

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED

6-26-2009

Number SA5996NM-D

This certificate, issued to UNITED AIR LINES, INC.

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. Ref. T. C. Data Sheet A22WE for Special Conditions.

Original Product — Type Certificate Number: A22WE
Make: McDonnell Douglas
Model: DC10-10 Series

Description of Type Design Change: Install and activate a single ARINC 741 Satellite Communication System (SATCOM). The installation consists of interconnect wiring, SATCOM antenna, circuit breakers and relays. This modification was accomplished in accordance with United Air Lines DAS 1WE amended approved master drawing list No. 5996 dated December 10, 1994 or later approved revisions. United Air Lines AFM Supplement to FAA approved Flight Manual MDC-J1010 dated 12/8/94 or later approved revisions is required as part of this modification.

Limitations and Conditions: This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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: September 15, 1994

Date issued:

Date of issuance: October 21, 1994

Date amended: December 10, 1994



By direction of the Administrator

F. L. Mohr

F. L. Mohr (Signature)

DAS Coordinator

United Air Lines (Title) DAS 1 WE

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
On 6-26-2009

Number SA3941WE-D

This certificate, issued to UNITED AIRLINES, INC.

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 FAR Regulations. (SEE TC DATA SHEET A22WE)

Original Product — Type Certificate Number: A22WE
Make: MCDONNELL-DOUGLAS
Model: DC-10-10

Description of Type Design Change:

INSTALLATION OF A UHF RADIO TELEPHONE SYSTEM IN ACCORDANCE WITH UNITED AIRLINES, DAS-1WE, SEALED DRAWING LIST 3941 DATED JUNE 9, 1980 OR LATER SEALED REVISION.

Limitations and Conditions: THE APPROVAL OF THIS CHANGE IN TYPE DESIGN APPLIES ONLY TO DC-10-10 AIRCRAFT. THIS APPROVAL DOES NOT EXTEND TO OTHER AIRCRAFT OF THIS MODEL 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 AIRCRAFT. THIS DETERMINATION SHOULD INCLUDE CONSIDERATION OF SIGNIFICANT CHANGES IN WEIGHT DISTRIBUTION SUCH AS INCREASE IN THE FIXED DISPOSABLE WEIGHT IN THE AIRCRAFT. ~~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: MAY 27, 1980

Date issued

Date of issuance: JUNE 9, 1980

Date amended



By direction of the Administrator
[Signature]

UNITED AIRLINES, DAS COORDINATOR
DAS-1WE

(Title)

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

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA2790NM-D

This certificate, issued to UNITED AIRLINES, INC.

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. (See Type Certificate Data Sheet A22WE for Special Conditions).

Original Product — Type Certificate Number: A22WE
Make: McDonnell-Douglas
Model: DC10-30

Description of Type Design Change: Installation of full provisions for a Collins Radio Traffic Alert and Collision Avoidance System (TCAS II) and a fully operational dual Collins Radio Mode S Transponder System, in accordance with United Airlines DAS 1 WE Approved Drawing List 2790 dated May 20, 1991 or later approved revisions. United Airlines AFM Supplement to FAA Approved Flight Manual No. MDC-J5830 dated May 20, 1991, or later approved revisions, is required as part of this modification.

Limitations and Conditions: This approval does not extend to other aircraft of this model 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 aircraft.

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: 5/1/91

Date reissued:

Date of issuance: 5/20/91

Date amended:



By direction of the Administrator

R. M. Casterline
R. M. Casterline (Signature)

DAS Staff Coordinator
United Airlines DAS 1 WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration Certificate
Supplemental Type Certificate **SURRENDERED**
 4.21.2009

Number SA2837WE-D

This certificate, issued to United Airlines, Inc.

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. (See T.C. Data Sheet A22WE for special conditions)

Original Product — Type Certificate Number A22WE
Make: McDonnell Douglas
Model: DC-10-10 and DC-10-30

Description of Type Design Change:

Installs new lavatory module/bustle assembly at Door 2 RH/LH, underfloor plumbing and related systems, modified main deck floor support structure, external service panel in accordance with United Airlines DAS-1-WE, Sealed Drawing list 2837 dated 12/9/77, or later sealed revision.

Limitations and Conditions: The approval of this change in type design applies basically to the McDonnell Douglas DC-10 airplane. This approval should not be extended to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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: January 23, 1975

Date issued

Date of issuance: May 1, 1975

Date amended: December 9, 1977
 April 18, 1984



By direction of the Administrator
R. M. Casterline
 (Signature)

R. M. Casterline
 DAS Coordinator, DAS-1-WE
 (Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA 3591 WE-D

This certificate, issued to United Airlines, Inc.

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. See T.C. Data Sheet A22WE.

Original Product — Type Certificate Number: A22WE
Make: McDonnell Douglas
Model: DC-10-10 Western Airlines

Description of Type Design Change:

Installs new lavatory module/bustle assembly at Door 2 RH/LH, underfloor plumbing and related systems, modified main deck floor support structure, external service panel in accordance with United Airlines DAS-1-WE, sealed drawing list 3591 dated 3/20/79.

Limitations and Conditions: The approval of this change in type design applies basically to the McDonnell Douglas DC-10-10 airplane. This approval should not be extended to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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: January 2, 1979

Date reissued:

Date of issuance: March 20, 1979

Date amended: September 11, 1979



By direction of the Administrator

H. N. Taylor
H. N. Taylor (Signature)

United Airlines
DAS Coordinator, DAS-1-WE
(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
 ON 6-26-2009

Number SA2756NM-D

This certificate, issued to UNITED AIR LINES, INC.

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. SEE TYPE CERTIFICATE DATA SHEET A22WE FOR SPECIAL CONDITIONS.

Original Product — Type Certificate Number: A22WE
 Make: McDONNELL-DOUGLAS
 Model: DC-10-10

Description of Type Design Change: INSTALLATION OF WIRING PROVISIONS FOR A SINGLE TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS II). THE PROVISIONS WILL INCLUDE INTERCONNECT WIRING, CIRCUIT BREAKERS, MOUNTING TRAYS, ANTENNAE AND ANTENNA COAX CABLES, AND TCAS TYPE VERTICAL SPEED INDICATORS. IN ADDITION, A DUAL OPERATIONAL MODE S TRANSPONDER SYSTEM WILL BE INSTALLED. UNITED AIR LINES AFM SUPPLEMENT TO FAA APPROVED FLIGHT MANUAL MDC-J1010 DATED 7/27/90, OR LATER APPROVED REVISION, IS REQUIRED AS PART OF THIS INSTALLATION OF A DUAL OPERATIONAL MODE S TRANSPONDER SYSTEM.

Limitations and Conditions:

THIS APPROVAL DOES NOT EXTEND TO OTHER AIRCRAFT OF THIS MODEL 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 AIRCRAFT.

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: 5/30/89

Date issued:

Date of issuance: 8/7/89

Date amended: 7/27/90, 6/01/92



By direction of the Administrator

R. M. Gasterline

R. M. Gasterline (Signature)

DAS Staff Coordinator

United Air Lines DAS 1 WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA 2755NM-D

This certificate, issued to **United Air Lines**

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. Ref. TC Data Sheet A22WE for Special Conditions

Original Product — Type Certificate Number: **A22WE**
Make: **McDonnell-Douglas**
Model **DC10-30 Series**

Description of Type Design Change Replace First Class seats and increase Coach seating from 40 F/C + 245 Y/C to 38 F/C + 260 Y/C. Install new G-3 galley and F/C closet in Zone A. Install centerline stowbins in Zone B and C. Aircraft N1852U-54U and N1856U-59U have a new mid-cabin lavatory installation. All zones have new aisle light covers and interior decor upgrade. This modification was accomplished in accordance with United Air Lines DAS 1WE approved Master Drawing List 2775 dated January 14, 1991 or later approved revisions.

Limitations and Conditions This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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: **October 30, 1989**
Date of issuance: **January 14, 1991**

Date issued:
Date amended



By direction of the Administrator
J. M. Gay
(Signature)
J. M. Gay, DAS Coordinator, DAS-1WE
United Airlines
(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
6-26-2009

Number SA5995NM-D

This certificate, issued to **UNITED AIR LINES, INC.**
San Francisco International Airport
San Francisco, California 94128

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. Ref. T.C. Data Sheet A22WE for Special Conditions

Original Product — Type Certificate Number: **A22WE**
Make: **McDonnell Douglas**
Model: **DC-10-10 Series**

Description of Type Design Change: **Install modified Flight Mode Annunciators to annunciate NAV instead of INS, and modified Horizontal Situation Indicators to annunciate GPS and associated wiring and relays. This installation was accomplished in accordance with United Air Lines DAS 1 WE approved amended Master Drawing List No. 5995, dated August 25, 1995, or later FAA approved revisions.**

Limitations and Conditions. This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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: **August 31, 1994**

Date issued:

Date of issuance: **October 21, 1994**

Date amended: **August 25, 1995, December 10, 1994**



By direction of the Administrator

H. Takeuchi

H. Takeuchi (Signature)

DAS Staff Coordinator

United Air Lines DAS 1-WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA5641NM-D

This certificate, issued to UNITED AIR LINES

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. Ref. TC Data Sheet A3WE for Special Conditions

Original Product — Type Certificate Number: A3WE
Make: The Boeing Company
Model: 727-200 Series

Description of Type Design Change:

Installation of Collins DLM-700 series Aircraft Communications and Reporting System (ACARS) with dedicated Collins VHF-700 series VHF transceiver and a Bendix PT-45B printer in accordance with United Air Lines DAS 1WE approved Master Drawing List dated September 25, 1992 or later approved revision.

Limitations and Conditions:

This approval does not extend to other aircraft of this model 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 affect upon the airworthiness of that aircraft. Refer to AFM Supplement.

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: June 30, 1992

Date issued:

Date of issuance: September 25, 1992

Date amended:



By direction of the Administrator

R.M. Casterline

R.M. Casterline (Signature)
DAS Staff Coordinator
United Air Lines DAS 1WE

(Title)

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

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED

6-26-2009

Number SA2775NM-D

This certificate, issued to UNITED AIR LINES

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. Ref. TC Data Sheet A3WE for Special Conditions.

Original Product — Type Certificate Number: A3WE
Make: The Boeing Company
Model: 727-222 Series

Description of Type Design Change.

Installation of dual Mode S/ATCRBS transponders and full Traffic Alert and Collision Avoidance System (TCAS) provisions, in accordance with United Air Lines DAS 1WE approved Master Drawing List 2775, dated June 23, 1990, or later approved revision. United Air Lines AFM Supplement to FAA Approved Flight Manual D6-8728-222 dated 6/23/90, or later approved revision, is required as part of this installation.

Limitations and Conditions:

This approval does not extend to other aircraft of this model 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 aircraft. The Mode S functions of the system are not approved for Traffic Alert and Collision Avoidance System (TCAS) operation. The TCAS functions of Smiths Industries IVSI are not approved for TCAS operation. Refer to AFM Supplement.

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: 05/08/90

Date reissued:

Date of issuance: 06/23/90

Date amended: 1/28/91, 9/6/90



By direction of the Administrator

R. M. Casterline

R. M. Casterline (Signature)
DAS Staff Coordinator
UNITED AIR LINES DAS 1WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
 on 6-26-2009

Number SA2770NM-D

This certificate, issued to United Airlines

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. See TC Data Sheet A3WE

Original Product — Type Certificate Number: A3WE
Make: Boeing
Model: 727-222 Series

Description of Type Design Change:

Installation of TCAS II and Mode 'S' Transponder provisions, consisting of system interwiring, antenna coaxial cables, antenna structure installations, TCAS directional antenna and transponder antenna, in accordance with United Airlines, DAS-1WE, approved drawing list 2770, dated February 9, 1990, or later approved revision.

Limitations and Conditions:

This approval does not extend to other aircraft of this model 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 aircraft.

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: April 12, 1989

Date reissued:

Date of issuance: February 9, 1990

Date amended:



By direction of the Administrator
Roger M. Costello
 (Signature)

UNITED AIRLINES DAS COORDINATOR DAS-1WE
 (Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA1130NW-D

This certificate, issued to UNITED AIRLINES, INC.

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 4.b of the CIVIL AIR Regulations. SPECIAL CONDITIONS: SEE TC DATA SHEET A3WE

Original Product — Type Certificate Number: A3WE
 Make: Boeing
 Model: 727-222

Description of Type Design Change:

Rework of weather radar system to install solid-state, color-display system in accordance with United Airlines, DAS-1WE, sealed drawing list 1130 dated November 7, 1981, or later sealed revision.

Limitations and Conditions: The approval of this change in type design applies only to 727-222 aircraft. This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as increase in the fixed disposable weight in the fuselage.

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: October 16, 1981

Date issued:

Date of issuance: November 7, 1981

Date amended:



By direction of the Administrator

R.M. Castor

(Signature)

UNITED AIRLINES, DAS COORDINATOR DAS-1WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA2148WE

This certificate, issued to United Air Lines, Inc.

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 4b of the Civil Air Regulations: dated December 1953 (See T.C. Data Sheet A3WE)

Original Product — Type Certificate Number: A3WE

Make: Boeing

Model: 727-222

Description of Type Design Change: Installation of a McDonnell Douglas Eros II Collision Avoidance System in accordance with FAA sealed UAL Report F-1555 and FAA approved UAL Airplane Flight Manual Supplement, dated 22 NOV 1971 to Boeing Document D6-8728.1 or a later FAA approved revision.

Limitations and Conditions: The ARINC characteristic 587 Collision Avoidance System does not adversely affect any other aircraft system, but the use of the CAS has not been evaluated. Therefore, flight operations must not be predicated on its use. This approval should not be extended to other specific airplanes of this model on which other previously approved modifications are incorporated unless it is determined that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of the aircraft.

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: 11 October 1971

Date reissued:

Date of issuance: 22 NOV 1971

Date amended:



By direction of the Administrator

George A. Boyert
(Signature)

Acting Chief, Aircraft Engineering Division
(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number ST00552LA-D

This certificate, issued to United Air Lines, Inc.
San Francisco International Airport
San Francisco, California 94128

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. (Ref. TC Data Sheet A22WE for Special Conditions)

Original Product — Type Certificate Number: A22WE
Make: McDonnell Douglas Corporation
Model: DC10-10

Description of Type Design Change:

Modifies the aircraft to deactivate Global Positioning Systems (GPS), Satellite Communication System (SATCOM), Electronic Flight Indicators (EFI) and Electronic Resource System (ERS) including removal of respective components. The deactivation is in accordance with DAS 1 WE approved United Air Lines Master Document List 00552, dated November 22, 1998, or later FAA approved revision.

Limitations and Conditions:

The approval of this installation applies to the DC10-10 Series only. This approval does not extend to other aircraft of this model 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 aircraft. 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: November 3, 1998

Date reissued:

Date of issuance: November 22, 1998

Date amended:



By direction of the Administrator

J. M. Gay
J.M. Gay (Signature)

United Air Lines, DAS Fleet Engineering Coordinator, DAS 1 WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47

Supplemental Type Certificate

Certificate
RENDERED
 on 6-26-2009

Number SA1122NW-D

This certificate, issued to UNITED AIRLINES, INC.

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 4.B of the CIVIL AIR

Regulations. SPECIAL CONDITIONS: SEE TC DATA SHEET 4A25.

Original Product — Type Certificate Number: 4A25
 Make: McDonnell-Douglas
 Model: DC8-61

Description of Type Design Change:

Rework of weather radar system to install solid-state, color-display system in accordance with United Airlines, DAS-1WE, sealed drawing list 1122 dated July 1, 1981 or later sealed revision.

Limitations and Conditions: The approval of this change in type design applies only to DC-8-61 aircraft. This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as increase in the fixed disposable weight in the fuselage.

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: June 10, 1981

Date issued

Date of issuance: July 1, 1981

Date amended



By direction of the Administrator

R.M. Casterline

(Signature)

UNITED AIRLINES, DAS COORDINATOR
 DAS-1WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED

on 6-26-2009

Number SA1123NW-D

This certificate, issued to UNITED AIRLINES, INC.

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 4.B of the Civil Air Regulations. Special Conditions: See TC Data Sheet 4A25.

Original Product — Type Certificate Number: 4A25*Make:* McDonnell-Douglas*Model:* DC-8-61 & DC-8-71*Description of Type Design Change:*

Installation of an underwing fueling panel in accordance with United Airlines, DAS-1WE, sealed drawing list 1123 as amended and dated June 8, 1982 or later sealed drawing list.

Limitations and Conditions The approval of this change in type design applies only to DC-8-61 and DC-8-71 aircraft. This approval does not extend to other aircraft of this model 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 aircraft. This determination should include consideration of significant changes in weight distribution such as increase in the fixed disposable weight in the fuselage.

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: April 30, 1981*Date issued**Date of issuance:* June 30, 1981*Date amended:* May 14, 1982*By direction of the Administrator**R. M. Castorline*

(Signature)

United Airlines, DAS Coordinator
DAS-1WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA1405WE

This certificate, issued to **United Air Lines, Inc.**
San Francisco International Airport
Maintenance Base
San Francisco, California 94128

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 4b of the ~~XXXXXX XXXXXX~~ **Civil Air**

Regulations:

Original Product — Type Certificate Number: **4A25**
Make: **Douglas Aircraft Company, Inc.**
Model: **DC-8-21, -31, -32, -33, -51, -52, -53, and DC-8F-54 and DC-8F-55**

Description of Type Design Change:

Structural installation of a Dorne and Margolin DMC 33-2 Satcom VHF radio antenna in accordance with FAA sealed United Air Lines Report Number F-1156 as revised April 25, 1967.

Limitations and Conditions:

This is a structural installation only and does not include the operational evaluation of the antenna or system. Prior to operational approval of this radio antenna installation, an operational evaluation must be conducted by the FAA,

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 Agency.

Date of application: **March 31, 1967**

Date reissued:

Date of issuance: **April 27, 1967**

Date amended:



By direction of the Administrator
[Signature]
(Signature)

Acting Chief, Aircraft Engineering Division
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.
This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA1926WE

This certificate, issued to

**United Air Lines, Inc.
San Francisco International Airport
San Francisco, California 94128**

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 4b of the Civil Air Regulations.

Original Product — Type Certificate Number: 4A25

Make: McDonnell Douglas

Model: DC-8-61 and DC-8-62

Description of Type Design Change: (Dual installation of the A.C. Electronics Carousel IV, INS units in the Model DC-8-61 in accordance with Item 1 below and in the Model DC-8-62 in accordance with Items 2 or 3 below):

1. Sealed Appendix "C" of UAL Report #F-1366 and the UAL Supplement to the McDonnell Douglas Model DC-8-61, FAA Approved AFM DAC-33161 dated 27 May 1969.
2. Sealed Appendix "A" of UAL Report #F-1384 and the UAL Supplement to the McDonnell Douglas Model DC-8-62, FAA Approved AFM DAC-33162 dated 21 July 1969.
3. Sealed Appendix "A" of UAL Report #F-1384 modified by UAL's sealed COA 2-3498 ER #20 and the UAL Supplement to the McDonnell Douglas Model DC-8-62, FAA approved AFM DAC-33162 dated **16 JAN 1970**

Limitations and Conditions: For cases 1 and 2 above the INS does not adversely affect other systems but cooling requirements prevent navigation solely being predicated on INS. Placards saying "INS NOT APPROVED FOR NAVIGATION" must be displayed below the CDU head. This approval should not be extended to other specific airplanes of this model on which other previously approved modifications are incorporated unless it is determined 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.

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: 10 April 1969

Date received:

Date of issuance: 27 May 1969

Date amended: 21 July 1969 **16 JAN 1970**



By direction of the Administrator

[Signature]
(Signature)

Acting Chief, Aircraft Engineering Division
(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA2709NM

This certificate, issued to UNITED AIRLINES, INC

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 04.b of the Civil Air Regulations. See Type Certificate Data Sheet 4A25 for Special Conditions

Original Product — Type Certificate Number: 4A25
 Make: McDonnell-Douglas
 Model: DC-8-71

Description of Type Design Change: Installation of an Airfone, Inc. Air to Ground Passenger Telephone System. The installation was done according to UAL DAS-1WE sealed drawing list #2709 dated 5/09/86 or later revision.

Limitations and Conditions: This approval should not be extended to other specific airplanes of this model on which other previously approved modifications are incorporated unless it is determined 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.

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: 9/03/85
 Date of issuance: 5/09/86

Date issued:
 Date amended:



By direction of the Administrator
R.M. Casterline
 (Signature)
 R.M. Casterline
 United Airlines DAS Coordinator DAS-1WE
 (Title)

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

This certificate may be transferred in accordance with FAR 21.47.

Department of Transportation - Federal Aviation Administration

Certificate
SURRENDERED
on 6-26-2009

SA2716NM-D

Number

This certificate issued to UNITED AIRLINES, INC.

certifies that the change in the type design for the following product with the limitations and conditions

therefor as specified herein meets the airworthiness requirements of Part 04.b of the CIVIL AIR

Regulations. See Type Certificate Data Sheet 4A25 for Special Conditions

Original Product - Type Certificate Number: 4A25

Make: McDonnell-Douglas

Model: DC-8-71

Description of Type Design Change: Installation of an Bendix Model TRA-66A

MODE-S transponder in accordance with UNITED AIRLINES, DAS-1WE, sealed drawing list 2716, dated April 29, 1987, or later sealed revisions.

Limitations and Conditions: This approval does not extend to other aircraft of this

model 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 aircraft.

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: 9/15/86

Date received:

Date of issuance: 4/30/87

Date amended:



R.M. Casterline
Administrator

(Signature)

R.M. Casterline
United Airlines DAS Coordinator DAS-1WE

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Certificate
SURRENDERED
on 6-26-2009

Number SA2717NM-D

This certificate, issued to UNITED AIRLINES, INC.

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 04.b of the Civil Air Regulations. See Type Certificate Data Sheet 4A25 for Special Conditions.

Original Product — Type Certificate Number: 4A25
Make: McDonnell-Douglas
Model: DC8-71

Description of Type Design Change: Installation of TCAS and Data Recording provisions, consisting of equipment mounting trays, antenna systems and cables, circuit breakers, and complete system interwiring, in accordance with United Airlines, DAS-1WE, sealed drawing list 2717, dated April 29, 1987 or later sealed revision.

Limitations and Conditions: This approval does not extend to other aircraft of this model 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 effect upon the airworthiness of that aircraft.

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: 3/15/87

Date reissued:

Date of issuance: 4/30/87

Date amended:



By direction of the Administrator
R.M. Casterline
(Signature)

R.M. Casterline
United Airlines DAS Coordinator DAS-1WE
(Title)

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

This certificate may be transferred in accordance with FAR 21.47.