

Scheduled Maintenance Task (SMT) Onboard Maintenance Function (OMF)

Erik Olson

Field Service Representative

November 27, 2017



- Are Maintenance level messages provided by the MAX Display System (MDS) and Onboard Maintenance Function (OMF) as follows.
- Please note that a SMT (Scheduled Maintenance Task) fault is not a status message.
- SMT's are currently found on the MDS MAINT CTRL PAGE LATCHED MESSAGE ERASE page (lower field) as well as on the OMF Inbound Flight Deck Effects (IFDE) page (the OMF will correlate a maintenance message). The SMT is LATCHED in the MDS and should not be un-latched until addressed per AMM chapter 5 and/or 73.
- SMT messages should not result in schedule interruptions since they are not visible to flight crews and do not prevent dispatch.

SMT's Location on MDS and/or OMF

SYS MENU	STATUS	MAINT Data Pgs	MAINT CTRL PGS	ONBD MAINT		
AIRPLANE (AIRPLANE CONFIG DATA (ACD)					
MISC SYSTE	M CTRLS (MS					
LATCHED ME	SSAGE ERASE					
MAINT LIGHT						

SYS MENU	STATUS	MAINT DATA PGS	MAIN CTRL P	TONE GSMAI	BD Nt		
ERASABLE STATUS MESSAGES							
ENG LPTACC	VALVE L			ERASE			
APU DOOR				ERASE			
BLEED FAM	BLEED FAMV L				ERASE		
PAG	æ does not auto)-refresh - (HANGE PAGE T	O UPDATE			
	PAG	E 1 0F 2	NEXT PAGE	ERASE ALL			
		MAINTENACE T	ASK MESSAGES				
BLEED TN	M SENSOR 1 L			ERASE			
PREV			NEXT				
MENU		PG 1 OF 2	PAGE				

SYS MENU	STATI	JS	MAINT DATA PGS	CT	1AINT RL PGS	ONBD MAINT
LINE MAINT			EXTENDED MAINT			OTHER UNCTIONS
INBOUND FLIGHT DECK EFFECTS						
EXISTING FLIGHT DECK EFFECTS						
GROUND TESTS						
SYSTEM CONFIGURATION		lelcome	to ONBD	MAIN	Г	
FAULT GUIDANCE						
CREW WIRELESS ACCESS CODE						

LINE MAINT
INBOUND FLIGHT DECK EFFECTS
EXISTING FLIGHT DECK EFFECTS
GROUND TESTS
SYSTEM CONFIGURATION
FAULT GUIDANCE
CREW WIRELESS ACCESS CODE

SYS MENU STAT	US MAINT Data Pgs	MAINT CTRL PGS	ONBD MAINT
L INE MAINT	EXTENDED MAINT	OTH Funci	
INBOUND FLIGHT DEC	The ti	me is: 1817Z Data So	/ 11MAR2016 Jurce: DMF
	ecorded during the pres	-	(7)
FDE: MAINTENANCE ENABL FAULT CODE: 316 141	00	AC 1636Z 17FEB	TIVE 1
[] Maintenance Mess Taxi In MAINTENANCE SWIT	sage: 31-00341 ICH ENABLED SPLAY PROCESSOR COMPUTER	ACT 1636Z 17FEB	IVE 2016
[] Maintenance Mess Taxi In MAINTENANCE SWI1	age: 31-00342	ACT 1636Z 17FEB	IVE 2016
DETECTED BY : DIS	SPLAY PROCESSOR COMPUTER	2 (DPC)-2	1
FDE: PACK IASC COMM L FAULT CODE: 215 101	Status 41	AC 1502Z 17FEB	TIVE 2016
[] Maintenance Mess		ACT 1512Z 17FEB	IVE 2016
)r computer (DPC)-1)r computer (DPC)-2		
FDE: PACK IASC COMM R FAULT CODE: 215 101	Status	AC 1502Z 17FEB	TIVE
[] Maintenance Mess	age: 21-90002	ACT	IVE
IASC-R HAS NO OL DETECTED BY:	JTPUT ON MORE THAN ONE B	BUS	2
DISPLAT PROCESS)r computer (DPC)-1)r computer (DPC)-2		
FDE: STALL WARNING SYS FAULT CODE: 273 101	SL Status	AC 15027 17FEB	TIVE 2016
	sage: 27-31022	NOT AC 1631Z 17FEB	TIVE 2016 1
MAINT MSG DATA	SHOW All Fdes	F	REPORT

SMT's DDG

Scheduled Maintenance Task (SMT): These are a special category of messages that are uniquely associated with a Certification Maintenance Requirement (CMR) or a Scheduled Maintenance Task (SMT). They are displayed on a special MFD maintenance page. SMT messages are checked as a result of a specified maintenance task defined by the CMR or maintenance program requirement, which also defines a specific time interval when corrective maintenance action is required. There is no requirement to check SMT messages prior to each flight. SMT messages are not included in the Cross Reference List. SMT repair time limits can be found in AMM 05-00-00/201 and AMM 73-00-00/501.

OMF Maintenance Messages

Onboard Maintenance Function: Onboard Maintenance System processes BITE fault reports into maintenance messages. These are nonessential messages that are displayed on Maintenance Laptops or specific flight deck display formats. **Maintenance messages** are not used to determine the airworthiness of the airplane. They provide diagnostic information useful in troubleshooting or maintenance planning. There are two general types of OMF maintenance messages: correlated and uncorrelated. Correlated messages are associated with a specific status message or other flight deck effect. Each fault indicated by a status message has at least one correlated maintenance message to assist the maintenance personnel in determining the root cause of the fault. Uncorrelated messages do not have a corresponding flight deck effect. OMF maintenance messages are not included in the Cross Reference List.

SMT's AMM Repair Limits

- TASK 05-00-00-750-801 4. Scheduled Maintenance Task (SMT) Repair Time Limits
- The frequency of this check may be reduced to allow repair time for fault corrective action, time for fault corrective action does not exceed the repaprovided the check interval plus the ir time limit specified in this procedure. NOTE: For Example: R = 150 FH
 - Q, where "R" is the repair time limit for corrective action, and "Q" is the scheduled maintenance task check interval. (a) Repair time limit 150 FH: Scheduled maintenance task check interval (Q) of 150 FH, if faults are found, corrective action for fault is required immediately (R = 0 FH). Scheduled maintenance task check interval (Q) of 70 FH allows repair time limit for fault corrective action (R) of 80 FH. (b) Repair time limit 3000 FH: Scheduled maintenance task check interval (Q) of 72 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (Q) of 70 FH allows repair time limit for fault corrective action (Q) of 70 FH allows repair time limit for fault corrective action (R) of 80 FH. (b) Repair time limit for fault corrective action (Q) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 70 FH allows repair time limit for fault corrective action (R) of 2930 FH. (c) Repair time limit MMEL: Refer to the MMEL for deferral.

MAX Display System (MDS) - Scheduled Maintenance Task (SMT) Messages

Table 201/05-00-00-993-801 Scheduled Maintenance Task - Repair Limits				
SMT Message	Repair Time Limit			
PACK CONTROL CHANNEL L	150 FH			
PACK CONTROL CHANNEL R	150 FH			
PACK RAM AIR SENSOR L	150 FH			
PACK RAM AIR SENSOR R	150 FH			
TEMP ZONE CTRL AFT CAB	3000 FH			
TEMP ZONE CTRL CONT CAB	3000 FH			
TEMP ZONE CTRL FWD CAB	3000 FH			
BLEED CTRL CARD L	3000 FH			
BLEED CTRL CARD R	3000 FH			
BLEED FAMV RVDT L	150 FH			
BLEED FAMV RVDT R	150 FH			
BLEED PM SENSOR 1 L	3000 FH			
BLEED PM SENSOR 1 R	3000 FH			
BLEED PRSOV CTRL L	150 FH			
BLEED PRSOV CTRL R	150 FH			
BLEED TM SENSOR 1 L	150 FH			
BLEED TM SENSOR 1R	150 FH			
BLEED TM SENSOR 2 L	150 FH			
BLEED TM SENSOR 2 R	150 FH			
TAKEOFF CONFIG FLAPS	150 FH			
AIR / GROUND SENSOR	150 FH			
PSEU ARINC BUS	150 FH			
GEAR XFER HYD QTY SIGNAL	MMEL 32-51-02			
MLG L UP SENSOR	150 FH			
MLG R UP SENSOR	150 FH			
TAILSKID CONTROL	MMEL 32-71-01			
DOOR R ENG RUN RLY	3000 FH			
ENG X EEC C1*[1]	TASK 73-00-00-700-801-G00			
ENG X EEC C2*[1]	TASK 73-00-00-700-802-G00			
ENG X REVERSER SENSOR	300 FH			
ENG X REVERSER INTERLOCK	300 FH			

*[1] For allowable repair time limits for ENG X EEC C1 and ENG X EEC C2 SMT messages, see the applicable AMM

ETOPS 737-7/8/8200/9/10 Configuration, Maintenance and Procedures Supplement CMP Supplemental Data

- Interrogate the Electronic Engine Control (EEC) Scheduled Maintenance Task (SMT) messages. If either of the following EEC SMT messages are active, ETOPS dispatch is not permitted: ENG 1 EEC C1 ENG 2 EEC C1 Maintenance task escalation not allowed. Required prior to ETOPS dispatch.
- Prior to an ETOPS flight dispatch, the operator is to use AMM Task 73-00-00-700-801-G00 to interrogate the EEC Scheduled Maintenance Task (SMT) messages for either "ENG 1 EEC C1" or "ENG 2 EEC C1" messages. No ETOPS dispatch is allowed with active EEC C1 SMT messages. The absence of these two messages confirms the functionality of both N2 channels for dispatch of an ETOPS flight. This interim action has been added to the 737 MAX CMP as a requirement for ETOPS operation until final corrective action becomes available. Final corrective action: EEC Software Version 5.1 (or later) will incorporate updates to the sub-idle N2 sensor fault accommodation logic to ensure a failed sensor channel is not used as a selected N2 speed.

737 MAX | Maint & Operational Lessons Learned Miscellaneous Tips

- 737 MAX Display System (MDS) has incorporated Scheduled Maintenance Task (SMT) messages
- MAINT light does not illuminate Does not affect dispatch MSG-3 analysis used for determination of SMT check and repair intervals
- There are 36 SMT messages
- Air Conditioning (7) Propulsion (8) Proximity Sensing Electronic Unit (PSEU) (9) Pneumatic (12)

737 MAX | Maint & Operational Lessons Learned Miscellaneous Tips

- Similar process on 737NG (Time-Limited Dispatch EEC faults) No MEL relief, but generous repair limits defined in AMM 05-00-00/201 Easy to incorporate into frequent maintenance checks (3 clicks)
- Recommendation: Check SMTs often



- 737MAX的SMT信息分析系统类和发动机类。
- 系统类的信息(含反推)参考TASK 05-00-00-750-801表,修复时 间限制主要为150FH、3000FH和参考MEL 三类。
- 发动机类的信息分为C1 (短时)和C2 (长时)两类,参考 TASK73-00-00-700801/802, C1为150FH, C2为250FH
- 系统类读取信息后的可保留时间计算方式为
 - R (剩余时间)=RTM (修复时间限制) Q (检查间隔时间)
- 发动机类读取信息后的可保留时间计算方法为
 - R (C1) = 150 Q/2 R (C2) = 250 Q/2