

**NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Washington, D.C. 20594

**Attachment 12 - Omega B707 Normal Checklist**

**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**

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## **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 Station<sup>1</sup>, 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.

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<sup>1</sup> Naval Base Ventura County.

**D. NORMAL CHECKLIST**

**OMEGA AERIAL REFUELING SERVICES**

**Normal Checklist – N707AR**

**BEFORE STARTING ENGINES (F/E reads)**

Cockpit Preparation .....	“COMPLETE”	ALL
Aircraft Forms .....	“CHECKED”	C, E
Oxygen Valve .....	OPEN	E
Oxygen & Interphone ...	“CHECKED & ON/100%”	All
Circuit Breakers .....	CHECKED	E
Battery CB and Switch .....	CLSD, CHKD, & ON	E
Fuel Manifold Valves .....	ALL OPEN	E
External Power .....	ON	E
Essential Power Switch .....	ON EXT	E
Radio Bus Switches .....	ON	E
Aux Pump 1 & Interconnect .....	“ON & SYS”	F/O
Parking Brake .....	“SET”	C
Emergency Flap Switches .....	“NORMAL”	C
Antiskid .....	“OFF”	C
Rudder & Spoiler Switches .....	“ON”	C
Nacelle & Wing Anti-Ice .....	“OFF”	C
No Smoking & Seat Belt Switches .....	“ON”	C
Emergency Exit Lights .....	“ARMED”	C
Landing Flap Warning Switch ...	“AS REQUIRED”	C
Pitot, Q-Inlet, Probe Heat .....	“OFF”	C
Window Heat .....	“LOW”	C
Yaw Damper .....	“ON, LIGHT ON”	C
Radios, Radar, Transponder ..	“SET & STANDBY”	C,F/O
Radio Altimeters .....	“CHECKED”	C,F/O
Emergency Brake .....	“SAFETIED & CHKD”	C
Standby Horizon .....	“CHECKED”	C
FMS & GPS .....	“ALIGN & PROGRAMMED”	C,F/O
Compasses and Controllers .....		
.....	“SET, SYNCH & CROSS CHECKED”	C,F/O
Flt Inst, Altimeters & Flt Dir .....	“SET & CHECK”	ALL
Trim Cutout Switches .....		
.....	NORMAL, MACH WARNING LIGHT OUT”	C
Stabilizer Trim .....	“___ UNITS, SET”	C
Rudder & Aileron Trim .....	“FREE & ZERO”	C
Gear Lever & Lights .....	“DOWN, IN, 3 GREEN”	ALL
Gear Locks .....	“ABOARD / REMOVED”	P, E
Engine Instruments .....	“NORMAL”	C, E
EPR & Airspeed Bugs .....	“SET”	C,F/O
Utility Hydraulic Pumps .....	“ON”	F/O
Rudder Boost Pressure .....	“CHECKED”	F/O
Speed Brake Lever .....	“FULL FWD”	C
Flap Lever .....	“UP / CHECKED”	C
Reverse Thrust .....	“DOWN & CLOSED”	C
Start Levers .....	“CUTOFF”	C
Autopilot .....	“OFF”	C
Fuel Qty, Valves & Switches .....	“___ LBS, SET FOR START”	E
Air Conditioning Unit Switches .....	OFF	E

Wing Isolation Valves .....	OPEN	E
Pressurization Controls.....	SET FOR TAKEOFF	E
Hydraulic Qty .....	CHECKED	E

Engine Start Selector Switch .....	SET FOR START	E
<b>Before Starting Engines Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**STARTING ENGINES (F/E reads)**

Beacon Switch .....	ON	P
Start Pressure .....	“___ PSI”	E
Start Engines.....	3, 4, 2, 1	C, E
External Equipment .....	“REMOVE”	E
<b>Starting Engines Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**AFTER START (F/E reads)**

Hydraulics.....	“CHECKED & ON”	F/O
Start Levers.....	IDLE	E
Engine Start Switches .....	OFF	E
Engine Anti-Ice .....	“AS REQUIRED”	C
Electrical Power.....	“ESS ON 3, NO LIGHTS”	E
Flap Lever.....	“14, 14, 2 GREEN LIGHTS”	ALL
Flight Controls.....	“CHECKED”	C,F/O
Crew Briefing .....	“COMPLETED”	P
Pack Valves .....	OPEN	E
Air Condition System Switches.....	ON	E
Turbo compressors .....	2 & 3 ON	E
Freon Switches .....	AS REQUIRED	E
All Fuel Pumps & Manifold Valves .....	ON & SET	E
Galley Power .....	ON	E
Engine Instruments .....	“CHECKED”	C, E
Ground Mechanics.....	“AS REQUIRED”	E
Door Warning Lights.....	“OFF”	E
Ground Support Equipment.....	“CLEAR L/R”	C,F/O
<b>After Start Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**BEFORE TAKEOFF (F/E reads)**

Brakes .....	“CHECKED”	C
Yaw Damper.....	“CHECKED”	C,F/O
Seat Belts & Shoulder Harness.....	“FASTENED”	ALL
Flt Dir, Instruments & Radios .....	“CHECKED & SET FOR DEPARTURE”	C,F/O
Antiskid .....	“ON, NO RELEASES”	E
Flight Recorder Switch.....	ON	E

Service Interphone .....	OFF	E
Electrical System .....	AC & DC CHECKED	E
Fuel System .....	SET FOR TAKEOFF	E
Fuel Heat .....	CHECKED, OFF	E
Air Conditioning System .....	CHECKED	E
Pressurization Mode Selector .....	TAKEOFF	E
Hydraulics.....	PRESSURE & QTY NORMAL	E
Cabin Report.....	“SECURED”	E

-----CLEARED FOR TAKEOFF-----

Transponder.....	“ON”	P, E
Radar .....	“ON”	P
TCAS Indicators.....	“ON”	F/O, E
Landing Lights.....	“ON”	E
Pitot, Q-Inlet, Probe Heat .....	“ON”	E
Engine Ignition Switches.....	FLT START	E
Takeoff Configuration .....	“CHECKED”	ALL
<b>Before Takeoff Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**AFTER TAKEOFF-CLIMB (SILENT)**

<b>T</b> Landing Gear & Lever .....	UP & OFF	E
Flap Lever .....	UP, NO LIGHTS	E
Anti-Icing Deicing .....	AS REQUIRED	E
<b>T</b> Engine Ignition Switches .....	OFF	E
Fuel System.....	AS REQUIRED	E
Hydraulics .....	PRESSURE & QTY NORMAL	E
Air Cond. & Pressurization...	CHECKED & SET	E
TC, Bleed Air or Combo.....	AS REQUIRED	E
Cabin & Duct Temperature.....	MONITOR	E

-----ABOVE 10,000 FT-----

Landing Lights .....	RETRACTED & OFF	E
Seat Belt Switch.....	AS REQUIRED	E
Aux Pump #2 (Rudder) .....	“OFF”	F/O

-----TRANSITION ALTITUDE-----

Altimeters.....	“SET 29.92 or Local Alt”	ALL
<b>T After Takeoff-Climb Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**DESCENT - APPROACH (F/E reads)**  
(Downwind Leg if running Traffic Pattern)

Pressurization.....	SET FOR LANDING	E
Anti-Icing & Deicing .....	AS REQUIRED	E
Air Conditioning .....	AS REQUIRED	E
<b>T</b> Fuel System.....	SET FOR LANDING	E
Fuel Heat.....	AS REQUIRED	E
Electrical System .....	CHECKED	E
<b>T</b> Hydraulics .....	PRESSURE & QTY NORMAL	E
Emergency Brake Pressure .....	“CHECKED”	F/O
Seat Belt & Shoulder Harness.....	“FASTENED”	ALL

Seat Belt Switch..... AS REQUIRED E  
**T** Landing Data..... “STATE (EPR & VREF)” E

-----TRANSITION ALTITUDE-----

Altimeters..... “SET \_\_\_\_” ALL  
 Aux Pump #2 (Rudder) ..... “ON” F/O  
 EPR & Airspeed Bugs..... “SET” C,F/O  
**T** Approach & Landing Briefing .. “COMPLETED” P  
**T** Radio Altimeters ..... “SET” C,F/O  
 Flt Dir, Flt Inst & Radios ... “SET & CHECKED” C,F/O

-----BELOW 10,000 FT-----

**T** Landing Lights ..... ON E  
 Equipment Cooling Lights ..... CHECKED E  
 Cabin Report ..... “SECURED” E  
**Descent - Approach Checklist** “COMPLETED” E  
**T (Downwind Leg Checklist .. “COMPLETED”)** E

**BEFORE LANDING (F/E reads)**

**T** Speed Brake Lever ..... “FULL FWD” C  
**T** Spoiler Switches..... ON C  
**T** Landing Gear ..... “DOWN, IN, 3 GREEN” ALL  
**T** Antiskid Switch.....CHKD, ON, 4 RELEASES E  
 Pressurization Mode Selector Switch. LANDING E  
**T** Flaps..... “40/40 or 50/50, 2 GREEN LIGHTS” ALL  
 Turbo compressors ..... SET FOR LANDING E  
 Hydraulics ..... PRESSURE & QTY NORMAL E  
**T** Engine Ignition Switches .....FLT START E  
 Landing Configuration ..... “CHECKED” ALL  
**T Before Landing Checklist .... “COMPLETED”** E

**AFTER LANDNG (F/E reads)**

Landing Lights..... AS REQUIRED E  
 Pitot, Q-Inlet, Probe Heat ..... OFF E  
 Anti-Icing & Window Heat Switches ..... OFF E  
 Engine Ignition Switches ..... OFF E  
 Antiskid Switch ..... “OFF” E  
 Brake Hydraulic Pressure ..... CHECKED E  
 Radar & Transponder ..... “STANDBY” P  
 Freon Switches ..... PUMP DOWN 2 MIN, OFF E  
 Air Condition System Switches..... OFF E  
 All Manifold Valves & Boost Pumps ...OPEN, OFF E  
 Electrical Equipment ..... CHECKED E  
 Turbo compressors .....STOP E  
 Pack Valves ..... CLOSE E  
 Outflow Valves..... OPEN E  
 Flight Recorder..... OFF E  
 Service Interphone..... ON E  
 Flap Lever..... 14 P

Speed Brake Lever.....	FULL FWD	P
Outboard Start Levers.....	AS REQUIRED	E
<b>After Landing Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>

**SHUTDOWN (FE reads)**

Parking Brake .....	SET or OFF	P
Flaps .....	UP / CHECKED	ALL
Stabilizer Trim.....	~ 2 UNITS DOWN	P
Ext & Ess Power Switches .....	ON, EXT	E
Start Levers.....	CUTOFF	E
Beacon .....	OFF	E
Seat Belt Switch .....	OFF	E
Emergency Exit Lights .....	OFF	E
Aux Hydraulic Pumps .....	“OFF”	F/O
Radios, Radar, Transponder .....	“OFF”	C,F/O
FMS, GPS.....	“OFF”	C,F/O
Oxygen .....	“OFF”	ALL
Foot & Shoulder Heaters .....	“OFF”	C,F/O
Engine Fire Control Panel .....	TEST	E
Radio Master Switches .....	OFF	E
Oxygen Valve.....	CLOSE	E
Battery Switch & CB.....	OFF & OPEN	E
<b>Shutdown Checklist .....</b>	<b>“COMPLETED”</b>	<b>E</b>