NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
WASHINGTON, D.C. 20594

January 28, 2014

MAINTENANCE RECORDS GROUP CHAIRMAN'S FACTUAL REPORT

NTSB ID No.: DCA13MA133

A. ACCIDENT:

Location:	Birmingham, Alabama
Date:	August 14, 2013
Time:	About 0440 central daylight time (CDT)
Aircraft:	Airbus A300-600
Registration:	N155UP, S/N 0841

B. GROUP MEMBERS:

Chairman:	Mike Hauf National Transportation Safety Board
Member:	Donald Shealy Federal Aviation Administration
Member:	Lou Esposito United Parcel Service Co.
Member:	Ralph Mathison Teamster Local Union 2727
Member:	Captain Robert Brown Independent Pilots Association

C. SUMMARY:

On August, 14, 2013, at about 0447 central daylight time (CDT), United Parcel Service (UPS) flight 1354, an Airbus A300-600, N155UP, crashed short of runway 18 while on approach to Birmingham-Shuttlesworth International Airport (BHM), Birmingham, Alabama. The captain and first officer were fatally injured and the airplane was destroyed. The scheduled cargo flight was operating under the provisions of 14 Code of Federal Regulations (CFR) Part 121 and originated from Louisville International-Standiford Field Airport (SDF), Louisville, Kentucky.

D. DETAILS OF THE INVESTIGATION:

The Maintenance Records Group met at the United Parcel Service (UPS) Corporate Offices located in Louisville, Kentucky from August 16, 2013 through August 19, 2013 to review and document the maintenance information associated with aircraft N155UP.

D.1 Executive Summary:

1. The most recent maintenance check performed on the airplane was an "Arrival Service (Normal) Check" performed on August 14, 2013 in Louisville, Kentucky.

2. According to the aircraft logbook, on August 14, 2013, flight 321 experienced a bird strike on the right side of the aircraft during approach. A bird strike inspection was conducted by UPS maintenance and no anomalies or additional bird strikes were noted.

3. There were no open Minimum Equipment List (MEL) items on the airplane on August 14, 2013.

4. At the time of the accident, the aircraft had twelve (12) Deferred Maintenance Items (DMI) listed in the aircraft technical logs.

5. Information supplied by UPS indicated all Airworthiness Directives (AD) have been complied with.

D.2 Air Carrier Operating Certificates:

United Parcel Service Co. is located at 1400 North Hurstbourne Parkway, Louisville, Kentucky 40223. A Part 121 operating certificate number, IPXA097B, was originally issued to United Parcel Service Co. by the Federal Aviation Administration's (FAA) Louisville Flight Standards District Office (FSDO), Southern Region on October 10, 1986; it was reissued on July 30, 2004.

D.3 Operations Specifications (OpSpecs)[1]:

United Parcel Service Co. Operating Certificate IPXA097B, which includes the standards, terms, conditions, and limitations contained in the FAA approved Operations Specifications was reviewed and the following facts were noted:

1. Per section D072 of the Op Specs, which is the Continuous Airworthiness Maintenance Program (CAMP), United Parcel Service Co. is authorized to use the manufacturer/United Parcel Service Co. maintenance and engine maintenance programs to maintain the airplanes.

2. Per section D074 of the Op Specs, United Parcel Service Co. is authorized to have a Maintenance Reliability Program.

[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.

3. Per section D076 of the Op Specs, United Parcel Service Co. is authorized to use short-term escalations of maintenance intervals on their fleet.

4. Per section D081 of the Op Specs, United Parcel Service Co. is authorized to participate in a parts pool agreement.

5. Per section D083 of the Op Specs, United Parcel Service Co. is authorized to use a borrowed part from another operator when time-in-service of the available part exceeds the certificate holder's approved overhaul time limit.

6. Per section D084 of the Op Specs, United Parcel Service Co. is authorized to conduct ferry flights using a special flight permit.

7. Per section D085 of the Op Specs, United Parcel Service Co. has the following airplanes in its fleet (Reference Table 1):

Table 1 UPS Fleet

A/C Type	Model	Count	Comment
A300	A300-F4622R	53	Including N155UP
B747	B747-400	13	
B757	B757-24ADF	75	
B767	B767-34AF	58	
MD11	MD11-F	38	
TOTALS		**237**	

8. Per section D086 of the Op Specs, United Parcel Service Co. is authorized to use two-engine airplanes for extended-range operations (B767 aircraft only).

9. Per section D090 of the Op Specs, United Parcel Service Co. is authorized to utilize CASE[2] as a means of qualifying a vendor for services, parts, and materials to satisfy the requirements of 14 CFR Section 121.373.

10. Per section D091 of the OpSpecs, United Parcel Service Co. is authorized to make arrangement with other organizations to perform substantial maintenance.

11. Per section D092 of the OpSpecs, United Parcel Service Co. is authorized for RVSM operations.

12. Per section D095 of the OpSpecs, United Parcel Service Co. is authorized to use an approved Minimum Equipment List (MEL).

13. Per section D097 of the OpSpecs, United Parcel Service Co. shall have approved Aging Aircraft Programs incorporated into the Continuous Airworthiness Maintenance Program for its fleet of airplanes.

[2] The Air Carriers section of the Non-profit 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.

14. Per section D485 of the OpSpecs, United Parcel Service Co. has approval to operate aircraft in accordance with requirements of the Aging Airplane Inspection and Records Review.

15. Per section E096 of the OpSpecs, United Parcel Service Co. is authorized for a Weight and Balance Program.

D.4 Aircraft and Engine Information:

N155UP was manufactured by Airbus in February 12, 2004[3] and was put on United Parcel Service Companies certificate on February 13, 2004. The airplane had 11,043:43 total hours with 6,812 total cycles at the time of the accident.

The airplane was equipped with two Pratt & Whitney 4158 (-3) Turbofan engines and a Honeywell Auxiliary Power Unit (APU). The engines and APU had accumulated the following operating times (reference Table 2):

Table 2 Engine and APU Information

	Engine No. 1	Engine No. 2	APU
Manufacturer:	Pratt & Whitney	Pratt & Whitney	Honeywell
Model Number	4158 (-3)	4158 (-3)	GTCP331-250H
Serial Number:	P729825	P728586	P1552
Manufacturer Date:	10/07/2003	02/05/2002	03/28/2003
Date Installed on N155UP:	05/12/2011	01/30/2012	10/04/2010
Station of Installation:	SDF	CAE	ATL
Total Time (hours) at Installation:	8,419:02	9,475:57	5,109:27
Total Cycles at Installation:	5,214	6,024	7,877
Airframe hours at Installation:	8,572:34	9,350:29	7,863:44
Airframe cycles at Installation:	5,270	5,750	4,839
Hours since last installation:	2,471:09	1,693:14	2,299:44
Cycles since last installation:	1,542	1,062	2,979
Total Hours as of 8/14/2013:	10,890:11	11,169:11	7,409:11
Total Cycles as of 8/14/2013:	6,756	7,086	10,856

[3] According to the date of export listed on the Certificate of Airworthiness.

D.5 Airbus A300 Maintenance Inspection Program:

Routine checks and inspections will be accomplished as part of the UPS Continuous Airworthiness Maintenance Program (CAMP). These checks and inspections will be performed in accordance with the instructions and procedures established in the United Parcel Service Co. General Maintenance Manual (GMM). The following information shows the maintenance programs for N155UP:

1. Arrival Service (AS) is a three-tiered check intended to meet the general servicing requirements of a transiting aircraft.

   (a) Arrival Service - Regulatory (AS-R) check consists of regulatory requirements, which must be, accomplished every 1 or 2 calendar days, depending on the fleet type. The AS-R must be accomplished regardless of planned ground time, but is not required if the aircraft is out of service. It is not necessary to accomplish if an Arrival Service – Normal (AS-N), Arrival Service – Extended (AS-E) or Periodic Service (PS) was previously accomplished during the same calendar day.

   (b) Arrival Service – Normal (AS-N) is required when planned ground time at UPS–staffed gateways is greater than two hours but less than six hours, unless an Arrival Service – Extended (AS–E) or Periodic Service (PS) was previously accomplished during the same calendar day or the aircraft has not flown since the preceding check or service was accomplished.

   (c) Arrival Service – Extended (AS-E) is required when planned ground time at UPS–staffed gateways is greater than six hours, unless an AS–E or Periodic Service (PS) was previously accomplished during the same calendar day or the aircraft has not flown since the preceding check or service was accomplished. If an AS-N was accomplished and ground time now requires an AS-E, it is not necessary to re-accomplish AS-N steps, provided the aircraft was not flown since AS-N completion. Only the required AS-E steps need to be completed. At UPS–staffed gateways, if an AS–E or higher check is accomplished, no further Arrival Service check is required, with the exception of the 747, 757, and 767 (See Arrival Service – Regulatory), until the aircraft has been operated.

2. Periodic Service – The Periodic Service (PS1) is accomplished within nine calendar days after the last Periodic Service is performed. A PS1 is identified as a 9-Day interval throughout the A300 Maintenance Specification Manual (MSM). The PS1 satisfies the requirements of the AS. The check consists of a walk around to check for obvious damages and verification that there is adequate serviceability of critical systems and components.

3. Periodic Service Planning Groups - The Periodic Service planning groups consists of tasks with similar intervals, which are grouped by Aircraft Maintenance Planning (AMP). The groups are categorized into two groups: Dependent (reference table 3) and Independent (reference table 4). This categorization refers to the scheduling relationship between the PS Checks. Dependent PS intervals are based on the accomplishment times of the preceding PS Planning Group. Independent PS Planning Groups are scheduled independent of any other routine maintenance.

Table 3 Dependent Periodic Service Group

Periodic Service Scheduled Intervals (Dependent)	
PS2	The initial PS2 is due 3 months, 500 FH, or 400 FC (WOF[4]), after aircraft delivery date and thereafter the PS2 will be scheduled 3 months, 500 FH, or 400 FC (WOF) after every PS9.
PS3	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS2
PS4	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS3
PS5	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS4
PS6	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS5
PS7	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS6
PS8	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS7
PS9	Due 3 months, 500 FH, or 400 FC (WOF) from the completed PS8

Table 4 Independent Periodic Service Group

Periodic Service Scheduled Intervals (Independent)	
PS10	Due 06 months, 1000 FH, or 800 FC (WOF)
PS11	Due 06 months, 1000 FH, or 800 FC (WOF)
PS12	Due 12 months, 2000 FH, or 1600 FC (WOF)
PS13	Due 18 months, 3000 FH, or 2400 FC (WOF)
PS14	Due 03 months, 500 FH, or 400 FC (WOF)
PS15	Due 03 months, 500 FH, or 400 FC (WOF)
PS16	Due 03 months, 500 FH, or 400 FC (WOF)

4. “C” Checks will be accomplished at intervals not to exceed 30 calendar months or 4,400 hours or 3,500 cycles, whichever occurs first. A “C” check is primarily an aircraft systems related visit. The “C” Check cycle consists of “C” Checks numbered 1C, 2C, 3C, and 4C and is accomplished as shown in Table 5.

Table 5 "C" Check Schedule

C Check Schedule	
1C	30 calendar months or 4,400 flight hours or 3,500 flight cycles (WOF)
2C	Due every other “C” Check
3C	Due every 3rd “C” Check
4C	Due every 4th “C” Check

[4] Whichever Occurs First (WOF).

Each "C" Check consists of all 1C tasks. The content of each "C" Check, as defined by the A300 MSM, is controlled by the A300 Fleet Operations Group, and may include portions of the 2C, 3C, and/or 4C required tasks to equalize the routine workload of each heavy maintenance visit; however, the maximum allowable frequency of any task will not be exceeded. In addition to accomplishing all "C" Check tasks during the aircraft "C" Check visit, all engine/APU "C" Check tasks shall be accomplished when:

(a) Any engine/APU is removed from an aircraft, but not reinstalled on the same aircraft prior to the next flight.

(b) Any used engine/APU is leased or purchased for use on United Parcel Service Co. aircraft prior to the first flight.

The additional "C" Checks will be accomplished regardless of the time since the last aircraft "C" Check or the time remaining until the next aircraft "C" Check. A PS1 will be accomplished in conjunction with each "C" Check.

5. The structural related inspections are primarily accomplished at the 5 and 10-year intervals and are identified in the MSM as 5 YRS and/or 10 YRS intervals. These checks have no flight hour restriction. Reference table 6 for the structural check schedule.

Table 6 Structural Check Schedule

Structural Check Schedule	
5 YRS	5 Year Interval
10 YRS	10 Year Interval (Includes the 5 Year Interval Tasks)

A PS1 will be accomplished in conjunction with each 5 and 10 year check.

6. Engine Maintenance is accomplished using the manufacturer's engine maintenance program with additional United Parcel Service Co. Engineering Orders as necessary.

7. The task listing found in Chapter 3 of the Maintenance Specifications Manual is arranged in ATA order with two exceptions. All Zonal tasks are found under the "ATA: 06" section and all lubrication tasks are found under the "ATA: 12" section.

8. Table 7 below provides a listing of the routine checks and inspections that were accomplished on airplane N155UP as part of the UPS CAMP.

Table 7 Inspection Procedures Conducted on N155UP

Check or Inspection	Date of recent Inspection	Location	Total Time	Total Cycles
AS-N	08/14/2013	SDF	11,043:43	6,812
AS-E	08/13/2013	MEX	11,040:35	6,811
PS1	08/09/2013	TYS	11,036:54	6,809
PS2	08/20/2012	MEM	9,887:46	6,102
PS3	10/29/2012	ATL	10,091:18	6,244
PS4	01/14/2013	ATL	10,336:09	6,371
PS5	03/31/2013	DFW	10,600:19	6,527
PS6	06/17/2013	CAE	10,861:45	6,698
PS7	01/16/2012	BHM	9,295:51	5,716
PS8	04/02/2012	CAE	9,529:07	5,875
PS9	06/11/2012	ATL	9,676:19	5,970
PS10	06/17/2013	CAE	10,861:45	6,698
PS11	07/18/2013	ATL	10,968:21	6,764
PS12	04/29/2013	ELP	10,714:51	6,599
PS13	01/12/2013	ATL	10,336:09	6,371
PS14	06/17/2013	CAE	10,861:45	6,698
PS15	06/17/2013	CAE	10,861:45	6,698
PS16	06/18/2013	ORD	10,864:04	6,701
1C	06/25/2011	SAA	8,650:26	5,323
2C	01/20/2009	SAA	5,885:03	3,633
3C	06/25/2011	SAA	8,650:26	5,323
4C	Due 2/9/2014	-----	-----	-----
5 YRS	01/20/2009	SAA	5,885:03	3,633
10 YRS	Due 2/9/2014	-----	-----	-----

D.6 Continuing Analysis and Surveillance System (CASS)[5]:

The United Parcel Service Co. CASS used a systems safety approach to assess the health of the United Parcel Service Co. Aircraft Maintenance organization. The CASS has two primary job functions:

1. The "performance analysis function" includes daily and long-term monitoring, and emergency response related to the performance of affected aircraft systems, including aircraft engines and components. This function includes, but is not limited to, the monitoring of:
   (a) Mechanical problems for affected aircraft. (Daily and long-term monitoring)

[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.

(b) Deferred Maintenance Items, including repetitive items. (Daily and long-term monitoring)
(c) Pilot Reports. (Long-term monitoring)
(d) Mechanical Interruption Summary Reports (MIS). (Long-term monitoring)
(e) Critical failures. (Emergency response)

2. The "audit function" provides for continuous surveillance of the United Parcel Service Co. maintenance operation, including the maintenance departments, United Parcel Service Co. gateways, substantial maintenance vendors, and component vendors for compliance with the United Parcel Service Co. General Maintenance Manual, FARs, manufacturer's manuals, and other approved manuals that affect United Parcel Service Co. maintenance operations. This function includes, but is not limited to, the auditing of:
   (a) Accuracy, completeness, currency, and adherence to required records, manuals, and publications.
   (b) Procedures for performance of maintenance, turnover/carryover items, deferred maintenance, required inspection, and airworthiness release execution.
   (c) Requirements for training programs.
   (d) Vendors for proper authorization, qualification, training, staffing, and equipment to perform their contracted functions.

The operator conducts monthly CASS and Reliability meetings to brief the FAA of performance trends or specific problem areas and to facilitate CASS system communication. Reports are generated that contain mechanical and maintenance dispatch reliability for the fleet, Minimum Equipment List performance, Component and Maintenance Review Board Alerts, Aircraft Utilization, delays and cancellations, Pilot reports, engine and APU information and Company internal and external audits. FAA Inspectors are invited to attend these meetings and do so.

D.7 Minimum Equipment List (MEL)[6], and Deferred Maintenance Items (DMI):

United Parcel Service Co. has an FAA approved MEL for the Airbus A300. The FAA approved MEL contains a list of equipment and instruments that may be inoperative on a specific aircraft for continuing flight beyond a terminal point. Per the definition section of the UPS, GMM, a MEL/CDL item is an aircraft maintenance item that has been recognized, recorded, and will remain inoperable and/or defective within the constraints of the MEL or Configuration Deviation List (CDL). The MELs for aircraft N155UP were reviewed from the date range of January 1, 2013 to August 14, 2013. At the time of the accident, the aircraft had no open MEL items.

Per the definition section of the UPS, GMM, Deferred Maintenance Items (DMI) are an aircraft maintenance item that has been recognized, recorded, and will remain inoperative and/or defective until repair has been scheduled and achieved. The DMIs for N155UP were reviewed from the date range of January 1, 2013 to August 14, 2013. At the time of the accident, the aircraft had twelve (12) open DMIs (Reference Attachment 1)

[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.

D.8 Supplemental Type Certificates (STC)[7]:

United Parcel Service Co. supplied the Maintenance Records Group with a list of Supplemental Type Certificates (STC) that was applicable to N155UP (Reference Table 8)

	Table 8 List of Supplemental Type Certificates
STC Number	**Description**
ST00440SE	A300 Installation of Honeywell Enhanced Ground Proximity Warning System
SA6076NM	Installation of A300 ACSS Traffic Alert and Collision Avoidance System (TCAS II)
STO1185WI-D	Modification of an existing FAA approved Collins HF Communication System with HFS-900D Receiver/Tran
STO1459WI-D	Rockwell Collins DLM-900 ACARS CORE Software Upgrade
STO1276WI-D	Collins CMU-900 ACARS CORE Software Upgrade
STO2877AT	Upgrade of existing Mode S Transponders to ACSS Mode S Transponder P/N 7517800-10005
STO2866CH	Upgrade of the internal core software of the ACARS Data Link Management Unit (DLM-900)
STO3921AT	Installation of L3 Cockpit Voice Recorder Note: This STC is not in the FAA Database, however UPS provided a copy of the STC

D.9 Airworthiness Directive (AD)[8] Summary:

United Parcel Service Co. supplied the Maintenance Records Group with an AD compliance summary list of applicable ADs. The summary list contains the list of ADs and the method of compliance. There were no discrepancies found during the review of the AD list.

D.10 Service Bulletin (SB) Summary:

United Parcel Service Co. supplied the Maintenance Records Group with a list of Service Bulletins accomplished on N155UP.

D.11 Maintenance History:

The aircraft maintenance history containing daily flight and maintenance information was reviewed from the date range of January 1, 2013 through August 14, 2013. The maintenance team specifically concentrated on ATA 22 (Autoflight), ATA 26 (Fire Protection), ATA 27 (Flight Controls), ATA 30 (Ice and Rain Protection), ATA 34 (Navigation), and ATA 57 (Wings), ATA 72 (Engine), ATA 73 (Engine Fuel and

[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.

Control), ATA 76 (Engine Controls), ATA 77 (Engine Indicating). A review of maintenance records showed no unresolved discrepancies.

D.12 Aircraft Logbook 72-Hour History:

A review of history by the Maintenance Working Group encompassed logbook pages 174282 to 174288. Page 174288 was transmitted to the group from the accident site. Reference Table 9 for a summary of the logbook pages and reference attachment 2 for a copy of the logbook pages.

The vehicle that Work Scheduling utilizes to schedule maintenance is called the Work Assignment Number (WAN). The WAN is recognized as an independent source to record accomplishment of planned maintenance work. A signed WAN will be required, prior to flight, following the completion of a scheduled check (such as a PS check) to verify documents are properly signed indicating certification as outlined within UPS Signature Policy GMM Section 03-01. This will indicate an Airworthiness Continuation as defined in GMM, Section 03-04.

Table 9 Logbook Summary

Logbook Page	Date	Discrepancy	Corrective Action	Comments
174282	8-9-13	"REF M510568 Left hand runway turnoff light inop"	"Reversed DMP. Light ops checks normal in accordance with MM-33-43-00"	
174283	8-10-13	N/A	"N/A"	"Logbook reflects PS-1 check accomplished"
174284	8-12-13	"3 each pitot covers installed and PDC requested"	"Removed 3 pitot covers and PDC accomplished"	
174285	8-13-13	"AS-N due"	"AS-N accomplished"	
174286	8-13-12	"AS-E due PDC requested"	"AS-E and PDC accomplished"	
174287	8-14-13	"Bird strike right side on approach" "AS-N due"	"Accomplished bird strike inspection AS-N accomplished"	See Note 1.
174288	8-14-13	------	-------	Flight 1354

Note 1: A review of aircraft logbook page 174287, dated August 14, 2013, revealed that N155UP, flight 321, experienced a bird strike on the right side of the airplane during approach into the Louisville International Airport (SDF), Kentucky. Flight 321 had originated from Mexico and landed at Louisville at 0421(z) time. The logbook also indicated that maintenance had accomplished a bird strike inspection per Engineering Order (EO) A300-0560-51463-A. During interviews, the UPS maintenance technicians (AMT) who conducted the bird strike inspection stated that the location of the bird strike was just below (forward) of the First Officers windscreen. The remains were wiped off and no structural damage was noted. The "splatter" debris field was observed to be located from the area just below the windshield up and aft onto the windshield only. The AMTs characterized the splatter debris as coming from a small bird. A visual inspection of the aircraft was conducted per the EO and no additional bird strikes were noted.

D.13 Weight and Balance Summary:

Per United Parcel Service Co. Weight and Balance Control Manual, all United Parcel Service Co. airplanes will be reweighed according to the Fleet Weighing Program as outlined in AC120-27E. Only a portion of each fleet must be weighed in a 36 calendar month period. The unaccounted weight and moment change determined by this sample will be applied to the remainder of the fleet at the end of the 36-month weighing cycle. Regardless of the number of aircraft in the fleet, no aircraft may exceed 18 years (six 36-month weighing cycles) from the date of its last weighing before being reweighed.

The last weight and balance for N155UP was performed on January 17, 2009 and was accomplished by S.T. Aerospace San Antonio L.P (Reference Attachment 3).

Weight and Balance Summary:

Basic Operating Weight:	179,144 pounds
Arm:	1,161.2 inches
Moment:	208,023,124 inch-pounds

D.14 Service Difficulty Reports (SDR)[9]:

The FAA SDR database listed a total of twelve (12) SDRs for the airplane from delivery until August 14, 2013. Table 10 provides a brief overview of the description of the discrepancies.

Table 10 SDR Summary

Date	ATA Chapter	Description and Corrective Action
05/15/2012	34	CAPTAIN`S AIRSPEED WENT TO 80 KNOTS, F/O WENT TO ZIPPER CAPTAIN`S ALT REMAINED CORRECT F/O ALT WENT 300' HIGH YAW DAMPER CLICKED OFF. NO FLAGS OR ECAM WARNINGS. EMERGENCY DECLARED. REPLACED NR 1 ADC IAW MM 34-11-34-04. (See note 2 below for more information)
06/11/2011	53	INSPECTION TYPE:3C, DEFERRAL ITEM D-452781 TEMP REPAIR TO HOLE IN BULK PIT FLOOR AT FR 66 TO FR 67 28 IN LT OF CENTERLINE. FABRICATED BULK CARGO FLOORBOARD NR161GF IAW EO A300-5320-16407-E, APPENDIX D.
06/11/2011	53	INSPECTION TYPE:3C, FUSELAGE SKIN DAMAGE AT FR 84 TO FR 86 AT STR 44L TO STR 45L TAPE APPLIED. ACCOMPLISHED REPAIR ON FUSELAGE SKIN AT FR84 TO FR 86 STR 44L TO STR 45L IAW SRM 53-10-12, FIG 210.
12/27/2009	53	FLOORBOARD DAMAGED. FABRICATED NEW FLOOR IAW A300-5320-16407
09/11/2009	79	INTERMITTENT ENGINE OIL LOW PRESSURE LIGHT. CREW HEARD LOUD POP OVER COCKPIT SPEAKER FOLLOWED BY AND AFT BULK CARGO SMOKE INDICATION. EMERGENCY DECLARED. REPLACED NR 1 ENGINE LOW OIL PRESS SWITCH PER MM 79-34-11-04. RAN ENG LEAK AND OPS CKD OK PER MM 71-00-00-05.
09/4/2009	32	INSPECTION TYPE:N/A AFTER LANDING GEAR EXTENSION, THE RESIDUAL BRAKE PRESSURE ON THE LEFT GAUGE INDICATED ABOUT 2500-3000 PSI. CYCLED THE LANDING GEAR - DUAL PR PRESSURE SHOWED ABOUT 200-250

[9] A Service Difficulty Report (SDR) is a report of the occurrence or detection of each failure, malfunction, or defect as required by 14 CFR 121.703.

		PSI. PUMPED THE BRAKE PEDALS AND SELECTED MEDIUM AUTOBRAKES. UPON LANDING, MEDIUM AUTOBRAKES DID NOT WORK. USED MANUAL BRAKES. RR'D TRIPLE BRAKE PRESSURE INDICATOR. OPS CHECKS GOOD. REF AMM 32- 44-19-04; 32-43-00, PG 501; 32-45-00, PG 501.
08/3/2009	21	INSPECTION TYPE:N/A CABIN OVER PRESSURE HORN LOCATED ON MAIN ENTRY DOOR SOUNDS CONTINUOUSLY. ALL DOOR PRESSURIZATION READINGS NORMAL. PERFORMED EMERGENCY ESCAPE SLIDE RELEASE AND RESIDUAL PRESSURE WARNING ADJ/TEST PROCEDURE IAW AMM 52-73-00-05 AND ASM 52-73-00 SCHEM 02 PG 106. FOUND WARNING LIGHT & BUZZER WARNING NORMAL, OK FOR SUBSEQUENT FLIGHT.
02/3/2009	52	INSPECTION TYPE: N/A MAIN CREW ENTRY DOOR WILL NOT SHUT OR LOCK. INSTALLED 2 CONNECTING ARMS AND 2 PINS. CYCLED DOOR LOCK MECHANISM, OPS NORMAL. PERFORMED INSPECTION PER 52-10-20-06 AND OPS CHECK PER 52- 10-20-05. INSPECTED AND OPS CHECK NORMAL OF OUTSIDE LOCK MECH HANDLE.
01/24/2009	52	INSPECTION TYPE:N/A DOOR SLIDE ARMING LEVER PIN RECEPTACLE IS OBSTRUCTED BY 1A PLUG. REMOVED PLASTIC PLUG IAW 52-50-00.
10/22/2006	33	CREW ENTRY DOOR EMERGENCY EXIT LIGHT ASSY HAS TWO LAMPS INOP. RELAMPED, OPS CHECK OK.
02/11/2006	33	ESPU BATT TIMEX. REMOVED AND REPLACED BATTERY IAW 33-51-14.
02/1/2006	27	ON APPROACH TO CGN, FLAPS W/N EXTEND PAST 15. A/C DIVERTED. EMERGENCY DECLARED. UPON APPRIVAL AT EDDK THE SLATS EXTENDED FULLY AND THE FLAP GAUGE INDICATED LESS THAN 15 FLAPS. WE SEQUENCED THE FLAP HANDLE THROUGH AGAIN GETTING THE SAME INDICATIONS. ON APPROACH INTO EDFH AS WE RAN THE CHECKLISTS FOR NO FLAPS. EXTENDED CORRECTLY ON SCHEDULE. BITE ON SFCC C/O FOUND SATISFACTORY AND T/S C/O IAW AMM 27-54-00-04. AND OPS TEST C/O FOUND ALL SATISFACTORY. OK FOR FURTHER SERVICE.

Note 2: According to the SDR that was generated on 5/15/2012, the corrective action for the airspeed anomaly was the replacement of the number 1 Air Data Computer (ADC). On 8-18-2013, the maintenance records group reviewed the maintenance history prior to and after the creation of the SDR. The review indicated that there were no reported airspeed anomalies prior to the reported event on 5/15/2012. However, discrepancies with the captain's airspeed indication continued to be documented in the maintenance log. On 5/25/2012, the crew reported that the discrepancies were occurring during icing conditions. Maintenance replaced the captain's pitot probe per the required maintenance procedures. No additional airspeed discrepancies were reported.

D.15 Major Repairs and Alterations:

The Maintenance Records Group reviewed both the Major Repair and Alterations listings provided by United Parcel Service Co. There were 12 major alterations (not including STCs) accomplished on the airplane from February 15, 2004 to January 26, 2012 (Reference Attachment 4).

There were 18 major repairs from May 18, 2004 to April 25, 2012 (Reference Attachment 5).

D.16 Life Limited Control Components:

Life limited component status for the airplane and two (2) installed engines, APU and landing gear was reviewed. The compliance status was satisfactory. UPS provided the Life Limited Records as requested by the Maintenance Group. A review of the records indicates that UPS is tracking life-limited components and records indicate they are within limits.

D.17 Method of Record Keeping:

All routine and non-routine work forms, log books, serviceable part tags from components installed, deferred items records, engine records, etc., were entered into the Aircraft Records Management System (ARMS) on a daily basis. A computer file history is maintained so that all inspections and checks are monitored for time limitations. The computer files were backed up to prevent total loss of history files. All hard copies of the paperwork were also kept and /or scanned by United Parcel Service Co.

The United Parcel Service Co. Aircraft Records Department in Louisville, Kentucky maintains pertinent aircraft, engine, and component records using both manual and electronic methods. ARMS is an optical imaging system that provides storage, indexing, and retrieval of exact digital images of aircraft maintenance documents. The images, once scanned, indexed, and audited, are written to an optical disk and are unalterable. Index values are stored in an Oracle database, which is backed up to tape each night. Duplicate optical disks and database tapes are stored off site for disaster recovery purposes.

D.18 Manuals:

United Parcel Service Co. uses the following manuals to maintain the airworthiness of its fleet and management of the airline:

Aircraft Reliability Program Manual – This manual describes the United Parcel Service Co. Aircraft Reliability Program, its operation, ambitions, and authority to function as an effective system to identify and establish proper maintenance processes.

General Maintenance Manual (GMM) – This manual describes the duties and responsibilities of the maintenance department and provides a detailed description of the general maintenance policies and procedures.

Maintenance Specification Manual (MSM) - This manual identifies the specific requirements of the aircraft maintenance program as it pertains to schedules, time control and other limits and/or controls concerning the individual aircraft maintenance program.

Ground Operations Manual (GOM) – This manual provides information and instructions for the ground handling of United Parcel Service Co. operated aircraft.

Category 2/3 Manual (CAT 2/3) – This manual provides the maintenance procedures, responsibilities and controls to effectively manage a CAT 2/3 maintenance program.

Reduced Vertical Separation Minimums Manual (RVSM) – This manual provides the processes and procedures for qualification of aircraft for RVSM airspace.

Continuing Analysis and Surveillance System (CASS) – This manual provides the processes and procedures to support the UPS CASS Program.

Illustrated Parts Catalog (IPC) – 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 United Parcel Service Co. The part number content of the IPC arrangement and breakdown sequence of items is compatible with Air Transport Association (ATA) No. 100.

Aircraft Maintenance Manuals (AMM) – The Aircraft Maintenance Manual contains the information necessary to service, troubleshoot, functionally check, repair and/or replace components installed on the aircraft/engines operated by United Parcel Service Co. The manual identifies limits and tests for the associated components or systems.

Minimum Equipment List, Configuration Deviation List, and Dispatch Deviation Procedures - 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.

Overhaul Manual (OHM) – Provides technical data required to overhaul the various components installed on the aircraft. This data contains descriptive, disassembly, cleaning, check, repair, assembly, functional test, special tools, and illustrated parts information. The Overhaul Manual does not contain information relative to work normally performed on the flight line or in the aircraft maintenance operation.

Structural Repair Manual (SRM) – 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.

Wiring Diagram Manual (WDM) – 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.

Weight and Balance Control Manual – This manual establishes procedures for monitoring and controlling the weight and balance of the United Parcel Service Co. fleet of aircraft.

Manufacture Supplied Manuals - Aircraft/Engine Maintenance Manuals, Structural Repair Manuals, Wiring Diagrams, Electrical Standard Practices Manual, Trouble Shooting Manual, Overhaul Manuals, Illustrated Parts Catalog, Corrosion Prevention Manual, NDT Manual, Service Bulletins and Engine Manuals.

NOTE: This manual listing does not contain UPS Shop Manuals.

Mike Hauf

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