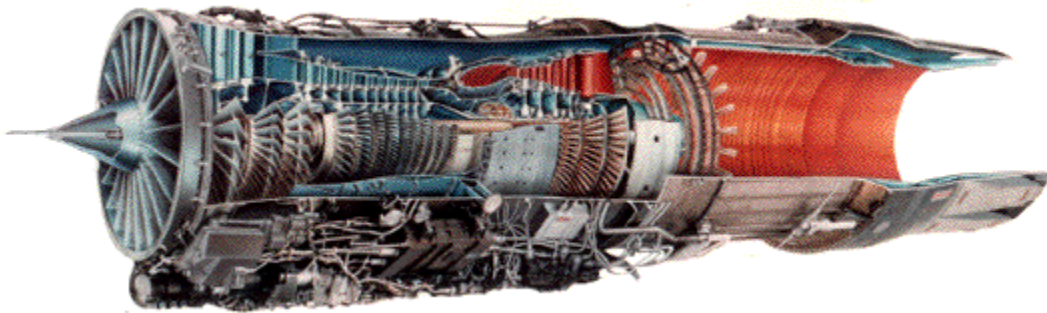


Created by Paul.McCord Jr.

Processing Combustors

Combustor Repair Shop

OC-ALC/MAEAWK



1 February 2005

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Processing Combustors - Inspection

1. Identify S/N & P/N and complete the proper Form 404 (CEMS) Report.
2. Take Form 404 to "Engine Records".
3. If the work scope document has not been printed, log in to G337 screen QN2037 and print work scope. Get ITN from metal tag if available. If not, call scheduler_____.
4. Inspection of the combustor... The following are automatic condemn if an Air Force F110 -100, -400, -129, F101, F118 combustor.
 - a. Does combustor have more than 3000 TAC's?
 - b. Has combustor been repaired?
 - c. Are parts made from HAST-X
 - i. Outer 9978M51G14, G15, G18
 - ii. Inner 9978M52G05, G08
 - iii. Dome 1317M58G01, G02
 - d. Does dome have cracks in Area "B" of flange

References: T.O. 2J-F110-3-5 WP 054 00, SWP 054 00
For use on -101 -110 -118
T.O. 2J-F118-3-5 WP 106
T.O. 2J-F110-13-5

Note: There is a one time repair for both Air Force and Navy components.

1. OCM Option Codes

Verify serial numbers of the parts and ITN numbers. Determine which repair options are required for each part.

***** Use OCM Option Chart on page 6 *****

2. Entering serial numbers to ITN numbers

- A Log in to Tandem
- B Go to screen G337 QN2097 (ITN update)
- C Enter ITN number and press list
- D "Tab" down to and enter serial number
- E Press save (green can)
- F Return to ITN number field repeat steps C through E until all parts are entered

3. Print Work Scope Document if not already printed

- A Go to G337 screen QN2037
- B Enter ITN and correct printer location (OC0328)
- C Press list
- D Press print WCD

4. Disassembly Document

- A Using TAA, find and Scan the step on the “Work Scope” document beginning with a “T” and labeled “Addendum to create the “**(D)**isassembly Document”.

5. Creating (Children ITN’s) for Air Force

- A Go to G337 screen QN2025
- B Enter the ITN for the combustor at the EI-ITN, press list
- C ITN numbers should appear. If not enter E_A for dome, Outer and Inner Liner. Enter C_A for inner and outer cowls.

The Air Force does not allow us to repair cowls. We need to remove these from Air Force inventory.

- D Enter “T” at the MC space and save (green can).

Helpful hint: Once you have created your new ITN numbers “Print” so you will have a copy of all children ITN’s.

6. Creating (Children ITN’s) for Navy Line (Obsolete)

- A Go to screen QN2025
- B Enter ITN number in EI-ITN block
- C Press F4 then F5
- D Select Combustor section and press F2 listing children
- E Select “Combustion Diff Nozzle” then press F2
- F Press F5 for next page
- G Select Chamber Combustion then press F2
- H Press F5 for next page
- F Follow Air Force steps.

7. Print the Repair “R” documents

- A Go to G337 screen QN2154
- B Enter ITN and press and list
- C Select the OCM option by putting an “A” in the “Selections ACT” box on right for each option.
- D Press save (green can) revise
- E Press print WCD
- F Repeat for each part

8. Printing the “A” Document

Go to **TAA** and enter the tracking point of the final step of Work Scope preceded by a (Y).

Go to QN2037 and verify correct print location (OC0328).

Enter ITN and press list, then print

OCM Option Codes

Outer Liner

	A	Clean Only
	B	NDI/FPI
G18/G03	C	Visual and Dimensional Inspection
G18/G03	D	General Repair (Nick, Burr, Blend)
	E	Clean, FPI, Visual and Dimensional (ACI)
G18/G03	F	Repair (TBC Coating Replacement & Weld)
G18/G03	G	Bolt Hole Repair
	H	Weld (Non TBC Area)
	I	TBC Coating Spot Repair
G18/G03	J	Aft Flange Repair (Only if the aft flange is pitted or worn)

Inner Liner

	A	Clean Only
G08/G03	C	Visual and Dimensional
G08/G03	D	General Repair (Nick, Burr, Blend)
	E	Clean, FPI, Visual and Dimensional (ACI)
G08/G03	F	Repair (TBC Coating Replacement & Weld)
G08/G03	G	Bolt Hole Repair
	H	Weld (Non TBC Area)
	I	TBC coating "Spot Repair"
	J	Leaf Seal Flange, Weld Repair

Dome

All	B	NDI/FPI
All	C	Visual and Dimensional
All	D	General Repair (Nick, Burr, Blend)
	E	Clean, FPI, Visual and Dimensional (ACI)
All	F	Repair (TBC Coating Replacement & Weld)
All	G	Bolt Hole Repair
All	H	Repair "Weld" (Venturi Sleeve)
All	I	Repair "Weld" (Secondary Swirler)
All	J	Repair "Weld" (Primary Swirler)

Non Conforming Products or Parts

References LPP OI 21-101

LPP OI 21-141

PO 88-1

When All Parts Have Been Worked Before

1. Complete OC-ALC Form H-240 (MRB) and send to part to MRB Material Review Board See LPP OI 21-141
2. When returned and engineer condemned the combustor complete the following action.
 - Create an ITN for each of the components through QN2025
 - Go to QN2154 and select all OCM options
 - i. Enter word "DUMMY" at the "Printer Location"
 - ii. Select Print
 - iii. Go to QN2082 to get the track point (Go to end of the document and write down the tracking point.)
 - iv. Condemn the part through TAA and close document on ITS labor with tracking point by adding a "Z" in front of tacking point.
 - v. Repeat for each component
 - In Work Scope Document "Disassembly Addendum 40515"
 - i. Go to TAA and close unserviceable
 - ii. Set printer to DUMMY
 - iii. Go to QN2082 enter ITN and press list.
 - iv. Go through pages to find last step
 - v. Go to TAA and close "Disassembly Document as unserviceable (Y)
 - vi. Go to TAA and close Work Scope as unserviceable (Y)
 - vii. Go to QN2037 press list and then Print for Assembly Document
 - Have the parts mutilated
 - Turn in the parts to PMT as Due In From Maintenance (DIFM)
 - Complete DD Form 1577 and attached Deck from PMT (See LPP OI 21-121 para. 4.3.3)
 - Ship parts to DRMO station 62

QN2025 **SELECTIVE INDUCTION** **DATE: 02/12/10 14:55:16**
USER: MCCORD PAUL L
EPS DOC: s11bb4 d **MC: T** **PROC PDN:** **JON:** **ROT/SEQ: 0000**
EI - SN: **STRCT PDN:** **LVL: 1** **STRCT SEQ:**
EI - ITN: **TMS:** **EI - NSN:** **OPC - CD:**
OPER - NR: **PARENT ITN:** **NOUN:** **COND - CD:**
ADV - CD: **DEMAND - SFX:** **IND WORK STA:** **ORI G - EI - ITN:** **COST - CD:**
PARENT P/ N: **OWNER:** **DOC - I D:** **PO/ PTC: LPPWH**

SEQ	PART NUMBER	MFG	NOUN	72	R P A S
				10	M C C M I T N
			Dome		E - A
			Outer Cowl		C - A (ch)
			Inner Cowl		C - A (ch)
			Inner Liner		E - A
			Outer Liner G-15		E - A
			G-18		

F1 - LIST PARENT **F12 - CLEAR - SCR N** **F6 - EXI T EXPAND** **F9 - I NDUCT**
F2 - LIST CHI LD **F3 - EXPAND - MULT** **F7 - REVI SE** **SF1 - DUP RM ACT**
F4 - LI ST **F5 - LI ST NEXT** **F8 - DELE TE/ RSTRT** **F15 - GO TO QN2**
TSK0000: READY

SAMPLE QN2025

COMBUSTOR PART NUMBERS

F-108 Make S/N's 42X_____	
Outer Liner HAST X	
9978M51G14	2840-01-306-5504
9978M51G15 Upgrade (Plasma Spray)	2840-01-190-9218
9978M51G18 Upgrade (L605 Flange Repair)	2840-01-344-3232
Inner Liner HAST X	
9978M52G05	2840-01-187-3053
9978M52G08 Upgrade (Plasma Spray)	2840-01-172-0159
Dome	
1317M58G02 HAST-X	2840-01-201-3081
1561M26G01 HS-188	2840-01-311-4794

F-110 F-101 F-118 -400 Navy (**1 Time Repair ***)	
2840-01-440-4351PR	
Outer Liner	
1385M95G03	2840-01-308-5467
1385M95G03	
Inner Liner	
1385M94G03	2840-01-308-5468
Dome	
1317M95G02 (HAST-X – Obsolete MRB)	
1318M95G06 (HS-188)	
1561M26G01	2840-01-311-4794
1561M26G04 (Preferred)	2840-01-423-7353
1561M26G05 (New)	2840-01-455-8002

F-110B / -129 (*****1 Time Repair Only*****)	
Outer Liner	
1385M95G03 (HS-188)	2840-01-308-5467
Inner Liner	
1385M94G03 (HS-188)	2840-01-308-5468
Dome	
1561M26G04	2840-01-423-7353

Combustor Buildup

Questions to ask

1. Do we have a plasma sprayed outer liner?
 - a. Is it an **F-108** Production number **87487A**?
 - b. Is it an **F-110-100** production number **94132A**?
 - c. Is it an **F-110-129** production number **20168A**?
 - d. Is it a Navy **F-110-400** production number **22109A**?
2. Do we have a plasma sprayed inner liner?
 - a. Is it an **F-108** Production number **87487A**?
 - b. Is it an **F-110-100** production number **94132A**?
 - c. Is it an **F-110-129** production number **20168A**?
 - d. Is it a Navy **F-110-400** production number **22109A**?
3. Do we have a plasma sprayed dome?
 - a. Is it an **F-108** Production number **87487A**?
 - b. Is it an **F-110-100** production number **94132A**?
 - c. Is it an **F-110-129** production number **20168A**?
 - d. Is it a Navy **F-110-400** production number **22109A**?
4. Do we have an outer cowl, inner cowl, and inner and outer nut channels?

Please refer to the chart on page 14 for acceptable part numbers to use on the various production number combustors.

If the answers to all these questions are yes then you can build a combustor. The combustor serial number is determined by the outer liner since the outer liner has both its serial and the combustor serial numbers etched on it.

If any of the major parts are brand new from supply, go to ITS screen QN2149 to print a new parts document. Then go to screen QN2097 to add the actual serial number to the newly generated WCD.

Check to ensure that all Work Control Documents (WCD's) are complete and closed serviceable for all the components. Make sure that all components have the same production number... ie: 87487A.

Find the combustor serial number on the outer liner located on the aft flange or the four o'clock ferrule. Find the folder with the correct serial number in the file cabinet. This folder should contain at least the following...

1. Work Scope document
2. Disassembly document
3. Comprehensive Engine Management Systems (CEMS) report
4. Assembly document

Make sure the Work Scope, Disassembly documents are completed before assembly begins.

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Begin assembly according to the Assembly document making sure that assembly time is documented in Time and Attendance DMAPS.

When assembly is complete, put all WCD's and CEMS report, and 2 completed yellow DD Form 1575's along with a new completed AFMC Form 404 into a large zip lock bag.

Be sure to put the 6P option on the Form 404 showing that work had been done to it. Take the zip lock bag to engine records. It is not uncommon for engine records personnel to call for one of the combustor personnel to come and correct paper work.

After a day or two or in some cases just a few hours, engine records will put one of the DD Form 1575's into our inbox upstairs stamped "RECORDS RELEASED".

Please request a DECK from our scheduler with the ITN, production number, MEPG9Z. When our scheduler returns a deck, please attach the deck and the DD Form 1575 to the combustor and send to drop station 65. It is important to deliver in person and not tie down as in the past, combustors have been damaged by such practices.

Combustor Build up Requirements

Build F-110		(2255M75G01) NAVY 2840-01-440-4351PR
Inner Liner	(1385M94G03 - HS-188)	
Outer Liner	(1385M95G03 - HS-188)	
Dome	(1561M26G04 HS-188)	

Build F-110B / -129 -400 (2255M75G01)		AF and NAVY 2840-01-440-4351PR
Inner Liner	(1385M94G03 - HS-188)	
Outer Liner	(1385M95G03 - HS-188)	
Dome	(1561M26G04 - HS-188)	

Build F-108	(9559M48G08)	2840-01-242-8336
	Tack Weld Bolts	
Inner Liner	(9978M52G08)	2840-01-172-0159
Outer Liner	(9978M51G18)	2840-01-344-3232
Dome	(1317M58G02 - HAST X)	2840-01-201-3081
Dome	(1561M26G01 - HS-188)	

APPENDIX

T.O. QUICK REFERENCE

AIR FORCE

Steps for HELPING you find T.O. references

Double click on icon labeled “LPP Tech Order Page” if available. After clicking on icon, click “TO Library” Click black button labeled “TO File #68 has moved”.

If icon is not available click blue “e” icon for Internet

On the top where it says” Address” type <https://wwwmil.tinker.af.mil/mae/to/tol.htm> and enter and scroll down

For use with F110 – F101

1. Scroll down to “Aircraft Engines”
2. Click blue button labeled **F110-GE-100** then
3. *Scroll down to “Tech Orders” then under Depot Level click blue button labeled F110-GE-100*
4. Click “Open” on pop up then click “Yes” on second pop up
 - a. Click “Yes” again if a third pop up appears.
5. On left side click **2J-F110-3-6 for Repair**
 - a. **Note: 2J-F110-3-5 for Inspection**
6. Click “+” plus sign on left of **2J-F110-3-6** to expand list
7. Click “+” plus sign on left of “List of Work Packages”
8. On left side scroll down and click **WP 054 00**
 - **WP 054 02** Inner Liner
 - **WP 054 03** Outer Liner
 - **WP 054 04** Dome
9. On right side, scroll down to your step

For use with F118

1. *Scroll down to “Aircraft Engines”*
2. Click blue button labeled **F118-GE-100**
3. *Scroll down to “Tech Orders” then under Depot Level click blue button labeled F118-GE-100*
4. Click “Open” on pop up then click “Yes” on second pop up
 - a. Click “Yes” again if a third pop up appears.
5. On left side click **2J-F118-3-6 for Repair**
 - a. **Note: 2J-F110-3-5 for Inspection**
6. Click “+” plus sign on left of **2J-F118-3-6** to expand list
7. Click “+” plus sign on left of “List of Work Packages”
8. On left side scroll down and click **WP 106 00**
 - **WP 106 02** Inner Liner
 - **WP 106 03** Outer Liner
 - **WP 106 04** Dome
9. On right side, scroll down to your step

For use with -129

-129 Click blue button labeled **F110-GE-129**

1. Scroll down to "Aircraft Engines"
2. Click blue button labeled F110-GE-129
3. Scroll down to "Tech Orders" then under Depot Level click blue button labeled F110-GE-129
4. Click "**Open**" on pop up then click "**Yes**" on second pop up
 - a. Click "**Yes**" again if a third pop up appears.
5. On left side click **2J-F110-13-6 for Repair**
 - b. On left side click **2J-F110-13-5 for Inspection**
6. Click "+" plus sign on left of **2J-F110-13-6** to expand list
7. Click "+" plus sign on left of "List of Work Packages"
8. On left side scroll down and click **WP 054 00**
 - **WP 054 02** Inner Liner
 - **WP 054 03** Outer Liner
 - **WP 054 04** Dome
9. On right side, scroll down to your step

For Use with F-108

1. Got to Post N-85 upstairs at MRB on North wall.
2. Find **T.O. 2J-F108-13-72** (book 126)
3. For Domes go to section **72-42-02**
4. For Inner Liners go to section **72-42-03**
5. For Outer Liners go to section **72-42-04**

NAVY

Navy F110

REFERENCE AIR FORCE F110 INSTRUCTIONS

TF-30

1. Double click icon labeled "F-14 ETM"
2. Click **TF-30** icon on the left
3. Click "+" plus sign to the left of "**TF-30 Engine Manuals**"
4. Select "**NAVAIR 02B-10FD-6-2 Aircraft Engines Navy Models**"
5. Double click "**6 Inspection, Repair, and Replacement**" on the right
6. Click on pointing arrow on far left to expand the sections and subsections
7. Select the subsection on left and read steps on right

TF-33

1. Go to Post **F-85**
2. Find Book **T.O. 2J-TF33-53-7** (Book 74)
3. Sign out T. O. on pink **AF Form 614** (CHARGE OUT FORM)
 - a. First Block-Date of Document is the T.O. Date on first page inside.
 - b. Second Block-Title shown on first page.
 - c. Third Block – **Name/MAEAWK/736-5697**
 - d. Fourth Block is the date signed out
4. Open to **WP 036 00** and find step

G337 Screens

Send Parts to another Shop	QN2148
Print a shop floor supplement WCD	QN2033
To print a WCD	QN2037
To print a metal tag	QN2049
To locate a part by P/N, S/N, or ITN	QN2053
Shipping ITN's to other RCC's	QN2058
To print a part number structure	QN2061
To print an ITN assignment structure	QN2079
To close a WCD or print trigger WCD	QN2096
To change P/N or add serial number	QN2097
To print a listing of all parts consumed to an end item	QN2103
To create or establish an ITN and print the WCD	QN2147
To receive an ITN or pallets of ITN's	QN2148
To print a new parts WCD	QN2149
To create a route WCD	QN2094
To divide/ combine ITN quantities on an ITN	QN2120
To select and print OCM options	QN2154
To consume, or de-consume an ITN to an assembly WCD	QN2168
WCD Individual Steps	QN2014