FLIGHT CREW CHECKLIST

BMS SERIES
F-15C/D

BENCHMARK SIMS - FALCON BMS

Not suited for real operations.
Suitable only for FALCON BMS.

06 JUNE 2024

INTRODUCTION

This checklist is a step-by-step guide in abbreviated form for use as a reference to ensure accomplishment of selected tasks by a predetermined sequence procedure. The intent of this checklist is to eliminate the probability of omission of a step in the accomplishment of the intended task.

The procedures contained herein are presented in the shortest practical form for use by qualified personnel and are not intended to provide full technical instructions.

This checklist does not replace the amplified version of the procedures in the Flight Manual and it is not intended as a stand-alone document. It assumes the reader already possesses a basic, working knowledge of F-15C/D aircraft. For a complete description of systems, the reader should consult the applicable documentation.

To fly the aircraft safely and efficiently, read and thoroughly understand why each step is performed and why it occurs in a certain sequence.

Changes to the checklist are made periodically to reflect functional changes to the Flight Manual, aircraft systems, procedures, or software, and are published by authorized authorities through official distribution channels.

Please note: The BMS F-15C Eagle is under development and not all features are fully implemented. Items in the checklists that do not function in the simulator are **colored gray** and marked with ***(N/I)***. These steps can be omitted from the checklist procedure.

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SECTION N

NORMAL PROCEDURES

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COCKPIT DESIGNATION CODE

System and/or component effectivity for a particular aircraft version/cockpit and engine version is denoted by a letter code enclosed in a box located in the text or on an illustration. The symbols and designations are as follows:

AIRCRAFT, COCKPIT

No code: F-16C and F-16D aircraft
C F-15C aircraft
D F-15D aircraft
DF F-15D aircraft, forward cockpit
DR F-15D aircraft, rear cockpit

An asterisk (*) preceding steps is used to highlight procedures for **D** aircraft which apply to both **DF** Front and **DR** Rear cockpits.

ENGINE

PW 220 Pratt & Whitney F100-PW-220 engine.

PW 229 Pratt & Whitney F100-PW-229 engine.

SOFTWARE

FALCON BMS

WARNINGS, CAUTIONS, NOTES, COMMS

The following definitions apply to Warnings, Cautions, Notes, and Comms found throughout the manual:

WARNING Operating procedures, techniques, etc., which could result in personal injury or loss of life if not carefully followed.

CAUTION Operating procedures, techniques, etc., which could result in damage to equipment if not carefully followed.

NOTE An operating procedure, technique, etc., which is considered essential to emphasize with additional information.

EPU CHECK **WARNING**

Aircraft system, component, procedure, that special attention, techniques, etc., is required.

USE OF WORDS AS DESIRED AND AS REQUIRED:

As desired allows pilot preference in switch/control positioning.

As required indicates those actions which vary based on mission requirements or dedicated SOP instructions.

PREFLIGHT CHECK

1. Speedbrake chaff loading – AS REQUIRED. *(N/I)*

EXTERIOR INSPECTION
Refer to figure N-3, page N-16.

COCKPIT ACCESS

1. Extend canopy external control handle by pushing release button in center of handle. *(N/I)*
2. To raise canopy, rotate handle AFT. *(N/I)*
3. To lower canopy, rotate handle FWD. *(N/I)*

BEFORE ENTERING COCKPIT

1. Canopy initiator indicator – NOT FIRED
2. Ejection controls safety lever – LOCKED
3. Seat hose quick disconnect coupling – CHECK SECURE
4. Radio beacon auto/manual selector – AS DESIRED
5. (F-15 A/C) Internal canopy manual unlocking handle – STOWED / PIN IN

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SECTION X

FAMILIARIZATION PROCEDURES

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This section is furnished for familiarization use. It will normally be inserted between BEFORE ENTERING COCKPIT and COCKPIT INTERIOR CHECK. It may also be inserted in another part of the checklist, removed, parts removed, or discarded as desired.

COCKPIT INTERIOR CHECK

1. Loose or foreign objects - Check.
2. Harness and personal equipment - Fasten.
3. Rudder pedals - Adjust.

Left Console

a. Integrated communications controls – AS REQUIRED
b. IFF – ALL MODES OUT
c. AAI – AS REQUIRED
d. EW panel – AS REQUIRED
e. External light controls – AS REQUIRED
   (1) Anti-collision – ON
   (2) Formation - OFF
f. Flap switch – UP
g. Throttles – OFF
h. Friction lever – AS DESIRED
i. Radar controls – AS DESIRED
   (1) Rader power knob - OFF
j. Fuel control panel – SET
   (1) Slipway switch – CLOSE
k. V-MAX switch – COVER CLOSED AND SAFETY WIRED
l. CAS switches – ON
m. Miscellaneous control panel – SET
   (1) Landing/taxi light switch - OFF
n. ILS/TACAN controls – AS REQUIRED
   (1) Emergency landing gear handle – IN
   (2) Arresting hook switch – UP

(Cont)

Main Instrument Panel

a. Landing gear handle – DOWN
b. VSD controls – AS REQUIRED
c. Master arm switch – SAFE
d. Main communications controls – ON AND SET
e. HUD display control panel – AS REQUIRED
f. Emergency jettison button – NOT PRESSED
g. Steermode knob – AS REQUIRED

Right Console

a. Engine control panel – SET
    (1) Generator switches – OFF
    (2) Emergency generator switch – AUTO
    (3) EEC/ENG CONTR switches – ON
    (4) JFS starter switch – ON
    (5) Engine master switches – ON
b. INS mode knob – OFF
c. Interior lights controls – AS REQUIRED
d. TEWS panel – AS REQUIRED
    (1) ICS – OFF
    (2) SET1-3 – AUTO
    (3) RWR – OFF
    (4) EWWS – OFF
e. Countermeasures control panel – AS REQUIRED
    (1) CMD MODE – OFF
    (2) DISP SEL – BOTH

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COCKPIT INTERIOR CHECK

1. Interior check – Complete.

AFTER COCKPIT CHECK IS COMPLETE – VERIFY

1. Throttles – OFF
2. Formation lights – OFF
3. Emergency landing gear handle – IN
4. Arresting hook switch – UP
5. Landing gear handle – DOWN
6. Master arm switch – SAFE
7. Emergency jettison button – NOT PRESSED
8. EEC/ENG CONTR switches – ON
9. Avionics – OFF (CC, AAI, IFF, RADAR, ILS/TACAN, VSD, HUD, INS, TEWS)

STARTING ENGINES

JFS START

1. Air Source – BOTH
2. JFS switch – ON
3. JFS handle – PULL AND RELEASE
   Start 1 (50% JFS capacity) – LEFT CLICK
   Start 2 (100% JFS capacity) – RIGHT CLICK
4. JFS Starter READY light – CHECK ON
   (within 5 sec; 15 sec if temperature below 0°F)
5. Right Engine master switch – ON
6. Right Engine Generator Switch – ON
7. Right ENG CONTR Switch – ON

ENGINE START

8. Finger lift right engine – RAISE AND RELEASE
   This engages the JFS to the right engine.
9. Tachometer – OBSERVE INDICATING
10. Right Throttle – IDLE (at 22% RPM)
11. Engine instruments – CHECK
    Engine limits are contained on page N-21
12. JFS deceleration – CONFIRM
13. EMER BST ON light – OBSERVE ON

Other engine – START

14. JFS Switch – CONFIRM ON
15. JFS Starter READY light – CONFIRM ON
16. Left Engine master switch – ON
17. Left Engine Generator Switch – ON
18. Left ENG CONTR Switch – ON
19. Finger lift left engine – RAISE AND RELEASE
    This engages the JFS to the left engine.
20. Left Throttle – IDLE (at 25% RPM)
21. Engine instruments – CHECK
22. Inlet ramp switches – CHECK AUTO
23. Close canopy – AS DESIRED

AFTER ENGINE START

1. Oxygen - ON
2. Internal Lights – AS DESIRED
3. External Lights – AS DESIRED
4. Verify ADI mode - ON
5. Radios – AS DESIRED
6. NCI Mode Selector Knob – GC
7. Data Select – PP
8. Numpad – press RDY
   Verify NCI lights on
9. Numpad – Press ENTR
   ➔ GPS alignment is initiated
   Verify:
   After 60sec - End Coarse - solid ALN light
   After 120sec - End partial - 1Hz flash ALN light
   After 240sec - full - 4Hz flash ALN light
10. MPCD – AS DESIRED

JTIDS/LINK-16 INITIALIZATION

(1) JTIDS MODE knob – ON
(2) Wait for 'INITIALIZE' to appear on MPCD.
(3) Continue with step 11 – DTM load.

11. MPCD DTM page – READ (DTC gets loaded)
12. MPCD MENU page – Verify
    (1) TERMINAL LOAD: GO
    (2) NET ENTRY: FINE
13. VSD – AS DESIRED
14. HUD – AS DESIRED
15. ICS – AS DESIRED
16. RWR – ON
17. EWWS – ON
18. SET 1-3 – AS DESIRED
19. Radar Power – STBY
    ➔ Radar BIT is initiated (takes ~ 90 sec.)
    ➔ AV BIT light – CHECK ON
20. CMD Mode – STBY

BEFORE TAXIING

1. Oxygen – CHECK
   a. Quantity – CHECK
   b. Oxygen test – Observe OXY LOW light at 2 liters
2. Fuel quantity gage – CHECK
   a. Tank quantities – CHECK
3. Avionics – AS REQUIRED
   (RADAR, ILS/TACAN, VSD, HUD, TEWS)
4. Speed brake – CYCLE
5. Flaps – DOWN
6. Slipway door – CHECK
   (if air refueling is planned)
7. Trim – CHECK AND SET
   a. Trim pitch, roll and yaw off neutral
8. Flight Controls – CHECK
   a. Stick full aft and full left
   b. Stick full forward and full left
   c. Stick full forward and full right
   d. Stick full aft and full right
   e. Rudder – Check

(CONT)

9. Brakes – CHECK
10. Avionics systems – CHECK/PROGRAM
11. NCI Mode Selector Knob – INS
    When aligned (4kHz flash ALN light)
12. Numpad –
    Verify NCI keypad lights on
13. Numpad – Press ENTR (Confirms INS alignment)
14. Numpad – press RDY
    Verify NCI lights OFF
15. Altimeters – SET
16. JFS LOW light – OUT
17. Master Caution Light - OFF
18. Nose wheel steering – AS DESIRED
19. Taxi Light – TAXI LIGHT

TAXIING

1. Brakes – CHECK
2. Nose gear steering – CHECK
3. Flight instruments – CHECK

BEFORE TAKEOFF

1. Radar – OPERATE
2. Ejection controls safety lever – CHECK ARMED
3. Flights controls – CHECK FREE
4. Flaps – CHECK DOWN
5. IFF – ON/AS REQUIRED
6. T/O trim – CHECK
   If the aircraft is manually trimmed nose down from takeoff trim, nosewheel lift-off speed may be increased.
7. Canopy – CLOSED AND LOCKED
   The canopy may bounce slightly as it lowers on canopy sill.
8. Warning, caution lights – CHECK.

TAKEOFF

Advance engines to 80% and check instruments. When ready for takeoff, release brakes and advance throttles to MIL or MAX as desired. Monitor engine instruments for proper operation, assuring that nozzles remain below 30% at MIL.
For normal takeoffs, move the stick to approximately 10° pitch attitude. For maximum performance takeoffs (minimum ground roll), move the stick full aft at a speed below the nose wheel lift-off speed and rotate 12° pitch attitude. Retract gear and flaps when airborne.

AFTERBURNER OPERATION
During normal afterburner operation, observe exhaust nozzles open progressively with each afterburner segment; thrust and fuel flow increase proportionately. As throttles are advanced from minimum to maximum afterburner, the increase in thrust is fairly smooth and continuous.

CLIMB TECHNIQUES

MIL Power – Climb at 350 knots to 0.90 Mach, then maintain 0.90 MACH.

MAX Power – Climb at 350knots to 0,95 Mach. If Mach increases above 0,95 at 40° pitch attitude, hold 40° and allow the Mach to increase.

IN-FLIGHT

Continually monitor aircraft systems operation throughout the flight. Frequently check engine instruments, cabin pressure, oxygen system operation, fuel quantity and fuel transfer.

Optimal cruise and maximum endurance should be found in the performance data section *(WIP)* and is attained by flying the correct Mach number for configuration and altitude. If the performance charts are not available and accuracy is not a significant factor, 12 units AOA may be used for optimum cruise and 14.5 units AOA may be used for maximum endurance.

DESCENT/BEFORE LANDING

1. Armament master switch – SAFE
2. Altimeter – SET

AFTER LANDING

1. Ejection controls safety lever – LOCKED
2. Speed brake – IN
3. Flaps – UP
4. Slipway – CHECK
5. IFF mode switches – OUT
6. Mode 4 function switch – HOLD MOMENTARILY
7. Radar power switch – STBY
8. Trim – T/O
9. Landing/taxi light – AS REQUIRED
10. Formation lights – OFF

ENGINE SHUTDOWN

1. Slipway switch – CLOSE (if required)
2. INS – OFF
3. Avionics switches – OFF
   Turn avionics OFF before shutting down the engines to prevent false BIT warnings on the status panel.
4. UHF 2 mode selector switch – MAN
5. Throttles – OFF AFTER 15 SECONDS
   Wait 15 seconds after INS shutoff before placing throttle(s) off.

SCRAMBLE

AIRCRAFT SETUP

1. Complete your Before Flight procedures through Before Taxiing
2. Perform Engine Shutdown procedure
3. Ejection controls safety lever – LOCKED
4. Avionics switches – ON (EXCEPT RADAR)
5. Do not move the aircraft.

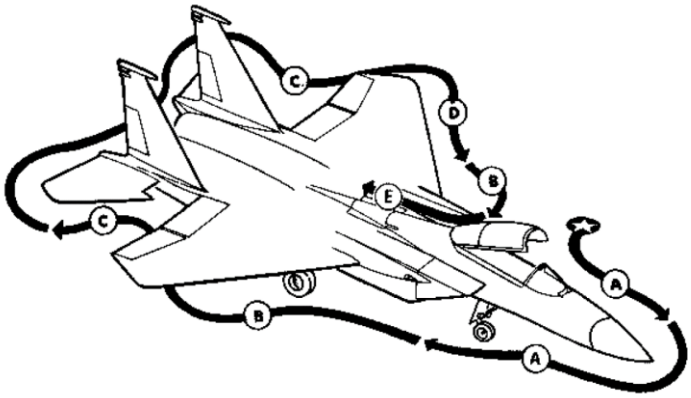
QUICK TURNAROUND

1. AFTER LANDING checks - Complete.
2. PRIOR TO ENGINE SHUTDOWN checks - Complete.
3. Communication with ground crew - Establish (if required).
4. ENGINE SHUTDOWN - COMPLETE.
5. Aircraft setup – COMPLETE (if required)

EXTERIOR INSPECTION (TYPICAL)

NOTE: Check aircraft for loose doors and fasteners, cracks, dents, leaks, and other discrepancies.

Figure N-3. (Sheet 1)



(Cont)

NOSE - A

1. UNDERSIDE:
   A. NLG TIRE WHEEL AND STRUT CONDITION
   B. NLG DOORS & LINKAGE SECURE, GROUND LOCK REMOVED.
   C. ANTENNAE CONDITION

2. FORWARD FUSELAGE:
   A. PITOT-STATIC PROBE CONDITION (2)
   B. AOA PROBE SECURE CONDITION (2)
   C. ENGINE INTAKE DUCT CLEAR (2)

CENTER FUSELAGE & WING - B

1. WING:
   A. EXTERNAL STORES & PYLONS SECURE
   B. NAVIGATION & FORMATIONS LIGHTS CONDITION
   C. AIRLERON & FLAP CONDITION
   D. FUEL DUMP/VENT MAST CONDITION

AFT FUSELAGE - C

1. GENERAL AREA:
   A. ARRESTING HOOK
   B. STABILATOR CONDITION
   C. RUDDER CONDITION
   D. ANTENNA COVER CONDITION (VERTICAL STABELIZER)
   E. NAVIGATION & FORMATION LIGHTS CONDITION
   F. ENGINE EXHAUST AREA CONDITION

(Cont)

UNDERSIDE OF FUSELAGE - D

1. GENERAL AREA:
   A. STORE & PYLON SECURE

2. MAIN GEAR AND WHEELWELL:

   A. WHEEL, TIRE AND STRUT CONDITION
   B. DOORS & LINKAGE SECURE
   C. GROUND LOCK REMOVED

TOP OF FUSELAGE - E

1. GENERAL AREA:
   A. SECONDARY HEAT EXCHANGER EXHAUST COVER REMOVED
   B. EQUIPMENT BAY FIVE SECURE

AIRCRAFT SERVICING

SERVICING DIAGRAM

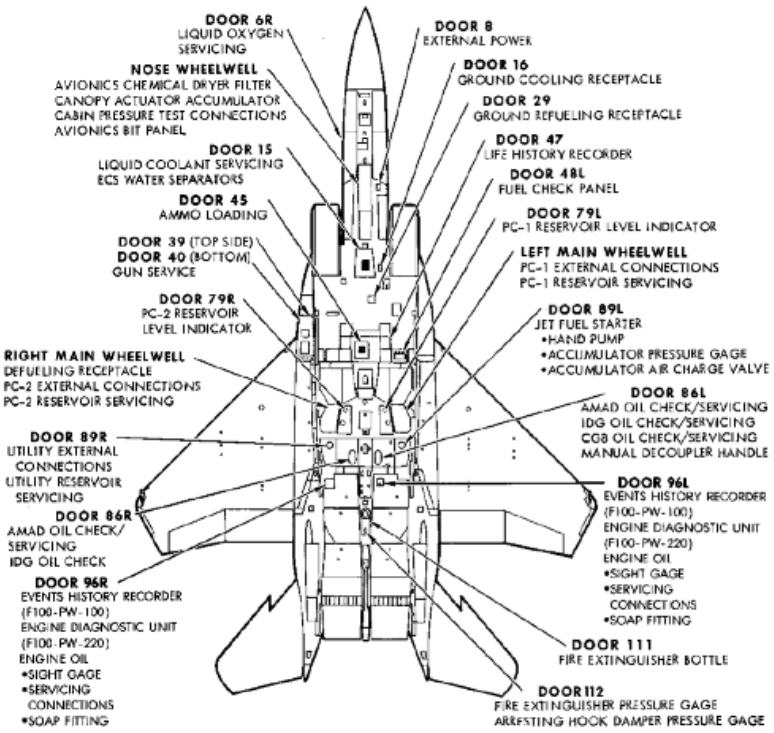


Figure N-4.

Takeoff and Landing Data Card

CONDITIONS

	TAKEOFF	LANDING
GW		
Runway Condition		
Runway Temp		
Pressure Altitude		
Wind		
Runway Length		
Runway Slope		

TAKEOFF

Rotation Speed		KIAS
Takeoff Speed/Dist.	KIAS	FEET
Refusal Speed		KIAS
Max Brake Speed		KIAS

LANDING

	Immediately After Takeoff		Final Landing	
	GW		GW	
Approach Speed				
Touchdown Speed				
Landing Distance				

Figure N-5.

ENGINE LIMITATIONS PW 220/PW 229

GROUND

CONDITION	FTIT °C	RPM %	OIL PSI	REMARKS
START	680	--	--	--
IDLE	-	-	15-80	--
MIL/AB	960	94	30-80	Notes 2,5 and 6
TRANSIENT	970	94	30-80	Notes 2,5 and 7
FLUCTUA-TION	±10	±1	±10	Notes 2,3 and 4

FLIGHT

CONDITION	FTIT °C	RPM %	OIL PSI	REMARKS
AIRSTART	800	--	--	--
IDLE	-	-	15-80	--
MIL/AB	970	96	30-80	Notes 1 and 2
TRANSIENT	990	96	30-80	Notes 2 and 8
FLUCTUA-TION	±10	±1	±10	Notes 2,3 and 4

NOTES

1. USE OF THE Vmax SWITCH IS PROHIBITED.
2. LIMITATIONS INCLUDE FLUCTUATIONS.
3. IN PHASE FLUCTUATION OF MORE THEN ONE INSTRUMENT, OR SHORT TERM CYCLIC FLUCTUATIONS ACCOMPANIED BY THRUST SURGES, INDICATE ENGINE ENTROL PROBLEMS.
4. NOZZLE FLUCTUATIONS ARE LIMIED TO +- 2% AT MILITARY POWER AND ABOVE. FLUCTUATIONS ARE NOT PERMITTED BELOW MILITARY POWER.
5. FOR ENGINE OPERATION AT MILITARY OR ABOVE, OIL PRESSURE MUST INCREASE 15 PSI MINIMUM ABOVE IDLE OIL PRESSURE.
6. ENGINE NOZZLE POSITION IS LIMITED TO 30% OPEN OR LESS AT MILITARY POWER.
7. MAXIMUM TEMPERATURE LIMITED TO 30 SECONDS.
8. MAXIMUM TEMPERATURE LIMITED TO 10 SECOUDS.

SECTION EP

EMERGENCY PROCEDURES

WIP

SECTION AR

AIR REFUELING PROCEDURES

WITH KC-135, KC-10, AND KDC-10

WIP

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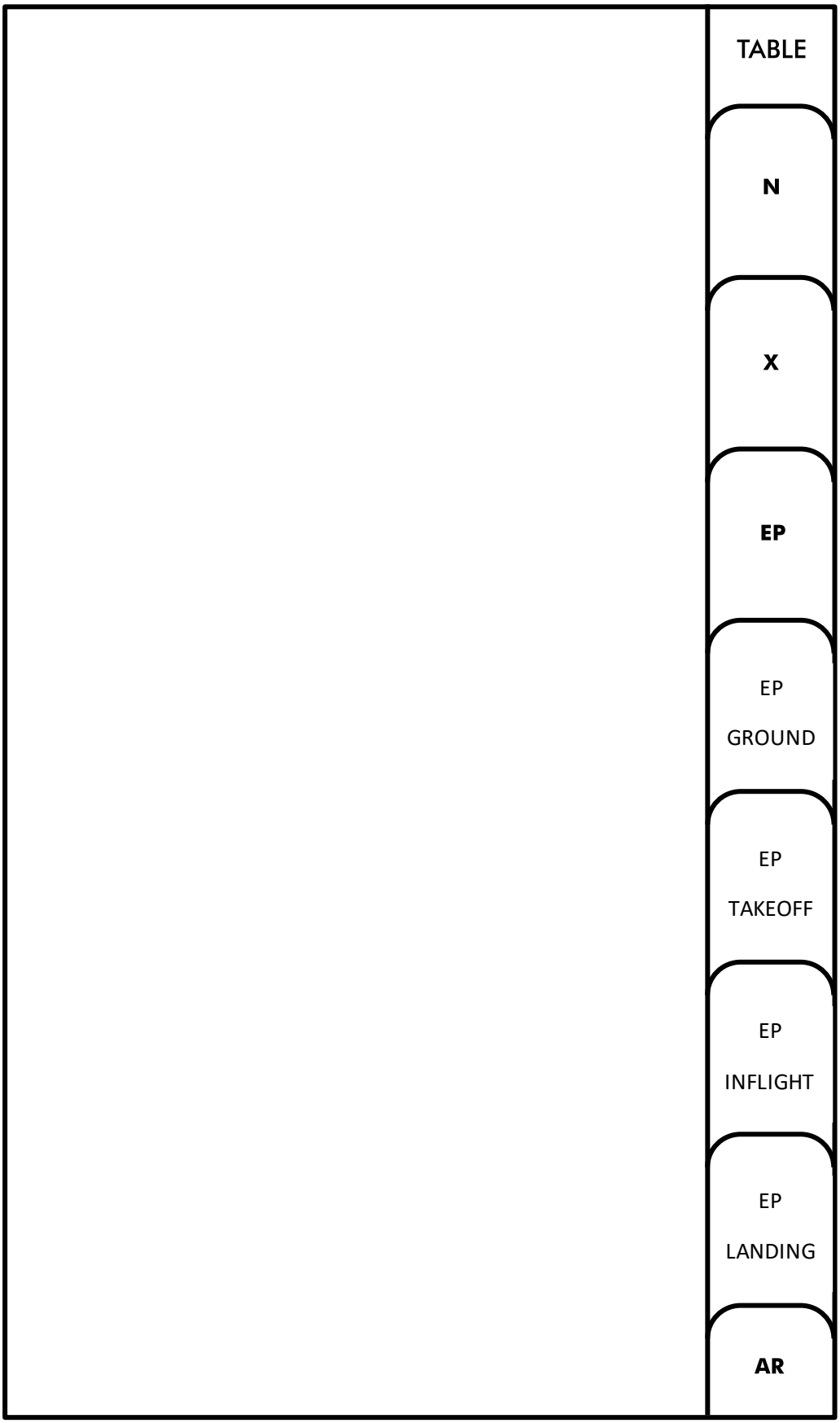
TABLE
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GROUND
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TAKEOFF
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INFLIGHT
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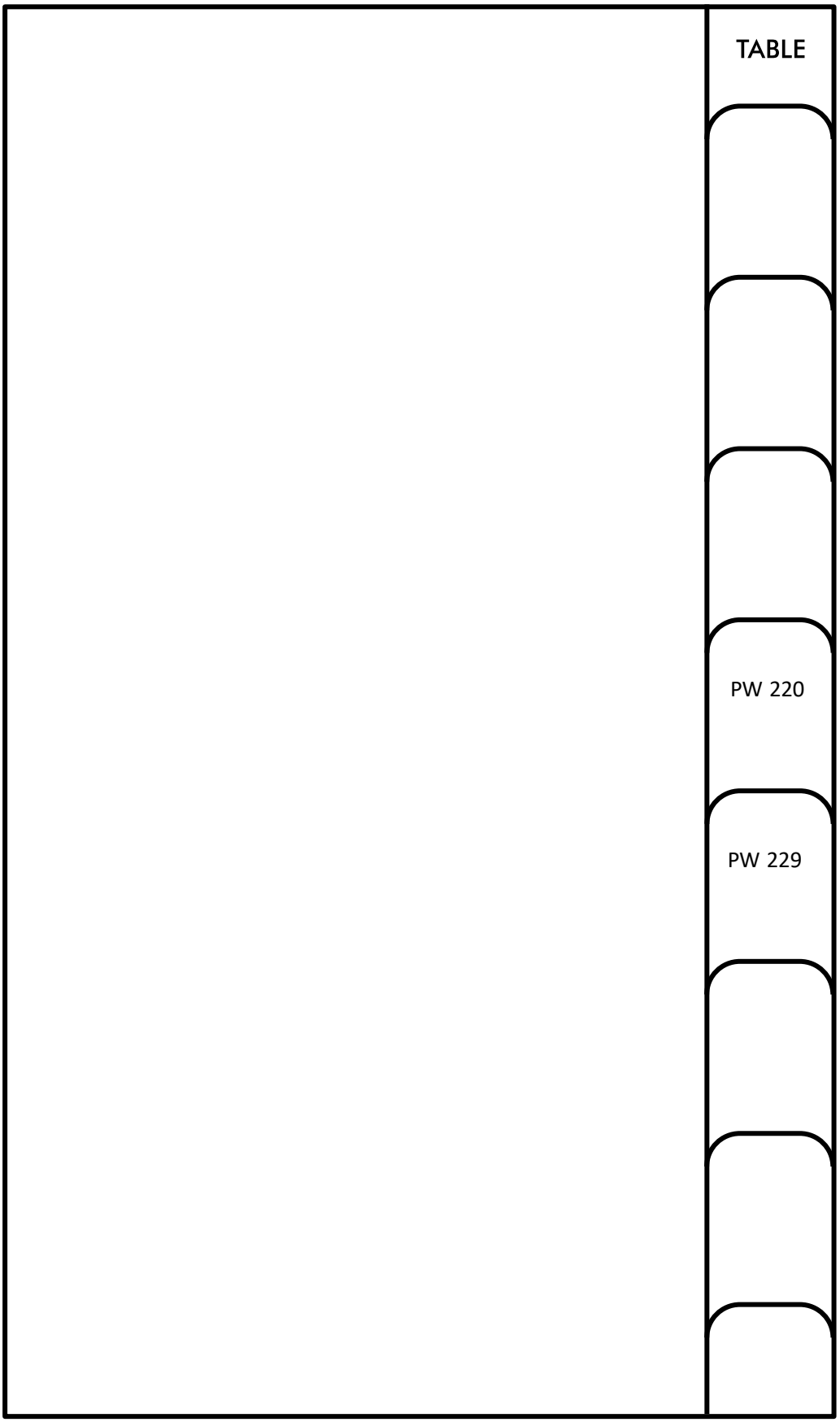
TABLE
PW 220
PW 229