD APPROVED BY	<i>(</i> :	DATE:	DA TA CATEGORY
RA     K. R.     Thomas     [728,30]     RA       THLE OF DOCUMENT:     DOCUMENT     DOCUMENT     DOCUMENT     SUBBASK     Reliability Kes gur ance OREANIZATION RESPONSIBLE POR DOCUMENT     SUBBASK     DPL NO.     L       LOG, PROBLEM/FAILURE SUMMARY     DREAMEZATION RESPONSIBLE OREANIZATION RESPONSIBLE OREANIZATION RESPONSIBLE ON DOCUMENT     OPL NO.     L     DPL NO.     L       TPFE OF DOCUMENT:     DOCUMENT     DOCUMENT     DOCUMENT     DOCUMENT     DOL NO.     F       TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.     OREANIZATION RESPONSIBLE FOR SINGLE PREPARATION.     NO. OF COL FOR SINGLE PREPARATION.     DATE OAT.       QA-002, *Report, Failure Analysis CA-003, Plan, Reliability Program QA-013, Preport, Failure Analysis Confermant et al.     DSFCIAL HAULUR DESCRIPTION     DATE OAT.       CLASSTRICTION CLASSTRICTION DATA     DREAME COMPARATION DESCRIPT COMPUTER LARGE DATA     DESCRIPT DESCRIPT DATE OF ALL     PUBLICATION DESCRIPT DESCRIPT DATE OF ALL     DIFFERENCE DOCUMENT     DATE OAT.       DEAMONTRY     DESCRIPT DESCRIPT COMPUTER LARGE OF DATA     DESCRIPT DESC		CODE	OFFICE RESPONSIBLE FO	R DRD: CO	DE DRD PRE	PARED BY:	DATE		DRD NO.:
LOG, PROBLEM/FAILURE SUMMARY  For BOOLINET FREEMATION LOG, PROBLEM/FAILURE SUMMARY  For BOOLINET AREPOSIBLE CONTROL DATION DECOMPTON DE	REQUIREMENT	RA			K. R.	Thomas	7/28/67	NO.:	RA-00
LOG, PROBLEM/FAILURE SUMMARY       ReliabilityAssurance         Decamization RESPONSIBLE for DOCUMENT: DOCUMENT: DOCUMENT: DO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.       Decamization RESPONSIBLE For DOCUMENT ISTEMATED To provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.       Decamization RESPONSIBLE For BOCUMENT ISTEMATED Restaurance (0, -009, Plan, Quality Assurance Program QA-020, *Report, Failure Analysis QA-021, *Report, Failure Analysis QA-021, *Report, Failure Analysis Cassification Decamization RESPONSIBLE Decamization RESPONSIBLE (Decamization RESPONSIBLE For Sincle PREPARATION Decamization RESPONSIBLE Decamization RESPONSIBLE (Decamization RESPONSIBLE PREVALUENT Decamization RESPONSIBLE Decamization RESPONSIBLE (Decamization RESPONSIBLE PREVALUENT QA-020, *Report, Failure Analysis QA-021, *Report, Nonconforming Material RA-001, Procedure, Reliability Operating Decamization RESPONSIBLE Decamization RESPONSIBLE Decamization Decamization RESPONSIBLE Decamization Decamization RESPONSIBLE Decamization RESPONSIBLE Decamization Deca	TITLE OF DOCUMENT:	<u> </u>			a				DRL ITE NO.:
LOG, PROBLEM/FAILURE SUMMARY  LOG, PROBLEM/FAILURE SUMMARY  PROMOLOGENVE PROVIDENT  TYPE OF DOCUMENT  CONTROL DACTION DEFERENCE SIMPOMATON  ORGANIZATION RESPONSIBLE  DOL NO. F  TYPE OF DOCUMENT  TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.  TERRELATIONALLY QA-020, Plan, Quality Assurance Program QA-020, Plan, Report, Nonconforming Material RA-009, Plan, Reliability Program QA-020, Plan, Reliability Program QA-020, Plan, Reliability Program CA-201, Preport, Nonconforming Material RA-011, Procedure, Reliability Operating CLASSIFICATION  GENERATION  GENERA						1		308 143N.	
TYPE OF DOCUMENT I CONTROL DACTION DREFERENCE BINFORMATON TYPE OF DOCUMENT DOCUMENT DISTRIBUTION USE OF DOCUMENT TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE. NTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS: QA-020, "Report, Failure Analysis QA-020, "Report, Failure Analysis QA-020, "Report, Failure Analysis QA-020, "Report, Failure Analysis QA-020, "Report, Failure Analysis QA-021, "Report, Nonconforming Material RA-009, Plan, Reliability Program Cassifications of Boometians, Department Completing Control Data Completing Control Data Completin	LOG. PROBLE	M/FA	ILURE SUMMAF	RY				DRL NO.:	LEVEL N
TYPE OF DOCUMENT:     DCONTROL     DACTION     DREFERENCE     BINFORMATION       USE OF DOCUMENT:     TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight-critical OSE.     ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE     NO OF COL       Interse experienced in prime equipment and flight-critical OSE.     FOR DOCUMENT STOWAGE     6       INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:     FOR SINGLE PREPARATION     DATE DATA       QA-020, *Report, Nonconforming Material     FOR OCCUMENT SISTERSUL     PUBLICATION       QA-020, *Report, Nonconforming Material     FREQUENCY OF ISSUE     PUBLICATION       QA-020, *Report, Reliability Program     Secont States Cost (\$)     PUBLICATION       QA-020, *Report, Nonconforming Material     GROUP \$     ANNUALY     PUBLICATION       QA-021, *Report, Nonconforming Material     GROUP \$     DATE OATA     PUBLICATION       Scort Restricted Data     GROUP \$     DESCORT     BEENAL HANDLING     UBASE STRUCTURE OATA     PREVENTY       Scort Restricted Data     GROUP \$     DESCORT     DATE OATA     PREVENTY     PUBLICATION       DESCORT RESTRUCTED DATA     GROUP \$     DATE     OTHERWISE, AS SPECIFIC     OTHERWISE, AS SPECIFIC       Scort Restricted Document     ABSTRUCT DESCRET     DOTERWISE, AS SPECIFIC     OTHERWISE, AS SPECIFIC     OTHE						FOR DOCUMENT RE	PRODUCTION:		
TYPE OF DOCUMENT       DOCUMENT       DECONTROL       DACTION       DREFERENCE       BINFORMATION         USE OF DOCUMENT       TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight-critical OSE.       ORGANIZATION RESPONSIBLE FOR SUBMETED COMMENTS       NO. OF COMPATION RESPONSIBLE FOR SUBMETED COST (\$)       INTERPLATION MAINTED MAINTED MAINTED COST (\$)       DATE OR MULTICAL PREPARATION         QA-0020, *Report, Failure Analysis       FREQUENCY OF ISSUE       PORTINAL PREPARATION       DATE OR MULTICAL PREPARATION         QA-0021, *Report, Nonconforming Material       RA-001, Procedure, Reliability Operating       FREQUENCY OF ISSUE       PUBLICATION         CLASSIFICATION       ORGUP 1       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINALLY       PDR         SECRET       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINLENT       URDATE IFRE         SECRET       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINLENT       Quarte FRE         SECRET       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINLENT       QUARTE FREENANCE         SECRET       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINTIN       QUARTE FREENANCE         SECRET       ORGUP 2       SPECIAL HANDLING       ESTIMATE MAINTIN       QUARTE FREENANCE         SECRET       <								DDL NO.:	FILE NO.
USE OF DOCUMENT: TO provide a dynamic means of identifying, categorizing and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE. NTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS: QA-009, Plan, Quality Assurance Program QA-021, *Report, Nonconforming Material RA-001, Procedure, Reliability Operating Cassification Construction and the data and presenting Construction and the data and the data and the data cassification Construction and the data and the data and the data cassification Construction and the data and the data and the data Construction and the data and the data and the data Construction and the data and the data and the data Construction and the data and the dat				E DINF	ORMATION		STRIBUTION.		
10 provide a dynamic intention of iteration in problems and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.       6         and presenting summary data for all open problems and failures experienced in prime equipment and flight- critical OSE.       6         WreakLationship with other data Reconsements: QA-009, Plan, Quality Assurance Program QA-021, *Report, Failure Analysis QA-021, *Report, Nonconforming Material RA-011, Procedure, Reliability Operating CLASSIFICATION				<u> </u>		ORGANIZATION R	ESPONSIBLE	NO. OF	COPIES:
and presenting summary data for all open problems and failures experienced in prime equipment and flight- failures experienced in prime equipment and flight- for single Preparation: ESTIMATED COST(\$) DATE OR MUL COMPUTER ANALYSIS QA-009, Plan, Quality Assurance Program QA-020, *Report, Failure Analysis QA-020, *Report, Nonconforming Material RA-011, Procedure, Reliability Pogram RA-011, Procedure, Reliability Operating CLASSIFICATION: DEGROUP 1 DEGROUP 2 DEGROUP	• •				0 0	FOR DOCUMENT	STOWAGE		2
Half fires experienced in prime equipment and ingit- critical OSE.       For single preparation:       Date or Millingit- critical OSE.         Interretationship with other data requirements: QA-020, Plan, Quality Assurance Program QA-021, *Report, Failure Analysis       For single preparation:       Date or Millingit- to use         QA-020, *Report, Failure Analysis       Frequency or issue:       Publication         RA-031, Procedure, Reliability Poperating       Image: Construction of the preparation       Publication         CLASSIFICATION:       Orgoup 1       Orgoup 2       Special Handling Date of the preparation       Publication         Score Track       Orgoup 2       Special Handling Date of the preparation       Publication       Publication         Score Track       Brochuse of the preparation       Orgoup 2       Special Handling       Publication         Score Track       Brochuse of the preparation       Orgoup 2       Special Handling       Publication         Score Track       Brochuse of the preparation       Orgoup 2       Special Handling       Publication         Breat       Definition       Date of the preparation       Orgoup 2       Special Handling       Publication         Breat       Breat       Instruction       Special Handling       Publication       Publication         Breat       Denset       Breat       B		-	-	-					
INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS: QA-009, Plan, Quality Assurance Program QA-020, *Report, Failure Analysis QA-021, *Report, Nonconforming Material RA-011, Procedure, Reliability Program RA-011, Procedure, Reliability Operating CLASSIFICATION CONFIDENTIAL SECRET RESTRICTED DATA SECRET RESTRICTED DATA SECRET RESTRICTED DATA SECRET RESTRICTED DATA DRAPH DELIC DOMAN CONFIDENTIAL RESTRICTED DATA DRAPH DELIC DOCUMENT DRAPH DELIC DATA REFERENCE DOCUMENTS PROPOSAL DRAPH DELIC DATA DRAPH DELIC D	-	in pr	ime equipment a	and flig	ht-				
INTERRELATIONSHIP with other DATA REQUIREMENTS: QA-002, *Report, Failure Analysis QA-021, *Report, Nonconforming Material RA-011, Procedure, Reliability Operating CLASSIFICATION. SECRET STRICTED DATA SECRET STRICTED STRICTED STRICT SECRET STRICTED DATA SECRET STRICTED STRICTED STRICTON SECRET STRICTED STRICTED STRICTED STRICTON SECRET STRIC						ESTIMATED CO	ST (\$)	DATE D	ATA DUE
QA-021, *Report, Nonconforming Material       Anulally       Poll(Littor)         RA-009, Plan, Reliability Program       Anulally       Danually         QA-021, Procedure, Reliability Operating       Image: Construct and the second and t	QA-009, Plan, Qual	ity As	surance Program	m					
QA-021, *Report, Nonconforming Material <ul> <li>RA-009, Plan, Reliability Program</li> <li>Cassification:</li> <li>Cassification:</li> <li>Confidential</li> <li>C</li></ul>	• • •		v	`		FREQUENCY C	F ISSUE:	PUBLICAT	ION DATE:
RA-011, Procedure, Reliability Operating       Image: Classification       Image: Classification <t< td=""><td>• • •</td><td></td><td>•</td><td>ıl</td><td></td><td></td><td></td><td></td><td></td></t<>	• • •		•	ıl					
Introduct, Proceeding, Proceeding       Operating		•	0			QUARTERLY		<u>⊢−−−</u> −−−	
SCRET       Image: Construction data			ability Operating	5		- MONTHLY			
Bit Store TRESTRICTED DATA       BROUP 4       INDUSCREET       DAILY       EXPORT         CONFIDENTIAL RESTRICTED DATA       BROUP 4       INDUSCREET       OTHERWISE, AS SPECIFIED       EXPINATION         POINT CONFIDENTIAL RESTRICTED DATA       BROKETARY       INSTRUCTO DISCREET       OTHERWISE, AS SPECIFIED       EXPINATION         PRINTED DOCUMENT       ABSTRACT       INSTRUCTION       REFERENCE DOCUMENTS:       REFERENCE DOCUMENTS:       INSTRUCTION         CHART       BROCHURE       LETTER       INSTRUCTION       REFERENCE DOCUMENTS:       INSTRUCTION         DIAGRAM       BULLETIN       LIST       INSTRUCTION       INSTRUCTION       INSTRUCTION         ILLUSTRATION       DIRECTIVE       MANUAL       NPC 250-1       INSTRUCTION         ILLUSTRATION       DIRECTIVE       MANUAL       APPLICABLE STANDARDUM         MODEL       DISCLOSURE       MINUTES       APPLICABLE STANDARDS:         COMPUTER CARD       ORDER       PROCEDURE       RESCREATER PROCEDURE         COMPUTER CARD       ORDER       RECORDING (TAPE OR DISC)       ING CHANGE OSCHULE       APPLICABLE STANDARDS:         MICROFILM (W/OR W/O CARD)       ING CHANGE OSCHULE       RESCREATING CHANGE       SCHEDULE       APPLICABLE         MICROFILM (W/OR W/O CARD)       INGENERING CHANG					AL HANDLING	BI-WEEKLY	.†	Qua1	terly,
ON MORE DATA.       Inited of data.         Image: Printed Document       Image: Asstract       Instruction         Image: Chart       BROCHURE       Letter         Image: Diagram       Bulletin       List         Image: Diagram       Contract       Manual         Image: Diagram       Diagram       Benefities         Image: Diagram       Diagram       Diagram       Manual         Image: Diagram       Diagram       Diagram       Memorandum         Image: Diagram       Diagram       Diagram       Applicable standards:         Image: Diagram       Diagram       Procedure       Procedure       Applicable standards:         Image: Diagram       Diagram       Procedure       Procedure       Applicable standards:         Image: Diagram       Image: Proposal       Procedure       Standards:       Image: Diagram         Image: Diagram       Image: Proposal       Standards:       Image: Diagram       Image: Dia	SECRET RESTRICTED DATA CONFIDENTIAL RESTRICTION			D JPL DE PROJ	DISCREET		S SPECIFIED		
PRINTED DOCUMENT       ABSTRACT       INSTRUCTION         CHART       BROCHURE       LETTER         DIAGRAM       BULLETIN       LIST         DRAWING       CATALOG       QLOG         ILLUSTRATION       DORECTIVE       MEMORANDUM         ILLUSTRATION       DIRECTIVE       MEMORANDUM         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         XO OTHER       DRAINEERING CHANGE       SCHEDULE         ADP Printout       PROPOSAL       SPECIFICATION         MICROFILM (W/OR W/O CARD)       ING CHANGE       SCHEDULE         MICROFILM (W/OR RW/O CARD)       ING CHANGE       SCHEDULE         MICROFILM (W/OR W/O CARD)       ING CHANGE       SCHEDULE         MICROFILM (W/OR W/O CARD)       ING CHANGE       SCHEDULE         MICROFILM (W/OR W/O CARD)       INGEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       VOUCHER       MAFT         SUBMIT FOR REVIEW TO:	FORM OF DATA	KINE	0 F DATA			REFERENCE DOCL	MENTS:	<b></b>	<u></u>
DIAGRAM       BULLETIN       LIST       NPC 250-1         DRAWING       CATALOG       OK LOG       NPC 250-1         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENSINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE       SPECIFICATION         MICROFILM (W/OR W/O CARD)       ENGINEERING CHANGE       SPECIFICATION         MICROFILM (W/OR W/O CARD)       ENGINEERING CHANGE       SPECIFICATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SPECIFICATION         MICROFILM (W/OR W/O CARD)       INDEX       VOUCHER         MANDBOOK       STANDARD       INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       INDEX       VOUCHER       DATE         SUBMIT FOR REVIEW TO:				0 11	NSTRUCTION				
DRAWING       CATALOG       CLOG       NPC 250-1         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILUUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         X0 OTHER       ENGINEERING CHANGE       SCHEDULE         ADDP Printout       PROPOSAL       SPECIFICATION         MANDBOOK       STANDARD       INDEX         INDEX       VOUCHER       STANDARD         INDEX       DATE       PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:	CHART		BROCHURE	0 L	ETTER				
FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         MICROFILM (W/OR W/O CARD)       ING CHANGE       SCHEDULE         ADP Printout       PROPOSAL       SPECIFICATION         MICROFILM (W/OR APPROVALS REQUIRED:       INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       INDEX       VOUCHER         BY							00 950 1		
ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       PRECULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SCHEDULE         ADP Printout       PROPOSAL       SCHEDULE         MADBOOK       STANDARD       INDEX         INDEX       VOUCHER       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       INDEX       VOUCHER         LIST IN ORDER OF SUBMITTAL)       DRAFT       DATE       PREPUBLICATION PROOF       DATI         SUBMIT FOR REVIEW TO:		ON)				NF	C 250-1		
Image: Construction of the construc		,							
COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         XD OTHER       ENGINEERING CHANGE       SCHEDULE         ADP Printout       PROPOSAL       SPECIFICATION          HANDBOOK       STANDARD          INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       INDEX       VOUCHER         (LIST IN ORDER OF SUBMITTAL)       DRAFT       DATE       PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:	MODEL		DISCLOSURE		IINUTES				. <u> </u>
COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       REPORT         XD OTHER       ENGINEERING CHANGE       SCHEDULE         ADP Printout       PROPOSAL       SPECIFICATION          HANDBOOK       STANDARD          INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       VOUCHER         (LIST IN ORDER OF SUBMITTAL)       DRAFT       DATE         DRAFT       DATE       PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:		DISC)				APPLICABLE STAT	NDARDS:		
Image: Microfilm (W/OR W/O CARD)       Ing change proposal is report         Image: Microfilm (W/OR W/O CARD)       Ing change is schedule         ADP Printout       PROPOsal       Schedule         ADP Printout       Proposal       Standard         Image: Image									
XD OTHER          □ ENGINEERING CHANGE          □ SCHEDULE         □ SPECIFICATION         □ HANDBOOK         □ STANDARD         □ INDEX          □ STANDARD         □ INDEX         REVIEWS AND/OR APPROVALS REQUIRED:         (LIST IN ORDER OF SUBMITTAL)         DRAFT          DATE         PREPUBLICATION PROOF         DATE         SUBMIT FOR REVIEW TO:          BY          BY         BY         BY	· · · <del>·</del>								
Image:	D OTHER			SE OS	CHEDULE				
Image: Distribution of submittal     Image: Distribution of submittal       Image: Distribution of submittal     Date       DRAFT     Date       PREPUBLICATION     PROOF       DATE     PREPUBLICATION       SUBMIT FOR REVIEW TO:	ADP Printout		PROPOSAL		PECIFICATION				
REVIEWS AND/OR APPROVALS REQUIRED:         (LIST IN ORDER OF SUBMITTAL)         DRAFT       DATE         SUBMIT FOR REVIEW TO:									
(LIST IN ORDER OF SUBMITTAL) DRAFT DATE PREPUBLICATION PROOF DATE SUBMIT FOR REVIEW TO: BY BY BY DATE BY DATE BY			U INDEX				_		
SUBMIT FOR REVIEW TO:			RED						
BY		C	DRAFT	DAT	Έ	PREPUBLICATION	PROOF	D	ATE
	SUBMIT FOR REVIEW TO:								
							<u> </u>	BY	
			BT		<u></u>				
	<u> </u>								
	SUBMIT FOR							<b>.</b>	<u> </u>
APPROVAL TO: BY BY	APPROVAL TO:							ых ———	
Manager, Reliability Assurance	Ma	nager	, Reliability As:	surance	<u>e</u>				

.

Į. L

Ł

I.

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

The log will be initiated with problems resulting from preliminary design reviews, and failures commencing with engineering model tests, and will be concluded at the end of mission operations. Problems/failures will be listed chronologically with problems being deleted as corrective actions are finalized. Working reports will be developed bi-weekly. Formal printings will be included in quarterly reliability progress reports.

This DRD is applicable to the prime contractor and principal subcontractors which requires operation and testing at the subcontractors facility.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

The Problem/Failure Summary Log is an EDP printout consisting of a chronological listing of all "open problems" and failures experienced on the prime equipment. Problem summaries will include pertinent information such as: problem identification (title), problem analysis report number, operation/hardware affected, proposed solution, expected completion date. Failure summaries will include coded information such as: item identification (nomenclature), failure report number, failure analysis report number, description of failure, test in which failure occurred, environmental condition at time of failure, operating mode at the time of failure, class of failure, accumulated operating hours of item, time to recover, apparent cause of failure. Failure summaries shall be of sufficient scope to permit analysis and implications of composite failures on systems reliability.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

drd no.: RA-006

VOYAGE		QUIREMENT DESCRIPTION			DRD APPROVED BY		DATE	DATA CATEGORY:
Volka								
ORGANIZATION ORIGINATING	CODE: OF	FICE RESPONSIBLE FOR D	RD: CODE:	DRD PREPA	ARED BY:	DATE:	CONTRACT	DRD NO.
REQUIREMENT	RA			K.R. 7	Thoma <b>s</b>	7/28/67	NO.:	RA-007
*MINUTES, FAILUE	RE ANA	ALYSIS REVIEW	BOARD	(FARB)	ORGANIZATION RE FOR DOCUMENT P Reliability Assurance		TASK OR SUBTASK	DRL ITEM NO.:
,			Donate		ORGANIZATION RE		DRL NO.	LEVEL NO.
	<u></u>				ORGANIZATION RE	-	DDL NO.	FILE NO.
		ACTION DREFERENCE		ATION				
USE OF DOCUMENT:				TT- /1	ORGANIZATION RE		NO. OF	COPIES
To provide a detaile	-	• • •			FOR DOCUMENT	STOWAGE.	20	
Analysis Review Boa	-	•	0					
identification of unr	esolved	l Failure Analysis	s Repor	·ts;	ESTIMATED MA FOR SINGLE PRE			ION CUTOFF
status of corrective	action	s: and conclusions	s. reco	m-	FOR SINGLE PRE	PARALIUN.	DATE OR	MILESIONE.
mendations and action			,					
INTERRELATIONSHIP WITH OTHE					ESTIMATED CO			ATA DUE
QA-009, Plan, Qual	lity As	surance Program			FUR SINGLE PRE	PARATION.	то	USER:
QA-020, *Report, Fa	ailure .	Analysis			FREQUENCY O	F ISSUE:	PUBLICA	ION DATE:
QA-021, *Report, No RA-001, *Reliability	SEMI-ANNUALLY	LY	SDR					
RA-009, Plan, Reli					D QUARTERLY		UPDATE (	FREQUENCY
CLASSIFICATION:	D MONTHLY D SEMI-MONTHL D BI-WEEKLY	Y	OR MIL Weekl	estone): Y				
CONFIDENTIAL		GROUP 3	NASA DIS		D WEEKLY		ESTI	MATED
SECRET RESTRICTED DATA			DIJPL DIS		X OTHERWISE, AS	S SPECIFIED	EXPIRAT	ON DATE:
D UNCLASSIFIED			NOFORN		Per each bo	ard mtg		
FORM OF DATA:	KIND C	DF DATA:			REFERENCE DOCU	MENTS:	<b>4</b>	
20 PRINTED DOCUMENT	ſ	ABSTRACT		RUCTION				
	C	BROCHURE	O LETTE	R	NPC 250-1			
	[	BULLETIN	LIST		NPC 250-1			
	C	CATALOG	LOG					
FILM (STATIC OR MOTIC	DN) (NC	CONTRACT	D MANU	AL				
- ILLUSTRATION	C			RANDUM				
I MODEL	C	DISCLOSURE	NUNU NU	TES				
RECORDING (TAPE OR	DISC) (	BINGINEERING CHANGE	O PLAN		APPLICABLE STAN	DARDS		
COMPUTER CARD		ORDER	D PROCI	EDURE				
COMPUTER TAPE	C	REQUEST FOR ENGINEER	- O REGU	LATION	×			
MICROFILM (W/OR W/O	CARD)	ING CHANGE PROPOSA	L D REPOR	RT				
C OTHER	C	BINGINEERING CHANGE	D SCHEI	DULE				
		PROPOSAL	D SPECI	FICATION				
	(	HANDBOOK	D STAN	DARD				
	(	INDEX		IER				
REVIEWS AND/OR APPROVALS (LIST IN ORDER OF SUBMITTA)		D:			L			
	DR	AFT	DATE		PREPUBLICATION	PROOF	C	ATE
SUBMIT FOR REVIEW TO:								
		BY					BY	
			=					
						·····		
SUBMIT FOR		BY _	·					
APPROVAL TO:							BY	
Chai	rman,	<u>Failure An</u> alysis	Review	v_Board_				<u> </u>

.

- -- ---

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS

This DRD is applicable to the prime contractor and principal subcontractors. FARB minutes will be prepared for each session of the board. DRD NO.: RA-007

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

The Failure Analysis Review Board Minutes will contain the following:

- 1. Review of open action items from prior meetings.
- 2. Identification of new failure analysis reports and the corrective actions pending or completed.
- 3. Conclusions, recommendations and assigned action items based on an "in depth" evaluation of the failure analysis reports by the board.
- 4. Concurrence with the analysis and/or corrective action to designate closing a failure analysis report.
- 5. Identify deficient analysis or corrective action, and cause the report to remain open for further action.
- 6. Identify members designated to follow-up on open items.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

		GE EXHIE	<u>BIT DR</u>	<u>D RA-00</u>	8			_
VOYAGER	DATA	REQUIREMENT DESCRIPTION			DRD APPROVED	BY:	DATE	DA TA CATEGORY:
REQUIREMENT	ODE:	OFFICE RESPONSIBLE FOR C		DRD PREPA		DATE: 7/28/67	CONTRACT NO.:	DRD NO.: RA-008
TITLE OF DOCUMENT:		DITITY ACCECCME	 יאו יד		ORGANIZATION FOR DOCUMENT Reliabili Assuran	RESPONSIBLE PREPARATION: ty	TASK OR SUBTASK:	DRL ITEM NO.:
PLAN, RE	LIA	BILITY ASSESSME	'I I		ASSULATION ORGANIZATION FOR DOCUMENT	RESPONSIBLE	DRL NO.:	LEVEL NO.:
					ORGANIZATION FOR DOCUMENT		DDL NO.;	FILE NO.
E CONTRO		DACTION DREFERENCE						
USE OF DOCUMENT: TO prov		-			ORGANIZATION		NO. OF	COPIES
methods to be utilized Reliability of the syst	tem,	, subsystems, and	compo	nents			25	
during the progress of the utilization of the design and other sign	lata	generated as it is	related	l to the	ESTIMATED FOR SINGLE P			TION CUTOFF MILESTONE:
INTERRELATIONSHIP WITH OTHER QA-021, *Report, Noi	DATA	REQUIREMENTS: Informing Material	; rrogr	aiii.	ESTIMATED FOR SINGLE P	COST (\$) REPARATION:		ATA DUE USER:
RA-003, List, Failur SE-008, Specificatio	re R	late Data	Doci	( <b>T</b> D)	FREQUENCY	OF ISSUE	PUBLICA	TION DATE:
Requiremen SE-065, Logbook, E	nts ng in	ieering	e/ Desl	R11	ANNUALLY     SEMI-ANNU     QUARTERLY			DR
TE-001, Plan, Integr	rate	u rest			BI-MONTHL			FREQUENCY ESTONE)
CLASSIFICATION:		GROUP			BI-WEEKLY	HLY	One ti	
CONFIDENTIAL			D SPECIAL	HANDLING SCREET	WEEKLY		L	MATED
D SECRET RESTRICTED DATA CONFIDENTIAL RESTRICTED D UNCLASSIFIED	DATA		U JPL DIS		O DAILY C OTHERWISE One issu	•		ION DATE:
FORM OF DATA:	KIN	D OF DATA:			REFERENCE DO	CUMENTS:		
B PRINTED DOCUMENT		D ABSTRACT		RUCTION	NPC 250	)-1		
		BROCHURE			Custome	er Guidelir	ne Docur	nent
DIAGRAM		D BULLETIN						
DRAWING		CATALOG						
FILM (STATIC OR MOTION	1)							
D ILLUSTRATION				DRANDUM				
MODEL     RECORDING (TAPE OR D	ISC)	DISCLOSURE			APPLICABLE S	TANDARDS		
COMPUTER CARD		ORDER						
COMPUTER TAPE		C REQUEST FOR ENGINEE	R- 🗆 REGU	LATION				
MICROFILM (W/OR W/O	CARD)	ING CHANGE PROPOSA	L D REPO	RT	1			
			SCHE					
	_	PROPOSAL		IFICATION				
		D HANDBOOK	D STAN					
	-							· ·
REVIEWS AND/OR APPROVALS		IRED:						
(LIST IN ORDER OF SUBMITTAL)		DRAFT	DATE		PREPUBLICATIO	N PROOF	1	DATE
SUBMIT FOR REVIEW TO:					·····	<u>,</u>		
		BY			·····		8 Y	
SUBMIT FOR Pro	ject	Manager <sup>BY</sup>					BY	
		<u> </u>	<del></del>					
*Key Informal Data		PAGI	E I OF 2				JPI	. 2568 ост 6

1

.

PAGE I OF 2

VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

Document is applicable to the prime contractor, and to principal subcontractors, responsible for the design of subsystems, or components unique to this program.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

The Reliability Assessment Plan will provide a description of the techniques, materials (data) and controls to be utilized in the periodic assessment of system, subsystem and components. The plan will define: organizational (functional) responsibilities; identification of test programs from which performance data, failure data and operating times will be accumulated; description of computer programs for risk assessment, and systems modeling techniques for reliability assessment; statistical handling of reliability data; methods of utilizing design review, quality assurance, manufacturing, etc., data; and means of calculating and presenting the assessed reliability of the items.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

. •

VOYAGE	R DATA F	REQUIREMENT DESCRIPTION			DRD APPROVED B	<u>(</u>	DATE	DATA CATEGORY:		
ORGANIZATION ORIGINATING	CODE	OFFICE RESPONSIBLE FOR DE	RD: CODE	DRD PREPA	RED BY:	DATE:	CONTRACT	DRD NO.		
REQUIREMENT:	RA				Thomas	7/28/67	NO.:	RA-009		
		<u> </u>		17* 11*	ORGANIZATION RE		TASK OR	DRL ITEM		
TITLE OF DOCUMENT:					FOR DOCUMENT P Reliabili Assuran	REPARATION: Ity Ce	SUBTASK:	NO.;		
PLAN, RELIABILI	TY P	ROGRAM			ORGANIZATION RI FOR DOCUMENT RI		DRL NO.:	LEVEL NO.:		
					ORGANIZATION R		DDL NO.:	FILE NO.		
La con	ROL	DACTION DREFERENCE		ATION		50000000 C	10.05			
USE OF DOCUMENT:					FOR DOCUMENT			COPIES		
Provide a totally int	-		•			75				
program requirement	nts an	d controls to be im	plemer	nted	ESTIMATED M	ANHOURS	INFORMAT	ION CUTOFF		
on the Program	EPARATION:	DATE OR	MILESTONE							
INTERRELATIONSHIP WITH OTH					ESTIMATED CO			ATA DUE		
MA-007, Plan, Proj	LIANALIUN.	101	JSER							
MG-009, Plan, Man										
QA-009, Plan, Man	FREQUENCY	UF ISSUE.		ION DATE:						
	D ANNUALLY	LLY		К						
SE-038, Report, System Analysis, Reliability								FREQUENCY		
	,raieu				SEMI-MONTHLY	LY	_	OR MILESTONE)		
CLASSIFICATION:			SPECIAL	HANDLING	D BI-WEEKLY		One time			
CONFIDENTIAL		GROUP 3	DINASA DI	SCREET	D WEEKLY			ON DATE:		
CONFIDENTIAL RESTRICT		PROPRIETARY	S PROJECT	DISCREET	Dire issue	S SPECIFIED	EAFIRALI	UN DATE.		
10 UNCLASSIFIED				· · · ·	· · · · · · · · · · · · · · · · · · ·		1			
FORM OF DATA:	KIND	OF DATA:			REFERENCE DOCI					
B PRINTED DOCUMENT		ABSTRACT			NASA Publication 250-1 JPL Reliability Guidelines					
				ER		bility Gui	delines			
					Document					
DRAWING     FILM (STATIC OR MOTI	ON)	CATALOG		AL	JPL /Cont					
	)			RANDUM	Reliability	<sup>,</sup> Operatii	ng Proce	dures		
D MODEL										
RECORDING TAPE OF	DISC)	D ENGINEERING CHANGE	XI PLAN		APPLICABLE STA	NDARDS				
COMPUTER CARD		ORDER	D PROC	EDURE						
COMPUTER TAPE		REQUEST FOR ENGINEER								
MICROFILM (W/OR W/	CARD)	ING CHANGE PROPOSAL								
				DULE						
		PROPOSAL	D STAN							
					<u> </u>					
REVIEWS AND/OR APPROVAL		RED:								
(LIST IN ORDER OF SUBMITTA		DRAFT	DATE		PREPUBLICATION	PROOF	C	DATE		
SUBMIT FOR REVIEW TO:										
		BY		_			BY			
			·							
SUBMIT FOR		Monogon BY					вү ——			
APPROVAL TO: Project Manager BY										
		<u> </u>	· · · · · ·							
L		PAGE	1 OF 2				JPL	2568 OCT 6		

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

DRD NO.: RA-009

This DRD is applicable to the prime contractor and to principal subcontractors (i.e., those responsible for design, fabrication and test of subsystems or components unique to the Program).

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

### OUTLINE OF CONTENTS:

The Reliability Program Plan must provide a mutually agreed (i.e., JPL/contractor major subcontractor) contractually binding, clearly defined Reliability Program requirement which can be effectively implemented within cost and time constraints of the overall Program. It must include a definition of:

- a. Reliability organization and its interrelation to customer, in-house, and subcontractor management, and the various other functional operations.
- b. Milestone tasks and schedules.
- c. Reliability deliverable items.
- d. Reliability activities to be implemented throughout the Program (i.e., analysis, design review, test, etc.)
- e. Reliability surveillance, monitoring and program control requirements.

The plan should also include a recognition of potential problem areas and predetermined action alternatives to eliminate or control the problem should it occur.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DR	D RA-010
---------------	----------

I.

ł

I.

·	_					DRD APPROVED BY	,	DATE	DATA
VOYAGE	R DATA	REQUIREMENT DESCRIPTION	N			DRD APPROVED B			CATEGORY:
ORGANIZATION ORIGINATING	CODE:	OFFICE RESPONSIBLE FOR	DRD	CODE	DRD PREP	ARED BY:	DATE:	CONTRACT	DRD NO.
REQUIREMENT:	RA				K.R. 7	Thomas	7/28/67	NO.:	RA-010
TITLE OF DOCUMENT:	<u> </u>				L	ORGANIZATION RE	SPONSIBLE	TASK OR	DRL ITEM
						FOR DOCUMENT P Reliabili Assuran	REPARATION: ty	SUBTASK:	NO.:
PLAN, PAI	RTS C	ONTROL PROGR	AM			ORGANIZATION RE		DRL NO.:	LEVEL NO.
	. <u> </u>					ORGANIZATION RI		DDL NO.;	FILE NO.:
TYPE OF DOCUMENT: 10 CON		DACTION DREFERENCE							
USE OF DOCUMENT: TO pro						ORGANIZATION R		NO. OF	COPIES
requirements and c						FOR DOCOMENT	STOWAGE.	75	
gram. Document wi a guide for the prim								INFORMAT	ION CUTOFF
izations to accompli	ish th	e requirements de	efine	ed in	NPC	ESTIMATED M FOR SINGLE PRE			MILESTONE
250-1 and as furthe			by <b>c</b>	contr	ractor.	ESTIMATED CO	)ST (\$)	DATE DA	TA DUE
RA-002, List, Crit	ical a	nd Limited Life It	ems	5		FOR SINGLE PRE	PARATION:	τοι	JSER
RA-003, List, Fail		•				FREQUENCY C	F ISSUE	PUBLICAT	ION DATE:
RA-005, List, Parts Application DataD ANNUALLYRA-009, Plan, Reliability ProgramD SEMI-ANNUALLYD QUARTERLYD QUARTERLY						SDR			
							REQUENCY STONE)		
CLASSIFICATION:					One tin				
CONFIDENTIAL					ESTIN	ATED			
SECRET RESTRICTED DATA					CREET DISCREET	DAILY	S SPECIFIED		ON DATE:
				FORN		One issu	e		
FORM OF DATA:	KIND	OF DATA:				REFERENCE DOCU	MENTS:		
X PRINTED DOCUMENT		D ABSTRACT	D	INSTR	UCTION	NPC 250-	1		
CHART		BROCHURE		LETTE	ĒR	NPC 250-	T		
		D BULLETIN		LIST		JPL Guide	elines Do	cument	
DRAWING		CATALOG		LOG MANU	Δ1				
					RANDUM				
D MODEL		DISCLOSURE	o	MINU.	TES				
C RECORDING (TAPE OR	DISC)		. R	PLAN		APPLICABLE STAN	DARDS		
COMPUTER CARD		ORDER			EDURE	]			
		REQUEST FOR ENGINE							
MICROFILM (W/OR W/O     OTHER	J CARD)		-	SCHEI					
	_	PROPOSAL			FICATION				
		HANDBOOK	a	STAN	DARD				
		D INDEX		VOUCH	IER				
REVIEWS AND/OR APPROVALS		REDI				I		·····	
	-	ORAFT	D	ATE		PREPUBLICATION	PROOF	D	ATE
SUBMIT FOR REVIEW TO:									
	·							<u> </u>	
		BY						BY	
		_							
				-					
SUBMIT FOR APPROVAL TO: Pr	oiect	Manager BY						BY	
	-1000								
						······································		<u> </u>	

PAGE | OF 2\_\_\_\_

JPL 2568 OCT 65

\_\_\_\_

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

DRD NO.: RA-010

This DRD is applicable to the prime contractor, and to principal subcontractors responsible for the design, fabrication and test of subsystems or components unique to this Program.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

The Parts Control Program Plan will provide a comprehensive outline of the controls and procedures to be implemented and continued throughout the parts activity period of the Program. As a minimum the plan will include:

- a. Organization responsibilities and management
- b. Procedures for fulfilling the requirements of NPC 250-1
- c. Part selection and qualification
- d. Supplier/selection and qualification
- e. Part specifications and standards
- f. Part screening
- g. Part derating and application
- h. Approved parts list

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

. | •

,

VOY	AGER DATA	REQUIREMENT DESCRIPTION			DRD APPROVED B	<b>(</b> )	DATE	DA TA CATEGORY:
ORGANIZATION ORIGINATING	CODE:	OFFICE RESPONSIBLE FOR D	RD: CODE	DRD PREPA	ARED BY:	DATE	CONTRACT NO.	DRD NO.
REQUIREMENT	RA			K.R. 7	Thomas	7/28/67	NO.	RA-011
TITLE OF DOCUMENT:		- · · · · · · · · · · · · · · · · · · ·		L	ORGANIZATION RE		TASK OR	DRL ITEM
					FOR DOCUMENT P		SUBTASK:	NO.:
			~		ReliabilityA	surance		
PROCEDURE,	RELIAI	BILITY OPERATIN	G		ORGANIZATION RI		DRL NO.:	LEVEL NO.:
					ORGANIZATION R	ESPONSIBLE	DDL NO.:	FILE NO.1
					FOR DOCUMENT D			
	ONTROL	DACTION DREFERENCE						
		s will be used by co			ORGANIZATION R FOR DOCUMENT		NO. OF	COPIES
	subcontractors Reliability Organizations in accomplishing the Reliability Program. Procedures will also be made						15	5
		other contractors						
		nation and assistan			ESTIMATED M			ION CUTOFF
-		e Reliability Progra		le mie-				
gration of activitie					ESTIMATED CO	)ST (\$)	DATE DA	TA DUE
INTERRELATIONSHIP WITH C		FOR SINGLE PRE			ISER:			
DA 000 Dlon Do	liobility	. Duo muo m			L			
RA-009, Plan, Re	паршку	Program			FREQUENCY C	F ISSUE	PUBLICAT	ION DATE:
					D ANNUALLY	. •	SDI	{
					C SEMI-ANNUAL			REQUENCY
					BI-MONTHLY			STONE)
CLASSIFICATION:			SPECIAL	HANDLING	BI-WEEKLY	Y	As req	uired
CONFIDENTIAL		GROUP 3	D NASA DIS	SCREET	D WEEKLY			ATED
CONFIDENTIAL RESTRICTED D				DISCREET	One time		EXPIRATI	ON DATE:
10 UNCLASSIFIED		D PUBLIC DOMAIN			<u> </u>			
FORM OF DATA:		O OF DATA:			REFERENCE DOCL	IMENTS:		
CX PRINTED DOCUME	NT	ABSTRACT			NPC 250-1	1		
				ER		-		
		D BULLETIN D CATALOG						
FILM (STATIC OR M	IOTION)			AL				
. D ILLUSTRATION				RANDUM				
D MODEL		DISCLOSURE		TES		_		
RECORDING (TAPE	OR DISC)		D PLAN		APPLICABLE STAT	NDARDS		
COMPUTER CARD		ORDER						
COMPUTER TAPE		REQUEST FOR ENGINEER						
	W/O CAND)		D SCHE					
		PROPOSAL		FICATION				
	<u> </u>	HANDBOOK	D STAN	DARD				
	<u> </u>	D INDEX		IER				
REVIEWS AND/OR APPROV	ALS REOUL	RED.			<b>_</b>			
(LIST IN ORDER OF SUBMI								
	C	DRAFT	DATE		PREPUBLICATION	PROOF	D	ATÉ
SUBMIT FOR REVIEW TO: -								
		BY					вү ———	
-								
–					<u></u>			
SUBMIT FOR -					. <u> </u>			
APPROVAL TO:		BY					8Y	
<u> </u> <u>N</u>	lanager	, Reliability Assur	ance					

PAGE I OF 2

JPL 2568 OCT 65

### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

Procedures covered by this document are applicable to prime contractor and to principal subcontractors coordinated.

DRD NO.: RA-011

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

The Reliability Operating Procedures will cover the major activities of the reliability program as outlined in the approved reliability program plan and other contractual reliability items as applicable. The total set of documents will include the policies and procedures associated with the preparation and utilization of the reliability data items as listed for this Program. Where needed, specific subjects may be covered in more detail, e.g., reliability assessment, reliability analysis, etc.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

FICE RESPONSIBLE FOR DE	K. R.	PARED BY: DATE: Thomas 7/28/67 ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION: Reliability Assurance ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION: ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:	TASK OR SUBTASK: DRL NO.:	DRD N RA- DRL NO
АТА	K. R.	ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION: Reliability Assurance ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION: ORGANIZATION RESPONSIBLE	TASK OR SUBTASK: DRL NO.:	DRL NO
	25 INFORMATION	FOR DOCUMENT PREPARATION: Reliability Assurance Organization responsible FOR DOCUMENT REPRODUCTION: ORGANIZATION RESPONSIBLE	SUBTASK:	NO LEVEL
	3 INFORMATION	Reliability Assurance Organization responsible for document reproduction: Organization responsible	DRL NO.:	LEVE
	ک INFORMATION	ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION: ORGANIZATION RESPONSIBLE	DRL NO.:	
	3 INFORMATION	FOR DOCUMENT REPRODUCTION: ORGANIZATION RESPONSIBLE		
	3 INFORMATION		DDL NO.;	FILE
	3 INFORMATION		DDL NO.:	FILE
	3 INFORMATION	FOR DOCUMENT DISTRIBUTION:		1
	-OF INFORMATION			
		ORGANIZATION RESPONSIBLE	NO. OF	
		FOR DOCUMENT STOWAGE:		
relative to each pa	art		3	
ct.		ESTIMATED MANHOURS FOR SINGLE PREPARATION	INFORMAT DATE OR	
		TOR SINGLE FREFARATION.	DATE OR I	WILLSI
		ESTIMATED COST (\$)		
EQUIREMENTS		FOR SINGLE PREPARATION:		JSER:
Program				
ty Program		FREQUENCY OF ISSUE	PUBLICAT	ION D
rt ( )		ANNUALLY     SEMI-ANNUALLY	SDR	
arts		QUARTERLY		REQU
	· · · · · · · · · · · · · · · · · · ·	- MONTHLY		STON
GROUP 2		D BI-WEEKLY	Requi	
		DAILY		AATED
		REFERENCE DOCUMENTS	4	
BROCHURE	D LETTER			
BULLETIN				
CATALOG	🗖 LOG			
	D MANUAL	None		
		APPLICABLE STANDARDS		
ORDER				
	STANDARD			
INDEX				
	EQUIREMENTS: Program ty Program t ( ) arts GROUP 1 GROUP 2 GROUP 2 GROUP 3 GROUP 4 PROPRIETARY PUBLIC DOMAIN T DATA: ABSTRACT BROCHURE BULLETIN CATALOG CONTRACT DIRECTIVE DISCLOSURE ENGINEERING CHANGE ORDER REQUEST FOR ENGINEER- ING CHANGE PROPOSAL ENGINEERING CHANGE PROPOSAL HANDBOOK	EQUIREMENTS: Program ty Program t ( ) arts GROUP 1 GROUP 2 GROUP 2 GROUP 3 HANDBOOK GROUP 4 JPL DISCREET PROPRIETARY SPECIAL HANDLING SPECIAL SPECIAL SPECIAL HANDLING SPECIAL	EQUIREMENTS: Program ty Program ty Program t ( ) arts GROUP 1 GROUP 2 GROUP 3 GROUP 3 GROUP 3 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 3 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 5 DATA: ABSTRACT DATA: ABSTRACT DATA: ABSTRACT GROUP 6 GROUP 1 DATA: ABSTRACT GROUP 1 DATA: ABSTRACT GROUP 1 DATA: ABSTRACT GROUP 1 DATA: ABSTRACT GROUP 1 DATA: ABSTRACT GROUP 1 DATA: ABSTRACT GROUP 1 CONTRACT GROUP 3 GROUP 3 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 3 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 4 GROUP 5 GROUP 4 GROUP 5 GROUP 4 GROUP 5 GROUP 4 GROUP 5 GROUP 4 GROUP 5 GROUP	EQUIREMENTS: Program ty Program ty Program ty Program ty C ( ) arts GROUP 1 GROUP 2 GROUP 2 GROUP 2 GROUP 3 GROUP 3 GROUP 3 GROUP 4 PUBLIC DOMAIN PUBLIC DOMAIN PUBLIC DOMAIN DATE DA FREQUENCY OF ISSUE: ANNUALLY DAILY SEMI-MONTHLY DAILY DAILY SEMI-MONTHLY DAILY DAILY SEMI-MONTHLY DAILY DAILY DAILY DAILY DAILY DAILY DAILY DAILY DAILY Commit Recuin Commit DAILY DAILY DAILY DAILY Commit PUBLIC DOMAIN DATE DA PROPRIETARY DAILY DA

\_

.

PAGE I OF 2

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor and to principal subcontractors (i.e., those responsible for design, fabrication and test of subsystems and components unique to this Program.)

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

The part data card shall be prepared for each part selected for use on the Program. The data provided will become the basis for the part classification as required by the parts control program. In addition to complete part identification, name, description, source, etc., the card will provide data on characteristics, acceptance parameters, rejection criteria, screening requirements, test data and complete part qualification data. This card with completed data is the basic record for the parts control procedure.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

.

VOYA	GER DATA R	EQUIREMENT DESCRIPTION				DRD APPROVED 6	3Y:	DATE	C4
ORGANIZATION ORIGINATING		FFICE RESPONSIBLE FOR D		000 0		RED BY:		CONTRACT	DR
REQUIREMENT:	RA	FFICE RESPONSIBLE FOR L	RD, CODE.			Thomas	DATE: 7/28/67	NO.:	R
TITLE OF DOCUMENT:	11111				<b>r</b>	ORGANIZATION F		TASK OR	DRI
						FOR DOCUMENT	PREPARATION:	SUBTASK:	ł
						ReliabilityA	ssurance		
CHART. RELIA	BILITY	ASSURANCE CON	TROL			ORGANIZATION F		DRL NO.:	LE
·					l				
					ľ	ORGANIZATION		DDL NO.:	FIL
						FOR DOCUMENT I	DISTRIBUTION.		
USE OF DOCUMENT:			es herokimi		-t	ORGANIZATION	RESPONSIBLE	NO. OF	COP
		us of reliability as				FOR DOCUMEN			
-		ue to, or from the			ļ				
•	contract	ors, and action ite	e <b>ms</b> per	nding		ESTIMATED I FOR SINGLE PR		INFORMA DATE OR	
or completed.									_
INTERRELATIONSHIP WITH O		REQUIREMENTS			[	ESTIMATED C		DATE D	
MA-008, Plan,						FOR SINGLE PR	EPARATION:	то	USEF
RA-009, Plan,	Reliabili	ty Program			ŀ	FREQUENCY	OF ISSUE	PUBLICA	
		ility Program Sta				ANNUALLY			
SE-008, Specifi	cation, S	ystem Performan	ce/Des	ign		C SEMI-ANNUA	LLY •	SI	
Requir	ements	<u> </u>				BI-MONTHLY		UPDATE ( OR MIL	
CLASSIFICATION:					NG	BI-WEEKLY	LY	Continu	lous
CONFIDENTIAL	TA	GROUP 3	DINASA DIS	CREET		D WEEKLY		ESTI	
CONFIDENTIAL RESTRI			PROJECT		ЕТ	OTHERWISE,	AS SPECIFIED	EXPIRAT	ION
· . <u></u>					-+	One time REFERENCE DOC	IMENTS'	L	
FORM OF DATA:		DF DATA:		UCTION		NEPENENCE DOC	OMENIO,		
X CHART									
		D BULLETIN				NPC 2	250 1		
DRAWING		CATALOG	🗆 LOG			NPC 2	200-1		
FILM (STATIC OR M									
D ILLUSTRATION		DIRECTIVE							
RECORDING (TAPE						APPLICABLE STA	NDARDS		
COMPUTER CARD		ORDER	D PROCE						
		REQUEST FOR ENGINEER ING CHANGE PROPOSAL							
- · · · · · · · · · · · · · · · · · · ·		PROPOSAL			N				
		HANDBOOK	STAND						
	1	INDEX	D VOUCH	ER					
REVIEWS AND/OR APPROVA		:D:							
(LIST IN ORDER OF SUBMIT		AFT	DATE			PREPUBLICATION	PROOF	r	ATE
SUBMIT FOR REVIEW TO:									
			······································	-					
		BY		_				ВҮ	
			···	_					
SUBMIT FOR -				_					
APPROVAL TO:		BY		_				BY	
М	anager.	Reliability Assura	ance	_	_				
			-						

PAGE I OF 2

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

RA-013 Data on Reliability Assurance Control Charts is accrued from many sources throughout the Program. It is reduced to those elements which have a major impact upon the success of the Program, maintained accurate through close surveillance by reliability project personnel. Format for the control charts is not specifically defined, but must be compatible with other project control charts.

This DRD is applicable to the prime contractor and to principal subcontractor (i.e., those responsible for design, fabrication and test of subsystems or components unique to the Program).

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

## OUTLINE OF CONTENTS:

Reliability Assurance Control Charts must provide that information necessary to achieve management decisions required to eliminate sources of unreliability. The standard indicators to be provided are divided into three categories:

- Items for action and decision relating to outstanding current problems, a. ancitipated critical problems, and actions for solution as required.
- Information relating to technical performance versus requirements. b.
- Information relating to program activity versus schedule. c.

Examples of indicators to be maintained on control charts are:

- Current estimate of mission success probability versus goal. a.
- Proportion of delinquent or suspected program activities under surveillance, and b. number cleared, versus previous period showing trend of exceptions taken to standards conformity.
- Specific areas currently under appraisal, categorized by criticality and reason c. for appraisal; i.e., random selection, suspect problem, or known problem.
- Problem/failures to date, percent cleared, and forecast of trend. d.
- Piece-part count trend curves; planned versus actual, preferred versus nonpreferred e. high versus low usage.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

vo	YAGER DATA	REQUIREMENT DESCRIPTIO	N		DRD APPROVED B	Y	DATE:	DATA CATEGORY:
ORGANIZATION ORIGINATING REQUIREMENT:	CODE: RA	OFFICE RESPONSIBLE FOR	R DRD: COD		ARED BY: Thomas	date: 7/28/67	CONTRACT NO.:	DRD NO.: RA-014
TITLE OF DOCUMENT:					ORGANIZATION R		TASK OR SUBTASK	DRL ITEM NO.:
					Reliability A	ssurance		
STANDARI	), REWO	RK			ORGANIZATION R FOR DOCUMENT R	ESPONSIBLE	DRL NO.:	LEVEL NO.
					ORGANIZATION R		DDL NO.:	FILE NO.:
TYPE OF DOCUMENT:	CONTROL			RMATION				
USE OF DOCUMENT:					ORGANIZATION R		NO. OF	COPIES
	=	tion of design cha	0		FOR DOCUMEN	STOWAGE.	20	
		rdware, or rewor		•				ION CUTOFF
and Flight hardw "designed and b		nsure against end reliability.	langerii	ng the	ESTIMATED N FOR SINGLE PRI			MILESTONE
INTERRELATIONSHIP WITH CM-003, Change		REQUIREMENTS			ESTIMATED C FOR SINGLE PR			ATA DUE JSER:
MG-009, Plan, M		uring Program			FREQUENCY	OF ISSUE	PUBLICAT	ION DATE:
QA-009, Plan, Q					D ANNUALLY		SDE	
QA-014, Procedu	ire, Rew	ork			D SEMI-ANNUA	LLY		
RA-009, Plan, R	eliability				BI-MONTHLY MONTHLY SEMI-MONTH	L Y	OR MIL	FREQUENCY ESTONE):
D SECRET				AL HANDLING	D BI-WEEKLY	-	Final b	y HDR
CONFIDENTIAL		GROUP 3 GROUP 4 PROPRIETARY	D JPL (	DISCREET DISCREET CT DISCREET		S SPECIFIED		MATED ON DATE:
D UNCLASSIFIED		D PUBLIC DOMAIN			Original iss	sue		
FORM OF DATA:	KIN	O OF DATA:			REFERENCE DOC	UMENTS:		
X PRINTED DOCUM	IENT	D ABSTRACT		STRUCTION				
CHART		BROCHURE	O LE					
DIAGRAM		D BULLETIN						
DRAWING	MOTIONI	CATALOG		, NUAL				
	MOSION)			MORANDUM				
				NUTES				
C RECORDING (TAP	E OR DISC)		Е 🗆 РЦ	AN	APPLICABLE STA	NDARDS		
COMPUTER CAR	)	ORDER		OCEDURE				
COMPUTER TAPE	<b>I</b>	REQUEST FOR ENGINI						
MICROFILM (W/O	R W/O CARD)							
D OTHER		ENGINEERING CHANG PROPOSAL	-	HEDULE ECIFICATION				
				NDARD				
			_	JCHER				
REVIEWS AND/OR APPRO	AITTAL)				1			
	I	DRAFT	DATE		PREPUBLICATION	PROOF	D	ATE
SUBMIT FOR REVIEW TO:			<u> </u>					
		B.v		<b>-</b>			вү —	<u> </u>
		ΒΥ	<u></u>				• · · · · · · · · · · · · · · · · · · ·	
					. <u></u>	······································		
SUBMIT FOR					<u> </u>			
APPROVAL TO:		BY					BY	
	Project	<u>Manager</u>						<u> </u>

PAGE 1 OF 2

JPL 2568 OCT 65

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor and principal subcontractors. These documents, are prepared coincident with the design or manufacturing and quality control planning cycle for the hardware.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

Rework Standards will be formally prepared, published and controlled documents providing:

- a. Standards (limitations) for rework (i.e., what elements may or may not be reworked) as applicable to various elements of hardware.
- b. Standards (limitations) for extent (i.e., complexity) of rework as applicable to various elements of hardware.
- c. Standards (limitations) for frequency (i.e., number of times) of rework for various elements of hardware.
- d. Standards (procedures) for methods and equipment for rework as applicable for various elements of rework.
- e. Standards (controls) for acceptance criteria (i.e., inspection and test) of rework as applicable to various elements of hardware.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

.

VOYAGER DAT	A REQUIREMENT DESCRIPTION			DRD APPROVED	BY	DATE	DA TA CATEGORY
							000 10
REQUIREMENT	OFFICE RESPONSIBLE FOR I	DRD: CODE:			DATE	CONTRACT NO.1	DRD NO.
RA		_	K. R. 7	Thomas	7/28/67		RA-015
TITLE OF DOCUMENT:				ORGANIZATION	RESPONSIBLE PREPARATION:	TASK OR SUBTASK	DRL ITEM
				Reliability			NO.:
				ORGANIZATION	RESPONSIBLE REPRODUCTION	DRL NO.:	LEVEL NO.
REPORT, FAI	LURE REVIEW			1			}
				ORGANIZATION		DDL NO.;	FILE NO.
TYPE OF DOCUMENT:				FOR DOCUMENT	DISTRIBUTION		
USE OF DOCUMENT:				ORGANIZATION	RESPONSIBLE	NO OF	COPIES:
Reports the results of t	he Failure Analysis	Review	,		NT STOWAGE		
Board's review of the a	•					20	0
Analysis Reports, and t	- •			ESTIMATED			ION CUTOFF
and action items issued	•	ommen	uations,	FOR SINGLE P	REPARATION	DATE OR I	MILESTONE
and action items issued	by the Doard.					····	
INTERRELATIONSHIP WITH OTHER DAT	A REQUIREMENTS:			ESTIMATED FOR SINGLE F			ATA DUE JSER:
PC-013, List, Bidder							JOL
QA-009, Plan, Quality P	rogram			FREQUENCY	OF ISSUE	PUBLICAT	ION DATE:
RA-007, Minutes, Failur	e Analysis Review	Board		O ANNUALLY		1	
RA-009, Plan, Reliabilit	y Program			SEMI-ANNU		PDF	{
RA-011, Procedure, Rel	iability Operating			BI-MONTHL			REQUENCY STONE)
CLASSIFICATION:		•		SEMI-MONT	HLY	Not app	
CONFIDENTIAL		D SPECIAL		D BI-WEEKLY			ATED
CONFIDENTIAL RESTRICTED DATA	GROUP 4	D JPL DIS	CREET	DAILY	AS SPECIFIED		ON DATE:
X UNCLASSIFIED		D NOFORN	DISCREET				
FORM OF DATA: KI	ND OF DATA:			REFERENCE DO	CUMENTS:	•••••	
M PRINTED DOCUMENT	D ABSTRACT	D INSTR					
CHART	BROCHURE	D LETTE	R				
DIAGRAM	D BULLETIN	D LIST		NPC 2	50-1		
	CATALOG						
FILM (STATIC OR MOTION)							
RECORDING (TAPE OR DISC)				APPLICABLE S	TANDARDS		
COMPUTER CARD	ORDER		DURE				
COMPUTER TAPE	C REQUEST FOR ENGINEER	R- 🗆 REGU	ATION				
MICROFILM (W/OR W/O CARD	) ING CHANGE PROPOSA	L 🛛 REPOR	т				
DOTHER	D ENGINEERING CHANGE	D SCHEI					
	PROPOSAL		FICATION				
	HANDBOOK     INDEX	D STANE					
REVIEWS AND/OR APPROVALS REQU	JIRED:						
(LIST IN ORDER OF SUBMITTAL)	DRAFT	DATE		PREPUBLICATIO	N PROOF	D	ATE
SUBMIT FOR REVIEW TO:							
	BY					BY	
SUBMIT FOR	BY					вү	<del></del> .
APPROVAL TO:		loo ad					
	n, Failure Review E	Joaru					

JPL 2568 OCT 65

#### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

#### SPECIAL INSTRUCTIONS

This DRD applies to all failure analysis reports whether issued against prime contractor's hardware or that manufactured and being tested by principal subcontractors.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

## OUTLINE OF CONTENTS:

The Failure Review Report will document the results of the FARB's review and evaluation of all failure analysis and corrective action reports. The report will include an analysis of:

- a. The completeness of the cause and effect analysis of the failure (discrepancy);
- b. The adequacy of the recommended or implemented corrective action, and the means of verifying its effectiveness;
- c. The criticality of the failure and its impact on other elements of the system;
- d. The conclusions, recommendations and assigned action items.

The Failure Review Report will also include identifying information such as: identification number, cross-reference to failure analysis reports, cross-reference to other supporting documentation, corrective action implementation schedule, authorized signatures.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

•

ORGANIZATION ORIGINATING REQUIREMENT: CODE: OFFICE RESPONSIBLE FOR DRD: CODE: DRD PREPARED BY: DATE: CONTRACT NO.: RA K. R. Thomas 7/28/67 RA-016	VOX	VOYAGER DATA REQUIREMENT DESCRIPTION					•	DATE	DA TA CATEGORY.
Decomposition     Date     Code     Office     Date     Date     Date     Date     Date       TITLE OF DOCUMENT:     RA     RA     RA     RA     RA     RA     Office	VOT	AGEN DAIA N	ENGINEMENT DESCRIPTION			]			
RADIALITY     RA     K. R.     Thomas     [7/28/67]     RA-016       TITLE OF DOCUMENT:     TASK OF GOCUMENT:     TOTAL OF GOCUMENT:     DOCUMENT:     DOCUME	ORGANIZATION ORIGINATING	CODE: C	FFICE RESPONSIBLE FOR		DRD PREPA	ARED BY:	DATE		DRD NO.
TITLE OF DOCUMENT:     DECAMPTION REPONDENCE     Set OF DEL. ITEM Set OF DOCUMENT     DEL ITEM Set OF DEL. ITEM SET	REQUIREMENT	RA			K. R. 7	Thomas	7/28/67		RA-016
TYPE OF DOCUMENT     DOINTOL     DACTION     DREFERENCE     BINFORMATION     ORGANIZATION RESPONDINGLE ORGANIZATION RESPONDINGLE FOR DOCUMENT     DOL NO.     FILE NO.       USE OF DOCUMENT:     D DOINTOL     DACTION     DREFERENCE     BINFORMATION     ONGANIZATION RESPONDINGLE FOR DOCUMENT STOLAGE     NO. OF COPIES.       TO provide management with an up-to-date summary of and practices with could have a detrimental affect on the reliability aspects of the Program. This is a tool of management control.     ORGANIZATION RESPONDINGLE FOR DOCUMENT STOLAGE     NO. OF COPIES.       INFORMATION the reliability aspects of the Program. RA-009, Plan, Reliability Program RA-013, Chart, Reliability Program RA-013, Chart, Reliability Program RA-013, Chart, Reliability Program Status     FREQUENCY OF ISSUE D SEMI-MANUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-ANNUALY SEMI-SEMICTED DATA D SECT D DATE     D PROFILE SEMI-SECT D DATE     PUBLICATION DATE D SECT D DATE     D PUBLICATION D DATE     PUBLICATION DATE D SEMI-SECT D DATE     SEMI-SECT D DATE     D PUBLICATION D DATE     DEFEND D DATE     PUBLICATION DATE D SEMI-SECT D DATE     SEMI-SECT D DATE     D PUBLICATION D DATE     D PUBLICATION D DATE     PUBLICATION DATE     SEMI-SECT D DATE     SEMI-SECT D DATE     DEFEND D DATE     DEFEND D DATE     DEFEND D DATE     DEFEND D DATE     DEFEND D DATE     D SECT D DATE     D PUBLICATION D DATE     D SECT D DATE     D SECT D DATE	TITLE OF DOCUMENT:	1				ORGANIZATION RE	REPARATION:	TASK OR	DRL ITEM
TYPE OF DOCUMENT:     DOCUMENT:     DOCUMENT:     DOCUMENT:     DOCUMENT:     DOCUMENT:     DOCUMENT:     NO. OF COPIES.       TO provide management with an up-to-date summary of audit and appraisal activities of those critical processes and paractices which could have a detrimental affect on the reliability aspects of the Program. This is a tool of management outrol.     ORGANIZATION PESPORIAL     NO. OF COPIES.       Interactices which could have a detrimental affect on the reliability aspects of the Program. This is a tool of management outrol.     Interactices which could have a detrimental affect on the reliability aspects of the Program. This is a tool of management outrol.     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices which could have a detrimental affect on the reliability Program Status     Interactices whic	REPORTS, SU	MMARY,	, AUDIT AND API	PRAISA	L			DRL NO.:	LEVEL NO.:
USE OF DOCUMENT: To provide management with an up-to-date summary of audit and appraisal activities of those critical processes and practices which could have a detrimental affect on the reliability aspects of the Program. This is a tool of management control. INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS: RA-009, Plan, Reliability Program RA-019, Report, Reliability Program RA-019, Report, Reliability Program Status CLASSIFICATION: D SECRET CONFIDENTIAL RESTRICTED DATA D CONFIDENTIAL RESTRICTED DATA D CATALOG D CATALOG				<u>-</u>				DDL NO.;	FILE NO.:
To provide management with an up-to-date summary of addit and appraisal activities of those critical processes and practices which could have a dotrimental affect of the reliability aspects of the Program. This is a tool of management control. INTERRELATIONED WITH OTHER DATA REQUEREMENTS: RA-009, Plan, Reliability Program RA-013, Chart, Reliability Program Status RA-019, Report, Reliability Program Status CLASSIFICATION CL		CONTROL E	JACTION DREFERENCE	TINFORM			<u>_</u>		
and preduces wither could have a detrimental ander on the reliability aspects of the Program. This is a tool of management control.       Date of management control.         read of management control.       interretability aspects of the Program RA-013, Chart, Reliability Program RA-013, Chart, Reliability Program RA-013, Chart, Reliability Program Status       FREQUENCY OF ISSUE: Date of the Publication Date: Submit From Structe Data Conviction tal, Restructe Data Conviction tal, Restructed Conviction Conviction tal, Restructed Conviction Conviction (Tape Conviction Conviction (Tape Conviction) Conviction (Tape Conviction tal) Conviction tal Conviction tal) Convict	To provide ma audit and appra	aisal acti	vities of those cr	itical p	rocesses	FOR DOCUMENT	STOWAGE:	10	
INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS: RA-009, Plan, Reliability Program RA-013, Chart, Reliability Assurance Control RA-019, Report, Reliability Program Status CLASSIFICATION. CL	the reliability	aspects	of the Program.						
RA-019, Report, Reliability Program Status <ul> <li>CLASSIFICATION:</li> <li>CROUP I</li> <li>CROUP Z</li> <li>CROUP</li></ul>	INTERRELATIONSHIP WITH	OTHER DATA	REQUIREMENTS:					_	-
CLASSIFICATION:  CLASSIFICATION:  CLASSIFICATION:  CCONFIDENTIAL  CONFIDENTIAL  CCONFIDENTIAL  CCONFIDENTIAL CCONFIDENTIAL CCONFIDENTIAL  CCONFIDENTIAL  CCONFIDENTIAL CCONFIDENTIAL CCONF	RA-013, Cha	rt, Relia	bility Assurance	Control		FREQUENCY C	F ISSUE:	PUBLICAT	ION DATE:
CLASSIFICATION:       GROUP I       GROUP I       SECRET       OR MULESTONE):         CCASSIFICATION:       GROUP 2       SPECIAL HANDLING       SEMI-MONTHLY       Not applicable         CCONFIDENTIAL       GROUP 3       INSA DISCREET       DIMENTIAL RESTRICTED DATA       GROUP 4       JPL DISCREET       DIMENTICE       Not applicable         CONFIDENTIAL       PROFILE TARY       INCLOSECT DISCREET       DIMENTICE DOCUMENT       ABSTRACT       INSTRUCTION       DIMENTICE DOCUMENT       BASTRACT       INSTRUCTION         CHART       BROCHURE       LETTER       DIAGRAM       BULLETIN       UST       NPC 250-1         DIAGRAM       BULLETIN       UST       NPC 250-1       NPC 250-1         ILLUSTRATION       DIRECTIVE       MEMORANDUM       APPLICABLE STANDARDS         MICROFILM (W/OR W/O CARD)       DIRECTIVE       MEMORANDUM       APPLICABLE STANDARDS         ILLUSTRATION       DIRECTIVE       MEMORANDUM       APPLICABLE STANDARDS         ILLUSTATION       ING CHANGE PROPOSAL <td>RA-019, Rep</td> <td>ort, Reli</td> <td>ability Program S</td> <td>Status</td> <td></td> <td>SEMI-ANNUAL</td> <td>LY</td> <td>L</td> <td></td>	RA-019, Rep	ort, Reli	ability Program S	Status		SEMI-ANNUAL	LY	L	
□ SCRET       □ Broup 2       □ SPECIAL HANDLING       □ Broup 2       □ Broup						D MONTHLY	Y		
Descripting restricted data       Description       Data       Data<	SECRET		GROUP 2			D BI-WEEKLY		Not app	
PORM OF DATA.       AND OF DATA.         SD PRINTED DOCUMENT       ABSTRACT       INSTRUCTION         CHART       BROCHURE       LETTER         DIAGRAM       BULLETIN       LIST         DRAWING       CATALOG       LOG         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         APPLICABLE STANDARDS.       ORDER       PROCEDURE         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SPECIFICATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SPECIFICATION         MINDEX       VOUCHER       STANDARD       STANDARD         INDEX       VOUCHER       SPECIFICATION       DATE         REVIEWS AND/OR APPROVALS REQUIRED:       INDEX       VOUCHER       DATE         SUBMIT FOR REVIEW TO:	CONFIDENTIAL RESTRICTED D	DATA	GROUP 4	D JPL DIS	CREET	D DAILY	S SPECIFIED		
CHART       BROCHURE       LETTER         DIAGRAM       BULLETIN       LIST       NPC 250-1         GRAWING       CATALOG       LOG       NPC 250-1         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       PREQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SCHEDULE       PROPOSAL         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SCHEDULE       PROPOSAL         MIROPER       INDEX       VOUCHER       SUBMIT FOR REVIEW TO:       DRAFT       DATE         BY	FORM OF DATA:	KIND	OF DATA:		-	REFERENCE DOCU	MENTS		
DIAGRAM       BULLETIN       LIST       NPC 250-1         DRAWING       CATALOG       LOG       NANUAL         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MINUTES       REQUEST FOR ENGINEER-       REPORT         OTHER       PROPOSAL       SPECIFICATION         MANDBOOK       STANDARD       INDEX         VOUCHER       INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       DATE       PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:	X PRINTED DOCUME	ENT	D ABSTRACT	D INST	RUCTION				
DRAWING       CATALOG       LOG       NPC 250-1         FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PRAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         OTHER       ENGINEERING CHANGE       SCHEDULE         PROPOSAL       SPECIFICATION         OTHER       ENGINEERING CHANGE         OTHER       ENGINEERING CHANGE         ING CARDO       ING CHANGE PROPOSAL         MICROFILM (W/OR W/O CARD)       ENGINEERING CHANGE         SPECIFICATION       INGE CHANGE PROPOSAL         MICROFILM (W/OR W/O CARD)       INGE CHANGE PROPOSAL         MICROFILM (W/OR W/O CARD)       INGE CHANGE         INDEX       VOUCHER         PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:				-	ER				
FILM (STATIC OR MOTION)       CONTRACT       MANUAL         ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENGINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SREPORT         OTHER       ENGINEERING CHANGE       SCHEDULE         PROPOSAL       ISPECIFICATION         MICROFILM (W/OR W/O CARD)       INDEX         DATE       PROPOSAL         BY       INDEX         BY       BY         BY       BY         BY       BY						NPC	250-1		
ILLUSTRATION       DIRECTIVE       MEMORANDUM         MODEL       DISCLOSURE       MINUTES         RECORDING (TAPE OR DISC)       ENSINEERING CHANGE       PLAN         COMPUTER CARD       ORDER       PROCEDURE         COMPUTER TAPE       REQUEST FOR ENGINEER       REGUEST FOR ENGINEER         MICROFILM (W/OR W/O CARD)       INS CHANGE PROPOSAL       SREPORT         OTHER       PROPOSAL       SPECIFICATION         MANDBOOK       STANDARD         INDEX       VOUCHER         PROPOSAL       STANDARD         INDEX       VOUCHER         DATE       PREPUBLICATION PROOF       DATE         SUBMIT FOR REVIEW TO:									
Image: Submit For Review To:       Disclosure       Iminutes         Image: Submit For Review To:       Disclosure       Iminutes         Submit For Review To:       Disclosure       Iminutes         Submit For Review To:       BY       BY         Submit For Review To:       BY       BY		worldw)							
Image: Consisting (Tape or Disc)       Image: Engineering Change       Image: Plan       APPLICABLE STANDARDS.         Image: Computer card       Order       Image: Procedure       Image: Procedure         Image: Computer card       Image: Procedure       Image: Procedure       Image: Procedure         Image: Computer card       Image: Procedure       Image: Procedure       Image: Procedure         Image: Computer card       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure         Image: Only the procedure       Image: Procedure       Image: Procedure       Image: Procedure       Image: Procedure									
COMPUTER TAPE       IREQUEST FOR ENGINEER-       REGULATION         MICROFILM (W/OR W/O CARD)       ING CHANGE PROPOSAL       SCHEDULE         OTHER       ENGINEERING CHANGE       SCHEDULE         PROPOSAL       SPECIFICATION         HANDBOOK       STANDARD         INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       VOUCHER         (LIST IN ORDER OF SUBMITTAL)       DRAFT         DRAFT       DATE         BY       BY         BY       BY         BY       BY	B RECORDING (TAPE			D PLAN		APPLICABLE STAN	DARDS		
Image: Nicrofilm (W/OR W/O CARD)       ING CHANGE PROPOSAL       Image: Schedule         Image: Other       Image: Schedule       Schedule         Image: Proposal       Image: Schedule       Image: Schedule         Image: Proposal <td< td=""><td>COMPUTER CARD</td><td></td><td>ORDER</td><td>D PROC</td><td>EDURE</td><td></td><td></td><td></td><td></td></td<>	COMPUTER CARD		ORDER	D PROC	EDURE				
Image: Conternance of the content o	COMPUTER TAPE								
PROPOSAL       SPECIFICATION         HANDBOOK       STANDARD         INDEX       VOUCHER         REVIEWS AND/OR APPROVALS REQUIRED:       VOUCHER         (LIST IN ORDER OF SUBMITTAL)       DRAFT         DRAFT       DATE         SUBMIT FOR REVIEW TO:		W/O CARD)							
Image: Submit for approvals	D OTHER								
Index     VOUCHER       REVIEWS AND/OR APPROVALS REQUIRED:     (LIST IN ORDER OF SUBMITTAL)       DRAFT     DATE       SUBMIT FOR REVIEW TO:									
(LIST IN ORDER OF SUBMITTAL)     DRAFT     DATE     PREPUBLICATION     PROOF     DATE       SUBMIT FOR REVIEW TO:									
BY         BY           SUBMIT FOR APPROVAL TO:         BY		TTAL)		DATE		PREPUBLICATION	PROOF	D	
BY         BY           SUBMIT FOR APPROVAL TO:         BY									
SUBMIT FOR BY BY	SUBMIT FOR REVIEW TO: -					·····			<b></b>
SUBMIT FOR BY BY	-							вү —	<u> </u>
APPROVAL TO:	-						<u> </u>		
APPROVAL TO:				······					
APPROVAL TO:	-								
APPROVAL TO:	SUBMIT FOR								
Manager, Reliability Assurance	APPROVAL TO:							8Y	
	-	Manager	, Reliability Assu	rance				<u> </u>	

PAGE I OF 2

VOYAGER	DATA	REQUIREMENT	DESCRIPTION	-	2ND	SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor who will maintain "audit and appraisal" responsibility for both contractor and principle subcontractor activities.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

The Audit and Appraisal Summary Report must serve as a management control and awareness document over "critical processes and practices" (i.e., sources of unreliability) which could materially affect the success of the program. The report, therefore, must provide:

- 1. Identification of the subject critical processes and practices audited during the period.
- 2. Summary of appraisal results both "pro" and "con".
- 3. Discussion of the detected potential problem areas.
- 4. Recommendations for corrective actions and status of in-process corrective actions.
- 5. Recommended follow-up plan and responsible parties.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

					DRD APPR	OVED BY	C.	DATE	DA TA CATEGORY
VOYAGER	DATA REQUI	REMENT DESCRIPTION			K. R.	Thom	as		
ORGANIZATION ORIGINATING	ODE: OFFIC	E RESPONSIBLE FOR DR	D: CODE:	DRD PREPA			DATE:	CONTRACT	DRD NO.
REQUIREMENT	RA						7/28/67	NO.:	RA-017
TITLE OF DOCUMENT:	·····			L				TASK OR SUBTASK	DRL ITEM
							surance	SUBTASK.	NO.,
							SPONSIBLE	DRL NO.	LEVEL NO.
REPO	DRT, DI	ESIGN REVIEW					PRODUCTION.		
							ESPONSIBLE STRIBUTION:	DDL NO.:	FILE NO.
				ATION	]				
USE OF DOCUMENT: TO pro	vide a d	etailed report (i	i.en	inutes)			ESPONSIBLE	NO. OF	COPIES
of: attendees, discuss:	ions, que	stions and answ	ers.io	dentified	FUR DU	CUMENT	STOWAGE:		35
problem areas, recom items, and scheduled	action c	ompletion dates	, To n	orovide	ESTIM	ATED M	ANHOURS	INFORMAT	ION CUTOFF
management and design project managers.							PARATION	DATE OR	MILESTONE
		•				ATED CO		DATE D	ATA DUE
INTERRELATIONSHIP WITH OTHER							PARATION:	ток	JSER:
RA-019, Report, SE-010, Contract	End Iter	m (CEN Detail S	Snecifi	cation					
SE-011, (Prime I SE-011, Contract (Prime I	Equipment End Ite:	nt) Part I (Requ m (CEI) Detail S	ireme pecifi	nts) cation	1		OF ISSUE:	PUBLICAT	ION DATE:
(Prime I	Equipment	nt) Part II				ANNUAL	LY.	SDI	3
SE-013, Contract (Identific	ation Ite	m (CEI) Detail : em)	specifi	cation		NTHLY		1	REQUENCY ESTONE)
				<u></u>		MONTHL	.Y	Not app	
SECRET     GROUP 2     SPECIAL HANDLI     CONFIDENTIAL     GROUP 3     NASA DISCREET		SCREET	WEEK	(LY			ATED		
SECRET RESTRICTED DATA     CONFIDENTIAL RESTRICTED     UNCLASSIFIED	DATA C	PROPRIETARY	JPL DIS PROJECT NOFORN	CREET			S SPECIFIED	EXPIRATI	ON DATE:
FORM OF DATA:	KIND OF D	ATA:		···	REFEREN	CE DOCU	MENTS	<b>4</b>	
X PRINTED DOCUMENT		BSTRACT		RUCTION	NP	C 250	-1		
CHART		ROCHURE		ER					
DIAGRAM		ULLETIN ATALOG							
FILM (STATIC OR MOTION		ONTRACT	D MANU	IAL	}				
ILLUSTRATION	0 0	IRECTIVE		RANDUM					
D MODEL		ISCLOSURE			APPLICAB	LE STAL			
RECORDING (TAPE OR D COMPUTER CARD	ISC) LE	NGINEERING CHANGE Order	D PLAN		AFFLICAD	CC JIM	URAD3.		
COMPUTER TAPE		EQUEST FOR ENGINEER-							
MICROFILM (W/OR W/O (	CARD)	ING CHANGE PROPOSAL		RT	Í				
D OTHER	0 E	NGINEERING CHANGE		DULE					
	— п н	PROPOSAL ANDBOOK			ł				
	_	IDEX			[				
REVIEWS AND/OR APPROVALS									
(LIST IN ORDER OF SUBMITTAL)	1							-	
	DRAFT		DATE		PREPUBLIC	CATION	PROOF	U	ATE
SUBMIT FOR REVIEW TO:									
		BY						BY	
SUBMIT FOR									
APPROVAL TO:	······	BY						BY	
Chairn	n <b>an, Des</b>	ign Review Boar	rd	<u> </u>				<u> </u>	

1

PAGE I OF 2

JPL 2568 OCT 65

VOYAGER	DATA	REGUIREMENT	DESCRIPTION -	2 ND	SHEET
VUTAGER	UAIA	REQUIREMENT	DESCRIPTION -	2140	SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor and to principal subcontractors (i. e., those responsible for design, fabrication and test of subsystems or components unique to the program)

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

All attendees of specific design review meetings. Managers of individual assigned action items.

OUTLINE OF CONTENTS:

The Design Review Reports must provide a comprehensive report of all proceedings and results in the design review meeting. It must include:

- a. Identification of all attendees of the review meeting.
- b. Identification of item being reviewed.
- c. A summary of the various presentations and identification of responsible parties.
- d. A brief description of questions and ensuing discussions.
- e. Description of all detected problems and recommendations.
- f. Identification of all action items, responsible parties, and due dates.
- g. Review of status of previous design review action items.

The Design Review Report must serve as a suitable record of all design review activities and follow-up on "actions".

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

VOYAGER DATA REQUIREMENT DESCRIPTION							DATE.	0
ORGANIZATION ORIGINATING	CODE	OFFICE RESPONSIBLE FO	R DRD: CODE	DRD PR	EPARED BY:	DATE	CONTRACT	ī
REQUIREMENT	RA			K. R.	. Thomas	7/28/67:	NO.	I
TITLE OF DOCUMENT			A		ORGANIZATION F		TASK OR	D
					FOR DOCUMENT		SUBTASK:	
					ReliabilityA			
REPORT, REI	LIA BILIT	Y ASSESSMENT	C		ORGANIZATION FOR DOCUMENT		DRL NO.:	
					ORGANIZATION FOR DOCUMENT		DDL NO.:	F
TYPE OF DOCUMENT:	CONTROL D	ACTION DREFERENC	E BINFOR	MATION				
USE OF DOCUMENT:					ORGANIZATION FOR DOCUMEN		NO. OF	co
•	-	ement with a per	0				2	0
	•	reliability. Th d performance w	•			MANHOURS	INFORMA	TIO
	-	asis permitting			FOR SINGLE PF	REPARATION	DATE OR	MI
to be taken as			correctl	ve actio			<b>I</b>	
INTERRELATIONSHIP WITH O	THER DATA	REQUIREMENTS			ESTIMATED ( FOR SINGLE P		DATE D TO	
QA-020, *Rep	ort, Fai	lure Analysis						
RA-009, Plan		• •			FREQUENCY	OF ISSUE:	PUBLICA	TIO
		em Analysis, R	eliabilit	7	D ANNUALLY		PI	
TE-001, Plar	i, Integra	ated Test			SEMI-ANNUA			
					BI-MONTHLY		UPDATE (	ES
CLASSIFICATION:				HANDLIN	BI-WEEKLY	ILY	Not app	lio
CONFIDENTIAL CONFIDENTIAL SECRET RESTRICTED D CONFIDENTIAL RESTR	ATA ICTED DATA	GROUP 3 GROUP 4 PROPRIETARY PUBLIC DOMAIN	D NASA D	ISCREET SCREET T DISCREE		AS SPECIFIED	ESTI EXPIRAT	
FORM OF DATA:	KIND	OF DATA:			REFERENCE DO	CUMENTS:		
X PRINTED DOCUME	INT	D ABSTRACT		TRUCTION				
CHART		BROCHURE	C LET					
		D BULLETIN				NPC 250	)_1	
DRAWING	ACTION)	CATALOG		UAL		NI 0 200		
				ORANDUM				
D MODEL		D DISCLOSURE	D MIN	UTES				
C RECORDING (TAPE	OR DISC)				APPLICABLE ST	ANDARDS		
COMPUTER CARD		ORDER						
COMPUTER TAPE					1			
			GE 🗇 SCH	EDULE				
		PROPOSAL		CIFICATION	•			
				201ER				
REVIEWS AND/OR APPROV		ED:						
(LIST IN ORDER OF SUBMI		RAFT	DATE		PREPUBLICATIO	N PROOF	(	DAT
	-							
SUBMIT FOR REVIEW TO: -						÷		
SUBMIT FOR REVIEW TO:								
SUBMIT FOR REVIEW TO: 		BY					вү	
SUBMIT FOR REVIEW TO:  							Вү	
SUBMIT FOR REVIEW TO:   							B Y	
							BY	
SUBMIT FOR -							BY  BY	

### VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

This DRD is applicable to the prime contractor with inputs from principal subcontractors. Reliability Assessment Reports will be released at major review points in the Program

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

#### OUTLINE OF CONTENTS:

The Reliability Assessment Report will be developed around a basic set of reliability growth curves which reflect reliability probability of success values at the successive assessment intervals. Basically, the report will **provide a** comprehensive assessment of the inherent/operational reliability of the system, subsystem and components in quantitative terms on a comparative basis with the apportioned reliability design goals. Initially, the assessment will be dependent upon reliability analysis (predictions) design reviews, and related engineering inputs. As test data, operating time and failure date become available, the assessment will be operationally oriented. Continued engineering judgement will be applied to the reliability assessment. The report will include: identification of any serious reliability problems, a description of the consequences, and the degree of risk involved.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO.: RA-018

DRD APPROVED BY						DATE	DATA CATEGORY.		
vo	YAGER DATA	REQUIREMENT DESCRIPTIC	N						
ORGANIZATION ORIGINATING	CODE	OFFICE RESPONSIBLE FO	R DRD:	CODE	DRD PREP	ARED BY:	DATE	CONTRACT	DRD NO.
REQUIREMENT	RA				K R '	Thomas	7/28/67	NO.:	RA-019
TITLE OF DOCUMENT:				L	12. 1(.	ORGANIZATION RE		TASK OR	DRL ITEM
						FOR DOCUMENT PR ReliabilityAs		SUBTASK:	NO.:
						пепаріпцяє			
REPORT, RE	LIABILI	ry program S7	TATU	JS		FOR DOCUMENT RE		DRL NO.:	LEVEL NO.
						ORGANIZATION RE		DDL NO.;	FILE NO.
	CONTROL		EÖ	INFORM	ATION				
USE OF DOCUMENT						ORGANIZATION RE		NO. OF	COPIES
-	•	management wit		-		FOR DOCUMENT	STOWAGE	4	0
		the reliability st						· · · · · ·	TION CUTOFF
	-	s provide manag taining a ''point				ESTIMATED MA FOR SINGLE PRE			MILESTONE
		eding further wit							
Appraisal prior			in the	- PLC	gram.	ESTIMATED CO			ATA DUE
PC-002, Repo						FOR SINGLE PRE	PARALION.	то	USER
RA-009, Plan	-					FREQUENCY O	E ISSUE	DUDUCA	TION DATE:
-	-	t and Appraisal S	Sumn	narv		D ANNUALLY	F 1330E.		
RA-017, Repo	-			J		SEMI-ANNUAL	LY	SDR	
TE-165, Repo	•	0				BI-MONTHLY			FREQUENCY ESTONE):
CLASSIFICATION:						SEMI-MONTHL	Y	Each ma	ajor
CONFIDENTIAL		GROUP 2			HANDLING			Project EST	<u>review</u>
SECRET RESTRICTED     CONFIDENTIAL REST					CREET DISCREET	DAILY			ION DATE:
UNCLASSIFIED		D PUBLIC DOMAIN		DFORN		As requi	red	[	
FORM OF DATA:		O OF DATA:				REFERENCE DOCU	MENTS		
PRINTED DOCUM	ENT	D ABSTRACT		INSTR		NDC	250-1		
D CHART		D BROCHURE	_	LIST	ER		200-1		
		CATALOG		LOG					
FILM (STATIC OR	MOTION)	CONTRACT		MANU	AL				
I ILLUSTRATION		D DIRECTIVE			RANDUM				
D MODEL			_	MINU PLAN	TES	APPLICABLE STAN	IDARDS	1-m	<del></del>
COMPUTER CARD		D ENGINEERING CHANG	_		EDURE				
COMPUTER TAPE		REQUEST FOR ENGIN	EER- 🖸	REGU	LATION	1			
MICROFILM (W/O	R W/O CARD)	ING CHANGE PROPO	SAL 🖻	REPOR	T				
D OTHER			-	SCHE		1			
		PROPOSAL		STAN	FICATION				
				VOUCH					
						I			
REVIEWS AND/OR APPRO		RED.							
	C	DRAFT	0	ATE		PREPUBLICATION	PROOF	ι	DATE
SUBMIT FOR REVIEW TO: -									
		BY	<u> </u>					В Ү	
		<u> </u>							
							<u></u>		
SUBMIT FOR		BY		<u></u>				вү ——	
APPROVAL TO:	Duciast	Manager				<u>.                                    </u>	<u> </u>	<u> </u>	
	Project ]	manager				<u>.</u>			

T

ļ.

PAGE I OF

JPL 2568 00T 65

VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

The Reliability Program Status Report is developed for accumulative data provided by all available Program data items. The data is analyzed and formalized into a measure of its impact on probability of success of the mission from both a subjective and objective viewpoint. These reports are to provide management with sufficient data to equate reliability growth (status) to time and cost curves for the Project.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

### OUTLINE OF CONTENTS:

The Reliability Program Status Report need not conform to any specific format requirements. However, it must present to management a concise appraisal of the total Program activities as they affect, or potentially affect, reliability growth during the specified assessment period. The report may include: narrative discussion, summary data tables, charts, graphs, computer printouts, etc. The report will include summary information from sources such as:

- a. Design review status of design reviews and approvals, identification of problem areas, corrective actions, etc.
- b. Reliability assessment quantitative or statistical assessment resulting from existing data, design margin analysis, etc.
- c. Reliability analysis analytical prediction of inherent reliability, failure mode, effects and criticality analysis, redundancy analysis, etc.
- d. Problem/failure summary logs identification of manufacturing inconsistencies and impact of rework.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

DRD NO .:

- e. Manufacturing degradation analysis reports deficiencies in the production cycle which require corrective actions.
- f. Quality assurance inspection records identification of manufacturing inconsistencies and impact of rework.
- g. Parts and materials qualification status determine percentage of items qualified to those specified and used in early stage hardware.

All information must be reducible to an indicator of "risk" resulting from the activity if full conformance to established performance standards is not maintained.

1

## DOCUMENTATION RELATIONSHIP TREES

A documentation relationship tree has been prepared to show the relationships of data items within each functional category as well as their relationships across categories.

Relationships within each functional category are shown by constructing a tier pattern beginning with the top-level (or governing) data item and relating in descending order all data items within the category to this top-level data item. (The location of a data item at a given level on the diagram does not necessarily indicate the importance of that specific item but iden-tifies and defines its relation to all other data items in that category.)

Relationships between data items in one category and data items in other functional categories are shown by (1) shaded arrows to indicate the direction of the relationship and (2) an alphabetic code to indicate the nature of the interrelationship as follows:

- a. Data items needed for preparation and/or support of the referenced item. (I)
- b. Data items that are supported or needed by this data item. (S)
- c. Data items that relate "to" and provide information of a general nature but are not required in an input or support role. (G)

Each data item appearing on the Data Item List (DIL) was examined and evaluated with respect to its contribution to, or dependence upon, data items appearing in other categories and is included in the diagrams. Additionally, certain data elements indicated in the user flow diagrams (but currently not identified as individual data items) have been shown within a dashed rectangle to clarify relationships.



.

•

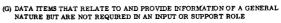
ļ

ļ

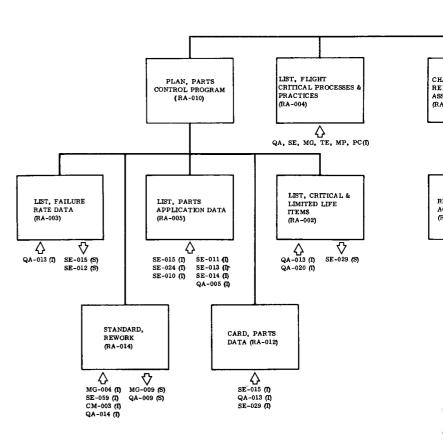


 $\begin{array}{c} \text{TE-161} (1) \\ \text{MG-006} (1) \\ \text{QA-014} (1) \\ \text{QA-020} (1) \\ \text{SE-048} (1) \\ \text{QA-009} (1) \\ \text{QA-009} (1) \\ \text{QA-009} (1) \\ \text{QA-029} (1) \\ \text{TE-046} (1) \end{array}$ 

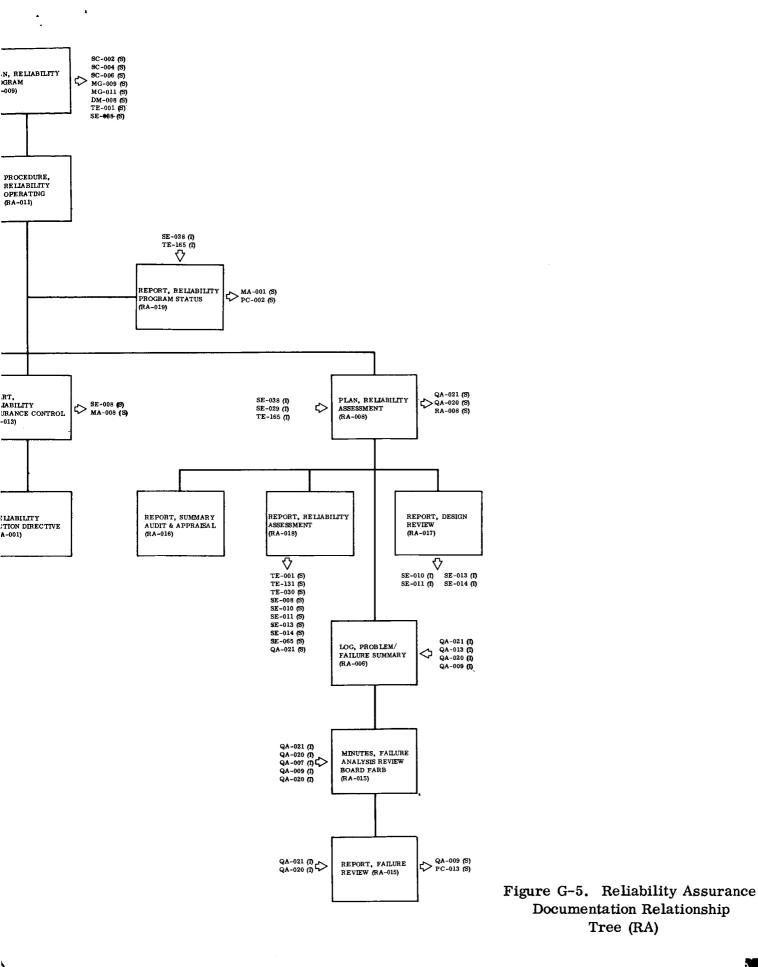
PL PR (R4



 $\bigtriangleup$  indicates principal relationship (I, S, or G) between data items in other functional categories.



5-3



5-4

## DATA ITEM PHASING/FREQUENCY

Figure G-6, Reliability Assurance Data Item Phasing and Frequency Matrix, provides a detailed picture of data item preparation requirements by the reliability function. Control and reporting requirements are of particular significance. Not reflected, however, but of equal significance, is the interrelationship with and surveillance by reliability of the engineering, manufacturing, and quality, assurance functions.

Figure G-7, Reliability Assurance Data Item Density Profile, reflects the distribution and density of data item preparation requirements in monthly averages by major project review periods.

Requirements for preparation of Parts Data Cards (RA-012) early in the project cause some distortion to an otherwise well-distributed data item preparation cycle.

												•
				>			>			>		$\diamond$
			si	DR		PÍ	DR I		н	DR		CDR
		PHASE	C - SYS	TEM DEFINI	TION	>		<u> </u>				
RELIABILITY	-		,	 Mo				- 9 Mo			— 12 Mo —	
(RA)						-						
								\$	/C and O	SE DESIGN - I		
											HDWE, FAB	·
					PDR 2	Mo		HDR 5	Mo 🗕		CDR 4	Mo
DATA ITEM	 					-						
TITLE	QUANTITY	FREQUENCY	TOTAL	QUANTITY	FREQUENCY	TOTAL	QUANTITY	FREQUENCY	TOTAL	QUANTITY	FREQUENCY	TOTAL
DIRECTIVES						75	200	Da	200	260	Ďa	260
RA-001 *Reliability Action Directives	75	. Da	75	75	Da	75	200	Da	200	200	Da	200
	•											┝──╋
LISTS												┝───╊
The construction of the land time the	1	I	1	. 1	U	1						┝───╊
RA-002 List, Critical and Limited Life Item	1	I	1	1	U	1		<u> </u>				
RA-003 List, Failure Rate Data RA-004 List, Flight Critical Processes and Pract.	1	T	1	1	U	1						
RA-005 List, Parts Application Data	1	I		1	U	1		<u>†</u>				
NA-005 Dist; Takes Application Data					1							
LOGS												
RA-006 Log, Problem/Failure Summary							1	2/U	3	1	3/U	4
		Ι										
MINUTES												
(FARB)												
RA-007 *Minutes, Failure Analysis Review Board				1	wk	15	1	wk	40	1	wk	52
		<b></b>						<u> </u>		<b></b>		
PLANS		[	ļ					<b> </b>		<b></b>		
	<b>_</b>	<b>↓</b>	1	1	U	1	ļ					┞┈╂
RA-008 Plan, Reliability Assessment	1	I	1	1	U	1	<b> </b>	<b> </b>			<u> </u>	┨──╁
RA-009 Plan, Reliability Program	1	I	1	1	U	1					+	
RA-010 Plan, Parts Control Program				<u> </u>		<u> </u>	<u> </u>	<del> </del>				<del>│───</del> ┧
PROCEDURES		<u>∤</u>		<u> </u>	╂			<u>├</u>		<u> </u>	<u> </u>	<u>                                      </u>
PROCEDURES		<u> </u>			1			+			<u> </u>	1 1
RA-011 Procedure, Reliability Operating	1	I	1	1	U	1		<u> </u>		1	1	
						<b> </b>	l –	1			t	
RECORDS					<u> </u>			İ				
		İ						Ι				
RA-012 Card, Parts Data		İ		20000	0/T	20000	20000	0/T	20000			
RA-013 Chart, Reliability Assurance Control		-	Γ	6	0/т	6	6	0/T	6	6	0/T	6
									ļ	<b>_</b>		↓↓
REPORTS										<b></b>	ļ	
<u></u>	<b>_</b>	ļ		L			I				<u> </u>	<b> </b>
RA-015 Report, Failure Review		ļ	Ļ	<b> </b>			36	wk	1400	60	wk	3,000
RA-016 Report, Summary, Audit and Appraisal		<b>_</b>	<u> </u>	1	<u> </u>	1	1	Q	3	1	Q .	4
RA-017 Report, Design Review	1	wk	15	1	wk	15	5	wk	200 3	7	wk Q	364 4
RA-018 Report, Reliability Assessment	<b> </b>			1	0/T	1	1	Q 0/T	1	1	0/T	$\begin{vmatrix} 4\\1 \end{vmatrix}$
RA-019 Report, Reliability Program Status			<u> </u>	<u> </u>	0/1	<u> </u>	· · · ·	0/1	<u> </u>			
		+		<b> </b>		<del> </del>	ł	ł	┨────	<u> </u>	ł – – –	1 1
STANDARDS			ł		1	<u> </u>	<b> </b>	1		ŧ	<u> </u>	++
RA-014 Standard, Rework		+	<b>├</b> ──	1	M	3	1	F	1		<u> </u>	
RA-014 Standard, Rework				<u> </u>						1		
TOTALS			98	t		20124		1	21, 857	1	1	3, 695
			<b></b>	L			A		1-1,00	A	<u>.</u>	1-1-1-1-1

## \*Key Informal Data

`,

. .

A S/A WK MO B/W B/M	Annual Semi-Annual Weekly Monthly Bi-Weekly Bi-Monthly	O/T A/R U I/U DA Q	One Time As Required Update One Update Daily Quarterly	I F SDR PDR HDR	Initial Final New and Revised System Design Review Preliminary Design Review Hard Design Review	CDR FACI MAR J FACT	Critical Design Re First Article Confi Mission Acceptanc Joint Flight Accept Composite Testin
------------------------------------	---	-----------------------------------	---	-----------------------------	--	------------------------------	---

			^			A A /						<b>`</b>	
1					м	AR		JF	VACT LAU			INCH	
<b></b>	- 17 Mo	ACQUISTION	- 14 Mo			5	Mo						
FLT. S/C ASSY TEST C/O						PRELAUNCH & L			AUNCH OPERATIONS				
PTM HDME FAB			FLT. HOME PROC. FAB.			- 1 mo mar						:	
UANTITY	1		QUANTITY	FREQUENCY	TOTAL		FREQUENCY	TOTAL	QUANTITY	FREQUENCY	TOTAL	TOTALS	NOTES AND ASSUMPTIONS
370	da	370	305	da	305	50	da	50				1335	5 da wk
			ļ										·····
ļ													
		<u> </u>	<u> </u>	<u> </u>								2	· · · · · · · · · · · · · · · · · · ·
								_				2	
												. 2	
1	4/U	5	1	4 U	5	1	3/U	4	1	1/U	2	23	
		<u> </u>											
······													
1	wk	74	1	wk	61							242	
		ļ											
												2	
. <u> </u>			ļ									2	
			<u> </u>		$\left\{ - \right\}$							2	
		<b> </b>											· · · · · · · · · · · · · · · · · · ·
												40000	
6	0/т	6	6	0/T	6	6	0/T	6	6	0/T	6	42	
	ļ												
60	wk	4500	14	wk	850	1	Wk	6				9,756	· · · · · · · · · · · · · · · · · · ·
1	Q	4	<u>``</u>	Q	6							18	
1	Q	4	1	Q	6	1	Q	1	1	Q	1	594 19	
1	0/T	1	1	_0/T	1			· · · ·				5	Following ea major design review
												4	
		4964		<b> </b>	1240			61			9	52, <b>054</b>	
	å		<b>6</b>	•			· · · · · · · · · · · · · · · · · · ·		• • • •	· · · · · · · · · · · · · · · · · · ·	<b>_</b>		

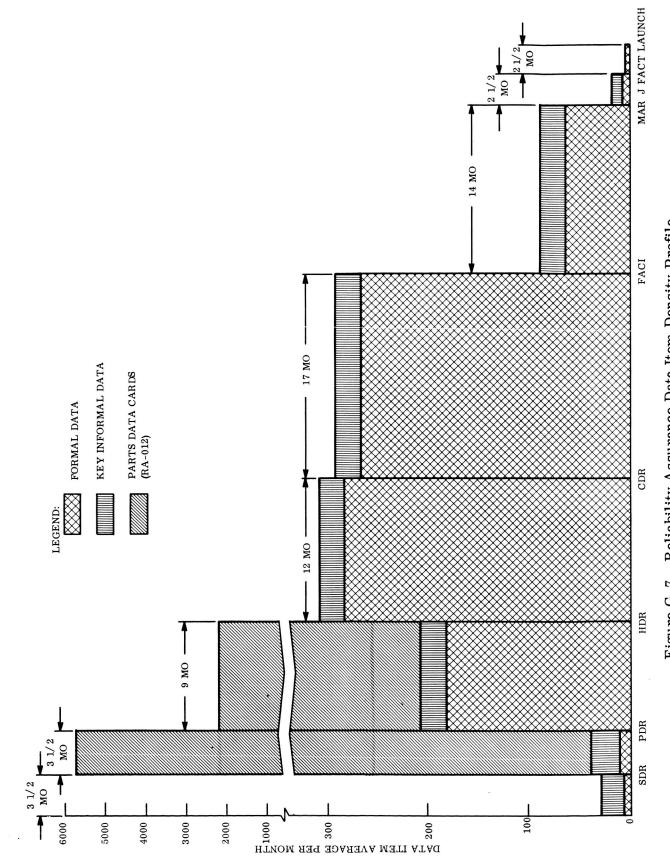
iew Juration Inspection Review

, **`** 

ince 3

## Figure G-6. Reliability Assurance Data Item Phasing and Frequency Matrix

- Aller



• 4

Figure G-7. Reliability Assurance Data Item Density Profile