myAustrian virtual

# DASH 8-Q400 OPERATING MANUAL

# COMPANY PROCEDURE

*Issue 1*

## INTRODUCTION

This operating manual (OM) contains all required instruction and procedure to operate the Majestic Dash 8-400 safe under the Austrian Virtual Company Procedures. This OM includes partly the real world standard operating procedure (SOP) and makes you familiar with the real Austrian Dash 8-400 pilot's procedure. Not required procedures for the flight simulator are deleted and is not included in this manual. This OM is a soft version of the real AOM which contains more than 1270 pages!

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# 1.0 FLIGHT PREPARATION

For Flight Planning see also following link:
http://virtual.austrian.com/wiki/doku.php/ava:company:flight_planning

## 1.1. ALTERNATE AIRPORT PLANNING

The alternate airport selection is the first required field of the flight planning. Use the nearest adequate airport with better weather condition than the planned destination. The planning process must be performed carefully to include only alternate airports which can be reached with the anticipated fuel load, total aircraft weight, and expected holding. The ALT A/P should be in the range of 150NM to max of 270NM. The operational ALT A/P for LOWW is LZIB, but in certain circumstances (WX, lot of Traffic,…) an other adequate ALT A/P may be used (e.g. LOWL, LOWG).

## 1.2. FLIGHT LEVEL

The required FL is depending on the distance to destination, aircraft weight and ATC restrictions. Find the required FL according the Tables below:

| **Distance** | **Maximum Initial Cruise Level (FL)** | | | | | | |
|---|---|---|---|---|---|---|---|
| **NM** | ISA -20°C | ISA -10°C | ISA | ISA +10°C | ISA +20°C | ISA +30°C | ISA +35°C |
| **50** | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **75** | 110 | 100 | 80 | 80 | 70 | 70 | 70 |
| **100** | 140 | 130 | 120 | 120 | 120 | 120 | 110 |
| **125** | 160 | 160 | 140 | 140 | 140 | 130 | 130 |
| **150** | 190 | 190 | 180 | 170 | 160 | 150 | 140 |
| **175** | 210 | 200 | 200 | 180 | 170 | 160 | 150 |
| **200** | 230 | 220 | 210 | 190 | 180 | 170 | 160 |
| **250** | 250 | 240 | 240 | 210 | 200 | 180 | 170 |
| **300** | 250 | 250 | 250 | 230 | 220 | 200 | 190 |
| **350** | 250 | 250 | 250 | 230 | 220 | 210 | 200 |
| **400** | 250 | 250 | 250 | 240 | 230 | 220 | 210 |
| **500** | 250 | 250 | 250 | 250 | 240 | 230 | 220 |

Maximum FL versus Distance to Destination – Figure 1.0-1

| Take-off Mass kg | Maximum Initial Cruise Level (FL) | | | | | | |
|---|---|---|---|---|---|---|---|
| | ISA -20°C | ISA -10°C | ISA | ISA +10°C | ISA +20°C | ISA +30°C | ISA +35°C |
| 29.257 | 250 | 250 | 250 | 250 | 250 | 240 | 230 |
| 29.000 | 250 | 250 | 250 | 250 | 250 | 240 | 230 |
| 28.000 | 250 | 250 | 250 | 250 | 250 | 250 | 240 |
| 27.000 | 250 | 250 | 250 | 250 | 250 | 250 | 240 |
| 26.000 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |

Maximum FL versus Take-off Mass – Figure 1.0-2

## 1.3. ROUTE PLANNING

Different programs are available for route planning – Austrian Virtual Company Routs, VATrout, Routfinder, or in case of unique route PFPX and SkyVector.

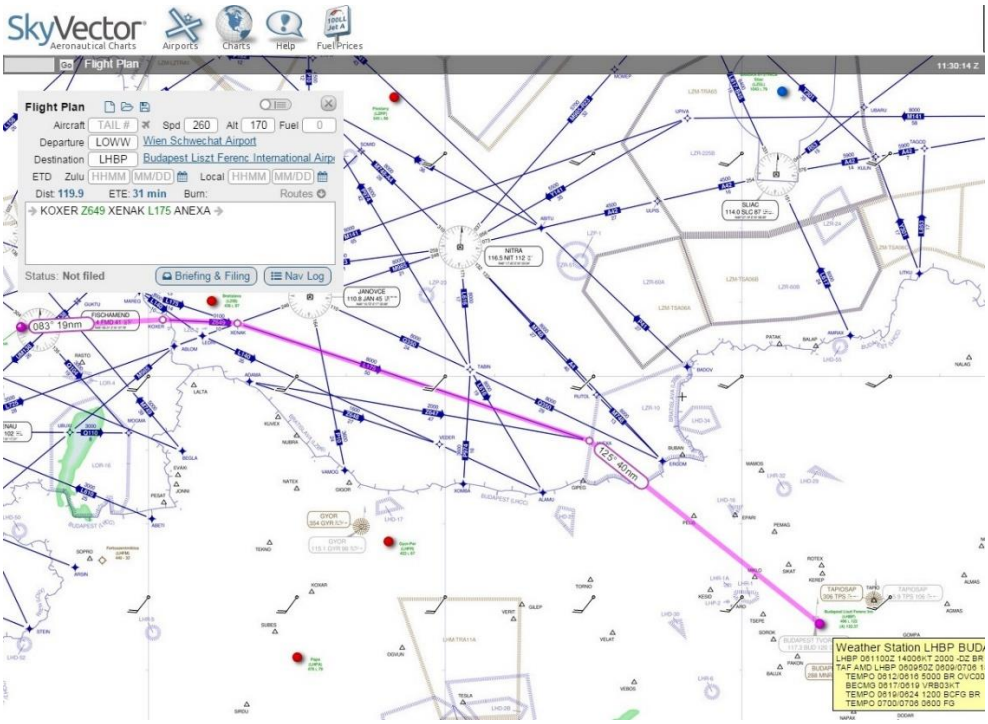


Figure 1.0-3

## 1.4. FUEL PLANNING

Next step of the flight planning is the fuel calculation. Flight planning requires accurate weather forecasts for proper fuel consumption calculation. Also the head or tail winds and air temperature have a significant effect to the fuel consumption during flight. Some flight planning tools (e.g. SkyVector see Figure 1.0-3) support actual aloft values and show wind barbs on the charts. You can calculate the accurate flight time according to this data. The average fuel consumption of the MJC Q400 is 17,7 kg/min, or 4,0 kg/NM, or 1.060 kg/h. This calculation is based on legs with one hour flight time (280NM). On longer flights reduce 10%, and on shorter flights add 10% of fuel.

For example:
Distance x fuel consumption pro NM – 10% = required fuel

LOWW-LFLL / flight plan distance = 510NM, including SID & STARS = 550NM.
550 x 4,0kg = 2.200kg fuel, minus 10% (220kg) = 1.980kg

In consideration of the wind factor use the GS of 320kt for calculation.

For example:
Head wind component of 40kts, Distance 550NM

Distance NM / Ground Speed kts = Flight Time Decimal
Flight Time Decimal x Windfactor kt = additoanal NM
Additional NM + Distance NM = Corrected Distance NM
Corrected Distance NM / Ground Speed kts = Corrected Flt Time
Corr. Flt Time in Minutes x Fuel Cons kg pro Minutes = Required Fuel

550 / 320 = 1,72 (1:43)
1,72 x 40 = 68,75
68,75 + 550 = 618,75
618,75 / 320 = 1,93 (1:56)
1:56 = 116 Min
116 x 17,7 = 2.053

The required trip fuel is 2.053kg for this flight.
(1.980 kg without wind factor, and 1.595 kg with 40kts tail wind)

Tip: With this fuel calculation you can reach 14 points on every flight!

After insertion of required fuel for the alternate (normally 600kg) and extra fuel (minimum 200kg), the OFP (Operational Flight Plan) are finished (Figure 1.4-1).

## 1.5. OPERATIONAL FLIGHT PLAN

When all necessary flight data are inserted in the headquarters flight booking page, you can open the OFP (Fig. 1.5-1). If required, some changes are possible, e.g. A/C type, registration, quantity of PAX, or payload reduction only! Use this data for the MJC8-400 control panel inputs.

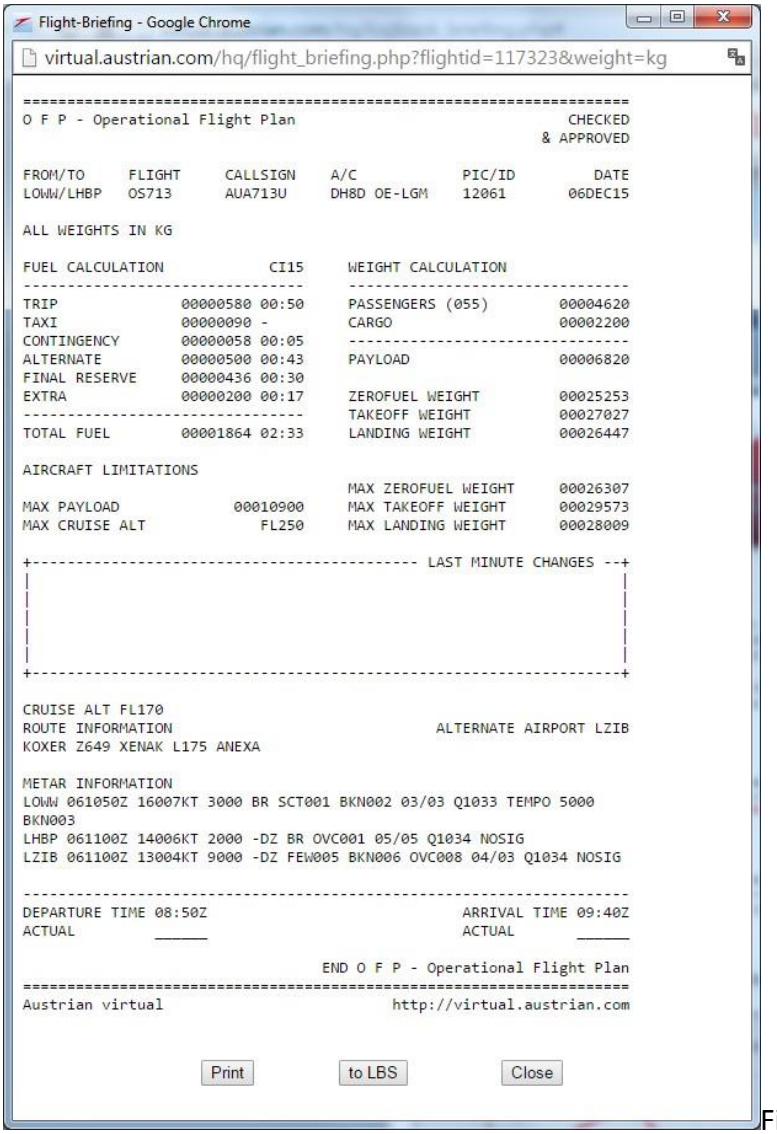


Fig 1.5-1

## 1.6. MJC CONTROL PANEL WEIGHT & BALANCE

If flight simulator running open the MJC control panel (see Figure 1.6-1).

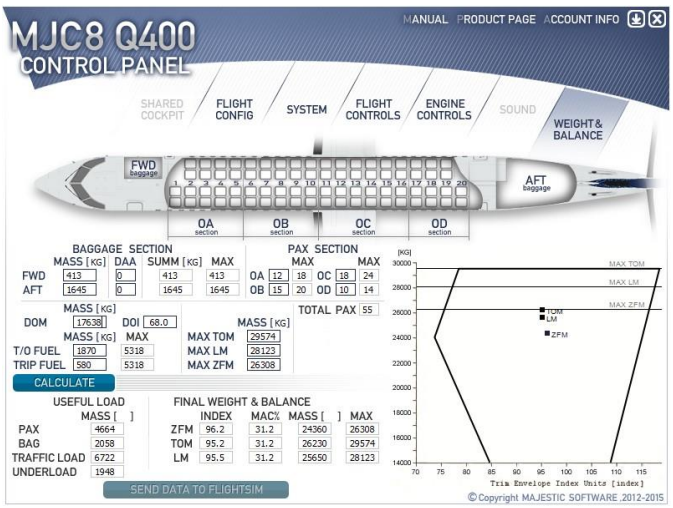


Figure 1.6-1

**Aircraft Basic Weight (kg) and Basic Index**

| Registration | Basic Weight | Basic Index |
|---|---|---|
| OE-LGA | 17.268 | 63,24 |
| OE-LGB | 17.269 | 75,33 |
| OE-LGC | 17.563 | 71,27 |
| OE-LGD | 17.584 | 66,78 |
| OE-LGE | 17.321 | 74,99 |
| OE-LGF | 17.390 | 73,28 |
| OE-LGG | 17.423 | 69,51 |
| OE-LGH | 17.391 | 72,2 |
| OE-LGI | 17.479 | 69,21 |
| OE-LGJ | 17.410 | 68,68 |
| OE-LGK | 17.571 | 69,44 |
| OE-LGL | 17.633 | 66,61 |
| OE-LGM | 17.638 | 68,93 |
| OE-LGN | 17.673 | 68,13 |
| OE-LGO | 17.692 | 58,69 |
| OE-LGP | 17.738 | 62,58 |
| OE-LGQ | 17.690 | 61,23 |
| OE-LGR | 17.664 | 65,34 |
| | | |
| Average: | 17.522 | 68,08 |

Figure 1.6-2

Transfer all data from the OFP into the appropriate field of the MJC CP. Distribute the numbers of PAXe in accordance to the Trim Index (right lower corner of the CP). Insert the data in the DOM and DOI field according to the basic weight & basic index table (Figure 1.6.2 e.g. LGM = DOM 17.638, DOI 68,9)
Note: In real the DOM is not the BW! Dry operating mass is the basic weight including crew and catering (~600kg). If you like it realistic add this to the BW, but it´s easier to perform flights on longer routs when you insert the BW in the DOM field!

Insert also the T/O fuel and the trip fuel according to OFP into the MJC CP.
After this press the CALCULATE button and check on the trim index if the three values (TOM, LM, ZFM) are in limit. If not, readjust some values. When all weights are in limit, press the button SEND DATA TO FLIGHTSIM.

Use following data from the OFP to feed the FMS (Flight Management System):

- ATC callsign (AUA123N)
- individual basic weight (BW) of used A/C according basic weight list (Figure 1.6-2)
- number of passengers
- weight of cargo (acc. OFP, - if over the maximum limit use 2.058kg)
- total fuel on board
- filed route

## 2.0 AIRCRAFT PREPARATION

For correct aircraft operating obey all procedure as described in the MJC manual, and refer to the expanded checklist. The expanded checklist gives you an explanation and guideline how to use the normal checklist. The correct use of the Normal Checklist is part of the SOP and necessary for safe operation. Both checklists are available in the Wiki on the website of Austrian Virtual.

### 2.1. SYSTEM SETUP

If you enter the cockpit, perform following work flow:

- switch both ARCDU's and FMS ON
- on the ESCP (Engine and System Integrated Control Panel) turn both MFD selector to SYS, and
- push the SYS button DOORS for MFD#1, and ELEC for MFD#2. The ELEC page (default) is displayed on the MFD even if the opposite MFD shows another page. The display of a given system page is achieved by pressing the relevant pushbutton of the ESCP
- check the rudder trim needle are centered and adjust if required (for T/O a little bit to the right)
- set required frequencies and NAV aids on the ARCDU
- check and set park brake - ON, gust lock - ON. power levers - DISC, condition lever - fuel OFF
- on FMS press ACCEPT and go to the DATA page 1/4 and request ground power under SERVICE
- perform the autofeather test by bushing the autofeather switch
- set the GPWS flap selector to the required T/O flap position (10 or 15)
- on the overhead panel check all switches of DC control panel are ON excluding the bus fault reset switch. EXT PWR switch ON if GND power available.

- engine intake bypass door shall stay open at all times when temperature is below +15°C
- perform the ENG and APU fire test
- if required start APU
- turn both engine ignition rotary switch to NORM
- adjust the landing altitude
- position light ON, fasten seat & no smoking signs ON, emergency lights ARM
- perform caution & advisory light test
- set air conditioning recirc fan ON, bleed 1 & 2 OFF, packs auto,
- AC GEN switches to ON
- on the glareshield panel check the spoilers switch to TAXI
- clock not running – if required reset clock on the ET button
- NAV Source – normally FMS,
- set altitude pre-selector to 0 or other then expected altitude (e.g. 4900 when expect 5000ft)
- set RWY HDG (if RWY for take-off known)
- confirm AP & YD OFF
- perform the anti-skid test – two klicks with the right mouse button
- initialize FMS and insert all required data from the OFP and load sheet
- transfer data into the FMS #2. (In real all data will be inserted by the Co-Pilot on #2 FMS and after crosscheck by the commander the transfer will be executed from #2 to #1 FMS)
- check gear pins removed in the FMS and confirm the streamer in the bag behind the co-pilot seat
- adjust the seat (view) according the eye level indicator, but a better and realistic view is given when you lower the position until you can read the hPa data on the ISI.

  Note: For HGS use adjust seat according the eye level indicator!

## 2.2. SPEED BUG SETTING FOR T/O

After insertion of all values in the FMS fuel page 1/5 a gross weight will be calculated automatically. In reference to the gross weight you can set the speed bugs according to the speed booklet.

Set your speed bugs as follows:

Bug 1 = $V_1$
Bug 2 = $V_R$
Bug 3 = $V_2$
Bug ▲= $V_2$+20kt (ICE)
Bug △= $V_{FTO}$+20kt (ICE)

For example:
T/O speed bug setting for 10° flap and 26.230kg gross weight (26.000kg on speed booklet).

Bug 1 = 117
Bug 2 = 117
Bug 3 = 118
Bug ▲= 138 (ICE)
Bug △= 168 (ICE)

## 3.0 ENGINE START-UP

Before starting the engine, all items of the "Before Engine Start Checklist" shall be performed. Normally the #2 engine should be started first. The #1 engine should be started after the #2 engine stabilized. Before starting the second engine check the MFD ELEC page for a load indication of all 3 batteries at 0.40 or lower. Monitor the ITT values during the start-up to ensure the values don´t exceed their normal range (below 920°C), and the oil pressure limits (not below 44 psi), otherwise shut down the effected engine.

Engine start-up with a 28VDC ground power is the preferred method. If no GPU is available, engine start-up with the APU generator is possible. For the procedure use the "Engine Start Using APU Generator" check list. Before starting the first engine switch the recirculation fan OFF. After first engine-start switch APU generator OFF to cool down the generator after starting mode.
Note: Start APU not below the minimum operating ambient temperature of -35°C.

If the APU is unserviceable start the first engine by the batteries. Before starting the first engine switch the recirculation fan OFF, and check during start-up the battery loads and temperatures on the MFD ELEC page. Start the second engine if battery loads are below 0.40

If a push back is required, only the #2 engine shall be started until the push-back is finished

### 3.1. ENGINE LIMITATIONS

**Torque Indication**

- Over-limit (red pointer & digits).....above 106%
- Maximum (red radial).....106%
- Caution (yellow arc).....100% – 106%
- Normal operation (green arc).....0%-100%

**Propeller RPM Indicators NP**

- Over limit.....above 1.071 RPM
- Max starting.....1.071 RPM
- Max operating.....1.020 – 1.071 RPM
- Normal operating.....660 – 1.020 RPM

**Turbine Temperature Indicators (ITT)**

- Over limit.....above Max (red radial)
- Max starting (red radial).....920°C
- Max T/O (MTOP and MCP.....880°C
- Normal operating (green arc).....250°C to 880°C

**Gas Generator low pressure rotor speed NL**

- Over limit (red digits).....above 100%
- Normal operating (white digits).....0 - 100%

**Gas Generator high pressure rotor speed NH**

- Over limit (red pointer & digits)……..above maximum
- Maximum (red radial)……100% MTOP
- Normal operation (green arc)……64,2 to 100% MTOP

**Oil Temperature Indicators**

- Over limit……above Maximum (red radial) and below -40°C
- Maximum (red radial)……107°C (PL between DISC & FLT IDLE 125°C) and below -40°C
- Caution (yellow arc)……107°C to 125°C and -40°C to 0°C
- Normal operating (green arc)……0°C to 107°C

**Oil Pressure Indicators**

- Under limit (red pointer & digits)……below 44 psi
- Caution (yellow arc)……44 to 61 psi & 72 to 100 psi
- Low pressure warning light……44 to 50 psi
- Normal operating (green arc)……61 to 72 psi

**Fuel Temperature Indicators**

- Over limit (red digits)……above 71°C
- Caution (yellow digits)……below 0°C
- Normal operating (white digits)……0 to 71°C

## 3.2. ONE PROPELLER IN FEATHER TAXIING

The aircraft shall be taxied using the one propeller feathered taxi procedure whenever possible to reduce propeller noise and fuel saving. Either of them (#1 or #2 propeller) may be left in feather. Prior 2 minutes before lining up assigned RWY unfeather the feathered prop, and start the taxi check list. Pay attention for steering inputs to correct asymmetric thrust direction. If necessary to cross a runway on taxi route, unfeather prop before reach crossing runway.

Obey following Items to avoid problems resulting from one prop feathered taxiing procedure:

- Both CL shall be set to MAX before start taxi check list flow
- Autofeather must not be selected before CL are set to MAX, otherwise AF TEST will be start automatically and the test will be abort. In this case a un-feather reset must be performed
- If reduced TO Power is selected before both CL are set to MAX the power rating will return to NTOP.
- If PL advanced T/O warning will be sound as long one prop in unfeathered condition.
- Galley ovens are not working with one prop in feather.

Note: Single engine taxiing procedure (one engine off) are not allowed for taxi out for departure!

Taxi speed should not exceed 30kts on straight track and 10kts during turns. Use the nose wheel steering tiller or rudder pedals for directional control. Differential power and braking may be used for tight maneuvering.

The TOGA button should be set after “Cabin Secured” call received, and the HDG SEL and ALT SEL FD modes may be set after ATC clearance received.

## 4.0 TAKE OFF AND INITIAL CLIMB

The “Before Take-Off” check list should be performed before lining up the assigned runway.

- If line up clearance received switch from the red to the white anti-collision light, turn the transponder to mode C. The lined up runway must be identified by both pilots.
- Release the gust lock lever.
- Verify TOGA button pushed and TOGA message appear on PFD.
- Verify auto feather switch on (after both propellers unfeathered - CL to MAX/1020).
- Verify AUX Fuel Pumps ON, STBY HYD Pump ON, and PTU CNTRL switch ON.
- Set spoiler switch from TAXI to FLT
- Verify initial altitude are preselected and then press ALT SEL on FGCP
- Verify YD and HDG on FGCP set, and HDG SEL / PITCH HOLD message appear on PFD.
- If take-off clearance received switch the approach and landing lights ON.
- Set bleed switch to MIN & OFF.
- The PL shall be advanced smoothly to the rating detent with brakes off and check spoiler retracted. Check also A/F ARM message on ED appear, and monitor engine indications for anomalies (see Note 1).
- The PNF shall call out “eighty” by reaching 80 KIAS, and if the PF not confirming the speed, abort the take-off.
- PF shall remove the hand from the PL by the $V_1$ call.
- At $V_R$ call rotate to 8° ANU and at $V_2$ continues rotation to achieve max 15° ANU.
- If a positive vertical speed indicated select landing gear up.
- After lift-off increase speed $V_2$+10kts and hold by pitch adjustment. In icing condition increase the target speed by 20kts.
- At or above 200ft AAL engage the LNAV by pushing the NAV button on the FGC and check LNAV annunciation on PFD.
- At 400ft AAL switch the bleed to MIN & ON.
- Above minimum acceleration altitude (normally 1.000ft AAL) reduce pitch and accelerate to the scheduled climb speed (see 5.2 Speed Schedule) by activating the IAS mode and increase speed by turning the pitch wheel on the AFCS panel for normal departure (see Note 2). Set flaps to zero according speed schedule.
- After IAS mode selection and passing acceleration altitude reduce power to 850 RPM (see Note 3 and Note 4) and set bleed to NORM, and switch Taxi and Flare lights OFF

**Note 1:** If torque does not match the torque bugs, or the propeller RPM does not match the Condition Lever position (1020 RPM), the T/O must be aborted.

**Note 2:** In gusty condition use the PITCH HOLD mode for smoother climb. Monitor speed carefully.

**Note 3**: Power reducing to 850 RPM (or 900 RPM see Note 4) should be delayed in some circumstances e.g. at LOWI visual departure route RTT2H RWY26. Set 850 RPM after accomplished turn when inbound AB.

**Note 4:** If max climb rate, or high-speed climb is requested with >26t T/O weight, reduce power at acceleration high to 900 RPM and when passing 3000ft AAL reduce further to 850 RPM.

## 4.1. T/O POWER SETTING

Normal Take-Off Power (NTOP) is used for standard take-offs. Reduced take-off (RDC TOP) is determined by assuming a higher OAT at which a take-off with the actual TOM is possible. The respective NTOP shall be used as RDC TOP. Reduce the take-off power torque by pressing the RDC TOP DECR button on the engine control panel. Each push to the button decrease the torque by 2%.

## 4.2. FLAP SETTING

Normal take-off should be made with flap 10°, but in accordance with the airplane performance and runway length flap setting 5° and 15 ° is also possible.

## 4.3. T/O IN ICING CONDITION

Icing conditions exist when the SAT on the ground and for take-off is 10°C or below, or SAT in flight is 5°C or below, and visible moisture in any form is present (such as mist, fog, clouds, rain, snow, ice crystals or any time the visibility is reported to be 1600m or less). Ice accretion on aerodynamic surfaces is not considered to exist at temperatures of -40°C or below. Engine Intake Bypass Door must be open if flying in icing condition. The engine intake bypass doors shall stay open when temperature is below +25°C.
All anti-icing systems (excluding prop de-icing) must be activated in the FAST mode before take-off. For take-off in icing conditions, the REF SPEEDS switch remains OFF even if de-/anti-icing systems are activated during take-off. But the speed bug setting for all take-off speeds in icing condition should be performed by adding 20kts to the required normal T/O speed according to the speed booklet. Bleed should be remained to OFF until the acceleration altitude is reached. Check de-ice pressure indicator for 18 +/- 3 psi. If Prop RPM is set to MAX (1020 RPM) activate prop de-ice system (AC power required). Observe the normal operating oil temperature (green arc) on the ED from 55°C to 107°C

**Note:** With SAT >+5°C the PROP advisory light will not illuminate

## 4.4. LOW VISIBILITY T/O WITH HGS

If the RVR below 125m a HGS utilized T/O can be performed under following procedure:

- Set all VHF NAV receiver to the RWY ILS frequency, and the ILS inbound course must be set on left HSI.
- Set on HGS Panel the RWY length and high in feet.
- The HGS “PRI” mode shall be used for take-off.
- The HGS must have entered “TO” mode before starting take-off roll.

When the above conditions are satisfied, the HGS enters “TO” mode for runway centerline track guidance. At rotation, the “PRI” mode in-flight symbol is automatically presented.

**Note:** Max crosswind component is 15kts, and min RVR for HGS assisted T/O is 75m!

# 5.0 CLIMB

When flying in VMC both pilots shall concentrate on the look-out to see and avoid other traffic. Paperwork and other work distracting from the look-out (such as FMS data entry) should be kept to a minimum below 10.000ft.

When passing 10.000ft / FL100 switch OFF the approach lights and start paperwork as required. Check CABIN ALT and DIFF pressure to verify that pressurization is working properly. The FASTEN SEAT BELT signs may be also switched OFF when the climb is established and neither turns with steep bank angles nor steep climb angles nor turbulence are expected.

## 5.1. SPEED SCHEDULE

Three standard climb speed schedules are published by the manufacturer:

- Type I (high speed) 210kts up to FL150 then decreasing by 5kts for each 1000ft
- Type II (intermediate speed) 185kts up to FL200 then decreasing by 5kts for each 1000ft
- Type III (low speed) 160kts up to FL250 or cruising level

Normally Type I (high speed climb) is used for normal procedure. If by ATC max climb rate is requested, perform a Type III climb.

Whenever traffic density is high, especially departure from high frequented airports like EDDF, LOWW, a quick acceleration departure as a Type I shall be performed. If the Type I is insufficient use the PITCH HOLD mode to reach VMO -10kts until passing sector of restrictions.

## 5.2. A/C SYSTEM SETTINGS

Both MFDs should be set to the MAP mode. The terrain shall be displayed unless weather condition requires the use of the WX radar. The WX radar should be displayed on the pilot flying MFD.

IAS mode is the recommended mode for climb. In turbulent air the PITCH HOLD mode up to 7° ANU should be used for a comfortable climb. Monitor the indicated air speed for a safe climb speed within the limits. VS mode shall not be used for climb. It may only be selected temporarily to achieve smooth pitch changes.

Normally the FMS mode should be used for departure and the conventional navigation should be used for reference. The heading bug should be readjusted after every course correction during flight in LNAV mode. FMS inputs and NAV aid settings should be performed first on the PFs side and then on the PNFs side.

When passing the transition altitude set the main altimeter and then the ISI altimeter to standard pressure (1013 hPa / 29.92 inHg).

# 6.0 CRUISE

If cruising level is reached, perform a fuel check on the PERF and FUEL Page of FMS. Monitor on WX radar the surrounding weather situation and if necessary plan an alternate routing. Whenever practicable, check the ATIS information of arrival airport. Perform a sequent scan of all primary systems for malfunctions.

### 6.1. CHOICE OF FLIGHT LEVEL

The cruising level is given by the flight planning software and is required for the OFP. In all other cases use the table “maximum initial cruise level” (figure 1.0-1) for flight level planning. In case of turbulent air, icing conditions, or other limitations, cruising level shall be adjusted, regarding aircraft performance and ATC regulations.

### 6.2. POWER SETTING

Generally 850 RPM shall be used for cruise. If a cruising level is used below the max flyable level, a torque adjustment by the power lever is necessary so as not to exceed an IAS of $V_{MO}$ -10kts

### 6.3. FLIGH T IN ROUGH AIR

By entering turbulent air or area of thunderstorm activity perform following items:

- switch on the FASTEN SEAT BELT sign
- switch on the STORM light (by thunderstorms)
- reduce and maintain a speed below the rough airspeed limit of 210 KIAS
- use of A/P in basic mode (wing level / pitch hold) is recommended
- monitor airspeed and avoid increasing over 210 KIAS for flight in severe turbulence.

## 7.0 DESCENT

If all relevant data for approach and landing is received, perform the approach briefing. Manage the TOD by the FMS (see 7.1 MANGAE TOD). Switch the SEAT BELT signs ON when leaving cruising level or 20 minutes before landing, whichever is later. When starting the descent set the ALT knob on the cabin altitude control panel to the destination elevation +500ft. Plan a 3° flight path for descent (or aprox. 1.800 ft/min). Avoid excessive nose down attitudes and steep descents (more than 12° ANU). When passing FL100 / 10.000ft MSL switch the APPROACH LIGHTS to ON. From this time all none essential work shall be reduced to minimum, and a sterile cockpit environment is established. During night time the LOGO LIGHTS should be switched ON together with the APPROACH LIGHTS.

### 7.1 MANAGING TOD

If a waypoint on the flight plan with an altitude constrain for descent given, or the complete arrival route is known and in the FMS inserted, set the required waypoint with the altitude restriction on the VNAV page on the top, and confirm by pressing enter. The FMS will calculate the TOD by using a descent rate of 1800ft/min. The VNAV page shows also the distance to the TOD. The TOD circle will be displayed on the ND.

### 7.2 SPEED SCHEDULE

Three standard descent speed schedules are available:

- Type I (high speed)……..$V_{MO}$ -10kts IAS
- Type II (intermediate speed)……..200kts IAS
- Type III (low speed)……..160kts IAS

Normal descent should be flown with Type I high speed descent - $V_{MO}$ -10kts IAS.

# 8.0 HOLDING

When holding is expected and requested by ATC, speed may be reduced while inbound to the holding fix to reduce fuel consumption. Use the FMS to program the holding, and recalculate the remaining fuel and HOLD TIME. Holdings shall normally be flown at 180kts IAS (190kts in icing condition), but not less than the minimum clean speed. Flaps shall not be used for holding. Set the speed bugs according 8.1.

## 8.1 SPEED SCHEDULE

Set the speed bugs for hold speed as follow:

Calculated aircraft mass for example is 16.125kg
Bug ▲= $V_{A0}$+25kt (ICE) $V_{A0}$ = 148 +25 = **173kts**
Bug △= $V_{FTO}$ $V_{FTO}$ = **148kts**

## 8.2 CONFIGURATION IN ICING CONDITION

Switch on airframe and prop de-ice / anti-ice system before entering icing condition. Keep flaps retracted as long as practicable. Check the de-ice pressure and if required switch bleed to MIN. In icing condition below 10.000ft select FAST mode. Airframe de-ice system should not be used at temperature above +10°C and below -40°C.

When encountering in severe icing conditions, disconnect A/P and advance CL to MAX (1020 RPM).

**Caution:** If airspeed is close to minimum and is not increased before the REF SPEEDS switch is selected to INCR, stall warning may occur!

**Note:** With SAT more than +5°C the PROP advisory light will not illuminate!

# 9.0 APPROACH

When receiving a clearance to descend to an altitude / through the transition level, or for visual approach, set the altimeters to the local QNH. After that start with the approach check:

- BLEED selector to MIN
- GPWS Landing Flap selector to required position (15 or 35)
- STBY HYD PRESS & PTU CNTRL switch ON
- AUX PUMPS switch to ON

On the index control panel set the DH and the MDA according approach charts.
For the Dash 8-Q400 minima and speeds, use category “C”.

Following DH & MDA data valid for LOWI depending on the landing weight:

21.000kg – DH 426´ / MDA 2320´
23.000kg – DH 486´ / MDA 2380´
25.000kg – DH 556´ / MDA 2450´
27.000kg – DH 656´ / MDA 2550´

## 9.1. LANDING GEAR AND FLAP SELECTION

Flaps 15° or 35° shall normally be used for landing. Landing gear and flaps shall be extended so as to allow the aircraft to be stabilized for landing before passing 500ft ARTE. Gear extension and next higher flap setting should be executed when the IAS is 10kts below the respective limit of gear or flaps.

On major airports with high traffic intensity (e.g. LOWW, EDDF, LSZH,…), a high speed approach shall be performed. Following procedure of sequence should be performed for high speed approaches:

- keep speed at or above 210kts until passing 8 NM
- when passing 8 NM press RDC NP button and set CL to MAX
- when passing 7 NM reduce to 190kts and set flaps to 5°
- when passing 6 NM select gear down
- when passing 5 NM reduce to 170kts and set flaps to 15°
- when passing 4 NM reduce to 160kts
- when passing 3 NM reduce speed to 140kts
- before passing 500ft ARTE reduce to final target speed for 15° flap landing.

**Note:** High speed approaches are only allowed with 15° flaps, tailwind below 10kts, and no low visibility procedure in progress.

Approaches at LOWI (LOC DME East) should be performed with 160kts to max of 180kts and only with the LOC / VS mode in reference the glide path / altitude to the approach chart.

VS for LOC (OEV 111.100) descent angle of 3,77°:

140kts – 935ft/min

160kts – 1070ft/min

180kts – 1200ft/min

## 9.2. A/C SYSTEM SETTING

Both NAVs should be set to the ILS or VOR frequencies via FMS or ARCDU. If the AP is active in the FMS NAV mode, the course should be set by pressing the FORMAT button for one second on the EFCP. The navigation display changes to the VOR/ILS view. Now set the published ILS course by turning the COURSE selection knob. Then once again press the FORMAT button on the EFCP to turn back on the FMS NAV view. Repeat this on the Co-Pilot side. Use the MAP mode on both MFDs for approach. If a conventional ILS approach is planned, fly the interception leg with the HDG mode in an angle of <60°. Verify the course is set to the inbound track according to the approach chart. If APPR is active and ILS is intercepted, turn HDG bug to the ILS or approach course. After GS captured preselect the GA altitude. Verify the DH & MDA values are set according to the approach chart. Set the speed bugs as required. When landing clearance is received turn on the taxi light. When approaching the MDA or 500ft AGL (whichever comes first) switch off the bleed to avoid a GA with bleed on. HGS shall be used for CAT II & III (AIII mode) approaches.

## 9.3. APPROACH SPEED BUG SETTING

Normal approach should be flown by 210kts or $V_{MO}$ -10kts. At FAF or latest 10NM from the runway reduce to 190kts.
For traffic pattern until abeam runway – 180kts.
Downwind and base leg – 150kts (flap 15°), 140kts (flaps 35°).
Final approach – final target speed latest 500ft AAL.

Speed Bug△(outline) shall be set to the final target speed during the approach.
Speed Bug ▲(solid) shall be set to $V_{A0\text{-}ICE}$ or to the respective flap setting during approach ($V_{A0\text{-}ICE}$ / $V_{A5\text{-}ICE}$ / $V_{A10\text{-}ICE}$ / $V_{A15\text{-}ICE}$ / $V_{A35\text{-}ICE}$).
Two different procedures for speed bug setting are recommended. The first is for single pilot operation in the flight simulator, and the second procedure is for connected cockpit operation (real world procedure).
For example – approach and landing speed bug setting at 26.000kg with flaps 35°:

Procedure 1 (single pilot):

Bug ▲ $V_{A0\text{-}ICE}$ $V_{A0}$ = 148 +20 = **168kts**
Bug △ $V_{A35}$ $V_{A35}$ = **116kts**

Procedure 2 (connected cockpit):

Bug ▲ $V_{A0\text{-}ICE}$ $V_{A0}$ = 148 +20 = **168kts,** than before start flap setting,
Bug ▲ $V_{A5\text{-}ICE}$ $V_{A5}$ = 137 +20 = **157kts,** than before next flap setting,
Bug ▲ $V_{A10\text{-}ICE}$ $V_{A10}$ = 127 +20 = **147kts,** than before next flap setting,
Bug ▲ $V_{A15\text{-}ICE}$ $V_{A15}$ = 121 +20 = **141kts,** than before final flap setting,
Bug ▲ $V_{A35\text{-}ICE}$ $V_{A35}$ = 116 +20 = **136kts**
Bug △ $V_{A35}$ $V_{A35}$ = **116kts**

## 9.4. TARGET SPEEDS

Final target speed shall be established latest 500ft AAL within +/- 5kts. The speed should be set according the speed booklet in reference to desired flap setting and the calculated landing weight (to round the values).

## 9.5. POWER SETTING

Normal approach and landing shall be performed with reduced power (RDC NP 850RPM), whenever possible, to reduce noise.
Landing with MAX RPM shall be used in turbulent conditions, on short runways, and for steep approach.

Landing with 900RPM is prohibited!

### 9.6. STEEP APPROACH AND LANDING

Steep approach can be flown under following restrictions:

- the maximum approach angle is 5,5°
- flaps 35° must be used
- reduced NP landing is prohibited
- maximum Landing Weight of 26.308 kg
- maximum of 5kts tail wind
- anti-Skid system must be operative
- landing gear down, flaps set 35°, and CL to MAX must be selected prior to start the steep approach.

### 9.7. MISSED APPROACH

Missed approach point (MAP) shall be set before starting the approach. Use the required DH according to the approach chart (aircraft category "C", see 9.0.). Set both, the DH and the MDA. The DH / MDA are displayed on the PFDs. The missed approach altitude shall be set on the pre-selector panel after descending through the missed approach altitude or when full established on the ILS.

A GA should be performed if visual references are insufficient or the airplane is not stable at 500ft AAL or below. Missed approach from DH shall be executed very accurately and without delay!

If GA initiated by pushing the GA button, advance the PL to rating detent. Rotating smoothly nose up according flight director pitch indication. If a positive rate of climb is indicated, retract the landing gear and flaps, according speed schedule ($V_{GA}$+10). If the airplane is in a stable GA condition, re-engage the AP and select HDG and ALT SEL on FGC or fly the FMS missed approach by using LNAV.

## 10.0 LANDING

After the landing clearance has been received the flare lights shall be switched ON, and if landing gear is down, switch also the taxi lights ON. The approach lights should be already switched to ON since passing FL100 / 10.000ft.

### 10.1. FLAP SETTING FOR LANDING

Flap setting from 10° up to 35° is approved for landing. Flaps 15° or 35° shall normally be used for landing. Use Flap 15° for high speed approach and long runways, and Flap 35° for short runways (<1.600m) and steep approaches. For landing with 10kts tail wind or greater flaps 35° must be used.

### 10.2. NP SETTING

Normal approach and landing shall be performed with reduced power (RDC NP 850RPM), whenever possible, to reduce noise.
Landing with MAX RPM shall be used:

- in turbulent conditions
- on short runways
- for Steep Approach

Landing with 900RPM is prohibited!

### 10.3. SPEED SCHEDULE

Plan the approach so that the final target speed is established and stable latest 500ft AAL within +/- 5kts according speed bug setting (see 9.3. Approach Speed Bug Setting).

### 10.4. TOUCHDOWN

Maintain a constant approach angle and if necessary, adjust power smoothly to correct the rate of descent. Flare the aircraft to achieve the touchdown at the runway aiming point markings approximately 300m beyond the threshold. If a little power is needed during landing flare, bring back the PLs at IDLE immediately latest at main wheels contact runway. Avoid pushing nose down in case of too high landing speed (or altitude), or rapid power changes if the landing speed (or altitude) is low. If the aircraft is below 500ft unstable perform a GA immediately, otherwise a hard landing or a “jumping aircraft” can occur.

### 10.5 USE OF BRAKES

After nose wheel touchdown, brakes shall be applied as required. If a long roll-out is possible on runway, brake application should be kept to a minimum.

### 10.6 USE OF REVERSE

For normal landing reverse power should not be used. Use revers on following circumstances:

- short runway (<1.400m)
- contaminated runway
- in case of emergency (e.g. loss of one or both Hydraulic Systems)
- power back – if required

### 10.7 CROSSWIND LANDING

When landing in a crosswind, the forward side-slip technique shall be used. A positive touchdown shall be performed and floating along the runway shall be avoided.

## 11.0 POST LANDING

When the aircraft decelerates below 50kts, switch the approach and flare lights OFF, and set the FLIGHT/TAXI switch to TAXI. Retract the flaps to position 0°. Engage the control lock. If runway vacated turn the transponder to STBY and switch the anti-collision light to RED. Start with the “After Landing

Check" according checklist. If single engine taxiing is planed (see 11.3) remain STBY HYD PRESS and PTU CNTRL button to ON.

## 11.1 A/C SYSTEMSETTINGS

If required start APU. MAIN BUS TIE shall be closed (TIE). De-Ice / Anti-Ice system should be switched OFF but windshield heat shall be left at WARM UP if OAT is below 10°C. Yaw damper shall be switched OFF. FD set to SBY. AUX Pumps switch OFF, WX radar turn to SBY. Check Flaps retract to 0°.
Turn on the ESID Panel both MFD selectors to SYS and press for the MFD2 the ELEC SYS button and for the MFD1 the DOOR SYS button. On the left MFD should displayed the door status, and on the MFD2 the electrical status.

## 11.2 TXIING IN ICING CONDITION

During taxiing in icing condition and contaminated taxiways, the engine intake bypass doors must be open and taxi speed shall not exceed 15kts and 5ktd in turns. Windshield heat and pitot static heat remains to ON until parking position is reached.

## 11.3 SINGLE ENGINE TAXIING

Generally, for taxiing to the parking stand a single engine taxi procedure should be used with the left engine shut down. The #1 engine shall not be shut down before:

- the "After Landing Check" has been completed
- the #1 propeller has been feathered for at least 30 seconds (use the clock for timing)
- both hydraulic systems are operating normally
- the AC electrical system are operating correct
- no runway crossing is required on the route of taxiing to the parking position
- remain STBY HYD PRESS and PTU CNTRL-switch to ON during taxiing

## 11.4 PARKING

When entering the parking position switch the taxi light to OFF. After the aircraft has come to a complete stop, set the parking brake and switch the BLEED to OFF. Move the CLs (or remaining #2 CL after single engine taxiing) to START & FEATHER, and after 30seconds move the CL to FUEL OFF. During engine shutdown monitor the engine instruments, and if PROP RPM at 0 switch the RED anti-collision light and the fasten seat belts sign to OFF. Request DC ground power via FMS, and switch the EXT PWR on the DC control panel to ON. Check that the DC EXT PWR ON annunciation is displayed on the MFD electrical page. Switch the nose wheel steering to OFF.

After engine shut down perform the "Transit Parking Check".

Installation of gear pins for overnight parking or towing the aircraft is necessary.

## 12.0 PROCEDURE FLOW

The procedure flow shall be used if the Q400 is flown by two pilots in the connected cockpit mode. This procedure includes the real SOP of Austrian Dash8-Q400 pilots. For normal operation, the commander is on the left seat (LP) and the first officer (RP) on the right seat. The commander is full responsible for the flight, but the flight duties will be changed depending on which crewmember is the flying pilot (PF), or the pilot none flying (PNF).

12.1.

| Before Engine Start Procedure: | |
|---|---|
| **LP** | **RP** |
| T/O briefing performed, speed bugs set and ATC clearance for start-up received, all door closed | |
| **"BEFORE ENGINE START"** | |
| FLOW:<br>Battery Master / Batteries ..... check ON<br>FASTEN BELTS ..... (check) ON<br>A/COL LIGHT ..... RED<br>APU BL AIR ..... OFF | FLOW:<br>POWER LEVERS ..... DISC<br>CONDITION LEVERS ..... FUEL OFF<br><br><br>perform the BEFORE ENGINE START checklist. |

12.2.

| Normal Engine Start Procedure: | |
|---|---|
| **LP** | **RP** |
| "Ground ready" signal for #2 engine received | |
| **"CHECK RIGHT SIDE"** | check right prop area and if clear:<br>**"RIGHT SIDE CHECKED"** |
| set START SELECT to #2 side<br>push START switchlight<br>start timing | monitor ground staff and informs commander about signals during entire starting process |
| at first indication of NH | |
| move #2 Condition Lever to START/FEATHER: **"FUEL ON"**<br>check for light-up within 16 seconds after selecting START/FEATHER: **"LIGHT-UP"** | |
| after light-up | |
| check ITT does not exceed 920°C<br>check engine accelerates to above 64.2% NH<br>check oil pressure is greater than 44 psi,<br>ENG OIL PRESS warning light extinguishes:<br>**"OIL PRESSURE"**<br>check for starter cut-out | |
| engine stabilized | |
| check ENGINE START SELECT switch is centred and START and SELECT lights are out<br>**"NUMBER 2 STABILIZED"** | |

...12.2 continue on next page...

| "Ground ready" signal for engine #1 received | |
|---|---|
| check left prop area and if clear:<br>**"LEFT SIDE CHECKED"** | |
| | monitor ground staff and informs commander about signals during entire starting process |
| Battery Loads are 0.4 or less | |
| Engine #1 shall be started similar to engine #2 as described above. | |
| after both engines are started and stabilized | |
| **"AFTER ENGINE START"** | |

12.3.

| **Engine Start Using APU Procedure:** | |
|---|---|
| **LP** | **RP** |
| after BEFORE ENGINE START checklist is completed, additionally: | |
| RECIRC fan ..... OFF<br>check that APU BL AIR is OFF.<br>perform first engine start. | |
| first engine start completed | |
| APU GEN ..... OFF<br>APU PWR SWITCHLIGHT ..... OFF<br>Check APU FUEL VALVE OPEN advisory light extinguishes and APU FUEL VALVE CLOSED advisory light illuminates.<br>Battery Loads ..... monitor | |
| Battery Loads are 0.4 or less | |
| RECIRC fan ..... ON | |

12.4.

| **After Engine Start Procedure:** | |
|---|---|
| **LP** | **RP** |
| after both engines are started without malfunctions | |
| **"AFTER ENGINE START"** | |
| FLOW:<br>DC EXTERNAL POWER ..... OFF<br>give GPU disconnect signal to ground staff<br>MAIN BUS TIE ..... OFF<br>CONDITION LEVER(S) ..... MAX | FLOW:<br>#3 HYD System Test ..... PERFORM<br>TRANSPONDER ..... ON ALT<br>(use code 1000 until correct code is received) |
| un-feather #1 or #2 or both props and AC generators online (caution lights out) | |
| FLOW:<br>DE-ICE / ANTI-ICE SYSTEMS ..... AS REQ'D | FLOW:<br>AIR CONDITIONING ..... AS REQ'D<br>STBY HYD PRESS & PTU CNTRL ..... ON<br>FLAPS ..... AS REQ'D |
| RUDDER TRAVEL ..... CHECK<br>NOSEWHEEL STEERING ..... ON | |
| | read the AFTER ENGINE START checklist. |

12.5.

| Push-Back Procedure: | |
|---|---|
| **LP** | **RP** |
| after #2 engine started without malfunctions | |
| DC EXTERNAL POWER ..... OFF<br>give GPU disconnect signal to ground staff | |
| | FLOW:<br>TRANSPONDER ..... AS REQ'D<br>check right side clear for push-back<br>**"READY FOR PUSH-BACK"** |
| **"REQUEST PUSH-BACK"** | obtains push-back clearance |
| push-back clearance received | |
| confirm with ground personnel that the aeroplane is connected to the tow truck<br>confirm NOSE STEERING ..... OFF<br>**"NOSE STEERING OFF"**<br>check PARK BRAKE ..... OPEN<br>**"PARK BRAKE OPEN"**<br>report **"READY FOR PUSH BACK"** to the ground staff | |
| clear of gate area, ground equipment, etc., and Battery Loads are 0.4 or less | |
| start #1 engine | monitor push back and engine start |
| after both engines have been started and stabilized | |
| **"AFTER ENGINE START"** | |
| FLOW:<br>MAIN BUS TIE ..... OFF | FLOW:<br>#3 HYD System Test ..... PERFORM |
| push-back completed | |
| PARK BRAKE ..... SET<br>reports **"PARK BRAKE SET"** to ground staff<br>CONDITION LEVER(S) ..... MAX | |
| tow bar disconnected, prop(s) un-feathered and AC generators online - caution light(s) out | |
| DE-ICE / ANTI-ICE SYS……..…….AS REQ'D<br><br><br>RUDDER TRAVEL ..... CHECK<br>NOSEWHEEL STEERING ..... ON | AIR CONDITIONING ..... AS REQ'D<br>STBY HYD PRESS & PTU CNTRL ..... ON<br>FLAPS ……..... AS REQ'D<br><br><br>read AFTER ENGINE START checklist. |

12.6.

| Taxi Procedure: | |
|---|---|
| **LP** | **RP** |
| ready for taxi | |
| | obtain Taxi Clearance |
| taxi clearance received | |
| TAXI LIGHT ..... ON<br>PARK BRAKE ..... OPEN<br>check the left side:<br>**"LEFT SIDE CHECKED"**<br>start taxiing according ATC clearance | check the right side:<br>**"RIGHT SIDE CHECKED"**<br><br>monitor taxiing |
| if taxiing with one prop in feather, unfetaher both prop before start TAXI CHECK | |
| check both Condition Levers at MAX<br>**"TAXI CHECK"** | confirm both condition levers at MAX (1020) |
| FLOW:<br>FLAPS..... CHECK<br>SPOILERS ..... CHECK<br>TAKE-OFF WARNING ..... CHECK<br>HDG.....CHECK | FLOW:<br>YAW DAMPER ..... ON<br>AUX PUMPS ..... ON<br>FADEC POWER ..... SET<br>sets MTOP or RDC TOP as applicable<br>AUTOFEATHER .....SELECT<br>WX RADAR ..... STBY |
| | read the TAXI CHECK checklist |

12.7.

| Before Take Off Procedure: | |
|---|---|
| **LP** | **RP** |
| Taxi Check completed / Take-off clearance expected shortly | |
| **"BEFORE TAKE-OFF CHECK"** | |
| | FLOW:<br>DE-ICE / ANTI-ICE SYSTEMS ..... AS REQ'D<br>FLIGHT DIRECTOR ..... SET<br>CONTROL LOCK ..... OFF<br>check flight controls for freedom of movement<br>and check correct movement on PFCS indicator<br>BLEEDS ..... MIN / OFF |
| | reads the<br>BEFORE TAKE-OFF checklist |
| entering RWY | |
| both pilots confirm entering the correct RWY | |
| A/COL LIGHT ..... WHITE | TRANSPONDER.....MODE-C |
| Aeroplane in Take-off position | |
| adjust their RWY heading | |

12.8.

| Normal Take Off Procedure / LP is PF: | |
|---|---|
| **LP (PF)** | **RP (PNF)** |
| Take-off clearance received and aligned on runway | |
| FLIGHT/TAXI switch ……..... FLIGHT<br>check that spoilers are extended<br>APPROACH/FLARE LIGHTS ……..... ON | |
| release brakes and advance power levers smoothly to RATING detent<br>maintain directional control with rudder pedals<br>check spoiler advisory lights extinguish and PFCS indication on MFD show spoilers retracted: **"SPOILERS IN"**<br>check "A/F ARM" message on ED: **"AUTOFEATHER ARMED"**<br>**"CHECK POWER"** | check take-off power setting (torque matching the torque bugs) and normal engine indications: **"POWER CHECKED"** |
| check correct take-off power setting and ITT | |
| check IAS indication: **"CHECKED"** | passing 80kts IAS: **"EIGHTY"** |
| put right hand on control wheel<br>rotate to max 8° ANU until lift - off | at $V_1$: **"$V_1$"**<br>at $V_R$: **"ROTATE"**<br>at $V_2$: **"$V_2$"** |

12.9.

| Normal Take Off Procedure / RP is PF: | |
|---|---|
| **LP (PNF)** | **RP (PF)** |
| Take-off clearance received and aligned on runway | |
| FLIGHT/TAXI switch ……..... FLIGHT<br>check that spoilers are extended<br>APPROACH/FLARE LIGHTS ……..... ON | |
| ask RP **"READY?"**<br>release brakes<br>**"YOUR CONTROL"** | confirm when ready: **"READY"**<br>take over control wheel with both hands and maintain directional control with rudder pedals: **"MY CONTROL"** |

…12.9 continue on next page…

| | |
|---|---|
| advance both power levers smoothly<br>to RATING detent<br>check spoiler advisory lights extinguish and<br>PFCS indication on MFD show spoilers retracted:<br>**"SPOILERS IN"**<br>check "A/F ARM" message on ED:<br>**"AUTOFEATHER ARMED"**<br>check take-off power setting (torque matching<br>the torque bugs) and normal engine indications:<br>**"POWER CHECKED"**<br>monitor engine indications. | |
| passing 80kts IAS: **"EIGHTY"** | check IAS indication: **"CHECKED"** |
| at $V_1$: **"$V_1$"**<br>remove the hand from the power lever<br>at $V_R$: **"ROTATE"**<br><br>at $V_2$: **"$V_2$"** | rotate to maximum 8° ANU until lift - off |
| continue with after lift-off procedure | |

12.10.

| **After Lift-Off Procedure:** | |
|---|---|
| **PF** | **PNF** |
| Continue rotation to V2+10kts (or max15° ANU) | |
| **"GEAR UP"** | observe positive ROC on VSI: **"POSITIVE"**<br><br>select landing gear UP<br>check green advisory lights extinguish<br>and gear handle light illuminates:<br>**"GEAR MOVING"**<br>monitor until all advisory lights are out |
| above 200ft AAL | |
| order PNF to engage LNAV:<br>**"ENGAGE LNAV"** | set PF´s NAV SOURCE selector to FMS<br>check NAV source on PF´s PFD shows<br>FMS1 or FMS2 (as applicable) and PF´s<br>CDI is displayed in magenta<br>push NAV button on FGC and check<br>LNAV message in both PFD FMAs:<br>**"LNAV ENGAGED"** |
| above 400ft AAL | |
| | switch bleeds to ON/MIN |

...12.10 continue on next page...

| at Minimum Acceleration Altitude (1.000ft AAL) | |
|---|---|
| accelerate to $V_{FTO}$ / $V_{FTO-ICE}$<br>passing VFRI: **"FLAPS ZERO"** | |
| | check speed ≥ VFRI:<br>**"SPEED CHECKED…"**<br>set flap lever to 0°: **"…FLAPS ZERO…"**<br>check flap indicator moving towards zero:<br>**"…MOVING"**<br>**"MINIMUM SPEED [$V_{FTO}$ / $V_{FTO-ICE}$]"**<br>set and check speed bugs |
| set and check speed bugs:<br>**"[$V_{FTO}$ / $V_{FTO-ICE}$] SET"**<br>**"CLIMB POWER 900" (**or **"850")**<br>accelerate to climb speed according climb speed schedule or as required to meet climb restrictions<br>(see Note 3 & 4 under 4.0 Take-Off and Initial Climb ) | set condition levers to 900 (or 850) RPM<br>set BLEED selector to NORM<br>check power rating and setting on ED:<br>**"POWER SET"**<br>switch FLARE and TAXI lights OFF |
| order AFCS IAS mode with a speed selection according Speed Schedule | set AFCS accordingly |
| **"CRUISE POWER 850"**<br>(see Note 3 & 4 under 4.0 Take-Off and Initial Climb ) | set condition levers to 850 RPM<br>**"POWER SET"** |

12.11.

| Climb Procedure: | |
|---|---|
| **PF** | **PNF** |
| at 1.000ft AAL or above | |
| check correct FD modes selected<br>check aeroplane is trimmed correctly<br>push AP button on FGC<br>check pointer beside AP button<br>illuminate and "AP" is displayed on PFD FMA:<br>**"AUTOPILOT ENGAGED"** | |
| | check pointers are illuminated, FD is set correctly and "AP" is displayed on PFD FMA:<br>**"CHECKED"** |
| passing Transition Altitude | |
| both pilots set their Altimeters to STANDARD (LP set also ISI to STANDARD) and check indications | |

…12.11 continue on next page…

| if condition levers are still at 900 RPM | |
|---|---|
| **"CRUISE POWER 850"**<br>(see Note 3 & 4 under 4.0 Take-Off and Initial Climb ) | set condition levers to 850 RPM<br>check power rating and setting on ED<br>**"POWER SET"** |
| Autopilot engaged, Climb Power set and above Transition Altitude | |
| **"CLIMB CHECK"** | FLOW:<br>STBY HYD PRESS & PTU CNTRL ... OFF<br>AUX PUMPS ..... OFF<br>MTOP (if applicable) ..... OFF<br>AUTOFEATHER ..... OFF<br>performe the CLIMB CHECK |

12.12.

| **Approach Procedure:** | |
|---|---|
| **PF** | **PNF** |
| cleared to an altitude or descending through transition level or cleared for visual approach | |
| both pilots set their Altimeters to QNH (LP set also ISI to QNH) and cross check indications | |
| **"APPROACH CHECK"** | FLOW:<br>BLEED selector ..... MIN<br>GPWS LANDING FLAP SELECTOR…AS REQ<br>STBY HYD PRESS & PTU CNTRL ..... ON<br>AUX PUMPS ..... ON<br>performe the APPROACH CHECK |

12.13.

| **Steep Approach Procedure:** | |
|---|---|
| **PF** | **PNF** |
| Prior to commencing steep approach | |
| **"CONDITION LEVERS MAX"** | sets condition levers to MAX |
| **"FLAPS 35"** | check speed < $V_{FE35}$<br>**"SPEED CHECKED, …"**<br>select flaps 35°: **"…FLAPS 35, …"**<br>check flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A35}$ / $V_{A35\text{-}ICE}$]…"**<br>set speed bug according Speed Booklet (see 9.3. Approach Speed Bug Setting) |
| set speed bug according speed booklet (see 9.3. Approach Speed Bug Setting)<br>**"SPEED BUGS 1 & 2 SET"** | |

…12.13 continue on next page…

| | |
|---|---|
| **"AUTOPILOT…"**<br>disengage the Autopilot<br>**"…OFF"** | |
| Commencing steep approach (latest at 1000ft ARTE) | |
| **"STEEP APPROACH"** | FLAP 35 APPROACH switch ..... STEEP<br>check STEEP advisory light illuminated:<br>**"STEEP SET"** |

12.14.

| **Standard Traffic Pattern Procedure:** | |
|---|---|
| **PF** | **PNF** |
| established on or entering downwind | |
| Adjust speed to 180 kts<br>**"REDUCED NP, CONDITION LEVERS MAX"** | select RDC NP LDG switch,<br>set condition levers to MAX |
| Abeam RWY midpoint | |
| **"FLAPS 5"** | check speed < $V_{FE5}$<br>**"SPEED CHECKED, …"**<br>select flaps 5°: **"…FLAPS 5, …"**<br>check flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A5}$ / $V_{A5\text{-}ICE}$]"** |
| Abeam landing RWY threshold | |
| start timing<br>**"GEAR DOWN"** | check speed < $V_{LO}$<br>**"SPEED CHECKED, …"**<br>select gear down, check red advisory<br>lights illuminate: **"…GEAR MOVING"** |
| After 30 seconds ± wind correction have elapsed, | |
| reduce speed to 150 kts<br>**"FLAPS 15"**<br><br>if flaps 15° are used for landing:<br>set speed bugs according Speed Booklet:<br>**"SPEED BUGS [1, 2] SET"** | check speed < $V_{FE15}$<br>**"SPEED CHECKED, …"**<br>select flaps 15°: **"…FLAPS 15, …"**<br>check flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A15}$ / $V_{A15\text{-}ICE}$]"** |

…12.14 continue on next page…

| | |
|---|---|
| After 60 seconds± wind correction have elapsed | |
| turn to base | |
| if landing with MAX RPM planned: | |
| **"MAX RPM"** | |
| | re-select RDC NP LDG switch |
| if flaps 35° are used for landing: | |
| **"FLAPS 35"** | |
| | check speed < $V_{FE35}$ |
| | **"SPEED CHECKED, …"** |
| | select flaps 35°: **"…FLAPS 35, …"** |
| | check flaps moving **"…MOVING",** |
| | **"MINIMUM SPEED [$V_{A35}$ / $V_{A35-ICE}$]"** |
| | set speed bugs according Speet Booklet |
| set speed bugs according Speed Booklet: | |
| **"SPEED BUGS [1, 2] SET"** | |
| Final Check | |
| **"FINAL CHECK"** | |
| | check 3 green gear advisory lights are ON: |
| | **"GEAR"** |
| checks 3 green gear advisory lights ON: | |
| **"DOWN - 3 GREENS"** | |
| | checks that desired flap setting is selected |
| | and indicated: **"FLAPS"** |
| checks flap setting: **"15/15"** or **"35/35"** | |
| | checks condition lever setting: |
| | **"CONDITION LEVERS"** |
| check condition lever setting: | |
| **"(REDUCED) MAX"** | |
| | **"FINAL CHECK COMPLETED"** |
| at 500ft ARTE | |
| **"500 FEET"** | |
| | turn both bleed air switches OFF: |
| | **"BLEEDS OFF, …"** |
| | check that aeroplane is stabilized |
| | according stabilized approach concept: |
| | **"STABILIZED"** |
| | confirm landing clearance received |
| | if not stabilized or not cleared to land, call: |
| | **"UNSTABLE - GO AROUND"** |

12.15.

| ILS Approach Procedure: | |
|---|---|
| **PF** | **PNF** |
| cleared for ILS approach, heading < 60° HDG inbound for ILS course interception | |
| arm APP mode<br>check PFD FMA<br>**"LOCALIZER / GLIDE SLOPE ARMED"** | check PFD FMA **"CHECKED"** |
| LOC captured | |
| **"LOCALIZER CAPTURED"** | if applicable, cross - check position<br>check PFD FMA **"CHECKED"** |
| ~8 NM final | |
| **"REDUCED NP, CONDITION LEVERS MAX"** | select RDC NP LDG switch,<br>set condition levers to MAX |
| 1 dot below glide slope | |
| **"FLAPS 5"** | check speed < $V_{FE5}$<br>**"SPEED CHECKED, …"**<br>select flaps 5°: **"…FLAPS 5, …"**<br>check flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A5}$ / $V_{A5\text{-}ICE}$]"** |
| **"GEAR DOWN"** | check speed < $V_{LO}$<br>**"SPEED CHECKED, …"**<br>select gear down, checks red advisory<br>light illuminate: **"…GEAR MOVING"** |
| GS captured | |
| **"GLIDE SLOPE CAPTURED, …"**<br>if possible, check correct position for GS intercept<br>**"…MISSED APPROACH ALTITUDE"** | if possible, check correct position for GS intercept<br>check PFD FMA **"CHECKED"**<br>select missed approach altitude on altitude pre-select controller:<br>**"[FL / ALT] SET"** |

…12.15 continue on next page…

| | |
|---|---|
| before passing OM or equivalent fix | |
| **"FLAPS 15"** | |
| | check speed < $V_{FE15}$ |
| | **"SPEED CHECKED, …"** |
| | select flaps 15°: **"…FLAPS 15, …"** |
| | check flaps moving **"…MOVING",** |
| | **"MINIMUM SPEED [$V_{A15}$ / $V_{A15-ICE}$]"** |
| | if flaps 15° are used for landing set speed bug according Speed Booklet. |
| set speed bug according speed booklet (see 9.3. Approach Speed Bug Setting) | |
| **"SPEED BUGS 1 & 2 SET"** | |
| if landing with MAX RPM planned: | |
| **"MAX RPM"** | |
| | re-select RDC NP LDG switch |
| if Flaps 35° are used for landing, flaps and speed bugs shall be ordered, set and checked as described above. | |
| Final Check | |
| **"FINAL CHECK"** | |
| | check 3 green gear advisory lights are ON: **"GEAR"** |
| check 3 green gear advisory lights ON: **"DOWN - 3 GREENS"** | |
| | check that desired flap setting is selected and indicated: **"FLAPS"** |
| check flap setting: **"15/15"** or **"35/35"** | |
| | check condition lever setting: **"CONDITION LEVERS"** |
| check condition lever setting: **"(REDUCED) MAX"** | |
| | **"FINAL CHECK COMPLETED"** |
| passing OM or equivalent fix | |
| **"OUTER MARKER"** | |
| | **OM check:** |
| | check correct position / altitude |
| | check that minima are set correctly |
| | **"MINIMUM [DA/DH] FEET"** |
| | check flight guidance systems are set correctly (FGC, PFD FMA, NAV frequencies) |
| | **"OUTER MARKER CHECK COMPLETED"** |
| continue with different ILS CAT procedures | |

12.16.

| CAT I ILS Approach Procedure: | |
|---|---|
| **PF** | **PNF** |
| at 500ft ARTE | |
| **"500 FEET"** | turn both bleed air switches OFF:<br>**"BLEEDS OFF, …"**<br>check that aeroplane is stabilized according stabilized approach concept:<br>**"STABILIZED"**<br>confirm landing clearance received<br>if not stabilized or not cleared to land, call:<br>**"UNSTABLE - GO AROUND"** |
| 100ft above Decision Altitude / Decision Height | |
| **"APPROACHING MINIMUM"** | **"CHECKED"**<br>concentrate to obtain visual cues<br>If visual references for landing are visible:<br>**"APPROACH LIGHTS (or RUNWAY) IN SIGHT"** |
| at Decision Altitude / Decision Height | |
| **"MINIMUM, LANDING"**<br>maintains a constant approach angle until landing flare | monitor constantly the instruments until touch-down and call out deviations |
| if Autopilot still engaged at aotopilot minimum use high (MUH): | **"AUTOPILOT"** |
| **"AUTOPILOT…"**<br>disengage the Autopilot<br>**"…OFF"** | |
| **or in case of Missed Approach / Balked Landing…** | |
| at Decision Altitude / Decision Height | |
| **PF** | **PNF** |
| **"MINIMUM, GO AROUND…"**<br>**"...FLAPS 5 / 10 / 15, GEAR UP"**<br>pushe TOGA button and advances power levers to RATING detent while smoothly rotating to FD pitch<br>adjust pitch to maintain $V_{GA+10}$ / $V_{GA-ICE+10}$<br>(control speed by reference to the IAS tape, not the speed bugs) | |
| | confirms condition levers are set to MAX<br>**"CONDITION LEVERS…"**<br>check that TOGA button has been pushed, confirm power levers are set to rating detent and check power setting:<br>**"…POWER SET"** |

| | |
|---|---|
| | select flaps to appropriate setting<br>**"FLAPS 5 / 10 / 15…"**<br>check flap indicator moving:<br>**"…MOVING"** |
| | observe positive ROC: **"POSITIVE…"**<br>select landing gear UP<br>check green advisory lights extinguish<br>and gear handle light illuminates:<br>**"…GEAR MOVING"** |
| if GA flown by conventional navigation: | |
| | select HDG and ALT SEL on FGC and<br>check that missed approach altitude is<br>set correctly:<br>**"HEADING ENGAGED, ALTITUDE SELECT"** |
| if GA flown by FMS, after conventional NAV approach: | |
| | set PF´s NAV SOURCE selector to FMS<br>check NAV source on PF´s PFD shows<br>FMS1 or FMS2 and PF´s CDI is displayed<br>in magenta<br>select NAV and ALT SEL on FGC and<br>check that LNAV is indicated on both<br>PFD FMAs and<br>check missed approach altitude is set correctly:<br>**"LNAV ENGAGED, ALTITUDE SELECT"** |
| | check flaps are set as required and calls<br>out respective $V_{GA}$:<br>**"MINIMUM SPEED [$V_{GA}$ / $V_{GA-ICE}$]"**<br>check that landing gear advisory lights are out |
| **"ENGAGE IAS, SET $V_{GA+10}$ / $V_{GA-ICE+10}$"** | |
| | select IAS on FGC<br>set $V_{GA+10}$ / $V_{GA-ICE+10}$<br>**"IAS ENGAGED, [KTS] SET"** |
| Above 200ft AAL (if LNAV has not been engaged during initial drill already) | |
| order PNF to engage LNAV:<br>**"ENGAGE LNAV"** | |
| | check FMS for correct setting<br>set PF´s NAV SOURCE selector to FMS<br>select NAV on FGC:<br>**"LNAV ENGAGED"** |
| at or above 400ft | |
| | switch bleeds to ON/MIN<br>check power setting on ED |
| after passing minimum acceleration altitude | |
| **"SET $V_{FTO}$ / $V_{FTO-ICE}$"** | |
| | set $V_{FTO}$ ($V_{FTO-ICE}$)<br>**"[KTS] SET"** |
| Continue with clean up procedure | |

12.17.

| CAT III ILS Approach Procedure: | |
|---|---|
| **LP** | **RP** |
| established on LOC & GS (LOC & GS captured on AFCS) | |
| if HGS AIII mode does not capture automatically: | |
| | check AIII is indicated available on HCP<br>**"ALPHA III AVAILABLE"** |
| **"ENGAGE ALPHA III"** | |
| | select AIII on HCP<br>**"ALPHA III ENGAGED"** |
| checks AIII is steadily indicated in the combiner, AIII Symbology is displayed.<br>**"ALPHA III CAPTURED"** | |
| | check AIII and RO ARM advisories on HAP are illuminated<br>**"CHECKED"** |
| at 1000ft ARTE | |
| if Autopilot still engaged: | |
| | **"AUTOPILOT"** |
| **"AUTOPILOT…"**<br>disengage the Autopilot<br>**"…OFF"** | |
| at 500ft ARTE | |
| **"500 FEET"** | |
| | turn both bleed air switches OFF:<br>**"BLEEDS OFF, …"**<br>check that aeroplane is stabilized according stabilized approach concept:<br>**"STABILIZED"**<br>confirm landing clearance received<br>if not stabilized or not cleared to land, call:<br>**"UNSTABLE - GO AROUND"** |
| 100ft above minimum | |
| **"APPROACHING MINIMUM"**<br>concentrate on obtaining visual eferences | |
| | **"CHECKED"**<br>concentrate to obtain visual cues<br>If visual references for landing are visible: |
| at Decision Height | |
| **"MINIMUM…"** | |
| **If sufficent visual reference for landing given** | |
| **"MINIMUM, LANDING"**<br>continue visually for landing, using HGS guidance as backup<br>maintain a constant approach angle until landing flare | monitor constantly the instruments until touch-down and call out deviations |

…12.17 continue on next page…

| during Roll Out | |
|---|---|
| | monitor centreline deviation and if required call: **"STEER LEFT" or "STEER RIGHT"** |
| **If visual references are insufficent at decision height** | |
| **"MINIMUM, GO AROUND…"** perform PF duties for missed approach | perform PNF duties for missed approach |

12.18.

| **Non-Precision Approach Procedure:** | |
|---|---|
| **PF** | **PNF** |
| cleared for approach & heading within 60˚of inbound course. | |
| LOC approach:<br>select NAV mode, check PFD FMA,<br>**"LOCALIZER ARMED"**<br>VOR approach:<br>select APP mode, checks PFD FMA,<br>**"VOR APPROACH ARMED"** | check PFD FMA: **"CHECKED"** |
| established on VOR / LOC, or +/- 5° of inbound track on NDB approache | |
| LOC approach:<br>**"LOCALIZER CAPTURED"**<br>VOR approach:<br>**"VOR APPROACH CAPTURED"**<br>NDB approach:<br>**"ESTABLISHED"** | cross-check position<br>check PFD FMA<br>**"CHECKED"** |
| ~8 NM final | |
| **"REDUCED NP, CONDITION LEVERS MAX"** | select RDC NP LDG switch,<br>set condition levers to MAX |
| before FAF | |
| **"FLAPS 5"** | check speed < $V_{FE5}$<br>**"SPEED CHECKED, …"**<br>select flaps 5°: **"…FLAPS 5, …"**<br>check and confirm flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A5}$ / $V_{A5\text{-}ICE}$]"** |
| **"GEAR DOWN"** | check speed < $V_{LO}$<br>**"SPEED CHECKED, …"**<br>select gear down, check red advisory<br>lights illuminate: **"…GEAR MOVING"** |

…12.18 continue on next page…

| | |
|---|---|
| **"FLAPS 15"** | check speed < $V_{FE15}$<br>**"SPEED CHECKED, …"**<br>select flaps 15°: **"…FLAPS 15, …"**<br>check and confirm flaps moving **"…MOVING",**<br>**"MINIMUM SPEED [$V_{A15}$ / $V_{A15-ICE}$]"**<br>if flaps 15° are used for landing set speed bug according speed booklet. |
| sets speed bug according speed booklet (see 9.3. Approach Speed Bug Setting)<br>**"SPEED BUGS 1 & 2 SET"** | |
| if landing with MAX RPM planned: | |
| **"MAX RPM"** | re-select RDC NP LDG switch |
| if Flaps 35° are used for landing, flaps and speed bugs shall be ordered, set and checked as described above. | |
| Final Check | |
| **"FINAL CHECK"** | check 3 green gear advisory lights are ON:<br>**"GEAR"** |
| check 3 green gear advisory lights ON:<br>**"DOWN - 3 GREENS"** | |
| | check that desired flap setting is selected and indicated: **"FLAPS"** |
| check flap setting: **"15/15"** or **"35/35"** | |
| | check condition lever setting:<br>**"CONDITION LEVERS"** |
| check condition lever setting:<br>**"(REDUCED) MAX"** | |
| | **"FINAL CHECK COMPLETED"** |
| passing FAF | |
| **"CHECK TIME"**<br>start timing (if required) | perform **OM check:**<br>check correct position / altitude<br>check that minima are set correctly<br>**"MINIMUM [DA/DH] FEET"**<br>check flight guidance systems are set correctly (FGC, PFD FMA, NAV frequencies)<br>**"OUTER MARKER CHECK COMPLETED"** |
| step-down fixes | |
| set next step-down altitude:<br>**"[ALT], ALTITUDE SELECT"** | verify step-down altitude: **"CHECKED"** |
| start of descent to MDA | |

…12.18 continue on next page…

| | |
|---|---|
| (engage VS and) set calculated VS:<br>**"(VS ENGAGED,) [FPM] SET"**<br>if ALT SEL is still displayed on PFD FMA:<br>push the ALT SEL button on FGC for at least 3 seconds<br>**"ALT SELECT CANCELLED"** | verify previously calculated VS is set and check ALT SEL is no longer displayed on PFD FMA: **"CHECKED"** |
| **"MISSED APPROACH ALTITUDE"** | select Missed Approach Altitude on Altitude Pre-select Controller:<br>**"[FL / ALT] SET"** |
| at 500ft ARTE | |
| **"500 FEET"** | turn both bleed air switches OFF:<br>**"BLEEDS OFF, ..."**<br>check that aeroplane is stabilized according stabilized approach concept:<br>**"STABILIZED"**<br>confirm landing clearance received<br>if not stabilized or not cleared to land, call:<br>**"UNSTABLE - GO AROUND"** |
| 100ft above Minimum Descent Altitude | |
| **"APPROACHING MINIMUM"** | **"CHECKED"**<br>concentrate to obtain visual cues<br>If visual references for landing are visible:<br>**"APPROACH LIGHTS (or RUNWAY) IN SIGHT"** |
| at Minimum Descent Altitude | |
| **"MINIMUM, LANDING"**<br>maintain a constant approach angle until landing flare | monitor constantly the instruments until touch-down and call out deviations |
| if Autopilot still engaged at aotopilot minimum use high (MUH): | **"AUTOPILOT"** |
| **"AUTOPILOT..."**<br>disengage the Autopilot<br>**"...OFF"** | |
| **or in case of Missed Approach / Balked Landing...** | |
| **"MINIMUM, GO AROUND..."**<br>perform PF duties for missed approach | perform PNF duties for missed approach |

12.19.

| Post Landing Procedure: | |
|---|---|
| **LP** | **RP** |
| aeroplane decelerates through 50 kts | |
| APPROACH/FLARE lights ..... OFF<br>FLIGHT/TAXI switch ..... TAXI | |
| LP has (taken over) control | |
| consider relevant circumstances,<br>and if found to be satisfactory:<br>**"CONDITION LEVER #__START/FEATHER"** | CONTROL LOCK ..... ON<br><br><br><br>"CONDITION LEVER #_.....START/FEATHER"<br>check engine indications for correct<br>engine response |
| **"AFTER LANDING CHECK"** | FLOW:<br>MAIN BUS TIE ..... TIE<br>DE-ICE / ANTI-ICE SYSTEMS ..... OFF<br>YAW DAMPER..... OFF<br>FD ..... SBY<br>AUX PUMPS ..... OFF<br>WX RADAR ..... SBY<br>FLAPS ..... 0<br>performs AFTER LANDING CHECK<br>AIR CONDITIONING ..... AS REQ'D |
| after leaving the RWY - entire aeroplane past stop bars | |
| A/COL LIGHT ..... RED | TRANSPONDER ..... STBY |
| AFTER LANDING CHECK completed and #1 propeller feathered for at least 30 seconds | |
| check STBY HYD PRESS switch pressed<br>(ON advisory light illuminated)<br>check PTU CNTRL switchlight pressed<br>(ON and green advisory lights illuminated)<br>**"HYDRAULIC CONTROLS ON "**<br>**"CONDITION LEVER #_ FUEL OFF"** | confirm #1 and #2 hydraulic systems<br>operate normally<br>confirm AC electrical system operates normally<br>CONDITION LEVER **#_** …….. FUEL OFF<br>check engine indications for correct<br>engine response:<br>**"CONDITION LEVER #_ FUEL OFF"**<br>check #_ hydraulic pressure at 2800 to<br>3000 psi<br>**"HYDRAULICS CHECKED"** |

…12.19 continue on next page…

| Aeroplane stopped on parking position | |
|---|---|
| PARK BRAKE ..... SET<br>NOSEWHEEL STEERING ..... OFF | BLEEDS ..... MIN / OFF<br>STBY HYD PRESS & PTU CNTRL ... OFF |
| **"CONDITION LEVER #_ START/ FEATHER (, #_ FUEL OFF)"**<br>or<br>**"CONDITION LEVERS START/FEATHER"** | CONDITION LEVER(S) ..... AS REQ'D<br>check engine indications for correct engine response |
| **Aeroplane stopped on parking position** | |
| give "Brakes Engaged" hand signal to the ground crew.<br>**"FASTEN BELTS OFF"** | FASTEN BELTS ..... OFF |
| DC EXT PWR / APU ..... AS REQ'D | |
| **earliest 30 seconds after propeller(s) has/have feathered** | |
| **"CONDITION LEVER #_ FUEL OFF"** or<br>**"CONDITION LEVERS FUEL OFF"** | |
| | CONDITION LEVER(S) ..... FUEL OFF<br>monitor engine indications for correct response |
| **#1 propeller has stopped turning** | |
| **"CABIN CREW - OPEN DOOR(S)"**<br>A/COL LIGHT ..... OFF | set the elevator trim to the centre of the T/O trim band<br>FLOW:<br>FLIGHT COMP. DOOR ..... UNLOCK<br>BATTERIES..... AS REQ'D<br>ENGINE INTAKE BYPASS DOORS ..... AS REQ'D<br>EXTERIOR LIGHTS ..... AS REQ'D<br>FMS ..... AS REQ'D<br>read the TRANSIT PARKING checklist |

# 13.0 APPENDIX: LIST OF ABBREVIATIONS

| | |
|---|---|
| AAL | Above Aerodrome Level |
| AC | Alternating Current |
| A/C | Aircraft |
| A/COL | Anti-Collision |
| ADC | Air Data Computer |
| ADF | Automatic Director Indicator |
| A/F | Autofeather |
| AFCS | Automatic Flight Control System |
| AGL | Above Ground Level |
| ALT | Altitude |
| ALT SEL | Altitude Select |
| ANU | Aircraft Nose Up |
| AOM | Aircraft Operator Manual |
| AP | Auto Pilot |
| A/P | Airport |
| APU | Auxiliary Power Unit |
| ARCDU | Audio and Radio Control Display Unit |
| ARM | Armed |
| ARTE | Above Runway Threshold Elevation |
| ASI | Air Speed Indicator |
| ATC | Air Traffic Control |
| ATIS | Air Traffic Information Service |
| AUX | Auxiliary |
| BW | Basic Weight |
| CAT | Category |
| CB(´s) | Circuit Breaker(s) |
| CG | Center of Gravity |
| CHR | Chronometer |
| CI | Cost Index |
| CL | Condition Lever |
| CP | Control Panel |
| DA | Decision Altitude |
| DC | Direct Current |
| DECR | Decreased |
| DH | Decision High |
| DOI | Dry Operating Index |
| DOM | Dry Operating Mass |
| ED | Engine Display |
| EFCP | EFIS Control Panel |
| EFIS | Electronic Flight Instrumentation System |
| EHSI | Electronic Horizontal Situation Indicator |
| ELT | Emergency Locator Transmitter |
| ENG | Engine |
| ESCP | Engine and System Control Panel |
| ET | Elapsed Time |
| EXT | External |
| FADEC | Full Authority Digital Electronic Controller |
| FAF | Final Approach Fix |
| FD | Flight Director |
| FGCP | Flight Guidance Control Panel |
| FL | Flight Level |
| FLT | Flight |
| FMA | Flight Mode Annunciator |
| FMS | Flight Management System |
| FP | Flight Plan |
| FS | Flight Simulator |
| FSFK | Flight Simulator Flight Keeper |
| ft | Feet |
| GND | Ground |
| GPS | Global Positioning System |
| GPWS | Ground Proximity Warning System |
| HAP | Head-up Guidance Annunciator Panel |
| HGS | Head-up Guidance System |
| hPa | Hectopascal |
| HYD | Hydraulic |
| IAS | Indicated Air Speed |

| | |
|---|---|
| ICAO | International Civil Aviation Organization |
| IRS | Inertial Reference System |
| ISA | International Standard Atmosphere |
| ISI | Integrated Standby Indicator |
| ITT | Inter Turbine Temperature |
| kg | Kilograms |
| KIAS | Knots Indicated Air Speed |
| kts | Knots |
| lbs | Pounds |
| LDG | Landing / Landing Gear |
| LM | Landing Mass |
| LP | Left Pilot |
| LVL | Level |
| MAN | Manual |
| MAX | Maximum |
| MCL | Max Climb Power |
| MCP | Max Continuous Power |
| MCR | Max Cruise Power |
| MDA | Minimum Descent Altitude |
| MFD | Multifunction Display |
| MTOP | Max Take-Off Power |
| NAV | Navigation |
| ND | Navigation Display |
| NH | High Pressure Rotor Speed |
| NL | Low Pressure Rotor Speed |
| NM | Nautical Mile |
| NP | Propeller Speed |
| NTOP | Normal Take-Off Power |
| OAT | Outside Air Temperature |
| OFP | Operation Flight Plan |
| OM | Operating Manual |
| PAX | Passenger |
| PF | Pilot Flying |
| PFCS | Powered Flight Control Surface |
| PFD | Primary Flight Display |
| PIC | Pilot in Command |
| PL | Power Lever |
| PNF | Pilot None Flying |
| RP | Right Pilot |
| PTU | Power Transfer Unit |
| PWR | Power |
| QNH | Altitude based on local pressure |
| RDC | Reduced |
| ROC | Rate of Climb |
| RPM | Revolution per Minute |
| SAT | Static Air Temperature |
| SID | Standard Departure Route |
| SBY | Standby |
| SOP | Standard Operating Procedure |
| STBY | Standby |
| TA/RA | Traffic Advisory / Resolution Advisory |
| TCAS | Traffic Alert and Collision Avoidance System |
| T/O | Take-Off |
| TOD | Top Of Descend |
| TOGA | Take-Off & Go-Around |
| TOM | Take-Off Mass |
| TORA | Take-Off Run Available |
| TOP | Take-Off Power |
| TQ | Torque |
| TRU | Transformer Rectifier Unite |
| UTC | Universal Time Coordinated |
| VHF | Very High Frequency |
| VLV | Valve |
| VMO | Maximum Operating Speed |
| VSI | Vertical Speed Indicator |
| WX | Weather |
| XACARS | Virtual Aircraft Communications Addressing and Reporting System |
| YD | Yaw Damper |
| ZFM | Zero Fuel Mass |