NCD NONCONFORMANCE DOCUMENT

MRB 41a

N023825

DOCUMENT INITIATION DATA

ASSY/DETAIL PART NUMBER	TRACEABILITY NUMBER	ORDER TYPE/NUMBER
8090101 0000-XXX	NOTED	

ASSY/DETAIL PART NAME	PROJECT	EFFECTIVITY	CTRL PT	GFP
ET COMPLETE	ET / COMM	NOTED	1027	Y / G / N

SUPPLIER CODE	SUPPLIER NAME	ORIGINATION LOCATION	TAIR BOOK (BK/PG)

INITIAL REPORT	REFERENCE DOCUMENT(S)

ITEM INITIATION DATA

ITEM	PART NUMBER	TRACEABILITY NUMBER	LOT QTY	QTY REJ	UOM
1	8090101 0000-120	NOTED	2	2	[redacted]

PART NAME	PI NUMBER	STEP NO	SHEET / ZONE / VIEW	CA TYPE
ET COMPLETE				1 D / C

DEFECT CODE	HDWR CODE	CC	EE BADGE	FAILURE	CRIT	DEPT FND	DEPT LBL	SCC	WELD CODE	WELD GRD
[illegible]				Y / N		3741	0000			

INITIATOR	BADGE	DATE	WELD TYPE	ORIG WELD TOOL	DETECT METHOD
[redacted]	[redacted]	9-25-01	T / V / S		VISUAL

VALIDATED BY	BADGE	DATE	MATERIAL THICKNESS ACTUAL	MATERIAL THICKNESS DRAWING	DEFECT LOC	REP ATTEMPT
[redacted]	[redacted]	9-25-1			ISL / OSL	ISL / OSL

RELIABILITY ASSURANCE	BADGE	DATE

DETECT METHOD: VISUAL / X-RAY / PENETRANT

DISCREPANCY DESCRIPTION	REPAIR	DEFECT LOCATION	DEFECT LENGTH

THIS ITEM IS WRITTEN TO DOCUMENT MULTI-EFFECTIVITY ACCOUNTABILITY

CAUSE AND CORRECTIVE ACTION DATA

CAUSE: ~~Defer to NCD# N023824~~ [redacted] 9-25-01

CORRECTIVE ACTION: ~~Defer to NCD# N023824~~ [redacted] 9-25-01

CAC	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE	PA&A CAUSE & CORRECTIVE ACTION REVIEW	BADGE	DATE

DISPOSITION DATA

MRB 41 — DISPOSITION 42: MRB DISPOSITION OF THIS ITEM IS NOT REQUIRED. REFER TO SUBSEQUENT ITEMS FOR DEFECT DISPOSITION

REQUEST AUTHORIZATION FOR MULTI-EFFECTIVITY FROM [redacted] 9-25-01

CONCUR: [redacted] 9/25/01

SHOP STAMP	INSP STAMP	CUST STAMP
	MSS [redacted] 9-26-1	

VISUAL INSPECTION ACCEPT	VISUAL INSPECTION REJECT	PROD OPS X-RAY ACCEPT	PROD OPS X-RAY REJECT

WELDER	PA X-RAY ACCEPT	PA X-RAY REJECT

WELD WIRE ACCEPTANCE	PENETRANT ACCEPT	PENETRANT REJECT

REPAIR PER SRI W-001	WELD WIRE LAB TICKET
☐ I ☐ II ☐ III	

PCN	WELD WIRE LOT NUMBER

[redacted]

MR CD	LAB / LICALL	SRI NUMBER	NUMBER OF ATTACHMENTS	NUMBER OF NCSDs
37			1 2 3 4 5 6 7 8 9 10 2	1 2 3 4 5 6 7 8 9 10 1

DOCUMENT CLOSURE DATA

DISP CODE	NUMBER OF ITEMS	TRANSFER TO DOCUMENT	PROJECT ACCEPTANCE	BADGE	DATE
N / M / F	1 2 3 4 5 6 7 8 9 10		[redacted]	[redacted]	9/25/01

QC SUPERVISOR CLOSURE ACCEPTANCE	BADGE	DATE	CUSTOMER CLOSURE ACCEPTANCE	DATE
[redacted]	[redacted]	9-26-1	[redacted]	[illegible]

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NCSD NONCONFORMANCE SUPPLEMENTAL DATA

NCD NUMBER 1	ITEM 2	PAGE 3
N023825	1	2

BLOCK "b" AND "f" CONT'D:

ET	S/N
93	00000000086
94	00000000087
111	00000000104
112	00000000105
113	00000000106
114	00000000107
115	00000000108
116	00000000109

RA [redacted] 9-25-01

BLOCK "3" CONT'D:

S/N

00000000086

00000000087

RA [redacted] 9-25-01

Block A2 cont'd

Reference OD010668 [redacted]

RA [redacted] 9-26-1

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[redacted]

8/30/01
Lmstrut.doc

[redacted]

Lockheed Martin Space Systems Company

Dea[redacted]

The intent of this letter is to notify Lockheed Martin Space Systems Company that there is a possibility that nonconforming hardware has escaped [redacted] inspection system. This stems from a finding that some of welds 4 thru 9 on strut assembly 10950-91-3-3 do not meet the design requirement. This problem affects the 17-inch line assemblies (14175-500, 509 and 510)

[redacted] has captured the hardware that is in house either in the strut configuration or in subs and top assemblies. They have been inspected again. Please see attached for the findings.

[redacted] suggests that LM inspect the hardware that is on hand or on the tank and inform [redacted] of the findings. If you have any question please give me a call.

Sincerely,

[redacted]

Program Manager External Tank

[redacted]

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NCD N023825
ATTACHMENT 1-1

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LOCKHEED MARTIN

OPERATIONS DIRECTIVE

PROGRAM	TYPE	GROUP ID	OPERATIONS DIRECTIVE NO
External Tank	NCD	C&DM	01/OD/0668
CUSTOMER NAME: NASA/MSFC			
CONTRACT TYPE: CPIF	REF. CONTROL NO.: NCD N023825	PCIN: N/A	UCN: N/A
CONTRACT NUMBER(S): NAS8-36200 & NAS8-00016		AUTHORIZED [redacted]	
TITLE: ET Complete - ET-93& 94, ET-111 thru ET-114 Filet Weld Size			DISPOSITION: N/A

1.0 REFERENCE:

1.1 None

2.0 ENCLOSURE:

2.1 NCD N023825

3.0 AUTHORITY:

3.1 RMO Signature on Enclosure 2.1

4.0 PURPOSE:

4.1 This Operations Directive authorizes "Use As Is" disposition for discrepant filet welds as identified on NCD N023825 for ET's -93 & -94, ET-111 through ET-114.

5.0 DIRECTION:

5.1 Product Assurance shall accept "Use As Is" disposition provided on NCD N023825.

6.0 SCHEDULES / RESPONSIBILITIES

6.1 All departments shall support this effort as required.
6.2 This Operations Directive is effective immediately.

7.0 BUDGET:

7.1 No additional budget is authorized by this Operations Directive.

8.0 EFFECTIVITY:

8.1 ET's-93, -94, -111 thru ET-114

DISTRIBUTION	CONCURRENCE:
ET #6	

NCD 23825
ATTACH #2 OF ETHWI
PG. 1 OF 1

MAF/MMA 33-028 (1/91) o

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1: NO.23825 | ITEM A2: 2 | PAGE A3: 1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
2	8070.10.1.0.000-509	NOTED	4	4	ea

PART NAME 7: ET Complete | PI NUMBER 8 | STEP NO 9 | SHEET / ZONE / VIEW 10 | CA TYPE 11: I / D / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT LBL 19	SCC 20	WELD CODE 21	WELD GRD 22
				Y (N)		3741	0000			

INITIATED BY [redacted] | BADGE [redacted] | DATE 29: 9-25-01 | WELD TYPE 23: T / V / S | ORIG WELD TOOL 24 | DETECT METHOD 25: ☐ VISUAL ☐ X-RAY ☐ PENETRANT

VALIDATED BY [redacted] | BADGE [redacted] | DATE 30: 9-25-1 | MATERIAL THICKNESS 26: ACTUAL / DRAWING | DEFECT LOC 27: ISL / OSL

RELIABILITY ASSURANCE | BADGE | DATE 31 | REP ATTEMPT 28: ISL / OSL

DISCREPANCY DESCRIPTION 32: This item is written to document multi-effectivity accountability.

REPAIR 33 | DEFECT LOCATION 34 | DEFECT LENGTH 35

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36

CORRECTIVE ACTION 37

CAC 38	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE 39	PA&A CAUSE & CORRECTIVE ACTION REVIEW	BADGE	DATE 40

DISPOSITION DATA

☒ MRB 41 | DISPOSITION 42: MRB disposition of this item is NOT Required. Refer to subsequent items for defect disposition.

Request authorization for multi-effectivity from [redacted]

[redacted] RA 9-25-01

Concur: [redacted] 9/25/01

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	[redacted] SSW 9-26-1	

VISUAL INSPECTION 46		PROD OPS X-RAY 47	
ACCEPT	REJECT	ACCEPT	REJECT

WELDER 48	PA X-RAY 49	
	ACCEPT	REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51	
	ACCEPT	REJECT

REPAIR PER SRI W-001 52: ☐ I ☐ II ☐ III | WELD WIRE LAB TICKET 53

PCN 54 | WELD WIRE LOT NUMBER 55

Block #3 Cont'd:

ET III - 114 S/N

000000000104

000000000105

000000000106

000000000107 [redacted] 9-25-01

MR CODE 56	LAB / LICALL 57	SRI NUMBER 58	NUMBER OF ATTACHMENTS 59	NUMBER OF ROUTES 60
37			1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10

MAF/MMA 37-033A (11/95)

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER N0238.25 | ITEM A2: 3 | PAGE A3: 1

ITEM INITIATION DATA

ITEM 3 | PART NUMBER 8A90101.0000-519 | TRACEABILITY NUMBER: NOTED | LOT QTY: 2 | QTY REJ: 2 | UOM: ea

PART NAME: ET Complete | PI NUMBER | STEP NO | SHEET / ZONE / VIEW | CA TYPE: I / D / C

DEFECT CODE | HDWR CODE | CC | EE BADGE | FAILURE: Y / N | CRIT | DEPT FND: 3141 | DEPT LBL: 0000 | SCC | WELD CODE | WELD GRD

INITIATED BY: [redacted] BADGE: [redacted] DATE: 9-25-01

VALIDATED BY: [redacted] BADGE: [redacted] DATE: 9-25-1

RELIABILITY ASSURANCE | BADGE | DATE

WELD TYPE: T / V / S | ORIG WELD TOOL | DETECT METHOD: ☐ VISUAL ☐ X-RAY ☐ PENETRANT

MATERIAL THICKNESS: ACTUAL | DRAWING | DEFECT LOC: ISL / OSL | REP ATTEMPT: ISL / OSL

DISCREPANCY DESCRIPTION: This item is written to document multi-effectivity accountability. | REPAIR | DEFECT LOCATION | DEFECT LENGTH

CAUSE AND CORRECTIVE ACTION DATA

CAUSE

CORRECTIVE ACTION

CAC | CAUSE & CORRECTIVE ACTION ACCEPTANCE | BADGE | DATE | PA&A CAUSE & CORRECTIVE ACTION REVIEW | BADGE | DATE

DISPOSITION DATA

☒ MRB | DISPOSITION: MRB disposition of this item is not required. Refer to subsequent items for defect disposition.

Request authorization for multi-effectivity from [redacted]

RA [redacted] 9-25-01

Concur: [redacted] 9/25/01

SHOP STAMP | INSP STAMP: [redacted] 9-25- | CUST STAMP

VISUAL INSPECTION: ACCEPT | REJECT

PROD OPS X-RAY: ACCEPT | REJECT

WELDER | PA X-RAY: ACCEPT | REJECT

WELD WIRE ACCEPTANCE | PENETRANT: ACCEPT | REJECT

REPAIR PER SRI W-001: ☐ I ☐ II ☐ III | WELD WIRE LAB TICKET

PCN | WELD WIRE LOT NUMBER

Block # 3 Cont'd:

ET #115 - 116 S/N

9/25/01 [redacted] 0000000108

0000000109

RA [redacted] 9-25-01

MR CD: 3 | LAB / LICALL | SRI NUMBER | NUMBER OF ATTACHMENTS: 1 2 3 4 5 6 7 8 9 10 | NUMBER OF NCSDs: 1 2 3 4 5 6 7

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	4	1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
4	PD4800175-089	NOTED	2	2	EA

PART NAME 7	PI NUMBER 8	STEP NO 9	SHEET / ZONE / VIEW 10	CA TYPE 11
F/L OXIDIZER - ELBOW ASSY.				I (D) / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT LBL 19	SCC 20	WELD CODE 21	WELD GRD 22
FWCL UF ST	SPF	SI		Y (N)		3741	0012			

INITIATED BY	BADGE	DATE 29	WELD TYPE 23	ORIG WELD TOOL 24	DETECT METHOD 25
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL
VALIDATED BY	BADGE	DATE 30	MATERIAL THICKNESS 26 ACTUAL / DRAWING	DEFECT LOC 27 ISL / OSL	☐ X-RAY
[redacted]	[redacted]	9-25-1		REP ATTEMPT 28 ISL / OSL	☐ PENETRANT
RELIABILITY ASSURANCE	BADGE	DATE 31			

DISCREPANCY DESCRIPTION 32 | REPAIR 33 | DEFECT LOCATION 34 | DEFECT LENGTH 35

[redacted] DWG. 10950-91-3-3, REV A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9, S/B CONVEX AND HAVE .18" MIN LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36: Defer to NCD# N023824

CORRECTIVE ACTION 37: Defer to NCD# N023824

CAC 38	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE 39	PA & CAUSE & CORRECTIVE ACTION	BADGE	DATE 40
CI	[redacted]	[redacted]	9-25-01	[redacted]	[redacted]	9/28/01

DISPOSITION DATA

☒ MRB 41 | DISPOSITION 42

BLOCK "3" CONT'D:

ET	S/N
93	00000000756
94	00000000757

RA [redacted] 9-25-01

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	[redacted] 9-26-1	

VISUAL INSPECTION 46 ACCEPT	REJECT	PROD OPS X-RAY 47 ACCEPT	REJECT

WELDER 48	PA X-RAY 49 ACCEPT	REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51 ACCEPT	REJECT

REPAIR PER SRI W-001 52	WELD WIRE LAB TICKET 53
☐ I ☐ II ☐ III	
PCN 54	WELD WIRE LOT NUMBER 55

MR CD 56	LAB / LICALL 57	SRI NUMBER 58	NUMBER OF ATTACHMENTS 59	NUMBER OF NCSDs 60
7 3			(1) ~~2 3 4 5 6 7 8 9 10~~ 1	(1) ~~2 3 4 5 6 7 8 9 10~~

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NCSD NONCONFORMANCE SUPPLEMENTAL DATA

NCD NUMBER 1	ITEM 2	PAGE 3
NO 23825	4	2

BLOCK 42 CONT'D 4

THIS DISPOSITION COVERS ITEMS 4 THROUGH 9.
USE AS IS. FORM, FIT, AND FUNCTION NOT ADVERSELY
AFFECTED. M.S. AFFECTED.
MS. NCD = 1.39 SF = 1.40 FLIGHT
M.S. DWG = 2.57 REF STRESS LIB NO 23825
THIS ANALYSIS IS BASED ON WORST CASE STRESS AT
THE WORST (HIGHEST STRESS) STRUT FOR THE HIGHEST
STRESS BSTRA. THE ANALYSIS ASSUMES A WORST CASE
LEG LENGTH OF .134" AND CONSERVATIVE WORST CASE
THROAT OF 0.085". ADDITIONAL RATIONALE FOR
ACCEPTANCE IS BASED ON ATP FOR THE BSTRA AND LINES.
ALL BSTRA FILLET WELDS IN QUESTION ARE PROOF
TEST DEMONSTRATED TO AT LEAST 145% OF FLIGHT
LIMIT LOAD OR TO GREATER THAN FLIGHT ULTIMATE
LOAD. ANALYSIS ALSO PERFORMED FOR NO OB FILLET WELD M.S. = 0.78

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

NASA Eng. [redacted] 9/26/01

NASA S&MA [redacted] 9/26/01

NASA- [redacted] 9-26-01

BLOCK 42 CONTINUED:

Request NASA R&D concurrence.

PA/MRB [redacted] 9/26/01

CONTRACTS [redacted] 9/26/01

OD 01/00/0668

BLOCK 42 cont'd.

ALL WORK ON THIS NCD COMPLETE AND ACCEPTABLE AND THE
CUTTING TAG WAS BEEN DESTROYED.

QA [redacted] 9-26-01

MAF/MMA 37-028 (12/93)

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Fillet Weld Configuration Issue at [redacted]

Attachment No. 4-1 to NCD N023825

Block 32 Continued:
Insufficient fillet weld material was deposited on BSTRA welds. [redacted] Process Specification MPS-MPQ-103-100 states a minimum leg dimension of 0.180" and a minimum throat dimension of 0.126".

Additional Information:
PQCFR wrote a SPAR to the supplier.

Further investigation by the LM Representative and [redacted] involved inspection of all BSTRA assemblies and sub-assemblies at the facility.

The worst cases discovered were 0.134" leg and 0.095" throat.

Twenty-three of 72 ea. Struts were found to have anomalous welds. There were 432 ea. Strut welds on BSTRA sub assemblies (3 leg, 6 leg and completed assemblies not welded into housings) inspected. Twenty-eight welds were found to have nonconforming welds. All nonconforming welds were on the outboard side of the strut only.

There were 18 ea. BSTRA assemblies and sub-assemblies welded into housings (subassemblies or completed lines). Pad-to-housing welds (216 ea.) were not re-inspected as a result of the Strut investigation. No weld configuration anomalies were seen by visual inspection. There was no reason to suspect an anomaly based on the even and consistent density of X-ray film for those welds and previous in-process inspections.

Inspection of 216 ea. Strut welds by direct visual and Boroscope produced approximately 57 ea. that had insufficient leg length. All 108 ea. outboard Strut welds appeared to have a concave condition.

All lines receive post ATP visual inspection of external surfaces for damage and deformation. This inspection is performed at [redacted] by the [redacted] inspector and a Lockheed Martin inspector.

At the cleaning facility [redacted], all lines receive a visual inspection of internal surfaces after precision cleaning. A flashlight is used to inspect all internal surfaces for contamination and loose particles.

[redacted] 9/26/01

Procurement Quality Control

N

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	5	1

ITEM INITIATION DATA

ITEM	PART NUMBER	TRACEABILITY NUMBER	LOT QTY	QTY REJ	UOM
5	PD4800175-090	NOTED	2	2	EA

PART NAME	PI NUMBER	STEP NO	SHEET / ZONE / VIEW	CA TYPE
F/L OXIDIZER - AFT ASSY				I (D) / C

DEFECT CODE	HDWR CODE	CC	EE BADGE	FAILURE	CRIT	DEPT END	DEPT LBL	SCC	WELD CODE	WELD GRD
FWCL UF ODSI	SPF	SI		Y / (N)		3741	0012			

INITIATED BY	BADGE	DATE	WELD TYPE	ORIG WELD TOOL	DETECT METHOD
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL
[redacted]	[redacted]	9-25-1	MATERIAL THICKNESS: ACTUAL / DRAWING	DEFECT LOC: ISL / OSL	☐ X-RAY
RELIABILITY ASSURANCE	BADGE	DATE		REP ATTEMPT: ISL / OSL	☐ PENETRANT

DISCREPANCY DESCRIPTION	REPAIR	DEFECT LOCATION	DEFECT LENGTH
[redacted] DWG. 10950-91-3-3			

REV A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9, S/B CONVEX AND HAVE .18" MIN. LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH.

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE: Defer to NCD# N023824

CORRECTIVE ACTION: Defer to NCD # N023824

CAC	[redacted]	DATE	PA&A CAUSE & CORRECTIVE ACTION REVIEW	BADGE	DATE
CI	[redacted]	9-25-01	[redacted]	[redacted]	9/28/01

DISPOSITION DATA

☒ MRB

DISPOSITION

BLOCK "3" CONT'D:

ET	S/N
93	00000000640
94	00000000641

RA [redacted] 9-25-01

FINAL DISPO IS AS STATED ON NCSD 4-2 LINES 1-17.

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

SHOP STAMP	INSP STAMP	CUST STAMP
	[redacted] 9-26-1	

VISUAL INSPECTION		PROD OPS X-RAY	
ACCEPT	REJECT	ACCEPT	REJECT

WELDER	PA X-RAY	
	ACCEPT	REJECT

WELD WIRE ACCEPTANCE	PENETRANT	
	ACCEPT	REJECT

REPAIR PER SRI W-001: ☐ I ☐ II ☐ III

WELD WIRE LAB TICKET

PCN

WELD WIRE LOT NUMBER

Block A2 cont'd.

All work on this NCD item is complete and acceptable.

RA [redacted] 9-26-1

7 [redacted]

MR CD	LAB / LICALL	SRI NUMBER	NUMBER OF ATTACHMENTS	NUMBER OF NCSDs
3			~~1 2 3 4 5 6 7 8 9 10~~	~~1 2 3 4 5 6 7 8 9 10~~

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	6	1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
6	PD4800175-099	NOTED			

PART NAME 7	PI NUMBER 8	STEP NO 9	SHEET / ZONE / VIEW 10	CA TYPE 11
F/L OXIDIZER - FWD ASSY				I (D) / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT LBL 19	SCC 20	WELD CODE 21	WELD GRD 22
FWCL UF ~~OD~~ S I	SPF	SL		Y / (N)		3741	0012			

INITIATED BY	BADGE	DATE 29	WELD TYPE 23	ORIG WELD TOOL 24	DETECT METHOD 25
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL
VALIDATED BY	BADGE	DATE 30	MATERIAL THICKNESS 26 ACTUAL / DRAWING	DEFECT LOC 27 ISL / OSL	☐ X-RAY
[redacted]	[redacted]	9-25-1		REP ATTEMPT 28 ISL / OSL	☐ PENETRANT
RELIABILITY ASSURANCE	BADGE	DATE 31			

DISCREPANCY DESCRIPTION 32	REPAIR 33	DEFECT LOCATION 34	DEFECT LENGTH 35
[redacted] DWG. 10950-91-3-3			

REV. A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9 S/B CONVEX AND HAVE .18" MIN LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH.

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36: Defer to NCD# N023824

CORRECTIVE ACTION 37: Defer to NCD# N023824

CAC 38	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE 39	PAA CAUSE & CORRECTIVE ACTION REVIEW	BADGE	DATE 40
C.L.	[redacted]	[redacted]	9-25-01	[redacted]	[redacted]	9/28/01

DISPOSITION DATA

☒ MRB 41 DISPOSITION 42

BLOCK "3" CONT'D:

ET	S/N
93	00000000696
94	00000000697

RA [redacted] 9-25-01

FINAL DISPO IS AS STATED ON NCSD 4-2 LINES 1-17.

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	MSS [redacted] 9-26-1	

VISUAL INSPECTION 46 ACCEPT	REJECT	PROD OPS X-RAY 47 ACCEPT	REJECT

WELDER 48	PA X-RAY 49 ACCEPT	REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51 ACCEPT	REJECT

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

REPAIR PER SRI W-001 52	WELD WIRE LAB TICKET 53
☐ I ☐ II ☐ III	
PCN 54	WELD WIRE LOT NUMBER 55

Block 42 cont'd

All work on this NCD item is complete and acceptable.

[redacted]

PA [redacted] 9-26-1

7 [redacted]

MR CD 56	LAB / LICALL 57	SRI NUMBER 58	NUMBER OF ATTACHMENTS 59	NUMBER OF NCSDs 60
3			1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10

MAF/MMA 37-033A (11/95)

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	7	1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
7	PD4800175-500	NOTED	6	6	EA

PART NAME 7	PI NUMBER 8	STEP NO 9	SHEET / ZONE / VIEW 10	CA TYPE 11
F/L OXIDIZER - ELBOW ASSY.				I / D / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT LBL 19	SCC 20	WELD CODE 21	WELD GRD 22
FWCL UF ~~AD~~ S I	SPF	SI		Y / N		3741	0012			

INITIATED BY	BADGE	DATE 29	WELD TYPE 23	ORIG WELD TOOL 24	DETECT METHOD 25
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL
[redacted]	[redacted]	DATE 30: 9-25-1	MATERIAL THICKNESS 26: ACTUAL / DRAWING	DEFECT LOC 27: ISL / OSL	☐ X-RAY
RELIABILITY ASSURANCE	BADGE	DATE 31		REP ATTEMPT 28: ISL / OSL	☐ PENETRANT

DISCREPANCY DESCRIPTION 32	REPAIR 33	DEFECT LOCATION 34	DEFECT LENGTH 35
[redacted] DWG. 10950-91-3-3			

REV A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9 S/B CONVEX AND HAVE .18" MIN LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH.

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36: Defer to NCD # N023824

CORRECTIVE ACTION 37: Defer to NCD # N023824

CAC 38	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE 39	PA & CAUSE & CORRECTIVE ACTION VIEW	BADGE	DATE 40
CI	[redacted]	[redacted]	9-25-01	[redacted]	[redacted]	9/28/01

DISPOSITION DATA

☒ MRB 41 DISPOSITION 42

BLOCK "3" CONT'D:

ET	S/N
111	00000000800
112	" 801
113	" 802
114	" 803
115	" 804
116	" 805

RA [redacted] 9-25-01

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	MSS [redacted] 9-26-1	

VISUAL INSPECTION 46		PROD OPS X-RAY 47	
ACCEPT	REJECT	ACCEPT	REJECT

WELDER 48	PA X-RAY 49	
	ACCEPT	REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51	
	ACCEPT	REJECT

REPAIR PER SRI W-001 52	WELD WIRE LAB TICKET 53
☐ I ☐ II ☐ III	
PCN 54	WELD WIRE LOT NUMBER 55

FINAL DISPO IS AS STATED ON NCSD 4-2 LINES 1-17.

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

Block 42 cont'd

All work on this NCD item is completed [illegible] acceptable.

7 [redacted] RA [redacted] 9-26-1

MR CD 56	LAB / LICALL 57	SRI NUMBER 58	NUMBER OF ATTACHMENTS 59	NUMBER OF NCSDs 60
3			1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10

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NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	8	1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
3	PD48001175-509	NOTED	6	6	EA

PART NAME 7	PI NUMBER 8	STEP NO 9	SHEET / ZONE / VIEW 10	CA TYPE 11
F/L OXIDIZER - AFT ASSY				I (D) / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT RL 19	SCC 20	WELD CODE 21	WELD GRD 22
ENGLS	0SJ	SJ		Y / (N)		3741	0012			

INITIATED BY	BADGE	DATE 29	WELD TYPE 23	ORIG WELD TOOL 24	DETECT METHOD 25
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL ☐ X-RAY ☐ PENETRANT

VALIDATED BY	BADGE	DATE 30	MATERIAL THICKNESS 26 ACTUAL	MATERIAL THICKNESS 26 DRAWING	DEFECT LOC 27	REP ATTEMPT 28
[redacted]	[redacted]	9-25-1			ISL / OSL	ISL / OSL

RELIABILITY ASSURANCE	BADGE	DATE 31

DISCREPANCY DESCRIPTION 32	REPAIR 33	DEFECT LOCATION 34	DEFECT LENGTH 35
[redacted] DWG, 10950-91-3-3			

REV A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9, S/B CONVEX AND HAVE .18" MIN LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH.

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36: Defer to NCD # N023824

CORRECTIVE ACTION 37: Defer to NCD # N023824

CAC 38	CAUSE & CORRECTIVE ACTION ACCEPTANCE	BADGE	DATE 39	PA/QA CAUSE & CORRECTIVE ACTION REVIEW	BADGE	DATE 40
C, I	[redacted]		9-25-01	[redacted]	[redacted]	9/28/01

DISPOSITION DATA

☒ MRB 41 DISPOSITION 42

BLOCK "3" CONT'D:

ET	S/N
111	00000000825
112	826
113	827
114	828
115	829
116	830

RA [redacted] 9-25-01

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	MSS 9-26-1	

VISUAL INSPECTION 46 ACCEPT	VISUAL INSPECTION 46 REJECT	PROD OPS X-RAY 47 ACCEPT	PROD OPS X-RAY 47 REJECT

WELDER 48	PA X-RAY 49 ACCEPT	PA X-RAY 49 REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51 ACCEPT	PENETRANT 51 REJECT

REPAIR PER SRI W-001 52	WELD WIRE LAB TICKET 53
☐ I ☐ II ☐ III	

PCN 54	WELD WIRE LOT NUMBER 55

FINAL DISPO IS AS STATED ON NCSD 4-2 LINES 1-17.

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

Block 42 Cont'd. All work Dispositioned on this NCD is Complete and Acceptable.

[redacted] 9-26-1

MR CD 56	LAB / LICALL 57	SRI NUMBER 58	NUMBER OF ATTACHMENTS 59	NUMBER OF NCSDs 60
3			1 2 3 4 5 6 7 8 9 10 — 0	1 2 3 4 5 6 7 8 9 10 — 1

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26-27-2008 07:07

NCID NONCONFORMANCE ITEM DATA

NCD NUMBER A1	ITEM A2	PAGE A3
N023825	9	1

ITEM INITIATION DATA

ITEM 1	PART NUMBER 2	TRACEABILITY NUMBER 3	LOT QTY 4	QTY REJ 5	UOM 6
9	PD4800175-510	NOTED	6	6	EA

PART NAME 7	PI NUMBER 8	STEP NO 9	SHEET / ZONE / VIEW 10	CA TYPE 11
F/L OXIDIZER - FWD ASSY				I / D / C

DEFECT CODE 12	HDWR CODE 13	CC 14	EE BADGE 15	FAILURE 16	CRIT 17	DEPT FND 18	DEPT LBL 19	SCC 20	WELD CODE 21	WELD GRD 22
FWC6 ~~00~~ UF S1	SPF	SI		Y / N		3741	0012			

INITIATED BY	BADGE	DATE 29	WELD TYPE 23	ORIG WELD TOOL 24	DETECT METHOD 25
[redacted]	[redacted]	9-25-01	T / V / S		☐ VISUAL
VALIDATED BY [redacted]	BADGE [redacted]	DATE 30 9-25-1	MATERIAL THICKNESS 26 ACTUAL / DRAWING	DEFECT LOC 27 ISL / OSL	☐ X-RAY
RELIABILITY ASSURANCE	BADGE	DATE 31		REP ATTEMPT 28 ISL / OSL	☐ PENETRANT

DISCREPANCY DESCRIPTION 32: [redacted] DWG. 10950-91-3-3 | REPAIR 33 | DEFECT LOCATION 34 | DEFECT LENGTH 35

REV A STRUT ASSEMBLY, ZONE G5, WELDS 4 THRU 9, S/B CONVEX AND HAVE .18" MIN. LEG LENGTH, ARE SUSPECT TO BE CONCAVE AND LESS THAN .18" IN LEG LENGTH.

Cont'd Attachment 4-1

CAUSE AND CORRECTIVE ACTION DATA

CAUSE 36: Defer to NCD # NO ~~23823~~ [redacted] N023824

CORRECTIVE ACTION 37: Defer to NCD # ~~N023823~~ [redacted] N023824 9-25-01

CAC 38: CI [redacted] | DATE 39: 9-25-01 | [redacted] | DATE 40: 9/28/01

DISPOSITION DATA

☒ MRB 41 | DISPOSITION 42

BLOCK "3" CONT'D:

GI	S/N
111	00000000849
112	" 851
113	" 853
114	" 854
115	" 856
116	" 852

RA [redacted] 9-25-01

SHOP STAMP 43	INSP STAMP 44	CUST STAMP 45
	MSS [redacted] 9-26-1	

VISUAL INSPECTION 46 ACCEPT	REJECT	PROD OPS X-RAY 47 ACCEPT	REJECT

WELDER 48	PA X-RAY 49 ACCEPT	REJECT

WELD WIRE ACCEPTANCE 50	PENETRANT 51 ACCEPT	REJECT

REPAIR PER SRI W-001 52: ☐ I ☐ II ☐ III | WELD WIRE LAB TICKET 53

PCN 54 | WELD WIRE LOT NUMBER 55

FINAL DISPO IS AS STATED ON NCSD 4-2 LINES 1-17.

STRESS ENGR MRB: [redacted] 9-26-01

PA/MRB [redacted] 9/26/01

BLOCK A2 CONT'D ALL WORK DISPOSITIONED ON THIS ITEM IS COMPLETE AND ACCEPTABLE.

7 [redacted] [redacted] 9-26-1

MR CD 56	LAB / LICALL 57	SRI NUMBER	NUMBER OF ATTACHMENTS 59	NUMBER OF NCSDs 60
3			~~1 2 3 4 5 6 7 8 9 10~~	1 ~~2 3 4 5 6 7 8 9 10~~

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