Before Engine Start

- If required, tell Chief to turn GROUND POWER ON.
- Ejection seat ..... **DISARM**
- Trigger safety ..... **SAFE**
- Landing gear lever ..... **OUT**
- AFK (autothrottle) lever ..... **OFF**
- Data cartridge ..... **INSERT**
- Parking brake ..... **SET**
- STRÅLKAST (landing light) ..... **FRÅN**
- NÖDBEL (emergency light) ..... **FRÅN**
- TÄNDSYSTEM (ignition system) switch ..... **AUT**
- Master mode selector ..... **BER**
- HUVUDSTRÖM (main power) switch ..... **TILL**
- LT-KRAN (low pressure fuel valve) switch ..... **TILL**
- Master caution ..... **RESET**
- High pressure fuel valve ..... **OPEN**
- Generator switch ..... **TILL**
- Cockpit illumination ..... **AS DESIRED**
- RENFLYGN (autopilot yaw correction) **0**
- FR 24 radio ..... **NORMAL + LARM**
- MIK BAND (flight recorder) ..... **AS DESIRED**
- Warning panel lights ..... **CHECK**
  - KONTR LAMPTABLÅ (warning panel test) button ..... **PUSH**
    - Indicator lights ..... **ON**
  - KONTR LAMPTABLÅ (warning panel test) button ... **RELEASE**
    - Lights marked white ..... **REMAIN ON**
- Radar illumination ..... **MIDDLE POSITION**

Before Engine Start

- Radar panel.....**NORMAL SETTINGS**
  - Radar mode switch.....**A0**
  - Antenna elevation.....**SNAP POSITION**
  - Passive mode selector.....**OFF**
  - Puls length selector.....**NORMAL**
  - Amplification mode switch.....**LOG**
  - Altimeter signal modulation selector.....**LAND or SJÖ**
- Thrust reverser.....**OFF**
- FR 22 radio.....**SET**
- HUD reflector glass.....**LOWER POSITION**
- SLAV SI (HUD slave switch).....**FRÅN**
- HÖJD CI SI (altitude source).....**LD**
- Backup altimeter.....**SET**
- Engine pressure ratio.....**~ 1.0**
- APP-27 RWR and KB pod.....**AS REQUIRED**
- Exterior lighting.....**AS REQUIRED**
- IFF system.....**TILL**
- KURSKORR (course correction).....**SET MAGNETIC DECLINATION**
- Windshield/canopy defrost.....**OFF**
- TILS selector.....**MODE A**
- Radar altimeter.....**TILL**
- Circuit brakers.....**ALL IN**
- Oxygen pressure.....**CHECK**
- Oxygen flow valve.....**TILL**
- Weapon selector.....**AS REQUIRED**
- Weapon sight mode selector.....**AS REQUIRED**
- Canopy.....**CLOSE**

Engine Start

- Radio ATC and REQUEST START-UP.
- Start switch.....**TILL – HOLD FOR 2 SEC**
  - **STARTSYST** (starter system).....**ON WITHIN 5 SEC**
  - **TÄNDSYST** (ignition system).....**ON**
- Maximum EGT.....**< 400°C**
  - If **EGT > 400°C** (engine might be faulty):
    - Throttle.....**CUT-OFF**
    - Start switch.....**FRÅN**
- Engine RPM.....**55 – 64%**
  - Engine pressure ratio.....**~ 1.0**
  - Nozzle indicator.....**FULLY OPEN**
  - Max EGT.....**< 350°C**
  - Warning lights.....**CHECK**
    - **OLJETRYCK** (oil pressure).....**OUT AFTER MAX 60 SEC**
    - **BRÄ UPPF** (fuel system).....**OUT**
    - **TANK PUMP**.....**OUT**
    - **STARTSYST** (starter system).....**OUT @ RPM > 58%**
    - **TÄNDSYST** (ignition system).....**OUT @ RPM > 58%**
    - **X-TANK BRÄ** (drop trank).....**OUT @ RPM > 70%**
- Autopilot SPAK light.....**AUTOMATICALLY ON**
- AVISNING MOTOR (engine de-ice) if icing conditions.....**ON**

Ventilation – Dry Start

- TÄNDSYSTEM (igniter).....**MAN**
- Throttle.....**CUT-OFF**
- LT-KRAN (low pressure fuel valve).....**FRÅN**
  - LT-KRAN warning light.....**OUT**
- Start switch.....**TILL**
- Start switch.....**OFF AFTER 40 SEC**

After Engine Start (AC Power)

- Backup instrument illumination.....**CHECK**
- Roll trim.....**CHECK & CENTER**
- Yaw trim (SID TRIM).....**CENTER**
- FLI37 ADI.....**CHECK & FAST ERECT**
- Backup ADI.....**FAST ERECT**
- Backup course indicator.....**FAST ERECT**
- Fuel indicator.....**CHECK MAX 5% DEVIATION**
  - Without external tank.....**106%**
  - With external tank.....**131%**
- CK37 data.....**LOAD**
  - **CK** warning light.....**OUT**
  - RENSA (clear) button.....**PUSH**
  - Data selector.....**REF LOLA**
  - IN/UT selector.....**IN**
  - Numpad.....**9099**
  - Confirm.....**LS/SKU**

Indicator System Check

- KONTROLL button.....**PUSH**
  - High alpha warning.....**TWO SHORT BURSTS**
  - **BRAND** (fire) warning lights.....**ON**
  - **LANDSTÄLL** (landing gear) warning light.....**OUT**
  - Altitude warning light.....**ON**
  - Indicated fuel.....**29 ± 3%**
  - Data indicator panel shows.....**1 and CK PROGRAM NUMBER**
  - FK-light.....**ON**

Before Taxi

- If required, tell Chief to turn GROUND POWER OFF.
- Control surfaces.....**CHECK**
- Pitch trim.....**SET**
  - Without drop tank.....**0°**
  - With drop tank.....**3° ↑**
- Brake pressure.....**200 – 270 kp/cm^2**
- Altimeter.....**RESET**
  - Check max deviation from QFE.....**2 hPa**
- Autopilot SPAK light.....**ON**
- Landing lights.....**TAXI**
- Ejection seat.....**ARM**
  - **HUV O STOL**.....**OUT**
- Master caution and warning lights.....**CHECK**
- Radio ATC and REQUEST premission to TAXI TO RUNWAY.

Taxi

- On increasing throttle ⇒ check ejector nozzle closed.
- Full rudder deflection ⇒ nose wheel rotation of ~30°C. Differential braking can be used to reduce turn radius.
- Fuel consumption on ground is ~0.3% per minute.
- Thrust reversal may be used to reduce speed.

Before Take-off

- Radio ATC and REQUEST permission for TAKE-OFF.
- Align aircraft with runway centerline.
- Main and backup course.....**CHECK**
- Backup ADI and altimeter.....**CHECK**
- Master mode selector.....**NAV**
- Manual course setting.....**IF REQUIRED**
- Autopilot SPAK light.....**ON**
- Master caution and warning lights.....**CHECK**
- HUD symbology.....**CHECK**
- Landing light.....**ON**

Take-off

- Brakes.....**APPLY**
- Throttle.....**MIL POWER**
  - EGT.....**< 590°C + AMBIENT TEMP**
- Throttle.....**AFTERBURNER IF REQUIRED**
  - AB zone indicator.....**CORRECT ZONE**
  - Exhaust nozzle indicator.....**ZONE ACHIEVED**
  - Pressure ratio.....**CHECK**
    - Zone 2.....**> 1.8 – 1.9**
    - Zone 3.....**MAX POWER**
- Airspeed indicator and time line.....**CHECK**
  - Time line reaches markers (260±10 km/h).....**ROTATE**
- Flight path vector.....**SET**
  - Without afterburner.....**HORIZON LINE**
  - With afterburner.....**HEIGHT OF OUTER PILLARS**

After Take-off

- Landing gear.....**RETRACT**
- HUD reflector glass.....**UPPER POS**

LANDING

- Airspeed at approach ..... **~ 550 km/h**
- Altitude after descent ..... **~ 500 m**
- Autothrottle AFK ..... **AS DESIRED**
  - AFK mode 3 ($\alpha = 15.5°$) ..... **AS DESIRED**
- Altimeter ..... **SET QFE**
- SLAV SI ..... **TILL**
- Thrust reverser ..... **AS REQUIRED**
- Backup ADI ..... **CHECK & FAST ERECT IF NEEDED**
- Brake pressure ..... **200 – 270 kp/cm^2**
- **Visual** approach:
  - Master mode ..... **LANDN P/O**
  - Hold airspeed ..... **AOA < 12°**
  - Place descent line on runway threshold.
  - Place sight dot at runway center line.
  - Steer flight path indicator onto descent dot/line.
- **TILS** approach:
  - Master mode ..... **LANDN NAV**
  - Runway heading ..... **SET**
    - Data panel ..... **BANA**
    - IN/UT selector ..... **UT**
    - Cycle heading ..... **L/MÅL**
  - **TILS** light: localizer locked ..... **FLASHING**
  - **TILS** light: localizer & glidesope used ..... **ON STEADY**
  - For "Flip-Flop" approach ..... **LANDN NAV → P/O → NAV**
  - Follow steering commands on HUD and ADI.
- Landing gear (~15 km from runway) ..... **EXTEND**
  - Landing gear indicator lights ..... **3 GREEN**
- Landing light ..... **ON**
- HUD reflector glass ..... **LOWER POS**
- HUD changes to descent rate mode 15/30 m above runway.

TILS Direct Approach

- Landing approach begins in master mode **NAV** once a landing waypoing L1/L2 becomes the destination.
- **Phase 1:** Starts by setting master mode to **LANDNING NAV**.
  ⇒ LB1/LB2 becomes the new destination.
- **Phase 2:** Starts when LB1/LB2 is passed or "Flip-Flop".
  ⇒ LF1/LF2 becomes the new destination.
- **Phase 3:** Starts when **TILS** descent signal is received.

Approach Patterns

- **Flip-Flop**: LANDNING NAV → LANDING P/O → LANDNING NAV
- **New approach**: LANDNING NAV → NAV → LANDNING NAV