

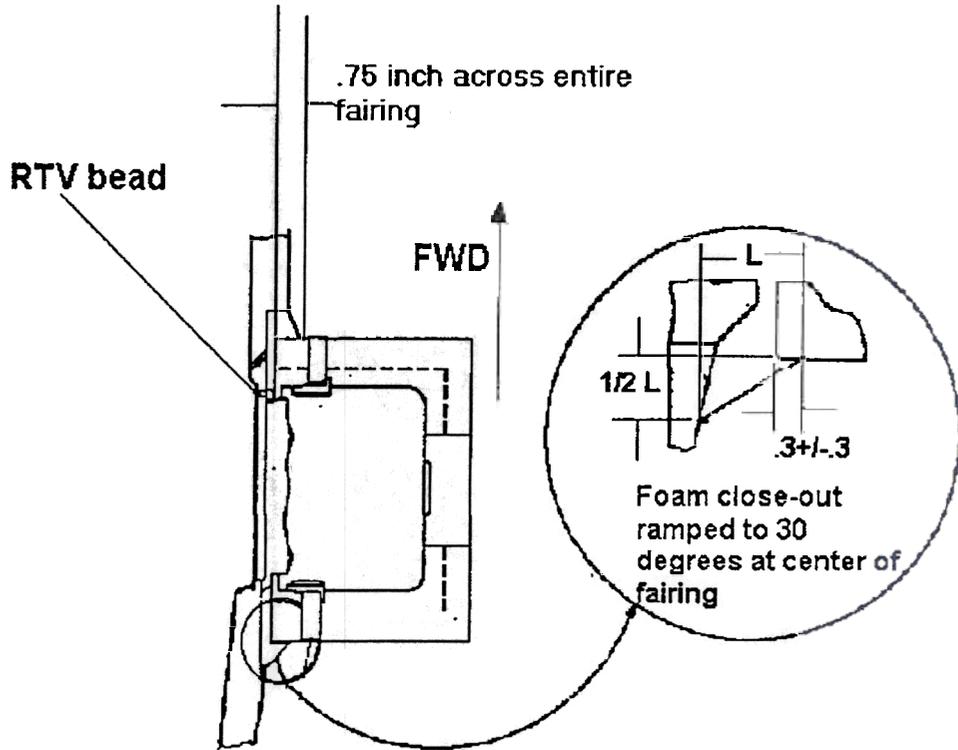
See View A-A for aft Periphery C/O Configuration

NOTE

The forward periphery close-out is straight across the fairing tangential to the tank surface.

Figure: Foam Close-Out
 (For Reference Only)
 -Y Side Shown (+Y side similar)

Foam flush with adjacent except as noted on Fwd and aft periphery



View A-A
Figure: Foam Close-Out
(For Reference Only)

12/2/02 06:56:07 PM

Official

PR ET-093-TS-0014

582405 020

PD 2.0 and 3.0 mold installation

20-3

3.0^①

CSR-569

Apply molds to the PD 2.0 and PD 2.0 areas per T5045.050

Log VAB-120302-04

① 付工
ME
08 12-3-02

3032
T: 7:11
DEC 03 02

*** End of PD 2.0 and 3.0 mold installation ***

20-7

QE
188
JPC 12/3/02



PD 1.0 mold installation

NOTE

It should be noted that while this is not the Crit 1 installation of foam, this is the final opportunity to see the close-out cavity prior foam installation. An OK to install inspection shall be performed prior to installation of molds. A final OK to install inspection shall be performed prior to Crit 1 foam application.

20-4

Verify PD item 1.0 area ready for mold installation.

OK To Install Qw:

SPC 322

N:

DEC 03 02

3032
12/1

T:

DEC 03 02

20-5

Remove masking materials from fwd periphery close-outs.

T:

DEC 03 02

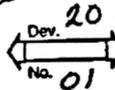
20-6

Place two 1/2 inch beads (1) roll 9320011829220 sealant putty (red) side by side around the periphery of the close-out cavity.

T:

DEC 03 02

12-3-02
WC
134
USA



T SEE DEV

3032
12/1
DEC 03 02

NOTE

Mold should fit as tightly as possible.

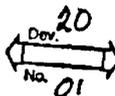
Fabricate mold forward periphery (ref Figure: Foam Close-Out) as follows:

Trim a sheet of RCAS 2400 30 +/-1 inch long by 2.5 +/-0.5 inch wide

Cover the close-out cavity with trimmed sheet to form mold.

- Press mold onto sealant tape.
- Trim excess RCAS 2400.

12-3-02
WC
134
USA



T SEE DEV

3032
12/1
DEC 03 02

T:

DEC 03 02

20-8

SEP 2002

NOTE

MMSMJ476C200 Tape does not adhere to foam surfaces well enough to provide adequate compression during foam rise. Tape shall be applied to mold to seal gaps in the mold.

20-8 Install mold on forward periphery (ref Figure: Foam Close-Out) as follows:

1.
 - **Overlap** strips of MMSJ476C200 tape around the perimeter of mold to increase the faying surface.
 - **Press** tape onto the sealant tape beads
2. Seal open ends and gaps with MMSMJ476C200 Tape
3. **Secure** any of the following materials
 (1) sheet 9330-00-K27-0610 Phenolic Sheet
 , (1) sheet 9330-00-K27-0611 Phenolic Sheet , (1) each 9330-00-K04-3227 shim stock , (1) each 9330-00-K04-3228 shim stock , or
 (1) sheet 8135-00-K02-4629 Etha Foam for a dam at the gap between the cable tray and the fairing and the between the fairing and the strut to preclude foam leakage.
4. **Place** one 2.0 inch wide strip of MMSJ476C200 tape to mold at the approximate center, at the +Z end and at the -Z end of the mold on the forward (PD 1.0 area).
5. **Cut** single slit in the tape strips applied to the mold at the approximate center of tape strip to allow for venting and injection of foam.

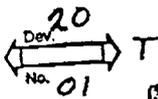
3032

T: 

DEC 03 02

12-3-02

WC
134
USA



SEE DEV

3032

DEC 03 02

*** End of PD 1.0 mold installation ***



12/2/02 06:56:07 PM

Official

PR ET-093-TS-0014

09E483 923

20-9

CSR-569

Apply PDL 1034 per T5045.060

- Inject PDL into the PD 2.0 and PD 3.0 areas per standard methods
- Inject 40cc's of foam simultaneously at the +Z and -Z ends of the PD 1.0 area and vent foam at center of mold.

Log VAB-120302-05

T: ⁸⁰³² 7/1

DEC 03 02

WARNING

Hand sanding/trimming of materials can create nuisance dust and debris which are irritants.
Exposure may cause eye, skin and lung irritation.

Wear N-Dex gloves and industrial goggles.
Wear coveralls when creating dust.

WM014 07-19-02

20-10

CSR-569

Trim applied foam (PD 1.0, 2.0 and 3.0) to meet drawing 80971029/440-520 (reference Figure Foam Application) using 240 grit or finer Al oxide abrasive paper and nonmetallic trim tools.

T: ¹⁰⁰¹ 12-4-02

① P2
12-3

20-11

CSR-202-Q

Verify PD 1.0, 2.0 and 3.0 repair meets finished product requirements per T5045.065

Log T-5045-065
1203002-03

Qw: ⁸⁰³² ^{SPO 155} DEC 04 02

②
C
DEC

12-3-02
WC
134
USA



12-4-02
¹⁰⁰¹
DEC 04 02

SEE DEV

⁸⁰³²
DEC 03 02

20-10

① STAMPED IN ERROR

⁸⁰³²
DEC 03 02

QE
188
12/3/02

DEC 04 02

12/2/02 06:56:07 PM

Official

PR ET-093-TS-0014

SECRET 824

End Operation

20-11

CJE
188
JPC 12/3/02



12/4/02 12:53:09 PM

Official

PR ET-093-TS-0014

OPERATION 30

OPERATION 30 Summary Closure

Shop: SUPOP
Cntrl Rm Console: NA
OPR: ETM
Zone: NA
Hazard (Y/N): N
Duration (Hrs): 1.0

Summary Closure

Reference PD item 1.0, the forward periphery of the -Y aft fairing closeout had numerous voids on both the +Z and -Z ends. The closeout was removed and re-foamed per an MRB. The repair was successful.

Reference PD item 2.0, the -Z splice plate had an under fill. The closeout was completely removed and re-foamed. The repair was successful.

Reference PD item 3.0, the -Z aft bolt hole had an under fill. The closeout was removed and re-foamed. The repair was successful.

No further rework is required. Reference PD item 1.0, RC action is requested from Lockheed Martin to provide void relief criteria for this closeout or to provide alternative closeout methodology. Request reply to CAAR by February 28, 2003.

Cause for PD item 1.0: (2) Design Deficiency.

Cause for PD item 2.0 / 3.0: Unavoidable - it is not unusual to get voids and under fills in foam closeouts from time to time.

30-1 Close this PR.

QW: 
DEC 4 2002

*** End of Operation 30 ***



United Space Alliance

TOP/WAD Deviation

Dev No. <u>20/01</u>	DILS No. <u>N/A</u>	Page 1 of 4
----------------------	---------------------	-------------

TOP/WAD No. PR ET-093-TS-0014	REV/CHG/VER	<input checked="" type="checkbox"/> In Family	Cause Code	
		<input type="checkbox"/> Out of Family	Requesting or Causing Org (B,D,E,G,H,L,N,O,P,Q,S,T,V)	Reason 10-Tech Chg 20-Proc Chg 30-Auth Error 40-Rewrite
		<input type="checkbox"/> NMA	E	20

First Use SRB BI- ET 093 GSE STS-
 Effectivity: ORB /FLT FRCS/POD /FLT SSME /FLT

Affected: OMRS/ACOMC/OMP Design Req'ts Haz Step(s) PPE Internal Review Req.

Contractor OPR <i>[Signature]</i> ME 08 12-3-02	Contractor Test Conductor	Gov't OPR
Contractor Test Project Engineer	Other <i>SE-MEX</i> <i>Tom Ford 12.3.02</i>	Gov't Project Engineer
Contractor Safety	Other <i>USA Ops D. HoPE 12/3/02</i> <i>David W. Dage</i> QE 188 JPC	Gov't Test Director or Contractor Chief TC

Page Number: 20-8 Step Number: 20-6

Add the following new step:

20-6.1 Obtain photos (5 max) of PD 1.0 repair area showing overall and closeup views of repair area. Load images into SIMS Photograph Index in STS-107 folder under "PR ET-093-TS-0014".

SPC W/O No. 55469

Qw: DEC 03 02

Originator (print) John Blue	SPDMS ID T08963	Phone 1-4425	Organization 53101	Date 12/03/2002	<input type="checkbox"/> Perm <input checked="" type="checkbox"/> Temp <input type="checkbox"/> Temp-Recycle
---------------------------------	--------------------	-----------------	-----------------------	--------------------	---





United Space Alliance

TOP/WAD Deviation

Dev No. <u>20/01</u>	DILS No. <u>N/A</u>	Page 2 of 4
----------------------	---------------------	-------------

TOP/WAD No. PR ET-093-TS-0014	REV/CHG/VER	<input checked="" type="checkbox"/> In Family <input type="checkbox"/> Out of Family <input type="checkbox"/> NMA	Cause Code Requesting or Causing Org (B,D,E,G,H,L,N,O,P,Q,S,T,V) E	Reason 10-Tech Chg 20-Proc Chg 30-Auth Error 40-Rewrite 20	
First Use <input type="checkbox"/> SRB BI- <input checked="" type="checkbox"/> ET 093 <input type="checkbox"/> GSE <input type="checkbox"/> STS-	Effectivity: <input type="checkbox"/> ORB /FLT <input type="checkbox"/> FRCS/POD /FLT <input type="checkbox"/> SSME /FLT	Affected: <input type="checkbox"/> OMRS/ACOMC/OMP <input type="checkbox"/> Design Req'ts <input type="checkbox"/> Haz Step(s) <input type="checkbox"/> PPE <input checked="" type="checkbox"/> Internal Review Req.	Contractor OPR ME 08 12-3-02	Contractor Test Conductor	Gov't OPR
Contractor Test Project Engineer	Other <u>SE-CHECK</u>	Gov't Project Engineer	Contractor Safety	Other <u>Tom Ford 12.3.02</u> <u>USA-QE D. HOPE</u> <u>David W. Dope 12/3/02</u>	Gov't Test Director or Contractor Chief TC

Page Number: 20-8 Step Number: 20-7

Add the following new step:

20-7.1 Obtain photos (5 max) of PD 1.0 repair area showing overall and closeup views of repair area. Load images into SIMS Photograph Index in STS-107 folder under "PR ET-093-TS-0014".

SPC W/O No. 55470

Qw:

DEC 03 02

Originator (print) John Blue	SPDMS ID T08963	Phone 1-4425	Organization 53101	Date 12/03/2002	<input type="checkbox"/> Perm <input checked="" type="checkbox"/> Temp <input type="checkbox"/> Temp-Recycle
---------------------------------	--------------------	-----------------	-----------------------	--------------------	---





United Space Alliance

TOP/WAD Deviation

Dev No. <u>20/01</u>	DILS No. <u>N/A</u>	Page 3 of 4
----------------------	---------------------	-------------

TOP/WAD No. PR ET-093-TS-0014	REV/CHG/VER	<input checked="" type="checkbox"/> In Family <input type="checkbox"/> Out of Family <input type="checkbox"/> NMA	Cause Code Requesting or Causing Org (B,D,E,G,H,L,N,O,P,Q,S,T,V) E	Reason 10-Tech Chg 20-Proc Chg 30-Auth Error 40-Rewrite 20
---	-------------	---	--	--

First Use <input type="checkbox"/> SRB BI- <input checked="" type="checkbox"/> ET 093 <input type="checkbox"/> GSE <input type="checkbox"/> STS-
Effectivity: <input type="checkbox"/> ORB /FLT <input type="checkbox"/> FRCS/POD /FLT <input type="checkbox"/> SSME /FLT

Affected: OMRS/ACOMC/OMP Design Req'ts Haz Step(s) PPE Internal Review Req.

Contractor OPR ME 12-3-02 OB	Contractor Test Conductor	Gov't OPR
Contractor Test Project Engineer	Other SE-CHECK Tom Ford 12.3.02	Gov't Project Engineer
Contractor Safety	Other LISA-QE D. HOPE David W. Hope 12/3/02	Gov't Test Director or Contractor Chief TC QE 188 JPC

Page Number: 20-9 Step Number: 20-8

Add the following:

20-8.1 Obtain photos (5 max) of PD 1.0 repair area showing overall and closeup views of repair area. Load images into SIMS Photograph Index in STS-107 folder under "PR ET-093-TS-0014".

SPC W/O No. 55471

Qw: 
DEC 3 02

Originator (print) John Blue	SPDMS ID T08963	Phone 1-4425	Organization 53101	Date 12/03/2002	<input type="checkbox"/> Perm <input checked="" type="checkbox"/> Temp <input type="checkbox"/> Temp-Recycle
--	---------------------------	------------------------	------------------------------	---------------------------	---





United Space Alliance

TOP/WAD Deviation

Dev No. 20/01

DILS No. N/A

TGP/WAD No.

PR ET-093-TS-0014

REV/CHG/VER

In Family

Out of Family

NMA

Cause Code

Requesting or Causing Org
(B,D,E,G,H,L,N,O,P,Q,S,T,V)

E

Reason

10-Tech Chg 20-Proc Chg
30-Auth Error 40-Rewrite
20

First Use SRB BI-

ET 093

GSE

STS-

Effectivity: ORB /FLT

FRCS/POD /FLT

SSME /FLT

Affected: OMRS/ACOMC/OMP

Design Req'ts

Haz Step(s)

PPE

Internal Review Req.

Contractor OPR

ME
08 12-3-02

Contractor Test Conductor

Gov't OPR

Contractor Test Project Engineer

Other SE-CHECK

Gov't Project Engineer

Tom Ford 12.3.02

Contractor Safety

Other USA DE D.HOPE 12/3/02
Klaudio W. Doyne
188
SPG

Gov't Test Director or Contractor Chief TC

Page Number: 20-10 Step Number: 20-11

Add the following:

20-11.1 Obtain photos (5 max) of PD 1.0 repair area showing overall and closeup views of repair area. Load images into SIMS Photograph Index in STS-107 folder under "PR ET-093-TS-0014".

SPC W/O No. 55472

Qw:

DEC 04 02

REASON: Temporary - photo documentation to be performed of what has become a "standard closeout method" for a problem-prone closeout in support of 80971029440 requirements.

Originator (print)	SPDMS ID	Phone	Organization	Date	<input type="checkbox"/> Perm <input checked="" type="checkbox"/> Temp
John Blue	T08963	1-4425	53101	12/03/2002	<input type="checkbox"/> Temp-Recycle

2002