

Scramble Operation

• Canopy.....	CLOSE
• DECS switch.....	ON
• Fuel shutoff lever.....	ON
• External lights.....	AS REQUIRED
• FUEL PROP.....	ON
• L/R fuel pumps.....	NORM
• Throttle.....	CUTOFF
• SAS - PITCH, ROLL, YAW switches.....	ON
• Q-feel switch.....	ON
• RPS/YAW switch.....	ON
• GEN switch.....	ON
• BATT switch.....	ON
• Warning and caution lights.....	TEST
• Master caution.....	RESET
• ANTISKID switch.....	NWS
• Flaps switches.....	ON and CRUISE
• Master mode.....	VSTOL
• L/R MPCD.....	BRT
• UFC.....	BRT
• COMM 1/2 VOL.....	ADJUST
• DMT switch.....	ON
• FLIR switch.....	ON
• INS mode.....	NAV
• APU switch.....	AS REQUIRED
• Engine start switch.....	ENG ST
• Throttle.....	IDLE
• Trim.....	4° ND
• Parking brake.....	OFF

Pre-flight Checks

- DECS switch.....OFF
- Fuel shutoff handle.....OFF
- Engine RPM switch.....LO
- EFC switch.....POS 2
- LIDS switch.....NORM
- Oxygen switch.....OFF
- H2O dump switch.....OFF
- Exterior lights.....AS REQUIRED
- Exterior lights master switch.....ON
- A/R switch.....IN
- Left and right wing fuel dump switches.....NORM
- Left and right boost pump switches.....NORM
- FUEL PROP.....ON
- Throttle.....OFF
- JPTL switch.....ON
- Manual fuel switch.....OFF
- Parking brake.....ON
- SAS.....SET
 - Pitch.....ON
 - Roll.....ON
 - Yaw.....ON
- Q-feel switch.....ON
- RPS/YAW switch.....ON
- Landing light switch.....OFF
- ANTISKID switch.....ON
- Landing gear handle.....DOWN
- LDG GEAR EMER BATT.....CHECK (white not visible)

Pre-flight Checks

- Flaps switches.....**AUTO and OFF**
- Water switch.....**OFF**
- Master arm.....**OFF**
- Armament control panel.....**SAFE/NORM**
- IR cool switch.....**OFF**
- MPCD, HUD and COMM.....**AS DESIRED**
- FLIR switch.....**AS DESIRED**
- VRS display switch.....**AS DESIRED**
- DMT switch.....**AS DESIRED**
- INS mode selector knob.....**OFF**
- DP switch.....**AUTO**
- MC switch.....**AUTO**
- Circuit breakers (7)**IN**
- ECM control panel.....**SET**
 - RWR.....**AS REQUIRED**
 - EXP.....**OFF**
 - ECM.....**OFF**
- Battery switch.....**OFF**
- Generator switch.....**GEN**
- V/UHF radio.....**T/R or T/R+G**
- ACNIP panel.....**AS DESIRED**
- IFF.....**NORM**
- Internal lights.....**AS DESIRED**
- ECS panel.....**SET**
 - Temperature controller.....**AUTO**
 - Aft bay EQUIP switch.....**ON**
 - DEFOG switch.....**NORM**
 - Cabin pressure switch.....**NORM**
- Video recorder.....**STBY/REMOTE**

Pre-start

- Battery switch.....**BATT**
- ICS.....**CHECK/SET**
- Warning and caution lights.....**TEST - MASTER CAUTION RESET**
- Brakes.....**CHECK**
 - Accumulator.....**> 1000 PSI**
 - Brake pressure.....**> 1500 PSI**
- Landing gear indicator.....**4 GREEN**
- Throttle quadrant.....**CHECK**
 - Parking brake.....**OFF**
 - Throttle.....**FULLY FORWARD**
 - JPT limiter.....**OFF**
 - Throttle.....**CUTOFF**
 - JPT limiter.....**ON**
 - Parking brake.....**ON**
- Igniters.....**CHECK**
 - Depress airstart button.....**NO or REGULAR SOUND**
 - Manual fuel switch.....**ON**
 - Depress airstart button.....**NO or REGULAR SOUND**
 - Manual fuel switch.....**OFF**
- EDP.....**BIT**
 - Nozzle needle.....**60°C ⇒ FLUCTUATING**
 - OT warning light.....**ON**
 - 15 SEC warning light.....**ON**
 - Water flow warning light.....**ON**
 - Lights after BIT test complete.....**ALL OUT**

Pre-start

- Fuel panel **BIT**
 - Left window..... **1400 ± 100**
 - Right window..... **2400 ± 100**
 - TOT window..... **3800 ± 200**
 - L and R fuel low level lights..... **FLASHING**
 - LOAD caution light..... **ON**
 - BINGO caution (if bingo fuel > 4000 lbs)..... **ON**
 - LEFT and RIGHT full advisory lights..... **FLASHING**
 - Lights after BIT test complete..... **ALL OUT**
- Canopy caution light..... **CHECK**
 - Canopy OPEN, control handle fully FORWARD..... **ON**
 - Canopy OPEN, control handle fully AFT..... **OFF**
 - Canopy CLOSED, control handle fully FORWARD..... **OFF**

External Power

- Battery switch..... **OFF**
- If required, tell **Chief** to turn **GROUND POWER ON**.
- Battery switch..... **BATT**
- Ground power panel switches..... **CHECK**
 - AFT EQP..... **ALL**
 - COCKPIT..... **ON**
 - FWD EQP..... **ON**
 - STORES..... **ACP or SMS**

APU Power

- Canopy..... **CLOSE**
- APU generator switch..... **ON**
- APU advisory light..... **ON**
- APU GEN light..... **OUT**

Engine Start

- Radio **ATC** and **REQUEST START-UP**.
- Canopy.....**CLOSE**
- DECS power.....**CHECK**
 - DECS switch.....**OFF**
 - EFC and JPTL warning and caution lights.....**ON**
 - DECS switch.....**ON**
 - EFC and JPTL warning and caution lights.....**OFF**
 - Fuel shutoff lever.....**ON**
 - EFC switch.....**CYCLE (EFC CAUTION LT FLICKERS)**
 - EFC switch.....**POS 2**
- If required, tell **Chief** to turn **GROUND POWER OFF**.
- Parking brake.....**ON**
- Throttle.....**CUTOFF**
- Nozzles.....**10°**
- Engine start switch.....**ENG ST**
- Throttle.....**IDLE**
- Engine start switch.....**OFF prior to 15%**
- Idle RPM check.....**28.4 – 29.0%**
- JPT.....**< 545°C**
- HYD 1 and HYD 2 pressure.....**3000 ± 200 PSI**
- Brake accumulator pressure.....**3000 ± 200 PSI**
- Brakes pedals pressed ⇒ brake pressure.....**> 2700 PSI**
- Warning and caution lights.....**TEST**
- Landing gear indication.....**4 GREEN**
- MPCD.....**ENG PAGE**
 - Engine ID.....**CHECK**
 - IGV angle.....**31° – 39°**
 - Sortie JPT.....**RESET**

Before Taxiing

- INS.....ALIGNMENT
 - Parking brake.....SET
 - DDI.....DTX, UNBOX TRUE
 - MCPD-SDAT.....DTX/OLX/GPSX
 - DDI.....CHECK A/C LAT/LONG
 - GYRO alignment.....MVAR
 - MANSEA alignment.....SHIP DATA
 - INS switch.....GND ALIGN
 - WAYPOINTS.....CHECK/ENTER
- TACAN, RADALT.....ON and SET
- DMT switch.....ON
- FLIR switch.....ON
- Transformer-rectifier/boost pumps.....CHECK
 - L/R pump switches.....OFF
 - Pump warning lights.....ON
 - L/R pump switches.....DC OPR
 - Pump warning lights.....OFF
 - Voltmeter BATT VOLTS.....27 V STABLE
 - DC TEST switch.....MAIN
 - STBY TR warning light.....ON at 24.75 V
 - Voltmeter BATT VOLTS.....> 25.5 V
 - DC TEST switch.....STBY
 - Voltmeter BATT VOLTS.....~ 25.5 V
 - L/R pump switches.....NORM
 - Voltmeter BATT VOLTS.....+1 V PER PUMP
 - DC TEST switch.....CENTER POSITION

Before Taxiing

- JPT limiter.....**CHECK**
 - JPTL switch.....**OFF**
 - RPM.....**INCREASE 6 – 7%**
 - JPTL warning light.....**ON**
 - EFC switch.....**POS 1 ⇒ POS 2**
 - EFC warning light.....**ON ⇒ OFF**
 - JPTL switch.....**ON**
 - RPM.....**DECREASE 6 – 7%**
 - JPTL warning light.....**OFF**
- Manual fuel switch.....**CHECK**
 - Manual fuel switch.....**ON**
 - MFS warning light.....**ON**
 - H2O switch.....**TO**
 - RPM.....**CONST**
 - H2O switch.....**OFF**
 - Manual fuel switch.....**OFF**
 - MFS warning light.....**OFF**
 - RPM.....**> 22%**
- Water switch.....**CHECK ⇒ OFF**
 - H2O switch.....**TO and LAND**
 - RPM.....**INCREASE 6 – 7%**
- FUEL PROP.....**CHECK ⇒ ON**
- Trim.....**CHECK ⇒ SET 4° ND**
- Standby instruments.....**CHECK**
- Altimeter.....**SET BAROMETRIC PRESSURE**
- Oxygen switch.....**ON**
- OBOGS system.....**CHECK**

Before Taxiing

- Flaps BIT
- Flaps CRUISE
- Flight controls CHECK
- SAAHS BIT
- DDI stores BIT
- Paddle switch **PRESS** ⇒ **ALL THREE SAAHS AXES DISENGAGE**
- Display computer CHECK
- A/R probe CYCLE
- MPCD CHECK PERFORMANCE
 - MENU, VRST CHECK BAW, H2O, BDI
 - VL CHECK OAT, FELV, GTW
 - ODU, ENG CHECK RJPT, JPTS, RHOV
- Displays/NVG ADJUST
 - Cockpit lighting ADJUST
 - Left MPCD SELECT ESHD MAP
 - RIGHT MPCD SELECT FLIR Video
 - HUD control panel NIGHT MODE
 - L/R MPCD ADJUST BRT/CONT
 - FLIR Video White/Black Hot ADJUST CONTRAST
 - HUD contrast and brightness ADJUST
 - FLIR Video in HUD SELECT (castle switch down)
 - HUD contrast and brightness ADJUST
- INS CHECK STATUS

Taxiing

- Radio **ATC** and **REQUEST** premission to **TAXI TO RUNWAY**.
- Master mode.....**VSTOL**
- Nozzles.....**10°**
- Flaps.....**CRUISE**
- Trim **0°, 0°, 4° ND**
- ANTISKID.....**CHECK**
- Brakes/NWS.....**CHECK**

Pre-position Checks

- CWAIVER checks
 - C**- Clock/CMBT.....**SET**
 - W**- Weapons program..... **STORES/FUZE/TONE/SITE/IR COOL**
 - A**- Avionics..... **TPOD/APG-65/GPS/ARC-210/NAVFLIR/ABRS/TACAN**
 - I**- IFF.....**MODE SET**
 - V**- VTR.....**RUN/AUTO MPCD/HUD**
 - E**- ECM.....**ALQ-164/ALE-39/ALR-67**
 - R**- RADALT.....**PUC/LAW BOMB**
- Canopy.....**CLOSED/CHECK**
- Seat.....**ARMED**
- Flight and standby instruments.....**CHECK**
- APU.....**AS DESIRED**
- ANTISKID.....**ON (LIGHT OUT)**
- Altitude switch.....**AS DESIRED**
- INS knob.....**IFA/NAV**
- Approach light.....**ON**
- Radio **ATC** and **REQUEST** permission for **TAKE-OFF**.

Takeoff – Vertical (VTO)

- Nozzle rotation airspeed.....NOT REQUIRED
- Pitch carets.....SET
 - ODU select.....PC
 - UFC enter.....14
- STO stop.....CLEAR
- Trim.....2° ND
- Flaps.....STOL
- Warning/caution lights.....OUT
- Engine.....CHECK
 - MPCD select.....ENG/BOX ACCEL
 - Engine RPM.....IDLE → 60%
 - Check timing 35–60%.....2.4–3.1 sec
 - IGVs.....10°–21°
- Water.....AS REQUIRED
 - If water is required:
 - Water switchTO ⇒ RPM INCREASE
 - Engine RPM.....RESET TO TOP END OF ACCELERATION BAND
- Nozzle/flaps/duct pressure.....CHECK
 - Nozzles temporarily.....50°
 - Flaps position.....62°
 - Duct pressure.....45 PSI
- Nozzles.....HOVER STOP and CHECK ANGLE
- Throttle.....FULL
- Brakes.....HOLD UNTIL AIRBORNE
- Engine.....CHECK TOP END RPM and WATER FLOW (if armed)
- Passing 50 ft ⇒ transition to wingborne flight:
 - Throttle.....FULL
 - Attitude.....WITCH HAT AT PITCH CARETS
 - Nozzles.....GRADUALLY ROTATE AFT

Takeoff – Rolling Vertical (RVTO)

- Nozzle rotation airspeed.....NOT REQUIRED
- Pitch carets.....SET
 - ODU select.....PC
 - UFC enter.....14
- STO stop.....70°
- Trim.....2° ND
- Flaps.....STOL
- Warning/caution lights.....OUT
- Engine.....CHECK
 - MPCD select.....ENG/BOX ACCEL
 - Engine RPM.....IDLE → 60%
 - Check timing 35–60%.....2.4–3.1 sec
 - IGVs.....10°–21°
- Water.....AS REQUIRED
 - If water is required:
 - Water switchTO ⇒ RPM INCREASE
 - Engine RPM.....RESET TO TOP END OF ACCELERATION BAND
- Nozzle/flaps/duct pressure.....CHECK
 - Nozzles momentarily.....STO STOP
 - Flaps position.....62°
 - Duct pressure.....45 PSI
- Nozzle.....30°
- NWS.....ENGAGE
- Throttle.....FULL
- BrakesRELEASE
- Nozzles.....STO STOP as RPM PASSES 110%
- Passing 50 ft ⇒ transition to wingborne flight:
 - Attitude.....WITCH HAT AT PITCH CARETS
 - NozzlesGRADUALLY ROTATE AFT

Takeoff – Short (STO)

- Nozzle rotation airspeed.....**AS CALCULATED**
 - Master mode.....**V/STOL**
 - ODU select.....**NRAS**
 - UFC enter.....**NRAS VALUE**
- Pitch carets.....**SET**
 - ODU select.....**PC**
 - UFC enter.....**14**
- STO stop.....**AS CALCULATED**
- Trim.....**2° ND**
- Flaps.....**STOL or AUTO**
- Warning/caution lights.....**OUT**
- Engine.....**CHECK**
 - MPCD select.....**ENG/BOX ACCEL**
 - Engine RPM.....**IDLE → 60%**
 - Check timing 35–60%.....**2.4–3.1 sec**
 - IGVs.....**10°–21°**
- Water.....**AS REQUIRED**
- Nozzle/flaps/duct pressure.....**CHECK**
 - Nozzles temporarily.....**STO STOP**
 - Flaps position (based on flaps mode).....**62° or 25°**
 - Duct pressure.....**45 PSI**
- Nozzle.....**10°**
- NWS.....**ENGAGE**
- Throttle.....**FULL**
- Brakes.....**RELEASE**
- Nozzles.....**STO STOP at NRAS**
- Passing 50 ft ⇒ transition to wingborne flight:
 - Attitude.....**WITCH HAT AT PITCH CARETS**
 - Nozzles.....**GRADUALLY ROTATE AFT**

Takeoff – Conventional (CTO)

- Nozzle rotation airspeed.....**NOSE WHEEL LIFTOFF SPEED**
 - Master mode.....**V/STOL**
 - ODU select.....**NRAS**
 - UFC enter.....**NOSE WHEEL LIFTOFF SPEED**
- Pitch carets.....**SET**
 - ODU select.....**PC**
 - UFC enter.....**14**
- STOP stop.....**CLEAR**
- Trim.....**2° ND**
- Flaps.....**AUTO**
- Warning/caution lights.....**OUT**
- Engine.....**CHECK**
 - MPCD select.....**ENG/BOX ACCEL**
 - Engine RPM.....**IDLE → 60%**
 - Check timing 35–60%.....**2.4–3.1 sec**
 - IGVs.....**10°–21°**
- Water.....**AS REQUIRED**
- Nozzle/flaps/duct pressure.....**CHECK**
 - Nozzles temporarily.....**50°**
 - Flaps position.....**25°**
 - Duct pressure.....**45 PSI**
- Nozzles.....**10°**
- NWS.....**ENGAGE**
- Throttle.....**FULL**
- Brakes.....**RELEASE**
- Engine.....**CHECK TOP END RPM and WATER FLOW (if armed)**
- Rotate.....**NOSE WHEEL LIFTOFF SPEED**
- Attitude.....**WITCH HAT AT PITCH CARETS**

After Takeoff

- Landing gear.....UP
- Flaps.....AUTO
- Nozzles.....AFT
- Water switch.....OFF
- STO stop.....CLEAR

Inflight

- **IVG check @ 5000 ft MSL**
 - Engine FAN speed.....80% RPM
 - IGV angle.....WITHIN BANDS
- **10,000 Foot Check**
 - Fuel transfer/quantity.....CHECK
 - Cabin pressure.....CHECK
- **18,000 Foot Check**
 - Altimeter.....29.92 SET
 - Cabin pressure.....CHECK
 - APU.....SECURE if conditions permit

Descent

- STO stop..... CLEAR
- Weather.....CHECK
- Steer-to-point.....INTENDEND POINT OF LANDING
- TACAN.....SET TO AIRFIELD or SHIP
- Courseline.....SET TO RUNWAY HEADING
- NAVFLIR, HUD, RADALT.....AS DESIRED
- Fuel.....CHECK
 - BINGO fuel.....RESET
 - Asymmetry.....BALANCE IF >300 lbs
- Temperature.....PREHEAT/DEFOG
- APU.....AS REQUIRED

Landing Checklist

- Landing gear..... DOWN
- Flaps.....AS REQUIRED
- STO stop..... CLEAR
- Duct pressure.....CHECK
- Brake pressure.....CHECK
- Water.....AS REQUIRED
 - If water is to be used:
 - Water switch.....TO
 - Throttle.....>105%
 - Green water flow light in HUD.....CHECK
 - Water switch.....AS REQUIRED
- Warning/caution lights.....CHECK
- Lights.....AS REQUIRED

Vertical Landing

- **Key position:** 0.5 NM from touchdown point - alt 310 ft AGL.
- **Approaching 180:**
 - Nozzles.....60°
 - Flaps.....CHECK PROG and DROOP
 - AOA.....10° - 12°
- **Off the 180:**
 - Control AOA with throttle or nozzles.
- **At the key:**
 - Set attitude.....WITCH HAT AT HORIZON
 - Nozzles.....HOVER STOP
 - AOA.....<15°
 - Adjust power to intercept glideslope.
- **At 60 KCAS:**
 - Check performance margine.....>2 LEGS OF POWER HEXAGON
 - Closure below 30 knots and remain 150 feet AGL.
 - Flare slightly or use braking stop to establish hover.
- **The Hover 50-60 feet AGL:**
 - Control height with small throttle changes.
 - RPM/JPT.....WITHIN LIMITS
- **Vertical Landing:**
 - Start a slow descent with the throttle.
 - Monitor ground reference.
 - Maintain positive rate of descent.
- **After Touchdown:**
 - Throttle.....IDLE
 - Brakes.....APPLY
 - Nozzles.....AFT
 - Trim.....4° ND
 - Water.....OFF

Vertical Landing

Rolling Vertical Landing

- **Approaching 180:**

- Nozzles.....60°
- Flaps.....CHECK PROG and DROOP
- AOA.....10° – 12°

- **Off the 180:**

- Adjust flight path with stick.
- Control AOA with throttle and nozzles.

- **After the key:**

- Set attitude.....WITCH HAT AT HORIZON
- Nozzles.....AS REQUIRED
- AOA.....<15°
- Adjust power to intercept glideslope.

- **At touchdown:**

- Throttle.....IDLE
- NWS.....ENGAGE when STRAIGHT
- Nozzles.....AS SET
- Brakes.....APPLY
- Trim.....> 2° ND
- Water.....OFF
- Nozzles.....< 60° when slow

- **After Touchdown:**

- Throttle.....IDLE
- Brakes.....APPLY
- Nozzles.....AFT
- Trim.....4° ND
- Water.....OFF

Slow Landing – Fixed Nozzle

- **Approaching 180:**

- Nozzles.....60°
- Flaps.....CHECK PROG and DROOP
- AOA.....10° – 12°

- **Off the 180:**

- Adjust flight path with stick.
- Control AOA with throttle.

- **At 30 to 50 feet AGL:**

- Set attitude.....WITCH HAT 0° – 2° ABOVE THE HORIZON
- Control ROD with throttle.....200 – 400 FPM

- **At touchdown:**

- Throttle.....IDLE
- NWS.....ENGAGE when STRAIGHT
- Nozzles.....AS REQUIRED (up to full braking stop)
- Trim.....> 2° ND

- **After Touchdown:**

- Throttle.....IDLE
- Nozzles.....HOVER STOP
- Brakes.....APPLY
- Water.....OFF
- Nozzles.....< 60° when slow

Slow Landing - Fixed Nozzle

AWL Channels

Channel	Airport	TACAN	Runway	ILS
1	Kobuleti	67X	07	111.50
2	Vaziani	22X	14-32	108.75
3	Kutaisi-Kopitnari	44X	08	109.75
4	Senaki-Kohlki	31X	09	108.90
5	Batumi	16X	13	110.30
6	Tiblisi-Lochini	-	13R	110.30
7			31L	108.90
8	Mineralnye Vody	-	12	111.70
9			30	109.30
10	Nalchik	-	24	110.50
11	Beslan	-	10	109.30
12	Sochi-Adler	-	06	111.10
13	Nellis AFB	12X	21	109.10
14	Creech AFB	87X	08	108.70
15	Groom Lake AFB	18X	32	109.30
16	Tonopah TR Airfield	77X	32	111.70
17			14	108.30
18	McCarran International	116X	25	110.30

Carrier Day Recovery Procedure