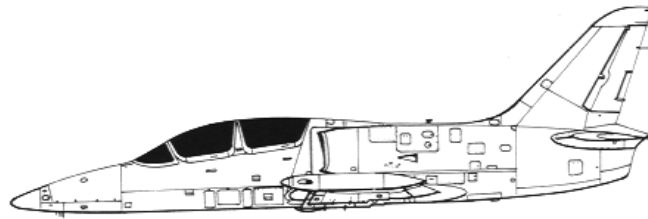


DCS L-39 ALBATROS

„REAL PILOT“ START-UP, TAXI AND TAKEOFF CHECKLISTS



V 1.0

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INTRODUCTIONS

A. CHECKLISTS

This compilation contains amplified normal and (hopefully in the future) emergency procedures. Checklists contain these procedures in abbreviated form and are issued as separate technical orders. Line items in the flight manual and checklists are identical with respect to the arrangement and item number.

B. HOW TO GET PERSONAL COPIES

Each flight crew member is entitled to personal copies of the flight manual, safety supplements, operational supplement and flight crew checklists. The required quantities should be ordered before you need them to assure their prompt receipt. Check with you supply personnel; it is their job to fulfill your technical order request. The easiest way to get a copy of the amplified normal and emergency Procedures is to download it from this source: <http://forums.eagle.ru/showthread.php?t=146451>

C. WARNINGS, CAUTIONS AND NOTES

The following definitions apply to "Warnings", "Cautions" and "Notes" found throughout the manual.

WARNING

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

CAUTION

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

NOTE

An operating procedure, condition, technique, etc., which is considered essential to emphasize.

D. Use of Words Shall, Will, Should and May

The words shall or will are to be used to indicate a mandatory requirement. The word should is to be used to indicate a nonmandatory desire or preferred method of accomplishment. The word may is used to indicate an acceptable or suggested means of accomplishment.

BEFORE START CHECKS		
1.	BATTERY SWITCH	ON
2.	ENGINE SWITCH	ON
3.	INVERTOR I, INVERTOR II, RDO SWITCH	ON
<p>NOTE</p> <p>The ENGINE switch activates a fuel boost pump. If the boost pump fails to operate and DON'T START light does not go off within 5 seconds, do not start the engine.</p>		
4.	FDR SWITCH	ON
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">CAUTION</div> <p>Before engine start, instruct the ground crew to set wheel chocks under the main landing gear.</p>		
5.	EXTERNAL GROUND POWER	ORDER TO ATTACH
6.	EXTERNAL POWER INDICATOR	ILLUMINATES (WHEN EXTERNAL POWER SOURCE ATTACHED)
7.	RADIO SET CONTROL BOX	SET
8.	AUDIO PANEL	SET
9.	ICS CONTROL BOX	SET
10.	ADF CONTROL BOX	SET
<p>On ICS control box position the switch to ADF (left), O/I beacon switch to O position (outer beacon). On ADF control box select ANT position, volume control to maximum, mode switch to TLF, tune the station and fine tune to maximum indicator's deflection. The station signal shall be audible and ADF indicator shall indicate relative bearing to the station after selection of AUT position on ADF control box. Repeat the same procedure for inner beacon. Select required ADF mode. On ICS control box position the switch to OFF (right).</p>		
11.	RSBN CONTROL BOX	SET
12.	RSBN SYSTEM ALTITUDE SELECTOR	SET ACCORDING TO ALTITUDE INDICATOR
13.	DIRECTIONAL GYRO CONTROL BOX	SET
END		

ENGINE START		
1.	ATC, START-UP	REQUEST
2.	INVERTOR I, INVERTOR II, RDO SWITCH	OFF
3.	SIGNAL LIGHTS - AIRCONDIT OFF - CANOPY UNLOCKED - HYD. SYST. FAIL - GENERATOR - EMERGENCY GENERATOR - INV. 115 V FAIL	FLASHING ON FLASHING FLASHING FLASHING
CAUTION The engine throttle finger-lift, for retarding the-throttle from IDLE to STOP is available in the forward cockpit only. It is therefore crucial that the forward pilot be aware and prepared to retard the throttle to STOP in case of an engine hot start or at any other time the engine must be shut down.		
4.	TURBO START BUTTON, STOP WATCH	DEPRESS FOR 2 SECONDS, START THE STOP WATCH
5.	TURBINE STARTER LIGHT	ON BY 25 SEC. MAX
6.	STOP WATCH	RESET
3.	ENGINE START BUTTON, STOP WATCH	DEPRESS FOR 2 SECONDS, START THE STOP WATCH
4.	THROTTLE	IDLE WITHIN 3 TO 6 SECONDS FROM STEP 3
5.	RPM, TRIPLE ENGINE, EGT INDICATORS	CHECK VALUES
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 10px;">CAUTION</div> <ul style="list-style-type: none"> • If the APU starter is not disconnected within 45 sec., abort start and switch APU to STOP (TURBO STOP switch). • If the EGT rises rapidly and approaches the high limit, abort start immediately. • Strong tail wind can cause an EGI temperature increase and aggravate fire condition. Observe the following: <p style="text-align: center;">NOTE</p> <p>If any of the following conditions is not met, abort start sequence by retarding the throttle to STOP.</p> <ul style="list-style-type: none"> - HPC RPM RISE WITHIN 8 SEC. - MINIMUM 20% RPM WITHIN 15 SEC. - EGT RISE WITHIN 25 SEC. - WHEN HPC RPM 30 %, LPC RPM START TO INCREASE - MAX EGT 685°C - CONTINUOUS HPC RPM RISING - 41.5 - 44.5 % TURBINE STARTER LIGHT GOES OUT - IDLE RPM WITHIN 50 SEC. - OIL PRESSURE AT IDLE 2 kp/cm² MINIMUM 		
6.	ENGINE AT IDLE RPM	56 ± 1.5 %
7.	OBSERVE THE FOLLOWING: - OIL PRESSURE - CAUTION AND WARNING LIGHTS	2 kp/cm² MINIMUM OUT FOLLOWING: HYD.SYS FAIL ENG. MIN. OIL PRESS.
END		

AFTER START CHECKS		
1.	CANOPY	CLOSE AND LOCK CANOPY UNLOCKED LIGHT OUT
2.	PRESSURIZATION / ECS CONTROL LEVER	FULLY FORWARD AIRCONDIT OFF LIGHT OUT
3.	MAIN CB / SWITCH - GENERATOR MAIN AND GENERATOR EMERG.	ON EMERGENCY GENERATOR AND GENERATOR LIGHTS OUT
4.	INVERTOR I, INVERTOR II	ON
5.	RDO, MRP-RV, RSBN, DE-ICING SIGNAL, SDU	ON
6.	WINGTIP TANKS	AS REQUIRED
7.	EXTERNAL POWER	DISCONNECT CHECK VOLTAGE
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px; margin-bottom: 5px;">CAUTION</div> <p>Should an icing sensor is not in the air stream on the ground, it does not indicate icing conditions. If the engine is started at icing conditions with ambient temperature below 5°C, position the anti-ice mode switch to MANUAL and leave it there the whole time the engine is running on the ground.</p>		
8.	ANTI-ICE MODE SWITCH	AUTOMATIC OR MANUAL
9.	RADIO MAGNETIC INDICATOR	SET ACCORDING TO RUNWAY ORIENTATION
END		

BEFORE TAXI CHECKS		
1.	AILERON TRIM	TRIM
2.	ELEVATOR TRIM	2 MARKS AFT
NOTE When flight without external stores, elevator trim to neutral.		
3.	FLIGHT CONTROLS	CHECK FOR FREE MOVEMENT AND CORRECT RESPONSE OF ELEVATORS, AILERONS AND RUDDERS
4.	FLAPS	CHECK LANDING AND UP POSITIONS SET TO TAKE-OFF CHECK INDICATORS
5.	OIL TEMPERATURE	-5°C MINIMUM
NOTE Before first flight of the day, perform following engine warming-up and engine run-up test: <ul style="list-style-type: none"> • When oil temperature is less than - 5 °C after one minute engine run at idle and one minute at 85%, increase RPM to 95% and terminate engine warming-up when oil temperature reaches -5 °C minimum. • Check engine surge bleed valves opening during engine warm-up: Shift the throttle slowly; when the valve behind fifth compressor stage closes (LPC RPM sudden decreasing by 3 to 4%), HPC RPM shall indicate 74 to 77%, when the valve behind third compressor stage closes (LPC RPM sudden decreasing by 1 to 2%), HPC RPM shall be 86 to 89%. • Acceleration and deceleration check. Record the fuel pressure at engine idle and max. Shift the throttle from IDLE to TAKE UP within 1 to 2 seconds, start stop watch simultaneously. Stop the stop watch in that moment, when the fuel pressure indicator shows a value of max. engine rating minus 10%. Acceleration time shall take from 9 to 12 seconds. Run the engine at max from 1s to 20 seconds and reset the stop watch. Retard the throttle from TAKE UP to IDLE within 1 to 2 seconds, start stop watch simultaneously. Stop the stop watch in that moment, when the fuel pressure indicator shows a value of idle engine rating measured in the beginning of this check. Deceleration time shall take not more than 5 seconds. • During acceleration and deceleration checkout, observe fuel pressure, EGT and RPM whether follow limits, refer to Section V, Operating Limitation. • After next 20 seconds, check the idle RPM. <div style="text-align: center; border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">CAUTION</div> <p style="text-align: center;">When engine is running in ice conditions at RPM less than 85%, increase HPC RPM every 5 minutes to 93% for one minute.</p> <p style="text-align: center;">NOTE During engine run-up check, extend speed-brakes every 5 minutes.</p>		
6.	VOLTAMMETER	28.5 VOLTS
7.	HYDRAULIC PRESSURE	135 TO 150 kp/cm²
NOTE If the HYDRAULIC EMER indicator reading is below 150 kp/cm ² , shut down the engine and terminate the preflight inspection.		
8.	SPEEDBRAKES	CHECK EXTENDED AND RETRACTED POSITIONS CHECK INDICATOR
9.	THROTTLE	IDLE

BEFORE TAXI CHECKS		
10.	BRAKES	APPLY CHECK PRESSURE
13.	EMERGENCY / PARKING BRAKE LEVER	NEUTRAL (RELEASE)
14.	TAXI CLEARANCE	REQUEST
END		

TAXI

CAUTION

- Taxi must be made with the canopies closed.
- Check that the area behind and to the sides of the aircraft is clear of obstacles, personnel or other aircraft.

1.	WHEEL CHOCKS	ORDER TO REMOVE
2.	POWER	80 – 85 %

CAUTION

- Taxi at the lowest practical RPM and moderate speed
- To move away from chocks, avoid the use of excessive power. Once the aircraft has started moving, retard the throttle to IDLE so as to prevent blowing objects which may cause injury to ground crew or damage to ground equipment.

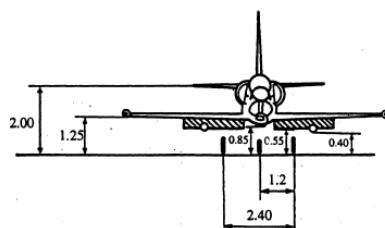
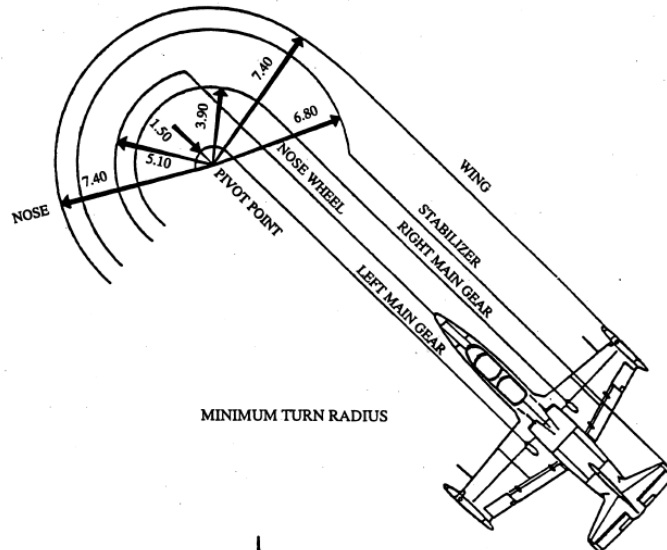
NOTE

- Recommended minimum turning radius of INBD MLG is 1.5 m. When the turning radius is less, the NLG tire will be excessively worn.
- Maximum permissible taxiing speed (the same as for A/C towing) is quoted as follows:

Taxiing	Configuration	Speed limit (km/h) concrete runway	Speed limit (km/h) grass strip
Straight	all	60	15
Turn	without stores	15	5
Turn	with stores	10	5

CAUTION

After excessive full braking the taxi speed 30 km/h shall be maintained because of possible wheelbrakes overheating.



END

BEFORE TAKE OFF CHECKS		
1.	TRIMS	CONFIRM POSITIONS
2.	SPEEDBRAKES	IN
3.	FLAPS	TAKEOFF POSITION
4.	FUEL QUANTITY & WING TIP TANKS LIGHT	CHECK
5.	FLIGHT AND ENGINE INSTRUMENTS	CHECK
6.	OXYGEN	CHECK QUANTITY
7.	CANOPY	CLOSED AND LOCKED HANDLE FORWARD LIGHT OUT
<p>NOTE If an instrument flying hood is carried, it must be kept at the retracted position throughout the takeoff and landing phases to ensure safe ejection.</p>		
8.	HYDRAULIC PRESSURE	CHECK
9.	CAUTION AND WARNING LIGHTS	CHECK LIGHTS OUT
10.	FLIGHT CONTROLS	CHECK
11.	PRESSURIZATION / ECS CONTROL LEVER	FULLY FORWARD
12.	RUNWAY ENTRY / TAKE-OFF CLEARANCE	REQUEST
END		

LINE-UP CHECKS		
1.	NOSE WHEEL	ALLIGNED WITH R/W HEADING
2.	COMPASSES	CHECK HEADING
3.	ADF, RMI	CHECK
4.	GMK	ALIGN
5.	ALTIMETER	CHECK
6.	PITOT TUBE HEATING	AS REQUIRED
7.	LANDING / TAXI LIGHTS	AS REQUIRED
END		

TAKE OFF		
Before starting the takeoff roll, mentally go through the "Abort" procedure and relevant take off data.		
1.	ENGINE INSTRUMENTS	CHECK WITHIN LIMITS RPM, EGT, OIL PRESSURE
2.	CAUTION AND WARNING LIGHTS	OUT
3.	CLOCK	START FLIGHT TIME COUNTING
4.	THROTTLE	TAKE UP
5.	WHEEL BRAKES	RELEASE
<p>Maintain directional control initially by differential braking and then by rudder. The rudder becomes effective at approximately 60 km/h.</p> <p>At 150 km/h IAS, smoothly raise the nose wheel. An aircraft in clean configuration will become airborne at approximately 180 to 190 km/h IAS.</p> <div style="text-align: center; border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">CAUTION</div> <p style="text-align: center;">Exceeding Max gear extended speed (330 km/h IAS) may cause damage to the landing gear doors and prevent their subsequent operation.</p> <p>With positive rate of climb at airspeed 220 km/h IAS and altitude 20 m AGL minimum:</p>		
6.	LANDING GEAR LEVER	UP
7.	LANDING GEAR INDICATOR LIGHTS	CHECK SEQUENCE DOORS OUT LIGHT ILLUMIN. THREE GREEN EXTINGUISH THREE RED COME ON DOORS OUT EXTINGUISHES
8.	MECHANICAL INDICATOR	CHECK
Airspeed 250 km/h IAS, altitude 50 m AGL minimum:		
9.	FLAPS	UP
10.	ELECTRICAL AND MECHANICAL INDICAT.	CHECK
11.	TRIM	AS REQUIRED
<p>NOTE</p> <p>Flaps are automatically retracted at airspeed 310 km/h. Overcome this speed with flaps extended can cause an unexpected change of aircraft behavior (unexpected flaps retraction).</p> <p>CROSS WIND TAKEOFF</p> <p>During a cross wind take off, use the same procedures as for normal takeoff. However, since during the takeoff roll, the aircraft nose tends to crab into the wind, be prepared with the opposite rudder. Also as the speed increases the upwind will tend to rise, be prepared with the ailerons into the wind. When airborne, be aware of the cross controls situation and prepare to align controls to gain a coordinated flight.</p> <p>GRASS STRIP TAKEOFF</p> <p>During a grass strip take off, use the same procedures as for normal takeoff. On wet or snow-covered surface, the aircraft can stay on brakes up to 88 to 98% RPM maximum. Aircraft acceleration is slower, maintain directional control initially by differential braking up to 100 km/h IAS. Takeoff roll distance may be longer by 50%. To decrease friction of NLG wheel, perform takeoff roll with a control stick pulled up. At 160 to 165 km/h IAS, raise the nose wheel by pulling the stick fully aft. An aircraft will become airborne at approximately 190 to 200 km/h IAS.</p> <div style="text-align: center; border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">CAUTION</div> <ul style="list-style-type: none"> • When takeoff is performed by several aircraft at the same moment, distance between aircraft should be kept sufficient not to intake dirt, raised by neighbor aircraft. • Takeoff on runway fallen to soft through wetness or on thawed snow is not recommended. 		
END		

CLIMB**NOTE**

After retracting flaps, retard the throttle to NORM (103%) and maintain a nose-up attitude until the initial climb speed of 300 km/h IAS is attained. The first turn out of traffic pattern will be at a minimum of 300 km/h IAS and 100 m AGL (if the airfield rules does not determine otherwise). Maintain climb speed 350 km/h IAS. Trim as required.

1.	OXYGEN SYSTEM	ABOVE 2,000 m CHECK PRESSURE CHECK BLINKER
2.	FLIGHT AND ENGINE INSTRUMENTS	CHECK
3.	FUEL QUANTITY	CHECK
4.	HYDRAULIC PRESSURE	CHECK
5.	CABIN ALTIMETER	CHECK
6.	ALTIMETER	SET
7.	LANDING / TAXI LIGHT	CHECK OFF
END		