

Explanations

- * Transit flight deck preparation
- || Procedures
- | By heart items
- FFD First flight a day

OUTSIDE CHECK

INSIDE CABIN

- 1 **Crossfeed drain** DRAINED
 - Drain crossfeed left hand of left forward seat
 - Check closure of drainvalves
- 2 **Flaps** DOWN

OUTSIDE CABIN

- 3 **Right wing** CHECKED
 - Surface condition
 - Flap and aileron (hinges)
 - Wing tip with lights
 - Fuel and filler cap
 - Drain wing tanks
 - Landing gear, strut, tires and brakes (no leaks)
 - Engine nacelle, oil quantity, props and spinner, cowl flap and exhaust tube

NOTES: (1) If a tire looks flat, check pressure (NW 40 PSI, MW 55 PSI)
 (2) Engines may be operated with a min. 6 qts (max. 8 qts)

- 4 **Nose section** CHECKED
 - General condition
 - Baggage door check locked
 - Nose gear strut and tire (no leaks, lights)
- 5 **Left wing** CHECKED
 - As right wing
 - Stall warning vanes
 - Pitot mast
- 6 **Fuselage** CHECKED
 - General condition
 - Aft section of cabin (fire extinguisher)
 - Static ports
- 7 **Empennage** CHECKED
 - Stabilator and trim tab
 - Rudder and trim tab (antiservotab)
- 8 **Flaps** UP
 - Check operation of the flaps

OUTSIDE CHECK COMPLETED

FLIGHT DECK PREPARATION

*	1	Outside check	COMPLETED
	2	Aeroplane papers Papers, Log book, Hour counter, Mass + Balance, Performance charts	ABOARD
	3	Parking brake Apply the pressure to the top of the rudder pedals and then pull out the BRAKE	SET
*	4	Magnetos	OFF
*	5	Electrical switches All switches off	OFF
*	6	Flight controls Check elevator and aileron for free movement and full travel	FREE
	7	Gear lever	DOWN
*	8	Cowl flaps	INTERMEDIATE POSITION
	9	Trim controls Check free movement and set to neutral	CHECKED
*	10	Circuit breakers Check all circuit breakers in	CHECKED
*	11	Battery switch	ON
	12	Annunciator panel / Internal lights For night flight check all internal lights as required	CHECKED
	13	Landing gear lights	3 GREEN
*	14	Fuel check	PERFORM
	a)	Valves	ON
	b)	Mixture	FULL FORWARD
	c)	Quantity Read quantity, compare with CFP and calculate endurance	CHECKED
	d)	Fuel pumps	OFF
*	15	Battery switch	OFF

FLIGHT DECK PREPARATION COMPLETED

NOTE: After short groundstop (students change, coffee break, refueling), make a small walk around: check the aeroplane for any fluid leaks and damages of fuselage. Afterwards perform only the *TRANSIT FLIGHT DECK PREPARATION* items.

BEFORE ENGINE START

- | | | |
|---|---|-----------|
| 1 | Aeroplane preparation | COMPLETED |
| 2 | Doors
Check all doors closed | CLOSED |
| 3 | Parking brake | SET |
| 4 | Seat belts
Shoulderharness on and seat belts on empty seats secured | ON |
| 5 | Ground clear switch | ON |
| 6 | Start up clearance
Check latest ATIS, set and compare altimeter, ask for start up clearance | RECEIVED |
| 7 | Ground clear switch | OFF |

BEFORE ENGINE START CHECK COMPLETED

ENGINE START

NOTE: Normal starting sequence LH engine (I)- RH engine (II)

- | | | |
|---|---|-------------|
| 1 | Battery switch | ON |
| 2 | Alternators | ON |
| 3 | Anticollision light | ON |
| 4 | Propeller area | CLEAR |
| 5 | Engine start | PERFORM |
| | a) Mixtures | FULL RICH |
| | b) Props | HIGH RPM |
| | c) Throttles | 1/2 INCH |
| | d) Magnetos | ON |
| | e) Primer
According diagramm 4-13 in information manual | AS REQUIRED |

Expanded flight checklist

- f) **Starter** ENGAGE
- g) **Throttle** 1000 RPM
When engine starts and accelerate through 500 RPM
release starter and adjust 1000 RPM
- h) **Oil pressure** CHECKED
Check indication within 30 sec.
Check annunciator panel
- i) **Alternator**..... CHECK VOLTAGE
Alternator-light extinguished only, when both engines
are running
- k) **Gyro suction** CHECKED
Check annunciator panel suction gauge

Repeat for engine II from point e)

ENGINE START CHECK COMPLETED

NOTES: 1) Starting engine when flooded:

Mixture	IDLE cut off
Throttle	FULL forward
AUX fuel pump	Check OFF
Starter	Engage

When engine starts:

Mixture	Advance slowly
Reduce throttle	to 1000 RPM

2) When engine runs rough, push primer button as required until engine runs smooth

AFTER ENGINE START

- 1 **Avionic switch** ON
Switch the avionics switch ON, check all radios ON
 - 2 **Autopilot** CHECKED
- *
FFD - Press A/P test button: All A/P lights on, trim light flashes 4 times, 5 beeps, A/P light flashes 12 times
- FFD - Trim test: Actuate left side of split trim switch fore and aft. Trim wheel should not move. Actuate right side of split trim switch. Trim wheel should not move
- FFD - Hold A/P disc./interrupt button: Actuate electric trim switch. Trim wheel should not move
- FFD - Press FD twice and then A/P engage button: Move control yoke left and right, fore and aft. Verify A/P can be over- powered.
- FFD - Rotate trim wheel manually: Verify it can be over- powered

Expanded flight checklist

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|----------|--|-------------|
| FFD | - Press CWS switch: Verify A/P can be momentarily interrupted | |
| FFD | - Press A/P disconnect button: Verify A/P disconnects | |
| 3 | Instruments | CHECKED |
| | - Clock: set and check | |
| | - Check system in slaved position | |
| | - Compare magnetic compass with HSI and RMI and adjust DG on RH side | |
| | - If needed, switch on Marker-Identification on audio-panel | |
| 4 | NAV lights | AS REQUIRED |
| 5 | ATC clearance | VERIFIED |
| | - use COM 1 for ATC (apron, ground, tower etc) | |
| | - use COM 2 for ATIS, emergency frequency, company | |
| | - Set NAV 1 & OBS: as per expected clearance/route; identify if possible or when airborne | |
| | - Set NAV 2 & OBS: as per expected clearance/route; identify if possible or when airborne | |
| | - Check RMI pointer for correct selected indication | |
| | - DME: select frequency in mode FREQ or select either DME 1 or DME 2 in mode RMT | |
| | - Set Transponder according clearance | |
| | Set ADF (usually set a local beacon in case of emergency) | |
| | - note cleared FL/altitude on CFP | |
| | <i>REMARK: All the time during flight, when receiving a new FL/altitude, note this on your CFP as a reminder, until reached initial approach altitude.</i> | |
| | <i>On aeroplane HB-LRY with APA: set the received altitude/FL always immediately on the APA (altitude preselect alert)</i> | |

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AFTER ENGINE START COMPLETED

TAXI CHECK

- | | | |
|---|--|---------|
| 1 | Brakes | CHECKED |
| 2 | Instruments | CHECKED |
| | Check flight instruments: IAS zero, attitude indicators stable, VSI zero, gyros turning correctly. | |
| | Recheck altimeters on actual QNH and compare reading | |

TAXI CHECK COMPLETED

RUN UP CHECK

Perform only, when *oil temperature* has increased (approaching or in green arc)

- | | | |
|---|------------------------------------|----------|
| 1 | Parking brake | SET |
| 2 | Run up | PERFORM |
| | a) Throttles | 1000 RPM |
| | b) Engine instruments | CHECKED |
| | Check gauges for proper indication | |

Expanded flight checklist

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|---|---------------|
| c) Manifold pressure lines | DRAINED |
| Drain LH / RH MP-line for 5 sec. | |
| d) Propeller | FEATHER CHECK |
| Move LH / RH prop momentarily fully aft; check RPM drop (max. 300 RPM!) and MP rise | |
| e) Throttles | 2300 RPM |
| Move both throttles to 2300 RPM, check aeroplane <u>not</u> moving! | |
| f) Propellers | EXERCISE |
| Exercise props (difference 300 RPM) | |
| g) Alternate Air | ON, then OFF |
| Move lever to open, then to closed. Check secured! | |
| h) Throttles | 2000 RPM |
| i) Magnetos | CHECKED |
| Max. drop 150 RPM, difference L / R max. 50 RPM | |
| k) Alternator output | CHECKED |
| l) Gyro suction | CHECKED |
| 4.8 - 5.1 inch HG | |
| m) Throttles | IDLE |
| Move throttles fully aft and check min. 500 RPM | |
| n) Throttles | 1000 RPM |

RUN UP CHECK COMPLETED

BEFORE DEPARTURE

- | | |
|---|---------------|
| 1 Flight controls | CHECKED |
| Check controls for full travel, check surface movements outside | |
| 2 Trim | CHECKED / SET |
| Check electrical pitch trim and set neutral for T/O | |
| 3 Flaps | SET |
| 0° normal T/O, 25° short field T/O | |
| 4 Fuel check | PERFORM |
| a) Valves | ON |
| b) Mixture | FULL FORWARD |
| c) Quantity | CHECKED |
| Read actual fuel quantity and say endurance | |
| d) Fuel pumps | OFF |
| 5 Cowl flaps | INTERMEDIATE |

Expanded flight checklist

- | | | |
|---|---|-----------------|
| 6 | Friction | POSITION
SET |
| 7 | Propellers | HIGH RPM |
| 8 | ATC clearance | RECHECKED |
| | Either: Recheck the ATC-clearance regarding COM 1 and 2,
NAV 1 and 2, DME, RMI, TRSP and ADF
Or: When ATC clearance was not available during "AFTER
ENGINE START" checklist, ask now for clearance and
make then your NAV setting (according points "ATC
clearance verified" in "AFTER ENGINE START" check-
list) | |
| 9 | Take off briefing | COMPLETED |

Call outs for take off briefing

- a) V_{MC}, V_R, V_{YSE} (blue line)
- b) Performance handling of your aeroplane in case of serious malfunctions (FIRST: reduce drag: gear and flaps up, then check full power on operating engine, identify and feather dead engine)
- c) Flight path (e.g. SID) to a fix (beacon, VOR, intersection)
- d) Climbing altitude (check MSA and highest obstacle on IAL)
- e) Kind of approaches in case of problems (visual, ILS, LOC etc to RWY...)

BEFORE DEPARTURE CHECK COMPLETED

LINE UP

- | | | |
|---|---|-------------|
| 1 | Approach | CLEAR |
| 2 | Lights | ALL ON |
| 3 | Pitot heat | AS REQUIRED |
| | Switch it on for an IR-flight | |
| 4 | Transponder | ON ALTITUDE |
| 5 | Heading | CHECKED |
| | Check and compare with RWY HDG, adjust DG if needed | |
| 6 | Time Check | PERFORM |
| | Perform, when T/O clearance is received | |

LINE UP CHECK COMPLETED

CLIMB CHECK

Perform, when workload is reduced and situation permits!

- | | | | |
|---|---------------------------------------|--------------------------|----------|
| 1 | Gear | CHECKED UP | |
| 2 | Flaps | CHECKED UP | |
| 3 | Cowl flaps | INTERMEDIATE
POSITION | |
| 4 | Climb power | SET | A |
| | 33" MP / 2600 RPM / Mixture full rich | | |
| 5 | Landing- and Taxi-light | OFF | |

CLIMB CHECK COMPLETED

CRUISE CHECK

- | | | | |
|---|---|------------------|----------|
| 1 | Altimeters | SET and COMPARED | |
| | When passing TA, set <u>both</u> altimeters to standard QNH and compare the readings (altitude or FL) | | |
| 2 | Power and Mixture | SET | A |
| | Set cruise power: 27" MP / 2400 RPM / lean to max 1400° Fahrenheit | | |
| 3 | Engine instruments | CHECKED | |
| | Periodically check all engine instruments for normal operating range | | |
| 4 | Cowl flaps | CLOSED | |

CRUISE CHECK COMPLETED

DESCENT CHECK

- | | | |
|---|--|------------------------|
| 1 | A ATIS | RECEIVED |
| 2 | B Briefing and NAV-setting | COMPLETED |
| 3 | C Circuit breakers | CHECKED |
| 4 | D Directional gyros | CHECKED |
| 5 | E Electrical equipment | CHECKED |
| | Anti-ice as required, lights as required | |
| 6 | F Fuel: Mixture controls | ADJUST WITH
DESCENT |
| | Max. EGT 1300° F during descent | |

DESCENT CHECK COMPLETED

Approach briefing

- a) Clearance limit
- b) Kind of approach / runway in use
- c) approach / landing configuration
- d) Vital altitudes (incl. MSA) and applicable MINIMA
- e) Missed approach procedure
- f) Setting / use of navigation aids / equipment
- g) Runway remarks: length / width / lights (APL, VASIS, PAPI)

CHECK FOR APPROACH

Perform always, when cleared down to an altitude

- | | | |
|----|--|------------------|
| 1 | Altimeters | SET and COMPARED |
| | Set <u>both</u> altimeters on local QNH and compare readings | |
| 2 | Fuel check | PERFORM |
| a) | Valves | ON |
| b) | Mixture | FULL FORWARD |
| c) | Quantity | CHECKED |
| | Read actual fuel quantity and calculate endurance | |
| d) | Fuel pumps | OFF |

APPROACH CHECK COMPLETED

OUTER MARKER CHECK

To be done at OM or substitute (either radial or DME distance) or generally 1000ft AGL

- | | | |
|---|---|-----------|
| 1 | Time | CHECKED |
| | Necessary for non precision approach | |
| 2 | QNH | RECHECKED |
| 3 | Altitude | COMPARE |
| | Read indicated altitude and compare with altimeters | |
| 4 | Minimum | REPEAT |

OUTER MARKER CHECK COMPLETED

FINAL CHECK

- | | | |
|---|--|----------------|
| 1 | Gear
Check gear handle in down position.
Check three green landing-gear lights ON | DOWN / 3 GREEN |
| 2 | Flaps
Check flaps in the required landing position | CHECKED |
| 3 | RPM | SET HIGH |
| 4 | Speed brakes (on aeroplane: HB-LRY) | NOT DEPLOYED |

FINAL CHECK COMPLETED

AFTER LANDING CHECK

Perform the check after landing in a geographic sequence and only when runway is vacated and taxi speed is reached

- | | | |
|---|--|--|
| 1 | Time Check
Note: This TC is to be done for calculation of landing time and correct application of cooling time of engines | PERFORM |
| 2 | Heater
Three position switch to FAN for two minutes with air intake in the open position for cooling purpose. | FAN ON |
| 3 | Cowl flaps | FULLY OPEN |
| 4 | Transponder | STBY |
| 5 | Flaps | UP D |
| 6 | Pitot heat | OFF |
| 7 | Lights
Switch landing lights off (if needed for taxi, leave one illuminated). Keep all other lights on (beacon, recognition) | AS REQUIRED |

AFTER LANDING CHECK COMPLETED

PARKING

- | | | |
|---|--|--------------|
| 1 | Parking brake | SET |
| 2 | Heater
After two minutes cooling time period, switch it off. | OFF |
| 3 | Avionic switch | OFF |
| 4 | Throttles | FULL AFT |
| 5 | Mixture | IDLE CUT OFF |
| 6 | External lights | ALL OFF |

Expanded flight checklist

- | | | |
|----|---|-------------|
| 7 | Magnetos | OFF |
| 8 | Alternators | OFF |
| 9 | Flighttime recorder, log book | OFF |
| 10 | Internal lights | ALL OFF |
| 11 | Battery switch | OFF |
| 12 | Parking brake | AS REQUIRED |
| | - Leave parking brake ON, when aeroplane is not
chocked or tied down. | |
| | - Consider as well outside temperature (freezing of
brakes during winter months !) | |
| 13 | Controls | SECURED |
| 14 | Aeroplane | TIED DOWN |

PARKING CHECK COMPLETED

MISSED APPROACH PROCEDURE

- | | | |
|---|---|----------------|
| 1 | Pitch / Power
Simultaneously increase pitch (ANU ~2°-3°) and
add full power. <i>Carefully: do not</i> overboost engines. | INCREASE / ADD |
| 2 | Flaps
- Lift the flaps handle to position 1 (10° flaps).
- If the approach was performed with flaps 1 only (10° flaps),
leave the flaps in present position and perform
first <i>gear up operation</i> . | UP |
| 3 | Gear
ONLY, when positive ROC is established | UP |
| 4 | Flaps
At safe altitude (~ 500 AGL) and safe speed (~ blue line)
retract the flaps fully up.
1-engine out: retract the flaps <i>immediatley</i> after gear operation. | UP |
| 5 | Cowl flaps | INTERMEDIATE |
| 6 | Climb power
Remember: climb out PITCH ~5°-7° ANU. | SET |
| 7 | ATC | INFORM |

If performing same approach again, no climb and descent check required.