

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

Attachment 14 - Reconstructed Weight and Balance

OPERATIONAL FACTORS

DCA11MA075

A. ACCIDENT

Operator: Omega Aerial Refueling Services, Inc.
Location: Point Mugu Naval Air Station, California
Date: May 18, 2011
Airplane: Boeing 707-321B, Registration Number: N707AR

B. NATIONAL TRANSPORTATION SAFETY BOARD (NTSB) OPERATIONS GROUP

Captain David Lawrence - Chairman
Senior Air Safety Investigator
National Transportation Safety Board
490 L'Enfant Plaza East S.W.
Washington, DC 20594

Captain John Banitt
B707 Flight Standardization Officer
Omega Air Refueling
700 N. Fairfax Street, Suite 306
Alexandria, Virginia 22314

Mr. Tony James
Air Safety Investigator
Federal Aviation Administration (FAA)
800 Independence Ave. S.W.
Washington, DC 20591

Mr. Michael Coker
Senior Safety Pilot
The Boeing Company
P.O. Box 3707 MC 20-95
Seattle, Washington 98124-2207

C. SUMMARY

On May 18, 2011, at approximately 1727 pm local time (0027 UTC), Omega Air flight 70, a Boeing 707-321B (N707AR), crashed on takeoff at the Point Mugu Naval Air Station¹, Point Mugu, California. The airplane impacted beyond the departure end of runway 21 and was destroyed by post-impact fire. All three flight crewmembers aboard escaped with minor injuries.

¹ Naval Base Ventura County.

D. CERTIFIED WEIGHT AND BALANCE FOR N707AR

WEIGHT AND BALANCE REPORT

BOEING 707-321B SERIAL # 20029 N707AR

October 9, 2010

Aircraft weight and balance updated to reflect changes as shown below.

ITEM	WEIGHT	ARM	MOMENT
OLD EWCG	143,637	854.41	122,733,341
Removed G.E. Drogue tracker on tailcone.	(25)	1680	(42,000)
Removed G.E. data recording equipment in aft galley.	(29)	1420	(41,180)
Removed Equipment Rack with equipment on left side in cabin.	(250)	640	(160,000)
Removed Laser gyro platform equipment on left side of cabin.	(92)	690	(63,480)
Removed Liton Laser gyro platform on left side of cabin.	(50)	720	(36,000)
Removed power supply on right side of cabin.	(63)	640	(40,320)
Removed E.W.S. Equipment rack on side of cabin.	(269)	708	(190,452)
New Aircraft Empty Weight == =>	142,859	855.11	122,159,909

New Aircraft Empty Weight = 142,859 lbs
 New Aircraft Total Moment = 122,159,909
 New Aircraft C.G. = 855.11 inches aft of datum
 New % M.A.C. = 33.82 %

This report supercedes weight and balance report dated 10/04/2010

Patrick Pate A&P # [REDACTED] October 9, 2010

E. RECONSTRUCTED WEIGHT AND BALANCE FOR OMEGA 70

WEIGHT AND BALANCE CLEARANCE FORM									
OMEGA 70									
DATE: 15-May-2011		AC TYPE: 707-321B		FROM: KNTD		HOME STATION: San Antonio, TX			
MISSION: B1511		SERIAL NO: 20020		TO: KNTD		PILOT: THURMOND			
REMARKS:									
REF ITEM WEIGHT MOM / 1,000									
1 BASIC AIRCRAFT WEIGHT 142,850 122,160									
2 CREW (FLT DECK) @ 170 LBS 3 510 90									
3 CREW BAGS 60 11									
4 FWD GALLEY (FOOD)									
5 AFT GALLEY (FOOD)									
6 FWD H2O TANKS (gals)									
7 AFT H2O TANKS (gals)									
8 LAV SERVICE 6.0 (gals) 300 371									
9 OPERATING WEIGHT 143,729 122,622									
10 TAKEOFF FUEL 21,328 (gals) 156,300 123,857									
11 6.7 LBS/GAL									
12 TOTAL AIRCRAFT WEIGHT 300,029 246,475									
LOAD ADJUSTED: CHARTS & MATH									
CORRECTIONS / MOST FWD / MOST AFT 13 DISTRIBUTION OF ALLOWABLE LOAD (PAYLOAD) 14 ZERO FUEL WT 147,879									
ZERO FUEL MOMENT 126,061									
ZERO FUEL % MAC 32.9%									
15 (SUB-TOTALS) 4,150 3,459									
TOTAL BY REMOVED									
TOTAL WT ADDN									
NET DIFFERENCE TOTAL FAX									
LIMITATIONS									
CONDITIONS TAKEOFF LANDING FUEL									
ALLOWABLE GROSS WT 331,600 247,000 195,000 16 TAKEOFF CONDITION (Uncorrected) 304,179 249,938									
NET ACFT WT (SEP 13) 300,029 164,729 143,729 17 TAKEOFF C.G. IN % M.A.C. 21.5%									
SEP 13 - (SEP14) 164,729 143,729 18 CORRECTIONS (if required)									
OPERATING WT (SEP 13) 143,729 19 TAKEOFF CONDITION (Corrected) 304,179 249,938									
ALLOWABLE LOAD (3) 31,571 82,271 51,271 20 TAKEOFF C.G. IN % M.A.C. 21.5%									
(3) ZERO FUEL OR LIMITING WING FUEL									
MINIMUM WING FUEL 16.4% AFT 35.0%									
MINIMUM WING FUEL 17.0% AFT 35.0%									
MINIMUM WING FUEL 17.0% AFT 35.0%									
COMPUTED BY SIGNATURE									
WEIGHT AND BALANCE AUTHORITY SIGNATURE Kenneth K. McNamara 22 ESTIMATED LANDING FUEL 21,000 17,564									
PILOT SIGNATURE 23 ESTIMATED LANDING CONDITION 148,879 143,645									
24 ESTIMATED LANDING C.G. IN % M.A.C. 32.2%									

F. FUEL SLIP

FUEL GRADE Catégorie de Carburant JP-8	VEHICLE NO. Numero du Vehicule 429	UNIT ID or UIN Identification N69232	N707AR
QUANTITY Quantité 6684	MEASURE UNIT Unité de Mesure Gals	UNIT PRICE Prix Unitaire \$3.03	
SERVICE LOCATION and NATION Lien de l'Opération et Pays NEW POINT NUGU		TOTAL PRICE Prix Total	
REFUEL Plats RESTITUTION Restitution	METHOD OF PAYMENT / Mode de Compensation REIMBURSEMENT Remboursement		BILLING ADDRESS AND AIRCRAFT INFORMATION (FOR CASH SALES WRITE "CASH") Adresse de Facturation, Modèle et No d'Immatriculation de l'Avion (Vente au Comptant Indiquez "Paiement Comptant")
REMARKS and/or VOUCHER NO. Remarques et/ou Piece Justificative T-1519 T-1559		DIR OF LOG Directeur de Logistique ACCOUNTANT Comptable	
		ISSUED BY (SIGNATURE) / Service Fournisseur	RECEIVED BY (SIGNATURE) / Service Acheteur
		ISSUE DATE / Date de Distribution 05 20 11	PRINT NAME and Rank / Nom et Grade (en lettres d'imprimerie) Clay J. Kelly

FUEL GRADE Catégorie de Carburant JP8	VEHICLE NO. Numero du Vehicule 449	UNIT ID or UIN Identification N69232	N707AR
QUANTITY Quantité 6150	MEASURE UNIT Unité de Mesure Gals	UNIT PRICE Prix Unitaire \$3.03	
SERVICE LOCATION and NATION Lien de l'Opération et Pays NEW POINT NUGU		TOTAL PRICE Prix Total	
REFUEL Plats RESTITUTION Restitution	METHOD OF PAYMENT / Mode de Compensation REIMBURSEMENT Remboursement		BILLING ADDRESS AND AIRCRAFT INFORMATION (FOR CASH SALES WRITE "CASH") Adresse de Facturation, Modèle et No d'Immatriculation de l'Avion (Vente au Comptant Indiquez "Paiement Comptant")
REMARKS and/or VOUCHER NO. Remarques et/ou Piece Justificative		DIR OF LOG Directeur de Logistique ACCOUNTANT Comptable	
		ISSUED BY (SIGNATURE) / Service Fournisseur	RECEIVED BY (SIGNATURE) / Service Acheteur
		ISSUE DATE / Date de Distribution 05 18 11	PRINT NAME and Rank / Nom et Grade (en lettres d'imprimerie) Clay J. Kelly

FUEL GRADE Catégorie de Carburant 3P8	VEHICLE NO. Numero du Vehicule 478	UNIT ID or UIN Identification N69232	N707AR
QUANTITY Quantité 7506	MEASURE UNIT Unité de Mesure GAL	UNIT PRICE Prix Unitaire 3.03	
SERVICE LOCATION and NATION Lien de l'Opération et Pays NEW POINT NUGU		TOTAL PRICE Prix Total	
REFUEL Plats RESTITUTION Restitution	METHOD OF PAYMENT / Mode de Compensation REIMBURSEMENT Remboursement		BILLING ADDRESS AND AIRCRAFT INFORMATION (FOR CASH SALES WRITE "CASH") Adresse de Facturation, Modèle et No d'Immatriculation de l'Avion (Vente au Comptant Indiquez "Paiement Comptant")
REMARKS and/or VOUCHER NO. Remarques et/ou Piece Justificative		DIR OF LOG Directeur de Logistique ACCOUNTANT Comptable	
		ISSUED BY (SIGNATURE) / Service Fournisseur Stephen Weiland	RECEIVED BY (SIGNATURE) / Service Acheteur
		ISSUE DATE / Date de Distribution 05 18 11	PRINT NAME and Rank / Nom et Grade (en lettres d'imprimerie) Neil Jones

77,100 LBS
PRE-UPVSK

1510 - 1559 LOCAL
18 MAY
12,834 USG
85,988 LBS

UPVSK



OMEGA TANKER FLIGHT LOG

SER NO. 10781

AIRCRAFT REG : 429W		DATE 11/1/72		
Crew List		From	On Blk : Land :	
Capt	[Redacted]	To	Off Blk : T/O :	
F.O		Event No.	Block + Flt Time +	
F.E		From	On Blk : Land :	
	2	To	Off Blk : T/O :	
		Event No.	Block + Flt Time +	
AR PUMP AND REEL				
	Pump No. 1 Cys	Reel No. 1 Cys	Pump No. 2 Cys	
Flight 1		2	7	
Flight 2				
FUEL				
	Flight 1		Units	
Before	11460			
Uplift	11430			
Total	11430			
Offload	11430			
Remaining	11430			
	Sign	Date	Time	
Captain's Name : [Redacted]				
Signature : [Redacted] Date : 1/1/72				
OIL				
	Flight 1			
Engine	1	2	3	4
Uplift				
Total				
ITEM	ITEM/AIRCRAFT DEFECTS		ACTION TAKEN	SIGN & LIC NO.
	[Redacted]		[Redacted]	[Redacted]
I certify that this A/C is in accordance with the maintenance program as chosen by the Pilot in Command.				
A/C Maint. Records are being maintained in accordance with the flight log.				
Ground Engineers : (please print) [Redacted]				