

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety Washington, D.C. 20594

Maintenance Factual

January 9, 2018

ACCIDENT DCA17FA076 А.

Location:	Ypsilanti International Airport, Ypsilanti, Michigan
Date:	March 8, 2017
Time:	1452 Local Time
Aircraft:	Ameristar Air Cargo, Inc. Flight 9363, Boeing MD-83, Registration
	N786TW

GROUP B.

Group Chairman:	Gregory Borsari National Transportation Safety Board Washington, D.C.
Member:	Gary M Watson Federal Aviation Administration Irving, TX
Member:	Mohammad Hassibi The Boeing Company Seal Beach, CA
Member:	Richard Cole Ameristar Air Cargo, Inc. Addison, TX

C. <u>SUMMARY</u>

On March 8, 2017, about 1452 EST, Ameristar Air Cargo, Inc. dba Ameristar Charters flight 9363, a Boeing MD-83, N786TW, ran off the end of runway 23L after executing a rejected takeoff at Willow Run Airport (YIP), Ypsilanti, Michigan. The MD-83 was manufactured by McDonald Douglas, which merged with Boeing in August 1997. All 110 passengers and 6 crewmembers evacuated the airplane. One passenger was reported to have received a minor injury. The airplane sustained substantial damage (no post-crash fire occurred). The airplane was operating under the provisions of 14 Code of Federal Regulations (CFR) Part 121 as an on-demand charter flight and was destined for Washington Dulles International Airport (IAD), Dulles, Virginia. Daytime visual meteorological conditions prevailed at the time of the accident.

On March 10, 2017, the Maintenance Record Group met at Ameristar Air Cargo, Inc. Headquarters in Addison, TX to document N786TW maintenance program and records.

D. <u>DETAILS OF INVESTIGATION</u>

1.0 Air Carrier Certificates

Ameristar Air Cargo, Inc. is located at 4400 Glenn Curtiss Drive, Suite 202, Addison, Texas 75001. A Part 121 operations certificate number, MJYA749T, was originally issued to Ameristar Air Cargo, Inc. by the Federal Aviation Administration's (FAA) Flight Standards District Office (Southwest Region), original on September 5, 2000. Reissued on October 9, 2011.

See Attachment One

The Department of Transportation issued a Certificate of Public Convenience and Necessity for Interstate Charter Air Transportation to Ameristar Air Cargo, Inc d/b/a Ameristar Charter (Issued by Order 2006-8-9; on August 9, 2006 and effective on August 9, 2006). Ameristar Charter is allowed to engage in interstate charter air transportation of persons, property and mail.

2.0 Operations Specifications (OpSpecs)¹

Ameristar Air Cargo, Inc. Certificate MJYA749T, which includes the standards, terms, conditions, and limitations contained in the FAA approved Operations Specifications was reviewed. Some important facts were noted and listed:

¹ Operations Specifications contains the authorizations, limitations, and certain procedures under which each kind of operation, if applicable, is to be conducted by the certificate holder.

- (a) Section D072 (Continuous Airworthiness Maintenance Program or CAMP) of the OpSpecs authorized Ameristar Air Cargo, Inc. to maintain in accordance with the conditions and limitations specified in each of the approved ops specs. Each aircraft and its component parts, accessories, and appliances are maintained in an airworthy condition in accordance with applicable Federal Aviation Regulations and standards prescribed and approved by the administrator. The DC-9-83 CAMP is covered by Ameristar Air Cargo Inc. General Maintenance Manual Rev 42, December 15, 2016 and Work Content Manual Rev 7, June 15, 2015.
- (b) Section D076 of the OpSpecs authorized Ameristar Air Cargo, Inc. to use short-term escalations of maintenance intervals for check packages, check package individual line items or component time-change/task intervals. Short Term Escalation Limitations and Provisions for the DC-9-83 are the following:

Hours 0 - 1000: +10% not to exceed 50 hours Over 1000: +5% not to exceed 500 hours

Cycles 0 - 500: +10% not to exceed 20 cycles Over 500: +5% not to exceed 200 cycles

Calendar Time 0 - 150 days: +10% not to exceed 10 days Over 150 days: +5% not to exceed 50 days

Notes:

- No escalation of any maintenance check may exceed the equivalent of 500 operating hours
- "C" Checks are on a fixed interval scheduling and are not authorized an escalation of more than 30 calendar days
- An individual item may be escalated to a higher figure by an extended shortterm escalation predicated on justification presented to the assigned FAA Principal Airworthiness Inspector (maintenance or avionics as applicable) and subject to approval before exceeding the current short-term escalation limits.
- (c) Section D083 of the OpSpecs authorized Ameristar Air Cargo, Inc. to use a borrowed part (overhauled) from another operator when time in service of the available part exceeds the certificate holder's approved overhaul limit.

- (d) Section D085 of the OpSpecs Ameristar Air Cargo, Inc. has 2 B737-205, 4 DC-9-15F and 2 DC-9-83 aircraft in the fleet. Total of 8 aircraft.
- (e) Section D089 of the OpSpecs authorized Ameristar Air Cargo, Inc. to utilize the Maintenance Time Limitations specified in the Ameristar Air Cargo, Inc. DC 9-80 Work Content Manual, June 15, 2015.
- (f) Section D091 of the OpSpecs authorized Ameristar Air Cargo, Inc. to make arrangements with other maintenance providers to accomplish maintenance, preventive maintenance, or alterations for the certificate holder.
- (g) Section D095 of the OpSpecs authorized Ameristar Air Cargo, Inc. to use an FAA approved MEL for each fleet type listed in the OpSpec.
- (h) Section D097 of the OpSpecs authorized the Ameristar Air Cargo, Inc. Aging Aircraft Program including, repair assessment, supplemental inspections, electrical wiring interconnection systems (EWIS), fuel tank system maintenance and means of flammability reduction as part of the continuous airworthiness maintenance program for its fleet of airplanes.
- (i) Per section E096 of the OpSpecs, Ameristar Air Cargo, Inc. is authorized for a Weight and Balance Program. Ameristar is authorized to use individual aircraft weights outlined in the Ameristar empty weight and balance program for each fleet type. Each DC-9-83 aircraft weighed every 36 months per the Ameristar DC-9AOM Volume I and 7 and MD-83 Weight and Balance Control and Landing Manual.

3.0 Type Certificate Data Sheet

The Type Certificate Data Sheet (A6WE) prescribes conditions and limitations under which the product for which the Type Certificate (TC) was issued meets the airworthiness requirements of the Federal Aviation Regulations. According to the document, The Boeing Company is the holder of the TC.

McDonnell Douglas Corporation, Long Beach, California, merged with The Boeing Company in 1997. They retained ownership of type certificate A6WE until it was transferred to The Boeing Company on September 27, 2010.

4.0 Aircraft Information

The McDonnell Douglas Corporation manufactured the airplane which was originally purchased by Irish Aerospace Leasing and delivered to Avianca on May 1, 1992. The aircraft

ownership transferred to Sierra America Corporation and Ameristar Air Cargo, Inc. leased the aircraft on November 30, 2010. Ameristar placed the aircraft into service September 21, 2011. The airplane had 41,008.6 total flight hours with 39,472 total flight cycles at the time of the accident.

The airplane was equipped with two Pratt and Whitney JT8D-219 engines and a Honeywell GTCP 281276-1 Auxiliary Power Unit (APU). The engines and APU had accumulated the following operating times at the time of the accident:

	No.1 Engine	No.2 Engine	APU
Manufacturer	Pratt & Whitney	Pratt & Whitney	Honeywell
Part Number	JT8D-219	JT8D-219	GTCP 281276-1
Manufacture Date	9/24/2002	12/23/2002	Unknown
Date Installed	11/5/2016	1/27/2014	6/19/2014
Serial Number	717829	725926	P-801C
Time Since Restore (Engine /APU hours)	63,358.3	33,717.1	N/A
Total Cycles Since Restore (Engine/APU cycles)	32,980	36,858	N/A
Engine Total Time Hours	63,384.9	34,202.2	14,310.6

Engine and APU Information

	No.1 Engine	No.2 Engine	APU
Engine Total Cycles	32,999	37,176	N/A
Location of Engine/APU Installation	ADS	OSC	ADS
Total Time of Airframe at engine/APU installation (hours)	40,982	40,523.5	40,720.1
Total Cycles of Airframe at engine/APU installation	39,453	39,154	39,275

5.0 Maintenance and Inspection Programs

The Ameristar Air Cargo, Inc. the DC 9-80 series maintenance program is based on the McDonnell Douglass On Aircraft Maintenance Planning document report 761-93 and is referenced in AAC OAMP Report 761-93, Rev 11 dated August 1, 1993.

The following are summaries of each check. Further itemized tasks can be seen in the General Maintenance Manual and Work Content Manual.

"Service Check" – Accomplished every 4 flight days, not to exceed 7 Calendar days. The 4 flight days may or may not have gaps between days. Service check is walk around check to examine the aircraft visually for discrepancies, security, replenishment of fluids and a review of the aircraft flight logbook.

"R" Check – Accomplished every 275 flight hours or 120 days whichever occurs first. An R check is routine maintenance check to ascertain the overall condition and serviceability of the aircraft. It consists of general visual security inspection exterior structure, surfaces, landing gear well interiors and engine accessories in addition to special items and the service check.

"A" Check - Accomplished every 450 flight hours or 120 days whichever occurs first. An A check is a walk around of the aircrafts external and internal area/zone(s) to assure continued airworthiness of the aircraft's powerplants, systems, components and structures. It also consists of a review of the flight log book and should be performed at station where experienced maintenance personnel are available.

"C" Check – Accomplished every 3,500 flight hours or 24 months whichever occurs first. A "C" Check is a comprehensive inspection of installations with maximum access to components and systems in various zones. Also, qualitative and quantitative checks are performed on the components/systems to detect deterioration in the performance of the component/system.

Special Inspection Checks, Structural Inspections and the Corrosion Prevention and Control Program are incorporated into the existing maintenance program and addressed as standalone checks and scheduled accordingly.

Ameristar Air Cargo, Inc. uses a Pratt and Whitney Engine Health Monitoring (EHM) for condition monitoring of its JT8D engines.

The following is the history of N786TW that lists the time limitation for inspection and check

procedures:
 Checks
 Date of recent Inspection
 Location
 Total Time
 Total Cycles

 Service
 3/8/2017
 YIP
 41,008.60
 39,472

 Check
 Image: Check
 Image: Check
 Image: Check
 Image: Check

Service Check	3/8/2017	YIP	41,008.60	39,472
A Check	12/30/2016	ADS	40,989	39,457
2A Check	12/30/2016	ADS	40,989	39,457
R Check	12/30/2016	ADS	40,989	39,457
C Check	8/26/2015	OSC	40,871.90	39,365
2C Check	8/1/2013	OSC	40,397.20	39,064
3C Check	7/22/2011	DAL	39,976.70	38,796
4C Check	7/22/2011	DAL	39,976.70	38,796
5C Check	LH/RH Overwing Ice Protection Heater Blanket Assembly			
	NOTE: N786TW – NA per equipment installed.			
8C Check	5/29/2006	AVI	32,630	N/A

6.0 Continuing Analysis and Surveillance System (CASS)²

To comply with requirements of 14 CFR Part 121.373, Ameristar Air Cargo, Inc. has an approved CASS program, which is a systems approach to assess the performance and effectiveness of the Ameristar inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiencies in those programs.

The purpose of the CASS program is:

- (a) Evaluate the entire continuous aircraft maintenance program to determine its effectiveness in maintaining company aircraft, engines and components to the highest airworthiness standards. A data collection and analysis system developed to assist in determining and monitoring aircraft performance, both short term and long term, including an emergency response directly related to the performance of the affected system.
- (b) The Continuing Analysis and Surveillance System through the use of audits reviews the performance of the administrative and supervisory aspects of the entire continuous aircraft maintenance program. This is to ensure that all agencies and people involved in the maintenance program are in compliance with company manuals, applicable regulations and industry standards.

The December 2016 to March 2017 CASS report was reviewed with no issues noted with the elevator, elevator controls, hydraulic or elevator structures; however, it validated the existence of an actively managed program.

7.0 Minimum Equipment List (MEL)³

Ameristar Air Cargo, Inc. was authorized to use an approved MEL on its airplanes per its OpSpecs. At the time of the accident, there were no open MEL items.

² As established by 14 CFR Part 121.373, each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventative maintenance and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person. ³ The FAA approved Minimum Equipment List contains a list of equipment and instruments that may be inoperative on a specific aircraft for continuing flight beyond a terminal point.

8.0 Supplemental Type Certificates (STC)⁴

Supplemental Type Certificates (STCs), supplied by air carrier, were reviewed. A total of 11 STCs were documented by the operator. All STCs in the listing were installed by the previous owner/operator of the airplane.

9.0 Airworthiness Directives (AD)⁵ and Service Bulletins (SB)

Ameristar Air Cargo, Inc. provided an AD summary for review. The AD summary contained the applicable Service Bulletins. A review of Airworthiness Directive status lists for the airplane, powerplants and appliances were conducted. A detailed review of all Airworthiness Directives (AD) relative to this make and model aircraft was completed, paying particular attention to the tail flight controls. All ADs were accounted for, and were verified as being in compliance or previously complied with.

10.0 Aircraft Flight Logs

Aircraft Flight Logs were reviewed from October 2016 thru March 2017. The review focused on flight control discrepancies on the incident airplane. No discrepancies of flight control issues were noted.

On the inbound to Ypsilanti, MI. flight there were three log items generated.

- (a) Navigation number one will not receive ILS Frequency. Maintenance replaced the navigation receiver.
- (b) Forward Flight Attendant seat shoulder harness will not retract. Maintenance adjusted the harness.
- (c) Auto Throttles will not engage. After replacing the navigation receiver, maintenance performed the Auto Throttle system test and the Digital Flight Guidance System return to service test, both tested good.

11.0 Weight and Balance Summary

Ameristar Air Cargo, Inc. uses a weight and balance program to ensure compliance with applicable airworthiness requirements and aircraft operation limitations. Air Operations weighs all aircraft on a scheduled basis to ensure accuracy of published basic operating weight data.

⁴ The FAA issues Supplement Type Certificates, which authorize a major change or alteration to an aircraft, engine or component that has been built under an approved Type Certificate.

⁵ Airworthiness Directive (AD) is a regulatory notice sent out by the FAA informing the operator of an action that must be taken for the aircraft to maintain its airworthiness status.

DC 9-83 aircraft must be weighed every 36 calendar months. The last weight and balance for N786TW was performed on August 1, 2015 and was accomplished at Oscoda, MI.

Basic Operating Weight:	87,304.1	pounds
Arm:	929.6	inches
Moment:	81,156,224.08	lb-inches*

* Weight and Balance calculations provided by Ameristar Air Cargo, Inc. Calculations were rounded to two decimal points.

12.0 Service Difficulty Reports (SDR)⁶ and Mechanical Interruption Summary Report (MISR)⁷

There is one SDR on file for corrosion found on the right-hand cockpit window lower zee channel and fasteners discovered during the 9/17/2015 "C" check at Kalitta. The Zee channel and fasteners were replaced in accordance with the SRM.

13.0 Major Repairs and Alterations

Major repairs and alterations were documented and reviewed. There were 46 major repairs and eight major alterations. The review concentrated on the flight control system of the airplane. There were no alterations or major repairs accomplished on the flight control system.

14.0 Time Limit Components

Time Limit component status for the airplane, the two installed powerplants and the APU were reviewed. The review included time limited rotable components installed on N786TW. Components are tracked by the manufacturer part and serial number. No discrepancies were noted during the review.

15.0 Maintenance Tracking

As inspections, non-routine or line maintenance are performed, any information that is required to be tracked, i.e. total times, cycles, next inspection or event due, life limited articles are provided to the Records Department for data entry into the company's database software

⁶ As required under 14 CFR 121.703, each scheduled operator is to report the occurrence or detection of each failure, malfunction or defect concerning (a) fires during flight, (b) false fire warning during flight, (c) engine exhaust system that causes damage during flight, (e) an aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes during flight, (f) engine shutdown during flight, (g) a propeller feathering, (h) aircraft structure requiring major repairs, (i) cracks, corrosion, (j) other safety critical issues as stated in the FAR part. These occurrences must be reported within 72 hours of the event.

⁷ Each scheduled operator is required under 14 CFR Part 121.705 to submit a summary of any (a) interruption to flight, (b) unscheduled change of aircraft en route, or unscheduled stop or diversion from a route caused by known or suspected mechanical difficulties or malfunctions that are not required to be reported as service difficulty reports.

program, "Flight Ops". This database tracks flight hours and cycles, calendar items for the airframe, engines, Auxiliary Power Unit (APU), emergency and life limited articles. Access to "Flight Ops" is limited to the Director of Quality Control (DQC), Director of Maintenance (DOM) and the Records Clerk. An Excel spreadsheet is produced from this database, showing due items and is available to all company personnel.

16.0 Vendors

The Maintenance Group reviewed the Approved Vendor List provided by Ameristar Air Cargo, Inc. Audits of their vendors are conducted on a 24-month basis or on a more frequent schedule based on findings. There are 46 vendors that are on the approved vendor list with two being an essential service provider for Ameristar Air Cargo, Inc. 12 of the vendors are now due an audit and are on a thirty-day grace period until the audit is accomplished. If the audits are not completed within this timeframe the vendors will be removed from the approved vendor list. There were no discrepancies noted during the review.

17.0 Method of Record Keeping

As inspections, non-routine or line maintenance are performed, the original, hard copy documents are electronically transmitted to Maintenance Control (MOC) for initial review and concurrence prior to aircraft release. The original documents are then provided to the Ameristar Air Cargo, Inc. Records Department for processing, to comply with the requirements of 14 CFR 121.380 and 14 CFR 121.380A.

The Records Department completes a review of the original documents for general content and accuracy of numerical entries. Records are retained for a final, monthly review by the DOM and the DQC. Following the final review, the records are manually filed in individual filing cabinet(s) identified for each individual aircraft. The aircraft file cabinets are kept in a central, secured location, known as the "Maintenance Library". The Maintenance Library is located within the administrative building at the Addison Airport facility. Access to the Maintenance Library is limited to the DOM, DQC and Records Clerk. As a backup, the files are electronically scanned. Those electronic files are kept on two servers. One being located at the administrative building and another is located off site.

18.0 Flight Recorder Parameter Verification

The flight recorder (FDR) parameter verification is a 24-month task per the Ameristar Air Cargo Inc. maintenance program. The review process verifies that each parameter is being recorded correctly and if not, corrective action is taken. The parameter verification reviews both the FAA mandatory parameters and non-mandatory parameters. The last check was completed on July 21, 2015 by Avionica, Inc. Miami, FL. The FDR was removed from the aircraft and sent to Avionica for data download and parameter verification. The FDR was then returned and

reinstalled in the aircraft. The FDR data analysis showed several parameters that needed attention and were corrected by Ameristar maintenance provider during the airplane's C check.

The following discrepancies were identified during the FDR analysis along with the troubleshooting and corrective action taken.

- (a) Vertical acceleration. Replaced the accelerometer.
- (b) Longitudinal acceleration. Replaced the accelerometer.
- (c) Latitudinal acceleration. Replaced the accelerometer.
- (d) Control wheel position. Found words 9 & 14 utilized for control wheel position and not words 25 & 27 as indicated on the report. Replaced the flight acquisition data unit (FADU).
- (e) Control column pitch position. Replaced the FADU.
- (f) Rudder pedal position. Found words 27 & 44 utilized for rudder pedal position and not words 24 & 25 as indicated on the report.
- (g) Radio altimeter No.1. Found parameter on word 62 and not word 60 as indicated on the report.
- (h) Marker Beacon. Failed capture parameter. Replaced the FADU.

19.0 Manuals

- (a) <u>General Maintenance Manual (GMM)</u> This section provides Ameristar Air Cargo, Inc. operations and overview of how the policies, procedures, and documents in its manual system ensure compliance with the Federal Aviation Administration's (FAA) regulatory requirement for a Continued Airworthiness Maintenance Program (CAMP) as authorized in FAA issued Operation Specifications.
- (b) <u>Work Content Manual (WCM)</u> The Ameristar Air Cargo, Inc. work content manual for the MD83 aircraft contains the approved maintenance program requirements, task cards and maintenance intervals. The maintenance program is based on the McDonald Douglas "On Aircraft Maintenance Planning" (OAMP) document report No. 761-93, revision 11, dated August 1, 1993. Work cards in this manual were developed by the Douglas Aircraft Company, Maintenance Check Manual (ME-0061), original dated March 1, 1997.
- (c) <u>Illustrated Parts Catalog (IPC)</u> The IPC is intended for use in provisioning, requisitioning, storing, and issuing replaceable aircraft/engine parts and units, and identifying these parts. It is also used to list and illustrate assemblies and detailed parts, which are utilized for the aircraft/engines operated by Ameristar. The part number content of the IPC arrangement and breakdown sequence of items is compatible with Air Transport Association (ATA) No. 100.

- (d) <u>Maintenance Manuals (MM)</u> The Maintenance Manual contains the information necessary to service, troubleshoot, functionally check, repair and/or replace components installed on the aircraft/engines operated by Ameristar. The manual identifies limits and tests for the associated components or systems.
- (e) <u>Minimum Equipment List, Configuration Deviation List, and Dispatch Deviation</u> <u>Procedures</u> - This manual provides information pertaining to the dispatch of aircraft with inoperative system(s)/configuration deviation and also references maintenance procedures relating to inoperative MEL items.
- (f) <u>Structural Repair Manual (SRM)</u> This manual contains material identifications for structure, subject to repairs generally applicable to structural components of the aircraft that are most likely to be damaged. Structural damage criteria fastener installation and procedures that must be performed concurrently with structural repair are identified.
- (g) <u>Wiring Diagram Manual (WDM)</u> The WDM Manual contains combined electrical and electronic wiring diagrams and schematics, an electrical and electronics list, and electrical and electronic charts. The equipment list, contained within the WDM, is an approved source for obtaining correct part numbers for aircraft, engines or components.

20.0 Flight Control Maintenance - Elevator

The maintenance group reviewed the records associated with the flight controls installed on N786TW at time of the accident. This review focused on the elevator and stabilizer for the work completed during the C-checks, dated July 31, 2013 and August 26, 2015 as well as any special inspections.

A review of the "C" Check records completed in August 2015, including all non-routine work cards was completed relative to the horizontal stabilizer and both elevators. The "C" Check inspection of this area required a detailed visual inspection (DVI) of the skins, internal structures, attachments and actuation mechanisms. The inspection was completed with no non-routine work cards being generated for this area. A Corrosion Control (CPCP) inspection was also performed in this area with no findings of corrosion.

A review of the previous "C" Check Inspection completed in July 2013 revealed seven non-routine work cards generated for discrepancies found on both elevators and tabs. Four of the non-routines involved hail dents. The left elevator and tab each had hail dents which requires periodic re-inspection. The right elevator and tab also had hail dents recorded which requires periodic re-inspection. The re-inspection requirement is at a 500-hour repetitive inspection interval. A Special Inspection task was created for the 500-hour inspection of the hail dents for

each elevator and tab. The right elevator float tab was found to be delaminated and requires a more restrictive 300-hour repetitive inspection per the Structural Repair Manual. The inspection was included in the 500-hour repetitive inspection. A 300-hour repetitive inspection was not found. The aircraft has flown 611.4 flight hours since the July 2013 C-check when the delamination was discovered.

A review of the 4C-check records completed in July 2011 was conducted concentrating solely on the elevator system revealed that the right elevator control tab was replaced. Part number 5910413-508, serial number 824EYZ was installed and rigged IAW AMM MD 80-27-30-03. In addition, there was a write-up for the right elevator damper leaking. A check of the right elevator damper was accomplished IAW MD 80-27-30-05 with no leaks noted.

Both right and left elevators were last lubricated December 30, 2016.

There are special inspection requirements within the MD-80 Aircraft Maintenance Manual of which one is for "High Wind/Gust Damage – Inspection Check". The procedure contains inspection and check instructions for high wind, wind/gust damage with aircraft on ground. If high winds or wind gust did not exceed 75 MPH (65 knots) and all doors are closed, no special inspections required. This inspection was not completed prior to the flight.

21.0 Door Slide Maintenance

The right front service door (R1) slide that was installed on N786TW, part number D29982-107, serial number 0218 was overhauled by Shoreline Marine, Inc. dba Safetech on July 6, 2015 in accordance with manufacturer component maintenance manuals (CMM) 25-26-48 rev 21 and CMM 25-65-11 rev 26.

The slide was subsequently installed on N786TW during the C-check performed by Kalitta on July 14, 2015 in accordance with AMM MD 80-25-62-00.

Submitted by: Gregory Borsari Aviation Accident Investigator Maintenance Attachment 1

Air Carrier Certificate



Federal Aviation Administration

Air Carrier Certificate

This certifies that

Ameristar Air Cargo, Inc. 4400 Glenn Curtiss Drive, Suite 202 Addison, Texas 75001

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed thereunder for the issuance of this certificate and is hereby authorized to operate as an air carrier and conduct common carriage operations in accordance with said Act and the rules, regulations, and standards prescribed thereunder and the terms, conditions, and limitations contained in the approved operations specifications.

This certificate is not transferable and, unless sooner surrendered, suspended, or revoked, shall continue in effect indefinitely.

By Direction of the Administrator.

Certificate number: ____MJYA749T___

Effective date: September 5, 2000 Re-Issue Date: October 9, 2011 Issued at ASW-07 DFW FSDO Michael J. Zenkovich (Signature)

Manager, Flight Standards Division (Title)

> Southwest Region (Region/Office)