**Docket No. SA-538**

**Exhibit No. 2-N**

# NATIONAL TRANSPORTATION SAFETY BOARD

**Washington, D.C.**

Attachment 13 – Weight and Balance
(13 Pages)

# NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

January 31, 2014

## Attachment 13 – Weight and Balance

# OPERATIONAL FACTORS

**DCA13MA133**

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# A. WEIGHT AND BALANCE

## 1.0 Computer –Generated Weight and Balance

Flight UPS1354 From SDF To BHM Tail N155UP
Flight Date 14-Aug-13 Close Date 14-Aug-13 Close Time 08:40:46 Z
A/C Model A300F4-622R Print Date 14-Aug-13 Print Time 08:40:48 Z

| POS. | CONTAINER | WGHT. | DEST. | POS. | CONTAINER | WGHT. | DEST. |
|---|---|---|---|---|---|---|---|
| | | | | 1 | AAY89572UPS | 2080 | 3570 |
| 2L | AAY43160UPS | 2090 | 3529 | 2R | AAY86298UPS | 1775 | 3970 |
| 3L | AAD43256UPS | 3045 | 3529 | 3R | AAY74130UPS | 2030 | 3516 |
| 4L | AAD14554UPS | 2615 | 3509 | 4R | AAY42453UPS | 2047 | BHM |
| 5L | AAY78873UPS | 2150 | 3560 | 5R | AAD18240UPS | 1850 | 3539 |
| 6L | AAD17693UPS | 4420 | 3539 | 6R | AAY84751UPS | 6400 | 3540 |
| 7L | AAY89635UPS | 3035 | 3562 | 7R | AAD17712UPS | 3710 | 3609 |
| 8L | AAY76434UPS | 3085 | 3620 | 8R | AAY86478UPS | 1870 | 3590 |
| 9L | AAD47139UPS | 3935 | 3539 | 9R | AAY70531UPS | 3445 | 3509 |
| 10L | AAY75890UPS | 3320 | 3570 | 10R | AAY77359UPS | 3345 | 3970 |
| | | | | 11 | AAY70197UPS | 3560 | 3509 |
| | | | | 12 | AAY78828UPS | 3260 | 3570 |
| | | | | 13 | AAY87893UPS | 3060 | 3609 |
| | | | | P1 | AAZ23286UPS | 3025 | 3509 |
| | | | | P2 | AAZ25610UPS | 2595 | 3509 |
| | | | | P3 | AAZ29994UPS | 3435 | 3539 |
| | | | | P4 | AAZ26307UPS | 3710 | 3539 |
| | | | | P5 | AAZ29977UPS | 2995 | 3509 |
| | | | | P6 | AAZ25373UPS | 3405 | 3529 |
| | | | | P7 | AAZ25940UPS | 3155 | 3529 |
| | | | | AB | N155UPAB | 760 | BHM |
| | | | | Total Payload | | 89227 | |
| | | | | BOW | | 179200 | |

Flight UPS1354 From SDF To BHM Tail N155UP
Flight Date 14-Aug-13 Close Date 14-Aug-13 Close Time 08:40:46 Z
A/C Model A300F4-622R Print Date 14-Aug-13 Print Time 08:40:48 Z

| ACMS | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| ZFW | 268.4 27.1 | 268.7 26.9 | 269.0 26.8 | 269.3 26.7 | 269.5 26.6 | 269.8 26.4 |

| FUEL | TAKEOFF | TAKEOFF | TAKEOFF | TAKEOFF | TAKEOFF | TAKEOFF |
|---|---|---|---|---|---|---|
| 33.1 | 300.5 28.9 | 300.8 28.8 | 301.1 28.7 | 301.4 28.5 | 301.6 28.4 | 301.9 28.3 |
| 33.6 | 301.0 28.9 | 301.3 28.7 | 301.6 28.6 | 301.9 28.5 | 302.1 28.4 | 302.4 28.3 |
| 34.1 | 301.5 28.8 | 301.8 28.7 | 302.1 28.6 | 302.4 28.5 | 302.6 28.4 | 302.9 28.2 |
| 34.6 | 302.0 28.8 | 302.3 28.7 | 302.6 28.6 | 302.9 28.4 | 303.1 28.3 | 303.4 28.2 |
| 35.1 | 302.5 28.8 | 302.8 28.6 | 303.1 28.5 | 303.4 28.4 | 303.6 28.3 | 303.9 28.2 |
| 35.6 | 303.0 28.7 | 303.3 28.6 | 303.6 28.5 | 303.9 28.4 | 304.1 28.3 | 304.4 28.1 |
| 36.1 | 303.5 28.7 | 303.8 28.6 | 304.1 28.4 | 304.4 28.3 | 304.6 28.2 | 304.9 28.1 |
| 36.6 | 304.0 28.6 | 304.3 28.5 | 304.6 28.4 | 304.9 28.3 | 305.1 28.2 | 305.4 28.1 |
| 37.1 | 304.5 28.6 | 304.8 28.5 | 305.1 28.4 | 305.4 28.3 | 305.6 28.2 | 305.9 28.0 |
| 37.6 | 305.0 28.6 | 305.3 28.5 | 305.6 28.3 | 305.9 28.2 | 306.1 28.1 | 306.4 28.0 |

| STAB: | | | | | | |
|---|---|---|---|---|---|---|
| 15/0 | -0.4 | -0.4 | -0.3 | -0.3 | -0.3 | -0.2 |
| 15/15 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 |
| 15/20 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 |

TAXI BURN = 1.0 N/A = NOT ALLOWED TAKEOFF CG = 28.8 (28.0 - 28.9)

USABLE CENTER TANK FUEL = 800 LBS
USABLE TRIM TANK FUEL = 0 LBS

ORIGINAL ZFW _____
+ ADD. PAYLOAD _____
REVISED ZFW _____

ORIGINAL TOW _____
+ ADD. PAYLOAD _____
REVISED TOW _____

MAX ALLOW GTOW 319.1
LIMITED BY:
T.O. RUNWAY ( )
T.O. CLIMB ( )
T.O. STRUCTURAL ( )
LNDG ALT( ) DEST (✓)
ENROUTE ( )

CERTIFICATIONS:

*** WEIGHT AND BALANCE DOES NOT INCLUDE ALL MEL/CDL LIMITATIONS ***

NOTOC IS REQUIRED FOR FLIGHT: (X) YES / NO ( )

BROOKE NASH
WEIGHT AND BALANCE CALCULATIONS
[redacted] TAIL N 155
AIRCRAFT LOADING / TIME COMPLETED 4:43

BROOKE NASH
COMPARTMENT WEIGHTS
[redacted] 08:43Z
UPS FLT CREW MEMBER/TIME RECEIVED

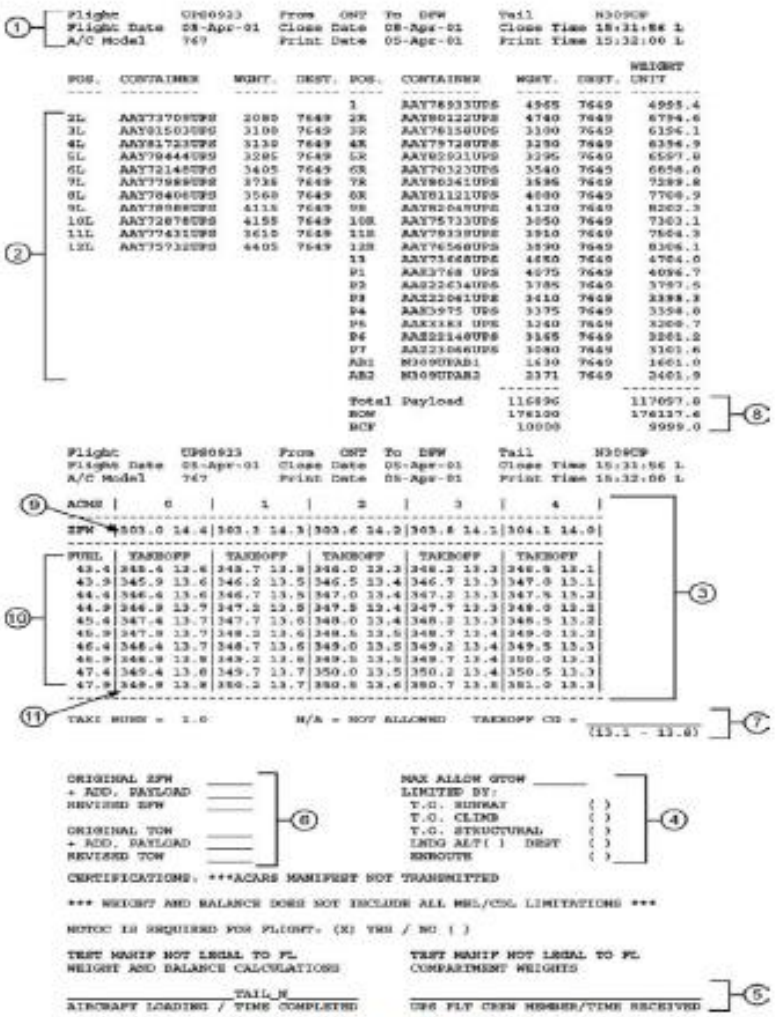
## 1.1 Computer –Generated Weight and Balance Format[1]

### 09.01.02 COMPUTER-GENERATED WEIGHT AND BALANCE

### 09.01.02.01 FORMAT

Illustrations of DWB computer-generated load manifests have been included in this chapter. Load manifests may be printed by a computer or by a remote computer.

Below is a sample of a B767 DWB computer-generated load manifest.



COMPUTER-GENERATED W&B MANIFEST

[1] Source: FOM Volume 2, Section 09.01.02.02 ELEMENTS

### 09.01.02.02 ELEMENTS

The elements in this section refer to the DWB computer-generated load manifest format for a B757-767 aircraft. General elements of the load manifest are defined in this section. Specific differences for the A300, MD11 and B747-400 are defined in the remaining sections of this chapter.

#### ELEMENT 1: HEADING

The W&B heading section shows flight number, departure and destination airports, aircraft tail, Flight Date (first leg of pairing), output run date (the date and time document was actually closed and printed) and the aircraft model. The following example is for a B767, but is consistent with any aircraft.

| | | | | | |
|---|---|---|---|---|---|
| Flight | UPS0123 | From JAA | To ANC | Tail | N310UP |
| Flight Date | 26-Nov-11 | Close Date | 27-Nov-11 | Close Time | 00:09:50 z |
| A/C Model | B-767-300 | Print Date | 27-Nov-11 | Print Time | 00:10:05 z |

```
------------------------------------------------------------------
                          FLIGHT RELEASE

DISPATCHER STEVE CANYON                        RELEASE TIME 01.35
  ACFT REG N310UP                                    DATE 11/27/11
 ACFT TYPE B767-300                 VIA          T/O
                        ORG  DST    ALTN  ALTN   ALTN  TAKEOFF FUEL
IFR FLIGHT UPS123/10    RJAA-PANC   ....  PAED   ....     093.4

ETOPS RULE 180 MIN
ENRTE ALTN RJCC PACD
 FMS ROUTE RJAA INUBO1 GIRAF Y808 PEXEL A590 HAMND NEELL1 PANC
   REMARKS
           ** EXTRA FUEL FOR TAXI. **
                                          FLIGHT CONTROL CONTACT
                                           DOM  800-247-1907
 SIGNATURE ............................    INTL 01-502-359-8378
==================================================================
OFP 7/0/1              OPERATIONAL FLIGHT PLAN
------------------------------------------------------------------
FLIGHT NBR UPS123        DATE 11/26/11       SCHEDULE      PLAN
  ACFT REG N310UP                        RJAA STD 12.55  ETD 01.35
 ACFT TYPE B767-300                            TXO 00.20
                        SELCAL DLEQ            ETE 06.15  ETE 06.45
SPEED   CLB 290.M78       WIND P012           TXI 00.09  ETA 20.00
SCHD    CRZ M80             ISA M01     PANC STA 19.39  PTA 20.09
        DSC M78.290       ROUTE NRTANC015                DIFF +0.30
------------------------------------------------------------------
```

The Close or Print dates can be either date. These simply reflect load complete and/or final weight and balance computations complete and print time.

#### ELEMENT 2: COMPARTMENT WEIGHTS

This section shows the container number, weight, destination and corresponding weight unit for each payload position. In addition, the total payload is calculated and the basic operating weight is displayed. "C" in the right "POS" column on a B767 manifest indicates a container loaded in the center position. When a "C" appears in the right "POS" column on a B767 manifest, a zero ("0") will appear in the left "POS" column. (See A300-600, MD11 and B747-400 exceptions.)

NOTE: All voided positions require a load supervisor's initials.

ELEMENT 3: ZERO FUEL WEIGHT AND TAKEOFF MATRIX

The matrix displays zero fuel weight and takeoff weight calculations. To determine zero fuel weight and CG, first locate the actual number of ACMs across the top of the matrix. The line below the number of ACMs shows the corresponding zero fuel weight (/1000) and the zero fuel weight CG (MAC UNITS). (See A300, MD11, B747-400 exceptions.)

Below the zero fuel line is the matrix showing takeoff weights and CGs. To determine takeoff weight and CG, first locate the actual number of ACMs across the top of the matrix. Next, locate the ramp fuel row along the left side of the matrix. The intersection of the ACM column and ramp fuel row contains the takeoff weight (/1000) and the takeoff CG (MAC UNITS). (See A300, MD11 and B747-400 exceptions.)

NOTE: The zero fuel weight and takeoff weight values must always be in the same column. You may select the next higher fuel value when the actual ramp fuel falls between two values in the matrix.

The logic of the DWB software prevents values from being printed when a W&B limit is exceeded. When any limit is exceeded, the abbreviation "NA," meaning "not allowed," will be printed.

ELEMENT 4: MAXIMUM ALLOWABLE TAKEOFF WEIGHT

In this section, the flight crew records the maximum allowable takeoff weight. Boxes (in the form of brackets or parentheses) are provided for the flight crew to check the limiting performance factor (i.e., runway, climb, structure, enroute [B757-767, A300 and MD11], landing at the alternate, or landing at the destination).

ELEMENT 5: SIGNATURES

Two electronically printed signatures and two hand signatures are required in this section of the load manifest. The electronically printed signatures are produced by the DWB system to certify W&B calculations and compartment weights. The aircraft Loading Supervisor enters a hand signature and time on the "Aircraft Loading" line of the manifest. An operating crewmember enters a hand signature and time on the "UPS Flt Crewmember" line of the manifest.

ELEMENT 6: LATE ARRIVING PACKAGE CORRECTIONS

This section is used to account for zero fuel weight and takeoff changes when late arriving packages are added to the lower aft belly positions. Notice that weight corrections are applied for up to 200 pounds of late arriving packages only. Due to the negligible change in CG, it is not necessary to make any adjustment to takeoff CG.

ELEMENT 7: TAKEOFF CG

This section is used to record the actual takeoff CG for the flight. This takeoff CG is the same value circled in the takeoff matrix. Below the recorded takeoff CG is the minimum and maximum takeoff CG range displayed in the matrix. This range simply serves as a safety check and in no way indicates the forward and aft CG limits. Confirm that your recorded value for takeoff CG is within this range.

ELEMENT 8: BALANCE CONTROL FUEL (BCF)

On the B747-400 aircraft, BCF is unusable fuel loaded in the Center Tank. (On the MD11, BCF is unusable fuel loaded in the Upper AUX Tank.) BCF has the effect of moving the aircraft CG forward. BCF is considered payload and is included in the Zero Fuel Weights of the aircraft. Refer to your AOM for details on BCF. When an aircraft is loaded with BCF in the Center Tank (MD11 - Upper AUX Tank), "BCF" and the amount in pounds is shown below "BOW."

ELEMENT 9: BALANCE CONTROL FUEL (BCF)

When an aircraft is loaded with BCF in the center tank, the BCF weight is included in Zero Fuel Weight.

ELEMENT 10: BALANCE CONTROL FUEL (BCF)

When an aircraft is loaded with BCF in the center tank, the fuel is included in total fuel on the aircraft.

ELEMENT 11: BALANCE CONTROL FUEL (BCF)

To find the actual Takeoff Weight and CG in the appropriate ACM column, enter the fuel column with the total ramp fuel, which includes BCF when BCF is loaded on the aircraft.

## 09.01.03 A300 EXCEPTIONS

### 09.01.03.01 ELEMENTS

The figure below illustrates a DWB computer-generated load manifest for the A300. Five elements of the A300 load manifest differ from the load manifests for other UPS aircraft.

ELEMENT 1: NO WEIGHT UNIT COLUMN

Weight Unit is absent on the A300 load manifest.

ELEMENT 2: STAB TRIM

The stabilizer trims for flaps 15/0, 15/15 and 15/20 (labeled "STAB TRIM") are printed on the A300 load manifest. These three "STAB" trims also appear on the A300 ACARS load manifest previews.

ELEMENT 3: PERCENT MAC CG

Percent MAC column is used for the A300 load manifest.

ELEMENT 4: UNUSABLE FUEL

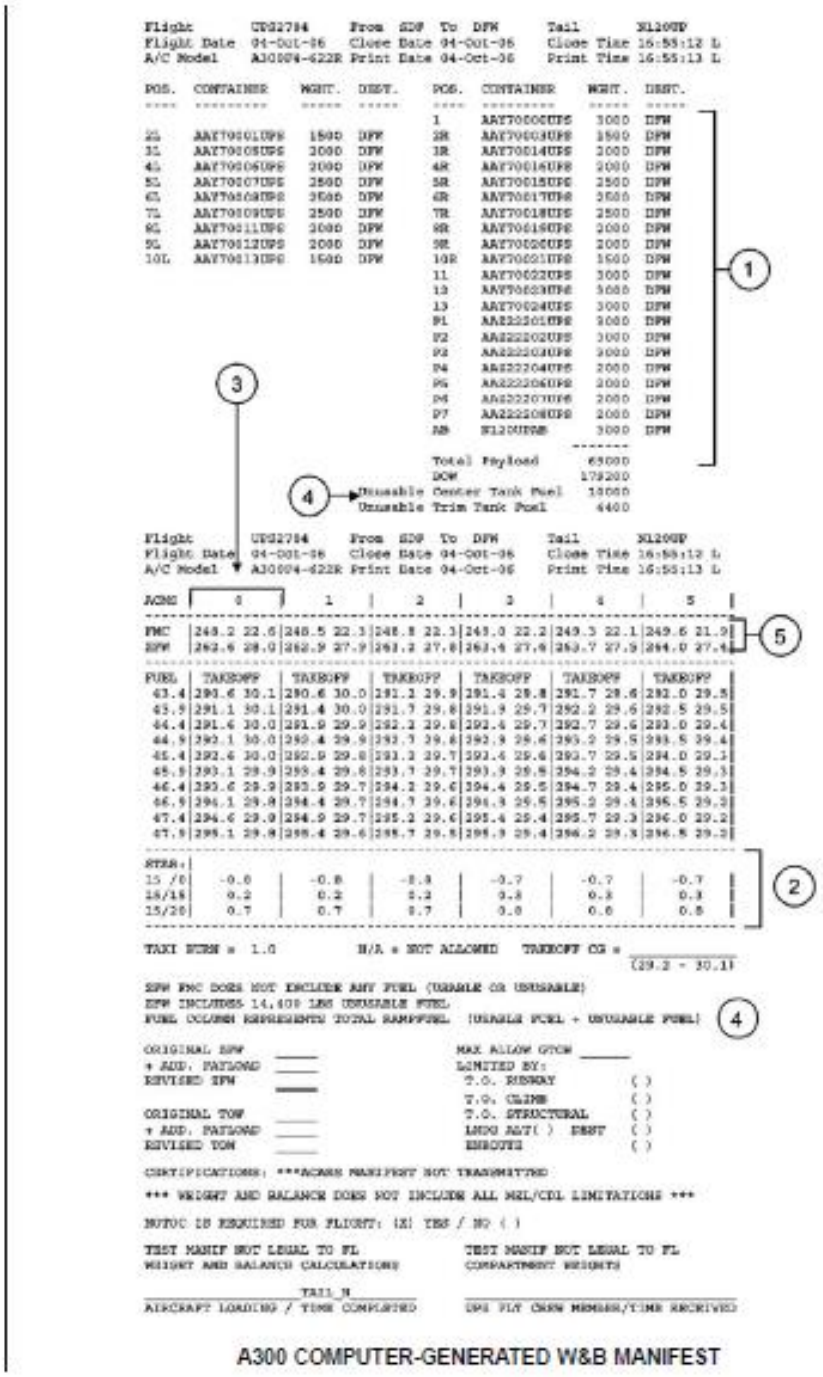
Unusable Center Tank Fuel: MEL trapped fuel (unburnable/unusable) can be in the center tank, provided it is included in ZFW and CG calculations and ZFW does not exceed 286,600 lbs.

Unusable Trim Tank Fuel: Up to 4400 lbs. MEL trapped fuel (unburnable/unusable) can be in the trim tank, provided it is included in ZFW and CG calculations and ZFW does not exceed 286,600 lbs.

ELEMENT 5: ZFW FMC

ZFW FMC (Zero Fuel Weight - Flight Management Computer). In those cases where there is MEL trapped/unusable fuel, the load manifest will display both ZFW and ZFW FMC values. If there is no trapped/unusable fuel the ZFW FMC line will not appear on the load manifest. Under certain MEL Limitations, unusable fuel may be trapped in the center and/or trim tank. The flight crew enters ZFW and ZFW CG from the ZFW FMC row on the load manifest into the FMC INIT page B. The A300 ECAM Memo page will then display proper weight and CG, matching the load manifest values.

NOTE: The A300 FMC is the input interface to the A300 Center of Gravity Control Computer (CGCC), which calculates the aircraft CG. The FMC input (ZFW FMC values to the CGCC) excludes unusable MEL trapped fuel (the CGCC already has the fuel distribution). The CGCC will then calculate the effect of fuel (usable and unusable, separate from the load manifest ZFW and CG) and when complete, the FMC values will match the load manifest values.

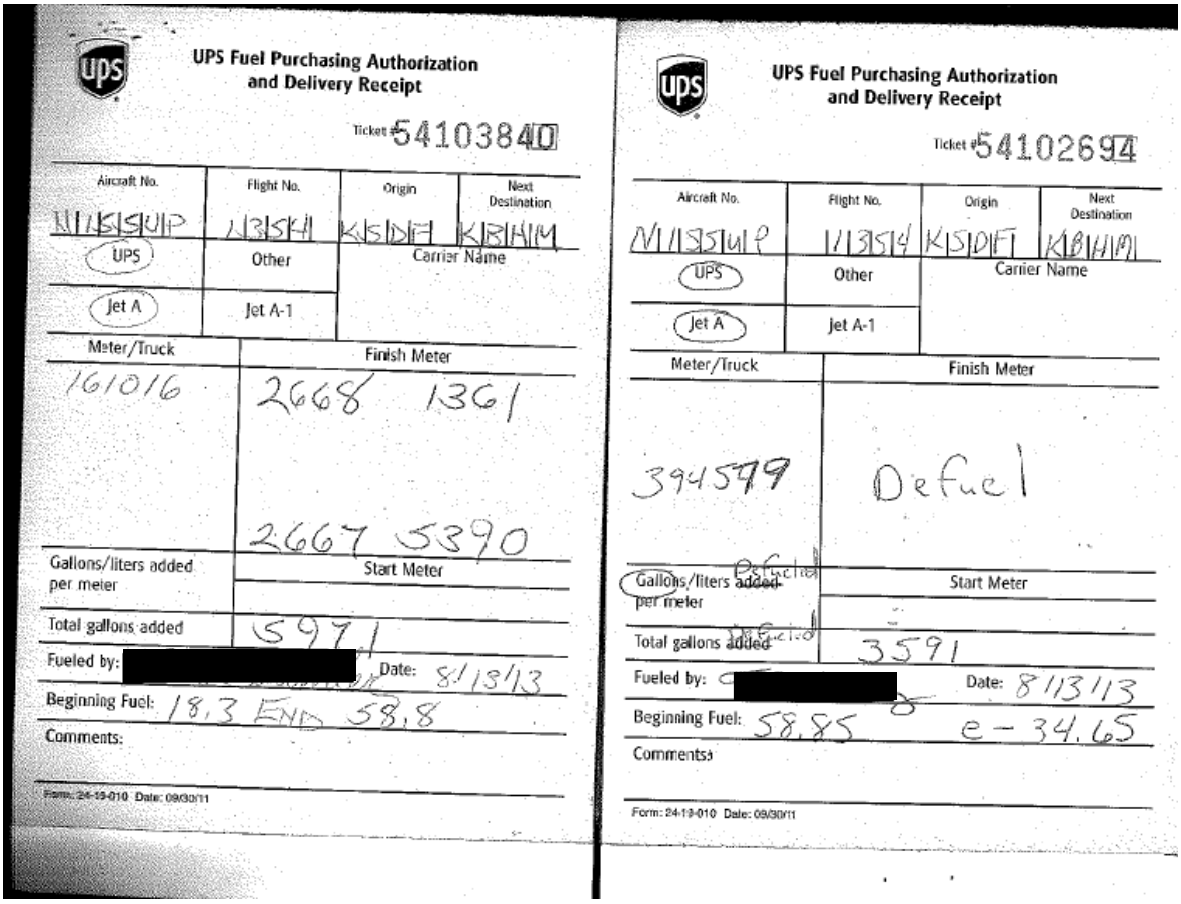


```
Flight       UPS2784      From  SDF  To  DFW      Tail       XL204UP
Flight Date  04-Oct-06     Close Date 04-Oct-06    Close Time 16:55:12 L
A/C Model    A30004-422R  Print Date 04-Oct-06    Print Time 16:55:13 L

POS.  CONTAINER    WGHT.  DEST.     POS.  CONTAINER    WGHT.  DEST.
----  ---------    -----  -----     ----  ---------    -----  -----
                                    1     AAY70000UPS  3000   DFW
2L    AAY70101UPS  1500   DFW       2R    AAY70003UPS  1500   DFW
3L    AAY70105UPS  2000   DFW       3R    AAY70014UPS  2000   DFW
4L    AAY70106UPS  2000   DFW       4R    AAY70016UPS  2000   DFW
5L    AAY70107UPS  2500   DFW       5R    AAY70015UPS  2500   DFW
6L    AAY70108UPS  3500   DFW       6R    AAY70017UPS  3500   DFW
7L    AAY70109UPS  2500   DFW       7R    AAY70018UPS  2500   DFW
8L    AAY70111UPS  2000   DFW       8R    AAY70019UPS  2000   DFW
9L    AAY70112UPS  2000   DFW       9R    AAY70020UPS  2000   DFW
10L   AAY70113UPS  1500   DFW       10R   AAY70021UPS  1500   DFW
                                    11    AAY70022UPS  3000   DFW
                                    13    AAY70023UPS  3000   DFW
                                    13    AAY70024UPS  3000   DFW
                                    P1    AA222301UPS  3000   DFW
                                    P2    AA222202UPS  3000   DFW
                                    P3    AA222203UPS  3000   DFW
                                    P4    AA222204UPS  2000   DFW
                                    P5    AA222206UPS  2000   DFW
                                    P6    AA222207UPS  2000   DFW
                                    P7    AA222208UPS  2000   DFW
                                    AB    XL204UPAB    3000   DFW
                                                      -------
                                    Total Payload      65000
                                    DOW               179200
                                    Unusable Center Tank Fuel  18000
                                    Unusable Trim Tank Fuel     6400

Flight       UPS2784      From  SDF  To  DFW      Tail       XL204UP
Flight Date  04-Oct-06     Close Date 04-Oct-06    Close Time 16:55:12 L
A/C Model    A30004-422R  Print Date 04-Oct-06    Print Time 16:55:13 L

ACMS |    0    |    1    |    2    |    3    |    4    |    5    |
-----------------------------------------------------------------------
ZFW  |248.2 22.6|248.5 22.3|248.8 22.3|249.0 22.2|249.3 22.1|249.6 21.9|
RFW  |262.6 28.0|262.9 27.9|263.2 27.8|263.4 27.6|263.7 27.5|264.0 27.4|
-----------------------------------------------------------------------

FUEL | TAKEOFF  | TAKEOFF  | TAKEOFF  | TAKEOFF  | TAKEOFF  | TAKEOFF  |
 43.4|291.6 30.1|290.6 30.0|291.2 29.9|291.4 29.8|291.7 29.6|292.0 29.5|
 43.9|291.1 30.1|291.4 30.0|291.7 29.8|291.9 29.7|292.2 29.6|292.5 29.5|
 44.4|291.6 30.0|291.9 29.9|292.2 29.8|292.4 29.7|292.7 29.6|293.0 29.4|
 44.9|292.1 30.0|292.4 29.9|292.7 29.8|292.9 29.6|293.2 29.5|293.5 29.4|
 45.4|292.6 30.0|292.9 29.8|293.2 29.7|293.4 29.6|293.7 29.5|294.0 29.3|
 45.9|293.1 29.9|293.4 29.8|293.7 29.7|293.9 29.5|294.2 29.4|294.5 29.3|
 46.4|293.6 29.9|293.9 29.7|294.2 29.6|294.4 29.5|294.7 29.4|295.0 29.3|
 46.9|294.1 29.8|294.4 29.7|294.7 29.6|294.9 29.5|295.2 29.4|295.5 29.3|
 47.4|294.6 29.8|294.9 29.7|295.2 29.6|295.4 29.4|295.7 29.3|296.0 29.2|
 47.9|295.1 29.8|295.4 29.6|295.7 29.5|295.9 29.4|296.2 29.3|296.5 29.3|
-----------------------------------------------------------------------

STEP:|
15 /0|  -0.0  |  -0.8  |  -1.3  |  -0.7  |  -0.7  |  -0.7  |
15/15|   0.2  |   0.2  |   0.2  |   0.8  |   0.8  |   0.8  |
15/20|   0.7  |   0.7  |   0.7  |   0.8  |   0.8  |   0.8  |
-----------------------------------------------------------------------

TAXI BURN =  1.0          N/A = NOT ALLOWED   TAKEOFF CG = ____________
                                                          (29.2 - 30.1)

ZFW FWC DOES NOT EXCLUDE ANY FUEL (USABLE OR UNUSABLE)
ZFW INCLUDES 14,400 LBS UNUSABLE FUEL
FUEL COLUMN REPRESENTS TOTAL RAMPFUEL  (USABLE FUEL + UNUSABLE FUEL)

ORIGINAL ZFW  _____              MAX ALLOW GTOW _____
+ ADD. PAYLOAD _____             LIMITED BY:
REVISED ZFW   _____               T.O. RUNWAY        ( )
                                  T.O. CLIMB         ( )
ORIGINAL TOW  _____               T.O. STRUCTURAL    ( )
+ ADD. PAYLOAD _____              LNDG ALT( )  DEST  ( )
REVISED TOW   _____               ENROUTE            ( )

CERTIFICATIONS: ***ACARS MANIFEST NOT TRANSMITTED

*** WEIGHT AND BALANCE DOES NOT INCLUDE ALL MEL/CDL LIMITATIONS ***

NOTOC IS REQUIRED FOR FLIGHT: (X) YES / NO ( )

TEST MANIF NOT LEGAL TO FL              TEST MANIF NOT LEGAL TO FL
WEIGHT AND BALANCE CALCULATIONS         COMPARTMENT WEIGHTS

_____TAIL_N_____                        _____
AIRCRAFT LOADING / TIME COMPLETED       DPS FLT CREW MEMBER/TIME RECEIVED
```

1
2
3
4
5

A300 COMPUTER-GENERATED W&B MANIFEST

## 2.0 Fuel Load



UPS Fuel Purchasing Authorization and Delivery Receipt

Ticket # 5410384

| Aircraft No. | Flight No. | Origin | Next Destination |
|---|---|---|---|
| N113SUP | 113SKH | KSDF | KBHM |
| UPS | Other | Carrier Name | |
| Jet A | Jet A-1 | | |

| Meter/Truck | Finish Meter |
|---|---|
| 161016 | 2668 1361 |
| | 2667 5390 |
| Gallons/liters added per meter | Start Meter |
| Total gallons added | 5971 |
| Fueled by: [redacted] | Date: 8/13/13 |
| Beginning Fuel: 18.3 END 58.8 | |
| Comments: | |

Form: 24-13-010 Date: 09/30/11

UPS Fuel Purchasing Authorization and Delivery Receipt

Ticket # 5410269

| Aircraft No. | Flight No. | Origin | Next Destination |
|---|---|---|---|
| N113SUP | 113SKH | KSDF | KBHM |
| UPS | Other | Carrier Name | |
| Jet A | Jet A-1 | | |

| Meter/Truck | Finish Meter |
|---|---|
| 394579 | Defuel |
| Gallons/liters added per meter Defueled | Start Meter |
| Total gallons added Defueled | 3591 |
| Fueled by: [redacted] | Date: 8/13/13 |
| Beginning Fuel: 58.85 | e-34.65 |
| Comments: | |

Form: 24-13-010 Date: 09/30/11

# UPS Fuel Planning Worksheet

Date- 8/13/13

(Jet A) Jet A-1-

| Aircraft No. | Flight No | Origin Gtwy | Next Destination |
|---|---|---|---|
| N155UP | 1354 | KSDF | KBHM |

| Tank | Remaining | Planned | Actual |
|---|---|---|---|
| 1 | 7,94 | 8,2 | 8,26 |
| 2 | 0 | 21,1 | 19,74 |
| 3 | 2,74 | 0 | 2,76 |
| 4 | 0 | 21,0 | 1978 |
| 5 | 7,63 | 8,2 | 8,28 |
| 6 | 0 | 0 | 0 |
| | | | |
| Total Fuel Indicated | 18,3 Remaining Lbs | 58,5 Planned Lbs | 58,8 Total Lbs |

Actural Fuel On Aircft Calculated: 18,3 Remaining Lbs + 40,24 Added Fuel Lbs = 58,54 Total Lbs

5971 Added Gals/liters (per meter) x 6,74 Fuel Density Lb/gal = 40,24 Added Fuel

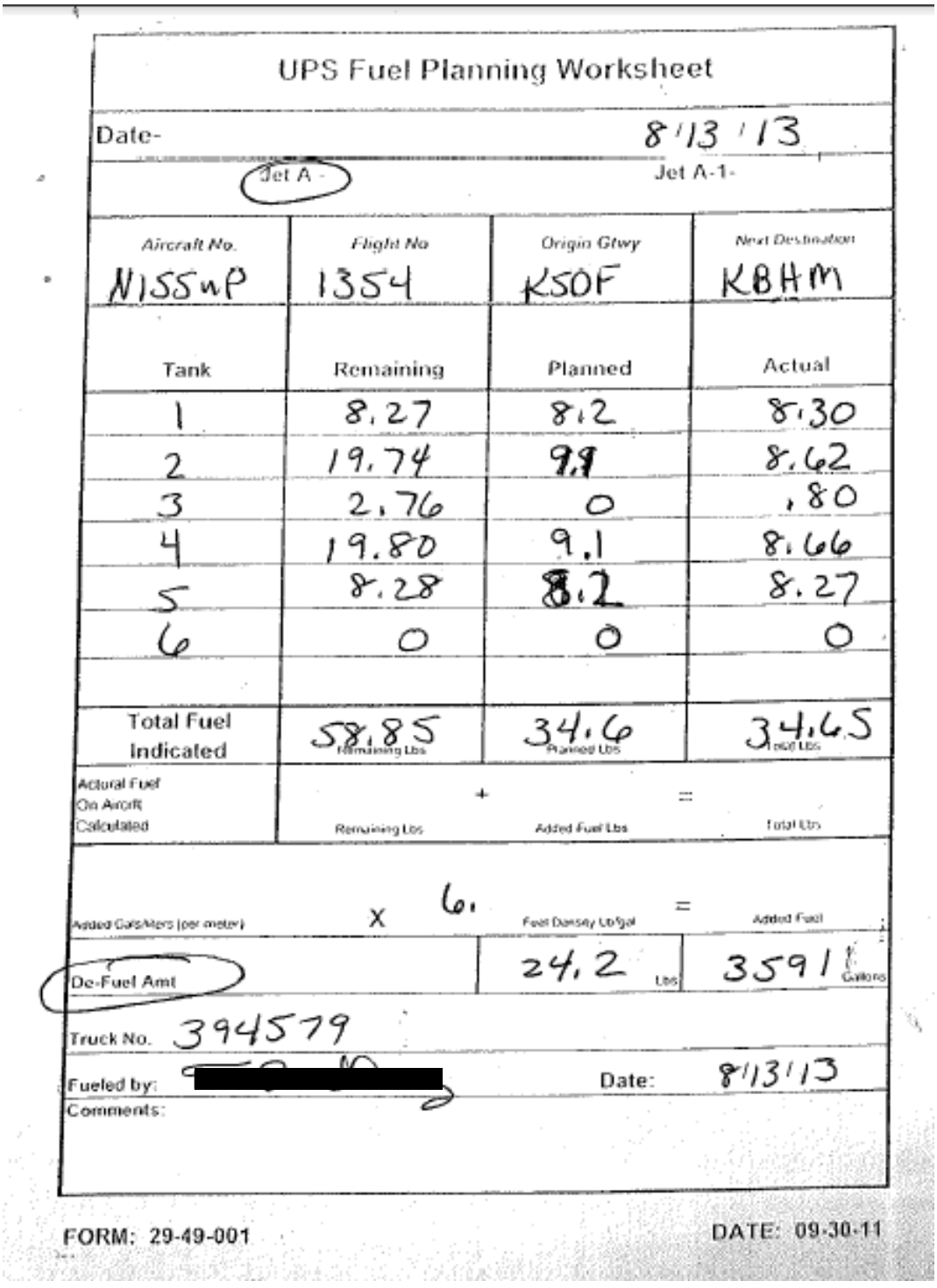
De-Fuel Amt ____ Lbs ____ Gallons

Truck No. 16016

Fueled by: [redacted] Date: 8/13/13

Comments:

FORM: 29-49-001 DATE: 09-30-11



UPS Fuel Planning Worksheet

Date- 8/13/13

Jet A - Jet A-1-

| Aircraft No. | Flight No | Origin Gtwy | Next Destination |
|---|---|---|---|
| N155uP | 1354 | KSDF | KBHM |

| Tank | Remaining | Planned | Actual |
|---|---|---|---|
| 1 | 8.27 | 8.2 | 8.30 |
| 2 | 19.74 | 9.1 | 8.62 |
| 3 | 2.76 | 0 | .80 |
| 4 | 19.80 | 9.1 | 8.66 |
| 5 | 8.28 | 8.2 | 8.27 |
| 6 | 0 | 0 | 0 |
| | | | |
| Total Fuel Indicated | 58.85 Remaining Lbs | 34.6 Planned Lbs | 34.65 Total Lbs |

Actual Fuel On Aircft Calculated: Remaining Lbs + Added Fuel Lbs = Total Lbs

Added Gals/Mtrs (per meter) x 6. Fuel Density Lb/Gal = Added Fuel

De-Fuel Amt: 24.2 Lbs 3591 Gallons

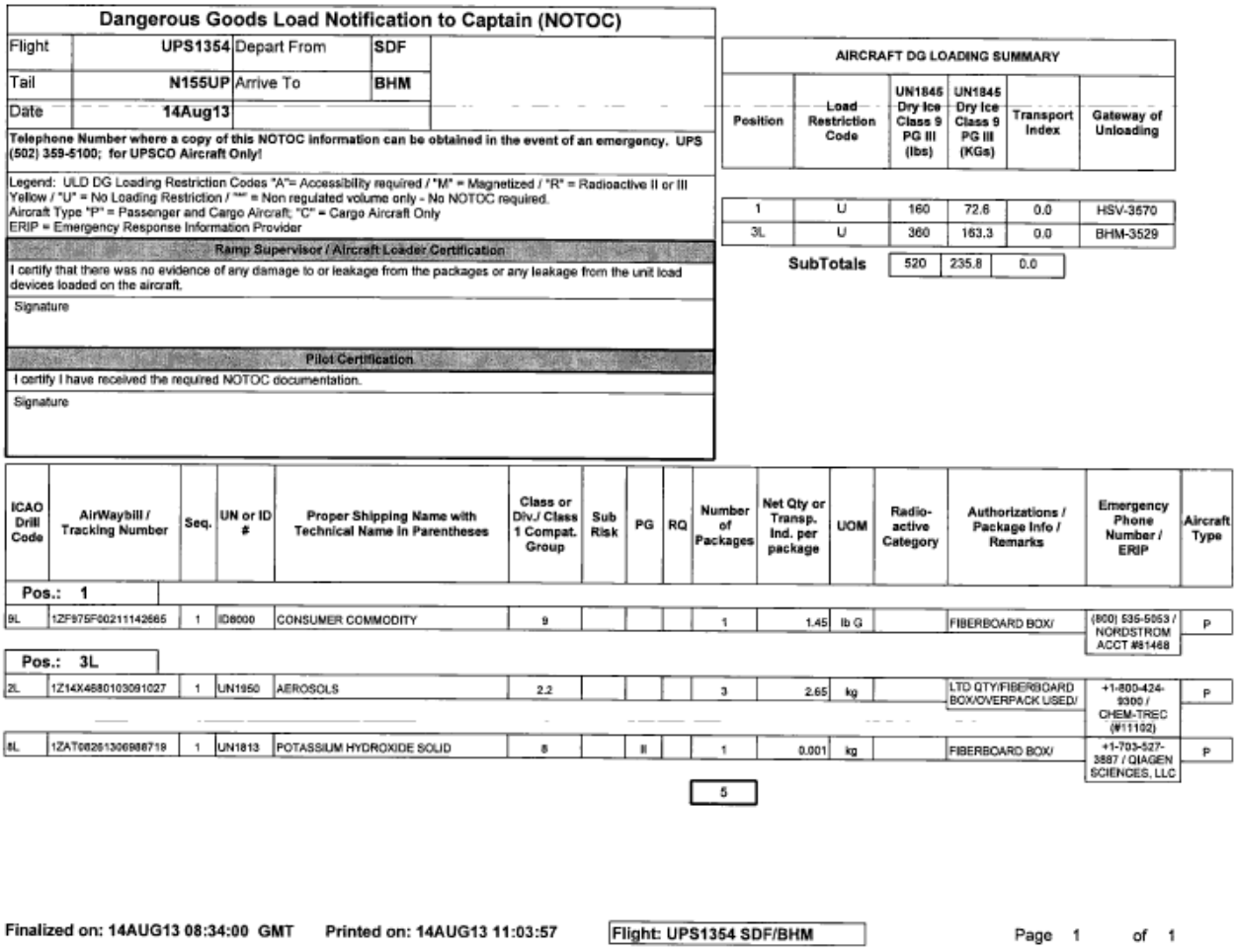
Truck No. 394579

Fueled by: [redacted] Date: 8/13/13

Comments:

FORM: 29-49-001 DATE: 09-30-11

## 3.0 NOTOC[2]



**Dangerous Goods Load Notification to Captain (NOTOC)**

| | | | |
|---|---|---|---|
| Flight | UPS1354 | Depart From | SDF |
| Tail | N155UP | Arrive To | BHM |
| Date | 14Aug13 | | |

**Telephone Number where a copy of this NOTOC information can be obtained in the event of an emergency. UPS (502) 359-5100; for UPSCO Aircraft Only!**

Legend: ULD DG Loading Restriction Codes "A"= Accessibility required / "M" = Magnetized / "R" = Radioactive II or III Yellow / "U" = No Loading Restriction / "*" = Non regulated volume only - No NOTOC required.
Aircraft Type "P" = Passenger and Cargo Aircraft; "C" = Cargo Aircraft Only
ERIP = Emergency Response Information Provider

**Ramp Supervisor / Aircraft Loader Certification**

I certify that there was no evidence of any damage to or leakage from the packages or any leakage from the unit load devices loaded on the aircraft.

Signature

**Pilot Certification**

I certify I have received the required NOTOC documentation.

Signature

**AIRCRAFT DG LOADING SUMMARY**

| Position | Load Restriction Code | UN1845 Dry Ice Class 9 PG III (lbs) | UN1845 Dry Ice Class 9 PG III (KGs) | Transport Index | Gateway of Unloading |
|---|---|---|---|---|---|
| 1 | U | 160 | 72.6 | 0.0 | HSV-3570 |
| 3L | U | 360 | 163.3 | 0.0 | BHM-3529 |
| SubTotals | | 520 | 235.8 | 0.0 | |

| ICAO Drill Code | AirWaybill / Tracking Number | Seq. | UN or ID # | Proper Shipping Name with Technical Name in Parentheses | Class or Div./ Class 1 Compat. Group | Sub Risk | PG | RQ | Number of Packages | Net Qty or Transp. Ind. per package | UOM | Radio-active Category | Authorizations / Package Info / Remarks | Emergency Phone Number / ERIP | Aircraft Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pos.: 1** | | | | | | | | | | | | | | | |
| 9L | 1ZF975F00211142665 | 1 | ID8000 | CONSUMER COMMODITY | 9 | | | | 1 | 1.45 | lb G | | FIBERBOARD BOX/ | (800) 535-5053 / NORDSTROM ACCT #81468 | P |
| **Pos.: 3L** | | | | | | | | | | | | | | | |
| 2L | 1Z14X4680103091027 | 1 | UN1950 | AEROSOLS | 2.2 | | | | 3 | 2.65 | kg | | LTD QTY/FIBERBOARD BOX/OVERPACK USED/ | +1-800-424-9300 / CHEM-TREC (#11102) | P |
| 8L | 1ZAT00261306986718 | 1 | UN1813 | POTASSIUM HYDROXIDE SOLID | 8 | | II | | 1 | 0.001 | kg | | FIBERBOARD BOX/ | +1-703-527-3887 / QIAGEN SCIENCES, LLC | P |
| | | | | | | | | | 5 | | | | | | |

**Finalized on: 14AUG13 08:34:00 GMT** **Printed on: 14AUG13 11:03:57** **Flight: UPS1354 SDF/BHM** Page 1 of 1

[2] NOTOC-Notification To Captain/Special Load Notification.