

CHAPTER

78

EXHAUST

(GE90-100 SERIES ENGINES)

777-200/300 FAULT ISOLATION MANUAL

CHAPTER 78 EXHAUST

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O 204	Sep 05/2017		O 225	Sep 05/2017		O 261	Sep 05/2017	
205	Jan 05/2013		O 226	Sep 05/2017		O 262	Sep 05/2017	
206	Jan 05/2013		O 227	Sep 05/2017		O 263	Sep 05/2017	
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208	Sep 05/2015		O 229	Sep 05/2017		78-36 TASKS		
209	Jan 05/2013		O 230	Sep 05/2017		201	Jan 05/2013	
210	Jan 05/2013		O 231	Sep 05/2017		202	Jan 05/2016	
211	Jan 05/2013		O 232	Sep 05/2017		203	Jan 05/2016	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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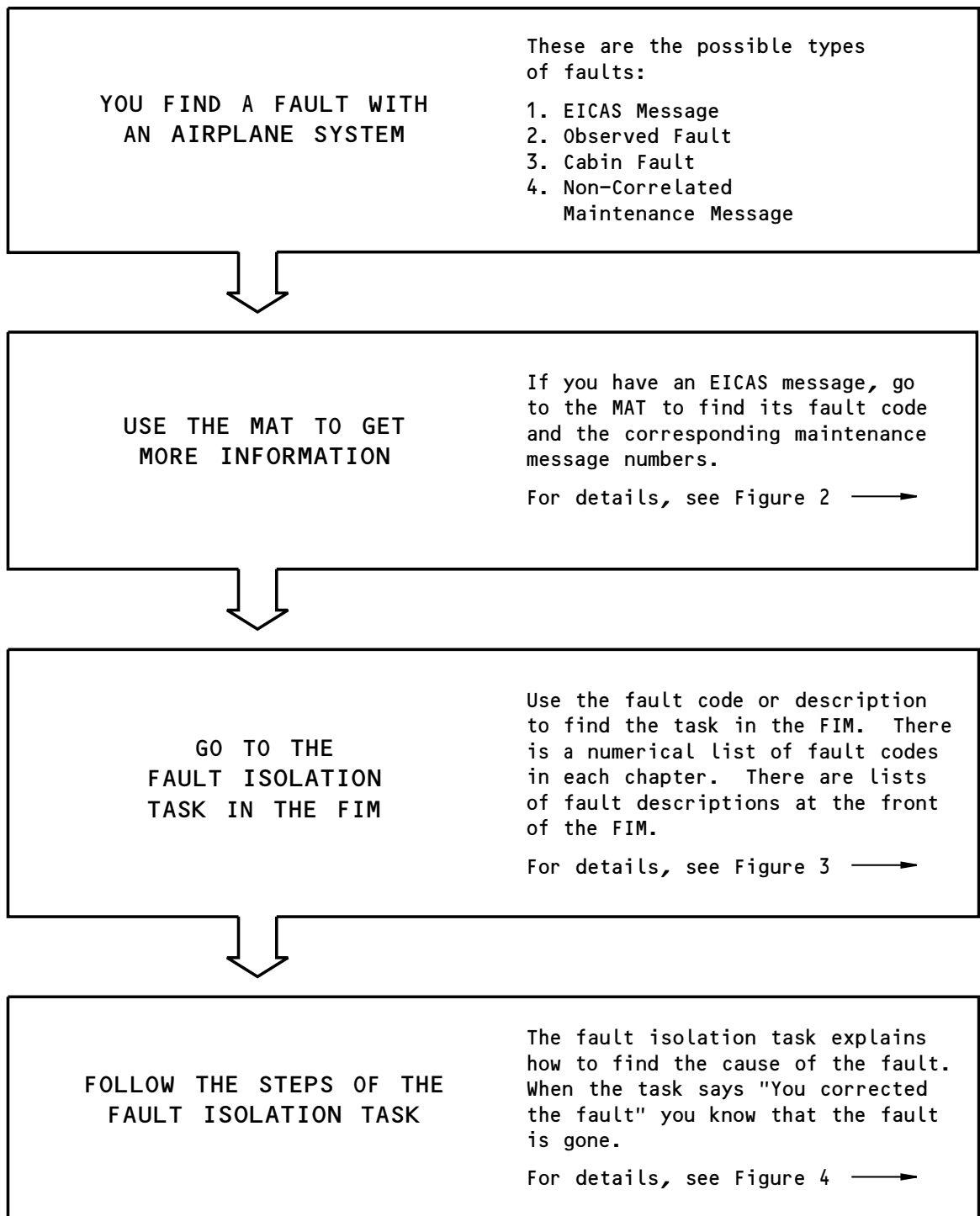
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210	Sep 05/2016		O 246	Sep 05/2017				
211	Sep 05/2016		O 247	Sep 05/2017				
212	Sep 05/2016		O 248	Sep 05/2017				
213	Sep 05/2016		O 249	Sep 05/2017				
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221	Sep 05/2016		O 257	Sep 05/2017				
222	Sep 05/2016		O 258	Sep 05/2017				
223	Sep 05/2016		O 259	Sep 05/2017				
224	Sep 05/2016		O 260	Sep 05/2017				
225	Sep 05/2016		O 261	Sep 05/2017				
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O 231	Sep 05/2017		78-98 TASKS					
232	Sep 05/2016		201	Jan 05/2013				
O 233	Sep 05/2017		202	BLANK				
O 234	Sep 05/2017							
O 235	Sep 05/2017							
O 236	Sep 05/2017							
O 237	Sep 05/2017							
238	Sep 05/2016							
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A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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**777-200/300
FAULT ISOLATION MANUAL**

E84424 S0000132469_V1

**Basic Fault Isolation Process
Figure 1**

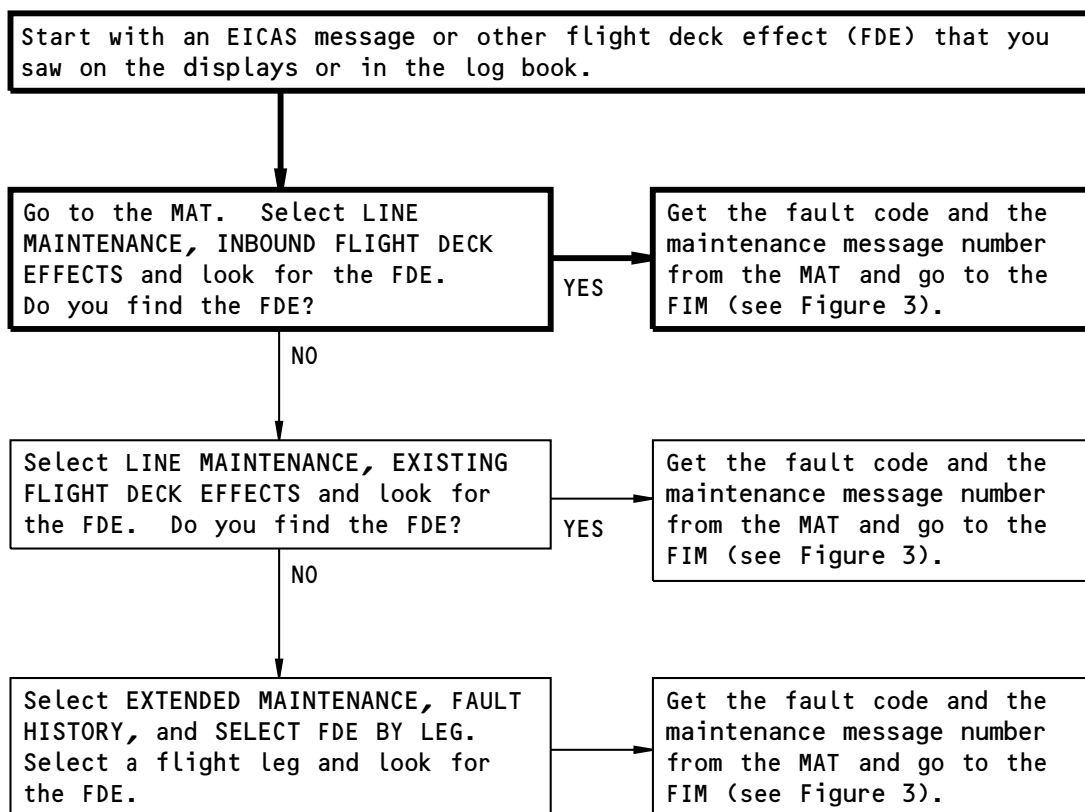
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NOTE: The bold lines show the most common path.

E84425 S0000132475_V1

Getting Fault Information from the MAT
Figure 2

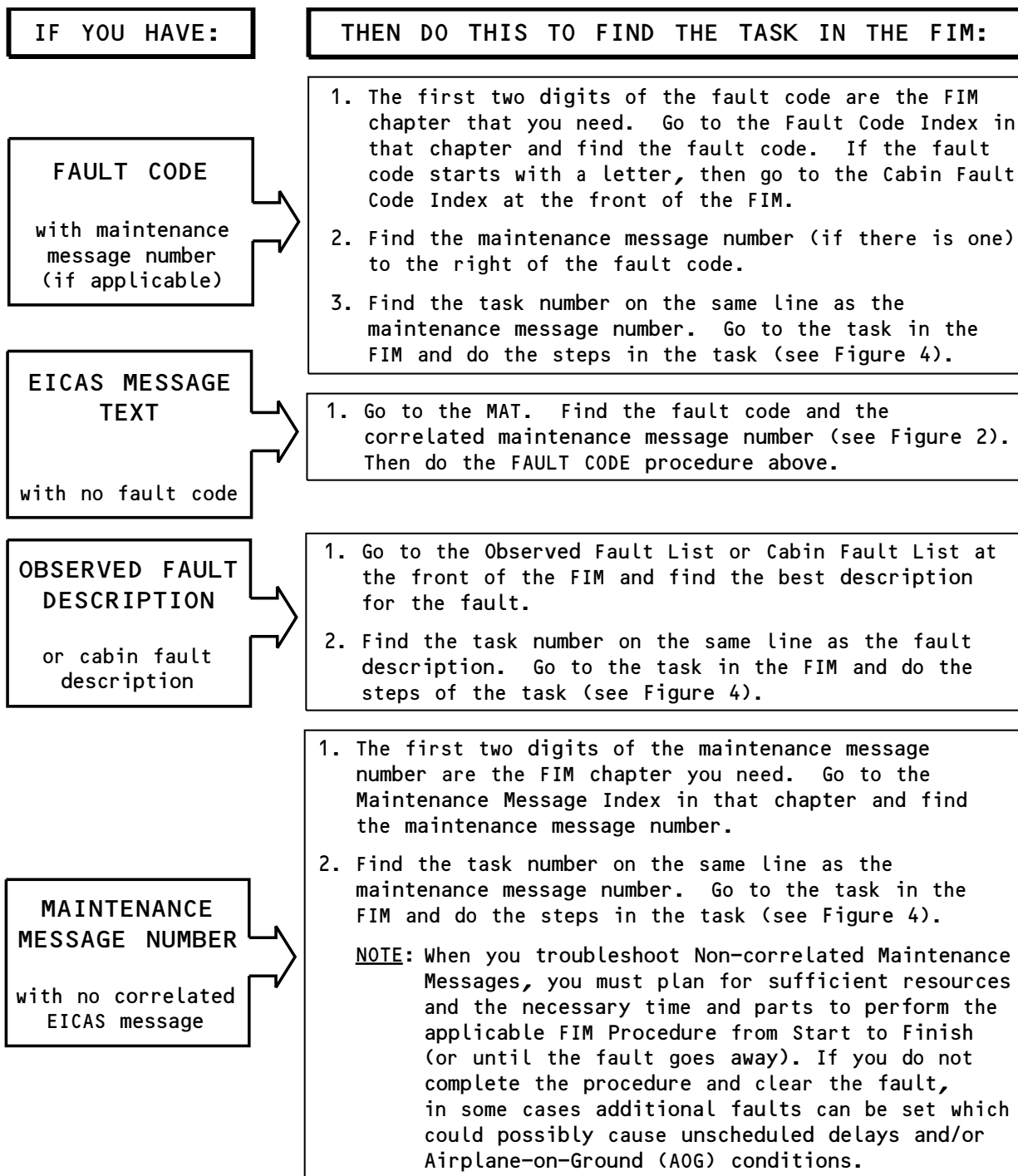
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E84427 S0000132476_V2

Finding the Fault Isolation Task in the FIM
Figure 3

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**777-200/300
FAULT ISOLATION MANUAL****ASSUMED CONDITIONS AT START OF TASK**

- External electrical power is ON
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- No equipment in the system is deactivated

INITIAL EVALUATION PARAGRAPH

- The Initial Evaluation paragraph at the start of the task helps you determine whether you can detect the fault right now.
- If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
- If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which components to replace. Then monitor the airplane to see if the fault happens again on subsequent flights.

FAULT ISOLATION STEPS

- The FIM task steps are presented in a specified order. "The If... then" statements will guide you along a logical path. But if you do not plan to follow the FIM task exactly, make sure that you read it before you start to isolate the fault. Some FIM procedures start with important steps that have an effect on the other steps in the procedure.
- When you are at the endpoint of the path, the step says "You corrected the fault." Complete the step and exit the procedure.
- The Recommended Maintenance Action that shows on the MAT for the maintenance message gives a list of possible causes in order by probability of failure. In the FIM procedure, the possible causes can be in a different order from the MAT.

WIRING CHECKS

When a step says "Do a wiring check", do these three types of electrical checks for the specified contacts (pins):

- continuity from contact to contact
- shorts between the contacts
- shorts from each contact to ground

E84428 S0000132477_V3

**Doing the Fault Isolation Task
Figure 4**

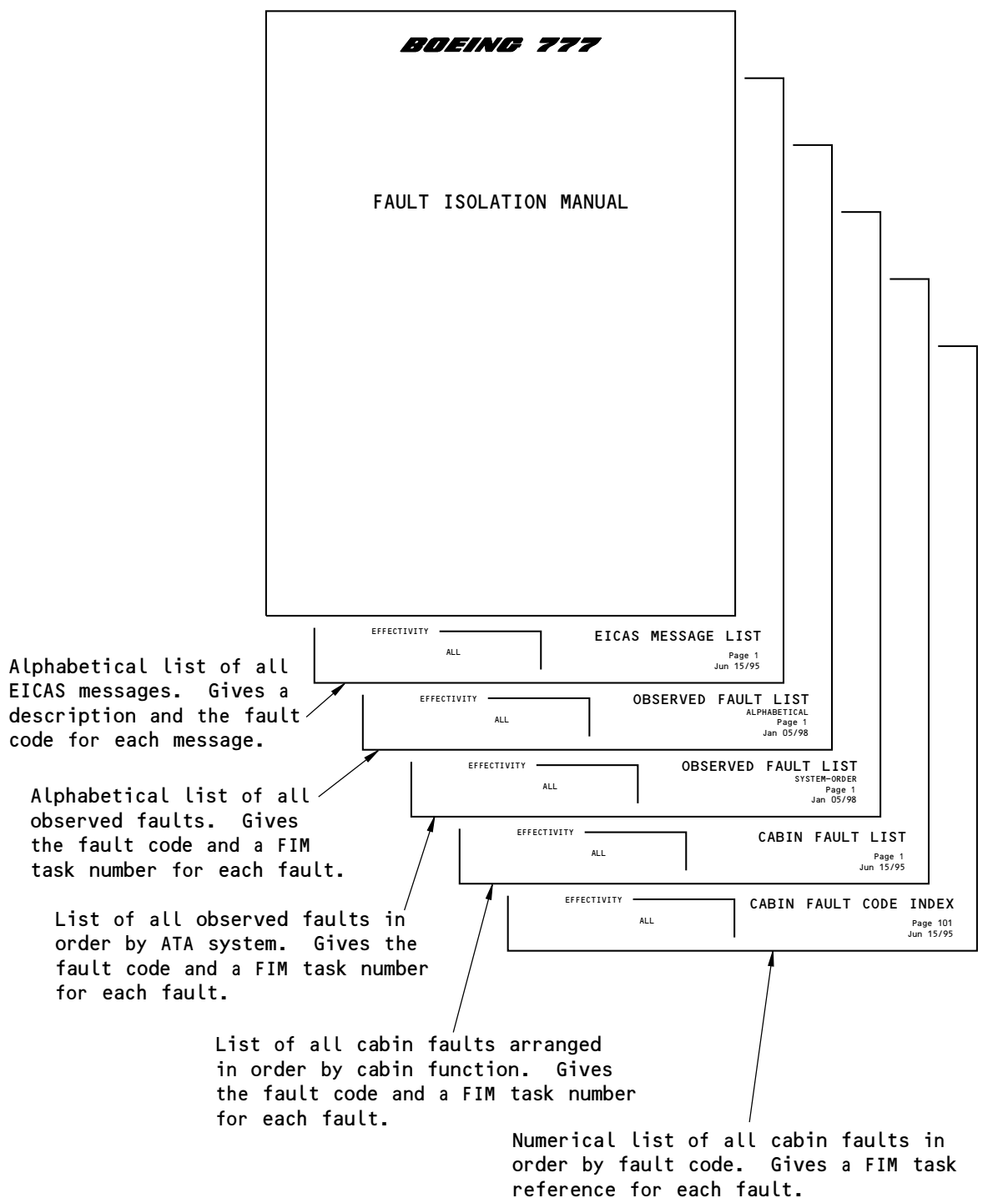
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F39750 S0000132478_V1

Subjects at Front of FIM
Figure 5

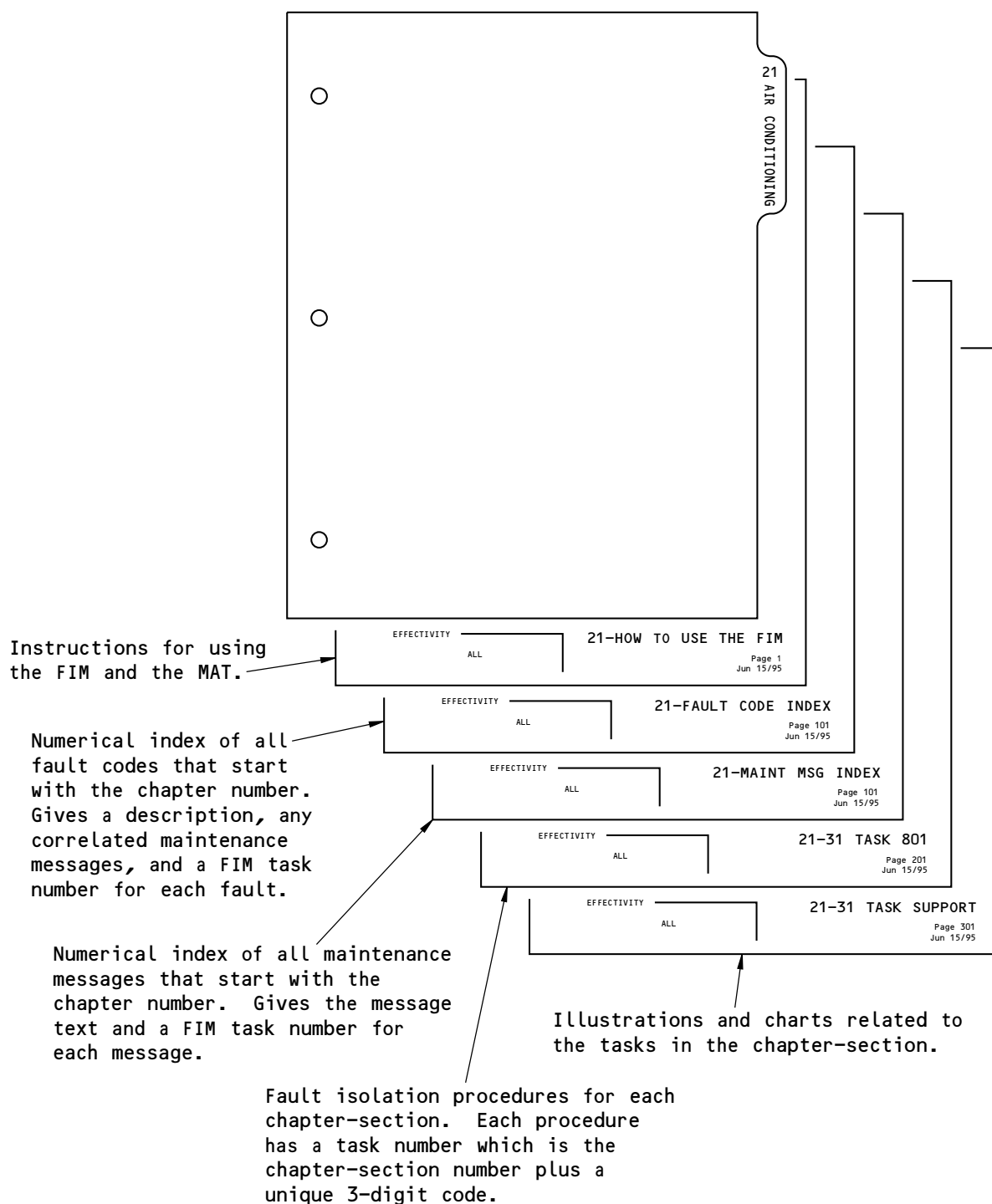
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F39837 S0000132479_V1

Subjects in Each FIM Chapter
Figure 6

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 001 51	ENG REVERSER L (EICAS ADVISORY)	24-11787	24-32 TASK 817
		32-71230	32-07 TASK 815
		32-71280	32-07 TASK 809
		32-71581	32-07 TASK 811
		32-71582	32-07 TASK 813
		32-71591	32-07 TASK 811
		32-71592	32-07 TASK 813
		73-13111	73-21 TASK 842
		73-23111	73-21 TASK 842
		78-00011	78-34 TASK 836
		78-00021	78-34 TASK 838
		78-00031	78-34 TASK 838
		78-00041	78-34 TASK 838
		78-00051	78-34 TASK 838
		78-00061	78-34 TASK 839
		78-00071	78-34 TASK 841
		78-00081	78-34 TASK 843
		78-00091	78-34 TASK 843
		78-01011	78-36 TASK 843
		78-01021	78-36 TASK 845
		78-01031	78-36 TASK 847
		78-01041	78-36 TASK 849
		78-01051	78-36 TASK 851
		78-01061	78-36 TASK 853
		78-01071	78-36 TASK 855
		78-02011	78-36 TASK 843
		78-02021	78-36 TASK 845
		78-02031	78-36 TASK 847
		78-02041	78-36 TASK 849
		78-02051	78-36 TASK 851
		78-02061	78-36 TASK 853
		78-02071	78-36 TASK 855
		78-15041	78-36 TASK 857
		78-15061	78-36 TASK 859
		78-25041	78-36 TASK 861

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 001 51	ENG REVERSER L (EICAS ADVISORY)	(continued)	
		78-25061	78-36 TASK 863
		78-34971	78-34 TASK 848
		78-35051	78-36 TASK 867
783 001 52	ENG REVERSER R (EICAS ADVISORY)	78-35071	78-36 TASK 869
		24-12056	24-32 TASK 820
		32-71282	32-07 TASK 810
		32-72260	32-07 TASK 835
		32-72461	32-07 TASK 829
		32-72462	32-07 TASK 831
		32-72471	32-07 TASK 829
		32-72472	32-07 TASK 831
		73-13112	73-21 TASK 842
		73-23112	73-21 TASK 842
		78-00012	78-34 TASK 837
		78-00022	78-34 TASK 838
		78-00032	78-34 TASK 838
		78-00042	78-34 TASK 838
		78-00052	78-34 TASK 838
		78-00062	78-34 TASK 840
		78-00072	78-34 TASK 842
		78-00082	78-34 TASK 843
		78-00092	78-34 TASK 843
		78-01012	78-36 TASK 844
		78-01022	78-36 TASK 846
		78-01032	78-36 TASK 848
		78-01042	78-36 TASK 850
		78-01052	78-36 TASK 852
		78-01062	78-36 TASK 854
		78-01072	78-36 TASK 856
		78-02012	78-36 TASK 844
		78-02022	78-36 TASK 846
		78-02032	78-36 TASK 848
		78-02042	78-36 TASK 850
		78-02052	78-36 TASK 852
		78-02062	78-36 TASK 854

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 001 52	ENG REVERSER R (EICAS ADVISORY)	(continued) 78-02072 78-15042 78-15062 78-25042 78-25062 78-34972 78-35052 78-35072	78-36 TASK 856 78-36 TASK 858 78-36 TASK 860 78-36 TASK 862 78-36 TASK 864 78-34 TASK 849 78-36 TASK 868 78-36 TASK 870
783 002 51	ENG REVERSER L (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.	24-11787 32-71230 32-71280 32-71581 32-71582 32-71591 32-71592 73-13111 73-23111 78-00011 78-00021 78-00031 78-00041 78-00051 78-00061 78-00071 78-00081 78-00091 78-01011 78-01021 78-01031 78-01041 78-01051	24-32 TASK 817 32-07 TASK 815 32-07 TASK 809 32-07 TASK 811 32-07 TASK 813 32-07 TASK 811 32-07 TASK 813 73-21 TASK 842 73-21 TASK 842 78-34 TASK 836 78-34 TASK 838 78-34 TASK 838 78-34 TASK 838 78-34 TASK 838 78-34 TASK 839 78-34 TASK 841 78-34 TASK 843 78-34 TASK 843 78-36 TASK 843 78-36 TASK 845 78-36 TASK 847 78-36 TASK 849 78-36 TASK 851

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 002 51	ENG REVERSER L (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.	(continued)	
		78-01061	78-36 TASK 853
		78-01071	78-36 TASK 855
		78-02011	78-36 TASK 843
		78-02021	78-36 TASK 845
		78-02031	78-36 TASK 847
		78-02041	78-36 TASK 849
		78-02051	78-36 TASK 851
		78-02061	78-36 TASK 853
		78-02071	78-36 TASK 855
		78-15041	78-36 TASK 857
		78-15061	78-36 TASK 859
		78-25041	78-36 TASK 861
		78-25061	78-36 TASK 863
		78-34951	78-36 TASK 865
		78-34971	78-34 TASK 848
		78-35051	78-36 TASK 867
		78-35071	78-36 TASK 869
783 002 52	ENG REVERSER R (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.		
		24-12056	24-32 TASK 820
		32-71282	32-07 TASK 810
		32-72260	32-07 TASK 835
		32-72461	32-07 TASK 829
		32-72462	32-07 TASK 831
		32-72471	32-07 TASK 829
		32-72472	32-07 TASK 831
		73-13112	73-21 TASK 842
		73-23112	73-21 TASK 842
		78-00012	78-34 TASK 837
		78-00022	78-34 TASK 838

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 002 52	ENG REVERSER R (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.	(continued)	
		78-00032	78-34 TASK 838
		78-00042	78-34 TASK 838
		78-00052	78-34 TASK 838
		78-00062	78-34 TASK 840
		78-00072	78-34 TASK 842
		78-00082	78-34 TASK 843
		78-00092	78-34 TASK 843
		78-01012	78-36 TASK 844
		78-01022	78-36 TASK 846
		78-01032	78-36 TASK 848
		78-01042	78-36 TASK 850
		78-01052	78-36 TASK 852
		78-01062	78-36 TASK 854
		78-01072	78-36 TASK 856
		78-02012	78-36 TASK 844
		78-02022	78-36 TASK 846
		78-02032	78-36 TASK 848
		78-02042	78-36 TASK 850
		78-02052	78-36 TASK 852
		78-02062	78-36 TASK 854
		78-02072	78-36 TASK 856
		78-15042	78-36 TASK 858
		78-15062	78-36 TASK 860
		78-25042	78-36 TASK 862
		78-25062	78-36 TASK 864
		78-34952	78-36 TASK 866
		78-34972	78-34 TASK 849
		78-35052	78-36 TASK 868
		78-35072	78-36 TASK 870

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 011 51	REVERSER INTERLOCK L (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.	32-71280	32-07 TASK 809
		32-71282	32-07 TASK 810
		73-13111	73-21 TASK 842
		73-23111	73-21 TASK 842
		78-35011	78-34 TASK 852
783 011 52	REVERSER INTERLOCK R (EICAS STATUS) Before you do any task listed here, see FIM 78-98 TASK 802. NOTE: AIMS CAN LATCH THIS MESSAGE.	32-71282	32-07 TASK 810
		73-13112	73-21 TASK 842
		73-23112	73-21 TASK 842
		78-35012	78-34 TASK 853
783 021 51	ENG REVERSER SNSR L (EICAS STATUS) Before you do any task listed here, see FIM 78-36 TASK 819. NOTE: AIMS CAN LATCH THIS MESSAGE.	32-71280	32-07 TASK 809
		32-71581	32-07 TASK 811
		32-71582	32-07 TASK 813
		32-71591	32-07 TASK 811
		32-71592	32-07 TASK 813
		78-01011	78-36 TASK 843
		78-01021	78-36 TASK 845
		78-01031	78-36 TASK 847
		78-01041	78-36 TASK 849
		78-01051	78-36 TASK 851
		78-01061	78-36 TASK 853
		78-01071	78-36 TASK 855
		78-02011	78-36 TASK 843
		78-02021	78-36 TASK 845
		78-02031	78-36 TASK 847
		78-02041	78-36 TASK 849
		78-02051	78-36 TASK 851

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 021 51	ENG REVERSER SNSR L (EICAS STATUS) Before you do any task listed here, see FIM 78-36 TASK 819. NOTE: AIMS CAN LATCH THIS MESSAGE.	(continued)	
		78-02061	78-36 TASK 853
		78-02071	78-36 TASK 855
		NONE	78-36 TASK 819
783 021 52	ENG REVERSER SNSR R (EICAS STATUS) Before you do any task listed here, see FIM 78-36 TASK 819. NOTE: AIMS CAN LATCH THIS MESSAGE.		
		32-71282	32-07 TASK 810
		32-72461	32-07 TASK 829
		32-72462	32-07 TASK 831
		32-72471	32-07 TASK 829
		32-72472	32-07 TASK 831
		78-01012	78-36 TASK 844
		78-01022	78-36 TASK 846
		78-01032	78-36 TASK 848
		78-01042	78-36 TASK 850
		78-01052	78-36 TASK 852
		78-01062	78-36 TASK 854
		78-01072	78-36 TASK 856
		78-02012	78-36 TASK 844
		78-02022	78-36 TASK 846
		78-02032	78-36 TASK 848
		78-02042	78-36 TASK 850
		78-02052	78-36 TASK 852
		78-02062	78-36 TASK 854
		78-02072	78-36 TASK 856
		NONE	78-36 TASK 819
783 031 51	ENG REV LIMITED L (EICAS ADVISORY)	24-11787	24-32 TASK 817
		76-15211	76-11 TASK 807
		76-25211	76-11 TASK 808
		78-15041	78-36 TASK 857
		78-15061	78-36 TASK 859

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
783 031 51	ENG REV LIMITED L (EICAS ADVISORY)	(continued) 78-25041 78-25061 78-34921 78-35021	78-36 TASK 861 78-36 TASK 863 78-34 TASK 844 78-34 TASK 854
783 031 52	ENG REV LIMITED R (EICAS ADVISORY)	24-12056 76-15212 76-25212 78-15042 78-15062 78-25042 78-25062 78-34922 78-35022	24-32 TASK 820 76-11 TASK 807 76-11 TASK 808 78-36 TASK 858 78-36 TASK 860 78-36 TASK 862 78-36 TASK 864 78-34 TASK 845 78-34 TASK 855
783 611 51	Thrust reverser: deploys too slowly - left engine.		78-31 TASK 801
783 611 52	Thrust reverser: deploys too slowly - right engine.		78-31 TASK 801

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
78-00011*	T/R Directional Control Valve (L Eng) is not in commanded position.	78-34 TASK 836
78-00012*	T/R Directional Control Valve (R Eng) is not in commanded position.	78-34 TASK 837
78-00021*	T/R Lwr Locking Actuator (R Sleeve) (L Eng) is not in commanded position.	78-34 TASK 838
78-00022*	T/R Lwr Locking Actuator (R Sleeve) (R Eng) is not in commanded position.	78-34 TASK 838
78-00031*	T/R Ctr Locking Actuator (R Sleeve) (L Eng) is not in commanded position.	78-34 TASK 838
78-00032*	T/R Ctr Locking Actuator (R Sleeve) (R Eng) is not in commanded position.	78-34 TASK 838
78-00041*	T/R Lwr Locking Actuator (L Sleeve) (L Eng) is not in commanded position.	78-34 TASK 838
78-00042*	T/R Lwr Locking Actuator (L Sleeve) (R Eng) is not in commanded position.	78-34 TASK 838
78-00051*	T/R Ctr Locking Actuator (L Sleeve) (L Eng) is not in commanded position.	78-34 TASK 838
78-00052*	T/R Ctr Locking Actuator (L Sleeve) (R Eng) is not in commanded position.	78-34 TASK 838
78-00061*	T/R Sync Lock Relay (L Eng) is not in commanded position.	78-34 TASK 839
78-00062*	T/R Sync Lock Relay (R Eng) is not in commanded position.	78-34 TASK 840
78-00071*	T/R Sync Lock Valve (L Eng) is not in commanded position.	78-34 TASK 841
78-00072*	T/R Sync Lock Valve (R Eng) is not in commanded position.	78-34 TASK 842
78-00081*	T/R Sync Lock (L Sleeve) (L Eng) is not in commanded position.	78-34 TASK 843
78-00082*	T/R Sync Lock (L Sleeve) (R Eng) is not in commanded position.	78-34 TASK 843
78-00091*	T/R Sync Lock (R Sleeve) (L Eng) is not in commanded position.	78-34 TASK 843
78-00092*	T/R Sync Lock (R Sleeve) (R Eng) is not in commanded position.	78-34 TASK 843
78-01011*	Prox Snsr Sync Shaft Lock (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 843
78-01012*	Prox Snsr Sync Shaft Lock (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 844
78-01021*	Prox Snsr Actr Lock Ctr (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 845
78-01022*	Prox Snsr Actr Lock Ctr (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 846

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
78-01031*	Prox Snsr Actr Lock Lwr (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 847
78-01032*	Prox Snsr Actr Lock Lwr (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 848
78-01041*	Prox Snsr Sync Shaft Lock (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 849
78-01042*	Prox Snsr Sync Shaft Lock (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 850
78-01051*	Prox Snsr Actr Lock Ctr (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 851
78-01052*	Prox Snsr Actr Lock Ctr (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 852
78-01061*	Prox Snsr Actr Lock Lwr (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 853
78-01062*	Prox Snsr Actr Lock Lwr (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 854
78-01071*	Prox Snsr Directional Control Valve (L Eng) circuit is open or shorted.	78-36 TASK 855
78-01072*	Prox Snsr Directional Control Valve (R Eng) circuit is open or shorted.	78-36 TASK 856
78-02011*	Prox Snsr Sync Shaft Lock (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 843
78-02012*	Prox Snsr Sync Shaft Lock (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 844
78-02021*	Prox Snsr Actr Lock Ctr (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 845
78-02022*	Prox Snsr Actr Lock Ctr (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 846
78-02031*	Prox Snsr Actr Lock Lwr (L Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 847
78-02032*	Prox Snsr Actr Lock Lwr (L Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 848
78-02041*	Prox Snsr Sync Shaft Lock (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 849
78-02042*	Prox Snsr Sync Shaft Lock (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 850
78-02051*	Prox Snsr Actr Lock Ctr (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 851
78-02052*	Prox Snsr Actr Lock Ctr (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 852

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
78-02061*	Prox Snsr Actr Lock Lwr (R Sleeve) (L Eng) circuit is open or shorted.	78-36 TASK 853
78-02062*	Prox Snsr Actr Lock Lwr (R Sleeve) (R Eng) circuit is open or shorted.	78-36 TASK 854
78-02071*	Prox Snsr Directional Control Valve (L Eng) circuit is open or shorted.	78-36 TASK 855
78-02072*	Prox Snsr Directional Control Valve (R Eng) circuit is open or shorted.	78-36 TASK 856
78-15041*	Thrust Reverser Sleeve (Right) (L Eng ch A) feedback is out of range.	78-36 TASK 857
78-15042*	Thrust Reverser Sleeve (Right) (R Eng ch A) feedback is out of range.	78-36 TASK 858
78-15061*	Thrust Reverser Sleeve (Left) (L Eng ch A) feedback is out of range.	78-36 TASK 859
78-15062*	Thrust Reverser Sleeve (Left) (R Eng ch A) feedback is out of range.	78-36 TASK 860
78-25041*	Thrust Reverser Sleeve (Right) (L Eng ch B) feedback is out of range.	78-36 TASK 861
78-25042*	Thrust Reverser Sleeve (Right) (R Eng ch B) feedback is out of range.	78-36 TASK 862
78-25061*	Thrust Reverser Sleeve (Left) (L Eng ch B) feedback is out of range.	78-36 TASK 863
78-25062*	Thrust Reverser Sleeve (Left) (R Eng ch B) feedback is out of range.	78-36 TASK 864
78-32081	Thrust Reverser Left Sleeve (L Eng) is not in commanded position.	78-31 TASK 801
78-32082	Thrust Reverser Left Sleeve (R Eng) is not in commanded position.	78-31 TASK 801
78-32111	Thrust Reverser Right Sleeve (L Eng) is not in commanded position.	78-31 TASK 801
78-32112	Thrust Reverser Right Sleeve (R Eng) is not in commanded position.	78-31 TASK 801
78-34921	28 VDC Power to the EEC for the Thrust Reverser Isolation Valve (L Eng) is not available.	78-34 TASK 844
78-34922	28 VDC Power to the EEC for the Thrust Reverser Isolation Valve (R Eng) is not available.	78-34 TASK 845
78-34951*	Thrust Reverser Isolation Valve (L Eng) Hydraulic Pressure Switch is failed.	78-36 TASK 865
78-34952*	Thrust Reverser Isolation Valve (R Eng) Hydraulic Pressure Switch is failed.	78-36 TASK 866

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
78-34961	Thrust Reverser Isolation Valve (L Eng) is failed closed.	78-34 TASK 846
78-34962	Thrust Reverser Isolation Valve (R Eng) is failed closed.	78-34 TASK 847
78-34971*	Thrust Reverser Isolation Valve (L Eng) is failed open.	78-34 TASK 848
78-34972*	Thrust Reverser Isolation Valve (R Eng) is failed open.	78-34 TASK 849
78-35001	Thrust Lever Interlock Actuator (L Eng) is failed blocking.	78-34 TASK 850
78-35002	Thrust Lever Interlock Actuator (R Eng) is failed blocking.	78-34 TASK 851
78-35011*	Thrust Lever Interlock Actuator (L Eng) is failed open.	78-34 TASK 852
78-35012*	Thrust Lever Interlock Actuator (R Eng) is failed open.	78-34 TASK 853
78-35021	Thrust Lever Interlock Actuator (L Eng) power is not available.	78-34 TASK 854
78-35022	Thrust Lever Interlock Actuator (R Eng) power is not available.	78-34 TASK 855
78-35031	Thrust Reverser Test Enable Switch (L Eng) is failed.	78-34 TASK 856
78-35032	Thrust Reverser Test Enable Switch (R Eng) is failed.	78-34 TASK 857
78-35051*	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Position Signals from Thrust Reverser Sleeve (Right) (L Eng) channel A and B do not agree. AIMS-2, CMCF LDI 3114-BCG-00W-16; Position signals from Thrust Reverser Sleeve (Right) (L Eng) channel A and B do not agree.	78-36 TASK 867
78-35052*	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Position Signals from Thrust Reverser Sleeve (Right) (R Eng) channel A and B do not agree. AIMS-2, CMCF LDI 3114-BCG-00W-16; Position signals from Thrust Reverser Sleeve (Right) (R Eng) channel A and B do not agree.	78-36 TASK 868
78-35071*	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Position Signals from Thrust Reverser Sleeve (Left) (L Eng) channel A and B do not agree. AIMS-2, CMCF LDI 3114-BCG-00W-16; Position signals from Thrust Reverser Sleeve (Left) (L Eng) channel A and B do not agree.	78-36 TASK 869

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
78-35072*	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Position Signals from Thrust Reverser Sleeve (Left) (R Eng) channel A and B do not agree. AIMS-2, CMCF LDI 3114-BCG-00W-16; Position signals from Thrust Reverser Sleeve (Left) (R Eng) channel A and B do not agree.	78-36 TASK 870
78-35081	Thrust Reverser Left Sleeve (L Eng) is not in commanded position.	78-31 TASK 802
78-35082	Thrust Reverser Left Sleeve (R Eng) is not in commanded position.	78-31 TASK 802
78-35111	Thrust Reverser Right Sleeve (L Eng) is not in commanded position.	78-31 TASK 802
78-35112	Thrust Reverser Right Sleeve (R Eng) is not in commanded position.	78-31 TASK 802

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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801. Thrust Reverser Sleeve is not in Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-32081, 78-32082, 78-32111, 78-32112.

B. Fault Isolation Procedure



WARNING

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the thrust reverser.
This is the task:
Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.
- (2) Deactivate the leading edge slats.
This is the task:
Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.
- (3) If the sleeve is in the retracted position, do these steps:
 - (a) Use the manual method to extend the thrust reverser.
This is the task:
Thrust Reverser Operation - Extend (Manual Method), AMM TASK 78-31-00-980-801-H01.
 - (b) If the sleeve operates smoothly, do these steps:
 - 1) Replace the RVDT/Gearhead Assembly.
These are the tasks:
Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.
 - 2) Do the repair confirmation at the end of this task.
 - (c) If the sleeve does not operate smoothly, do these steps:
 - 1) Replace the thrust reverser.
These are the tasks:
Thrust Reverser Removal, AMM TASK 78-31-01-000-801-H01,
Thrust Reverser Installation, AMM TASK 78-31-01-400-801-H01.
 - 2) Do the repair confirmation at the end of this task.
- (4) If the sleeve is in the extended position, do these steps:
 - (a) Make sure there is no contamination in the main and auxiliary tracks.
 - (b) Use the manual method to retract the thrust reverser.
This is the task:
Thrust Reverser Operation - Retract (Manual Method), AMM TASK 78-31-00-980-802-H01.
 - (c) If the sleeve operates smoothly, do these steps:

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- 1) Replace the RVDT/Gearhead Assembly.
These are the tasks:
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01,
Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01.
- 2) Do the repair confirmation at the end of this task.
- (d) If the sleeve does not operate smoothly, then continue.
- (5) Remove the thrust reverser sleeve.
This is the task:
Thrust Reverser Sleeve Removal, AMM TASK 78-31-10-000-801-H01.
- (6) Examine the thrust reverser track liners and sliders for damage that can cause the thrust reverser sleeve to operate incorrectly:
 - (a) Examine the tracks and track liners for mechanical damage.
 - (b) Make sure there is no unwanted material between the track and track liner.
 - (c) Examine the condition of the surface of the Rulon J material:
 - 1) No areas with bare metal can show.
 - 2) It is permitted to have small damage if it is not at the ends of the track or the track liners.
 - 3) You can add a radius of 0.005-0.015 inch (0.127-0.381 millimeters) at the entry end of the Rulon J material to make the sleeve installation easier.
- (7) If you find damage, do the applicable steps that follows:
 - (a) Replace the thrust reverser auxiliary track liner.
These are the tasks:
Thrust Reverser Track Liners Removal, AMM TASK 78-31-11-000-801-H01,
Thrust Reverser Track Liners Installation, AMM TASK 78-31-11-400-801-H01.
 - (b) Replace the thrust reverser auxiliary slider.
These are the tasks:
Thrust Reverser Auxiliary Sliders Removal, AMM TASK 78-31-13-000-801-H01,
Thrust Reverser Auxiliary Sliders Installation, AMM TASK 78-31-13-400-801-H01.
 - (c) Replace the thrust reverser sleeve.
These are the tasks:
Thrust Reverser Sleeve Removal, AMM TASK 78-31-10-000-801-H01,
Thrust Reverser Sleeve Installation, AMM TASK 78-31-10-400-801-H01.
 - (d) After you do one or more of the above tasks, do the repair confirmation at the end of this task.
- (8) If you do not find damage, re-install the thrust reverser sleeve.
This is the task:
Thrust Reverser Sleeve Installation, AMM TASK 78-31-10-400-801-H01.
 - (a) Do the repair confirmation at the end of this task.

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C. Repair Confirmation

- (1) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Reactivate the leading edge slats.

This is the task:

Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

- (3) Select the existing fault screen on the MAT.

- (4) Do the operational test of the thrust reverser.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

- (a) Make sure there are no hydraulic leaks.
- (5) If the MAT does not show the maintenance message, you corrected the fault.
- (6) If the MAT shows the maintenance message, then continue.

————— **END OF TASK** —————

802. Thrust Reverser Sleeve (L or R Eng) (L or R Sleeve) is Not in the Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-35081, 78-35082, 78-35111, 78-35112.

B. General

- (1) Flight Deck Messages: HYD QTY LOW L(R) or HYD PRESS SYS L(R).

NOTE: These messages can be an indication of possible hydraulic system leakage.

- (2) A thrust reverser sleeve that is not in the commanded position means that it extends and retracts more slowly than the opposite sleeve, did not move from the retracted and stowed position, stopped between the retracted and fully extended position, remained in the fully extended position.
- (3) A thrust reverser sleeve that is not in the commanded position can be caused by these conditions:
 - (a) An out-of-sync or internally damaged locking hydraulic actuator or non-locking hydraulic actuator.
 - (b) An internally damaged sync lock/manual drive unit.
 - (c) Missing or damaged sync shaft between two hydraulic actuators.
 - (d) Damaged main track sliders or unwanted material in the main track liner.
 - (e) Hydraulic fluid leakage from the tubing and unions at the locking or non-locking hydraulic actuators or the sync shaft tubing.
 - (f) Hydraulic fluid leakage from the tubing and unions at flow control tees, directional control valve, sync lock valve, isolation valve and the tubing and fittings between these components.
 - (g) Internal leakage across the dynamic seal on the piston inside the locking or non-locking hydraulic actuators.

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- (4) The procedure that follows has an initial evaluation, and four procedures for different conditions, and the repair confirmation.
 - (a) The initial evaluation uses visual examination, manual extension and retraction, then hydraulic powered extension and retraction to find the procedure to use.
 - (b) Procedure 1 recommends the replacement of the thrust reverser; if a thrust reverser sleeve does not operate smoothly, or the sync lock manual drive unit clutch slips, the affected thrust reverser sleeve can have problems with the main track sliders or broken or missing components in the thrust reverser actuation system (TRAS). If replacement of the thrust reverser is not possible, the procedure examines the track sliders and liners, and removes and installs all the TRAS components to re-rig the thrust reverser at the retracted and stowed position.
 - (c) Procedure 2 recommends the replacement of the thrust reverser position transducer (RVDT) if the sleeve operates smoothly with manual actuation and hydraulic power, and by visual observation both sleeves extend and retract at the same rate, but the EPCS page shows a sleeve moves slowly or does not follow the command.
 - (d) Procedure 3 finds the cause for one of the two sleeves that is not in the commanded position and hydraulic leakage is seen. The hydraulic components from the flow control tees to the flex hoses, retract and deploy tubing, all three actuators, the sync shaft tubing and the sync lock are examined.
 - (e) Procedure 4 finds the cause for both sleeves that are not in the commanded position and hydraulic leakage is seen. The hydraulic components from the isolation valve, all hydraulic tubing, sync lock valve, directional control valve, and flow control tees are examined.
- (5) After the faulty component is found, the actuation system must be re-installed with stow hydraulic power to make sure the sleeve is completely retracted and the bullnose seal is compressed to correctly rig the thrust reverser.

C. Initial Evaluation

- (1) Deactivate the leading edge slats.

This is the task:

Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (2) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.
- (3) Depressurize the left (right) hydraulic system.

This is the task:

Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
- (4) Look for hydraulic fluid leakage from the thrust reverser actuation system at the forward torque box or from the strut drains.
 - (a) Make a record where the hydraulic fluid leakage was seen.
 - (b) If no problem is found, continue with the procedure.

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- (5) Examine all hydraulic actuators for missing gimbal pins, or damaged torque box structure, or damaged gimbal mounts, or damaged hydraulic tubing, or sync shaft tubing, or damaged actuators on the front torque box of the thrust reverser.

NOTE: Refer to the Boeing structural repair manual for damage to structure and the Boeing component maintenance manual for the replacement of components.

- (a) If damage is found at the torque box, replace the thrust reverser.
- 1) These are the tasks:
- Thrust Reverser Removal, AMM TASK 78-31-01-000-801-H01,
Thrust Reverser Installation, AMM TASK 78-31-01-400-801-H01.
- (b) If no problem is found, continue with the procedure.
- (6) Examine all hydraulic actuator rod end connections to the aft sleeve fitting for damage.
- (a) If there is a missing bolt that connects the hydraulic actuator rod end to the sleeve fitting or the actuator rod end is damaged, replace the actuator.

NOTE: Make sure you examine for any additional damage to the thrust reverser sleeve.

- 1) Do the applicable task:
- a) Replace the thrust reverser lower actuator.
- These are the tasks:
- Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01,
Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.
- b) Replace the thrust reverser center actuator.
- These are the tasks:
- Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01,
Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.
- c) Replace the thrust reverser upper actuator.
- These are the tasks:
- Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01,
Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.
- (b) If the thrust reverser sleeve composite structure is damaged or the rod end fitting in the sleeve is damaged, replace the thrust reverser sleeve.

NOTE: Refer to the Boeing structural repair manual for damage to structure and the Boeing component maintenance manual for the replacement of components.

- 1) Replace the thrust reverser sleeve.
- These are the tasks:
- Thrust Reverser Sleeve Removal, AMM TASK 78-31-10-000-801-H01,
Thrust Reverser Sleeve Installation, AMM TASK 78-31-10-400-801-H01.
- (c) If no problem is found, continue with the procedure.

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- (7) Manually extend and retract the thrust reverser sleeve to find if the sleeve operates smoothly.

NOTE: The sync lock/manual drive unit has an internal clutch which will slip at a maximum of 110 inch-pounds (12.4 newton-meters). The unlock handle on the sync lock/manual drive unit should be turned and pinned to unlock the sync lock. The manual wrench square drive must be held in against spring force to engage the sync lock/manual drive while the square drive is turned.

NOTE: The unlock levers on the two locking hydraulic actuators should be turned and pinned to unlock the actuators.

- (a) Extend and retract the thrust reverser sleeve.

These are the tasks:

Thrust Reverser Operation - Extend (Manual Method), AMM
TASK 78-31-00-980-801-H01,

Thrust Reverser Operation - Retract (Manual Method), AMM
TASK 78-31-00-980-802-H01.

- (b) If the sleeve does not operate smoothly or the clutch in the sync lock/manual drive unit slips, do procedure 1.

NOTE: The affected sleeve can have broken or missing components in the thrust reverser actuation system (TRAS) or problems with the main track sliders.

- (c) If the sleeve operates smoothly with manual actuation, continue with the procedure.

- (8) Do the thrust reverser operational test and have a second person watch the sleeve extend and retract with hydraulic power.

- (a) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM
TASK 78-31-00-440-805-H00.

- (b) Do the operational test of the thrust reverser.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

- 1) First person; watch the EPCS page to find which sleeve is not in the commanded position. Compare the sleeve movement on the EPCS page and the observed movement.
 - 2) Second person; watch for observed faults such as one or both sleeves extends and retracts. Communicate with the first person.
 - 3) Second person; watch for hydraulic leakage from the thrust reverser actuation system or the strut drains.
- (c) If the EPCS page does not agree with the sleeve movement and sleeve extends and retracts slowly, do procedure 1.
- (d) If the sleeves operate smoothly with manual actuation and hydraulic power, and both sleeves extend and retract at the same rate, but the EPCS page shows a sleeve moves slowly or does not follow the command, do procedure 2.
- (e) If hydraulic fluid leakage from the thrust reverser actuation system or the strut drains is seen, do procedure 3 or 4.

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- (f) If the EPCS page agrees with the sleeve movement and the sleeve extends and retracts correctly and no hydraulic leakage is seen, there was an intermittent fault.

D. Procedure 1

- (1) If the thrust reverser sleeve does not operate smoothly, or the sync lock manual drive unit clutch slips, the affected thrust reverser sleeve can have problems with the main track sliders or broken or missing components in the thrust reverser actuation system (TRAS). Repairs and re-rigging the TRAS on-wing can be extensive and difficult.
 - (a) If possible, replace the thrust reverser.
These are the tasks:
Thrust Reverser Removal, AMM TASK 78-31-01-000-801-H01,
Thrust Reverser Installation, AMM TASK 78-31-01-400-801-H01.
 - 1) Do the repair confirmation at the end of this task.
 - (b) If replacement of the thrust reverser is not possible, continue with the procedure.
- (2) If the thrust reverser sleeve does not operate smoothly, or the sync lock manual drive unit clutch slips, the affected thrust reverser sleeve can have problems with the main track sliders.
 - (a) Examine the thrust reverser track liners and sliders for damage:
 - 1) Remove the thrust reverser sleeve.
This is the task:
Thrust Reverser Sleeve Removal, AMM TASK 78-31-10-000-801-H01.
 - 2) Make sure there is no unwanted material between the main track slider and main track liner.
NOTE: Unwanted material such as dirt or sand can erode the Rulon J material, a low friction surface, on the main track slider shoes.
 - a) Remove any unwanted material from the track liners.
 - b) Continue with the procedure.
 - 3) Examine the condition of the surface of the Rulon J material on the main track sliders for damage:
 - a) No areas with bare metal can show.
 - b) It is permitted to have small damage if the damage is not at the ends of the track or at the ends of the track liners.
 - 4) If you find damage to the main track slider, do the applicable procedure that follows:
 - a) Repair or replace the main track slider shoes per CMM 78-31-82, or;
 - b) Repair the Rulon J surface on the main track slider shoes per CMM 78-31-82, or,
 - c) Replace the thrust reverser auxiliary sliders.
These are the tasks:
Thrust Reverser Auxiliary Sliders Removal, AMM TASK 78-31-13-000-801-H01,
Thrust Reverser Auxiliary Sliders Installation, AMM TASK 78-31-13-400-801-H01.
 - d) Replace the thrust reverser auxiliary track liner.
These are the tasks:

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Thrust Reverser Track Liners Removal, AMM TASK 78-31-11-000-801-H01,

Thrust Reverser Track Liners Installation, AMM TASK 78-31-11-400-801-H01.

- 5) Install the thrust reverser sleeve, but do not connect all hydraulic actuator rod ends to the thrust reverser sleeve fittings at this time.

This is the task:

Thrust Reverser Sleeve Installation, AMM TASK 78-31-10-400-801-H01.

- 6) Continue with the procedure to return the thrust reverser actuation system (TRAS) to the usual condition.

- (3) If the sleeve does not operate smoothly, do the steps that follow:

NOTE: If the sync lock manual drive unit clutch slips, the affected sleeve can have broken or missing components in the thrust reverser actuation system (TRAS).

NOTE: A missing or broken sync shaft between the locking or non-locking hydraulic actuators will cause only one or two of the three actuators to provide the force to move the sleeve.

NOTE: A locking or non-locking hydraulic actuator that was not installed with stow hydraulic power, or the rod end was turned during the installation is mis-rigged so that it does not move the same length with the other actuators.

NOTE: Damage or wear to the internal components of the locking hydraulic actuators could cause the actuator to operate slowly, fail to unlock, or jam.

NOTE: Damage or wear to the internal components of the non-locking hydraulic actuator could cause the actuator to operate slowly or jam.

NOTE: Damage or wear to the internal components of the sync lock/manual drive unit could cause the sync lock to operate slowly, or fail to unlock or jam.

- (a) Replace and re-rig all the TRAS components from the thrust reverser.

- 1) If possible, manually retract the thrust reverser sleeve.
- 2) Remove the deactivation pin from the bypass valve handle on the isolation valve.

NOTE: If the deactivation pin remains installed, you can drain the hydraulic return line from the hydraulic reservoir above the isolation valve.

- 3) Remove all the TRAS components from the thrust reverser.

- a) Remove the sync shaft and tubing between the lower locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Removal, AMM TASK 78-34-13-000-801-H01.

<1> If the sync shaft is broken or missing, replace the sync shaft.

- b) Remove the sync shaft and tubing between the upper non-locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Removal, AMM TASK 78-34-13-000-801-H01.

<1> If the sync shaft is broken or missing, replace the sync shaft.

- c) Remove the RVDT.

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Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01.

- d) Remove the sync lock/manual drive unit.

This is the task:

Thrust Reverser Sync Lock/Manual Drive Unit Removal, AMM
TASK 78-34-10-000-801-H01.

- e) Remove the lower locking hydraulic actuator.

This is the task:

Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01.

- f) Remove the center locking hydraulic actuator.

This is the task:

Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01.

- g) Remove the upper non-locking hydraulic actuator.

This is the task:

Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01.

- 4) Replace all the TRAS components with spares or use the supplier component maintenance manuals to bench rig the locking and non-locking hydraulic actuators, RVDT and the sync lock/manual drive unit at the fully retracted position.
- 5) Install all the TRAS components on the thrust reverser.

NOTE: The installation of the sync lock/manual drive unit, the locking and non-locking hydraulic actuators, RVDT and the sync shaft and tubing requires retract (stow) hydraulic power to make sure the sync lock, actuators, RVDT and sync shaft are installed at the completely retracted position and the bullnose seal is compressed to correctly rig the thrust reverser. The procedures that follow must be completed together.

- a) Install the lower locking hydraulic actuator.

This is the task:

Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.

- b) Install the center locking hydraulic actuator.

This is the task:

Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.

- c) Install the upper non-locking hydraulic actuator.

This is the task:

Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.

- d) Install the sync shaft and tubing between the lower locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.

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- e) Install the sync shaft and tubing between the upper non-locking actuator and the center locking actuator.
This is the task:
Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.
- f) Install the sync lock/manual drive unit.
This is the task:
Thrust Reverser Sync Lock/Manual Drive Unit Installation, AMM
TASK 78-34-10-400-801-H01.
- g) Install the RVDT.
This is the task:
Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.
- (b) If any of the hydraulic actuators has a large, continuous flow of leakage from the actuator drive during stow hydraulic power, replace the affected actuator.
 - 1) Do the applicable task:
 - a) Replace the thrust reverser lower actuator.
These are the tasks:
Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01,
Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.
 - b) Replace the thrust reverser center actuator.
These are the tasks:
Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01,
Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.
 - c) Replace the thrust reverser upper actuator.
These are the tasks:
Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01,
Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.
 - 2) Do the repair confirmation at the end of this task.
- (c) If there is no problem with the thrust reverser actuation system (TRAS), continue with the procedure.

E. Procedure 2

- (1) If the sleeve operates smoothly with manual actuation and hydraulic power, and both sleeves extend and retract at the same rate, but the EPCS page shows a sleeve moves slowly or does not follow the command, replace the applicable RVDT.

NOTE: The installation of the RVDT requires stow hydraulic power to make sure the RVDT is installed at the completely retracted position and the bullnose seal is compressed to correctly rig the thrust reverser.

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- (a) Replace the thrust reverser position transducer.
These are the tasks:
Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.
- (b) Do the repair confirmation at the end of this task.

F. Procedure 3

- (1) If one of the two sleeves on the thrust reverser operates slowly and hydraulic leakage is seen at the front of the strut or the thrust reverser torque box, do these steps:
 - (a) Visually examine the flow control tees and the hydraulic tubing and fittings from the flow control tees to the flex hoses for damage or hydraulic fluid leakage.
 - 1) If you find damage or hydraulic leakage, repair or replace the hydraulic tubing.
 - 2) If you find damage to the flow control tees, replace the flow control tees.
These are the tasks:
Thrust Reverser Flow Control Tees Removal, AMM TASK 78-34-02-000-801-H01,
Thrust Reverser Flow Control Tees Installation, AMM TASK 78-34-02-400-801-H01.
 - 3) Do the repair confirmation at the end of this task.
- (b) Visually examine the flex hoses, the sync shaft tubing, the extend and retract hydraulic tubing and unions on the locking hydraulic actuators and non-locking hydraulic actuators for damage or hydraulic fluid leakage.

NOTE: The installation of the sync lock/manual drive unit, the locking and non-locking actuator, and the sync shaft and tubing requires retract (stow) hydraulic power to make sure the sync lock/manual drive unit, locking and non-locking actuator, and sync shaft are installed at the completely retracted position and the bullnose seal is compressed to correctly rig the thrust reverser. The procedures that follow must be combined.

- 1) If you find damage or hydraulic fluid leakage from the extend and retract hydraulic tubing, repair or replace the hydraulic tubing.
- 2) If you find damage or hydraulic fluid leakage from the sync shaft tubing, repair or replace the sync shaft tubing.
These are the tasks:
Thrust Reverser Sync Shaft and Tubing Removal, AMM
TASK 78-34-13-000-801-H01,
Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.
- 3) If you find damage or hydraulic fluid leakage from a locking or non-locking hydraulic actuator, repair or replace the applicable locking or non-locking hydraulic actuator; do the applicable task:
 - a) Replace the thrust reverser lower actuator.
These are the tasks:
Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01,
Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.

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- b) Replace the thrust reverser center actuator.

These are the tasks:

Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01,

Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.

- c) Replace the thrust reverser upper actuator.

These are the tasks:

Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01,

Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.

- (c) Visually examine the sync lock flex hoses, the sync lock tubing on the torque box and sync lock/manual drive unit for damage or hydraulic fluid leakage.

NOTE: Loss of hydraulic pressure could cause the sync lock/manual drive unit to lock.

NOTE: The installation of the sync lock/manual drive unit requires retract (stow) hydraulic power to make sure the sync lock/manual drive unit is installed at the completely retracted position and the bullnose seal is compressed to correctly rig the thrust reverser.

- 1) If you find damage or hydraulic fluid leakage from the sync lock/manual drive unit, repair or replace the applicable sync lock/manual drive unit.

These are the tasks:

Thrust Reverser Sync Lock/Manual Drive Unit Removal, AMM
TASK 78-34-10-000-801-H01,

Thrust Reverser Sync Lock/Manual Drive Unit Installation, AMM
TASK 78-34-10-400-801-H01.

- 2) If you find damage or hydraulic fluid leakage from the sync lock tubing or flex hose, repair or replace the applicable sync lock tubing.

These are the tasks:

Thrust Reverser Sync Shaft and Tubing Removal, AMM
TASK 78-34-13-000-801-H01,

Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.

- 3) Do the repair confirmation at the end of this task.

G. Procedure 4

- (1) If both sleeves on the thrust reverser operate slowly or hydraulic fluid leakage is seen from the strut or aft hydraulic bay, do these steps:

- (a) Visually examine the unions on the sync lock valve, the sync lock hydraulic tubing, fittings and clamp blocks from the sync lock valve to the flex hoses in the strut for damage or hydraulic fluid leakage.

NOTE: Loss of hydraulic pressure could cause the sync lock/manual drive unit to lock.

- 1) If you find damage or hydraulic fluid leakage from the sync lock hydraulic tubing, repair or replace the hydraulic tubing.
- 2) If you find hydraulic fluid leakage from the unions on the sync lock valve, repair or replace the sync lock valve.

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These are the tasks:

Thrust Reverser Sync Lock Valve Removal, AMM TASK 78-34-11-000-801-H01,
Thrust Reverser Sync Lock Valve Installation, AMM TASK 78-34-11-400-801-H01.

- 3) Do the repair confirmation at the end of this task.
- (b) Visually examine the unions on the isolation valve, the control, pressure and return hydraulic tubing, fittings and clamp blocks from the isolation valve to the directional control valve, and the unions on the directional control valve for damage or hydraulic fluid leakage.
 - 1) If you find damage or hydraulic fluid leakage from the hydraulic tubing, repair or replace the hydraulic tubing.
 - 2) If you find hydraulic fluid leakage from the unions on the isolation valve, repair or replace the isolation valve.

These are the tasks:

Thrust Reverser Isolation Valve Removal, AMM TASK 78-34-05-000-804-H00,
Thrust Reverser Isolation Valve Installation, AMM TASK 78-34-05-400-801-H01.

- 3) If you find hydraulic fluid leakage from the unions on the directional control valve, repair or replace the directional control valve.

These are the tasks:

Thrust Reverser Directional Control Valve Removal, AMM
TASK 78-34-01-000-801-H01,
Thrust Reverser Directional Control Valve Installation, AMM
TASK 78-34-01-400-801-H01.

- 4) Do the repair confirmation at the end of this task.
- (c) Visually examine the unions on the directional control valve, the extend and retract hydraulic tubing, fittings and clamp blocks from the directional control valve to the flow control tees, and the flow control tees for damage or hydraulic fluid leakage.
 - 1) If you find damage or hydraulic fluid leakage from the hydraulic tubing, repair or replace the hydraulic tubing.
 - 2) If you find hydraulic fluid leakage from the unions on the directional control valve, repair or replace the directional control valve.
 - a) These are the tasks:

Thrust Reverser Directional Control Valve Removal, AMM
TASK 78-34-01-000-801-H01,
Thrust Reverser Directional Control Valve Installation, AMM
TASK 78-34-01-400-801-H01.
 - 3) If you find damage to the flow control tees, replace the flow control tees.

These are the tasks:

Thrust Reverser Flow Control Tees Removal, AMM TASK 78-34-02-000-801-H01,
Thrust Reverser Flow Control Tees Installation, AMM TASK 78-34-02-400-801-H01.
 - 4) Do the repair confirmation at the end of this task.

H. Repair Confirmation

- (1) Activate the thrust reverser.

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This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Reactivate the leading edge slat.

This is the task:

Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

- (3) Do the operational test of the thrust reverser.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

- (a) If the sleeves do not extend/retract correctly, go back to the fault isolation procedure (procedure 1, 2, 3 or 4) and continue with the next subsequent step of that procedure.

- 1) If all procedures 1, 2, 3 and 4 were done and the sleeves do not extend/retract correctly, replace the thrust reverser.

These are the tasks:

Thrust Reverser Removal, AMM TASK 78-31-01-000-801-H01,

Thrust Reverser Installation, AMM TASK 78-31-01-400-801-H01.

- (b) If both sleeves on the left or right engine thrust reverser extends/retracts correctly and there is no hydraulic leakage from the thrust reverser actuation system or the strut, you have corrected the fault.

———— **END OF TASK** ————

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FAULT ISOLATION MANUAL****836. T/R Directional Control Valve (DCV) (L Eng) Not In Commanded Position - Fault Isolation****A. Maintenance Messages**

- (1) This task is for maintenance message: 78-00011.

B. Description

- (1) Flight Deck Message: ENG REVERSER L
- (2) 78-00011: Thrust Reverser (T/R) Directional Control Valve (L ENG) is not in the commanded position.

NOTE: Paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 can occur even though the Thrust Reverser operates correctly. These are erroneous maintenance messages when they occur as pairs. The erroneous messages are caused by a logic discrepancy in the Central Maintenance Computer (CMC). These messages can also be caused by interference of the Leaf Spring in the Sync Lock Switch Installation.

C. Possible Causes

- (1) L ENG T/R Directional Control Solenoid Valve, DV 78102A
- (2) L ENG T/R Directional Control Hydraulic Tubing
- (3) T/R Microswitch Pack, M32060
- (4) Wiring
- (5) L ENG T/R

D. Related Data

- (1) WDM 78-34-11

E. Initial Evaluation

- (1) On the Maintenance Access Terminal (MAT), select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the Thrust Reverser. This is the task: Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00
- (2) Deactivate the Leading Edge Slat. This is the task: Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801
- (3) If paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 are found, do these steps:
 - (a) Do a check of the Sync Lock Switch Installation for any interference at the Leaf Spring. This is the task: Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01
 - (b) Disconnect connector DV78102A from the Thrust Reverser Isolation Valve, V78102 (WDM 78-34-11).
 - (c) Measure the Resistance between pins 1 and 2 of the connector J1 on the Thrust Reverser Isolation Valve, V78102 :
 - The correct Resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 Solenoid Valve is 79-115 ohms.
 - The correct Resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 Solenoid Valve is 72-76 ohms.
 - 1) If the Resistance is not in the specified range, replace the Thrust Reverser Directional Control Solenoid Valve. These are the tasks:
 - Thrust Reverser Directional Control Solenoid Valve Removal, AMM TASK 78-34-17-000-801-H01
 - Thrust Reverser Directional Control Solenoid Valve Installation, AMM TASK 78-34-17-400-801-H01
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the Resistance is in the specified range, continue.
 - (d) Do a check for continuity from connector DV78102A, pin 2 to ground.
 - 1) If you do not find continuity, repair the wiring.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find continuity, re-connect connector DV78102A and continue.
- (4) Do a check of the Hydraulic Tubing between the Isolation Valve, V78102 and the Directional Control Valve (DCV):
 - (a) If you find a problem with the Hydraulic Tubing, do these steps:
 - 1) Repair or replace the Hydraulic Tubing.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If you do not find a problem with the Hydraulic Tubing, then continue.
- (5) Do this check of the Microswitch Pack, M32060 at the P10 Panel (WDM 78-34-11):
 - (a) Disconnect connector D115P at the Control Stand Panel, P10.
 - (b) Do a check for continuity between pins 1 and 5 of connector D115P.

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- 1) If you do not find continuity, replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00
 - Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - a) Do the Repair Confirmation at the end of this task.
- 2) If you find continuity, then measure the Resistance between pins 5 and 6 of connector D115P.
 - a) If the Resistance is less than 100K ohms, then replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00
 - Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - <1> Do the Repair Confirmation at the end of this task.
 - b) If the Resistance is more than 100K ohms, then do a check for continuity between pin 1 of connector D115J and ground.
 - <1> If you do not find continuity, repair the wiring.
 - <a> Do the Repair Confirmation at the end of this task.
 - <2> If you find continuity, continue.
- (c) Remove the DO-NOT-OPERATE tag and move the applicable Reverse Thrust Lever UP and AFT until it engages the Interlock Stop.
- (d) Do a check for continuity between pins 5 and 6 of connector D115P.
 - 1) If you do not find continuity, replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00
 - Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find continuity, move the Reverse Thrust Lever to the Fully Forward and DOWN position, re-attach the DO-NOT-OPERATE tag and continue.
- (6) Do a wiring check between the T/R Isolation Valve, V78102, and the Microswitch Pack, M32060 as follows (WDM 78-34-11):
 - (a) Disconnect connector DV78102A from the Isolation Valve, V78102.
 - (b) Do a wiring check between these pins of the connector DV78102A at the Isolation Valve, V78102 and connector D115J at the P10 Panel.

DV78102A	D115J
pin 1	pin 5

 - 1) If you find a problem with the wiring, do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors D115J and DV78102A.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then re-connect connectors D115J and DV78102A and continue.
- (7) Replace the Thrust Reverser Directional Control Valve. These are the tasks:

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- Thrust Reverser Directional Control Valve Removal, AMM TASK 78-34-01-000-801-H01
 - Thrust Reverser Directional Control Valve Installation, AMM TASK 78-34-01-400-801-H01
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Activate the Thrust Reverser. This is the task: Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
 - (2) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this Fault Isolation Procedure.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
- NOTE:** You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.
- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, do these steps:
 - a) Deactivate the Thrust Reverser. This is the task: Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00..
 - b) Continue with the subsequent step of this Fault Isolation Procedure.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the problem.
 - a) Reactivate the Leading Edge Slat. This is the task: Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

— END OF TASK —

837. T/R Directional Control Valve (DCV) (R Eng) Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-00012.

B. Description

- (1) Flight Deck Message: ENG REVERSER R
- (2) 78-00012: T/R Directional Control Valve (R ENG) is not in the commanded position.

NOTE: Paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 can occur even though the Thrust Reverser operates correctly. These are erroneous maintenance messages when they occur as pairs. The erroneous messages are caused by a logic discrepancy in the CMC. These messages can also be caused by interference of the Leaf Spring in the Sync Lock Switch Installation.

C. Possible Causes

- (1) R ENG T/R Directional Control Solenoid Valve, DV 78202A
- (2) R ENG T/R Directional Control Hydraulic Tubing
- (3) T/R Microswitch Pack, M32060
- (4) Wiring
- (5) R ENG T/R

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D. Related Data

- (1) WDM 78-34-21

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
- (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the Thrust Reverser. This is the task: Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.
 - (2) Deactivate the Leading Edge Slat. This is the task: Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.
 - (3) If paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 are found, do these steps:
 - (a) Do a check of the Sync Lock Switch Installation for any interference at the Leaf Spring. This is the task: Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.
 - (b) Disconnect connector DV78202A from the Thrust Reverser Isolation Valve, V78202.
 - (c) Measure the Resistance between pins 1 and 2 of the connector J1 on the Thrust Reverser Isolation Valve, V78202 (WDM 78-34-21):
 - The correct Resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 Solenoid Valve is 79-115 ohms.
 - The correct Resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 Solenoid Valve is 72-76 ohms.
- 1) If the Resistance is not in the above range, replace the Thrust Reverser Directional Control Solenoid Valve. These are the tasks:

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- Thrust Reverser Directional Control Solenoid Valve Removal, AMM TASK 78-34-17-000-801-H01
- Thrust Reverser Directional Control Solenoid Valve Installation, AMM TASK 78-34-17-400-801-H01
 - a) Do the Repair Confirmation procedure at the end of this task.
- 2) If the Resistance is not in the specified range, continue.
- (d) Do a check for continuity from connector DV78202A, pin 2 to ground.
 - 1) If you do not find continuity, repair the wiring.
 - a) Do the Repair Confirmation procedure at the end of this task.
 - 2) If you find continuity, re-connect connector DV78202A and continue.
- (4) Do a check of the Hydraulic Tubing between the Isolation Valve, V78202 and the DCV
 - (a) If you find a problem with the Hydraulic Tubing, do these steps:
 - 1) Repair or replace the Hydraulic Tubing.
 - 2) Do the Repair Confirmation procedure at the end of this task.
 - (b) If you do not find a problem with the Hydraulic Tubing, then continue.
- (5) Do this check of the Microswitch Pack, M32060 at the P10 panel (WDM 78-34-21):
 - (a) Disconnect connector D118P at the Control Stand Panel, P10.
 - (b) Do a check for continuity between pins 1 and 2 of connector D118P.
 - 1) If you do not find continuity, replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00
 - Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find continuity, then measure the Resistance between pins 2 and 3 of connector D118P.
 - a) If the Resistance is less than 100K ohms, replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00
 - Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - <1> Do the Repair Confirmation procedure at the end of this task.
 - b) If the Resistance is greater than 100K ohms, then do a check for continuity between pin 1 of connector D118J and ground.
 - <1> If you do not find continuity, repair the wiring.
 - <a> Do the Repair Confirmation at the end of this task.
 - <2> If you find continuity, continue.
- (c) Remove the DO-NOT-OPERATE tag and move the applicable Reverse Thrust Lever Up and Aft until it engages the Interlock Stop.
- (d) Do a check for continuity between pins 2 and 3 of connector D118P.
 - 1) If you do not find continuity, replace the Microswitch Pack, M32060. These are the tasks:
 - Switch Pack Removal, AMM TASK 76-11-11-000-804-H00

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- Switch Pack Installation, AMM TASK 76-11-11-400-804-H00
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find continuity, move the Reverse Thrust Lever to the Fully Forward and DOWN position, re-attach the DO-NOT-OPERATE tag and continue.
 - (6) Do a wiring check between the T/R Isolation Valve, V78202, and the Microswitch Pack, M32060 (WDM 78-34-21):
 - (a) Disconnect connector DV78202A from the Isolation Valve, V78202.
 - (b) Do a wiring check between these pins of the connector DV78202A at the Isolation Valve, V78202 and connector D118J at the P10 panel.
- | | |
|-----------------|--------------|
| DV78202A | D118J |
| pin 1 | pin 2 |
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors D118J and DV78202A.
 - 3) Do the Repair Confirmation at the end of this task.
 - (7) Replace the Thrust Reverser Directional Control Valve. These are the tasks:
 - Thrust Reverser Directional Control Valve Removal, AMM TASK 78-34-01-000-801-H01
 - Thrust Reverser Directional Control Valve Installation, AMM TASK 78-34-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Activate the Thrust Reverser. This is the task: Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
 - (2) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this Fault Isolation Procedure.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
- NOTE:** You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.
- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, do these steps:
 - a) Deactivate the Thrust Reverser. This is the task: Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00..
 - b) Continue with the subsequent step of this Fault Isolation Procedure.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the problem.
 - a) Reactivate the Leading Edge Slat. This is the task: Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

————— **END OF TASK** —————

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838. T/R Locking Actuator Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-00021, 78-00022, 78-00031, 78-00032, 78-00041, 78-00042, 78-00051, 78-00052.

B. General

- (1) Flight Deck Message: ENG REVERSER L(R).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message with the thrust reverser deployed, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Visually examine the hydraulic tubing for the thrust reverser actuation system for damage and leakage.
 - (a) If you find damage or leakage, repair or replace the hydraulic tubing as necessary.
 - (b) If it was necessary to repair or replace the hydraulic tubing, do the repair confirmation procedure at the end of this task.
- (2) Do a check of the operation of the manual unlock handle on the locking hydraulic actuators.
 - (a) Extend the thrust reverser.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

- (b) Hold the thrust reverser at the extended position.
- (c) Make sure the four manual unlock handles are at the TARGET FAR position.

NOTE: The definition of the TARGET FAR position is that the target on the handle has turned away from the actuator unlock proximity sensor and does not cover the end of the sensor.

- 1) If any of the manual unlock handles are at the TARGET NEAR position, lubricate the manual unlock handle.

This is the task:

Thrust Reverser Locking Actuator Servicing, AMM TASK 78-34-12-600-801-H01.

- a) Monitor the fault history if this problem occurs again.

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- 2) Continue with the procedure to return the thrust reverser actuation system (TRAS) to the usual condition.

**WARNING**

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (3) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (4) If the actuator does not operate smoothly, do the steps that follow:

NOTE: If the sync lock manual drive unit clutch slips, the affected sleeve can have broken or missing components in the thrust reverser actuation system (TRAS).

NOTE: A missing or broken sync shaft between the locking or non-locking hydraulic actuators will cause only one or two of the three actuators to provide the force to move the sleeve.

NOTE: A locking or non-locking hydraulic actuator that was not installed with stow hydraulic power, or the rod end was turned during the installation is mis-rigged so that it does not move the same length with the other actuators.

NOTE: Damage or wear to the internal components of the locking hydraulic actuators could cause the actuator to operate slowly, fail to unlock, or jam.

NOTE: Damage or wear to the internal components of the non-locking hydraulic actuator could cause the actuator to operate slowly or jam.

NOTE: Damage or wear to the internal components of the sync lock/manual drive unit could cause the sync lock to operate slowly, fail to unlock, or jam.

- (a) Replace and re-rig all the TRAS components from the thrust reverser.

- 1) If possible, manually retract the thrust reverser sleeve.
- 2) Remove the deactivation pin from the bypass valve handle on the isolation valve.

NOTE: If the deactivation pin remains installed, you can drain the hydraulic return line from the hydraulic reservoir above the isolation valve.

- 3) Remove all the TRAS components from the thrust reverser.

- a) Remove the sync shaft and tubing between the lower locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Removal, AMM
TASK 78-34-13-000-801-H01.

<1> If the sync shaft is broken or missing, replace the sync shaft.

- b) Remove the sync shaft and tubing between the upper non-locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Removal, AMM
TASK 78-34-13-000-801-H01.

<1> If the sync shaft is broken or missing, replace the sync shaft.

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- c) Remove the RVDT.
This is the task:
Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01.
 - d) Remove the sync lock/manual drive unit.
This is the task:
Thrust Reverser Sync Lock/Manual Drive Unit Removal, AMM
TASK 78-34-10-000-801-H01.
 - e) Remove the lower locking hydraulic actuator.
This is the task:
Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01.
 - f) Remove the center locking hydraulic actuator.
This is the task:
Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01.
 - g) Remove the upper non-locking hydraulic actuator.
This is the task:
Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01.
- 4) Replace all the TRAS components with spares or use the supplier component maintenance manuals to bench rig the locking and non-locking hydraulic actuators, RVDT and the sync lock/manual drive unit at the fully retracted position.
- 5) Install all the TRAS components on the thrust reverser.
- NOTE:** The installation of the sync lock/manual drive unit, the locking and non-locking hydraulic actuators, RVDT and the sync shaft and tubing requires retract (stow) hydraulic power to make sure the sync lock, actuators, RVDT and sync shaft are installed at the completely retracted position and the bullnose seal is compressed to correctly rig the thrust reverser. The procedures that follow must be completed together.
- a) Install the lower locking hydraulic actuator.
This is the task:
Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.
 - b) Install the center locking hydraulic actuator.
This is the task:
Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.
 - c) Install the upper non-locking hydraulic actuator.
This is the task:
Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.
 - d) Install the sync shaft and tubing between the lower locking actuator and the center locking actuator.
This is the task:

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Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.

- e) Install the sync shaft and tubing between the upper non-locking actuator and the center locking actuator.

This is the task:

Thrust Reverser Sync Shaft and Tubing Installation, AMM
TASK 78-34-13-400-801-H01.

- f) Install the sync lock/manual drive unit.

This is the task:

Thrust Reverser Sync Lock/Manual Drive Unit Installation, AMM
TASK 78-34-10-400-801-H01.

- g) Install the RVDT.

This is the task:

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

- (b) If any of the hydraulic actuators has a large, continuous flow of leakage from the actuator drive during stow hydraulic power, replace the affected actuator.

- 1) Do the applicable task:

- a) Replace the thrust reverser lower actuator.

These are the tasks:

Thrust Reverser Lower Actuator Removal, AMM TASK 78-34-12-000-801-H01,
Thrust Reverser Lower Actuator Installation, AMM
TASK 78-34-12-400-801-H01.

- b) Replace the thrust reverser center actuator.

These are the tasks:

Thrust Reverser Center Actuator Removal, AMM
TASK 78-34-12-000-802-H01,
Thrust Reverser Center Actuator Installation, AMM
TASK 78-34-12-400-802-H01.

- c) Replace the thrust reverser upper actuator.

These are the tasks:

Thrust Reverser Upper Actuator Removal, AMM TASK 78-34-12-000-803-H01,
Thrust Reverser Upper Actuator Installation, AMM
TASK 78-34-12-400-803-H01.

- 2) Do the repair confirmation at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (3) Do the thrust reverser operational test.

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This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message, continue with the subsequent step of this fault isolation procedure.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

839. T/R Sync Lock Relay (L Eng) Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-00061.

B. General

- (1) Flight Deck Message: ENG REVERSER L.

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message (with the thrust reverser extended (deployed)), then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure



MAKE SURE YOU DO THE DEACTIVATION PROCEDURE ON THE THRUST REVERSER HALF. IF YOU DO NOT, THE THRUST REVERSER CAN ACCIDENTALLY OPERATE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Deactivate the leading edge slat.

This is the task:

Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.

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- (3) Make sure the leaf spring correctly operates the sync lock switch.

This is the task:

Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

NOTE: The leaf spring must operate the sync lock switch at 9.5-12.5 degrees of reverse thrust lever movement.

- (a) If the leaf spring does not actuate the switch, adjust the leaf spring.
- (b) If the feel spring support catches the leaf spring slot and prevents actuation of the sync lock microswitch, dress or reduce the height of the threads to relieve the interference.

NOTE: Do not reduce the height of the threads below the bottom of the threads. A minimum diameter is required for correct operation of the feel spring support.

- (4) Do this check of the sync lock switch, S78103 at the control stand panel, P10 (WDM 78-34-11):

- (a) Make sure the reverse thrust lever is in the fully forward and down (stowed) position.
- (b) Disconnect connector D103P at the control stand panel, P10.
- (c) Do a check for continuity between pins 3 and 5 of connector D103P.
- (d) If there is not continuity, replace the thrust reverser sync lock switch, S78103.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (e) If there is continuity, then measure the resistance between pins 4 and 5 of connector D103P.
- (f) If the resistance is less than 100K ohms, replace the thrust reverser sync lock switch, S78103.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (g) If the resistance is greater than 100K ohms, then do a check for continuity between pin 3 of connector D103J and ground.

- (h) If there is not continuity, then do these steps:

- 1) Repair the wiring.
- 2) Do the repair confirmation procedure at the end of this task.

- (i) If there is continuity, then do these steps:

- 1) Remove the DO-NOT-OPERATE tag and move the applicable reverse thrust lever up and aft until it engages the interlock stop.
- 2) Do a check for continuity between pins 4 and 5 of connector D103P.
- 3) If there is not continuity, replace the thrust reverser sync lock switch, S78103.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

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- 4) If there is continuity, then do these steps.
 - a) Move the reverse thrust lever to the fully forward and down position and re-attach the DO-NOT-OPERATE tag.
 - b) Continue with the procedure.
- (5) Examine and repair the wiring between the sync lock relay, K78106 and the sync lock switch, S78103 (WDM 78-34-11):
 - (a) Examine and repair the wiring between these pins of connector DK78106 at the Power Management Panel, P110 and connector D103J at the Control Stand Panel, P10.

DK78106	D103J
pin C1	pin 5
 - (b) Re-connect connector D103P.
 - (c) Re-install the sync lock relay, K78106 (WDM 78-34-11).
 - (d) Do the repair confirmation procedure at the end of this task.
- (6) Replace the the sync lock relay, K78106 (WDM 78-34-11).
 - (a) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.
This is the task:
Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
- (2) Reactivate the leading edge slat.
this is the task:
Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.
- (3) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (4) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.
This is the task:
Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message (with the thrust reverser extended (deployed)), then continue with the subsequent step of this fault isolation procedure.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

840. T/R Sync Lock Relay (R Eng) Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-00062.

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B. General

- (1) Flight Deck Message: ENG REVERSER R.

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message (with the thrust reverser extended (deployed)), then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

MAKE SURE YOU DO THE DEACTIVATION PROCEDURE ON THE THRUST REVERSER HALF. IF YOU DO NOT, THE THRUST REVERSER CAN ACCIDENTALLY OPERATE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Deactivate the leading edge slat.

This is the task:

Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.

- (3) Make sure the leaf spring correctly operates the sync lock switch.

This is the task:

Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

NOTE: The leaf spring must operate the sync lock switch at 9.5-12.5 degrees of reverse thrust lever movement.

- (a) If the leaf spring does not actuate the switch, adjust the leaf spring.
- (b) If the feel spring support catches the leaf spring slot and prevents actuation of the sync lock microswitch, dress or reduce the height of the threads to relieve the interference.

NOTE: Do not reduce the height of the threads below the bottom of the threads. A minimum diameter is required for correct operation of the feel spring support.

- (4) Do this check of the sync lock switch, S78203 at the control stand panel, P10 (WDM 78-34-21):

- (a) Make sure the reverse thrust lever is in the fully forward and down (stowed) position.

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- (b) Disconnect connector D105P at the control stand panel, P10.
- (c) Do a check for continuity between pins 3 and 4 of connector D105P.
- (d) If there is not continuity, replace the thrust reverser sync lock switch, S78203.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (e) If there is continuity, then measure the resistance between pins 4 and 5 of connector D105P.
- (f) If the resistance is less than 100K ohms, replace the thrust reverser sync lock switch, S78203.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (g) If the resistance is greater than 100K ohms, then do a check for continuity between pin 3 of connector D105J and ground.

- (h) If there is not continuity, then do these steps:

- 1) Repair the wiring.
- 2) Do the repair confirmation procedure at the end of this task.

- (i) If there is continuity, then do these steps:

- 1) Remove the DO-NOT-OPERATE tag and move the applicable reverse thrust lever up and aft until it engages the interlock stop.
- 2) Do a check for continuity between pins 4 and 5 of connector D105P.
- 3) If there is not continuity, replace the thrust reverser sync lock switch, S78203.

These are the tasks:

Thrust Reverser Sync Lock Switch Removal, AMM TASK 78-34-06-000-801-H01,
Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

- 4) If there is continuity, then do these steps.

- a) Move the reverse thrust lever to the fully forward and down position and re-attach the DO-NOT-OPERATE tag.

- b) Continue with the procedure.

- (5) Examine and repair the wiring between the sync lock relay, K78206 and the sync lock switch, S78203 (WDM 78-34-21):

- (a) Examine and repair the wiring between these pins of connector DK78206 at the Power Management Panel, P110 and connector D105J at the Control Stand Panel, P10.

DK78206	D105J
pin C1	pin 4

- (b) Re-connect connector D105P.

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- (c) Re-install the sync lock relay, K78206 (WDM 78-34-21).
- (d) Do the repair confirmation procedure at the end of this task.
- (6) Replace the the sync lock relay, K78206 (WDM 78-34-21).
- (a) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Reactivate the leading edge slat.

this is the task:

Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

- (3) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (4) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message (with the thrust reverser extended (deployed)), then continue with the subsequent step of this fault isolation procedure.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

841. T/R Sync Lock Valve (L Eng) Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-00071.

B. General

- (1) Flight Deck Message: ENG REVERSER L.
- (2) Paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 may occur even though the thrust reverser correctly operates. These are erroneous maintenance messages when they occur as pairs. The erroneous messages result from a logic discrepancy in the central maintenance computer (CMC). These messages can also be caused by interference of the leaf spring in the sync lock switch installation.
- (3) Maintenance Messages 78-00071 and 78-00072 can be ignored if no associated ENG REVERSER L/R EICAS message is set.

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C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message with the thrust reverser extended, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Deactivate the leading edge slat.

This is the task:

Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.

- (3) Make sure the leaf spring correctly operates the sync lock switch.

This is the task:

Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

NOTE: The leaf spring must operate the sync lock switch at 9.5-12.5 degrees of reverse thrust lever movement.

- (a) If the leaf spring does not actuate the switch, adjust the leaf spring.
- (b) If the feel spring support catches the leaf spring slot and prevents actuation of the sync lock microswitch, dress or reduce the height of the threads to relieve the interference.

NOTE: Do not reduce the height of the threads below the bottom of the threads. A minimum diameter is required for correct operation of the feel spring support.

- (4) Disconnect connector DV78101 from the thrust reverser sync lock valve, V78101.
- (5) Measure the resistance between pins 1 and 2 of the connector DV78101 on the thrust reverser sync lock valve, V78101 (WDM 78-34-11):
 - (a) The resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 solenoid valve is 79-115 ohms.

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- (b) The resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 solenoid valve is 72-76 ohms.
- (c) If the resistance is not in the above range, replace the thrust reverser sync lock solenoid valve.

These are the tasks:

Thrust Reverser Sync Lock Solenoid Valve Removal, AMM TASK 78-34-16-000-801-H01,
Thrust Reverser Sync Lock Solenoid Valve Installation, AMM
TASK 78-34-16-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.
 - (d) If the resistance is in the above range, then do a check for continuity between pin 2 on the wiring harness connector and ground.
 - (e) If there is not continuity, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (f) If there is continuity, then do these steps:
 - 1) Re-connect connector DV78101.
 - 2) Continue with the procedure.
 - (6) Replace the thrust reverser sync lock valve, V78101.
- These are the tasks:
- Thrust Reverser Sync Lock Valve Removal, AMM TASK 78-34-11-000-801-H01,
Thrust Reverser Sync Lock Valve Installation, AMM TASK 78-34-11-400-801-H01.
- (a) Do the repair confirmation procedure at the end of this task.
 - (7) Examine and repair the wiring between the sync lock valve, V78101 and the sync lock relay, K78106 at the Power Management Panel, P110 (WDM 78-34-11):
 - (a) Disconnect connector DV78101 from the sync lock valve, V78101.
 - (b) Remove the sync lock relay, K78106.
 - (c) Examine and repair the wiring between these pins of the connector DV78101 at the sync lock valve, V78101 and connector DK78106 at the Power Management Panel, P110.

DV78101

DK78106

pin 1 pin A1

- (d) Re-connect connector DV78101.
- (e) Re-install the sync lock relay, K78106.
- (f) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Reactivate the leading edge slat.

This is the task:

Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.

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- (3) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (4) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message with the thrust reverser extended, then continue with the subsequent step of this fault isolation procedure.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

842. T/R Sync Lock Valve (R Eng) Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-00072.

B. General

- (1) Flight Deck Message: ENG REVERSER R.
- (2) Paired maintenance messages 78-00011 & 78-00071 or 78-00012 & 78-00072 may occur even though the thrust reverser correctly operates. These are erroneous maintenance messages when they occur as pairs. The erroneous messages result from a logic discrepancy in the central maintenance computer (CMC). These messages can also be caused by interference of the leaf spring in the sync lock switch installation.
- (3) Maintenance Messages 78-00071 and 78-00072 can be ignored if no associated ENG REVERSER L/R EICAS message is set.

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message with the thrust reverser extended, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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D. Fault Isolation Procedure



WARNING

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Deactivate the leading edge slat.

This is the task:

Leading Edge Slat - Deactivation, AMM TASK 27-81-00-040-801.

- (3) Make sure the leaf spring correctly operates the sync lock switch.

This is the task:

Thrust Reverser Sync Lock Switch Installation, AMM TASK 78-34-06-400-801-H01.

NOTE: The leaf spring must operate the sync lock switch at 9.5-12.5 degrees of reverse thrust lever movement.

- (a) If the leaf spring does not actuate the switch, adjust the leaf spring.
- (b) If the feel spring support catches the leaf spring slot and prevents actuation of the sync lock microswitch, dress or reduce the height of the threads to relieve the interference.

NOTE: Do not reduce the height of the threads below the bottom of the threads. A minimum diameter is required for correct operation of the feel spring support.

- (4) Disconnect connector DV78201 from the thrust reverser sync lock valve, V78201.
- (5) Measure the resistance between pins 1 and 2 of the connector DV78201 on the thrust reverser sync lock valve, V78201 (WDM 78-34-21):
 - (a) The resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 solenoid valve is 79-115 ohms.
 - (b) The resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 solenoid valve is 72-76 ohms.
 - (c) If the resistance is not in the above range, replace the thrust reverser sync lock solenoid valve.

These are the tasks:

Thrust Reverser Sync Lock Solenoid Valve Removal, AMM TASK 78-34-16-000-801-H01,

Thrust Reverser Sync Lock Solenoid Valve Installation, AMM TASK 78-34-16-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.
- (d) If the resistance is in the above range, then do a check for continuity between pin 2 on the wiring harness connector and ground.
- (e) If there is not continuity, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (f) If there is continuity, then do these steps:

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- 1) Re-connect connector DV78201.
 - 2) Continue with the procedure.
- (6) Replace the thrust reverser sync lock valve, V78201.
- These are the tasks:
- Thrust Reverser Sync Lock Valve Removal, AMM TASK 78-34-11-000-801-H01,
Thrust Reverser Sync Lock Valve Installation, AMM TASK 78-34-11-400-801-H01.
- (a) Do the repair confirmation procedure at the end of this task.
- (7) Examine and repair the wiring between the sync lock valve, V78201 and the sync lock relay, K78206 at the Power Management Panel, P110 (WDM 78-34-21):
- (a) Disconnect connector DV78201 from the sync lock valve, V78201.
 - (b) Remove the sync lock relay, K78206.
 - (c) Examine and repair the wiring between these pins of the connector DV78201 at the sync lock valve, V78201 and connector DK78206 at the Power Management Panel, P110.

DV78201**DK78206**

pin 1 pin A1

- (d) Re-connect connector DV78201.
- (e) Re-install the sync lock relay, K78206.
- (f) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.
This is the task:
Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
 - (2) Reactivate the leading edge slat.
This is the task:
Leading Edge Slat Reactivation, AMM TASK 27-81-00-440-801.
 - (3) Select the Existing Fault Screen on the MAT and find this maintenance message.
 - (4) If the MAT shows ACTIVE for the maintenance message, then continue with the subsequent step of this fault isolation procedure.
 - (5) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.
This is the task:
Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
- NOTE:** You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.
- (a) If the MAT shows ACTIVE for the maintenance message (with the thrust reverser extended, then continue with the subsequent step of this fault isolation procedure.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

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843. T/R Sync Lock Not In Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-00081, 78-00082, 78-00091, 78-00092.

B. General

- (1) Flight Deck Message: ENG REVERSER L(R).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows ACTIVE for the maintenance message with the thrust reverser extended, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Measure the gap between the sync lock proximity sensor and the target. The gap should be 0.045 in. (1.14 mm) to 0.055 in. (1.40 mm).
 - (a) If the gap is outside these limits, adjust the gap. (Thrust Reverser Sync Lock Proximity Sensor Installation, AMM TASK 78-36-04-400-801-H01)
- (2) If the maintenance message for a sync lock/manual drive unit has been reported on a intermittent or regular basis, the sync lock/manual drive unit is out of rig.

NOTE: The sync lock/manual drive unit is adjusted when it is installed.

- (a) To adjust the sync lock/manual drive unit, remove the sync lock/manual drive unit and then install the same sync lock/manual drive unit.

These are the tasks:

Thrust Reverser Sync Lock/Manual Drive Unit Removal, AMM
TASK 78-34-10-000-801-H01,

Thrust Reverser Sync Lock/Manual Drive Unit Installation, AMM
TASK 78-34-10-400-801-H01.

NOTE: Follow the steps in the installation procedure to correctly adjust the sync lock/manual drive unit.

- (b) If the problem continues, replace the applicable sync lock/manual drive unit.

These are the tasks:

Thrust Reverser Sync Lock/Manual Drive Unit Removal, AMM
TASK 78-34-10-000-801-H01,

Thrust Reverser Sync Lock/Manual Drive Unit Installation, AMM
TASK 78-34-10-400-801-H01.

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- 1) Do the repair confirmation procedure at the end of this task.
- (3) Visually examine the hydraulic tubing of the thrust reverser actuation system for damage and leakage.
 - (a) If you find damage or leakage, repair or replace the hydraulic tubing as necessary.
 - (b) If it was necessary to replace the hydraulic tubing, do the repair confirmation procedure at the end of this task.
- (4) Visually examine the hydraulic tubing from the sync lock to the sync lock valve for damage and leakage.
 - (a) If you find damage or leakage, repair or replace the hydraulic tubing as necessary.
 - (b) If you repaired or replaced the hydraulic tubing, do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT and find this maintenance message.
- (2) Do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM
TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- (a) If the MAT shows NOT ACTIVE for the maintenance message, then you have corrected the fault.

— END OF TASK —

844. 28 VDC Power to the EEC for the T/R Isolation Valve (L Eng) is Not Available - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34921.

B. Description

- (1) The 28 VDC power for the thrust reverser isolation valve is not detected at the EEC. This fault is set whenever the EEC is powered.
- (2) Flight Deck Message: ENG REV LIMITED L (Advisory).

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the TEST position.

NOTE: If there is a fault, then the MAT will show the maintenance message in 90 seconds or less.

- (a) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

NOTE: If you have an intermittent fault, you must use your judgement (and your airlines policy) to make a decision if you will replace components and if so, which components to replace. Then monitor the airplane on the subsequent flight.

- (c) Set the applicable EEC MAINT POWER switch to the NORM position.

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D. Fault Isolation Procedure

- (1) Remove connector DM73003B at the EEC, M73003.
- (2) Do a check for 28 VDC from pin E of connector DM73003B at the EEC, M73003 to structure ground (WDM 78-34-11):
- (3) If there is 28 VDC at pin E of connector DM73003B, then do these steps:
 - (a) Do a check for ground at pin F of connector DM73003B at the EEC, M73003 (WDM 78-34-11).
 - (b) If there is ground at pin F of connector DM73003B, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
 - (c) If there is not ground at pin F of connector DM73003B, then do these steps:
 - 1) Repair the wiring between pin F of connector DM73003B and ground (WDM 78-34-11).
 - 2) Do the repair confirmation procedure at the end of this task.
- (4) If there is not 28 VDC at pin E of connector DM73003B, then do a check for 28 VDC at the aft aisle stand panel, P8 (WDM 78-34-11):
 - (a) Install the connector, DM73003B, at the EEC, M73003.
 - (b) Remove the connector DS26101 at the aft aisle stand panel, P8.
 - (c) Do a check for 28 VDC at pin 20 of the left engine fire switch, S26101 to structure ground.
 - (d) If there is 28 VDC at pin 20 of the left engine fire switch S26101, then do a check between pins 20 and 39 for continuity through the left engine fire switch.
NOTE: The fire handle must be pushed in.
 - 1) If there is continuity between pins 20 and 39 of the left engine fire switch, repair the wiring between pin 39 of connector DS26101 at the left engine fire switch S26101 at the aft aisle stand panel and pin E of connector DM73003B at the EEC, M73003.
 - a) Do the repair confirmation procedure at the end of this task.
 - 2) If there is not continuity between pins 20 and 39 of the left engine fire switch, replace the left engine fire switch, S26101 (WDM 78-34-11).
 - a) Do the repair confirmation procedure at the end of this task.
 - (e) If there is not 28 VDC at pin 20 of the left engine fire switch S26101, then continue.
- (5) Install the connector DS26101 at the aft aisle stand panel, P8.
- (6) Do a check for 28 VDC at the output connection of this circuit breaker for the left engine (WDM 78-34-11):

This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	23	C78605	L ENG T/R CTRL

- (7) If there is 28 VDC at the circuit breaker, then do these steps:

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- (a) Repair the wiring between the circuit breaker and pin 20 of connector DS26101P at the aft aisle stand panel, P8.
- (b) Do the repair confirmation procedure at the end of this task.
- (8) If there is not 28 VDC at the circuit breaker, then do these steps:
 - (a) Replace this circuit breaker for the left engine:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	23	C78605	L ENG T/R CTRL

- (b) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the TEST position.

NOTE: If there is a fault, then the MAT will show the maintenance message in 90 seconds or less.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then put the EEC MAINT POWER switch back to the NORM position and no more action is necessary (you corrected the fault).
- (b) If the MAT shows ACTIVE for the maintenance message, then put the EEC MAINT POWER switch back to the NORM position and continue with this fault isolation procedure at the subsequent step.

END OF TASK**845. 28 VDC Power to the EEC for the Thrust Reverser Isolation Valve (R Eng) is Not Available - Fault Isolation****A. Maintenance Messages**

- (1) This task is for maintenance message: 78-34922.

B. Description

- (1) The 28 VDC power for the thrust reverser isolation valve is not detected at the EEC. This fault is set whenever the EEC is powered.
- (2) Flight Deck Message: ENG REV LIMITED R (Advisory).

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the TEST position.

NOTE: If there is a fault, then the MAT will show the maintenance message in 90 seconds or less.

- (a) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

NOTE: If you have an intermittent fault, you must use your judgement (and your airlines policy) to make a decision if you will replace components and if so, which components to replace. Then monitor the airplane on the subsequent flight.

- (c) Set the applicable EEC MAINT POWER switch to the NORM position.

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D. Fault Isolation Procedure

- (1) Do a check for 28 VDC from pin E of connector DM73003B at the EEC, M73003 to structure ground (WDM 78-34-21):
 - (a) Remove connector DM73003B at the EEC, M73003.
- (2) If there is 28 VDC at pin E of connector DM73003B, then do these steps:
 - (a) Do a check for ground at pin F of connector DM73003B at the EEC, M73003 (WDM 78-34-21).
 - (b) If there is ground at pin F of connector DM73003B, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
 - (c) If there is not ground at pin F of connector DM73003B, then do these steps:
 - 1) Repair the wiring between pin F of connector DM73003B and ground (WDM 78-34-21).
 - 2) Do the repair confirmation procedure at the end of this task.
- (3) If there is not 28 VDC at pin E of connector DM73003B, then do a check for 28 VDC at the aft aisle stand panel, P8 (WDM 78-34-21):
 - (a) Install the connector, DM73003B, at the EEC, M73003.
 - (b) Remove the connector DS26201 at the aft aisle stand panel, P8.
 - (c) Do a check for 28 VDC at pin 20 of the right engine fire switch, S26201 to structure ground.
 - (d) If there is 28 VDC at pin 20 of the right engine fire switch, S26201, then do a check between pins 20 and 39 for continuity through the right engine fire switch.
NOTE: The fire handles must be pushed in.
 - 1) If there is continuity between pins 20 and 39 of the right engine fire switch, repair the wiring between pin 39 of the right engine fire switch, S26201 at the Aft Aisle Stand Panel and pin E of connector DM73003B at the EEC, M73003.
 - a) Do the Repair Confirmation procedure at the end of this task.
 - 2) If there is no continuity between pins 20 and 39 of the engine fire switch, replace the right engine fire switch, S26201 (WDM 78-34-11).
 - a) Do the repair confirmation procedure at the end of this task.
 - (e) If there is not 28 VDC at pin 20 of the right engine fire switch, S26201, then continue.
- (4) Install the connector DS26201 at the aft aisle stand panel, P8.
- (5) Do a check for 28 VDC at the output connection of this circuit breaker (WDM 78-34-21):

This is the primary circuit breaker related to the fault:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	12	C78604	R ENG T/R CTRL

- (6) If there is 28 VDC at the circuit breaker, then do these steps:

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- (a) Repair the wiring between the circuit breaker and pin 20 of connector DS26201P at the aft aisle stand panel, P8.
- (b) Do the repair confirmation procedure at the end of this task.
- (7) If there is not 28 VDC at the circuit breaker, then do these steps:
 - (a) Replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	12	C78604	R ENG T/R CTRL

- (b) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the TEST position.

NOTE: If there is a fault, then the MAT will show the maintenance message in 90 seconds or less.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then put the EEC MAINT POWER switch back to the NORM position and no more action is necessary (you corrected the fault).
- (b) If the MAT shows ACTIVE for the maintenance message, then put the EEC MAINT POWER switch back to the NORM position and continue with this fault isolation procedure at the subsequent step.

————— **END OF TASK** —————

846. Thrust Reverser Isolation Valve (L Eng) is Failed Closed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34961.

B. Description

- (1) The thrust reverser isolation valve did not open.
- (2) Flight Deck Message: ENG REVERSER L.

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (5) If the MAT shows the maintenance message, then do the fault isolation procedure below.
- (6) If the MAT does not show the maintenance message, then do these steps:
 - (a) Look at the MAT while you do these steps:
 - 1) Operate the thrust reverser to the extended position.

This is the task:

Thrust Reverser Operation - Extend (Power Method), AMM
TASK 78-31-00-981-801-H01.

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- 2) Operate the thrust reverser to the retracted position.

This is the task:

Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.

- (b) If the MAT shows the maintenance message when the thrust reverser extended or retracted, then do the fault isolation procedure below.
- (c) If the MAT does not show the maintenance message when the thrust reverser extended, then there was an intermittent fault.

D. Fault Isolation Procedure



WARNING

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.



CAUTION

REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (2) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (3) Do a check for 28 VDC at the isolation valve, V78102 (WDM 78-34-11):
- (a) Remove the connector DV78102B from the isolation valve, V78102.
 - (b) Press and hold the test enable switch, S78104, when you check for 28 VDC.
 - (c) Do a check for 28 VDC between pins 1 and 2 of connector DV78102B at the isolation valve, V78102.
 - (d) Release the test enable switch, S78104.
 - (e) If there is not 28 VDC between pins 1 and 2 of connector DV78102B, do a check for 28 VDC from the EEC, M73003 (WDM 78-34-11):
 - 1) Remove the connector DM73003A from the EEC, M73003.
 - 2) Press and hold the test enable switch, S78104, when you check for 28 VDC.
 - 3) Do a check for 28 VDC between pins E and F on receptacle J1 of the EEC, M73003.
 - 4) Release the test enable switch, S78104.
 - 5) If there is not 28 VDC between pins E and F on receptacle J1 of the EEC, M73003, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

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- 6) If there is 28 VDC between pins E and F on receptacle J1 of the EEC, M73003, do these steps:
- a) Repair the wiring between the EEC, M73003, and the isolation valve, V78102.

DV78102B

pin 1	.....	pin E
pin 2	.....	pin F

DM73003A (J1)

- b) Do the repair confirmation procedure at the end of this task.
 - f) If there is 28 VDC between pins 1 and 2 of connector DV78102B, then continue.
- (4) Do a check of the resistance between pin 1 and pin 2 of the receptacle J2 on the T/R isolation valve, V78102 (WDM 78-34-11).
- (a) The resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 solenoid valve is 79-115 ohms.
 - (b) The resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 solenoid valve is 72-76 ohms.
 - (c) If the resistance between pin 1 and pin 2 is not in the above range, replace the isolation valve solenoid valve.
- These are the tasks:
- Thrust Reverser Isolation Solenoid Valve Removal, AMM TASK 78-34-18-000-801-H01,
Thrust Reverser Isolation Solenoid Valve Installation, AMM TASK 78-34-18-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (d) If the resistance between pin 1 and pin 2 is in the above range, replace the T/R isolation valve, V78102.
- These are the tasks:
- Thrust Reverser Isolation Valve Removal, AMM TASK 78-34-05-000-804-H00,
Thrust Reverser Isolation Valve Installation, AMM TASK 78-34-05-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
 - (2) Select the Existing Fault Screen on the MAT.
 - (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
 - (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
 - (5) Activate the thrust reverser.
- This is the task:
- Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
- (6) Look at the MAT while you do these steps:
- (a) Operate the thrust reverser to the extended position.
- This is the task:
- Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
- (b) Operate the thrust reverser to the retracted position.

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This is the task:

Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.

- (7) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (8) If the MAT does not show the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

847. Thrust Reverser Isolation Valve (R Eng) is Failed Closed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34962.

B. Description

- (1) The thrust reverser isolation valve did not open.
- (2) Flight Deck Message: ENG REVERSER R.

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (5) If the MAT shows the maintenance message, then do the fault isolation procedure below.
- (6) If the MAT does not show the maintenance message, then do these steps:
 - (a) Look at the MAT while you do these steps:
 - 1) Operate the thrust reverser to the extended position.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM
TASK 78-31-00-981-801-H01.
 - 2) Operate the thrust reverser to the retracted position.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.
 - (b) If the MAT shows the maintenance message when the thrust reverser extended or retracted, then do the fault isolation procedure below.
 - (c) If the MAT does not show the maintenance message when the thrust reverser extended, then there was an intermittent fault.

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D. Fault Isolation Procedure

**WARNING**

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

**CAUTION**

REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (2) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (3) Do a check for 28 VDC at the isolation valve, V78202 (WDM 78-34-21):
- (a) Remove the connector DV78202B from the isolation valve, V78202.
 - (b) Press and hold the test enable switch, S78104, when you check for 28 VDC.
 - (c) Do a check for 28 VDC between pins 1 and 2 of connector DV78202B at the isolation valve, V78202.
 - (d) Release the test enable switch, S78104.
 - (e) If there is not 28 VDC between pins 1 and 2 of connector DV78202B, do a check for 28 VDC from the EEC, M73003 (WDM 78-34-21):
- 1) Remove the connector DM73003A from the EEC, M73003.
 - 2) Press and hold the test enable switch, S78104, when you check for 28 VDC.
 - 3) Do a check for 28 VDC between pins E and F on receptacle J1 of the EEC, M73003.
 - 4) Release the test enable switch, S78104.
 - 5) If there is not 28 VDC between pins E and F on receptacle J1 of the EEC, M73003, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.
- 6) If there is 28 VDC between pins E and F on receptacle J1 of the EEC, M73003, do these steps:
 - a) Repair the wiring between the EEC, M73003, and the isolation valve, V78202.

DV78202B

pin 1	.....	pin E
pin 2	.....	pin F

DM73003A (J1)

- b) Do the repair confirmation procedure at the end of this task.

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- (f) If there is 28 VDC between pins 1 and 2 of connector DV78202B, then continue.
- (4) Do a check of the resistance between pin 1 and pin 2 of the receptacle J2 on the T/R isolation valve, V78202 (WDM 78-34-21).
 - (a) The resistance between pin 1 and pin 2 for the Sterer P/N 45080-1 solenoid valve is 79-115 ohms.
 - (b) The resistance between pin 1 and pin 2 for the Parker-Hannifin P/N 881600-1001 solenoid valve is 72-76 ohms.
 - (c) If the resistance between pin 1 and pin 2 is not in the above range, replace the T/R isolation valve solenoid valve.

These are the tasks:

Thrust Reverser Isolation Solenoid Valve Removal, AMM TASK 78-34-18-000-801-H01,
Thrust Reverser Isolation Solenoid Valve Installation, AMM TASK 78-34-18-400-801-H01.

- (d) If the resistance between pin 1 and pin 2 is not in the above range, replace the isolation valve solenoid valve.

These are the tasks:

Thrust Reverser Isolation Solenoid Valve Removal, AMM TASK 78-34-18-000-801-H01,
Thrust Reverser Isolation Solenoid Valve Installation, AMM TASK 78-34-18-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (e) If the resistance between pin 1 and pin 2 is in the above range, replace the T/R isolation valve, V78102.

These are the tasks:

Thrust Reverser Isolation Valve Removal, AMM TASK 78-34-05-000-804-H00,
Thrust Reverser Isolation Valve Installation, AMM TASK 78-34-05-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (5) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (6) Look at the MAT while you do these steps:

- (a) Operate the thrust reverser to the extended position.

This is the task:

Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.

- (b) Operate the thrust reverser to the retracted position.

This is the task:

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Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.

- (7) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (8) If the MAT does not show the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

848. Thrust Reverser Isolation Valve (L ENG) is Failed Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34971.

B. Description

- (1) The Left Engine Thrust Reverser Isolation Valve did not close.
- (2) Flight Deck Message: ENG REVERSER L

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER Switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER Switch on the P61 panel to the NORM position.
 - (a) If the MAT shows the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT does not show the maintenance message, then look at the MAT while you do these steps:
 - 1) Operate the Thrust Reverser to the extended position.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM
TASK 78-31-00-981-801-H01
 - 2) Operate the Thrust Reverser to the retracted position.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01
 - (c) If the MAT shows the maintenance message when the Thrust Reverser extended or retracted, then do the Fault Isolation Procedure below.
 - (d) If the MAT does not show the maintenance message when the Thrust Reverser extended, then there was an intermittent fault.

D. Fault Isolation Procedure



WARNING

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the Thrust Reverser.

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This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Close the following circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	23	C78605	L ENG T/R CTRL

- (3) Disconnect the connector DV78102B from the T/R Isolation Valve, V78102 (WDM 78-34-11).
 (4) Do a check for 28 VDC between pins 1 and 2 of connector DV78102B at the T/R Isolation Valve, V78102.

NOTE: It is not necessary to operate the TEST ENABLE switch.

- (a) If there is 28 VDC between pins 1 and 2 of connector DV78102B, do these steps:

- 1) Replace the T/R Isolation Solenoid Valve.

These are the tasks:

Thrust Reverser Isolation Solenoid Valve Removal, AMM
TASK 78-34-18-000-801-H01,

Thrust Reverser Isolation Solenoid Valve Installation, AMM
TASK 78-34-18-400-801-H01.

- a) Connect the connector DV78102B to the T/R Isolation Valve, V78102.
 b) Do the Repair Confirmation Procedure at the end of this task.

- 2) If the problem continues, replace the T/R Isolation Valve, V78102.

These are the tasks:

Thrust Reverser Isolation Valve Removal, AMM TASK 78-34-05-000-804-H00,
 Thrust Reverser Isolation Valve Installation, AMM TASK 78-34-05-400-801-H01.

- a) Do the Repair Confirmation Procedure at the end of this task.

- (b) If there is no 28 VDC between pins 1 and 2 of connector DV78102B, do these steps:

- 1) Disconnect the connector DM73003A from the EEC, M73003 (WDM 78-34-11).
 2) Do a check for 28 VDC between pins E and F at the EEC, M73003.
 a) If you find 28 VDC between pins E and F, examine the wiring as follows:

LEFT ENGINE

EEC	T/R ISLN VLV
DM73003A	V781002
pin E	pin 1
pin F	pin 2

- <1> Examine the EEC connector DM73003A and Receptacle J1 for bent pins that could cause a short to power the T/R Isolation Valve, V78102.
 <2> Repair the wiring problems that you find.
 <3> Connect the connector DM73003A to the Left Engine EEC, M73003.
 <4> Connect the connector DV78102B to the T/R Isolation Valve, V78102
 <5> Do the Repair Confirmation Procedure at the end of this task.

- b) If you do not find 28 VDC between pins E and F, then continue.

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- (5) Disconnect the connector DS78101 from the Hydraulic Pressure Switch, S78101 (WDM 78-34-11).
- (6) Do a continuity check between pins 1 and 2 at the Hydraulic Pressure Switch, S78101.
 - (a) If you find continuity between pins 1 and 2 of the switch, replace the Hydraulic Pressure Switch:
These are the tasks:
Thrust Reverser Hydraulic Pressure Switch Removal, AMM TASK 78-36-02-000-801-H01,
Thrust Reverser Hydraulic Pressure Switch Installation, AMM TASK 78-36-02-400-801-H01.
 - 1) Connect connector DS78101 to the Hydraulic Pressure Switch.
 - 2) Do the Repair Confirmation Procedure at the end of this task.
 - (b) If you do not find continuity between pins 1 and 2 of the Hydraulic Pressure Switch, disconnect connector DM73003C at the Left Engine EEC and do this check of the wiring (WDM 78-34-11):

LEFT ENGINE

HYD PRESS SW	EEC
DS78101	DM73003D
pin 1	pin Y
pin 2	pin T

- 1) If you find problems, repair the wiring as necessary.
 - a) Connect the connector DS78101 to the Hydraulic Pressure Switch, S78101, S78201.
 - b) Connect the connector DM73003C to the Left Engine EEC.
 - c) Do the Repair Confirmation Procedure at the end of this task.
 - 2) If the wiring is satisfactory, then continue.
- (7) Replace the EEC, M73003.
- These are the tasks:
- EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- (a) Do the Repair Confirmation Procedure at the end of this task.

E. Repair Confirmation

- (1) Make sure that the applicable EEC MAINT POWER Switch on the P61 panel is in the NORM position.
- (2) Select the EXISTING FAULTS Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER Switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER Switch on the P61 panel to the NORM position.
- (5) Activate the Thrust Reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

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- (6) Look at the MAT while you do these steps:
 - (a) Operate the Thrust Reverser to the extended position.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
 - (b) Operate the Thrust Reverser to the retracted position.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.
- (7) If the MAT shows the maintenance message, then continue with the subsequent step of this Fault Isolation Procedure.
- (8) If the MAT does not show the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

849. Thrust Reverser Isolation Valve (R ENG) is Failed Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34972.

B. Description

- (1) The Right Engine Thrust Reverser Isolation Valve did not close.
- (2) Flight Deck Message: ENG REVERSER R

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER Switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER Switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Set the applicable EEC MAINT POWER Switch on the P61 panel to the NORM position.
 - (a) If the MAT shows the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT does not show the maintenance message, then look at the MAT while you do these steps:
 - 1) Operate the Thrust Reverser to the extended position.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01
 - 2) Operate the Thrust Reverser to the retracted position.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01
 - (c) If the MAT shows the maintenance message when the Thrust Reverser extended or retracted, then do the Fault Isolation Procedure below.
 - (d) If the MAT does not show the maintenance message when the Thrust Reverser extended, then there was an intermittent fault.

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D. Fault Isolation Procedure



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Deactivate the Thrust Reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (2) Close the following circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	12	C78604	R ENG T/R CTRL

- (3) Disconnect the connector DV78202B from the T/R Isolation Valve, V78202 (WDM 78-34-21).
- (4) Do a check for 28 VDC between pins 1 and 2 of connector DV78202B at the T/R Isolation Valve, V78202.

NOTE: It is not necessary to operate the TEST ENABLE switch.

- (a) If there is 28 VDC between pins 1 and 2 of connector DV78202B, do these steps:

- 1) Replace the T/R Isolation Solenoid Valve.

These are the tasks:

Thrust Reverser Isolation Solenoid Valve Removal, AMM TASK 78-34-18-000-801-H01,

Thrust Reverser Isolation Solenoid Valve Installation, AMM TASK 78-34-18-400-801-H01.

- a) Connect the connector DV78202B to the T/R Isolation Valve, V78202.
- b) Do the Repair Confirmation Procedure at the end of this task.

- 2) If the problem continues, replace the T/R Isolation Valve, V78202.

These are the tasks:

Thrust Reverser Isolation Valve Removal, AMM TASK 78-34-05-000-804-H00,

Thrust Reverser Isolation Valve Installation, AMM TASK 78-34-05-400-801-H01.

- (b) If there is no 28 VDC between pins 1 and 2 of connector DV78202B, do these steps:

- 1) Disconnect the connector DM73003A from the EEC, M73003 (WDM 78-34-21).
- 2) Do a check for 28 VDC between pins E and F at the EEC, M73003.
- a) If you find 28 VDC between pins E and F, examine the wiring as follows:

LEFT ENGINE

EEC	T/R ISLN VLV
DM73003A	V782002
pin E	pin 1
pin F	pin 2

- <1> Examine the EEC connector DM73003A and Receptacle J1 for bent pins that could cause a short to power the T/R Isolation Valve, V78202.

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- <2> Repair the wiring problems that you find.
- <3> Connect the connector DM73003A to the Right Engine EEC, M73003.
- <4> Connect the connector DV78202B to the T/R Isolation Valve, V78202
- <5> Do the Repair Confirmation Procedure at the end of this task.
- b) If you do not find 28 VDC between pins E and F, then continue.
- (5) Disconnect the connector DS78201 from the Hydraulic Pressure Switch, S78201 (WDM 78-34-21).
- (6) Do a continuity check between pins 1 and 2 at the Hydraulic Pressure Switch, S78201.
 - (a) If you find continuity between pins 1 and 2 of the switch, replace the Hydraulic Pressure Switch:
These are the tasks:
Thrust Reverser Hydraulic Pressure Switch Removal, AMM TASK 78-36-02-000-801-H01,
Thrust Reverser Hydraulic Pressure Switch Installation, AMM TASK 78-36-02-400-801-H01.
 - 1) Connect connector DS78201 to the Hydraulic Pressure Switch.
 - 2) Do the Repair Confirmation Procedure at the end of this task.
 - (b) If you do not find continuity between pins 1 and 2 of the Hydraulic Pressure Switch, disconnect connector DM73003C at the Right Engine EEC and do this check of the wiring (WDM 78-34-21):

RIGHT ENGINE

HYD PRESS SW	EEC
DS78201	DM73003D
pin 1	pin Y
pin 2	pin T

- 1) If you find problems, repair the wiring as necessary.
 - a) Connect the connector DS78201 to the Hydraulic Pressure Switch.
 - b) Connect the connector DM73003C to the Right Engine EEC.
 - c) Do the Repair Confirmation Procedure at the end of this task.
- 2) If the wiring is satisfactory, then continue.
- (7) Replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - (a) Do the Repair Confirmation Procedure at the end of this task.

E. Repair Confirmation

- (1) Make sure that the applicable EEC MAINT POWER Switch on the P61 panel is in the NORM position.
- (2) Select the EXISTING FAULTS Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER Switch on the P61 panel to the TEST position and stop for 30 seconds.

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- (4) Set the applicable EEC MAINT POWER Switch on the P61 panel to the NORM position.
- (5) Activate the Thrust Reverser.
This is the task:
Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
- (6) Look at the MAT while you do these steps:
 - (a) Operate the Thrust Reverser to the extended position.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
 - (b) Operate the Thrust Reverser to the retracted position.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.
- (7) If the MAT shows the maintenance message, then continue with the subsequent step of this Fault Isolation Procedure.
- (8) If the MAT does not show the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

850. Thrust Lever Interlock Actuator (L Eng) is Failed Blocking - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35001.

B. Description

- (1) The thrust reverser feedback from the AIMS indicates the interlock actuator still blocks 10 seconds after the EEC command to remove the interlock and energize the interlock relay.

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.
This is the task:
Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.
 - (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the TEST position.
- (2) Extend the left engine thrust reverser.
This is the task:

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Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.

- (a) Make sure the left forward thrust lever is back at the idle position and the reverse thrust lever is pulled up to the interlock stop.



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (3) Deactivate the thrust reverser.

This is the task:

Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.

- (4) Examine the left engine T/R interlock actuator.

NOTE: The actuator should have extended to remove the interlock.

- (a) If the actuator did extend to remove the interlock, do a check for continuity through the left engine T/R interlock actuator, M78105 for the AIMS interlock feedback (WDM 78-34-11).
- 1) Disconnect the connector DM78105 at the left engine T/R interlock actuator, M78105.
 - 2) Do a check for continuity through the interlock actuator connector DM78105, pin 4 and pin 3.
 - 3) If there is not continuity through the interlock actuator, replace the left engine T/R interlock actuator, M78105.

These are the tasks:

Reverse Thrust Lever Interlock Actuator Removal, AMM
TASK 78-34-14-000-801-H01,

Reverse Thrust Lever Interlock Actuator Installation, AMM
TASK 78-34-14-400-801-H01.

NOTE: There are internal limits switches in the interlock actuator that could require bench component adjustment.

- a) Re-connect connector DM78105.
 - b) Do the repair confirmation procedure at the end of this task.
- 4) If there is continuity through the interlock actuator, do a check for ground at connector DM78105, pin 3:
- a) If there is not ground, repair the wiring between ground and DM78105, pin 3.
 - b) Re-connect connector DM78105.
 - c) Do the repair confirmation procedure at the end of this task.
- 5) If there is ground at connector DM78105, pin 3, do a wiring check between the left integration panel, P105, connector D5535P and the left engine T/R interlock actuator, M78105, connector DM78105 for an open circuit (WDM 78-34-11).

D5535P

pin B6

DM78105

pin 4

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- a) If there is an open circuit, repair the wiring between D5535P, pin B6 and DM78105, pin 4.
 - b) Re-connect connector D5535P.
 - c) Re-connect connector DM78105.
 - d) Do the repair confirmation procedure at the end of this task.
- 6) If the wiring check between the left integration panel, P105 and the left engine T/R interlock actuator, M78105 is OK, do a wiring check between the left integration panel, P105, connector D5535P and the left and right AIMS cabinets, M31101 and M31201 for an open circuit.
- a) Remove the Input/Output Modules, M008 and M009, from the left and right AIMS cabinets. This is the task:
Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - b) Do a wiring check between connector D5535P, pin B6, and connectors J410-A, pin C2, and J420-A, pin C2 on the left and right AIMS cabinets..
 - c) If there is an open circuit, repair the wiring.
 - d) Re-install the Input/Output Modules, M008 and M009, into the left and right AIMS cabinets. This is the task:
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - e) Re-connect connector D5535P.
 - f) Re-connect connector DM78105.
 - g) Do the repair confirmation procedure at the end of this task.
- 7) If the problem continues, the problem is in the AIMS cabinet to the EDIU through the ARINC 629 data bus or the EDIU to the EEC through the ARINC 429 data bus.
- a) Use the MAT to find maintenance messages for the AIMS in 31 and the EDIU in 73.
- (b) If the actuator did not extend to remove the interlock, continue with the procedure.
- (5) Disconnect the connector DM78105 at the left engine T/R interlock actuator, M78105.
- (6) Do a check for ground at connector DM78105, pin 10 (WDM 78-34-11).
- (a) If there is not ground at connector DM78105, pin 10, then repair the wiring to ground.
 - 1) Install the connector DM78105 at the left engine T/R interlock actuator, M78105.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is a ground at connector DM78105, pin 10, continue with the procedure.
- (7) Do a check for 28VDC at the left engine T/R interlock actuator, M78105 in the control stand, P10 (WDM 78-34-11):
- NOTE:** An open circuit would prevent electrical power to the actuator.
- (a) Do a check for 28VDC at connector DM78105, pin 8.
 - (b) If there is 28 VDC at DM78105, pin 8, replace the left engine T/R interlock actuator, M78105.
- These are the tasks:
- Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,
Reverse Thrust Lever Interlock Actuator Installation, AMM TASK 78-34-14-400-801-H01.
- (c) If there is not 28 VDC at DM78105, pin 8, continue with the procedure.

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- (8) Do a check for ground at the left engine T/R interlock relay, K78104, connector DK78104, pin X2 (WDM 78-34-11):
- (a) Remove the left engine T/R interlock relay, K78104.
 - (b) If there is not ground on connector DK78104 pin X2, do a check for an open circuit in the wiring between the left engine T/R interlock relay, K78104, connector DK78104 and the left engine EEC, M73003, connector DM73003D.

DK78104**DM73003D**

pin X2 pin C

- 1) If there is a open circuit, repair the wiring between the connectors DK78104, pin X2 and DM73003D, pin C.
 - a) Install the left T/R interlock relay, K78104.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If there is not an open circuit between the connectors DK78104, pin X2 and DM73003D, pin C, do a check for ground on the connector DM73003D pin B for the left engine EEC, M73003.
- 3) If there is not ground on connector DM73003B pin B, repair the wiring from connector DM73003D pin B to ground.
 - a) Install the left T/R interlock relay, K78104.
 - b) Do the repair confirmation procedure at the end of this task.
- 4) If there is ground on connector DM73003B pin B, replace the EEC, M73003 on the left engine.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Install the left T/R interlock relay, K78104.
 - b) Do the repair confirmation procedure at the end of this task.
 - (c) If there is ground on connector DK78104 pin X2, then continue with the procedure.
- (9) Do a check for 28V DC at the T/R interlock relay, K78104, connector DK78104, pin A1 (WDM 78-34-11):

- (a) If there is not 28V DC at connector DK78104, pin A1 then repair the wiring between connector DK78104, pin A1 and this circuit breaker

This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	C78609	L ENG T/R INTLK

- 1) Install the left T/R interlock relay, K78104.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is 28V DC at connector DK78104, pin A1, then continue with the procedure.
- (10) Do a check for 28V DC at the left T/R interlock relay, K78104, connector DK78104, pin X1 (WDM 78-34-11):

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- (a) If there is not 28V DC at connector DK78104, pin X1 then repair the wiring between connector DK78104, pin X1 and this circuit breaker

This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	C78609	L ENG T/R INTLK

- 1) Install the left T/R interlock relay, K78104.
 - 2) Do the repair confirmation procedure at the end of this task.
- (b) If there is 28V DC at connector DK78104, pin X1, then continue with the procedure.
- (11) Do a check for continuity between the left power management panel, P110, connector D11039P and the left engine T/R interlock actuator, M78105, connector DM78105 for an open circuit (WDM 78-34-11).

D11039P	DM78105
pin 39	pin 8

- (a) If there is an open circuit, repair the wiring between D11039P, pin 39 and DM78105, pin 8.
- 1) Re-connect connector D11039P.
 - 2) Re-connect connector DM78105.
 - 3) Do the repair confirmation procedure at the end of this task.
- (b) If continuity exists, continue with the procedure.
- (12) Replace the left engine T/R interlock relay, K78104 (WDM 78-34-11).
- (a) Do the repair confirmation procedure at the end of this task.
- (b) If the problem continues, continue with the procedure.
- (13) Do a check for continuity between the connectors in the left power management panel, P110 (WDM 78-34-11):

NOTE: An open circuit would prevent electrical power to the actuator.

- (a) Remove the monitor card M24518.
- (b) Do this wiring check.

DK78104	DM24518
pin A2	pin 57

- (c) If continuity does not exist, repair the wiring.
- 1) Install the monitor card, M24518.
 - 2) Install the T/R interlock relay, K78104.
 - 3) Re-connect connector D11039P.
 - 4) Do the repair confirmation procedure at the end of this task.
- (d) If the problem continues, do this wiring check.

DK24518	D11039J
pin 58	pin 39

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- (e) If continuity does not exist, repair the wiring.
 - 1) Install the monitor card, M24518.
 - 2) Install the left T/R interlock relay, K78104.
 - 3) Re-connect connector D11039P.
 - 4) Do the repair confirmation procedure at the end of this task.
- (f) If the problem continues, replace the monitor card, M24518 (WDM 78-34-11).
 - 1) Install the left T/R interlock relay, K78104.
 - 2) Re-connect connector D11039P.
 - 3) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.
This is the task:
Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.
- (2) Retract the thrust reverser.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.
- (3) Do the thrust reverser lever interlock test.
This is the task:
Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.
 - (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
 - (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.
- (4) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.

————— END OF TASK —————

851. Thrust Lever Interlock Actuator (R Eng) is Failed Blocking - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35002.

B. Description

- (1) The thrust reverser feedback from the AIMS indicates the interlock actuator still blocks 10 seconds after the EEC command to remove the interlock and energize the interlock relay.

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.
This is the task:
Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.
 - (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the TEST position.
- (2) Extend the right engine thrust reverser.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
 - (a) Make sure the right forward thrust lever is back at the idle position and the reverse thrust lever is pulled up to the interlock stop.



DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (3) Deactivate the thrust reverser.
This is the task:
Thrust Reverser Deactivation For Ground Maintenance, AMM TASK 78-31-00-040-806-H00.
- (4) Examine the right engine T/R interlock actuator.
NOTE: The actuator should have extended to remove the interlock.
 - (a) If the actuator did extend to remove the interlock, do a check for continuity through the right engine T/R interlock actuator, M78205 for the AIMS interlock feedback (WDM 78-34-21).
 - 1) Disconnect the connector DM78205 at the right engine T/R interlock actuator, M78205.
 - 2) Do a check for continuity through the interlock actuator connector DM78205, pin 4 and pin 3.
 - 3) If there is not continuity through the interlock actuator, replace the right engine T/R interlock actuator, M78205.
These are the tasks:
Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,
Reverse Thrust Lever Interlock Actuator Installation, AMM TASK 78-34-14-400-801-H01.
NOTE: There are internal limits switches in the interlock actuator that could require bench component adjustment.
 - a) Re-connect connector DM78205.
 - b) Do the repair confirmation procedure at the end of this task.

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- 4) If there is continuity through the interlock actuator, do a check for ground at connector DM78205, pin 3:
 - a) If there is not ground, repair the wiring between ground and DM78205, pin 3.
 - b) Re-connect connector DM78205.
 - c) Do the repair confirmation procedure at the end of this task.
- 5) If there is ground at connector DM78205, pin 3, do a wiring check between the right integration bracket, AE0232, connector D5617P and the right engine T/R interlock actuator, M78205, connector DM78205 for an open circuit (WDM 78-34-21).

D5617P**DM78205**

pin 6 pin 4

- a) If there is an open circuit, repair the wiring between D5617P, pin 6 and DM78205, pin 4.
 - b) Re-connect connector D5617P.
 - c) Re-connect connector DM78205.
 - d) Do the repair confirmation procedure at the end of this task.
- 6) If the wiring check between the right integration bracket, AE0232 and the right engine T/R interlock actuator, M78205 is OK, do a wiring check between the right integration bracket, AE0232, connector D5715P and the left and right AIMS cabinets, M31101 and M31201 for an open circuit.
 - a) Remove the Input/Output Modules, M003 and M004, from the left and right AIMS cabinets. This is the task:
Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - b) Do a wiring check between connector D5715P, pin 7, and connectors J240-A, pin D10, and J250-A, pin D10 on the left and right AIMS cabinets..
 - c) If there is an open circuit, repair the wiring.
 - d) Re-install the Input/Output Modules, M003 and M004, into the left and right AIMS cabinets. This is the task:
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - e) Re-connect connector D5715P.
 - f) Re-connect connector DM78205.
 - g) Do the repair confirmation procedure at the end of this task.
 - 7) If the problem continues, the problem is in the AIMS cabinet to the EDIU through the ARINC 629 data bus or the EDIU to the EEC through the ARINC 429 data bus.
 - a) Use the MAT to find maintenance messages for the AIMS in 31 and the EDIU in 73.
 - (b) If the actuator did not extend to remove the interlock, continue with the procedure.
- (5) Disconnect the connector DM78205 at the right engine T/R interlock actuator, M78205.
 - (6) Do a check for ground at connector DM78205, pin 10 (WDM 78-34-21).
 - (a) If there is not ground at connector DM78205, pin 10, then repair the wiring to ground.
 - 1) Install the connector DM78205 at the right engine T/R interlock actuator, M78205.
 - 2) Do the repair confirmation procedure at the end of this task.

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- (b) If there is a ground at connector DM78205, pin 10, continue with the procedure.
- (7) Do a check for 28VDC at the right engine T/R interlock actuator, M78205 in the control stand, P10 (WDM 78-34-21):

NOTE: An open circuit would prevent electrical power to the actuator.

- (a) Do a check for 28VDC at connector DM78205, pin 8.
- (b) If there is 28 VDC at DM78205, pin 8, replace the right engine T/R interlock actuator, M78205.

These are the tasks:

Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,
Reverse Thrust Lever Interlock Actuator Installation, AMM TASK 78-34-14-400-801-H01.

- (c) If there is not 28 VDC at DM78205, pin 8, continue with the procedure.
- (8) Do a check for ground at the right engine T/R interlock relay, K78204 connector DK78204 pin X2 (WDM 78-34-21):
- (a) Remove the right engine T/R interlock relay, K78204.
- (b) If there is not ground on connector DK78204 pin X2, do a check for an open circuit in the wiring between the right engine T/R interlock relay, K78204, connector DK78204 and the right engine EEC, M73003, connector DM73003D.

DK78204

DM78003D

pin X2 pin C

- 1) If there is a open circuit, repair the wiring between the connectors DK78204, pin X2 and DM78003D, pin C.
 - a) Install the right T/R interlock relay, K78204.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If there is not an open circuit between the connectors DK78204, pin X2 and DM73003D, pin C, do a check for ground on the connector DM78003D pin B for the right engine EEC, M73003.
- 3) If there is not ground on connector DM78003D pin B, repair the wiring from connector DM78003D pin B to ground.
 - a) Install the right T/R interlock relay, K78204.
 - b) Do the repair confirmation procedure at the end of this task.
- 4) If there is ground on connector DM78003D pin B, replace the EEC, M73003 on the right engine.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Install the right T/R interlock relay, K78204.
 - b) Do the repair confirmation procedure at the end of this task.
 - (c) If there is a ground on connector DK78204 pin X2, then continue with the procedure.
- (9) Do a check for 28V DC at the right T/R interlock relay, K78204, connector DK78204, pin A1 (WDM 78-34-21):

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(a) If there is not 28V DC at connector DK78204, pin A1 then repair the wiring between connector DK78204, pin A1 and this circuit breaker

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	13	C78611	R ENG T/R INTLK

- 1) Install the right T/R interlock relay, K78204.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is 28V DC at connector DK78204, pin A1, then continue with the procedure.
- (10) Do a check for 28V DC at the right T/R interlock relay, K78204, connector DK78204, pin X1 (WDM 78-34-21):

- (a) If there is not 28V DC at connector DK78204, pin X1 then repair the wiring between connector DK78204, pin X1 and this circuit breaker

This is the primary circuit breaker related to the fault:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	13	C78611	R ENG T/R INTLK

- 1) Install the right T/R interlock relay, K78204.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is 28V DC at connector DK78204, pin X1, then continue with the procedure.
- (11) Do a check for continuity between the right power management panel, P210, connector D21039P and the right engine T/R interlock actuator, M78205, connector DM78205 for an open circuit (WDM 78-34-21).

D21039P **DM78205**
pin 32 pin 8

- (a) If there is an open circuit, repair the wiring between D21039P, pin 32 and DM78205, pin 8.
 - 1) Re-connect connector D21039P.
 - 2) Re-connect connector DM78205.
 - a) Do the repair confirmation procedure at the end of this task.
 - 3) If continuity exists, continue with the procedure.
- (12) Replace the right engine T/R interlock relay, K78204 (WDM 78-34-21).
 - (a) Do the repair confirmation procedure at the end of this task.
 - (b) If the problem continues, continue with the procedure.
- (13) Do a check for continuity between the connectors in the right power management panel, P210 (WDM 78-34-21):

NOTE: An open circuit would prevent electrical power to the actuator.

- (a) Remove the monitor card M24519.
- (b) Do this wiring check.

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DK78204

pin A2

DM24519

pin 57

- (c) If continuity does not exist, repair the wiring.
 - 1) Install the monitor card M24519.
 - 2) Install the right T/R interlock relay, K78204.
 - 3) Re-connect connector D21039P.
 - 4) Do the repair confirmation procedure at the end of this task.
- (d) If the problem continues, do this wiring check.

DM24519

pin 58

D21039J

pin 32

- (e) If continuity does not exist, repair the wiring.
 - 1) Install the monitor card M24519.
 - 2) Install the right T/R interlock relay, K78204.
 - 3) Re-connect connector D21039P.
 - 4) Do the repair confirmation procedure at the end of this task.
- (f) If the problem continues, replace the monitor card, M24519 (WDM 78-34-21).
 - 1) Install the right T/R interlock relay, K78204.
 - 2) Re-connect connector D21039P.
 - 3) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Activate the thrust reverser.

This is the task:

Thrust Reverser Activation After Ground Maintenance, AMM TASK 78-31-00-440-805-H00.

- (2) Retract the thrust reverser.

This is the task:

Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.

- (3) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
- (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.
- (4) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.

————— **END OF TASK** —————

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852. Thrust Lever Interlock Actuator (L Eng) is Failed Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35011.

B. Description

- (1) The T/R interlock feedback from AIMS indicates that the interlock actuator remains in the extend position 10 seconds after the EEC demand to the interlock relay is to the retract position for interlock block.
- (2) Flight Deck Message: REVERSER INTERLOCK L.

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the TEST position.
- (2) Make sure the forward thrust levers are at the minimum idle position and the reverse thrust levers are forward and down.
- (3) Make sure the thrust reversers are retracted.
- (4) Examine the left engine T/R interlock actuator.

NOTE: The actuator should have retracted to set the interlock.

- (a) If the actuator did retract to set the interlock, do a check for continuity through the left engine T/R interlock actuator, M78105 for the AIMS interlock feedback (WDM 78-34-11).
- 1) Disconnect the connector DM78105 at the left engine T/R interlock actuator, M78105.
 - 2) Do a check for continuity through the interlock actuator connector DM78105, pin 4 and pin 3.
 - 3) If there is continuity through the interlock actuator, replace the left engine T/R interlock actuator, M78105.

These are the tasks:

Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,

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Reverse Thrust Lever Interlock Actuator Installation, AMM
TASK 78-34-14-400-801-H01.

NOTE: There are internal limits switches in the interlock actuator that could require bench component adjustment.

- a) Do the repair confirmation procedure at the end of this task.
- 4) If the actuator is OK, do a check for a short to ground in the wiring between the connectors for the left integration panel, P105, connector D5535P, pin B6 and connector DM78105P, pin 4 at the left engine T/R interlock actuator, M78105.
 - a) If there is a short to ground, repair the wiring between the connectors for the left integration panel, P105, connector D5535P, pin B6 and connector DM78105P, pin 4.
 - b) Do the repair confirmation procedure at the end of this task.
- 5) If there is no short to ground, then do a check for ground at connector DM78105, pin 10.
 - a) If there is not ground at connector DM78105, pin 10, repair the wiring to ground.
 - b) Do the repair confirmation procedure at the end of this task.
- (b) If the actuator did not retract to set the interlock, continue with the procedure.
- (5) Do a check for 28V DC on the left engine T/R interlock actuator, M78105, connector DM78105, pin 6.
 - (a) If there is 28V DC on connector DM78105 pin 6, replace the left engine T/R interlock actuator, M78105.

These are the tasks:

Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,
Reverse Thrust Lever Interlock Actuator Installation, AMM TASK 78-34-14-400-801-H01.

 - 1) Do the repair confirmation procedure at the end of this task.
 - (b) If there is not 28V DC on connector DM78105 pin 6, continue with the procedure.
 - (6) Remove the left engine T/R interlock relay, K78104 (WDM 78-34-11).
 - (7) Do a check for ground at the left engine T/R interlock relay, K78104, connector DK78104, pin X2 (WDM 78-34-11):
 - (a) If there is a ground on connector DK78104, pin X2, do a check for a short to ground in the wiring between the connectors for the left engine T/R interlock relay, K78104 and the left engine EEC, M73003.

DK78104

pin X2

DM78003D

pin C

- 1) If there is a short to ground, repair the wiring between the connectors DK78104, pin X2 and DM78003D, pin C.
 - a) Install the left engine T/R interlock relay, K78104.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If there is no short to ground, then do a check for a short across pins C and B in the left engine EEC, M73003, connector DM78003D.
 - a) If there is a short, repair the connector DM78003D.

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- b) Install the left engine T/R interlock relay, K78104.
- c) Do the repair confirmation procedure at the end of this task.
- 3) If there is no short across the pins C and B, replace the EEC, M73003 on the left engine.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Install the left engine T/R interlock relay, K78104.
- b) Do the repair confirmation procedure at the end of this task.
- (b) If there is no ground on connector DK78104, pin X2, then continue with the procedure.
- (8) Do a check for 28V DC at the left engine T/R interlock relay, K78104, connector DK78104, pin B3 (WDM 78-34-11):
 - (a) If there is not 28V DC at connector DK78104, pin B3 then repair the wiring from connector DK78104, pin B3 to this circuit breaker

This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	C78609	L ENG T/R INTLK

- 1) Install the left engine T/R interlock relay, K78104.
- 2) Do the repair confirmation procedure at the end of this task.
- (b) If there is 28V DC at connector DK78104 pin B3, continue with the procedure.
- (9) Do a wiring check for an open circuit between left engine T/R interlock relay K78104, connector DK78104, pin B2 and the left engine T/R interlock actuator M78105, connector DM78105, pin 6.
 - (a) If there is an open circuit, repair the wiring between the left engine T/R interlock relay K78104, connector DK78104, pin B2 and the left engine T/R interlock actuator M78105, connector DM78105, pin 6.
 - 1) Install the left engine T/R interlock relay, K78104.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is no open circuit, replace the left engine T/R interlock relay (WDM 78-34-11).
 - (c) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
- (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.

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- (2) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.

————— END OF TASK —————

853. Thrust Lever Interlock Actuator (R Eng) is Failed Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35012.

B. Description

- (1) The T/R interlock feedback from AIMS indicates that the interlock actuator remains in the extend position 10 seconds after the EEC demand to the interlock relay is to the retract position for interlock block.
- (2) Flight Deck Message: REVERSER INTERLOCK R.

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the TEST position.
- (2) Make sure the forward thrust levers are at the minimum idle position and the reverse thrust levers are forward and down.
- (3) Make sure the thrust reversers are retracted.
- (4) Examine the right engine T/R interlock actuator.

NOTE: The actuator should have retracted to set the interlock.

- (a) If the actuator did retract to set the interlock, do a check for a continuity through the right engine T/R interlock actuator, M78205 for the AIMS interlock feedback (WDM 78-34-21).
 - 1) Disconnect the connector DM78205 at the right engine T/R interlock actuator, M78205.
 - 2) Do a check for continuity through the interlock actuator connector DM78205, pin 4 and pin 3.
 - 3) If there is continuity through the interlock actuator, replace the right engine T/R interlock actuator, M78205.

These are the tasks:

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Reverse Thrust Lever Interlock Actuator Removal, AMM
TASK 78-34-14-000-801-H01,

Reverse Thrust Lever Interlock Actuator Installation, AMM
TASK 78-34-14-400-801-H01.

NOTE: There are internal limits switches in the interlock actuator that could require bench component adjustment.

- a) Do the repair confirmation procedure at the end of this task.
- 4) If the actuator is OK, do a check for a short to ground in the wiring between the connectors for the E2-1 shelf connector D5721J, pin 9, and the right engine T/R interlock actuator, M78205, connector DM78205 pin 4.
 - a) If there is a short to ground, repair the wiring between the E2-1 shelf connector D5721J, pin 9, and the right engine T/R interlock actuator, M78205, connector DM78205, pin 4.
 - b) Do the repair confirmation procedure at the end of this task.
- 5) If there is no short to ground, do a check for ground at connector DM78205, pin 10.
 - a) If there is not ground at connector DM78205, pin 10, repair the wiring to ground.
 - b) Do the repair confirmation procedure at the end of this task.
- (b) If the actuator did not retract to set the interlock, continue with the procedure.
- (5) Do a check for 28V DC on the right engine T/R interlock actuator, M78205, connector DM78205, pin 6.
 - (a) If there is 28V DC on connector DM78205 pin 6, replace the right engine T/R interlock actuator, M78205.

These are the tasks:

Reverse Thrust Lever Interlock Actuator Removal, AMM TASK 78-34-14-000-801-H01,
Reverse Thrust Lever Interlock Actuator Installation, AMM TASK 78-34-14-400-801-H01.

 - 1) Do the repair confirmation procedure at the end of this task.
 - (b) If there is not 28V DC on connector DM78205 pin 6, continue with the procedure.
 - (6) Remove the right engine T/R interlock relay, K78204 (WDM 78-34-21).
 - (7) Do a check for ground at the right engine T/R interlock relay, K78204 connector DK78204 pin X2 (WDM 78-34-21):
 - (a) If there is a ground on connector DK78204 pin, X2, do a check for a short-to-ground in the wiring between the connectors for the right engine T/R interlock relay, K78204 and the right engine EEC, M73003.

DK78204**DM78003D**

pin X2 pin C

- 1) If there is a short to ground, repair the wiring between the connectors DK78204, pin X2 and DM78003D, pin C.
 - a) Install the right engine T/R interlock relay, K78204.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If there is no short to ground, then do a check for a short across pins C and B in the right engine EEC, M73003, connector DM78003D.

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- a) If there is a short, repair the connector DM78003D.
 - b) Install the right engine T/R interlock relay, K78204.
 - c) Do the repair confirmation procedure at the end of this task.
- 3) If there is no short across the pins C and B, replace the EEC, M73003 on the right engine.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - a) Install the right engine T/R interlock relay, K78204.
 - b) Do the repair confirmation procedure at the end of this task.
- (b) If there is no ground on connector DK78204, pin X2, then continue with the procedure.
- (8) Do a check for 28V DC at the right engine T/R interlock relay, K78204, connector DK78204, pin B3 (WDM 78-34-11):
 - (a) If there is no 28V DC at connector DK78204, pin B3 then repair the wiring from connector DK78204, pin B3 to this circuit breaker
This is the primary circuit breaker related to the fault:
Right Power Management Panel, P210

Row	Col	Number	Name
N	13	C78611	R ENG T/R INTLK

 - 1) Install the right engine T/R interlock relay, K78204.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is 28V DC at connector DK78204 pin B3, continue with the procedure.
- (9) Do a wiring check for an open circuit between the right engine T/R interlock relay K78204, connector DK78204, pin B2 and the right engine T/R interlock actuator M78205, connector DM78205, pin 6.
 - (a) If there is an open circuit, repair the wiring between the right engine T/R interlock relay K78204, connector DK78204, pin B2 and the right engine T/R interlock actuator M78205, connector DM78205, pin 6.
 - 1) Install the right engine T/R interlock relay, K78204.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (b) If there is no open circuit, replace the right engine T/R interlock relay (WDM 78-34-11).
 - 1) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
- (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.

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- (2) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.

————— **END OF TASK** —————

854. Thrust Lever Interlock Actuator (L Eng) Power is Not Available - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35021.

B. Description

- (1) Airplane supplied 28V DC power for the thrust reverser interlock is not available for 10 seconds. EEC demand is for interlock block, EEC relay monitor shows not blocked, and AIMS feedback is block.
- (2) Flight Deck Message: ENG REV LIMITED L (Advisory).

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Do a check for 28V DC at the EEC (WDM 78-34-11):
 - (a) Disconnect the connector DM73003B from the EEC, M73003 on the left engine.
 - (b) Do a check for ground at connector DM73003B, pin F.
 - 1) If there is not ground, repair the wiring to ground.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (c) Do a check for 28V DC at connector DM73003B, pin E (pin F gnd).
 - 1) If there is 28V DC, replace the EEC, M73003.
 These are the tasks:
 EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
 EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - a) Do the repair confirmation procedure at the end of this task.
 - (d) If there is not 28V DC, do a check for 28V DC at the left power management panel, P110:
 - 1) Connect the connector DM73003B to the EEC, M73003 on the left engine.

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- 2) Disconnect the connector D11039P from the left power management panel, P110.
 - 3) Do a check for 28V DC at connector D11039J, pin 38 (pin 1 gnd).
 - 4) If there is 28V DC, repair the wiring between connectors D11039P, pin 38 and DM73003D, pin C.
 - a) Do the repair confirmation procedure at the end of this task.
 - 5) If there is not 28V DC, then continue with the procedure.
- (3) Do a check for 28V DC at the T/R interlock relay, K78104:
- (a) Remove the T/R interlock relay, K78104.
 - (b) Do a check for 28V DC at connector DK78104, pin X1.
 - (c) If there is 28V DC at connector DK78104, pin X1, then do a check of the continuity between these connectors:

DK78104	D11039J
pin X2	pin 38

- 1) If continuity exists, replace the T/R interlock relay, K78104.
 - a) Re-connect connector D11039P.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If continuity does not exist, repair the wiring between DK78104, pin X2 and D11039J, pin 38.
 - a) Install the T/R interlock relay, K78104.
 - b) Re-connect connector D11039P.
 - c) Do the repair confirmation procedure at the end of this task.
- (d) If there is not 28V DC at connector DK78104, pin X1 then repair the wiring from connector DK78104, pin X1 to this circuit breaker

This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	C78609	L ENG T/R INTLK

- 1) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM
TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
- (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.

————— **END OF TASK** —————

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855. Thrust Lever Interlock Actuator (R Eng) Power is Not Available - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35022.

B. Description

- (1) Airplane supplied 28 V DC power for the thrust reverser interlock is not available for 10 seconds. EEC demand is interlock block, EEC relay monitor is unblock, and AIMS feedback is block.
- (2) Flight Deck Message: ENG REV LIMITED R (Advisory).

C. Initial Evaluation

- (1) Do the thrust reverser lever interlock test.
This is the task:
Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM TASK 71-00-00-700-812-H01.
 - (a) If the maintenance message shows on the ground test display, then do the fault isolation procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Do a check for 28V DC at the EEC (WDM 78-34-14):
 - (a) Disconnect the connector DM73003B from the EEC, M73003 on the right engine.
 - (b) Do a check for ground at connector DM73003B, pin F.
 - 1) If there is no ground, repair the wiring to ground.
 - 2) Do the repair confirmation procedure at the end of this task.
 - (c) Do a check for 28V DC at connector DM73003B, pin E (pin F gnd).
 - 1) If there is 28V DC, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - a) Do the repair confirmation procedure at the end of this task.
 - (d) If there is not 28V DC, do a check for 28V DC at the right power management panel, P210:
 - 1) Connect the connector DM73003B to the EEC, M73003 on the right engine.
 - 2) Disconnect the connector D21039P from the right power management panel, P210.
 - 3) Do a check for 28V DC at connector D21039J, pin 33 (pin 15 gnd).

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- 4) If there is 28V DC, repair the wiring between connectors D21039P, pin 33 and D73003B, pin C.
 - a) Do the repair confirmation procedure at the end of this task.
- 5) If there is not 28V DC, then continue with the procedure.
- (3) Do a check for 28V DC at the T/R interlock relay, K78204:
 - (a) Remove the T/R interlock relay, K78204.
 - (b) Do a check for 28V DC at connector DK78204, pin X1.
 - (c) If there is 28V DC at connector DK78204, pin X1, then do a check of the continuity between these connectors:

DK78204	D21039J
pin X2	pin 33

- 1) If continuity exists, replace the T/R interlock relay, K78204.
 - a) Re-connect connector D21039P.
 - b) Do the repair confirmation procedure at the end of this task.
- 2) If continuity does not exist, repair the wiring between DK78204, pin X2 and D21039J, pin 33.
 - a) Install the T/R interlock relay, K78204.
 - b) Re-connect connector D21039P.
 - c) Do the repair confirmation procedure at the end of this task.
- (d) If there is not 28V DC at connector DK78204, pin X1 then repair the wiring from connector DK78204, pin X1 to this circuit breaker

This is the primary circuit breaker related to the fault:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	13	C78611	R ENG T/R INTLK

- 1) Do the repair confirmation procedure at the end of this task.

E. Repair Confirmation

- (1) Do the thrust reverser lever interlock test.

This is the task:

Test No. 13 - Engine Reverse Thrust Lever Interlock Test (MAT Initiated Test), AMM
TASK 71-00-00-700-812-H01.

- (a) If the maintenance message shows on the ground test display, then continue with the subsequent step of this fault isolation procedure.
- (b) If the maintenance message does not show on the ground test display, then you have corrected the fault.

————— END OF TASK —————

856. Thrust Reverser Test Enable Switch (L Eng) is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35031.

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B. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Cycle (push then release) the thrust reverser test enable switch.
NOTE: The test enable switch is located adjacent to the PDOS switch for the right thrust reverser at the 4 o'clock position on the aft inlet bulkhead.
- (5) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (6) If the MAT shows the maintenance message, then do the fault isolation procedure below.
- (7) If the MAT does not show the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Disconnect connector DS78104 from the T/R test enable switch, S78104.
- (3) Do this check to find out if the T/R test enable switch, S78104 operates correctly (WDM 78-34-11):
NOTE: The switch must have continuity only when you press the switch.
 - (a) Do a check for continuity between pin 1 and pin 2 while you press and release the switch.
 - (b) If the switch does not operate correctly, replace the T/R test enable switch, S78104.
 These are the tasks:
 Thrust Reverser Test Enable Switch Assembly Removal, AMM TASK 78-34-15-000-801-H01,
 Thrust Reverser Test Enable Switch Assembly Installation, AMM TASK 78-34-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
 - (c) If the switch does not operate correctly, continue with the procedure.
- (4) Do a wiring check between the EEC and the T/R test enable switch (WDM 78-34-11):
 - (a) Disconnect connector DM73003C from the EEC, M73003.
 - (b) Make sure that the connector DS78104 is disconnected from the T/R test enable switch, S78104.
 - (c) Do a wiring check between these pins of the connector DM73003C at the EEC, M73003, and the connector DS78104 at the T/R test enable switch, S78104.

DM73003C

pin W-
 pin EE

DS78104

pin 2
 pin 1

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- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM73003C and DS78104.
 - 3) Do the repair confirmation procedure at the end of this task.
- (e) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DS78104.
 - 2) Continue with the procedure.
- (5) Replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- (a) Re-connect connector DM73003C.
- (b) Do the repair confirmation procedure at the end of this task.

D. Repair Confirmation

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Cycle (push then release) the thrust reverser test enable switch.
NOTE: The test enable switch is located adjacent to the PDOS switch for the right thrust reverser at the 4 o'clock position on the aft inlet bulkhead.
- (5) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (6) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (7) If the MAT does not show the maintenance message, then you have corrected the fault.

————— END OF TASK —————

857. Thrust Reverser Test Enable Switch (R Eng) is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35032.

B. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the overhead maintenance panel, P61, to the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Cycle (push then release) the thrust reverser test enable switch.
NOTE: The test enable switch is located adjacent to the PDOS switch for the right thrust reverser at the 4 o'clock position on the aft inlet bulkhead.
- (5) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

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- (6) If the MAT shows the maintenance message, then do the fault isolation procedure below.
- (7) If the MAT does not show the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure



REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU DISCONNECT THE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Disconnect connector DS78104 from the T/R test enable switch, S78104.
- (3) Do this check to find out if the T/R test enable switch, S78104 operates correctly (WDM 78-34-21):

NOTE: The switch must have continuity only when you press the switch.

- (a) Do a check for continuity between pin 1 and pin 2 while you press and release the switch.
- (b) If the switch does not operate correctly, replace the T/R test enable switch, S78104.

These are the tasks:

Thrust Reverser Test Enable Switch Assembly Removal, AMM
TASK 78-34-15-000-801-H01,

Thrust Reverser Test Enable Switch Assembly Installation, AMM
TASK 78-34-15-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.
- (c) If the switch does not operate correctly, continue with the procedure.
- (4) Do a wiring check between the EEC and the T/R test enable switch (WDM 78-34-21):
 - (a) Disconnect connector DM73003C from the EEC, M73003.
 - (b) Make sure that the connector DS78104 is disconnected from the T/R test enable switch, S78104.
 - (c) Do a wiring check between these pins of the connector DM73003C at the EEC, M73003, and the connector DS78104 at the T/R test enable switch, S78104.

DM73003C

DS78104

pin W-	pin 2
pin EE	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM73003C and DS78104.
 - 3) Do the repair confirmation procedure at the end of this task.
- (e) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DS78104.
 - 2) Continue with the procedure.
- (5) Replace the EEC, M73003.

These are the tasks:

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EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- (a) Re-connect connector DM73003C.
- (b) Do the repair confirmation procedure at the end of this task.

D. Repair Confirmation

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (4) Cycle (push then release) the thrust reverser test enable switch.
NOTE: The test enable switch is located adjacent to the PDOS switch for the right thrust reverser at the 4 o'clock position on the aft inlet bulkhead.
- (5) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (6) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (7) If the MAT does not show the maintenance message, then you have corrected the fault.

———— **END OF TASK** ————

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819. EICAS Message ENG REVERSER SNSR L(R) - Fault Isolation

A. Description

- (1) The EICAS message ENG REVERSER SNSR L(R) shows. It is possible that the message will show with no correlated maintenance messages.
 - (a) The maintenance messages are inhibited during taxi-in and taxi-out phases.
 - (b) This fault isolation procedure below is to identify the maintenance messages that were correlated with an EICAS message.

B. Initial Evaluation

NOTE: AIMS can latch the ENG REVERSER SNSR L(R) EICAS message when it occurs. After you find the cause of the fault and correct it, it is possible that the EICAS message will continue to show.

- (1) If the MAT does not show a correlated maintenance message for this EICAS message, then do the fault isolation procedure below.
- (2) If the MAT shows a correlated maintenance message for this EICAS message, then do these steps:
 - (a) Do not erase the EICAS message until you complete the task for the maintenance message.
 - (b) Make sure that you have the correlated maintenance message number that shows on the MAT with the EICAS message.
 - (c) Go back to the FIM Fault Code Index and find the fault code for the EICAS message.
 - (d) Find the correlated maintenance message number and the task number to the right of the fault code.
 - (e) Go to the specified task in the FIM and do the steps in the task.
 - (f) After you do the actions in the task to correct the fault, do these steps:
 - 1) Look at the MAT for the EICAS message.
 - 2) If the MAT shows LATCHED for the EICAS message, then you must erase it from the EICAS status display.

This is the task:

Erasing a EICAS Status Message Latched by AIMS, AMM TASK 31-61-00-800-802.

C. Fault Isolation Procedure

- (1) Do the thrust reverser operational test.

This is the task:

Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the thrust reverser extended (deployed) for the MAT to show ACTIVE for the maintenance messages.

- (2) If a correlated maintenance message is shown, refer to the applicable Maintenance Message Index in the FIM, or select the maintenance message and select MAINTENANCE MESSAGE DATA.

————— **END OF TASK** —————

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843. Prox Snsr Sync Shaft Lock (L Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01011, 78-02011.

B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02011 is present.
- (3) 78-02011: Sync Shaft Lock (L SLEEVE) (L ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG Thrust Reverser (T/R) Sync Lock (L SLEEVE) Proximity Sensor, S78007
- (3) Circuit Card Assembly, Proximity Driver in PSUE1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the Maintenance Access Terminal (MAT), select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Sync Lock Proximity Sensor and the Proximity Sensor Electronics Unit (PSEU) 1 as follows (WDM 78-34-12):
 - (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78007 from the Sync Lock Proximity Sensor, S78007.
 - (c) Do a wiring check between these pins of the connector DS78007 at the Sync Lock Proximity Sensor, S78007, and the connector DM32021AA at the E1-5 shelf .

DS78007**DM32021AA**

pin B	pin A1
pin C	pin A2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78007.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78007.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Sync Lock Proximity Sensor, S78007. These are the tasks:
 - Thrust Reverser Sync Lock Proximity Sensor Removal, AMM TASK 78-36-04-000-801-H01
 - Thrust Reverser Sync Lock Proximity Sensor Installation, AMM TASK 78-36-04-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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844. Prox Snsr Sync Shaft Lock (L Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01012, 78-02012.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02012 is present.
- (3) 78-02012: Sync Shaft Lock (L SLEEVE) (R ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Sync Lock (L SLEEVE) Proximity Sensor, S78007
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.
 - 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Sync Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):

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- (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78007 from the Sync Lock Proximity Sensor, S78007.
- (c) Do a wiring check between these pins of the connector DS78007 at the Sync Lock Proximity Sensor, S78007, and the connector DM32025AA at the E4-1 shelf.

DS78007**DM32025AA**

pin B	pin A1
pin C	pin A2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78007.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78007.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Sync Lock Proximity Sensor, S78007. These are the tasks:
 - Thrust Reverser Sync Lock Proximity Sensor Removal, AMM TASK 78-36-04-000-801-H01
 - Thrust Reverser Sync Lock Proximity Sensor Installation, AMM TASK 78-36-04-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

845. Prox Snsr Actr Lock Ctr (L Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation**A. Maintenance Messages**

- (1) This task is for maintenance messages: 78-01021, 78-02021.

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B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02021 is present.
- (3) 78-02021: Center Actuator Lock (L SLEEVE) (L ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) LENG T/R Center Actuator Lock (L SLEEVE) Proximity Sensor, S78008
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.
NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.
 - 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Center Actuator Lock Proximity Sensor and the PSEU 1 as follows (WDM 78-34-12):
 - (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.

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- (b) Disconnect connector DS78008 from the Center Actuator Lock Proximity Sensor, S78008.
- (c) Do a wiring check between these pins of the connector DS78008 at the Center Actuator Lock Proximity Sensor, S78008, and the connector DM32021AA at the E1-5 shelf.

DS78008

pin B pin B1
pin C pin B2

DM32021AA

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78008.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78008.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Center Actuator Lock Proximity Sensor, S78008. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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846. Prox Snsr Actr Lock Ctr (L Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01022, 78-02022.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02022 is present.
- (3) 78-02022: Center Actuator Lock (L SLEEVE) (R ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Center Actuator Lock (L SLEEVE) Proximity Sensor, S78008
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Center Actuator Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):

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- (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78008 from the Center Actuator Lock Proximity Sensor, S78008.
- (c) Do a wiring check between these pins of the connector DS78008 at the Center Actuator Lock Proximity Sensor, S78008, and the connector DM32025AA at the E4-1 shelf.

DS78008

pin B pin B1
pin C pin B2

DM32025AA

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78008.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78008.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Center Actuator Lock Proximity Sensor, S78008. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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847. Prox Snsr Actr Lock Lwr (L Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01031, 78-02031.

B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02031 is present.
- (3) 78-02031: T/R Lower Actuator Lock (L SLEEVE) (L ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG T/R Lower Actuator Lock (L SLEEVE) Proximity Sensor, S78009
- (3) Circuit Card Assembly, Proximity Driver in PSEU 1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Lower Actuator Lock Proximity Sensor and the PSEU 1 as follows (WDM 78-34-12):
 - (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78009 from the Lower Actuator Lock Proximity Sensor, S78009.
 - (c) Do a wiring check between these pins of the connector DS78009 at the Lower Actuator Lock Proximity Sensor, S78009, and the connector DM32021AA at the E1-5 shelf.

DS78009**DM32021AA**

pin B	pin C1
pin C	pin C2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78009.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78009.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Lower Actuator Lock Proximity Sensor, S78009. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
 - (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
 - (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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848. Prox Snsr Actr Lock Lwr (L Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01032, 78-02032.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02032 is present.
- (3) 78-02032: T/R Lower Actuator Lock (L SLEEVE) (R ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Lower Actuator Lock (L SLEEVE) Proximity Sensor, S78009
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Lower Actuator Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):
 - (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78009 from the Lower Actuator Lock Proximity Sensor, S78009.
 - (c) Do a wiring check between these pins of the connector DS78009 at the Lower Actuator Lock Proximity Sensor, S78009, and the connector DM32025AA at the E4-1 shelf.

DS78009**DM32025AA**

pin B	.....	pin C1
pin C	.....	pin C2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78009.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78009.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Lower Actuator Lock Proximity Sensor, S78009. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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849. Prox Snsr Sync Shaft Lock (R Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01041, 78-02041.

B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02041 is present.
- (3) 78-02041: T/R Sync Shaft Lock (R SLEEVE) (L ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG T/R Sync Shaft Lock (R SLEEVE) Proximity Sensor, S78010
- (3) Circuit Card Assembly, Proximity Driver in PSEU 1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Sync Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-12):
 - (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78010 from the Sync Lock Proximity Sensor, S78010.
 - (c) Do a wiring check between these pins of the connector DS78010 at the Sync Lock Proximity Sensor, S78010, and the connector DM32021AA at the E1-5 shelf.

DS78010**DM32021AA**

pin B	pin E1
pin C	pin E2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78010.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78010.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Sync Lock Proximity Sensor, S78010. These are the tasks:
 - Thrust Reverser Sync Lock Proximity Sensor Removal, AMM TASK 78-36-04-000-801-H01
 - Thrust Reverser Sync Lock Proximity Sensor Installation, AMM TASK 78-36-04-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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850. Prox Snsr Sync Shaft Lock (R Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01042, 78-02042.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02042 is present.
- (3) 78-02042: T/R Sync Shaft Lock (R SLEEVE) (R ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Sync Shaft Lock (R SLEEVE) Proximity Sensor, S78010
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Sync Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):
 - (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78010 from the Sync Lock Proximity Sensor, S78010.
 - (c) Do a wiring check between these pins of the connector DS78010 at the Sync Lock Proximity Sensor, S78010, and the connector DM32025AA at the E4-1 shelf.

DS78010**DM32025AA**

pin B	pin E1
pin C	pin E2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78010.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78010.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Sync Lock Proximity Sensor, S78010. These are the tasks:
 - Thrust Reverser Sync Lock Proximity Sensor Removal, AMM TASK 78-36-04-000-801-H01
 - Thrust Reverser Sync Lock Proximity Sensor Installation, AMM TASK 78-36-04-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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851. Prox Snsr Actr Lock Ctr (R Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01051, 78-02051.

B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02051 is present.
- (3) 78-02051: Center Actuator Lock (R SLEEVE) (L ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG T/R Center Actuator Lock (R SLEEVE) Proximity Sensor, S78011
- (3) Circuit Card Assembly, Proximity Driver in PSEU 1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Center Actuator Lock Proximity Sensor and the PSEU 1 as follows (WDM 78-34-12):

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- (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78011 from the Center Actuator Lock Proximity Sensor, S78011.
- (c) Do a wiring check between these pins of the connector DS78011 at the Center Actuator Lock Proximity Sensor, S78011, and the connector DM32021AA at the E1-5 shelf.

DS78011

pin B pin F1
pin C pin F2

DM32021AA

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78011.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78011.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Center Actuator Lock Proximity Sensor, S78011. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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852. Prox Snsr Actr Lock Ctr (R Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01052, 78-02052.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02052 is present.
- (3) 78-02052: Center Actuator Lock (R SLEEVE) (R ENG) circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Center Actuator Lock (R SLEEVE) Proximity Sensor, S78011
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Center Actuator Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):

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- (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78011 from the Center Actuator Lock Proximity Sensor, S78011.
- (c) Do a wiring check between these pins of the connector DS78011 at the Center Actuator Lock Proximity Sensor, S78011, and the connector DM32025AA at the E4-1 shelf (WDM 78-34-22).

DS78011**DM32025AA**

pin B	.....	pin F1
pin C	.....	pin F2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78011.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78011.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Center Actuator Lock Proximity Sensor, S78011. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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853. Prox Snsr Actr Lock Lwr (R Sleeve) (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01061, 78-02061.

B. Description

- (1) Flight Deck Message: ENG REVERSER L.
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02061 is present.
- (3) 78-02061: T/R Lower Actuator Lock (R SLEEVE) (L ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG T/R Lower Actuator Lock (R SLEEVE) Proximity Sensor, S78012
- (3) Circuit Card Assembly, Proximity Driver in PSEU 1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Lower Actuator Lock Proximity Sensor and the PSEU 1 as follows (WDM 78-34-12):
 - (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78012 from the lower actuator lock proximity sensor, S78012.
 - (c) Do a wiring check between these pins of the connector DS78012 at the Lower Actuator Lock Proximity Sensor, S78012, and the connector DM32021AA at the E1-5 shelf.

DS78012

pin B pin G1
pin C pin G2

DM32021AA

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78012.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78012.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Lower Actuator Lock Proximity Sensor, S78012. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
 - (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
 - (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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854. Prox Snsr Actr Lock Lwr (R Sleeve) (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01062, 78-02062.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02062 is present.
- (3) 78-02062: T/R Lower Actuator Lock (L SLEEVE) (R ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Lower Actuator Lock (L SLEEVE) Proximity Sensor, S78012
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

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- (1) Do a wiring check between the Lower Actuator Lock Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):
 - (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
 - (b) Disconnect connector DS78012 from the Lower Actuator Lock Proximity Sensor, S78012.
 - (c) Do a wiring check between these pins of the connector DS78012 at the Lower Actuator Lock Proximity Sensor, S78012, and the connector DM32025AA at the E4-1 shelf.

DS78012**DM32025AA**

pin B	pin G1
pin C	pin G2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78012.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78012.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Lower Actuator Lock Proximity Sensor, S78012. These are the tasks:
 - Thrust Reverser Actuator Lock Proximity Sensor Removal, AMM TASK 78-36-01-000-801-H01
 - Thrust Reverser Actuator Lock Proximity Sensor Installation, AMM TASK 78-36-01-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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855. Prox Snsr Directional Control Valve (L Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01071, 78-02071.

B. Description

- (1) Flight Deck Message: ENG REVERSER L
 - (a) This message is shown if two of these messages are present: 78-02011, 78-02021, 78-02031, 78-02041, 78-02051, 78-02061, 78-02071.
- (2) Flight Deck Message: ENG REVERSER SENSOR L.
 - (a) This message is shown if the 78-02071 is present.
- (3) 78-02071: T/R Directional Control Valve (L ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) L ENG T/R Directional Control Valve (L ENG) Proximity Sensor, S78113
- (3) Circuit Card Assembly, Proximity Driver in PSEU 1, M32021-B08
- (4) PSEU 1, M32021

D. Related Data

- (1) WDM 78-34-12

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Directional Control Valve Proximity Sensor and the PSEU 1 as follows (WDM 78-34-12):

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- (a) Remove the PSEU 1, M32021, from the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78113 from the Directional Control Valve Proximity Sensor, S78113.
- (c) Do a wiring check between these pins of the connector DS78113 at the Directional Control Valve Proximity Sensor, S78113, and the connector DM32021AA at the E1-5 shelf ().

DS78113**DM32021AA**

pin 2	.....	pin D1
pin 3	.....	pin D2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78113.
 - c) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78113.
 - b) Re-install the PSEU 1, M32021, to the E1-5 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Directional Control Valve Proximity Sensor, S78113. These are the tasks:
 - Thrust Reverser Directional Control Valve Proximity Sensor Removal, AMM TASK 78-36-05-000-801-H01
 - Thrust Reverser Directional Control Valve Proximity Sensor Installation, AMM TASK 78-36-05-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32021-B08 in PSEU 1. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 1, M32021. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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856. Prox Snsr Directional Control Valve (R Eng) Circuit is Open or Shorted - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 78-01072, 78-02072.

B. Description

- (1) Flight Deck Message: ENG REVERSER R.
 - (a) This message is shown if two of these messages are present: 78-02012, 78-02022, 78-02032, 78-02042, 78-02052, 78-02062, 78-02072.
- (2) Flight Deck Message: ENG REVERSER SENSOR R.
 - (a) This message is shown if the 78-02072 is present.
- (3) 78-02072: T/R Directional Control Valve (R ENG) Proximity Sensor circuit is open or shorted.
- (4) These maintenance messages were added for these PSEUs. PSEU 1 - ELDEC P/N 80-777-01 (BOEING P/N S283W202-13) and PSEU 2 - ELDEC P/N 80-778-01 (BOEING P/N S283W202-14) have 8 circuit cards. PSEUs with 16 circuit cards are not interchangeable with these PSEUs.

C. Possible Causes

- (1) Wiring
- (2) R ENG T/R Directional Control Valve Proximity Sensor, S78213
- (3) Circuit Card Assembly, Proximity Driver in PSEU 2, M32025-B08
- (4) PSEU 2, M32025

D. Related Data

- (1) WDM 78-34-22

E. Initial Evaluation

- (1) On the MAT, select the EXISTING FAULTS Screen and find this maintenance message.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, do the Thrust Reverser - Operational Test (Engine Not In Operation), AMM TASK 78-31-00-710-821-H00.

NOTE: You must stop for 30 seconds with the T/R extended (deployed) for the MAT to show ACTIVE for the maintenance message.

- 1) If the MAT shows ACTIVE for the maintenance message with the Thrust Reverser deployed, then do the Fault Isolation Procedure below.
- 2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

NOTE: Optional - Proximity Sensor Breakout Box (Crane P/N 380-777-01): Crane Proximity Sensor Breakout Box is used only to examine basic Resistance Sensor Health and Installation (do not use as a rigging tool). The Breakout Box is used to select the correct sensor for the test. Sensors addressed by the Breakout Box include (but not limited to): Thrust Reverser Proximity Sensors and Directional Control Valve. Do the Proximity Sensor Breakout Box test. Refer to Door and Landing Gear Proximity Sensor Test Using Breakout Box, AMM TASK 52-71-00-720-802.

- (1) Do a wiring check between the Directional Control Valve Proximity Sensor and the PSEU 2 as follows (WDM 78-34-22):

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- (a) Remove the PSEU 2, M32025, from the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801.
- (b) Disconnect connector DS78213 from the Directional Control Valve Proximity Sensor, S78213.
- (c) Do a wiring check between these pins of the connector DS78213 at the Directional Control Valve Proximity Sensor, S78213, and the connector DM32025AA at the E4-1 shelf.

DS78213

pin 2 pin D1
pin 3 pin D2

DM32025AA

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DS78213.
 - c) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector DS78213.
 - b) Re-install the PSEU 2, M32025, to the E4-1 shelf. This is the task: Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.
 - c) Continue with the procedure.
- (2) Replace the Directional Control Valve Proximity Sensor, S78213. These are the tasks:
 - Thrust Reverser Directional Control Valve Proximity Sensor Removal, AMM TASK 78-36-05-000-801-H01
 - Thrust Reverser Directional Control Valve Proximity Sensor Installation, AMM TASK 78-36-05-400-801-H01
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the PSEU Proximity Driver Card, M32025-B08 in PSEU 2. These are the tasks:
 - PSEU Circuit Card Removal, AMM TASK 32-08-02-000-801
 - PSEU Circuit Card Installation, AMM TASK 32-08-02-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU 2, M32025. These are the tasks:
 - Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801
 - Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, continue the fault isolation at the subsequent step.

————— **END OF TASK** —————

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857. Thrust Reverser Sleeve (Right) (L Eng ch A) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-15041.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER L. This message shown if range fail of both Ch.A and Ch.B for right sleeve, left engine, are present: 78-15041, 78-25041.
 - (b) Flight Deck Message: ENG REV LIMITED L (Advisory). This message shown if any of these messages, left engine, are present: 78-15041, 78-15061, 78-25041, 78-25061.

C. Possible Causes

- (1) Rotary Variable Differential Transducer (RVDT), M78002 (L Sleeve) M78003 (R Sleeve)
- (2) Electronic Engine Control (EEC), M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-13).
- (3) Measure the resistance between these pairs of pins through the right sleeve RVDT, M78003, excitation and signal coils for channel A (WDM 78-34-13):

DM78003		DM78003	
pin 5	.....	pin 6	230 - 330 ohms
pin 7	.....	pin 14	74 - 111 ohms
pin 4	.....	pin 14	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

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These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
- NOTE:** The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
- (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
- (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
- (c) Repair the problem that you find.
- (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
- (a) Connect the connector DM78003 for the RVDT, M78003.
- (b) Disconnect the connector DM73003C (channel A) from the EEC, M73003.
- (c) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C		DM73003C	
e	.....	f	232 - 332 ohms
p	.....	q	76 - 113 ohms
n	.....	q	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
- These are the tasks:
- EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
- (a) Do a check of the Thrust Reverser Position Signals;
- 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.
- (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
- (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.

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- (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
- (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

858. Thrust Reverser Sleeve (Right) (R Eng ch A) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-15042.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER R. This message shown if range fail of both Ch.A and Ch.B for right sleeve, right engine, are present: 78-15042, 78-25042.
 - (b) Flight Deck Message: ENG REV LIMITED R (Advisory). This message shown if any of these messages, right engine, are present: 78-15042, 78-15062, 78-25042, 78-25062.

C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

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F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-23).
- (3) Measure the resistance between these pairs of pins through the right sleeve RVDT, M78003, excitation and signal coils, channel A (WDM 78-34-23):

DM78003		DM78003	
pin 5	.....	pin 6	230 - 330 ohms
pin 7	.....	pin 14	74 - 111 ohms
pin 4	.....	pin 14	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
 - (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
 - (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
 - (c) Repair the problem that you find.
 - (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
 - (a) Connect the connector DM78003 for the RVDT, M78003.
 - (b) Disconnect the connector DM73003C (channel A) from the EEC, M73003.
 - (c) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C		DM73003C	
e	.....	f	232 - 332 ohms
p	.....	q	76 - 113 ohms
n	.....	q	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
 - 1) Repair the wiring.

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- 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

859. Thrust Reverser Sleeve (Left) (L Eng ch A) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-15061.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER L. This message shown if range fail of both Ch.A and Ch.B for left sleeve, left engine, are present: 78-15061, 78-25061.
 - (b) Flight Deck Message: ENG REV LIMITED L (Advisory). This message shown if any of these messages, left engine, are present: 78-15041, 78-15061, 78-25041, 78-25061.

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C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure

MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve, RVDT, M78002 (WDM 78-34-13).
- (3) Measure the resistance between these pairs of pins through the left sleeve RVDT, M78002, excitation and signal coils, channel A (WDM 78-34-13):

DM78002		DM78002	
pin 5	.....	pin 6	230 - 330 ohms
pin 7	.....	pin 14	74 - 111 ohms
pin 4	.....	pin 14	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

- (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
- (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.

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- (c) Repair the problem that you find.
- (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
 - (a) Connect the connector DM78002 for the RVDT, M78002.
 - (b) Disconnect the connector DM73003C (channel A) from the EEC, M73003.
 - (c) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C	DM73003C	
y	GG	232 - 332 ohms
CC	u	76 - 113 ohms
BB	u	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.

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- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— **END OF TASK** —————

860. Thrust Reverser Sleeve (Left) (R Eng ch A) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-15062.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
- (a) Flight Deck Message: ENG REVERSER R. This message shown if range fail of both Ch.A and Ch.B for left sleeve, right engine, are present: 78-15062, 78-25062.
 - (b) Flight Deck Message: ENG REV LIMITED R (Advisory). This message shown if any of these messages, right engine, are present: 78-15042, 78-15062, 78-25042, 78-25062.

C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve RVDT, M78002 (WDM 78-34-23).
- (3) Measure the resistance between these pairs of pins through the left sleeve RVDT, M78002, excitation and signal coils, channel A (WDM 78-34-23):

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DM78002

pin 5		pin 6	230 - 330 ohms
pin 7		pin 14	74 - 111 ohms
pin 4		pin 14	74 - 111 ohms

DM78002

- (4) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

- (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
- (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
- (c) Repair the problem that you find.
- (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
- (a) Connect the connector DM78002 for the RVDT, M78002.
- (b) Disconnect the connector DM73003C (channel A) from the EEC, M73003.
- (c) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C

y	.....	GG	232 - 332 ohms
CC	.....	u	76 - 113 ohms
BB	.....	u	76 - 113 ohms

DM73003C

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
- These are the tasks:
- EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
- (a) Do a check of the Thrust Reverser Position Signals;

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- 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
- 2) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
- (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
- (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
- (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
- (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

— END OF TASK —

861. Thrust Reverser Sleeve (Right) (L Eng ch B) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-25041.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER L. This message shown if range fail of both Ch.A and Ch.B for right sleeve, left engine, are present: 78-15041, 78-25041.
 - (b) Flight Deck Message: ENG REV LIMITED L (Advisory). This message shown if any of these messages, left engine, are present: 78-15041, 78-15061, 78-25041, 78-25061.

C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

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E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-13).
- (3) Measure the resistance between these pairs of pins through the right sleeve RVDT, M78003, excitation and signal coils, channel B (WDM 78-34-13):

DM78003		DM78003	
pin 9	.....	pin 10	230 - 330 ohms
pin 11	.....	pin 13	74 - 111 ohms
pin 12	.....	pin 13	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
 - (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
 - (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
 - (c) Repair the problem that you find.
 - (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
 - (a) Connect the applicable connector for the RVDT at the thrust reverser/strut disconnect panel.
 - (b) Disconnect the connector DM73003D (channel B) from the EEC, M73003.

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- (c) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
e	f	232 - 332 ohms
n	p	76 - 113 ohms
m	p	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003. These are the tasks:
- EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
- (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

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862. Thrust Reverser Sleeve (Right) (R Eng ch B) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-25042.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER R. This message shown if range fail of both Ch.A and Ch.B for right sleeve, right engine, are present: 78-15042, 78-25042.
 - (b) Flight Deck Message: ENG REV LIMITED R (Advisory). This message shown if any of these messages, right engine, are present: 78-15042, 78-15062, 78-25042, 78-25062.

C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-23).
- (3) Measure the resistance between these pairs of pins through the right sleeve RVDT, M78003, excitation and signal coils, channel B (WDM 78-34-23):

DM78003

pin 9

pin 11

pin 12

DM78003

pin 10

pin 13

pin 13

230 - 330 ohms

74 - 111 ohms

74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

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These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
- NOTE:** The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
- (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
- (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
- (c) Repair the problem that you find.
- (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
- (a) Connect the connector DM78003 on the RVDT, M78003.
- (b) Disconnect the connector DM73003D (channel B) from the EEC, M73003.
- (c) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
e	f	232 - 332 ohms
n	p	76 - 113 ohms
m	p	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
- These are the tasks:
- EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
- (a) Do a check of the Thrust Reverser Position Signals;
- 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
- (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
- (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.

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- (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
- (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

863. Thrust Reverser Sleeve (Left) (L Eng ch B) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-25061.

B. Description

- (1) The thrust reverser sleeve feedback from the Rotary Variable Differential Transducer (RVDT) is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER L. This message shown if range fail of both Ch.A and Ch.B for left sleeve, left engine, are present: 78-15061, 78-25061.
 - (b) Flight Deck Message: ENG REV LIMITED L (Advisory). This message shown if any of these messages, left engine, are present: 78-15041, 78-15061, 78-25041, 78-25061.

C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

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F. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve RVDT, M78002 (WDM 78-34-13).
- (3) Measure the resistance between these pairs of pins through the left sleeve RVDT, M78002, excitation and signal coils, channel B (WDM 78-34-13):

DM78002		DM78002	
pin 9	.....	pin 10	230 - 330 ohms
pin 11	.....	pin 13	74 - 111 ohms
pin 12	.....	pin 13	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
 - (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
 - (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.
 - (c) Repair the problem that you find.
 - (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
 - (a) Connect the connector DM78002 for the RVDT, M78002.
 - (b) Disconnect the connector DM73003D (channel B) from the EEC, M73003.
 - (c) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D		DM73003D	
AA	.....	GG	232 - 332 ohms
y	.....	u	76 - 113 ohms
x	.....	u	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
 - 1) Repair the wiring.

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- 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

864. Thrust Reverser Sleeve (Left) (R Eng ch B) Feedback is Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-25062.

B. Description

- (1) The thrust reverser sleeve feedback from the RVDT is not in the specified limits.
- (2) These flight deck messages can be shown:
 - (a) Flight Deck Message: ENG REVERSER R. This message shown if range fail of both Ch.A and Ch.B for left sleeve, right engine, are present: 78-15062, 78-25062.
 - (b) Flight Deck Message: ENG REV LIMITED R (Advisory). This message shown if any of these messages, right engine, are present: 78-15042, 78-15062, 78-25042, 78-25062.

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C. Possible Causes

- (1) RVDT, M78002 (L Sleeve) M78003 (R Sleeve)
- (2) EEC, M73003
- (3) Wiring

D. Related Data

- (1) WDM 78-34-13
- (2) WDM 78-34-23

E. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

F. Fault Isolation Procedure

MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve RVDT, M78002 (WDM 78-34-23).
- (3) Measure the resistance between these pairs of pins through the left sleeve RVDT, M78002, excitation and signal coils, channel B (WDM 78-34-23):

DM78002		DM78002	
pin 9	.....	pin 10	230 - 330 ohms
pin 11	.....	pin 13	74 - 111 ohms
pin 12	.....	pin 13	74 - 111 ohms

- (4) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the resistance is in the range specified for each pair of pins, do the steps that follow:
NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.
 - (a) Do a wiring check between the EEC and the Left (Right) T/R Cowl/Strut disconnect panel (WDM 78-34-13) (WDM 78-34-23).
 - (b) Examine the wiring at the backshell connectors at the AN0183 and AN0184 for possible chafing, recess pins and shorting or missing plugs.

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- (c) Repair the problem that you find.
- (d) Do the Repair Confirmation at the end of this task.
- (6) If the wiring check is good and no problems found at the backshell of the connectors at the AN0183 and AN0184, do the steps that follow:
 - (a) Connect the connector DM78002 for the RVDT, M78002.
 - (b) Disconnect the connector DM73003D (channel B) from the EEC, M73003.
 - (c) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
AA	GG	232 - 332 ohms
y	u	76 - 113 ohms
x	u	76 - 113 ohms

- (d) If the resistance is not in the range specified for each pair of pins, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (e) If the resistance is in the range specified for each pair of pins, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
- (7) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

G. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.

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- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— **END OF TASK** —————

865. Thrust Reverser Isolation Valve (L Eng) Hydraulic Pressure Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34951.

B. Description

- (1) The hydraulic pressure switch on the thrust reverser isolation valve is failed. The thrust reverser operated OK.
- (2) Flight Deck Message: ENG REVERSER L.

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Look at the MAT while you do these steps:
- (a) Extend the thrust reverser.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
 - (b) Retract the thrust reverser.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.
- (4) If the MAT shows the maintenance message when the thrust reverser operated, then do the fault isolation procedure below.
- (5) If the MAT does not show the maintenance message when the thrust reverser operated, then there was an intermittent fault.

D. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Replace the hydraulic pressure switch, S78101 (L Eng).
These are the tasks:
Thrust Reverser Hydraulic Pressure Switch Removal, AMM TASK 78-36-02-000-801-H01,
Thrust Reverser Hydraulic Pressure Switch Installation, AMM TASK 78-36-02-400-801-H01.
- (a) Do the repair confirmation procedure at the end of this task.
- (3) If the problem continues, do this check of the pressure switch wiring:
- (a) Disconnect connector DM73003C from the EEC, M73003.

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- (b) Disconnect the connector DS78101 on the hydraulic pressure switch, S78101 (WDM 78-34-11).
- (c) Do a wiring check between connector DS78101 for the hydraulic pressure switch, S78101 and connector DM73003C at the EEC, M73003 (WDM 78-34-11).

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

DS78101	DM73003C
pin 1	pin Y
pin 2	pin T-

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Connect the connector DS78101 on the hydraulic pressure switch, S78101.
 - 3) Connect the connector DM73003C on the EEC, M73003.
 - 4) Do the repair confirmation procedure at the end of this task.
- (e) If there was no problem with the wiring, then continue.
- (4) If the problem continues, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

E. Repair Confirmation

- (1) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Look at the MAT while you do these steps:
 - (a) Extend the thrust reverser.

This is the task:

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Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.

- (b) Retract the thrust reverser.

This is the task:

Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.

- (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (5) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (6) If the MAT does not show the maintenance message, then you have corrected the fault.

————— **END OF TASK** —————

866. Thrust Reverser Isolation Valve (R Eng) Hydraulic Pressure Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-34952.

B. Description

- (1) The hydraulic pressure switch on the thrust reverser isolation valve is failed. The thrust reverser operated OK.
- (2) Flight Deck Message: ENG REVERSER R.

C. Initial Evaluation

- (1) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Look at the MAT while you do these steps:
- (a) Extend the thrust reverser.
- This is the task:
- Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
- (b) Retract the thrust reverser.
- This is the task:
- Thrust Reverser Operation - Retract (Power Method), AMM
TASK 78-31-00-981-802-H01.
- (4) If the MAT shows the maintenance message when the thrust reverser operated, then do the Fault Isolation Procedure below.
- (5) If the MAT does not show the maintenance message when the thrust reverser operated, then there was an intermittent fault.

D. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Make sure the applicable EEC MAINT POWER switch on the P61 panel is in the NORM position.
- (2) Replace the hydraulic pressure switch, S78101 (L Eng).

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These are the tasks:

Thrust Reverser Hydraulic Pressure Switch Removal, AMM TASK 78-36-02-000-801-H01,
Thrust Reverser Hydraulic Pressure Switch Installation, AMM TASK 78-36-02-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (3) If the problem continues, do this check of the pressure switch wiring:
 - (a) Disconnect the connector DS78201 on the hydraulic pressure switch, S78201 (WDM 78-34-21).
 - (b) Disconnect the connector DM73003C on the EEC, M73003.
 - (c) Do a wiring check between connector DS78201 for the hydraulic pressure switch, S78201 and connector DM73003C for the EEC, M73003 (WDM 78-34-21).

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

DS78201	DM73003C
pin 1	pin Y
pin 2	pin T-

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Connect the connector DS78201 on the hydraulic pressure switch, S78201.
 - 3) Connect the connector DM73003C on the EEC, M73003.
 - 4) Do the repair confirmation procedure at the end of this task.
- (e) If there was no problem with the wiring, then continue.
- (4) If the problem continues, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (5) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
 - 2) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

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E. Repair Confirmation

- (1) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (2) Select the Existing Fault Screen on the MAT.
- (3) Look at the MAT while you do these steps:
 - (a) Extend the thrust reverser.
This is the task:
Thrust Reverser Operation - Extend (Power Method), AMM TASK 78-31-00-981-801-H01.
 - (b) Retract the thrust reverser.
This is the task:
Thrust Reverser Operation - Retract (Power Method), AMM TASK 78-31-00-981-802-H01.
- (4) Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (5) If the MAT shows the maintenance message, then continue with the subsequent step of this fault isolation procedure.
- (6) If the MAT does not show the maintenance message, then you have corrected the fault.

— END OF TASK —

867. Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35051.

B. Description

- (1) The channel A signal does not agree with the channel B signal from the thrust reverser position transducer (RVDT).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

D. Fault Isolation Procedure



CAUTION

MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-13).
- (3) Examine the connector DM78003 and the right sleeve RVDT, M78003 for broken or bent pins that could cause a short or an open circuit.

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- (a) If a problem is found, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

- 1) Repair the wiring.
- 2) Do the repair confirmation procedure at the end of this task.

- (4) For channel A, measure the resistance between these pairs of pins through the right sleeve RVDT, M78003:

DM78003	DM78003	
5	6	220 - 230 ohms
7	14	74 - 111 ohms
4	14	74 - 111 ohms

- (5) For channel B, measure the resistance between these pairs of pins through the right sleeve RVDT, M78003:

DM78003	DM78003	
9	10	220 - 230 ohms
11	13	74 - 111 ohms
12	13	74 - 111 ohms

- (6) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.

- (7) If the resistance is in the range specified for each pair of pins, do a wiring check between the EEC and the RVDT (WDM 78-34-13):

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

- (a) Connect the connector DM78003 for the RVDT, M78003.
- (b) Disconnect the connector DM73003C (channel A) and DM73003D (channel B) from the EEC, M73003.
- (c) Examine the connector DM73003C and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.

- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

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- (d) Examine the connector DM73003D and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.

- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

- (e) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C	DM73003C	
e	f	222 - 232 ohms
p	q	76 - 113 ohms
n	q	76 - 113 ohms

- (f) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
e	f	222 - 232 ohms
m	p	76 - 113 ohms
n	p	76 - 113 ohms

- (g) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (h) If the resistance is in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

NOTE: If the RVDT passes all the electrical checks, there can be an internal mechanical fault.

- 1) Do the repair confirmation procedure at the end of this task.

- (i) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.

- (8) If the problem continues, do the tasks that follow:

- (a) Do a check of the Thrust Reverser Position Signals;

- 1) Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 869.

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- (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
- (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
- (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
- (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

E. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— **END OF TASK** —————

868. Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation**A. Maintenance Messages**

- (1) This task is for maintenance message: 78-35052.

B. Description

- (1) The channel A signal does not agree with the channel B signal from the thrust reverser position transducer (RVDT).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

D. Fault Isolation Procedure

MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78003 from the right sleeve RVDT, M78003 (WDM 78-34-23).

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- (3) Examine the connector DM78003 and the right sleeve RVDT, M78003 for broken or bent pins that could cause a short or an open circuit.

- (a) If a problem is found, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (4) For channel A, measure the resistance between these pairs of pins through the right sleeve RVDT, M78003:

DM78003	DM78003	
5	6	220 - 230 ohms
7	14	74 - 111 ohms
4	14	74 - 111 ohms

- (5) For channel B, measure the resistance between these pairs of pins through the right sleeve RVDT, M78003:

DM78003	DM78003	
9	10	220 - 230 ohms
11	13	74 - 111 ohms
12	13	74 - 111 ohms

- (6) If the resistance is not in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (7) If the resistance is in the range specified for each pair of pins, do a wiring check between the EEC and the RVDT (WDM 78-34-23):

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

- (a) Connect the connector DM78003 for the RVDT, M78003.
- (b) Disconnect the connector DM73003C (channel A) and DM73003D (channel B) from the EEC, M73003.
- (c) Examine the connector DM73003C and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.

- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

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- a) Do the repair confirmation procedure at the end of this task.
- (d) Examine the connector DM73003D and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.
- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.
- (e) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C	DM73003C	
e	f	222 - 232 ohms
p	q	76 - 113 ohms
n	q	76 - 113 ohms

- (f) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
e	f	222 - 232 ohms
m	p	76 - 113 ohms
n	p	76 - 113 ohms

- (g) If the resistance is not in the range specified for each pair of pins, then do these steps:
- 1) Repair the wiring.
- 2) Do the repair confirmation procedure at the end of this task.
- (h) If the resistance is in the range specified for each pair of pins, replace the right sleeve RVDT, M78003.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

NOTE: If the RVDT passes all the electrical checks, there can be an internal mechanical fault.

- 1) Do the repair confirmation procedure at the end of this task.
- (i) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- 1) Do the repair confirmation procedure at the end of this task.
- (8) If the problem continues, do the tasks that follow:

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- (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 870.
- (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
- (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
- (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
- (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

E. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

END OF TASK**869. Position Signals from Thrust Reverser Sleeve (Left) (L Eng) Ch A and B Do Not Agree - Fault Isolation****A. Maintenance Messages**

- (1) This task is for maintenance message: 78-35071.

B. Description

- (1) The channel A signal does not agree with the channel B signal from the thrust reverser position transducer (RVDT).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

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D. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve RVDT, M78002 (WDM 78-34-13).
- (3) Examine the connector DM78002 and the left sleeve RVDT, M78002 for broken or bent pins that could cause a short or an open circuit.
 - (a) If a problem is found, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (4) For channel A, measure the resistance between these pairs of pins through the left sleeve RVDT, M78002:

DM78002	DM78002	
5	6	220 - 230 ohms
7	14	74 - 111 ohms
4	14	74 - 111 ohms

- (5) For channel B, measure the resistance between these pairs of pins through the left sleeve RVDT, M78002:

DM78002	DM78002	
9	10	220 - 230 ohms
11	13	74 - 111 ohms
12	13	74 - 111 ohms

- (6) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,
Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (7) If the resistance is in the range specified for each pair of pins, do a wiring check between the EEC and the RVDT (WDM 78-34-13):

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

- (a) Connect the connector DM78002 for the RVDT, M78002.

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- (b) Disconnect the connector DM73003C (channel A) and DM73003D (channel B) from the EEC, M73003.
- (c) Examine the connector DM73003C and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.

- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

- (d) Examine the connector DM73003D and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.

- 1) If a problem is found, replace the EEC, M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

- a) Do the repair confirmation procedure at the end of this task.

- (e) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C	DM73003C	
y	GG	222 - 232 ohms
CC	u	76 - 113 ohms
BB	u	76 - 113 ohms

- (f) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
AA	GG	222 - 232 ohms
y	u	76 - 113 ohms
x	u	76 - 113 ohms

- (g) If the resistance is not in the range specified for each pair of pins, then do these steps:

- 1) Repair the wiring.
- 2) Do the repair confirmation procedure at the end of this task.

- (h) If the resistance is in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

NOTE: If the RVDT passes all the electrical checks, there can be an internal mechanical fault.

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- 1) Do the repair confirmation procedure at the end of this task.
- (i) If the problem continues, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
- 1) Do the repair confirmation procedure at the end of this task.
- (8) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (L Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 867.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

E. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

————— END OF TASK —————

870. Position Signals from Thrust Reverser Sleeve (Left) (R Eng) Ch A and B Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 78-35072.

B. Description

- (1) The channel A signal does not agree with the channel B signal from the thrust reverser position transducer (RVDT).

C. Initial Evaluation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the Overhead Maintenance Panel, P61, to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the fault isolation procedure below.

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- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then there was an intermittent fault.

D. Fault Isolation Procedure



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE EEC BEFORE YOU REMOVE ELECTRICAL CONNECTORS. IF YOU DO NOT OBEY THIS INSTRUCTION, DAMAGE TO THE EEC CAN OCCUR.

- (1) Put the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.
- (2) Disconnect the connector DM78002 from the left sleeve RVDT, M78002 (WDM 78-34-23).
- (3) Examine the connector DM78002 and the left sleeve RVDT, M78002 for broken or bent pins that could cause a short or an open circuit.

- (a) If a problem is found, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (4) For channel A, measure the resistance between these pairs of pins through the left sleeve RVDT, M78002:

DM78002	DM78002	
5	6	220 - 230 ohms
7	14	74 - 111 ohms
4	14	74 - 111 ohms

- (5) For channel B, measure the resistance between these pairs of pins through the left sleeve RVDT, M78002:

DM78002	DM78002	
9	10	220 - 230 ohms
11	13	74 - 111 ohms
12	13	74 - 111 ohms

- (6) If the resistance is not in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM TASK 78-36-03-400-801-H01.

- (a) Do the repair confirmation procedure at the end of this task.
- (7) If the resistance is in the range specified for each pair of pins, do a wiring check between the EEC and the RVDT (WDM 78-34-23):

NOTE: The WDM does not use lower case letters on the connector pins. Lower case letters are shown as upper case letters with a minus sign in the WDM.

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- (a) Connect the connector DM78002 for the RVDT, M78002.
- (b) Disconnect the connector DM73003C (channel A) and DM73003D (channel B) from the EEC, M73003.
- (c) Examine the connector DM73003C and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.
 - 1) If a problem is found, replace the EEC, M73003.
 These are the tasks:
 EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
 EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - a) Do the repair confirmation procedure at the end of this task.
- (d) Examine the connector DM73003D and the EEC, M73003 for broken or bent pins that could cause a short or an open circuit.
 - 1) If a problem is found, replace the EEC, M73003.
 These are the tasks:
 EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
 EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - a) Do the repair confirmation procedure at the end of this task.
- (e) Measure the resistance between these pairs of pins of the connector DM73003C (channel A) at the EEC, M73003:

DM73003C	DM73003C	
y	GG	222 - 232 ohms
CC	u	76 - 113 ohms
BB	u	76 - 113 ohms

- (f) Measure the resistance between these pairs of pins of the connector DM73003D (channel B) at the EEC, M73003:

DM73003D	DM73003D	
AA	GG	222 - 232 ohms
y	u	76 - 113 ohms
x	u	76 - 113 ohms

- (g) If the resistance is not in the range specified for each pair of pins, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the repair confirmation procedure at the end of this task.
- (h) If the resistance is in the range specified for each pair of pins, replace the left sleeve RVDT, M78002.

These are the tasks:

Thrust Reverser Position Transducer (RVDT) Removal, AMM
TASK 78-36-03-000-801-H01,

Thrust Reverser Position Transducer (RVDT) Installation, AMM
TASK 78-36-03-400-801-H01.

NOTE: If the RVDT passes all the electrical checks, there can be an internal mechanical fault.

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- (i) If the problem continues, replace the EEC, M73003.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01,
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.
 - 1) Do the repair confirmation procedure at the end of this task.
- (8) If the problem continues, do the tasks that follow:
 - (a) Do a check of the Thrust Reverser Position Signals;
 - 1) Position Signals from Thrust Reverser Sleeve (Right) (R Eng) Ch A and B Do Not Agree - Fault Isolation, 78-36 TASK 868.
 - (b) Do a check of the HPT ACC Feedback; Do the Resistance checks of HPTACC Feedback Fault - Fault Isolation, 75-21 TASK 839.
 - (c) Do a check of the FMV Feedback Soft; Do the Resistance checks of FMV Feedback Soft Fault - Fault Isolation, 73-21 TASK 847.
 - (d) Do a check of the VBV Feedback Soft; Do the Resistance checks of VBV Feedback Soft Fault - Fault Isolation, 75-21 TASK 835.
 - (e) Do a check of the VSV Feedback Soft; Do the Resistance checks of VSV Feedback Soft Fault - Fault Isolation, 75-21 TASK 832.

E. Repair Confirmation

- (1) Select the Existing Fault Screen on the MAT.
- (2) Set the applicable EEC MAINT POWER switch on the P61 panel to the TEST position and stop for 30 seconds.
- (3) If the MAT shows ACTIVE for the maintenance message, then set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position and continue with the subsequent step of this fault isolation procedure.
- (4) If the MAT shows NOT ACTIVE for the maintenance message (or the maintenance message does not show), then you corrected the problem. Set the applicable EEC MAINT POWER switch on the P61 panel to the NORM position.

———— **END OF TASK** ————

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NOTE: AIMS can latch this EICAS message when it occurs. After you find the cause of the fault and correct it, it is possible that the EICAS message will continue to show.

- (1) Do not erase the EICAS message until you complete the task for the correlated maintenance message.
- (2) When this EICAS message occurs, do these steps:
 - (a) Make sure that you have the correlated maintenance message number that shows on the MAT with the EICAS message.
 - (b) Go back to the FIM Fault Code Index and find the fault code for the EICAS message.
 - (c) Find the correlated maintenance message number and the task number to the right of the fault code.
 - (d) Go to the specified task in the FIM and do the steps in the task.
 - (e) After you do the actions in the task to correct the fault, do these steps:
 - 1) Look at the MAT for the EICAS message.
 - 2) If the MAT shows LATCHED for the EICAS message, then you must erase it from the EICAS status display.

This is the task:

Erasing a EICAS Status Message Latched by AIMS, AMM TASK 31-61-00-800-802.

———— **END OF TASK** ————