NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

October 2, 2019

Maintenance Records – Factual

NTSB No: DCA19MA086

A. ACCIDENT

Operator:	Atlas Air Inc.
Location:	Trinity Bay, Houston, TX
Date:	February 23, 2019
Time:	1235 Central Time
Aircraft:	Boeing 767-375, Registration N1217A

B. MAINTENANCE RECORDS GROUP

Group Chairman:	Gregory Borsari National Transportation Safety Board Washington, D.C.
Member:	Neal McVickers Senior Director / Quality Control / Quality Assurance / Safety and Regulatory Compliance Atlas Air Inc.
Member:	Daniel Marcotte Senior Investigator Air Safety Investigations The Boeing Company
Member:	John Pieraccini Supervisory Principal Maintenance Inspector Flight Standards New York CMO Federal Aviation Administration

C. SUMMARY

On February 23, 2019, at 1239 central standard time, Atlas Air flight 3591, a Boeing 767-375BCF, N1217A, entered a rapid descent from 6,000 ft and impacted a marshy bay area about 40 miles southeast of George Bush Intercontinental Airport (KIAH), Houston, Texas. The two pilots and one nonrevenue jumpseat pilot were fatally injured. The airplane was destroyed and highly fragmented. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 121 domestic cargo flight, which originated from Miami International Airport (KMIA), Miami, Florida, and was destined for KIAH.

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LIST OF ACRONYMS

ACSS	AIRCRAFT COMMUNICATION SURVEILLANCE SYSTEM
AD	AIRWORTHINESS DIRECTIVE

LIST OF ACRONYMS – Continued

ADF	AUTOMATIC DIRECTION FINDER
AMM	AIRCRAFT MAINTENANCE MANUAL
AMOC	ALTERNATE METHOD OF COMPLIANCE
AOA	ANGLE OF ATTACK
AP	AUTO PILOT
APU	AUXILIARY POWER UNIT
ATC	AIR TRAFFIC CONTROL
AWL	AIRWORTHINESS LIMITATIONS
BCF	BOEING CONVERTED FRIEGHTER
BITE	BUILT-IN-TEST EEQUIPMENT
BWI	BALTIMORE WASHINGTON INTERNATIONAL
CAMP	CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM
CASE	COORDINATING AGENCY FOR SUPPLIER EVALUATIONS
CASS	CONTINUING ANALYSIS AND SURVEILLANCE SYSTEM
CDL	CONFIGURATION DEVIATION LIST
CDU	CONTROL DISPLAY UNIT
CFR	CODE OF FEDERAL REGULATIONS
CVG	CINCINNATI AIRPORT
DDG	DISPATCH DEVIATION GUIDE
DFDAU	DIGITAL FLIGHT DATA ACQUISITION UNIT
DMI	DEFERRED MAINTENANCE ITEM
DTR	DAMAGE TOLERANCE RATING
ECS	ENVIRONMENTAL CONTROL SYSTEM
EGAT	EVERGREEN AVIATION TECHNOLOGIES
EICAS	ENGINE INDICATING CREW ALERTING SYSTEM
EO'S	ENGINEERING ORDERS
ETOPS	EXTENDED RANGE TWIN ENGINE OPERATIONAL PERFORMANCE STANDARDS
EWIS	ELECTRICAL WIRING INTERCONNECTION SYSTEM
FCD	FLEET CAMPAIGN DIRECTIVE
FC	FLIGHT CYCLES
FH	FLIGHT HOURS
FIM	FAULT ISOLATION MANUAL
FMC	FLIGHT MANAGEMENT COMPUTER
GMM	GENERAL MAINTENANCE MANUAL
GVI	GENERAL VISUAL INSPECTION
HF	HIGH FREQUENCY
IAH	HOUSTON AIRPORT
IAW	IN ACCORDANCE WITH
IRU	INERTIA REFERENCE UNIT
LLM	LOWER LANDING MINIMUM
MAC	MEAN AERODYNAMIC CHORD
MCC	MAINTENANCE CONTROL CENTER
MCDU	MULTI-PURPOSE CONTROL DISPLAY UNIT
MDDR	MAINTENANCE DEFERRED DEFECT REPORT

LIST OF ACRONYMS – Continued

MIA	MIAMI AIRPORT
MIP	MAINTENANCE INSPECTION PROGRAM
MISR	MECHANICAL INTERRUPTION SUMMARY REPORT
MMEL	MASTER MINIMUM EQUIPMENT LIST
MPD	MAINTENANCE PLANNING DOCUMENT
MRBR	MAINTENANCE REVIEW BOARD REPORT
MSG	MAINTENANCE STEERING GROUP
NPRM	NOTICE OF PROPOSED RULE MAKING
OEM	ORIGINAL EQUIPMENT MANUFACTURER
OpSpecs	OPERATIONS SPECIFICATIONS
PCMCIA	PERSONAL COMPUTER MEMORY CARD INTERNATIONAL ASSOCIATION
QA	QUALITY ASSUARANCE
RFD	ROCKFORD ILLINOIS AIRPORT
RH	RIGHT HAND
RII	REQUIRED INSPECTION ITEM
RVSM	REDUCED VERTICAL SEPARATION MINIMUMS
SB	SERVICE BULLETIN
SDR	SERVICE DIFFICULTY REPORT
SRM	STRUCTURAL REPAIR MANUAL
STC	SUPPLEMENTAL TYPE CERTIFICATE
TC	TYPE CERTIFICATE

D. DETAILS OF INVESTIGATION

1.0 Air Carrier Certificates

Atlas Air Inc., principle base of operation is located at 7310 Turfway Road, Suite 400, Florence, Kentucky 41042. A Part 121 operations certificate number, UIEA784U, authorizing Flag, Domestic and Supplemental operations was originally issued to Atlas Air on February 23, 1993, by the Federal Aviation Administration (FAA). Flight Standards District Office AGL-05 (see Attachment 1).

2.0 Operations Specifications (OpSpecs)[1]

Atlas Air Certificate UIEA784U, which includes the standards, terms, conditions, and limitations contained in the FAA approved Operations Specifications was reviewed. Some important facts were noted and listed:

(a) Section D072 Continuous Airworthiness Maintenance Program (CAMP) of the OpSpecs authorized Atlas Air to maintain in accordance with the conditions and

[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.

limitations specified in each of the approved OpSpecs. 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 FAA administrator. The B767-375 CAMP is covered by Atlas Air Express General Maintenance Manual, Version 18, Chapter 1, Page 1.2.1.

(b) Section D076 of the OpSpecs authorized Atlas Air to use short-term escalations of scheduled maintenance intervals (maximum of 10 percent not to exceed 500 hours-time in service), Check packages (A-Check – 65 hours in service, C-Check – 30 Days and D-Check – 60 Days), check package individual line items and component time-change/task intervals.

(c) Section D081 of the OpSpecs authorized Atlas Air to participate in a parts pool agreement subject to conditions and limitations. Only the parts pool participants listed in the OpSpecs are eligible to provide parts to the certificate holder.

(d) Section D083 of the OpSpecs authorized Atlas Air to use short-term escalations for borrowed parts subject to Overhaul requirements. The certificate holder is authorized to use a borrowed part (overhauled) from another operator when time-in-service of the available part exceeds the certificate holder's overhaul time limit.

(e) Section D084 of the OpSpecs authorized Atlas Air to conduct ferry flights using a special flight permit with continuous authorization in accordance with the limitations and provisions of this specification.

(f) Section D085 of the OpSpecs, Atlas Air has 33 B747-400, 4 B747-8, 10 B767-200 and 27[2] B767-300 aircraft in the fleet. Total of 74 aircraft.

(g) Section D086 of the OpSpecs authorized Atlas Air maintenance program for two engine airplanes used in extended range operation of 180 minutes for the B767-300 fleet, and one B767-277 (N767MW).

(h) Section D089 of the OpSpecs, authorized Atlas Air to use the Time Limitations specified in the MSG-3 Maintenance and Inspection Program manual, version 31, dated July 17, 2018 for the B767 fleet.

[2] Includes aircraft N1217A.

(i) Section D090 of the OpSpecs authorized Atlas Air to utilize CASE[3] as a means of qualifying a vendor for services, parts, and materials to satisfy the requirements of 14 CFR Section 121.373.

(j) Section D091 of the OpSpecs authorized Atlas Air to make arrangements with other maintenance providers to accomplish maintenance, preventive maintenance, or alterations for the certificate holder.

(k) Section D092 of the OpSpecs authorized Atlas Air for Operations in Designated Reduced Vertical Separation Minimum (RVSM) which included aircraft N1217A.

(l) Section D095 of the OpSpecs authorized Atlas Air to use an FAA approved minimum equipment list (MEL) for each fleet type listed in the OpSpecs.

(m) Section D097 of the OpSpecs authorized the Atlas Air Aging Aircraft Program including, repair assessment, supplemental inspections, electrical wiring interconnection systems (EWIS), fuel tank system maintenance and means of flammability reduction[4] as part of the continuous airworthiness maintenance program for its fleet of airplanes.

(n) Per section E096 of the OpSpecs, Atlas Air is authorized for a Weight and Balance Program. Atlas Air is authorized to use individual aircraft weights outlined in the Atlas Air empty weight and balance program for each fleet type. For the B767-375 each aircraft weighed initially at 36 months per the Atlas Air Weight and Balance Manual, General Version 8, dated July 18, 2018.

3.0 Type Certificate Data Sheet

The Type Certificate Data Sheet (A1NM) 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.

4.0 Aircraft Information

The Boeing Company manufactured the accident airplane (B767-375, serial number 25865) on February 28, 1992. The airplane was originally manufactured in a passenger configuration and later converted to a cargo configuration. Atlas Air placed the aircraft on the operating

[3] The Air Carriers section of the Nonprofit Coordinating Agency for Supplier Evaluations (C.A.S.E.) was organized as a means of sharing non-prejudicial supplier quality approval data among the membership airlines. This increases surveillance coverage of suppliers and thereby upgrades their quality programs. It also has an economic impact on each C.A.S.E. member by decreasing the cost of supplier surveillance and making their surveillance programs more effective.

[4] Fuel tank inerting system requirement not applicable to N1217A.

certificate on April 6, 2017. The airplane had accumulated 91,063:02 total flight hours with 23,316 total flight cycles at the time of departure from Miami, FL., on February 23, 2019.

The airplane was equipped with two General Electric CF6-80C2B6F engines and a Honeywell Auxiliary Power Unit (APU). The engines and APU had accumulated the following operating times at the time of the accident:

Engine and APU Information

	No.1 Engine	**No.2 Engine**	**APU**
Manufacturer	General Electric	General Electric	Honeywell
Part Number	CF6-80C2B6F	CF6-80C2B6F	GTCP331-200ER
Manufacture Date (installed new date)	28 February 1992	01 December 1989	22 June 1991
Date Installed	22 March 2017	22 March 2017	24 September 2018
Serial Number	702680	702250	1771
Time Since Restore (Engine /APU hours)	4024:50	4024:50	2202:00
Total Cycles Since Restore (Engine/APU cycles)	1354	1354	1940
Engine Total Time Hours	109,590:28	107,540:45	48,443:00
Engine Total Cycles	14,345	17,312	18,857
Location of Engine/APU Installation	QPG	QPG	CVG
Total Time of Airframe at engine/APU installation (hours)	87,038	87,038	90,232
Total Cycles of Airframe at engine/APU installation	21,962	21,962	22,638

The last shop visit for both engines was accomplished at Evergreen Aviation Technologies (EGAT), Taoyuan, Taiwan. EGAT is an FAA-approved Part 145 repair station, No. E8VY0800.

5.0 Maintenance Program

Atlas Air aircraft, including engines, systems and appliances, are maintained in a continuous state of airworthiness by a continuous airworthiness maintenance program. The B767 MSG-3 maintenance and inspection program manual provides the specification utilized in performing Boeing 767 scheduled maintenance. The maintenance program is based on the following:

- B767 Maintenance Review Board Report (MRBR) document D622T001-MRBR, February 2011.
- B767 Maintenance Review Board Report (MRBR) document D622T001-MRBR, Temporary Revision February 2012.
- B767 Maintenance Planning Data (MPD) Document D622T001, April 2011.
- B767 Damage Tolerance Rating (DTR) Document D622T001-DTR.
- B767 Type Certificate Data Sheet A1NM.
- General Electric CF6-80C2 Type Certificate Data Sheet E13NE.
- B767 Service Bulletins (SB).
- FAA Airworthiness Directives (AD).
- Certification Maintenance Requirements and Airworthiness Limitations.
- Atlas Air ETOPS Maintenance Manual.
- Atlas Air Engineering Orders.

The Systems Maintenance, Structural, and Zonal Inspection Program are flight hour, flight cycle, and calendar time sensitive.

The following are the intervals for each check.

Transit Check - is accomplished prior to each flight unless a higher-level check is required. The transit check includes a walkaround visual inspection of the interior and exterior for obvious damage, leaks, proper operating equipment, security of attachment and check of the fluid levels.

ETOPS Pre-Departure – B767 ETOPS designated aircraft receive an ETOPS a pre-departure service check no earlier than four elapsed hours prior to an ETOPS departure.

Daily Check – includes the requirements of a Transit Check, completed every 48 elapsed hours.

A Check (Systems/Powerplants) – interval is 750 flight hours and applies to all multiples of A tasks up to A12. A1 (750 flight hours), A2 (1,500 Flight Hours), A3 (2,250 flight hours), and so on up to A12. After A12 the cycle starts over at A1.

SA (Structures) – interval is 300 flight cycles and applies to all multiples of SA tasks up SA5. SA1 tasks (300 Flight Cycles), SA2 tasks (600 flight cycles), SA3 task (900 flight cycles), and so on up to SA5. After SA5 the cycle starts over SA1.

C Check (Systems/Powerplants) – interval is 6,000 flight hours or 18 months, whichever comes first and applies to all multiples of C-checks up to C24. C1 (6,000 Flight Hours, 18 Months), C2 (12,000 Flight Hours, 36 Months), C3 (18,000 Flights Hours, 54 Months) and so on up to C24. After C24 the cycles start over at C1.

SC (Structures) – interval is 3,000 flight cycles or 18 months, whichever comes first and applies to all multiples of SC checks up to 24SC. 1SC (3,000 Flight cycles or 18 Months). 2SC (6,000 Flight Cycles or 36 Months), 3SC (9,000 Flight Cycles or 54 Months), and so on up to 24SC.

Timed Control Items – These tasks are tracked independently and may be packaged with a letter check or scheduled independently. They are tracked in flight hours, flight cycles, calendar time or a combination of intervals and connotated with “whichever comes first” or “whichever comes later”.

The following is the history of N1217A that lists the most recent check completed:

Check Type	**Date**	**Location**	**Total Time**	**Total Cycles**
Transit Check	23-Feb-2019	Miami	91,063:02	23,316
ETOPS Pre-Departure Check	23-Feb-2019	Honolulu	91,053:53	23,314
Daily Check	22-Feb-2019	Rockford	91,043:49	23,312
A Check (A7)	17 – Feb-2019	Miami	91,019	23,302
SA Check (SA2)	17 – Feb-2019	Miami	91,019	23,302
C Check	18-Aug-2018	Jacksonville (VQQ)	89,815	22,917
SC Check (SC1)	18-Aug-2018	Jacksonville (VQQ)	89,815	22,917

The Maintenance Records group reviewed the transit check completed prior to the accident flight. No discrepancies were entered in the logbook as a result of the transit check. See section 11.0 for details on the logbook review.

The Maintenance Records group reviewed the A Check package that was completed on 17-Feb-2019 in Miami. Brake assembly at position six was replaced (worn to limits). Nose wheel assembly position two was replaced as well as the number five main wheel assembly (both worn to limits). The APU battery was replaced for time.

The left-wing outboard flap had delamination on the trailing edge. The delamination was repaired IAW AMM 51-70-03.

Work card A-27-018-01, check of the Elevator Power control Actuator was reviewed. Maintenance performed the single Hydraulic System Check of each elevator Power Control Actuator using hydraulic system in sequence. The test was completed on February 15, 2019.

Work card A-53-406-00, routine general visual inspection of the door stops, sills, and frames was part of the most recent "A" check. Step 1.A.(1). (k). to perform GVI of the external portion of the door stops, sills, and frames was marked "N/A" in error for the Aft Lower Cargo Door.

A review of the C-Check package that was completed on August 18, 2018 in Jacksonville was performed. The review focused on the Airworthiness Directives, Aging Aircraft Items, Engineering Orders and the non-routine items generated during the visit. No discrepancies noted.

6.0 Aging Aircraft Inspection Report

During the passenger to cargo conversion visit at ST Aerospace – Singapore an aging airplane safety inspection and record review was completed March 10, 2017 in accordance with 14 CFR 121.1105. The maintenance group reviewed the report generated which covered the following:

- Executive Summary
- Records Review
- Findings from Record Review
- Repair Station Capabilities
- General Conclusion
- Pictorial Demonstration of Aircraft Condition
- Certificate of Review

The report included a summation of repairs and damage, wiring condition, interior structure including the main deck cargo bay, wings and pylons, corrosion inhibiting compounds, fuselage external structure. The report concluded that the general condition of the aircraft along with the

structure was good. The aircraft structure had a few external repairs located mainly in the lower bilge areas.

7.0 Continuing Analysis and Surveillance System (CASS)[5] and Reliability Program

To comply with requirements of 14 CFR Part 121.373, Atlas Air has an FAA accepted CASS program. CASS monitors the maintenance program performance and effectiveness through a closed loop system of four major activities; Surveillance, Data Analysis, Corrective Action; and Follow-up.

Organizational responsibilities, duties and procedures are contained in the General Maintenance Manual as well as the Reliability Reporting Manual. The GMM contains the Atlas CASS program description including how CASS works, what is examined, roles and responsibilities including the quality assurance audit program (internal and external audits). The Reliability Reporting manual contains the reliability program requirements; data collection, data generation, data analysis, display and reporting requirements.

CASS monitors all elements of a maintenance program. CASS will address effectiveness discrepancies that are identified through collection and analysis of operational data.

- **Airworthiness Responsibility** – The company is primarily responsible for performance of maintenance, including work done by maintenance providers on its aircraft.

- **Maintenance Manuals** – The content of all manuals, including maintenance manuals and technical content is the responsibility of the company. The manuals may be based on the original equipment manufacturer manuals or other information, but the company is required to use its own manuals. Manuals, publications and forms are useable, current, correct and readily available to all personnel required to use them.

- **Maintenance Organization** – The company has a maintenance organization that can effectively exercise and maintain operational control over all persons performing, supervising, managing, and amending the maintenance program.

- **Maintenance Schedule** – Sets out the appropriate item, task, and interval of the company's scheduled maintenance requirements. The maintenance schedule is task

[5] 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.

based and structured and modified as required to comply with the CASS data collection and analysis findings.

- **RII's** – Specific procedures, standards, and limits necessary for the acceptance or rejection of each RII and for periodic inspection and calibration of precision tools, measuring devices, and test equipment are contained within the GMM.

- **Contract Maintenance** – Vendors and suppliers are qualified and provide services and products according to the company's maintenance program and manuals.

- **Personnel Training** – The company ensures personnel, including those of contract maintenance providers, are competent to accomplish their duties.

- **Accomplishment and Approval of Maintenance and Inspection** – When accomplishing maintenance, preventive maintenance, alterations and inspections, the Company will ensure:
    - All vendor maintenance facilities and equipment, including base and line stations are adequate to perform maintenance.
    - Parts and components are properly stored dispensed, identified, and handled.
    - Tools and equipment are properly calibrated.
    - Requirements for specialized tools or training are identified and tools are provided.
    - Maintenance and alterations are performed according to methods, standards, and techniques as specified in the company's manuals.
    - Work interruptions and deferred maintenance are properly documented in shift turnover records and accomplished according to applicable procedures.
    - Major repairs and major alterations are properly classified and accomplished with approved technical data.
    - Logbook entries and Airworthiness Release Authority are executed by appropriately certificated; trained, qualified and authorized mechanics.
    - Logbook entries are completed according to the company's policies and procedures.

- **Maintenance Recordkeeping System –** Maintenance records and current status records are generated and retained in accordance with the company's policies and procedures.

CASS and Monthly Reliability reports were reviewed, containing data for both October and November 2018. Review of the reports validated the existence of an actively managed CASS and reliability program.

8.0 Minimum Equipment List (MEL)[6]

Atlas Air was authorized to use an approved MEL on its airplanes per its OpSpecs. MEL items were reviewed from September 1, 2018 to February 18, 2019. At the time of the accident, there were no open MEL items. MEL items noted below were selected and reviewed by the group.

Date Opened	Defect	Date Closed	Resolution
2/10/2019	Left Weather Radar Inoperative	2/12/19	Replaced weather radar transceiver
1/28/2019	Right FMC MCDU inoperative	1/31/2019	Replaced RH FMC
1/27/2019	Capt CDU (FMC) inoperative	1/27/2019	Removed CDU & Cleaned Connector
1/26/2019	Left FMC CDU Inoperative	1/26/2019	Replaced left CDU
1/9/2019	RH IRU Inoperative	1/9/2019	Replaced IRU
12/29/2018	RH FMC CDU Inoperative	12/29/2018	Replaced RH FMC
10/29/2018	Center autopilot inoperative	11/6/2018	Replace “C” servo valve

9.0 Supplemental Type Certificates (STC)[7]

Supplemental Type Certificates (STCs), supplied by air carrier, were reviewed. A total of 17 STCs were documented and installed. Three STC’s were installed by Atlas Air;

- ST02483LA – Installation of Main Deck Cargo Loading System March 3, 2017.
- ST02303CH – Installation of Mode S ATC Transponder with Elementary and Enhanced Surveillance Modes, August 16, 2018.
- ST02126LA – Installation of ACSS SafeRoute System, August 16, 2018.

10.0 Airworthiness Directives (AD)[8] and Service Bulletins (SB)

Atlas Air provided Aircraft, Powerplant and APU AD reports/status lists for aircraft N1217A for review by the investigative team. The AD reports contained the applicable Service Bulletins.

The maintenance record group reviewed the AD and AWL item complete listing. The listing contains each mandated requirement, the source document, method of compliance, due date, next

[6] 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.
[7] 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.
[8] 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.

due (if applicable), comment section, old AD if applicable, method of compliance and notes sections.

The group reviewed the engine AD tracking sheet for both engines and the APU. Each engine/APU is tracked individually by part number and serial number. No discrepancies were noted.

The group accomplished a detailed review of the package for AD 2012-09-04 on the Rear Spar Bulkhead Side Fittings – Fail Safe Strap. EO 6753A070 Rev 6 dated July 7, 2016 contains the requirements for AD 2012-09-04. The AD was superseded by AD 2004-19-06 R1. The EO contains the description and reason section for the AD as well as the AD effective date, AMOC numbers as applicable, effectivity list, and scheduling information. The EO part 2 provides the initial and repeat inspection time limits. Part 3 contains the terminating action which in this case, if a crack is found on the fail-safe strap the terminating action is performed. The EO Fleet Compliance Status during phase into Atlas OpSpecs provides the AD compliance information as well as future requirements. The EO task cards were reviewed by the group and there was no crack indication during the last accomplishment of the EO at ST Aerospace in Singapore on March 15, 2017.

Additionally, the group also reviewed AD 2008-06-06. The AD required operators to perform a detailed inspection of the Horizontal Stabilizer Trim Ballscrew, Ballnut, and Ballnut Return Tubes for wear, condition, security and relubrication of the Stabilizer Jackscrew. The AD was last completed on July 25, 2018. No findings were reported.

Atlas Air AD Process:

New or revised AD's or CFR's are routed to the Senior Director of Engineering and Maintenance Programs. The Senior Director of Engineering and Maintenance Programs, or designee, shall initiate a file for new or revised requirements to capture all associated communication, documentation or reference material. AD/CFR/NPRM Comment Sheet Form (Q2020) is initiated.

The responsible engineer shall detail each compliance requirement, effectivity, including thresholds and repeat intervals, options for repetitive inspection, modification, markings and terminating action.

If an AMOC is considered, then a risk management assessment will be instituted.

The comment sheet will list the documents required to convey the method of compliance. This includes EO's, Task Cards, as applicable, proposed MIP revisions, and Manual revisions. The method of compliance shall be listed.

The comment sheet, with AD/CFR/NPRM and other supporting documentation shall be circulated for initial review and approval to the Engineering Manager, Senior Director of

Engineering and Maintenance Programs, Senior Director of Quality Assurance/Quality Control, appropriate engineer for AD's/NPRM's affecting structures, systems, components, or powerplants.

Each reviewer shall verify applicability and that the compliance plan meets the requirements of the rule or directive and that no requirements remain un-addressed.

Comment sheets with the mandated requirements are provided to the Senior Manager of Aircraft Scheduled Services at which time a task is initiated in the electronic database to track each mandated requirement.

The Senior Director of Engineering and Maintenance Programs assigns the development of required EO's, FCD's, or Maintenance Tasks cards to Engineering or Maintenance Program staff as applicable.

The Senior Director of Engineering and Maintenance Programs will coordinate any required manual revisions with the Senior Director, Quality Assurance/Quality Control and other departments as required.

For AD's affecting appliances, or requiring component maintenance, the responsible engineer includes specific material disposition information on an EO Materials page.

11.0 Aircraft Flight Logs

Aircraft Flight Logs were reviewed from July 18, 2018 thru February 23, 2019. The review focused on the last 30 days. Logbook items noted below.

Date	Station	Discrepancy	Action
2/23/2019	MIA	With total fuel at 55 fuel was leaking into center tank for much of the flight	Performed fuel transfer & pressure checks with no fuel migration noted. Okay for continued service per FIM 2-8-41, task 801
2/18/2019	BWI	HSI "ADF" flag	Performed reset right ADF receiver and ops test good IAW 34-57-33. No flags in view
2/15/2019	MIA	Ref No MEL #89531. Right engine inlet cowl skin with dent at 6 o'clock. 1.5"x.025".	Inspected right engine inlet cowl skin dent and found within limits IAW SRM 54-15-01.
2/12/2019	CVG	Ref DMI 107125 left hand weather radar inop.	Removed & replaced LH WXR Transceiver IAW AMM 34-43-01. Op check good at this time. Placard removed.
1/31/2019	MIA	LT AOA caution discrete light in overhead panel inop.	Swapped spare module into left AOA position IAW AMM 33-16-02. Checks good.

Date	Station	Discrepancy	Action
1/29/2019	IAH	C Hydraulic demand pump EICAS will come on momentarily when flaps are moved	Performed hydraulic system adjustment test. No defects noted. Cycled flaps from 1-30 position multiple times. No EICAS message noted.
1/27/2019	CVG	Ref DMI 106475	Removed and cleaned the connector on the captains FMC CDU. Ops test good. Removed placard and closed DMI 106475
1/27/2019	RFD	Captain FMC screen dead	Transferred to MDDR 106475 IAW MEL 34-61-01-01, CAT C. Placard installed.
1/26/2019	CVG	Ref DMI 106426 left FMC	R&R left FMC control unit IAW AMM 34-61-02. Test good. Cleared DMI 106426.
1/25/2019	MIA	Standby Attitude Indicator out of order.	Operational check normal as per task 34-24-01-402-017 & 34-24-03-402-017.

12.0 Weight and Balance Summary

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

New aircraft inducted into Atlas Air must be weighed at 36 calendar months. The last weight and balance for N1217A was performed on March 24, 2017, at ST Aerospace, QPG Singapore.

Basic Operating Weight:	185034	pounds
Arm:	944.94	inches
Moment:	174846314.3	lb-inches

Per the Atlas Air basic operation weight and balance calculation sheet the percent MAC is 13.36% and the index is 37.94. Next weigh due March 24, 2020.

13.0 Service Difficulty Reports (SDR)[9] and Mechanical Interruption Summary Report (MISR)[10]

The Maintenance Records Group reviewed the Service Difficulty Reports for the accident aircraft for the date range February 1, 2018 to February 22, 2019. There were 102 SDR's and nine MISR on file. Items of note:

- October 28, 2018 – A 1,700 LBS split developed between the two main tanks during flight. The fuel burn on the gauges were about even. Maintenance troubleshot per FIM 28-41 fault tree 847. System okay, MCC Advised.
- September 11, 2018 – Passing FL 180 a loud bang was heard followed by the handle moving on the R2 Window. The indicator was between open/closed. Maintenance removed and replaced the R2 window and adjust IAW 56-11-02.
- July 13, 2018 – Cabin Altitude Auto 1 Status Message. Maintenance performed the BITE test of the Auto 1 Cabin Pressure Controller. No faults noted at this time, ref AMM 21-31-00.

14.0 Major Repairs and Alterations

Major repairs and alterations were documented and reviewed. 95 major repairs were accomplished on N1217A. 24 major alterations were on file. See attachment two for index of major alterations and repairs.

15.0 Passenger to Cargo Conversion

N1217A Passenger to Cargo major alteration started December 13, 2016 and was completed on April 5, 2017 by ST Aerospace at QGP Singapore. In addition to the conversion a Phase-In Check, C24 Check, SC24 Check, A12 Check, SA5 Check were also completed. At the time of the conversion the airplane had accumulated 87,038:12 total flight hours and 21,952 total flight cycles.

The maintenance group reviewed the Final Report prepared for Atlas Air dated April 24, 2017.

The passenger to cargo configuration change was accomplished IAW Boeing Service Bulletins.

SB767-00-0039 Collector service bulletin for all 767-300 BCF Airplanes.

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[9] 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.

[10] 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.

- Master lists each collector service bulletins for each airplane.

SB767-00-0087 Collector service bulletin for N1217A.

- **SB767-00-0091** Remove and Salvage Components.
- **SB767-00-0092** Functional Tests.
- **SB767-00-0220** Equipment and Flight Deck Installation.
- **SB767-00-0221** Wire Bundle and Wire Design Installation and Avionics Software Installations.
- **SB767-00-0276** Flight Controls, Payloads, Flight Deck, Door Configuration Change, Environmental Control Systems (ECS), Structures - Prebuild and Installation - A-3-3-A and A-A-1-A Alternate Door Configuration.
- **SB767-00-0277** Structures, Equipment Installation, Wire Provision, Flight Controls, Hydraulics, Fuels, Payloads, Flight Deck, Environmental Control Systems (ECS) and Mechanical Systems - Stable and Variable - A33A and AA1A Alternate Door Configuration.

There were 1,642 non-routine items generated during the visit. This included the non-routines from the Phase-In, C24, SC24, A12 & SA5 checks as well as the conversion from passenger to cargo. A review of the non-routine items was conducted mainly concentrating on the 422 non-routine items generated during the cargo conversion. Items such as mismatched pilot holes, oversized holes, short edge margins, gaps in angles, interference items with straps, splices, plates, shear webs, supports, floor panels, brackets, previous repairs, and holes with short edge margins. There were also non-routine items generated for electrical wire bundle routing, wire length, connection problems, such as pin locations and wiring configuration mis-match by effectivity. As a result of these non-routines, there were 422 requests for engineering assistance generated in order to disposition the findings which were completed prior to release of the aircraft.

16.0 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 N1217A. Components are tracked by the manufacturer part number and serial number. Atlas Air utilizes TRAX™ system for the tracking of components. The system tracks the manufacturer part and serial number. Components can be tracked by flight hours, flight cycles, calendar date or any combination of flight hours, flight cycles and date.

The maintenance group reviewed the time limit tracking reports for the airframe components and both engines. No discrepancies were noted.

17.0 Vendors

Per the OpSpecs, Atlas Air is also authorized to utilize CASE as a means for qualifying a vendor for services, parts, and materials to satisfy the requirements of 14 CFR 121.373. The

Maintenance Group reviewed the Approved Vendor List provided by Atlas Air. Atlas Air performs external audits of their vendors on a frequency of every 24 or 36 months. According to the GMM accomplishment schedule Line Maintenance, Fuel vendors, Repair/Overhaul facilities, Heavy Maintenance Facilities, Parts Pooling, Non-Certified, OEM Vendors are audited every 24 months. Tool Calibration and De-Icing (On-site) vendors are every 36 months. De-Icing desk top surveillance is performed every 12 months and CASE allocated audits occur at various times based on CASE requirements.

The maintenance group reviewed the most recent on-site audits for the vendors that completed the A-check on February 17, 2019 and the C-check on September 28, 2018. The A-check vendor was AMES located at Miami, FL. There were three moderate and two negligible findings. The C-check vendor was Flightstar located in Jacksonville, FL. There were two moderate and two negligible findings as a result of the audit.

18.0 Method of Record Keeping

Atlas Air - Air Carrier Manuals and Record keeping system maintains aircraft, engine, and component records on paper and stored offsite. The service is provided by Iron Mountain, Inc. Atlas Air is in the process of transitioning to electronic storage system Airvault™. Paper records are sent to the Atlas headquarters in Purchase, NY. Maintenance Planning receives the records which is then audited by QA, sorted and then boxed and archived offsite. This includes everything required by 14 CFR 121.380 and 14 CFR 121.380A.

19.0 Flight Recorder Parameter Verification

The flight recorder parameter verification at Atlas Air is performed every 12 months as per B767 MIP Manual. 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 flight recorder or PCMCIA Media cards are shipped to an approved vendor specified by the manager of Avionics Engineering for data analysis. The vendor forwards the results of the data analysis to the Manger of Avionics Engineering. If all parameters are found to be in limits, no further action is required. If any parameter is listed as suspect a maintenance item, either a log book item or a non-routine item will be generated for repairs. If a vendor reports no data or missing parameters were detected on the readout, the item maybe continued as a deferred item in accordance with established procedures contained within the DDG for that specific aircraft type. A verification test per AMM Chapter 31 must be accomplished to verify that all the required parameters are working after repairs are made. The last data download for N1217A was July 26, 2018. All parameters were reviewed. A few parameters could not be absolutely confirmed.

- VHF Keying No.3 – Not active for any of the flights reviewed.

- HF Keying – Not active.
- Master Warn – This parameter was triggered several times during the flight.
- A/P Engage – Recording normally but at once every four seconds, instead of once per second.

Atlas Air Engineering review determined that VHF Keying No.3 and HF Keying were not applicable for this aircraft configuration. The Master warning were actual messages and corrected. Atlas Air Engineering determined that A/P Engage parameter is built into the DFDAU software and is not modifiable.

20.0 Manuals

Atlas Air utilizes Boeing's OEM produced manuals to maintain the fleet of aircraft which are accessed via MyBoeing Fleet™. In addition, the following manuals are utilized.

(a) General Maintenance Manual (GMM) – This manual is designed to give instruction, policy and procedures regarding the day-to-day job functions, and the completion of routine paperwork. It also provides the following:
- A detailed description of the maintenance department's duties and job responsibilities by title.
- A detailed description of the Quality Assurance and Quality Control Department's duties and responsibilities.
- The detailed procedures for compliance with code of federal regulations as required in the areas of airworthiness release, tool and equipment calibration, maintenance analysis and surveillance, required inspection items, required reports, shift or work interruption records, aircraft/engine/component and appliance records retention, deferred maintenance item procedures, maintenance alerts, etc.

(b) Maintenance and Inspection Program Manuals
- Designed to provide procedures for routine maintenance service checks as well as heavy maintenance inspections.
- Outline the frequency of maintenance services and tasks by ATA System that is required to maintain the aircraft and its related systems in a continuous state of airworthiness.

(c) The Dispatch Deviation Guide also may be referred to as MEL/CDL. Designed to combine the FAA approved MMEL and CDL with the Boeing generated DDG which provide instructions and guidance material to aid in compliance with the MEL and CDL.

(d) Anti-icing/Deicing Manual.

(e) Approved Vendor List manual.

(f) Weight and Balance Manual.

(g) Reliability Report Manual.

(h) ETOPS Manual.

(i) Reduced Vertical Separation Manual.

(j) LLM / Autoland Maintenance Program Manual.

(k) Fatigue Critical Structure Program Manual.

Submitted by: Gregory Borsari
Aviation Accident Investigator - Maintenance

Attachment 1

Air Carrier Certificate

US Department
of Transportation
Federal Aviation
Administration

COPY

Air Carrier Certificate

This certifies that

ATLAS AIR, INC.
7310 TURFWAY ROAD, SUITE 400
FLORENCE, KENTUCKY 41042

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

[redacted]

Certificate number: UIEA784U

JAMES E. GARDNER
(Signature)

Effective Date: FEBRUARY 23, 1993

MANAGER
(Title)

Issued at: AGL-05

GREAT LAKES FLIGHT STANDARDS
(Region/Office)

Attachment 2

Listing - Major Alterations & Major Repairs

Major Alteration - 25865 - VN064 - LN 430

	EO Number	Title	Compliance Date
1	6722A014	AUTOFLIGHT - AUTOTHROTTLE - CHANGE TO ALLOW SELECTION OF TAKEOFF & CLIMB DERATES AND FIXED PERCENTAGE TAKEOFF & CLIMB DERATE LEVELS - 10% AND 20% - SB 767-22-0163 R1	1-Apr-2017
2	6723A093	COMMUNICATIONS - Fixed ELT Relocation	30-Mar-2017
3	6725A161	EQUIPMENT & FURNISHING - Installation of - Freighter Conversion - B767-300BCF	5-Apr-2017
4	6725A179	EQUIPMENT & FURNISHING - Installation of Back Up Portable Oxygen Bottle with Full Face Mask - Boeing 767-300 F/SF/BCF	18-May-2018
5	6728A008	FUEL - Engine Fuel Feed System - Main Tank Boost Pump Ground Fault and Center Tank Override and Jettison Pump Uncommanded On Protection - SB 767-28A0085R6 - AD 2011-25-05	28-Mar-2017
6	6731A034	INDICATING/RECORDING SYSTEMS - CAUTION AND WARNING FEATURES REVISION - SB 767-31-0367R2	1-Apr-2017
7	6731A039	INDICATING/RECORDING SYSTEMS - Installation of Teledyne Controls Wireless GroundLink® – Quick Access Recorder (WQAR) P/N 2243800-364 - STC ST01805LA	8-Aug-2018
8	6732A018	LANDING GEAR - WHEELS AND BRAKES - Brake Rod Assembly Inspection and Modification - SB 767-32A0126R1, SB 767-32-0132, SB 767-32-0183R1 - AD 94-03-07	18-Jan-2017
9	6734A008	NAVIGATION - Air Traffic Control (ATC) System - Add Extended Squitter Wiring for GPS Position	1-Apr-2017
10	6734A012	NAVIGATION - Air Traffic Control System - ATC Mode S Transponder Replacement	31-Mar-2017

Major Alteration - 25865 - VN064 - LN 430

	EO Number	Title	Compliance Date
11	6734A037	NAVIGATION - Traffic Alert and Collision Avoidance System (TCAS) - Replacement of the Rockwell Collins TCAS Change 7.0 Computer with TCAS Change 7.1 Computer	30-Mar-2017
12	6734A085	NAVIGATION - Elementary Surveillance (ELS) and Enhanced Surveillance (EHS) Installation - STC ST02303CH	16-Aug-2018
13	6734A108	NAVIGATION - NXT-800 Transponder and NXG-900 GPS with ADS-B Out Modification - STC ST02126LA	16-Aug-2018
14	6734A062	NAVIGATION - FMCS/ILS - REPLACEMENT OF CONTROL DISPLAY UNITS (CDUS) WITH FANS-MCDUs & INSTRUMENT LANDING SYSTEM (ILS) RECEIVERS WITH MULTI-MODE RECEIVERS (MMRS) - SB 767-34-0795	5-Apr-2017
15	6749A009	AIRBORNE AUXILIARY POWER - APU Electronic Control Unit (ECU) Relocation - SB 767-49-0043	15-Aug-2018
16	6753A019	FUSELAGE - Section 48 - Body Station 1809.5 Bulkhead Outer Chord Inspection, Repair and Modification - SB767-53A0078 R6, AD 2005-11-02	17-Mar-2017
17	6753A027	FUSELAGE - Section 41 - Station 287, BL 25 Nose Wheel Well Bulkhead Vertical Chords Cracks - Inspection and Repair - SB 767-53A0113, AD 2005-02-02	11-Jan-2017
18	6753A038	FUSELAGE -STA 859.5, 883.5 and 903.5, Left and Right Side BL 89, Below WL 200 - Frame Inner Chord Transition Radius - Inspection And Repair - SB 767-53A0209 R2, AD 2012-22-17	16-Aug-2018
19	6753A070	FUSELAGE - Section 45 - STA 955 Rear Spar Bulkhead Side Fittings - Fail-safe Strap - Inspection - SB 767-53A0100 R3 - AD 2012-09-04	15-Mar-2017
20	6753A710	Fuselage - Skin - Dual WAAS Antenna Installation - Structural provisions - 767-300 BCF	15-Aug-2018

Major Alteration - 25865 - VN064 - LN 430

	EO Number	Title	Compliance Date
21	6772A002	ENGINE- Conversion of GE CF6-80C2B1F/B5F/B7F Engine to CF6-80C2B6F Engine Model - ETOPS - GE SB 72-0389 Rev 11	17-Mar-2017
22	AD-53-0691	FUSELAGE - Section 48 - STA 1725.5 Aft Skin and Bulkhead Outer Chord Strap - Inspection and Repair - SB 767-53-0118 R1, AD 2006-09-09	23-Sep-2008
23	AD-54-0092LA	WINGS - Outer Wing Attachment Fittings - Wing Front Spar Pitch Load Fittings Inspection And Rework - SB 767-57-0053R2 - AD 2000-12-17 and AD 2004-16-12	18-Nov-2011
24	AD-57-0490LA	WINGS - Diagonal Brace Aft Pitch Load Fitting - Lower Wing Skin Tension Bolt Hole - SB 767-57A0097 R2 - AD 2009-06-08	16-Nov-2011

Major Repair - N1217A - VN064 - LN 430 - MSN 25865

ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
Fuselage - SECTION 41 (BS 92.5 - BS 434)													
41-1	LAN T003SP67	SRM 53-00-01 REPAIR 8 SECTION II PARA 3 STEPS A-F REV 90	30-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 355 BETWEEN S24L-S25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-2	LAN T003SY8K	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 266.5 BETWEEN S23L-S24L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-3	LAN T003SY8F	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 266.5 BETWEEN S24L-S25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-4	LAN T003SY8H	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 236.5 BETWEEN S24L-S25L - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-5	LAN T003SY8E	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 276 BETWEEN S24L-S25L - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-6	LAN T003SY8P	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 157 AND 164.75 R/H, WL 171 - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-7	LAN T003SY9D	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 157 AND 164.75 R/H, WL 175 - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-8	LAN T003SY9S	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	30-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 164.75 R/H, WL 210 - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-9	LAN T003SY9V	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 172.5 R/H, WL 198 - LIGHTNING STRIKE.	A	N/A	N/A	N/A

Major Repair - N1217A - VN064 - LN 430 - MSN 25865

ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
41-10	LAN T003SY8M	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 144.5 R/H, WL 179 - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-11	LAN T003SY8L	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 143.5 R/H, WL 186 - LIGHTNING STRIKE.	A	N/A	N/A	N/A
41-12	LAN T003SY8C	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	1-Nov-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 302 L/H, S24L-25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-13	LAN T003SY89	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	1-Nov-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 325 L/H, S24L-25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-14	LAN T003SP6D	SRM 53-00-01-2R-8 REPAIR 8 SECTION II PARA 3 STEP A-F REV 90	30-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 368 L/H, S24L-25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-15	LAN TOO3SY8D	SRM 53-00-01-2R-8 REPAIR 8 SECTION II DETAIL IV REV 90	29-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 287 L/H, S24L-25L - LIGHTNING STRIKE AT FASTENER.	A	N/A	N/A	N/A
41-16	SASCO NRC 0175, 0176. 1181 and 1182	SASCO EN 1003-17 FAA Form 8100-9	2-Apr-17	2014-14-04	N/A	FLOOR BEAM	YES	GAP	FUSELAGE - STA 368 FLOOR BEAM ASSY (P/N 657T1102-10) TO FRAME ASSY (P/N 141T1322-77(LH), P/N 141T1322-78 (RH)) INTERFACE - TAPERED GAP BETWEEN FLOOR BEAM AND FRAME	B	37,500 TFC	TBD by Boeing	6753A422
41-17	SASCO NRC 0174 and 1183	SASCO EN 1004-17 FAA Form 8100-9	2-Apr-17	2014-14-04	N/A	FLOOR BEAM	YES	GAP	FUSELAGE - STA 390 FLOOR BEAM ASSY (P/N 657T1103-4) TO FRAME ASSY (P/N 141T1323-62), INTERFACE - TAPERED GAP BETWEEN FLOOR BEAM AND FRAME	B	37,500 TFC	TBD by Boeing	6753A424
41-18	SASCO NRC 0997 AND 1019	SASCO EN 1043-17 FAA Form 8100-9	26-Mar-17	N/A	N/A	SKIN & STRINGER	YES	CORROSION	SECTION 41 / 141T3231-6 SKIN PANEL / INTERNAL SURFACE CORROSION AT STA 430, S-36R	B	37,500 TFC	TBD by Boeing	6753A407
41-19	SASCO NRC 1150	SASCO EN 1077-17 FAA Form 8100-9	3-Apr-17	N/A	N/A	FLOOR BEAM	YES	INTERFERENCE	FUSELAGE - SECTION 41, FLOOR BEAM (P/N 141T5107-25) SPEEDBRAKE AUTOSTOW CONTROLLER (P/N 767-3934-1) - STA 303, LBL 40 - RELOCATION	A	N/A	N/A	6753A425

Major Repair - N1217A - VN064 - LN 430 - MSN 25865

ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
Fuselage - SECTION 43 (BS 434 - BS 785.9)													
43-1	LAN T001D2BK	SRM 53-00-01 FIG 201 REPAIR 6 REV 84	9-Sep-10	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE STA. 720 S7R - S8R -EVALUATE EXISTING REPAIR.	A	N/A	N/A	Refer to Item 43-6
43-2	LAN T003SP74	SRM 53-00-01 REPAIR 8 SECT II PARA 3 STEPS A-F REV 90	30-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 654+46 S30L-LIGHTNING STRIKE AT FASTENER	A	N/A	N/A	N/A
43-3	LAN T003SP85	SRM 53-00-01 REPAIR 8 SECT II PARA 3 STEPS A-F REV 90	30-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA. 654+22, S30L-S31L - LIGHTNING STRIKE AT FASTENER	A	N/A	N/A	N/A
43-4	LAN T003T1XE	SRM 53-00-01 REPAIR 8 SEC I DETAIL III REV 90	30-Oct-12	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE STA. 654+22 - 654+44, S26R - EVALUATE EXISTING REPAIR.	A	N/A	N/A	Refer to Item 43-7
43-5	SASCO NRC 0265 and 1193	SASCO EN 1014-17 FAA Form 8100-9	5-Apr-17	2014-14-04	N/A	FLOOR BEAM	YES	GAP	FUSELAGE - SECTION 43 - TAPERED GAP BETWEEN FLOOR BEAM ASSY AND FRAME ASSY EXCEEDS DWG REQUIREEMNTS, BS 456, APPROX. LBL 94, S20L-S21L	B	37,500 TFC	TBD by Boeing	6753A418
43-6	TLS NRC Q2031-27 SASCO NRC 0399	SASCO EN 1052-17 FAA Form 8100-9	24-Mar-17	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE - SECTION 43 - EXISTING FUSELAGE SKIN SRM REPAIR FOUND WITH DEVIATIONS AT STA 728, BETWEEN S-7R AND S-8R	A	N/A	N/A	6753A404
43-7	TLS NRC Q2031-28 SASCO NRC 241 AND 1197	SASCO EN 1016-17 FAA Form 8100-9	29-Mar-17	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE - SECTION 43 - DOUBLER (P/N 814T3331-1) INSTL HOLES RIDING ON MACHINED SKIN STEP, SHORT EM AND INTERFERENCE WITH SHEAR TIE - STA 654+66 AND STA 654+88, S-21L TO S-25L	B	37,500 TFC	TBD by Boeing	6753A411
43-8	SASCO NRC 0225 AND 1194	SASCO EN 1008-17 FAA Form 8100-9	30-Mar-17	N/A	N/A	FLOOR BEAM	YES	DAMAGE	FUSELAGE / SEC 43 / QTY 03 HOLES WILL HAVE SHORT HEEL MARGIN CONDITIONS ON FLOOR BEAM ASSY 657T1194-8 / VN064-0150	B	37,500 TFC	TBD by Boeing	6753A412
43-9	FAS NR-00113	FAA Form 8100-9	15-Aug-18	AD 2012-22-17	767-53A0209, Rev 02	FRAME INNER CHORD	YES	CRACK	RHS STA 903.5, BL 89, Below WL 200 - Frame Inner Chord Transition Radius Inspection Found Crack With 0.220" Thick Filler - SB767-53A0209R2 Repair With Deviation	B	TBD by Boeing	TBD by Boeing	6753A732

Major Repair - N1217A - VN064 - LN 430 - MSN 25865

ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
43-10	FAS NR-00112	FAA Form 8100-9	15-Aug-18	AD 2012-22-17	767-53A0209, Rev 02	FRAME INNER CHORD	YES	CRACK	RHS STA 883.5, BL 89, Below WL 200 - Frame Inner Chord Transition Radius Inspection Found Crack With 0.160" Thick Filler - SB767-53A0209R2 Repair With Deviation	B	TBD by Boeing	TBD by Boeing	6753A733
43-11	FAS NR-00114	FAA Form 8100-9	15-Aug-18	AD 2012-22-17	767-53A0209, Rev 02	FRAME INNER CHORD	YES	CRACK	LHS STA 903.5, BL 89, Below WL 200 - Frame Inner Chord Transition Radius Inspection Found Crack With 0.160" Thick Filler - SB767-53A0209R2 Repair With Deviation	B	Per EO 6753A038, Part 16	Per EO 6753A038, Part 16	6753A743
Fuselage - SECTION 46 (BS 1065 - BS 1582)													
46-1	LADECO 5000	SRM 53-00-01 P.204 FIG 201	5-Jun-98	N/A	N/A	SKIN	YES	SCRATCH	FUSELAGE SKIN STA. 1373, S29 R -DEEP SCRATCH.	Refer to Item 46-17	Refer to Item 46-17	Refer to Item 46-17	Refer to Item 46-17
46-2	LAN CHILE 3063	EO RP-52-1001 LAN-SCL-00-00280H FAA FORM 8110-3	10 MAY 00	N/A	N/A	TRACK	NO	FRAYING	AFT ENTRY DOOR CUTOUT - AFT SIDE TRACK EDGE - FRAYING.	A	46-17	N/A	N/A
46-3	LAN CHILE 3060	EO RP-52-1002 LAN-SCL-00-00279H FAA FORM 8110-3	10-May-00	N/A	N/A	TRACK	NO	FRAYING	AFT SERVICE DOOR CUTOUT - AFT SIDE TRACK EDGE - FRAYING.	A	N/A	N/A	N/A
46-4	LAN CHILE 651727	EO RP-53-1136 LAN-SCL-01-00116H FAA FORM 8110-3	29-Mar-01	N/A	N/A	CHORD AND WEB	YES	CORROSION	STA. 1480, LBL 50 TO LBL 88.5 - FLOOR BEAM UPPER FLANGE AND WEB CORRODED.	A	N/A	N/A	N/A
46-5	LAN 7441398	EO RP-53-2754 BSR: 1-973011431 FAA 8100-9	27-Sep-08	2003-18-10	N/A	SKIN AND BEARSTRAP	YES	CORROSION	FUSELAGE STA. 1263, S35R-S36R - INNER SKIN CORRODED.	B	37,500 TFC LFEC & DVI	3,000 FC LFEC & DVI	6753A387
46-6	LAN T000ZNZE	SRM 53-00-01 REPAIR 14 FIG 201 51-40-03 PARA 4 LETTER C REV 83 EO RP-53-2976-4M	23-Apr-10	N/A	N/A	SKIN	YES	CRACK	STA. 1329-1351, S33L-34L - SKIN PANEL CRACKED	B	37,500 TFC HFEC	12,000 FC HFEC	6753A383
46-7	LAN 7423202	EO RP-53-2741 BSR: 1-947263447 FAA 8100-9	23-Sep-08	N/A	N/A	SKIN	YES	CORROSION	FUSELAGE STA 1087 S39L-S39R - INNER SKIN CORRODED.	B	37,500 TFC LFEC & DVI	3,000 FC LFEC & DVI	6753A362
46-8	LAN T003SYAJ	SRM 53-00-01 REPAIR 8 SECTION II REV 90	26-Oct-12	N/A	N/A	SKIN	YES	LIGHTNING STRIKE	FUSELAGE STA 1395, BETWEEN S32L-S33L - LIGHTNING STRIKE.	A	N/A	N/A	N/A
46-9	LAN T003SYB6	EO RP-53-3331 BSR: 2-2341687820 FAA 8110-3	8-Nov-12	N/A	N/A	STRINGER	YES	CORROSION	STRINGER BETWEEN STA. 1480 AND STA 1502 , S37L - AREA FOUND BULGING	A	N/A	N/A	NRC Q2031-31

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
46-10	LAN T003T6LJ	EO RP-53-3330 FAA 8110-3	10-Nov-12	N/A	N/A	STRINGER	YES	CORROSION	FUSELAGE STA. 1200-1219, S34L - STRINGER CORRODED.	A	N/A	N/A	N/A
46-11	LAN T003V7BV	EO RP-53-3335 BOEING SR: 2-2350179690 FAA 8100-9	15-Nov-12	2003-18-10	N/A	SKIN & STRINGER	YES	CORROSION	FUSELAGE STA. 1219, S34R & 35R - SKIN AND STRINGER CORROSION AT BUTT SPLICE.	B	37,500 TFC LFEC & DVI	3,000 FC LFEC & DVI	6753A384
46-12	SASCO NRC 1085	SASCO EN 1055-17 FAA Form 8100-9	24-Mar-17	N/A	N/A	SKIN	YES	DENT	FUSELAGE - SECTION 46- SKIN DENT NEAR CIRCUMFERENTIAL SPLICE - STA 1219, S-32L TO S-33L	A	N/A	N/A	6753A405
46-13	SASCO NRC 1020	SASCO EN 1073-17 FAA Form 8100-9	2-Apr-17	N/A	N/A	FRAME	YES	CORROSION	FUSELAGE - L2 MED SURROUND STRUCTURE - DOOR STA 923.7 FRAME WEB (P/N 146T1383-7) AT WL 200 - CORROSION	B	30,000 TFC	TBD by Boeing	6753A420
46-14	SASCO NRC 0230	SASCO EN 1069-17 FAA Form 8100-9	24-Mar-17	N/A	N/A	SKIN & STRINGER	YES	CORROSION	FUSELAGE - SECTION 46 - SKIN, BEARSTRAP AND STRINGER REPAIR DUE TO CORROSION DAMAGE - BETWEEN STA 12141 AND 1285, BETWEEN S-34R AND S39R	B	30,962 TFC DVI & HFEC	9,000 FC DVI & HFEC	6753A406
46-15	SASCO NRC 1148	SASCO EN 1076-17 FAA Form 8100-9	2-Apr-17	N/A	N/A	FRAME	YES	CORROSION	FUSELAGE - SECTION 46 - STA 1219 FRAME SEGMENT WEB (P/N 146T0250-2) CORROSION - RBL 20 TO RBL 30, S-35R TO S-36R	B	27,962 TFC	TBD by Boeing	6753A423
46-16	SASCO NRC 0349	SASCO EN 1078-17 FAA Form 8100-9	2-Apr-17	N/A	N/A	FRAME	YES	CRACK	FUSELAGE - SECTION 46- FRAME WEB (P/N 146T1226-2) - STA 1197_66, WL 120, LBL 41 - CRACK REPAIR	B	27,962 TFC	TBD by Boeing	6753A421
46-17	TLS NRC Q2031-29 SASCO NRC 0362	SASCO EN 1039-17 FAA Form 8100-9	30-Mar-17	N/A	N/A	SKIN & STRINGER	YES	EXISTING REPAIR	FUSELAGE - SKIN PANEL (P/N 146T3531-3) STA 1307 TO 1582, STRINGER S-26R TO S-36R	B	30,000 TFC	TBD by Boeing	6753A415
46-18	SASCO NRC 0369	SASCO EN 1075-17 FAA Form 8100-9	28-Mar-17	N/A	N/A	STRINGER	YES	EXISTING REPAIR	FUSELAGE - SECTION 46- S38L STRINGER (P/N 146T3003-145) AT STA 1480-1502, EXISTING STRINGER REPAIR	A	N/A	N/A	6753A409
Fuselage - SECTION 48 (BS 1582 - BS 1952)													
48-1	LAN CHILE 6222927	EO RP-53-1467 LAN-SCL-02-00312H FAA FORM 8110-3	26-Jun-03	N/A	N/A	SKIN	NO	DENT/ TEMPORARY REPAIR	FUSELAGE STA 1904.5 - 1913.5, BL 0 SKIN DENTED AT EDGE OF APU DOOR CUTOUT. (TEMPORARY REPAIR PERFORMED)	A	N/A	N/A	N/A
48-2	N/A	SRM 53-00-01 FIG 201 REV 78	Dec-08	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE STA 1605.5-1629, S20R-S21R - EVALUATE EXISTING REPAIR.	B	37,500 TFC LFEC & DVI	3,000 FC LFEC & DVI	6753A388

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
48-3	N/A	EO RP-53-2452 BSR: 1-313098890 FAA Form 8100-9	12-Apr-07	2006-24-04 2011-14-02	767-53A0131	CHORD FITTINGS	YES	CRACKED	FUSELAGE STA 1809.5 BULKHEAD, S3-S6 L/H - FWD OUTER CHORD FITTINGS CRACKED.	B	Per EO 6753A030, Part 15	Per EO 6753A030, Part 15	6753A385
48-4	LAN T001DJ03	SRM 53-80-01 REPAIR 5 FIG 201 REV 84	23-Sep-10	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE STA. 1725.5, S7R-S8R - EVALUATE EXISTING REPAIR.	B	37,500 TFC DVI, LFEC & HFEC	6,000 FC DVI, LFEC & HFEC	6753A361
48-5	LAN CHILE 6067600	SRM 53-00-01 FIG 206	21-May-02	N/A	N/A	SKIN	YES	DENT	STA. 1654-1678 BETWEEN STRINGER 7-8 L/H - DENT.	A	N/A	N/A	N/A
48-6	SASCO NRC 0365	SASCO EN 1024-17 FAA Form 8100-9	31-Mar-17	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	FUSELAGE - SECTION 48 - RH FUSELAGE SKIN PANEL (P/N 148T3231-2) - STA 1605.5 TO 1629, S-20R TO S-21R - EXISTING REPAIR FASTENER REPLACEMENT	B	27,962 TFC LFEC & DVI	6,000 FC LFEC & DVI	6753A417
48-7	SASCO NRC 0692	SASCO EN 1071-17 FAA Form 8100-9	31-Mar-17	N/A	N/A	BULKHEAD WEB	YES	PREVIOUS REPAIR	SECTION 48 - AFT PRESSURE BULKHEAD WEB (P/N 148T2610-230), STA 1582 AT WL 278 AND RLB 59	B	37,500 TFC LFEC & DVI	3,900 FC LFEC & DVI	6753A419
48-8	SASCO NRC 0741	B767-300 SRM 53-80-08, REPAIR 2, DETAIL 1, REV.103 FAA Form 8100-9	30-Mar-17	N/A	N/A	BULKHEAD WEB	YES	DENT	SECTION 48 - STA 1582 AFT PRESSURE BULKHEAD WEB (PN 148T2610-233) DENT AT WL 205 LBL 80 TO LBL 84 - SRM REPAIR	B	37,500 TFC LFEC & DVI	3,900 FC LFEC & DVI	6753A413
Nacelles/Pylons													
P-3	N/A	EO RP-54-1559 BOEING SR: 1-241386088 8100-9	7-Nov-06	2005-19-23	767-54A0101	ANGLE	YES	CRACK	#1 ENGINE MIDSPAR ATTACH FITTING CLOSE OUT ANGLE, P/N 311T3157-1 - CRACKED.	A	N/A	N/A	N/A
P-4	LAN T002MJ4R DELTA NR 472	DELTA ERA 497365-14 BSR: LAN-12-0353-03B FAA 8110-3	12-Nov-11	N/A	N/A	SKIN	NO	CRACK	# 1 PYLON FORWARD STRUT L/H, NAC STA 230 - CRACK AT PANEL # 432AL UPPER AFT CORNER CUTOUT.	A	N/A	N/A	N/A
P-5	LAN T002N1HL DELTA NR 472	DELTA ERA 497206-14 BSR: LAN-LAN-11-0914-03F FAA 8110-3	15-Nov-11	N/A	N/A	SKIN	NO	GOUGE	# 1 PYLON R/H SIDE STRUT, STA. 240 - GOUGE.	A	N/A	N/A	N/A
P-6	LAN T002MJ4M DELTA 466	DELTA ERA 497364-14 BSR: LAN-LAN-12-0155-03C	15-Nov-11	N/A	N/A	SKIN	NO	CRACK	# 2 PYLON SKIN AT FWD STRUT L/H SIDE, UPPER AFT CORNER AT ACCESS PANEL # 442AL - CRACKED.	A	N/A	N/A	N/A
Stabilizers													

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
S-1	LAN T004D7UK	SRM 51-70-05 PARA 5G FIG 9 REV 92.	2-May-13	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	L/H ELEVATOR STA 90.29 - 114.77 - EVALUATE EXISTING REPAIR.	A	N/A	N/A	N/A
S-2	LAN T004W2QH T003SN59	SRM 51-70-17 PARA 4 B FIG 24 REV 93	22-Aug-13	N/A	N/A	SKIN	YES	PREVIOUS REPAIRS	L/H ELEVATOR STA 90.29-114.77 - EVALUATE TWO EXISTING REPAIRS NOT RECORDED IN DAMAGE CHART.	A	N/A	N/A	N/A
S-3	LAN T0050GTM & T0050GTN	EO RP-55-1276 PART 1	29-Oct-13	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	R/H ELEVATOR STA 200.46-175.98, LOWER SKIN - EVALUATE EXISITING REPAIR.	A	N/A	N/A	NRC Q2031-36
Wings													
W-1	LAN CHILE T001CTHX 3003	SRM 51-70-17	05-Apr-99	N/A	N/A	SKIN	NO	DAMAGE	R/H INBOARD AILERON DAMAGED - (UPPER SURFACE T/E APPROX. WS 490)	A	N/A	N/A	N/A
W-2	LAN CHILE 6067070	SRM 51-70-06 PARA 4C FIG 4	20-May-02	N/A	N/A	SKIN	NO	PUNCTURE & DELAMINATION	L/H OUTBOARD TRAILING EDGE FLAP LOWER SURFACE - PUNCTURE AND DELAMINATION DAMAGE.	Permanent	N/A	N/A	N/A
W-3	LAN T001CU6B	SRM 51-70-03 PARA 5C FIG 2 REV 84	10-Sep-10	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	L/H OUTBOARD FLAP LOWER SKIN AT WS 616.2 - EVALUATE EXISTING REPAIR.	Permanent	N/A	N/A	N/A
W-4	LAN T001CU76	SRM 51-70-03 PARA 5C FIG 2 REV 84	10-Sep-10	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	L/H OUTBOARD FLAP LOWER SKIN AT WS 825.2 - EVALUATE EXISTING REPAIR.	Refer to Item W-32	Refer to Item W-32	Refer to Item W-32	Refer to Item W-32

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
W-5	LAN T001DELX	SRM 51-70-06 PARA 5C FIG 4 REV 84	14-Sep-10	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	L/H OUTBOARD FLAP LOWER SKIN AT WBL 710.7 - EVALUATE EXISTING REPAIR.	Permanent	N/A	N/A	N/A
W-6	LAN TOO1DEMV	SRM 51-70-06 PARA 5C FIG 4 REV 84	13-Sep-10	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	R/H OUTBOARD FLAP LOWER SKIN AT WS 668.2 - EVALUATE EXISTING REPAIR.	Refer to Item W-30	Refer to Item W-30	Refer to Item W-30	Refer to Item W-30
W-7	LAN T001DH92	SRM 51-70-10 REPAIR 4 FIG 201 REV 84	22-Sep-10	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	R/H INBOARD AFT FLAP UPPER SKIN AT WBL 263.0 - EVALUATE EXISTING REPAIR.	A	N/A	N/A	N/A
W-8	LAN T001EFS3	SRM 57-53-01 TABLE 1 LETTER C REV 84	24-Sep-10	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	R/H OUTBOARD FLAP LOWER SKIN AT WS 564.2 - EVALUATE EXISTING REPAIR OF DENT.	Refer to Item W-31	Refer to Item W-31	Refer to Item W-31	Refer to Item W-31
W-9	DELTA 133	SRM 57-53-01 FIG 201 REV 87	28-Oct-11	N/A	N/A	SKIN	NO	DELAMINATED	L/H OUTBOARD FLAP LOWER SKIN WS 564.2 - AREA DELAMINATED.	Permanent	N/A	N/A	N/A
W-10	DELTA 495	SRM 57-53-01 REPAIR 1 TABLE II REV 87	01-Nov-11	N/A	N/A	SKIN	NO	DELAMINATED	L/H OUTBOARD FLAP LOWER SKIN WS 590.2 - AREA DELAMINATED.	Permanent	N/A	N/A	N/A
W-11	LAN T003CRRP	57-43-01 REPAIR 2 FIG 201 REV 89	04-Jul-12	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	#2 LEADING EDGE SLAT, ZONE 1 NOSE SKIN - EVALUATE EXISTING REPAIR.	Permanent	N/A	N/A	N/A
W-12	LAN TOO1DNF5	EO RP-57-3271 REV 00	23-Sep-10	N/A	N/A	SKIN	NO	DENT	# 11 SLAT UPPER TRAILING EDGE WEDGE, WS 962.2 - HAIL DAMAGE.	Permanent	N/A	N/A	N/A

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
W-13	LAN T002PRXL T002PRSL	EO RP-57-3389 (SKIN) RP-57-3390 (RIB) BSR: LAN-LAN-11-1031-09B (R1) 8100-9	06-Dec-11	N/A	N/A	SKIN & RIB	NO	BIRD STRIKE	# 6 SLAT SUFFERED BIRD STRIKE IMPACT AT INBOARD EDGE - ISS 144.88.	Permanent	N/A	N/A	N/A
W-14	LAN T003TSBY	EO RP-57-3492 BSR: 2-2344101825	07-Nov-12	N/A	N/A	RIB	NO	FRAYED	# 5 SLAT OUTBOARD RIB HAS FRAYING	Permanent	N/A	N/A	N/A
W-15	LAN T003TSDA	EO RP-57-3491 BSR: 2-2344115086	07-Nov-12	N/A	N/A	RIB	NO	FRAYED	# 4 SLAT OUTBOARD RIB HAS FRAYING	Permanent	N/A	N/A	N/A
W-16	LAN T003ST5G	SRM 51-70-10 REPAIR 4 PARA 3 FIG 202 REV 90	31-Oct-12	N/A	N/A	SKIN	NO	DELAMINATED	# 3 SLAT, TRAILING EDGE WEDGE O.S.S. 692 - DELAMINTATED.	Permanent	N/A	N/A	N/A
W-17	LAN T003VT28	SRM 51-70-10 REPAIR 4 FIG 202 REV 90	15-Nov-12	N/A	N/A	SKIN	YES	DELAMINATED	R/H WING INBD AFT FLAP, TRAILING EDGE - DELAMINATED. (INBOARD OF IFS 295.00)	A	N/A	N/A	N/A
W-18	LAN T003SPGZ	SRM 51-70-03 PARA S.1 REV 90	25-Oct-12	N/A	N/A	SKIN	NO	PREVIOUS REPAIR	R/H OUTBOARD AILERON, LOWER SURFACE - EVALUATE EXISITING REPAIR. (INBOARD OF WS 962.2)	A	N/A	N/A	N/A
W-19	LAN T003VWSN	SRM 51-70-03 PARA 5.L FIG 16 REV 90	15-Nov-12	N/A	N/A	SKIN	YES	PREVIOUS REPAIR	R/H INBOARD MID FLAP NEAR WBL 121.0 - EVALUATE EXISITING REPAIR.	A	N/A	N/A	N/A
W-20	LAN T003SWZL	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	23-Oct-12	N/A	N/A	SKIN	NO	CRACK	# 4 SLAT O.S.S. 641 - SKIN CRACKED AROUND RIVET	Permanent	N/A	N/A	N/A

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ITEM	NRC, Barcode	EO or Reference	Date	AD	SB	Damaged Part	PSE	Defect	Location and Description	Category (A/B/C)	Initial	Repeat	Atlas EO #
W-21	LAN T003SWF6	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	23-Oct-12	N/A	N/A	SKIN	NO	CRACK	# 4 SLAT O.S.S. 572 - SKIN CRACKED AROUND RIVET	Permanent	N/A	N/A	N/A
W-22	LAN T003SVLN	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	23-Oct-12	N/A	N/A	SKIN	NO	CRACK	# 5 SLAT O.S.S. 492 - SKIN CRACKED AROUND RIVET	Permanent	N/A	N/A	N/A
W-23	LAN T003SQB6	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	01-Nov-12	N/A	N/A	SKIN	NO	CRACK	# 9 SLAT O.S.S. 572.55 - SKIN CRACKED AROUND RIVET	Permanent	N/A	N/A	N/A
W-24	LAN T003SQAU	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	02-Nov-12	N/A	N/A	SKIN	NO	CRACK	# 9 SLAT O.S.S. 646.35 - NOSE SKIN CRACKED.	Permanent	N/A	N/A	N/A
W-25	LAN T003T292	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	01-Nov-12	N/A	N/A	SKIN	NO	CRACK	R/H WING # 10 SLAT EXTERNAL SKIN, L.E.S. 725.10 - CRACKED.	Permanent	N/A	N/A	N/A
W-26	LAN T003T27U	SRM 57-43-01 REPAIR 2 FIG 201 REV 90	03-Nov-12	N/A	N/A	SKIN	NO	CRACK	R/H WING # 11 SLAT EXTERNAL SKIN, L.E.S. 867.10 - CRACKED.	Permanent	N/A	N/A	N/A
W-27	LAN CHILE 6067665	SRM 51-70-06 P. 20 PARA 4 A.	28 MAY 03	N/A	N/A	SKIN	NO	CRACK	R/H WING OUTBOARD FLAP - CRACK ON INBOARD CORNER. (OUTBOARD OF OTEF 3.75)	Permanent	N/A	N/A	N/A
W-29	LAN T003T5G2	SRM 51-70-06 PARA 5 FIG 21 REV 90	26-Oct-12	N/A	N/A	SKIN	NO	DAMAGE	L/H WING OUTBOARD TRAILING EDGE AT WS 825.2 - TWO AREAS OF DAMAGE. (UPPER SURFACE)	Permanent	N/A	N/A	N/A
W-30	SASCO NRC 1017 TLS Q2031-42	767 SRM 57-53-01-2R- 1 REPAIR 1 TLS 1957A279	31-Mar-17	N/A	N/A	OB Flap	NO	PREVIOUS REPAIR	RH WING OB FLAP LOWER SURFACE DAMAGE AT WS 668.2 FOUND NOT PER SRM	Permanent	N/A	N/A	1957A279

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W-31	SASCO NRC 1018 TLS Q2031-44	767 SRM 57-10-17 TLS 1957A279	31-Mar-17	N/A	N/A	OB Flap	NO	PREVIOUS REPAIR	RH WING OB FLAP LOWER SURFACE DAMAGE AT WS 564.2 FOUND NOT PER SRM	Permanent	N/A	N/A	1957A279
W-32	SASCO NRC 1016 TLS Q2031-40	767 SRM 57-10-17 TLS 1957A280	31-Mar-17	N/A	N/A	OB Flap	NO	PREVIOUS REPAIR	LH WING OB TE FLAP EXISTING REPAIR ON THE WEDGE AT WS 825.2	Permanent	N/A	N/A	1957A280