



Flying Operations

**C-130J MAFFS
OPERATIONS PILOT CHECKLIST**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication

OPR: HQ AMC/A3V

Supersedes: AFMAN 11-2C-130JV3 ADD B CL-1

Date: 17 September 2018

Certified by: HQ USAF/A3T

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Number of Pages: 13

This checklist establishes procedures for employing the Modular Airborne Fire Fighting System (MAFFS) on C-130J aircraft employed by Mobility Air Forces (MAF) to accomplish their worldwide mission. This checklist complements AFMAN 11-2C-130J-V3, *Operations Procedures*, and is printed on standard 8 ½" x 11" bond paper, and trimmed to fit the standard plastic aircrew checklist binders. This checklist is intended to provide MAFFS certified crewmembers quick reference to procedures required for the safe execution of MAFFS ground and flight operations. All MAFFS certified C-130J pilots will carry this annex. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF FORM 847, *Recommendation for Change of Publication*; route AF FORM 847 from the field through the appropriate chain of command.

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NOTE

MAFFS CHECKLIST PROCEDURES: Items on the loadmaster's MAFFS BEFORE TAKEOFF, AFTER TAKEOFF, and BEFORE LANDING, and AFTERLANDING CHECKLISTS will be accomplished following completion of the normal checklist items from T.O. 1C-130J-1CL-2. The loadmaster's CL-2 checklists will not be called complete for MAFFS missions until items of the MAFFS checklist are accomplished. The loadmaster will verbalize the setting of the Compressor Enable Switch and the pressure of the MAFFS hydraulic system when calling the CL-2 Before Takeoff checklist complete. As always, the checklists and these instructions are not substitutes for sound judgment and special circumstances may require modifications of these procedures.

WARNING

Ensure the Drop Control Pendant is not dropped or impacted, is readily available during critical phases of flight, and properly secured to minimize the likelihood of being dropped.

PART ONE – BRIEFING GUIDES

MISSION BRIEFING

- Aircraft Preflight /Preparation
- Fire Situation and Intensity
- Weather / Visibility / Turbulence / Density Altitude / Time to Fire
- Go / No-Go / ORM / TFR / FLT Plans / Tanker Base Survey
- Aircraft Performance: Takeoff / 3ENG / Fire Area
- MX Status: Aircraft / MAFFS unit
- Use Crew Position / Call Off-On Interphone
- Max Diff-10" / T-Storm Avoidance / Icing / Freezing Level
- Pressurization Management /BINGO Fuel/ Area E min Fuel if no drop

LAUNCH ORDER

- Stations: 10 minutes after Receipt of Launch Order
- AC-Confirm Coordinates are CNIMU compatible: deg/min/hundredths
 - Radial DME of the Fire
 - From-To Pts / TOLD / TAC Plots
- CP: Initiate Power-Up
 - Confirm Weights / CG / Operating Category in CNI-MU/
 - DRAG INDEX 22
 - Review/Update perf data on PERF-INIT and Takeoff pages
- LM: Primary Coordination for Servicing

START

- Before Start Checklist while MAFFS servicing
- ENG Motoring - 175°C
- Ground: Brief Lost Comm / Start Sequence / Pit turnout / Wing walkers
- LM: Aft for start / Confirm Chalks removed / Parking Tender clear pit
 - Start Inboards only / Up-speed plan / Prop blast considerations
 - After start, Applicable items / Off-Pit ENG Start

TAKEOFF

- LM: Confirm Takeoff Flap Configuration
 - No personnel between FS 345 & MAFFS unit for T/O / LND
 - Primary for Emergency Drop
 - Confirm MAFFS unit EMERGENCY HYDPRESS
- CP: Rolling Call / ACAWS MASTER WARNING Door Open

EN ROUTE

- CP: Confirm AFF / COMM with FLT following / Dispatch
- LM: Advise when not strapped in and moving around Cargo Cmpt

FTA

- AC: Drop Prep Checklist Initiation / GCAS/TAWS Set-Up
 - 12nm Check-in / 7 nm enter FTA, 150 KIAS, with LP
- CP: Lead Call / Radio Assignments / Get Well 122.92 VHF
 - Back-up pilot on all flight parameters; Airspeeds, Sink Rates, Terrain Primary for Drop Release
 - Lead plane ID / Target, Release Pt, Escape Plan
 - “Ready, Ready, Drop” Cadence / Flap overspeed / Call-Outs
 - Trigger Management (Auto vs Manual Start-Stop drop)
- “Knock it off” / “No Drop”
- Incremental Drops (begin with slowdown checklist)
- Stall Speed Review
- *Basic pattern profile*
 - 140-150 Downwind
 - 120-140 Base
 - 110-130 Final
 - 110-130 Drop Speed

COMPLETION OF DROP

- Lead Plane Strike report
- Update PERF-INIT WT / W&B PAYLOAD Page
- Reload tanker base / Load & Return or Hold / MSN Complete
- Completion of Drop Checklist (LDG GEAR INHIBIT “OFF”)

TANKER BASE OPERATIONS

- Radio Comms
- Pit Assignments / Entry, Exit Plan / Obstructions / Marshaller
- Refueling Location
- GND Power vs APU (Reboot)

EMERGENCIES

- Emergency Escape Maneuver
- Emergency DUMP (Pressurized vs Unpressurized)

COMMON FREQ AND SQUAWKS

- Firefighting aircraft squawk Mode 3 Code 1255 when not assigned other VFR or IFR squawk
- VHF Air-Air Common: 122.925
- Air tanker base Standard: 123.975
- Air Guard: 168.625

TANKER BASE PILOT ORIENTATION BRIEFING GUIDE

The Tanker Base Pilot Orientation Briefing should be conducted between the MAFFS pilot and Air Tanker Base Manager (ATBM) or representative prior to conducting recurring operations at a particular air tanker base facility. This does not preclude servicing in pits on initial stop, if required.

Most ATBMs publish a local Pilot Orientation Package. As a minimum, review the following with the appropriate tanker base representative:

Air Tanker Base Manager

Conduct a thorough review of local operating procedures, as required, to include the following:

Base Operations

- Local Fire Situation
- Mission planning facilities /capabilities
- Type Retardant in use
- Loading / Pumping Equipment Capability /Limitations
- Aircraft Parking Locations /Procedures
- Local Hazards: ramps, runway, approach, departure
- **Airspace coordination plan**
 - Class B, C, D airspace
 - Noise Abatement Procedures
 - MTRs
 - Transit altitudes to / from fires)
 - Standard VFR departure / arrival procedures
 - Prominent Local Landmarks
 - Flight Hazards / TFRs
 - Jettison Areas
- **Pilot Duty Day and Flight Time limitations**

Tanker Base Pilot Orientation Briefing Guide (Cont)

- Engine-run up location / procedures
- Weather, time of day limitations, or collocated military activity
- Flight Plans
- ARFF requirements (minimum 3000 gallons retardant for continuous C-130 ops)

Air-Tac / Lead plane procedures and other operations

- **Pit Operations** (e.g. unidirectional pits, preferred pits, etc.)
 - Fuel / Ground Power requirements
 - Aircraft Washing
 - Marshaling requirements (e.g. 10' obstruction clearance with wing walker)
- **Dispatch Procedures**
 - Standard Interagency Dispatch Form
 - GACC and Local Dispatch procedures
 - Flight Following (AFF, En route dispatch frequency, etc.)
- C2 – ensure TB personnel pass On (Stopped) and Off (Rolling) times to AEG in Boise, ID
 - Phone - (208) 422-3422
 - Fax - (208) 422-3419
- **RON requirements**
 - Billeting
 - Transportation
 - Morning Brief Time

Tanker Base Pilot Orientation Briefing Guide **(Cont.)**

- Engine Start coordination (Hand Signals preferred during heavy tanker operations)
- Identify any obstruction hazards and coordinate wing walkers as required (10' clearance)

Load Attendant

- Discharge Nozzle (Pintle) safety issues
- Retardant loading / metering procedures
- Emergency Shutoff procedures / signals

PART TWO – NORMAL PROCEDURES

CAUTION

Do not operate the MAFFS compressors if use of propeller de-icing is expected. Operation of the MAFFS compressors in icing conditions may exceed maximum generator loads. If icing conditions are anticipated, ensure Compressor Enable switch is in the OFF position. The loadmaster will obtain a verbal confirmation from the pilot prior to enabling compressors.

DROP PREPARATION CHECKLIST

1. **“CREW, DROP PREPARATION CHECKLIST”** (P)
2. **“ACKNOWLEDGED”** (LM)
3. Stall Speeds – **“REVIEWED”** (CP, P)
4. Altimeters – **“SET”** (State setting) (CP, P)
5. Radar Altimeters – **“SET”** (State setting) (CP)
6. GCAS/TAWS – **“SET”** (State setting) (CP)
7. LDG GEAR INHIBIT – **“ON”** (CP)
8. STICK PUSHER – **“OFF”** (CP)
9. IFF/TCAS – **“SET”** (State setting) (CP)
10. Red Light – **“ON”** (CP)
11. Drop Preparation Checks – **“COMPLETE”** (LM, CP)

C-130J-30 STALL SPEEDS									
		Bank Angle					Bank Angle		
Gross Wt.	Flap %	0	30	45	Gross Wt.	Flap %	0	30	45
110	0%	107	116	128	135	0%	119	128	142
	50%	96	103	114		50%	106	114	126
	100%	89	96	106		100%	99	106	117
115	0%	110	118	131	140	0%	121	130	145
	50%	98	105	117		50%	108	116	129
	100%	91	98	108		100%	100	108	120
120	0%	112	121	134	145	0%	123	133	147
	50%	100	108	119		50%	110	118	131
	100%	93	100	111		100%	102	110	122
125	0%	115	123	137	150	0%	126	135	150
	50%	102	110	122		50%	112	120	133
	100%	95	102	113		100%	104	112	124
130	0%	117	126	139	155	0%	128	137	152
	50%	104	112	124		50%	114	122	135
	100%	97	104	115		100%	106	114	126

SLOWDOWN CHECKLIST

1. **“CREW, SLOWDOWN CHECKLIST”** (P)
2. **“ACKNOWLEDGED”** (LM)
3. *Flaps – **“SET”** (State setting) (CP)
4. Landing Lights – **“SET”** (Extended/ON) (CP)
5. Compressor Enable Switch – **“OFF”** (LM)
6. *Drop Selection Switch – **“SET”** (State setting) (LM)
7. *Foam Mix (If required) – **“SET”** (State setting) (LM)
8. *System Status – **“ARMED”** (LM)
9. Pilots Radar – Windshear (WS) mode “As required” (P,CP)

NOTE

The Armed light on the drop control assembly will flash when the arming cycle is initiated. The light will be on and steady when the system is fully armed. The system takes approximately 30 seconds to complete the arming cycle.

10. *Slowdown Checks – **“COMPLETE”** (LM, CP)

ONE MINUTE ADVISORY

1. **“CREW, ONE MINUTE ADVISORY”** (P)
2. **“ACKNOWLEDGED”** (LM, P)
3. Release Point and Escape – **“REVIEWED”** (CP, P)
4. Bleed Air – As required (CP)

RELEASE POINT CHECKLIST

1. **“READY, READY, DROP”** (CP)
2. Drop Release Trigger Switch – Depress and hold (CP)

NOTE

The Drop Release Trigger Switch should be depressed and held for the duration of the desired drop, or until “LOAD CLEAR”

3. Status of Load – **“LOAD CLEAR”** (Or condition) (LM)
4. Flaps - **“SET”** (State setting) (CP)

NOTE

If multiple drops are planned for a sortie, re-accomplish checklists starting with asterisked items of the SLOWDOWN checklist. Ensure stall speeds are updated/reviewed when aircraft gross weight changes.

COMPLETION OF DROP CHECKLIST

NOTE

If multiple drops are not planned, the copilot's "Flaps" call on the Release Point Checklist initiates the Completion of Drop Checklist.

1. Flaps – **"UP"** (CP)
2. GCAS/TAWS – **"ON"** (CP)
3. STICK PUSHER – **"ON"** (CP)
4. LDG GEAR INHIBIT – **"OFF"** (CP)
5. IFF/TCAS – **"SET"** (State Setting) (CP)
6. Bleed Air – As required (CP)
7. CNI-MU – **"Reviewed/Updated"** (As Required) (CP)
 - a. PERF INIT WEIGHT – Update as required
8. Compressor Enable Switch – **"SET"** (State setting) (LM)
9. Landing Lights – **"SET"** (as required) (CP)

NOTE

Green light must be ON for at least five seconds to ensure an airdrop event is recorded in the maintenance data download.

10. Green Light – ON (CP)
11. Red light – ON (CP)
12. Red Light – OFF (CP)
13. Drop Checks – **"COMPLETE"** (LM, CP)

MAFFS WEIGHT TABLES

MAFFS Weight Chart (thousands of pounds)				
Quantity	Retardant	Retardant (Foam Tank Removed)	Water and Foam	Water Only
Empty	15.1	14.8	15.1	15.1
500	19.6	19.3	19.5	19.3
1000	24.1	23.8	23.9	23.4
1500	28.6	28.3	28.2	27.6
2000	33.1	32.8	32.6	31.7
2500	37.6	37.3	37.0	35.9
3000	42.1	41.8	41.4	40.0
NO WATER, FULL FOAM TANK			16.5	

Fluid Weights (pounds per gallon)		
Retardant (typical)	Water	Foam
9.0	8.3	8.5

System Capacity (gallons)	
Main Tank	Foam Tank
3000	160

NOTE

Weights provided above are rounded estimates for planning purposes and actual weights must be verified. Actual weight of a MAFFS II unit can be found in the weight and balance section of the maintenance documentation specific to each unit.

PART THREE – EMERGENCY PROCEDURES

EMERGENCY DROP

1. Emergency Drop – **“CLEARED TO DROP”** (P)
2. Emergency Drop Switch – Lift Guard and Toggle (LM, CP)
3. Status of Load – **“LOAD CLEAR”** (Or condition) (LM)
4. Emergency Drop Checks – **“COMPLETE”** (LM, CP)

EMERGENCY SHUTDOWN

To stop both compressors and all hydraulic pumps from the MAFFS loadmaster station:

1. Power Switch – GROUND MODE (LM)
2. EMER STOP (FWD Pallet) – IN (LM)
3. 28 VDC Power Switch (FWD Pallet) – DISABLE (LM)

If conditions dictate complete removal of power to the MAFFS unit:

4. Generators 1 and 4 – **“OFF”** (PM)
5. TR 2 Circuit Breaker – **“PULLED”** (P)
6. TR 4 Circuit Breaker – **“PULLED”** (CP)

When conditions permit:

7. MAFFS Power Cables – **“REMOVED”** (LM)
8. TR 4 Circuit Breaker – **“RESET”** (CP)
9. TR 2 Circuit Breaker – **“RESET”** (P)
10. Generators 1 and 4 – **“ON”** (PM)

WARNING

Once the MAFFS unit power cables are disconnected from the aircraft, pulling the MAFFS battery circuit breaker will remove all power from the MAFFS unit including power required for an emergency dump. Pulling this circuit breaker is only recommended if you have already dropped and the MAFFS DC system is suspected of causing smoke or fire.

11. MAFFS Battery Circuit Breaker – **“PULLED”** (if required) (LM)
12. Emergency Shutdown Checks – **“COMPLETE”** (LM, PM)