Factual Report – Attachment 5

Weight and Balance Documents

OPERATIONAL FACTORS

DCA17FA076

Contents

1.0 Signed Flight Release and Flight Load Manifest

Ameristar Air Cargo, Inc. **Flight Release MD83**

FLIGHT PLAN:
AAC 9363 MD-83 N786TW IFR From YIP To IAD 392 MILES ALT(1) BWI T/O ALT
ALT(2)
FP A/J9363 MD83 YIP..CRL.J34.DJB.J86.HVQ.GIBBZ2.IAD
Considered and Compliant
Required Fuel (#'s) 16,226 Ramp Fuel (#'s) 30,000 Jeppesen Plan #: 1686 ☐ O2 ☐ Ozone ☐ Driftdown

PERSONNEL:

		FFD	NFL	SL
PIC/ISC	Andreas Conny Grusgus	[redacted]	☑ N3480	☑ S3441
SIC	Mark Donald Radloff		☑ N3480	☑ S3441
FA (L)	Jeffrey Steven Zerke		☑ N3480	☑ S3441
FA	David Henry Ladenberger		☑ N3480	☑ S3441
FA	Charita Michelle Johnson		☑ N3480	☑ S3441
FA	Delessa Tennile Hampton		☑ N3480	☑ S3441

	NFL	SL
GSC Rose Edward Jamison III	☑ N3480	☑ S3441

AIRPORTS/WX:

	Departure	Destination	Other
Special Airport	☐	☐	☐
Cold Weather Airport Ref. SOM/Approach Plate	☐	☐	☐

MEL/CDL CATEGORY EXPIRATION
1.
2.
3.
4.
5.

Weather Attached
☑ METAR ☑ TAF ☑ SIGMETS ☑ NOTAMS ☐ OTHER

TAKEOFF:
Max Takeoff Wt 148,400 *Based On* Runway 23L Flaps OP Maximum Temperature 30° C
Corrections ☐ Wind ___ Kts ☐ QNH ☐ Clutter ☐ Anti-Skid ☐ Anti-Ice ☐ MEL/CDL
Limited by ☑ Field Length ☐ Landing ☐ Climb ☐ Structural

LANDING:
Max Landing Wt 139,500 *Based On* Runway 19L Flaps 28° Maximum Temperature 38 °C
Corrections ☐ Wet/Low Visibility ☐ Wind ___ Kts ☐ MEL/CDL ☐ Anti-Ice
Limited by ☐ Field Length ☐ Climb ☑ Structural

FUEL AGENCIES: ☐ No Fuel Uplifted

	Fully Trained & Qualified	Supervision Required
AvFlight West	Y	N
AvFuel (FUEL AUDIT REQUIRED)	N	Y

MISCELLANEOUS: ☐ HAZMAT
Departure Airport Security #: 734-483-6700 **Parking:** Jet Aviation
Scales: ☐ No Payload Uplifted ☑ AAC Scales ASSUMED WEIGHTS USED
☐ Certificate Obtained Ground Handler ____ Scale S/N ____ Calibration Date Due ____

RELEASE:
AAC RELEASES THIS FLIGHT ON 3/8/2017 at 17:00 (Z) by DD BLOCK OUT ON OR AFTER 3/8/17 18:30
I CERTIFY THAT ALL APPLICABLE PART 121 FAR REQUIREMENTS FOR THIS FLIGHT HAVE BEEN MET.
SIGNATURE/PIC [redacted] AT 1730 (Z) WEATHER UPDATE AT ____ (Z) BY ___

Amendment 1:
Amendment 2:
Amendment 3:

Flight Follower
Flight Follower
Flight Follower

Ameristar Charters
Loading Form MD-83 (147 Passengers)

Flight#: 9363 Date: 3/8/17

Pax Zone #1 (Rows 2-10) 25 Max 45 passengers

Pax Zone #2 (Rows 11-20) 40 Max 50 passengers

Pax Zone #3 (Rows 21-32) 45 Max 52 passengers

Lap Children: 0

☑ Security Check Complete

☐ Cabin Preflight Complete

[redacted]

Signed Lead Flight Attendant

Total/Bin

Bags Lwr A _____ Lwr B _____ A+B _____

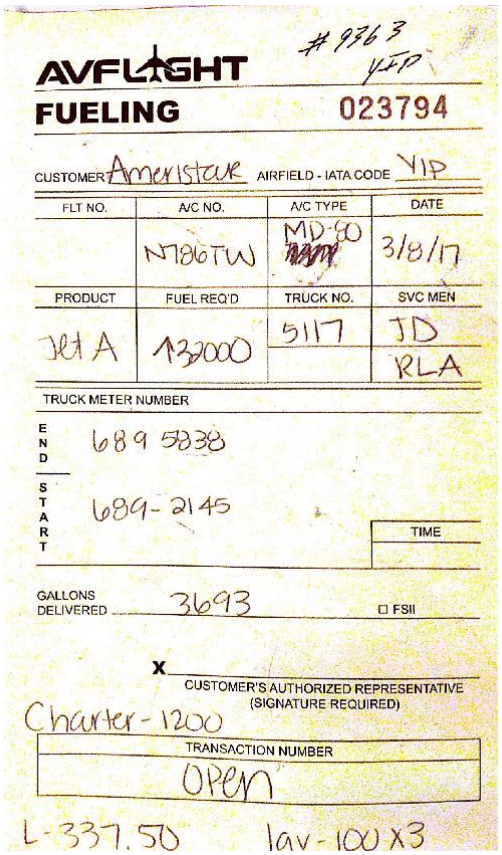
Bags Lwr C1 _____ Lwr C2 _____ C1+C2 _____

Bags Lwr D1 _____ Lwr D2 _____ D1+D2 _____

Rev. 03/01/14

3.0 Fueling Records

3.1 Fuel Slip



AVFLIGHT #9363 YIP

FUELING 023794

CUSTOMER Ameristar AIRFIELD - IATA CODE YIP

FLT NO.	A/C NO.	A/C TYPE	DATE
	N786TW	MD-80	3/8/17
PRODUCT	**FUEL REQ'D**	**TRUCK NO.**	**SVC MEN**
Jet A	132000	5117	JD RLA

TRUCK METER NUMBER

END 689 5838

START 689-2145

TIME

GALLONS DELIVERED 3693 ☐ FSII

X _____ CUSTOMER'S AUTHORIZED REPRESENTATIVE (SIGNATURE REQUIRED)

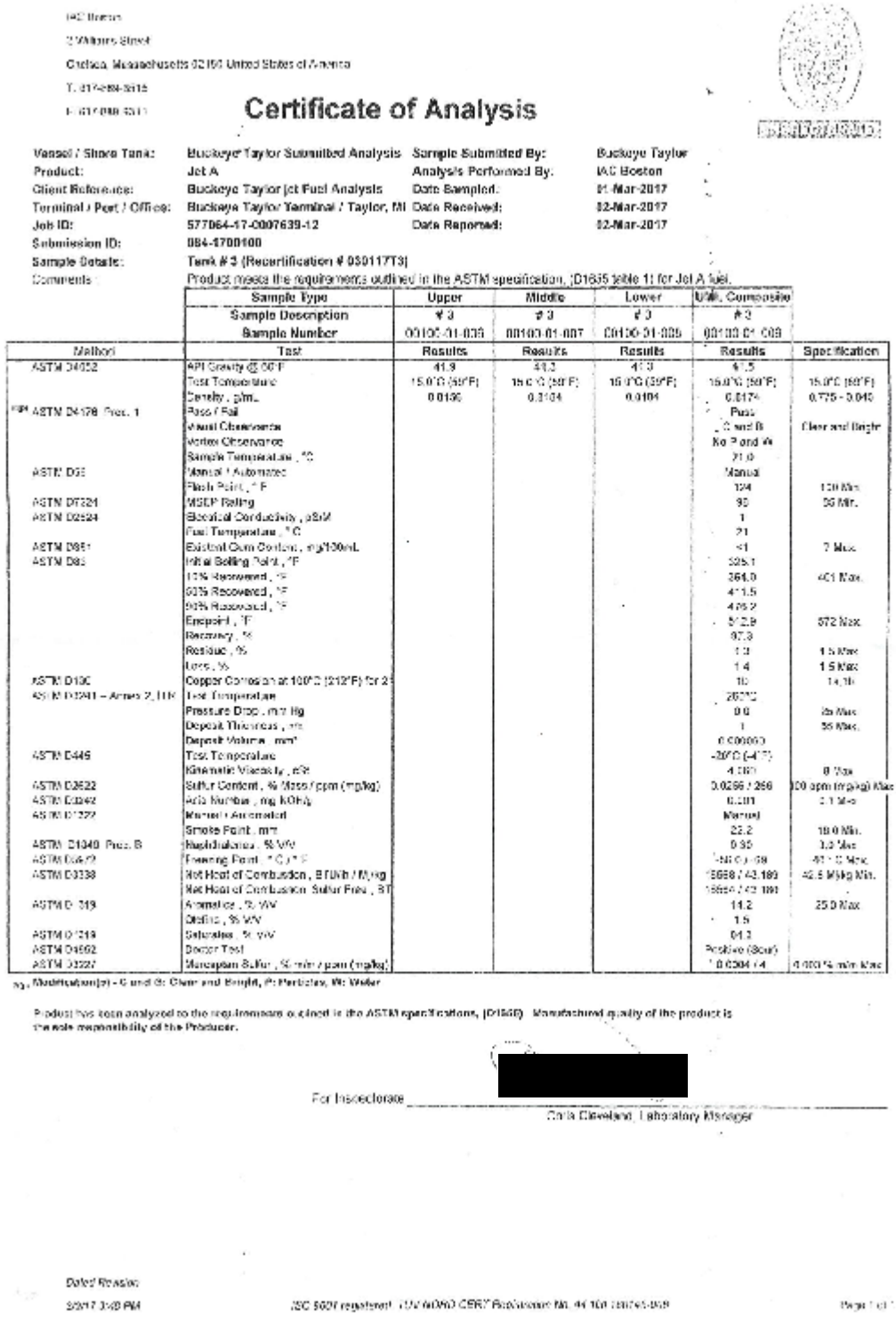
Charter-1200

TRANSACTION NUMBER

OPEN

L-337.50 lav-100 x3

3.2 Fuel Analysis



[illegible]
2 Wilburs Street
Chelsea, Massachusetts 02150 United States of America
T. 617-884-5515
F. 617-889-5511

Certificate of Analysis

Vessel / Shore Tank:	Buckeye Taylor Submitted Analysis	Sample Submitted By:	Buckeye Taylor
Product:	Jet A	Analysis Performed By:	IAC Boston
Client Reference:	Buckeye Taylor jet Fuel Analysis	Date Sampled:	01-Mar-2017
Terminal / Port / Office:	Buckeye Taylor Terminal / Taylor, MI	Date Received:	02-Mar-2017
Job ID:	577064-17-0007639-12	Date Reported:	02-Mar-2017
Submission ID:	084-1700100		
Sample Details:	Tank # 3 (Recertification # 030117T3)		
Comments	Product meets the requirements outlined in the ASTM specification, (D1655 table 1) for Jet A fuel.		

	Sample Type	Upper	Middle	Lower	U/M, Composite	
	Sample Description	# 3	# 3	# 3	# 2	
	Sample Number	03100-01-035	03100-01-007	03100-01-005	03100-01-009	
Method	Test	Results	Results	Results	Results	Specification
ASTM D4052	API Gravity @ 60°F	41.9	41.2	41.3	41.5	
	Test Temperature	15.0°C (59°F)	15.0°C (59°F)	15.0°C (59°F)	15.0°C (59°F)	15.0°C (60°F)
	Density , g/mL	0.8136	0.8164	0.8164	0.8174	0.775 - 0.840
[illegible] ASTM D4176 Proc. 1	Pass / Fail				Pass	
	Visual Observance				C and B	Clear and Bright
	Water Observance				No P and W	
	Sample Temperature , °C				21.0	
ASTM D93	Manual / Automated				Manual	
	Flash Point , °F				104	100 Min.
ASTM D7224	MSEP Rating				90	85 Min.
ASTM D2624	Electrical Conductivity , pS/M				1	
	Fuel Temperature , °C				21	
ASTM D381	Existent Gum Content , mg/100mL				<1	7 Max.
ASTM D86	Initial Boiling Point , °F				325.1	
	10% Recovered , °F				364.0	401 Max.
	50% Recovered , °F				411.5	
	90% Recovered , °F				478.2	
	Endpoint , °F				512.9	572 Max.
	Recovery , %				97.3	
	Residue , %				1.3	1.5 Max.
	Loss , %				1.4	1.5 Max.
ASTM D130	Copper Corrosion at 100°C (212°F) for 2				1B	1A,1B
ASTM D3241 – Annex A1, IIIA	Test Temperature				260°C	
	Pressure Drop , mm Hg				0.0	25 Max.
	Deposit Thickness , nm				1	85 Max.
	Deposit Volume , mm²				0.000003	
ASTM D445	Test Temperature				-20°C (-4°F)	
	Kinematic Viscosity , cSt				4.097	8 Max
ASTM D2622	Sulfur Content , % Mass / ppm (mg/kg)				0.0296 / 296	300 ppm (mg/kg) Max
ASTM D3242	Acid Number , mg KOH/g				0.011	0.1 Max
ASTM D1322	Manual / Automated				Manual	
	Smoke Point , mm				22.2	18.0 Min.
ASTM D1840 Proc. B	Naphthalenes , % V/V				0.93	3.0 Max
ASTM D5972	Freezing Point , °C / °F				-51.0 / -59	-40 °C Max.
ASTM D3338	Net Heat of Combustion , BTU/lb / MJ/kg				18698 / 43.189	42.8 MJ/kg Min.
	Net Heat of Combustion Sulfur Free , BT				18854 / 43.551	
ASTM D1319	Aromatics , % V/V				14.2	25.0 Max
	Olefins , % V/V				1.5	
ASTM D1319	Saturates , % V/V				84.3	
ASTM D4952	Doctor Test				Positive (Sour)	
ASTM D3227	Mercaptan Sulfur , % m/m / ppm (mg/kg)				0.0004 / 4	0.003 % m/m Max

(a) Modification(s) - C and B: Clear and Bright, P: Particles, W: Water

Product has been analyzed to the requirements outlined in the ASTM specifications, (D1655). Manufactured quality of the product is the sole responsibility of the Producer.

[redacted]

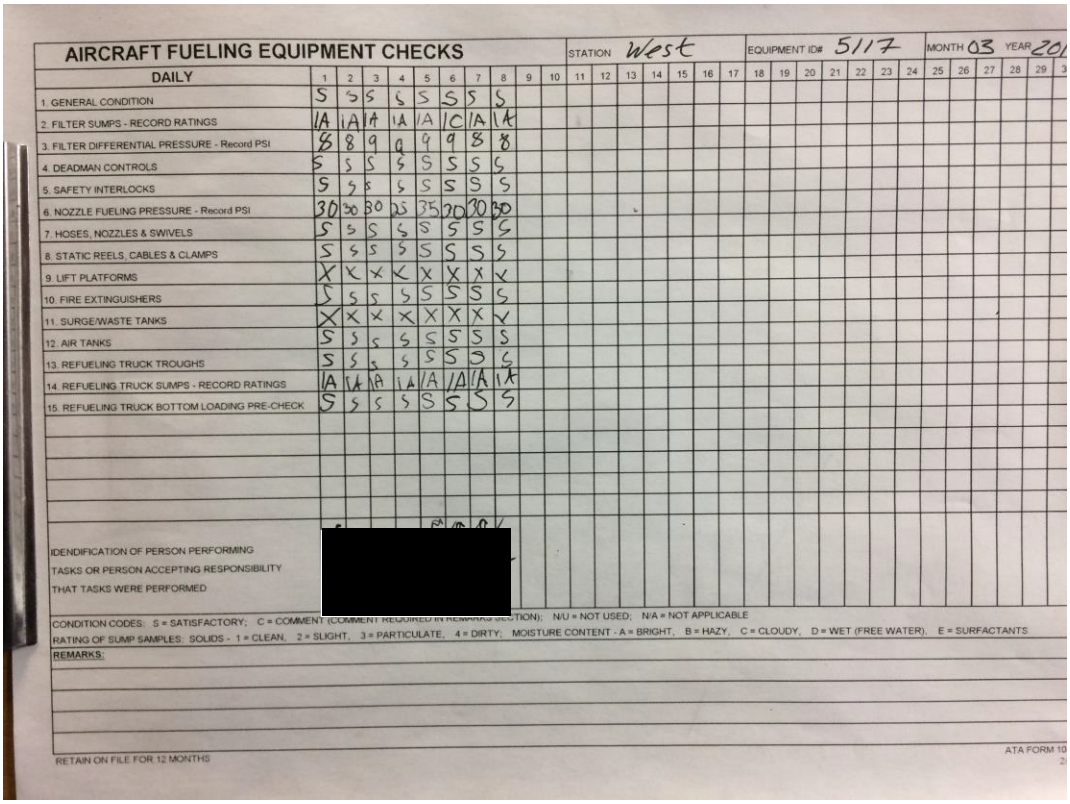
For Inspectorate _____
Carla Cleveland, Laboratory Manager

Dated Revision:
3/2/17 3:49 PM

ISO 9001 registered - UVdeNO CERT Registration No. 44 100 [illegible]

Page 1 of 1

3.3 Fueling Equipment Checks



AIRCRAFT FUELING EQUIPMENT CHECKS

STATION West EQUIPMENT ID# 5117 MONTH 03 YEAR 20

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	3
1. GENERAL CONDITION	S	S	S	S	S	S	S	S																						
2. FILTER SUMPS - RECORD RATINGS	IA	IA	IA	IA	IA	IC	IA	IA																						
3. FILTER DIFFERENTIAL PRESSURE - Record PSI	8	8	9	9	9	9	8	8																						
4. DEADMAN CONTROLS	S	S	S	S	S	S	S	S																						
5. SAFETY INTERLOCKS	S	S	S	S	S	S	S	S																						
6. NOZZLE FUELING PRESSURE - Record PSI	30	30	30	25	35	30	30	30																						
7. HOSES, NOZZLES & SWIVELS	S	S	S	S	S	S	S	S																						
8. STATIC REELS, CABLES & CLAMPS	S	S	S	S	S	S	S	S																						
9. LIFT PLATFORMS	X	X	X	X	X	X	X	X																						
10. FIRE EXTINGUISHERS	S	S	S	S	S	S	S	S																						
11. SURGE/WASTE TANKS	X	X	X	X	X	X	X	X																						
12. AIR TANKS	S	S	S	S	S	S	S	S																						
13. REFUELING TRUCK TROUGHS	S	S	S	S	S	S	S	S																						
14. REFUELING TRUCK SUMPS - RECORD RATINGS	IA	IA	IA	IA	IA	IA	IA	IA																						
15. REFUELING TRUCK BOTTOM LOADING PRE-CHECK	S	S	S	S	S	S	S	S																						

IDENDIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED [redacted]

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RATING OF SUMP SAMPLES: SOLIDS - 1 = CLEAN, 2 = SLIGHT, 3 = PARTICULATE, 4 = DIRTY; MOISTURE CONTENT - A = BRIGHT, B = HAZY, C = CLOUDY, D = WET (FREE WATER), E = SURFACTANTS

REMARKS:

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 10

4.0 Planned versus Actual Weights[1]

Ameristar (AAC 9363)	N786TW	YIP-IAD	8-Mar

Cargo Position	Planned	Actual	# Bags plann	#Bags Actual	
Cargo A (3585 max)	786	910	20	28	Note: standard bag weight is 30# each. For large bags, they use 60# each,
Cargo B (2925 max)	1160	1534.5	30	34	and double the bag count for that bag to account for the extra weight.
Cargo C1 (1160 max)	376	437	7	15	
Cargo C2 (3900 max)	1000	1612	20	35	Unknown how many bags were counted as "large"
Cargo D1 (2380 max)	810	768	27	28	
Cargo D2 (3105 max)	870	1091	29	42	
Totals	5002	6352.5	133	182	
Difference		1350.5			

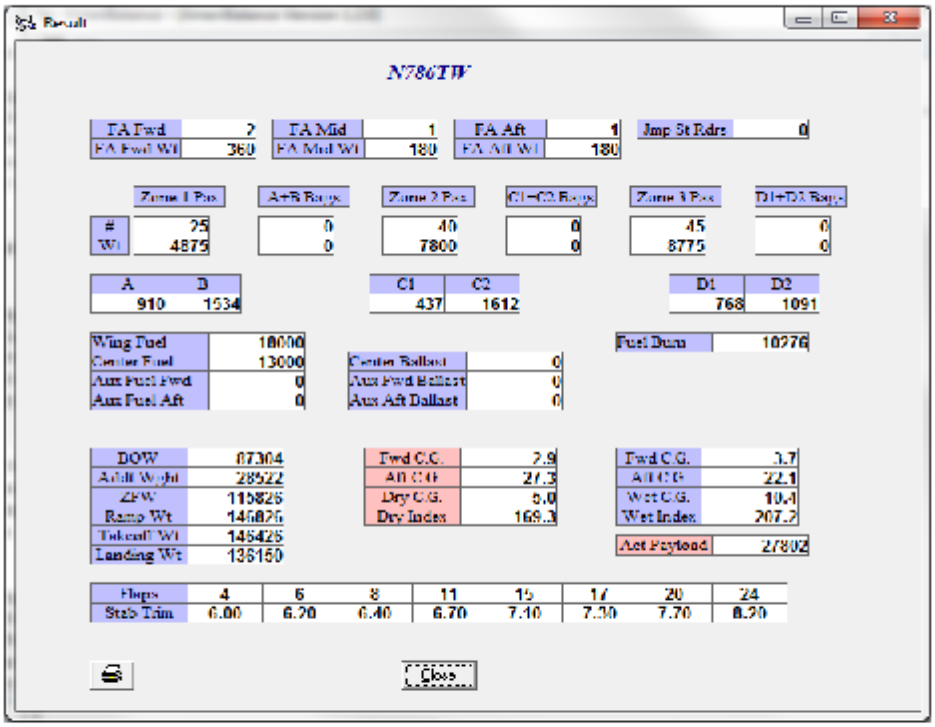
Carry on baggage	Planned	Actual	
110 passengers x 16#	1760	1401.6	Note: According to AC120-27E, Carry on bag weight of
2 cases gatorade (60# total)		60	16#/pax is included in the standard pax weights
Total		1461.6	
Difference		-298.4	

Passenger position	Planned	Actual	
Rows 2-10 (25 pax)	4875	?	Note: Winter weights = 195# each
Rows 11-20 (40 pax)	7800	?	
Rows 21-32 (45 pax)	8775	?	
Totals	21450	0	

Weight and balance	Planned	Actual		Max	
Basic Operating Weight	87304	87304			
FA weights (4x180#)	720	720			
Passenger weight (110 pax)	21450	21450	(assumed weights)		
Baggage weight	5002	6352.5			
Zero Fuel Weight	**114476**	**115826.5**		**122000**	
Fuel weight	31000	31000			
Taxi weight	**145476**	**146826.5**		**161000**	
Taxi fuel	-400	-400		**146400**	(Field Length)
Takeoff Weight	**145076**	**146426.5**		(160000 structural)	
Fuel burn	-10276	-10276			
Landing weight	**134800**	**136150.5**		**139500**	(structural)

[1] Weights listed are consensus agreement between the NTSB and Ameristar via email 03/17/2017.

5.0 Performance Computer Screenshot (Actual Weights)



6.0 Ameristar Ops Bulletin 15-04

Ameristar Air Cargo, Inc..
DC-9/MD83 Aircraft Operations Bulletin 15-04
August 1, 2015
Weight and Balance Information

Aircraft	Pax/FA Configuration	Max Taxi	Max Takeoff	Max ZFW	Max Landing	BOW	Dry C.G. % MAC	Index	Payload	File Validation Date
N786TW	147 Pax / 0 FAs	161,000	160,000	122,000	139,500	87,304	27.8	566.2	34,696	08/01/15
N787TW	147 Pax / 0 FAs	161,000	160,000	122,000	139,500	86,876	27.7	564.5	35,124	03/19/14

The Director of Operations is responsible for assuring that the aircraft status board in Flight Control reflects the current configuration of the aircraft including the status of the overwater equipment. Flight Followers using Jepp Planner should use "$786" or "$787".

NOTES

Weight and Balance Computer Software Version for the passenger configuration is 1.2.0 dated 3/4/15 or later version
The weights indicated in the table above are the maximum weights (lbs.) allowed by the AFM for the respective aircraft. These weights supersede the weight limitations indicated in the Limitations Section of the MD-83 AOM.

Use the MD83 Flight Release and Weight and Balance Form for 147 Passenger Configuration.

The % of Mac has been constrained when carrying passengers. If passengers are not being carried, the max imum ZFW Aft C.G. is limited to 31% of MAC and the forward C.G. is limited to -1% of MAC

The following weights have been included in the BOW:	**lbs.**
Maximum capacity of all storage compartments (Excluding Overhead Bins)	2129
Lavatory Fluids Forward and Aft	69
Potable Water	392
Liferafts (4) Located in forward and aft cabin in overhead compartments	420
A Life Vest under each seat including FA jumpseats	220
2 pilots with flight kits	420
All Required Emergency Equipment (weighed with the aircraft)	

Liferafts Forward	Add 9 Index units for removal of FORWARD Life Raft s.
Liferafts AFT	No index correction necessary for removal of AFT liferafts.
Jumpseater	Subtract 15 index units when a jumpseat rider is on board.

Flight Attendant Index Units:

(2) Forward	Subtract 23 index units
(1) Mid	Add 7 Index Units
(1) Aft	Add 4 Index Units/FA

FAA Approved Effective Date: 08-17-2015
DFW CMO
[redacted]
H. Dee Williams, Principal Operations Inspector

Current AOM Operations Bulletin as of August 1, 2015 are 09-03, 15-03 and 15-04

\\nas2\aircargo\Operations\9\AOM_Vol_I\OpsbulletinsCurrent\AOMOpsbul_15-04_0320143wtbalPAX147_N786TW.doc

7.0 Onboard Scale Calibration Certification

121
ADS
165

Calibration Specialty

2500 E. Grauwyler
Irving, TX 75061
(972) 438-3774

Calibration Certification

Calibration Report #: 385465
Unit: DIGITAL SCALE
Make: PELOUZE
Model: 4040
Primary ID#: AAC0299
Secondary ID #: 002438
Date Received: 10/20/2016
Date of Calibration: 10/25/2016 **Temp:** 69 °F
Expiration Date: 10/25/2017 **Humidity** 36 %
Received: IN TOLERANCE **Returned:** IN TOLERANCE

Customer Info
AMERISTAR JET CHARTER, I
4451 GLENN CURTISS, HGR. #
ADDISON TX 75001

Uncertainty Statement: All test accuracy ratios meet or exceed 4:1 unless otherwise stated.

Procedures:
33K6-4-3192-1

REMARKS:

Test Equipment Report

MFG:	MODEL:	TestEQ_ID	UNIT:	CAL DATE	RECAL DATE:
OHAUS	10-5-8/16-.8	062-6847-407	MASS SET BRASS	11/23/2014	11/23/2016
NIST Reports	1850781				
TROEMNER	50 LB F CLASS	E:1-10	MASS SET 50 LB	4/11/2012	4/11/2017
NIST Reports	212602				

Calibration Specialty, Inc. maintains a quality system that meets or exceeds the requirements set forth in the following document: ANS/ISO/IEC 17025:2005 .ANSI/NCSL Z540.3-2006. All reference standards used by Calibration Specialty Inc. are traceable to NIST, an internationally known standard or intrinsic measurement standard. This certification shall not be reproduced except in full, without written aproval of Calibration Specialty Inc.

TECH: RICK KIRKLAND

[redacted]
Authorized Signature

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[redacted]

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Calibration Specialty

2500 E. Grauwyler
Irving, TX 75061
(972) 438-3774

Calibration Certification

Calibration Report #: 385464

Unit:	DIGITAL SCALE
Make:	PELOUZE
Model:	4040
Primary ID#:	AAC0300
Secondary ID #:	002437
Date Received:	10/20/2016
Date of Calibration:	10/25/2016 **Temp:** 69 °F
Expiration Date:	10/25/2017 **Humidity** 36 %
Received:	IN TOLERANCE **Returned:** IN TOLERANCE

Customer Info
AMERISTAR JET CHARTER, I
4451 GLENN CURTISS, HGR. #
ADDISON TX 75001

Uncertainty Statement: All test accuracy ratios meet or exceed 4:1 unless otherwise stated.

Procedures:
33K6-4-3192-1

REMARKS:

Test Equipment Report

MFG:	MODEL:	TestEQ_ID	UNIT:	CAL DATE	RECAL DATE:
OHAUS	10-5-8/16-.8	062-6847-407	MASS SET BRASS	11/23/2014	11/23/2016
NIST Reports	1850781				
TROEMNER	50 LB F CLASS	E:1-10	MASS SET 50 LB	4/11/2012	4/11/2017
NIST Reports	212602				

Calibration Specialty, Inc. maintains a quality system that meets or exceeds the requirements set forth in the following document: ANS/ISO/IEC 17025:2005 ,ANSI/NCSL Z540.3-2006. All reference standards used by Calibration Specialty Inc. are traceable to NIST, an internationally known standard or intrinsic measurement standard. This certification shall not be reproduced except in full, without written approval of Calibration Specialty Inc.

TECH: RICK KIRKLAND

[redacted]
Authorized Signature

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