



# 故障输入

飞机机型： Boeing 737

章节号： 34-45

故障描述： 机组反应空中出现TCAS FAIL，复位后正常

# 方案输出

## 推荐方案一：

依据 **AMM-34-45-00**；

针对 **TCAS** 出现 **TCAS FAIL**；复位后正常 故障；

执行 **测试 TCAS** 操作；

**【故障排除概率： 72%】**

(参照DE： #1263912； #1229807)

-若故障仍未解除

依据 **AMM-34-45-00**；

执行 **测量 上下天线电阻** 操作；

**【故障排除概率： 72%】**

(参照DE： #1184930)

-若故障仍未解除

依据 **AMM-34-45-01**；

执行 **更换 TCAS 计算机** 操作；

**【故障排除概率： 69%】**

(参照DE： #1204720)

-若故障仍未解除

依据 **MEL-34-40-A**；

执行 **保留** 操作；

(参照DE: #1204720)

【综合排故概率: 94%】

## 推荐方案二:

依据 AMM-34-45-01;

针对 TCAS 出现 TCAS FAIL; 复位后正常 故障;

执行 对串 TCAS 计算机 操作;

【故障排除概率: 60%】

(参照DE: #1012406; #1065601)

-若故障仍未解除

依据 AMM-34-45-01;

执行 更换 TCAS 计算机 操作;

【故障排除概率: 69%】

(参照DE: #1204720)

-若故障仍未解除

依据 AMM-34-45-01;

执行 更换 TCAS 收发机 操作;

【故障排除概率: 33%】

(参照DE: #856131)

-若故障仍未解除

依据 MEL-34-40-A;

执行 保留 操作;

(参照DE: #987241)

【综合排故概率: 92%】

参考DE

DE	开单ATA	关单ATA	故障描述	计划措施	排故方案	飞机机型	航站	日期
1204720	34-45	34-45	TMC:AHM监控到空中出现TCAS FAIL,机组反映武汉-呼和-武汉两段空中TCAS FAIL各闪现一次后很快消失,TCAS工作正常.	装机TCAS计算机可靠性不是太高,深圳过站更换TCAS计算机:822-1293-033---饶龙190207	过站依据AMM34-45-00更换TCAS计算机,测试正常	Boeing 737	WUH	2019-02-07 16:20:00
1184930	34-45	34-45	TMC:无锡飞香港,空中机组报告TCAS故障。复位跳开后正常。	注意:还要测量上下天线电阻,如有异常,许更换相应天线---饶龙181109航后更换TCAS计算机(822-2911-002)---杨龙1108	航后依据AMM34-45-00测试TCAS正常无代码,测量上天线J1为5.64千欧,J2为15.03千欧,J3为33.12千欧,J4为82.13千欧,测量下天线J1为5.62千欧,J2为14.93千欧,J3为33.08千欧,J4为82.30千欧,在正常范围内,为判断故障,依据AMM34-45-01将B-5410飞机TCAS计算机拆用至本机,测试正常。	Boeing 737	HKG	2018-11-08 15:00:00

**PREREQUISITES**

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:  
ELECTRICAL POWER IS ON (AMM 24-22-00/201)  
ALIGN IRS (AMM 34-21-00/201)

**TCAS BITE PROCEDURE**

1. SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO ATC 1 (2). PUSH AND HOLD THE TEST SWITCH ON THE TCAS COMPUTER. DOES "TP" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 20. REPLACE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401).

NO → 3. DOES "T1 (X2)" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 21. REPLACE THE LEFT (RIGHT) ATC TRANSPONDER, MT0141 (MT0142) (AMM 34-53-01/401). IF THE PROBLEM CONTINUES, REPLACE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). IF THE PROBLEM CONTINUES, REMOVE THE TCAS COMPUTER AND THE LEFT (RIGHT) ATC TRANSPONDER. EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D1583E, PINS J15, K15, F14, AND G14 (A14, B14, J14, AND J14), TO THE LEFT (RIGHT) ATC TRANSPONDER, CONNECTOR D251A (D255A), PINS K5, J5, K5, AND H5 (WDM 34-45-02).

NO → SEE SHEET 2 (BLOCK 3)

FROM SHEET 1 (BLOCK 2)

NO → 10. REMOVE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). ALTERNATIVE METHOD OPTION 1: DO A CHECK OF THE UPPER ANTENNA CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D1583A, PINS 1, C1, 2, C2, 3, C3, 4 AND C4, TO THE UPPER ANTENNA, MT0820, CONNECTORS D1585, D1587, D1589, AND D1591, PINS A1 AND C1 (WDM 34-45-02). OPTION 2: DO THE ANTENNA/COAX CABLE RESISTANCE VALUE CHECK, USING THE RESISTANCE VALUES THAT THE ANTENNA SUPPLIER SPECIFIES: J1=100Ω, J2=900Ω, J3=680Ω, J4=10K OHMS. IS THE ANTENNA CABLE OK?

YES → 22. REPLACE THE UPPER TCAS ANTENNA, MT0820 (AMM 34-45-02/401). INSTALL THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401).

NO → 23. REPLACE THE ANTENNA CIRCUIT FROM THE TCAS COMPUTER, MT0819, CONNECTOR D1583A, PINS 1, C1, 2, C2, 3, C3, 4 AND C4, TO THE UPPER TCAS ANTENNA, CONNECTORS D1585, D1587, D1589, AND D1591, PINS A1 AND C1 (WDM 34-45-02).

YES → 24. REPLACE THE LOWER TCAS ANTENNA, MT0821 (AMM 34-45-02/401). INSTALL THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401).

NO → 25. REPLACE THE ANTENNA CIRCUIT FROM THE TCAS COMPUTER, MT0819, CONNECTOR D1583B, PINS 1, C1, 2, C2, 3, C3, 4 AND C4, TO THE LOWER TCAS ANTENNA, CONNECTORS D1595, D1597, AND D1599, PINS A1 AND C1 (WDM 34-45-02). OPTION 2: DO THE ANTENNA/COAX CABLE RESISTANCE VALUE CHECK, USING THE RESISTANCE VALUES THAT THE ANTENNA SUPPLIER SPECIFIES: J1=100Ω, J2=900Ω, J3=680Ω, J4=10K OHMS. IS THE ANTENNA CABLE OK?

YES → 26. REPLACE THE LOWER TCAS ANTENNA, MT0821 (AMM 34-45-02/401). INSTALL THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401).

NO → 27. REPLACE THE ANTENNA CIRCUIT FROM THE TCAS COMPUTER, MT0819, CONNECTOR D1583B, PINS 1, C1, 2, C2, 3, C3, 4 AND C4, TO THE LOWER TCAS ANTENNA, CONNECTORS D1595, D1597, AND D1599, PINS A1 AND C1 (WDM 34-45-02).

YES → 28. REPLACE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401).

NO → 29. DOES "B1 (B2, B3, B4)" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 11. REMOVE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). ALTERNATIVE METHOD OPTION 1: DO A CHECK OF THE LOWER ANTENNA CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D1583B, PINS 1, C1, 2, C2, 3, C3, 4 AND C4, TO THE LOWER ANTENNA, MT0821, CONNECTORS D1595, D1597, AND D1599, PINS A1 AND C1 (WDM 34-45-02). OPTION 2: DO THE ANTENNA/COAX CABLE RESISTANCE VALUE CHECK, USING THE RESISTANCE VALUES THAT THE ANTENNA SUPPLIER SPECIFIES: J1=100Ω, J2=900Ω, J3=680Ω, J4=10K OHMS. IS THE ANTENNA CABLE OK?

YES → 29. DOES "B1 (B2, B3, B4)" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

NO → SEE SHEET 3 (BLOCK 1)

**TCAS BITE Procedure**  
Figure 103/34-45-00-990-803-012 (Sheet 1)

**TCAS BITE Procedure**  
Figure 103/34-45-00-990-803-012 (Sheet 2)

**EFFECTIVITY**  
SFN 801, 805, 806, 810

**34-45 FAULT TREE 802**

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**EFFECTIVITY**  
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**34-45 FAULT TREE 802**

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FROM SHEET 2 (BLOCK 4)

NO → 5. DOES "RA" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 12. DOES THE RADIO ALTIMETER SHOW ALTITUDE OF MORE THAN 50 FEET WHILE THE AIR/GND LOGIC IS SET TO GROUND?

YES → 24. OPEN THE AIR/GND CIRCUIT BREAKER AND TURN THE TCAS COMPUTER OFF, THEN BACK ON.

NO → 22. REPLACE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). IF THE PROBLEM CONTINUES, REPLACE THE LEFT (RIGHT) RADIO ALTIMETER, R202 (R203) (AMM 34-53-01/401). IF THE PROBLEM CONTINUES, REMOVE THE LEFT (RIGHT) RADIO ALTIMETER AND THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). EXAMINE AND REPAIR THE CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D1583F, PINS H3 AND J13 (G3 AND E3) TO THE LEFT (RIGHT) RADIO ALTIMETER, CONNECTOR D211B (D217B), PINS G2 AND G3 (WDM 34-45-02). INSTALL THE LEFT (RIGHT) RADIO ALTIMETER AND THE TCAS COMPUTER.

NO → 6. DOES "PL, RL," OR "HD" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 31. DOES THE YELLOW FAULTBALL SHOW ON THE FRONT PANEL OF THE LEFT (CENTER) IRU?

YES → 28. REPLACE THE LEFT (CENTER) IRU, MT59 (MT60) (AMM 34-21-01/401).

NO → 29. REPLACE THE TCAS COMPUTER, MT0819 (AMM 34-45-01/401). IF THE PROBLEM CONTINUES, REPLACE THE LEFT (CENTER) IRU, MT59 (MT60) (AMM 34-21-01/401). IF THE PROBLEM CONTINUES, REMOVE THE LEFT (CENTER) IRU AND THE TCAS COMPUTER. EXAMINE AND REPAIR THE CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D1583E, PINS A7 AND B7, TO THE LEFT (CENTER) IRU, CONNECTOR D157B (D141B), PINS C10 AND C11 (WDM 34-45-02). INSTALL THE TCAS COMPUTER AND THE LEFT (CENTER) IRU.

NO → SEE SHEET 4 (BLOCK 7)

FROM SHEET 3 (BLOCK 6)

NO → 7. DOES "RD" SHOW IN THE FAILURE DISPLAY AT THE END OF THE TEST?

YES → 14. DO A BITE TEST OF THE LEFT, RIGHT, AND CENTER EFIS SYMBOL GENERATORS (SG) M148, R150, AND M149 (34-22-00, FIG. 1008). IS THERE A FAILURE OF THE SG?

YES → 30. REPLACE THE APPLICABLE SG (AMM 34-22-01/401).

NO → 15. SET THE LEFT EFIS SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO NORM. TURN THE MODE SELECT SWITCH ON THE TCAS/ATC CONTROL PANEL TO TEST AND HOLD IT FOR ONE SECOND. DOES THE TCAS TEST DISPLAY SHOW ON THE LEFT EFIS DISPLAY?

YES → 16. SET THE LEFT EFIS SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO ALTN. TURN THE MODE SELECT SWITCH ON THE TCAS/ATC CONTROL PANEL TO TEST AND HOLD IT FOR ONE SECOND. DOES THE TCAS TEST DISPLAY SHOW ON THE LEFT EFIS DISPLAY?

YES → 32. EXAMINE AND REPAIR THE CIRCUIT FROM THE TCAS COMPUTER, MT0819, CONNECTOR D1583E, PINS C7 AND D7, TO THE CENTER EFIS SG, M149, CONNECTOR D85A, PINS J9 AND K9.

NO → 31. EXAMINE AND REPAIR THE CIRCUIT FROM THE TCAS COMPUTER, MT0819, CONNECTOR D1583E, PINS C7 AND D7, TO THE LEFT EFIS SG, M148, CONNECTOR D81A, PINS J9 AND K9.

NO → SEE SHEET 5 (BLOCK 15)

**TCAS BITE Procedure**  
Figure 103/34-45-00-990-803-012 (Sheet 3)

**TCAS BITE Procedure**  
Figure 103/34-45-00-990-803-012 (Sheet 4)

**EFFECTIVITY**  
SFN 801, 805, 806, 810

**34-45 FAULT TREE 802**

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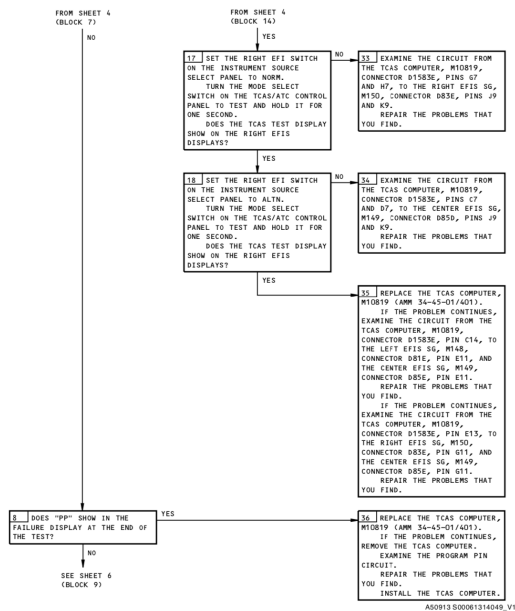
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**EFFECTIVITY**  
SFN 801, 805, 806, 810

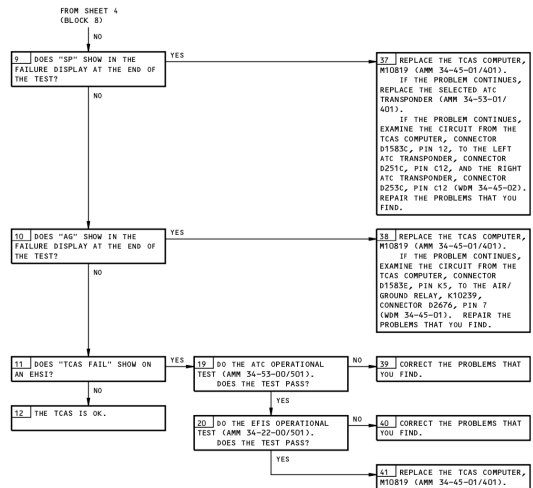
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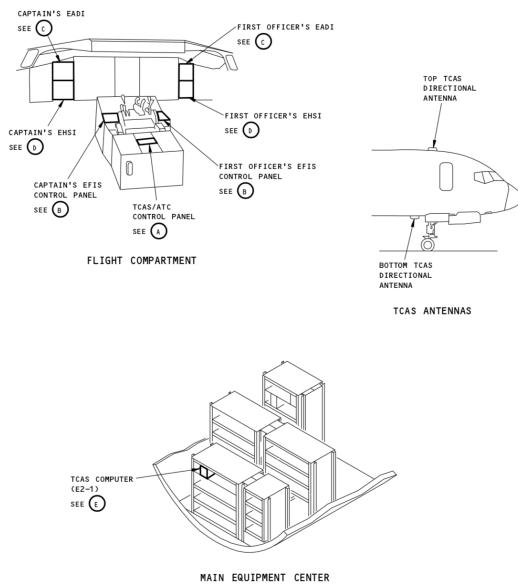
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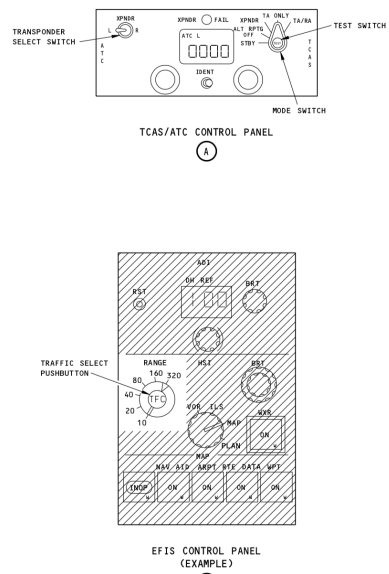
TCAS BITE Procedure  
Figure 103/34-45-00-990-803-012 (Sheet 5)



TCAS BITE Procedure  
Figure 103/34-45-00-990-803-012 (Sheet 6)



TCAS - Component Location  
Figure 102/34-45-00-990-854-014 (Sheet 1)



TCAS - Component Location  
Figure 102/34-45-00-990-854-014 (Sheet 3)

