

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA2676CE

This certificate, issued to Rockwell Collins, Inc.
400 Collins Road NE, MS 164-100
Cedar Rapids, IA 52498

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 25 of the Federal Aviation Regulations.

Original Product - Type Certificate Number : A20WE
Make : Boeing
Model : 747-100 Series, 100B Series, 100B SUD Series, 747-200B Series, 200C Series, 200F Series, 747-300 Series, 747SR Series, 747SP Series

Description of Type Design Change: Installation of Collins Traffic Alert and Collision Avoidance System (TCAS II) in accordance with: (1) Collins Drawing Indices 992-2696-001, 992-1978-001, 992-1989-001 as listed on Sheet 2, 3 or 4, and (2) Collins Airplane Flight Manual Supplement (AFMS) listed on Sheets 2, 3 or 4, or later FAA Approved revisions to (1) or (2).

Limitations and Conditions: (1) Installation of Collins Mode S Transponder, per STC SA2636CE is a prerequisite to this modification. (2) This approval should not be extended to other specific airplanes of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that airplane. (3) If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : July 21, 1989

Date reissued : February 22, 1993; October 10, 1997

Date of issuance : December 3, 1990

Date amended : 4/16/91; 5/14/92; 10/27/92; 1/11/93;
3/19/93; 8/26/93; 1/21/94; 9/30/99



By direction of the Administrator

Dale R. Koonts
(Signature)

Dale R. Koonts

Manager, DAS-3CE

(Title)

United States of America
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Supplemental Type Certificate
(Continuation Sheet)

Number SA2676CE
(Continued)

Airplane Flight Manual Supplement (AFMS)	Applicable to:	Airplane Flight Manual Supplement (AFMS) Revision Level
ACC-90-15	TCAS II with Sextant 457400KA0601 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision A, dated November 30, 1992 to Revision C, dated August 26, 1993)	No revision, dated December 3, 1990, to Revision B, dated August 26, 1993
	TCAS II (Version 6.04A) with Sextant 457400KA0601 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision D to Revision G, dated February 15, 1999)	Revision C, dated January 21, 1994
ACC-99-042	TCAS II (Version 7.0) with Sextant 457400KA0601 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision G, dated February 15, 1999)	No revision, dated September 30, 1999
ACC-92-13	TCAS II with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision A, dated December 11, 1992)	No revision, dated May 14, 1992, to Revision A, dated August 26, 1993
	TCAS II (Version 6.04A) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision B to Revision D, dated February 15, 1999)	Revision B, dated January 21, 1994
ACC-99-043	TCAS II (Version 7.0) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision D, dated February 15, 1999)	No revision, dated September 30, 1999
ACC-92-101	TCAS II with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision A, dated November 30, 1992 to Revision C, dated August 26, 1993)	No revision, dated October 27, 1992
	TCAS II (Version 6.04A) with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision D to Revision G, dated February 15, 1999)	Revision A, dated January 21, 1994

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

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Supplemental Type Certificate
(Continuation Sheet)

Number SA2676CE
(Continued)

<u>Airplane Flight Manual Supplement (AFMS)</u>	<u>Applicable to:</u>	<u>Airplane Flight Manual Supplement (AFMS) Revision Level</u>
ACC-99-044	TCAS II (Version 7.0) with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-2696-001, Revision G, dated February 15, 1999)	No revision, dated September 30, 1999
ACC-92-103	TCAS II with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision A, dated December 11, 1992)	No revision, dated August 26, 1993
	TCAS II (Version 6.04A) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision B to Revision D, dated February 15, 1999)	Revision B, dated January 21, 1994
ACC-99-045	TCAS II (Version 7.0) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1978-001, Revision D, dated February 15, 1999)	No revision, dated September 30, 1999
ACC-92-154	TCAS II with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1989-001, no revision, dated November 6, 1992 to Revision B, dated September 1, 1993)	No revision, dated January 11, 1993 to Revision A, dated June 11, 1993
	TCAS II (Version 6.04A) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1989-001, Revision C to Revision E, dated February 15, 1999)	Revision B, dated January 21, 1994
ACC-99-046	TCAS II (Version 7.0) with Sextant 457400FA0311 TA/RA/VSI Indicators (Drawing Index 992-1989-001, Revision E, dated February 15, 1999)	No revision, dated September 30, 1999

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

Supplemental Type Certificate

(Continuation Sheet)

Number SA2676CE
(Continued)

Airplane Flight
Manual Supplement
(AFMS)

Applicable to:

Airplane Flight
Manual Supplement
(AFMS) Revision Level

ACC-93-38

TCAS II with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-1989-001, no revision, dated November 6, 1992 to Revision B, dated September 1, 1993)

No revision, dated August 18, 1993

TCAS II (Version 6.04A) with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-1989-001, Revision C to Revision E, dated February 15, 1999)

Revision A, dated January 21, 1994

ACC-99-047

TCAS II (Version 7.0) with Collins TVI-920 TA/RA/VSI Indicators (Drawing Index 992-1989-001, Revision E, dated February 15, 1999)

No revision, dated September 30, 1999