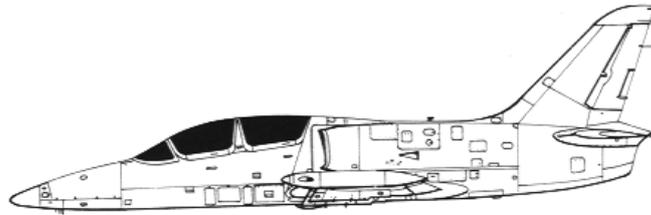


DCS L-39 ALBATROS

CHECKLISTS



V 1.3

PREPARED BY LINO_GERMANY

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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.

INTERIOR INSPECTIONS		
1.	BATTERY SWITCH	ON
2.	EXTERNAL POWER INDICATOR	ILLUMINATES (WHEN EXTERNAL POWER SOURCE ATTACHED)

LEFT CONSOLE

1.	FLIGHT SUIT VENTILATION	AS REQUIRED
2.	OXYGEN SUPPLY	OPEN (CCW)
3.	OXYGEN CONTROLS - DILUTER DEMAND SWITCH - EMERGENCY SWITCH	NORM OFF
4.	HELMET VENTILATION	AS REQUIRED
5.	FUEL SHUT-OFF LEVER	FORWARD AND GUARDED
6.	PITOT HEAT BUTTONS	OFF
7.	FDR SWITCH	OFF
8.	RADIO SET CONTROL BOX	SET
9.	AUDIO PANEL	SET
10.	ICS CONTROL BOX	SET
11.	THROTTLE	FULL AND FREE MOVEMENT
12.	PITOT TUBE SELECTOR	MAIN
13.	HELMET VISOR HEATING PANEL	AS REQUIRED
14.	EMERGENCY / PARKING BRAKE LEVER	FORWARD (APPLY)
15.	INSTRUMENT LIGHTS CONTROL	WHITE
16.	LANDING / TAXI LIGHT SWITCH	OFF
17.	OXYGEN PRESSURE INDICATOR	150 kg/cm²

NOTE

When temperature is below zero degrees of Celsius, the pressure can drop down to 130 kg/cm².

INSTRUMENT PANEL

1.	L/G CONTROL LEVER	DOWN
NOTE The L/G lever in the aft cockpit shall be in neutral (center) position.		
2.	ACCELEROMETER	RESET CHECK "+1 G"
3.	GUN SIGHT - GYRO UNIT ARRESTMENT LEVER	FIXED
4.	AIRSPEED / MACH INDICATOR	CHECK
5.	ALTIMETER	SET
6.	RADAR ALTIMETER	CHECK INDICATION SET DANGEROUS HEIGHT
7.	ADI	CHECK ILLUMINATING RED
8.	RMI	CHECK
9.	RANGE INDICATOR	CHECK
10.	VERTICAL VELOCITY INDICATOR	ZERO
11.	ADF INDICATOR	CHECK
12.	CLOCK	SET

INTERIOR INSPECTIONS		
13.	CABIN PRESSURE / ALTIMETER ELEV.	CHECK FIELD ALT. DIFFERENCE ZERO
14.	VOLTAMMETER	EXTERNAL POWER VOLTAGE
15.	ENGINE INSTRUMENTS	CHECK
16.	DIFFUSER AND SUIT TEMP. CONTR.	AUT. SET TEMPERATURE
17.	DIFFUSER	SET DIRECTION CLOSE

CENTER PEDESTAL

1.	SIGNAL FLARE BUTTONS	CHECK BASIC POSITION
2.	ARMAMENT PANEL	ALL OFF
3.	LOWER INDICATION PANEL TO STORES	ILLUMINATING ACCORDING TO STORES
4.	PUS-0 LIGHT	ILLUMINATING
5.	ROCKET MODE SELECTOR	CENTER
6.	MAIN BRAKE PRESSURE INDICATOR	ZERO
7.	EMERGENCY BRAKE PRESS. INDIC.	CONDITION
8.	TRIM INDICATOR	CONDITION
9.	FIRE SIG TEST SWITCH	I AND II FIRE LIGHT ILLUMINATES

RIGHT CONSOLE

1.	PRESSURIZATION / ECS HANDLE	OFF AFT POSITION
2.	ADF CONTROL BOX	SET
3.	AUXILARY SWITCH PANEL - SEAT UNBLOCKING SWITCH - CABIN HEATING - ENGINE INDICAT. EMERGENCY - ANTI ICING - NAVIGATION LIGHTS - SDU - RSBN	GUARDED AUTOMATIC OFF OFF AS REQUIRED OFF NAVIGATION
4.	RSBN CONTROL BOX	SET
5.	FOUR HYDRAULIC EMER. LEVERS	FORWARD AND SAFETY WIRED
6.	A&W LIGHTS INTENSITY CONTROLS - CHECK - BRIGHTNESS	LIGHTS ILLUMIN. ADJUST
7.	HYDRAULIC GAUGE	CONDITION
8.	GMK CONTROL BOX - MODE SWITCH - HEMISPHERE SWITCH - LATITUDE SELECTOR	MC SET SET
9.	JPT-REG. TEST	I AND II LIGHTS ILLUMINATING
10.	IFF CONTROL BOX	SET CODE
END		

BEFORE START CHECKS		
1.	RADIO SWITCHES	ON
2.	SIGNAL LIGHTS - AIRCONDIT OFF - CANOPY UNLOCKED - HYD. SYST. FAIL - GENERATOR - EMERGENCY GENERATOR - ENG. MIN. OIL PRESS - DON'T START - INV. 3X36 V FAIL - WINGTIP TANKS	ON ON ON ON FLASHING ON ON ON ON
3.	ENGINE SWITCH	ON DON'T START AND INV. 3X36V FAIL LIGHTS OUT WITHIN 5 SECONDS
NOTE 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.		
4.	FUEL INDICATOR	CHECK
The fuel indicator should indicate value according the flight mission to be flown. Check engine vibration indicator by means of CHECK VIBRATION button.		
5.	ADI / RMI	OPERATIVE
6.	THROTTLE	STOP
7.	FDR SWITCH	ON GREEN LIGHT ILLUMINATES
8.	VOLTAMMETER	CHECK 22 V MINIMUM
NOTE Do not attempt an engine battery start if battery voltage is less than 22 V.		
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 10px 0;">WARNING</div> Failure to comply the next step could result in damage to equipment or injury to pilot in aft cockpit.		
9.	AFT CANOPY	CLOSE
10.	AFT CANOPY UNLOCKED LIGHT	COMES OFF
END		

ENGINE START

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.

NOTE

If you were instructed to request engine start permission, turn on INVERTOR I, INVERTOR II and RDO. When permission request ist done, disable INVERTOR I, INVERTOR II and RDO.

CAUTION

Before engine start, instruct the ground crew to set wheel chocks under the main landing gear.

1.	TURBO START BUTTON	DEPRESS FOR 2 SECONDS
2.	TURBINE STARTER LIGHT	ON BY 25 SEC. MAX
3.	ENGINE START BUTTON	DEPRESS FOR 2 SECONDS
4.	THROTTLE	IDLE WITHIN 3 TO 6 SECONDS FROM STEP 3
5.	RPM, TRIPLE ENGINE, EGT INDICATORS	CHECK VALUES

CAUTION

- 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:

NOTE

If any of the following conditions is not met, abort start sequence by retarding the throttle to STOP.

- 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.	AIR DIFFUSOR	AS REQUIRED
10.	IFF	ON
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.	POWER	85 % RPM FOR ONE MINUTE
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="border: 1px solid black; padding: 2px; display: inline-block;">CAUTION</div> When engine is running in ice conditions at RPM less than 85%, increase HPC RPM every 5 minutes to 93% for one minute.		
NOTE During engine run-up check, extend speed-brakes every 5 minutes.		
6.	AIRCRAFT SYSTEMS	CHECK
<p>Intercom check: Select radio channel, switch off squelch circuit on audio panel, and position ADF switch to OFF on ICS control box. Adjust volume by rotating RADIO knob on ICS control box. Depress the ICS transmission button and adjust intercom volume by rotating the INTERCOM knob. Aft cockpit transmission overrides the fwd one. Stand-by intercom check: Positioning switch to STAND-BY should provide the ICS transmission.</p> <p>ADF check: 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. Repeat the same procedure for inner beacon. Select required ADF mode when checkout is terminated.</p> <p>Radio altimeter check: The height indicator pointer moves to right position and back to zero within 1 to 2 minutes from MRP-RV switching on. Push the TEST button on the height indicator: Warning light shall illuminate when DH pointer is set to 15 meters or below.</p>		

BEFORE TAXI CHECKS**De-ice sensor heating check:**

ANTI-ICING switch to AUTOMATIC position and depress the de-ice sensor heating test button. The light beside the button shall come on. After button releasing, reposition the switch to MANUAL. DEICING ON light shall come on within 30 seconds. Finally reposition the switch to AUTOMATIC.

CAUTION

When ANTI-ICING switch in MANUAL position, and DE-ICING ON light will not illuminate, shutdown the engine.

RSBN check:

Tune RSBN station of known location, within 3 minutes the RMI shall indicate bearing and distance to this station and AZIMUTH CORRECT light illuminates. Verify the RSBN proper operation by means of TESTING button on the auxiliary switch panel. When the button is depressed, the RSBN system should set distance 291.5 ± 3 km at the range indicator and course $177^\circ \pm 2^\circ$ at the RMI.

7.	VOLTAMMETER	28.5 VOLTS
8.	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.		
9.	SPEEDBRAKES	CHECK EXTENDED AND RETRACTED POSITIONS CHECK INDICATOR
10.	FLAPS	CHECK LANDING AND UP POSITIONS SET TO TAKE-OFF CHECK INDICATOR
11.	THROOTLE	IDLE
12.	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.

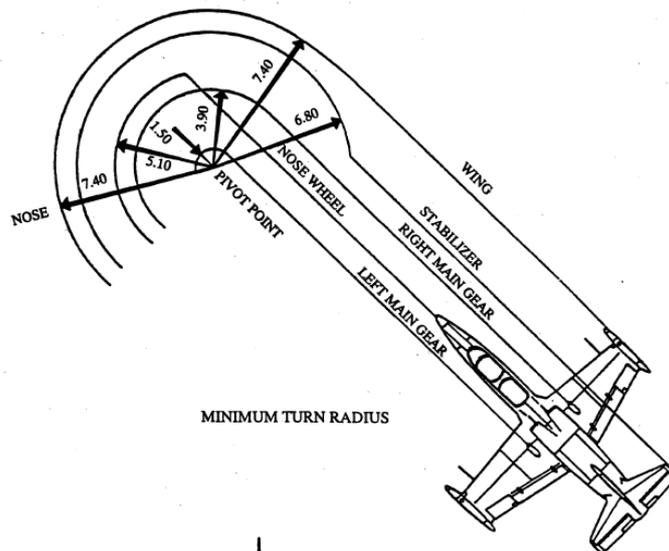
NOTE

- 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:

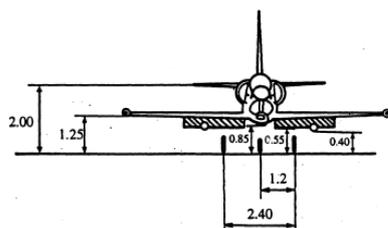
Taxiing	Configuration	Speed limit (km/h) concrete runway	Speed limit (km/h) grass strip
Straight	all	60	15
Turn	without stores	15	5
Turn	with stores	10	5

CAUTION

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



MINIMUM TURN RADIUS



GROUND CLEARANCES

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		

CRUISE		
As soon as practical after leveling off, accomplish the following:		
1.	FUEL QUANTITY	CHECK
2.	OXYGEN	CHECK
3.	ENGINE INSTRUMENTS	CHECK
END		

DESCENT		
1.	FUEL QUANTITY	CHECK
2.	FLIGHT AND ENGINE INSTRUMENTS	CHECK
3.	ALTIMETER	SET AS REQUIRED
4.	DE-ICING	AS REQUIRED
END		

APPROACH CHECKS		
1.	WARNING AND ADVIS. / CAUTION PANELS	CHECK
2.	FUEL QUANTITY	CHECK
3.	HYDRAULIC PRESSURE	135 TO 150 kp/cm²
4.	LANDING LIGHTS	AS REQUIRED
END		

APPROACH (VFR)**NOTE**

During approach and landing, recommended view from the cockpit is mainly left-ahead, supplemental view is straight ahead.

WARNING

In flight phases where it is required to retard the throttle to IDLE, be aware to throttle finger-lift is not lifted and the IDLE position inadvertently exceeded.

INITIAL APPROACH PHASE

1.	SPEED	450 km/h IAS
2.	POWER	AS REQUIRED
3.	ALTITUDE	DESCENT TO 500 m AGL
4.	SPEEDBRAKES	AS REQUIRED
5.	GUN SIGHT GYRO ARRESTMENT LEVER	FIXED
6.	AIRSPEED	DECREASE TO TRAFFIC PATTERN AIRSPEED 350 km/h IAS

DOWN-WIND

AS SPEED DECREASES BELOW 330 km/h:		
1.	LANDING GEAR LEVER	DOWN
2.	LANDING GEAR INDICATOR LIGHTS	CHECK SEQUENCE DOORS OUT LIGHT ILLUMIN. THREE RED EXTINGUISH THREE GREEN COME ON DOORS OUT EXTINGUISHES
3.	AIRSPEED	300 km/h IAS
4.	TRIM	AS REQUIRED
5.	SPEEDBRAKES	RETRACT IF EXTENDED CHECK INDICATOR

BASE LEG

AS SPEED DECREASES BELOW 280 km/h:		
1.	FLAPS	T/O Check the corresponding light and the two mechanical indicators for confirmation
NOTE The flaps will not extend if speed is above the flaps limiting speed (310 km/h IAS).		
2.	SPEED	MAINTAIN 280 km/h IAS NORMALLY THE REQUIRED POWER WILL BE 95 TO 100 % RPM
3.	SINK RATE	4 TO 5 m/s

APPROACH (VFR)		
4.	HYDRAULIC SYSTEM	CHECK 135 TO 150 kp/cm² 0 kp/cm ² PRESSURE IN WHEEL BRAKE SYSTEM
5.	TRIM	AS REQUIRED
6.	ALTITUDE BEFORE TURNING BASE	400 TO 420 m AGL

TURNING BASE

1.	ALTITUDE	320 TO 330 m AGL
2.	DISTANCE FROM RUNWAY THRESHOLD	5 TO 5.5 km
3.	FLAPS	LAND Check the corresponding light and the two mechanical indicators for confirmation
4.	SINK RATE	4 TO 5 m/s
5.	SPEED	MIN. 260 km/h IAS
6.	ALTITUDE	250 m AGL MINIMUM

FINAL APPROACH

<p>NOTE</p> <p>When established on final, it is recommended to maintain a minimum of 70% RPM in order to assure optimum engine acceleration if required.</p>		
<div style="border: 1px solid black; padding: 2px; display: inline-block;">CAUTION</div>		
<p>At engine RPM about 75 and 85%, the surge bleed valves open and close. When engine operation is not stable, increase or decrease power to leave this RPM range.</p>		
1.	LANDING GEAR	VERIFY DOWN AND LOCKED
2.	SPEED	230 km/h IAS MIN.
3.	ALTITUDE	120 m AGL MINIMUM
4.	LANDING LIGHTS	AS REQUIRED
5.	THRESHOLD SPEED	200 km/h IAS MIN.
6.	FLARE ALTITUDE	6 TO 8 m AGL
7.	THROTTLE	IDLE
8.	FLOAT	UP TO 1 m
9.	TOUCH-DOWN SPEED	180 km/h IAS
END		

LANDING

NORMAL LANDING

Throughout the final approach, use the airspeed indicator and runway as primary references.

NOTE

If runway length and conditions permit, an aerodynamic braking may be carried out to conserve brakes and tires. To perform an aerodynamic braking, increase the aircraft pitch attitude after touchdown by gradually pulling the control stick to the full aft position. (Retraction of flaps enables longer aerodynamic braking.)

1. Lower the nose and bring the nose-wheel in contact with the runway before the elevator becomes ineffective.

WARNING

- The wheel brakes will operate **ONLY** when the nose-wheel is firmly in contact with the ground.
- Be prepared to use the emergency brake lever if there is no response from the normal brakes.

NOTE

Push the stick forward when braking failure is experienced, in order to increase the nose-wheel loading.

2. Start braking gently, increase the brakes application as required and maintain directional control by use of rudder.
3. At speed below approximately 110 km/h IAS, use differential braking to maintain directional control.

CROSS-WIND LANDING

Cross-wind landing is performed by using normal landing procedures. The aircraft is the most sensitive to tend to bank by the wind at airspeeds about 100 km/h IAS. However, while using normal approach speeds, counteract drift by using the crab or the upwind wing down methods or by a combination of both, to keep the aircraft ground track aligned with the runway center line, leveling the wings just prior to touchdown.

In case of strong cross-wind and/or gusts with a possibility of wind-shear, it is recommended that the flaps be maintained in TAKE-OFF position during landing, to improve aircraft lateral control and to obtain, if required, a quicker acceleration when applying power.

After touchdown, keep the control stick into the wind and lower the nose-wheel smoothly on the runway as soon as practical, maintaining the center line track with rudder and, if required, moderate use of differential braking. Crabbing on touchdown must be avoided.

If heavy weight landing cannot be prevented, bear in mind that the sink rate touchdown, is considerably higher with increased weight than with normal landing weight due to the increased landing speed. A straight-in approach should therefore be flown maintaining airspeeds specified in the performance data, using power to control the sink rate. Flare should be gradual and touchdown smooth. A stall prior to touchdown could result in an abrupt and uncontrollable increase in sink rate with the possibility of exceeding permissible limits.

CAUTION

The vertical velocity indicator readings are subject to a remarkable lag. They are therefore reliable during the approach but not in transient phases such as during the flare and contact with the runway.

GRASS STRIP LANDING

Grass strip landing is performed by using normal landing procedures. The aircraft tends to lower the nose-wheel at higher speeds, so hold the stick fully aft after the touchdown. Brake more gently than during concrete runway landing.

LANDING

MINIMUM RUN LANDING

For minimum run landing, fly an accurate final approach and touch-down speeds. After touch-down, lower the nose-wheel, retract the flaps and push the control stick fully forward. These actions will introduce more weight on the wheels thus reducing tire skidding. Apply brakes gently in a single smooth application with constantly increasing pedal pressure as the speed decreases.

NOTE

The anti-skid system regulates the hydraulic pressure delivered to the brakes in order to obtain at any time the maximum coefficient of friction between the wheels and the runway for any aircraft configuration: To minimize brake wear, brakes should be used as sparingly as possible. Care should be exercised to take full advantage of the length of the runway during landing or aborted take-off. Although the anti-skid system operates automatically during braking, thereby minimizing the possibility of a locked wheel, heavy wheel braking may lock the wheels more easily when there is considerable lift on the wings, than when the same pressure is applied with the full weight of the aircraft on the wheels.

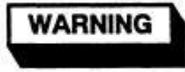
If the anti-skid system fails and a locked wheel is suspected, momentarily release the brakes and then continuously re-apply. Rough braking, with the anti-skid system un-serviceable may cause damage of the main landing gear wheel tires. Therefore, in case of an anti-skid failure it is crucial to brake gently.

END

MISSED APPROACH		
<p>NOTE Make the decision to go-around as early as possible and do not hesitate to use maximum power.</p>		
1.	THROTTLE	MAXIMUM
2.	SPEEDBRAKE	IN IF EXTENDED
3.	FLAPS	T/O
4.	SPEED	210 km/h IAS
5.	ATTITUDE	TAKE-OFF AOA
6.	SPEED	230 TO 250 km/h IAS
WITH POSITIVE RATE OF CLIMB:		
7.	GEAR	UP
ACCELERATING THROUGH 260 km/h IAS:		
8.	FLAPS	UP
9.	LANDING LIGHTS	AS REQUIRED
10.	TRIM	AS REQUIRED
11.	CONFIGURATION	CHECK LANDING GEAR, SPEED BRAKE AND FLAPS POSITION INDICATORS
<p>NOTE If a touchdown cannot be avoided, do not attempt to keep the aircraft off the ground. Continue to fly the aircraft to touchdown and when touchdown is made, lower the nose slightly, avoiding nose-wheel contact with the ground and accelerate to take-off speed, then establish take-off attitude and allow the aircraft to fly off the ground. Once airborne, adopt normal missed approach procedure.</p>		
END		

TOUCH AND GO LANDING

The following procedure is to be adopted when a normal landing has been attempted with the main wheels in contact with the runway and another approach and landing is desired.



- Touch and go landings encompass all aspects of landing and take-off characteristics in a relatively short time. Be constantly alert for a possible malfunction and execute the procedures promptly and precisely, during this critical phase of flight.
- The instrument flying hood must be kept in the retracted position throughout the take-off and landing phases in order to ensure safe ejection in case of emergency.

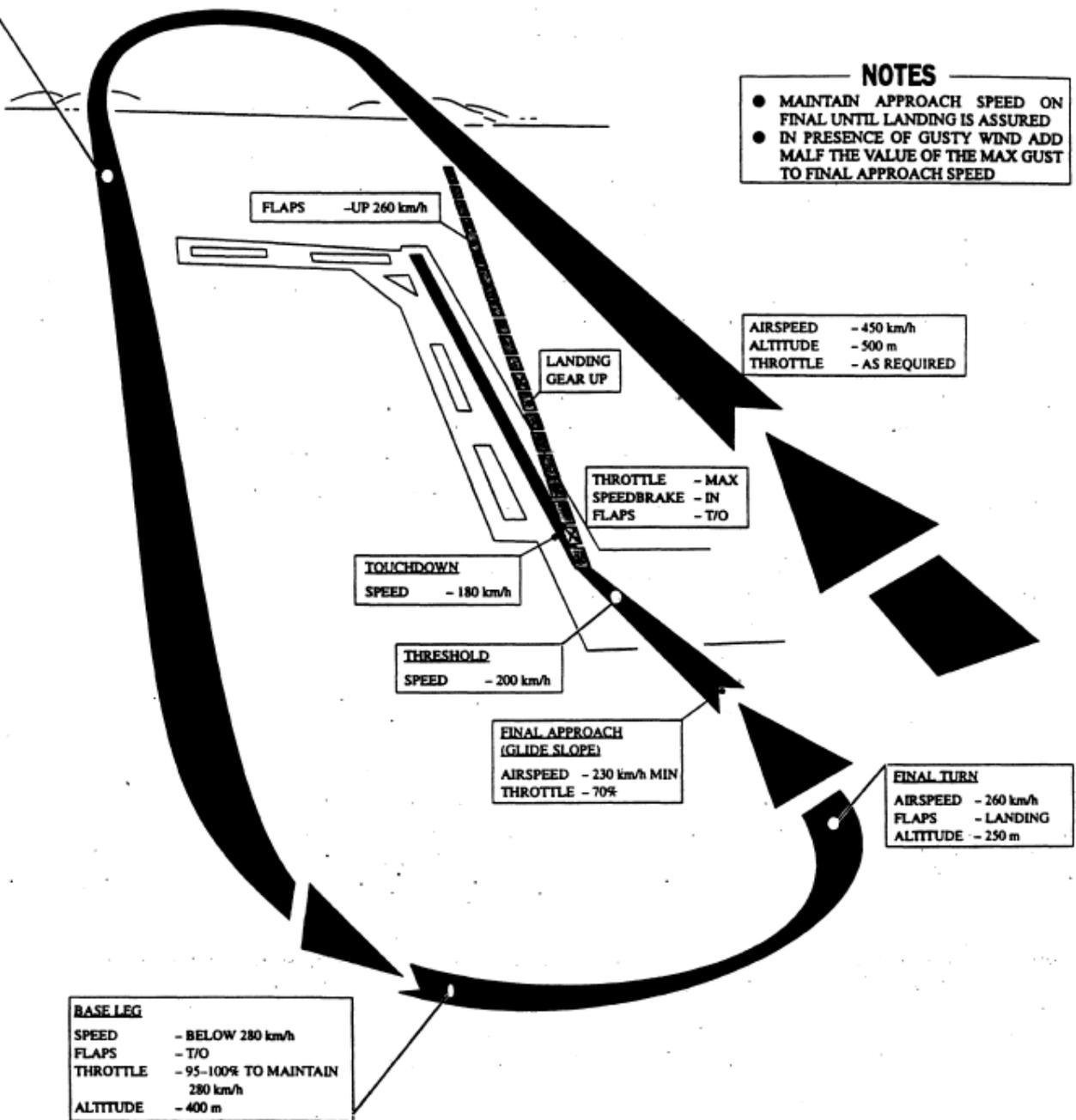
1.	THROTTLE	MAXIMUM
2.	SPEEDBRAKE	IN IF EXTENDED
3.	FLAPS	T/O
4.	ENGINE INSTRUMENTS	CHECK
CONTINUE AS PER NOMAL TAKE-OFF		
END		

TOUCH AND GO LANDING

DOWN WIND
 SPEED - BELOW 300 km/h
 LANDING GEAR - DOWN
 SPEED BRAKE - IN
 FLAPS - T/O
 THROTTLE - AS NECESSARY

NOTES

- MAINTAIN APPROACH SPEED ON FINAL UNTIL LANDING IS ASSURED
- IN PRESENCE OF GUSTY WIND ADD HALF THE VALUE OF THE MAX GUST TO FINAL APPROACH SPEED



FLAPS -UP 260 km/h

AIRSPED - 450 km/h
 ALTITUDE - 500 m
 THROTTLE - AS REQUIRED

LANDING GEAR UP

THROTTLE - MAX
 SPEEDBRAKE - IN
 FLAPS - T/O

TOUCHDOWN
 SPEED - 180 km/h

THRESHOLD
 SPEED - 200 km/h

FINAL APPROACH
 (GLIDE SLOPE)
 AIRSPED - 230 km/h MIN
 THROTTLE - 70%

FINAL TURN
 AIRSPED - 260 km/h
 FLAPS - LANDING
 ALTITUDE - 250 m

BASE LEG
 SPEED - BELOW 280 km/h
 FLAPS - T/O
 THROTTLE - 95-100% TO MAINTAIN 280 km/h
 ALTITUDE - 400 m

INSTRUMENT APPROACH (RSBN/SDU)**ENTRY**

1.	CONFIRMATION	CRUISE
2.	AIRSPEED	370 km/h IAS
3.	POWER	AS REQUIRED TO MAINTAIN SPEED

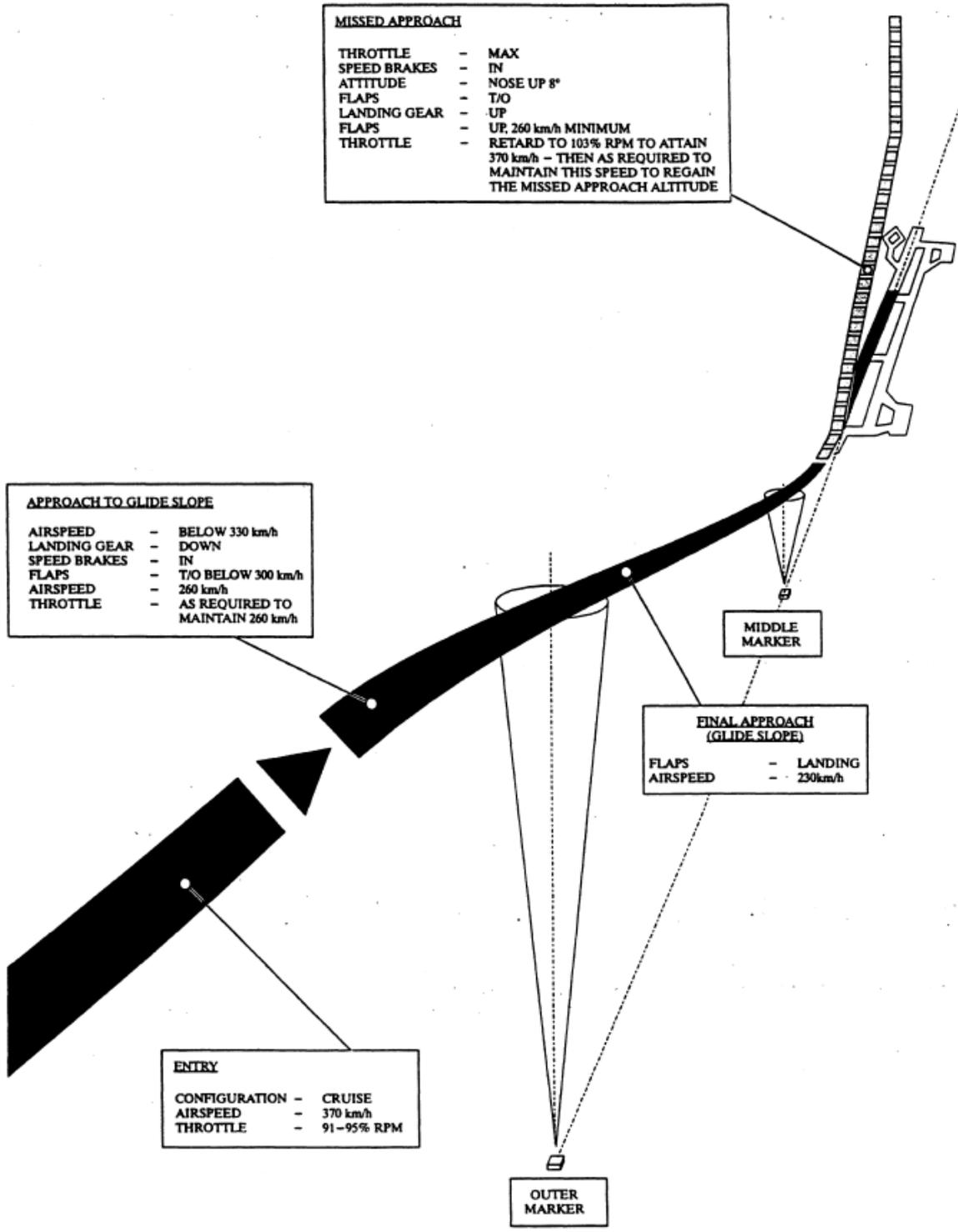
APPROACH TO GLIDE SLOPE

1.	AIRSPEED	BELOW 330 km/h IAS
2.	LANDING GEAR	DOWN CHECK INDICATORS
3.	SPEEDBRAKES	IN CHECK INDICATORS
4.	AIRSPEED	BELOW 280 km/h IAS
5.	FLAPS	T/O CHECK INDICATORS
6.	TRIM	AS REQUIRED
7.	AIRSPEED	260 km/h IAS
Maintain speed and configuration until glide-slope intercept.		

GLIDE SLOPE INTERCEPT / FINAL APPROACH

1.	FLAPS	DOWN
2.	LANDING GEAR	VERIFY DOWN AND LOCKED
3.	AIRSPEED	230 km/h IAS
4.	POWER	AS REQUIRED TO MAINTAIN 230 km/h IAS MINIMUM
5.	LANDING LIGHTS	AS REQUIRED
6.	THRESHOLD SPEED	200 km/h IAS MINIMUM
7.	FLARE ALTITUDE	6 TO 8 m AGL
8.	THROTTLE	IDLE
9.	FLOAT	UP TO 1 m
10.	TOUCH-DOWN SPEED	180 km/h IAS
END		

INSTRUMENT APPROACH (RSBN/SDU)



INSTRUMENT APPROACH (RADAR APPROACH)

ENTRY AND DOWN-WIND

1.	CONFIRMATION	CRUISE
2.	AIRSPEED	370 km/h IAS
3.	POWER	AS REQUIRED TO MAINTAIN SPEED
4.	SPEEDBRAKES	IN CHECK INDICATORS

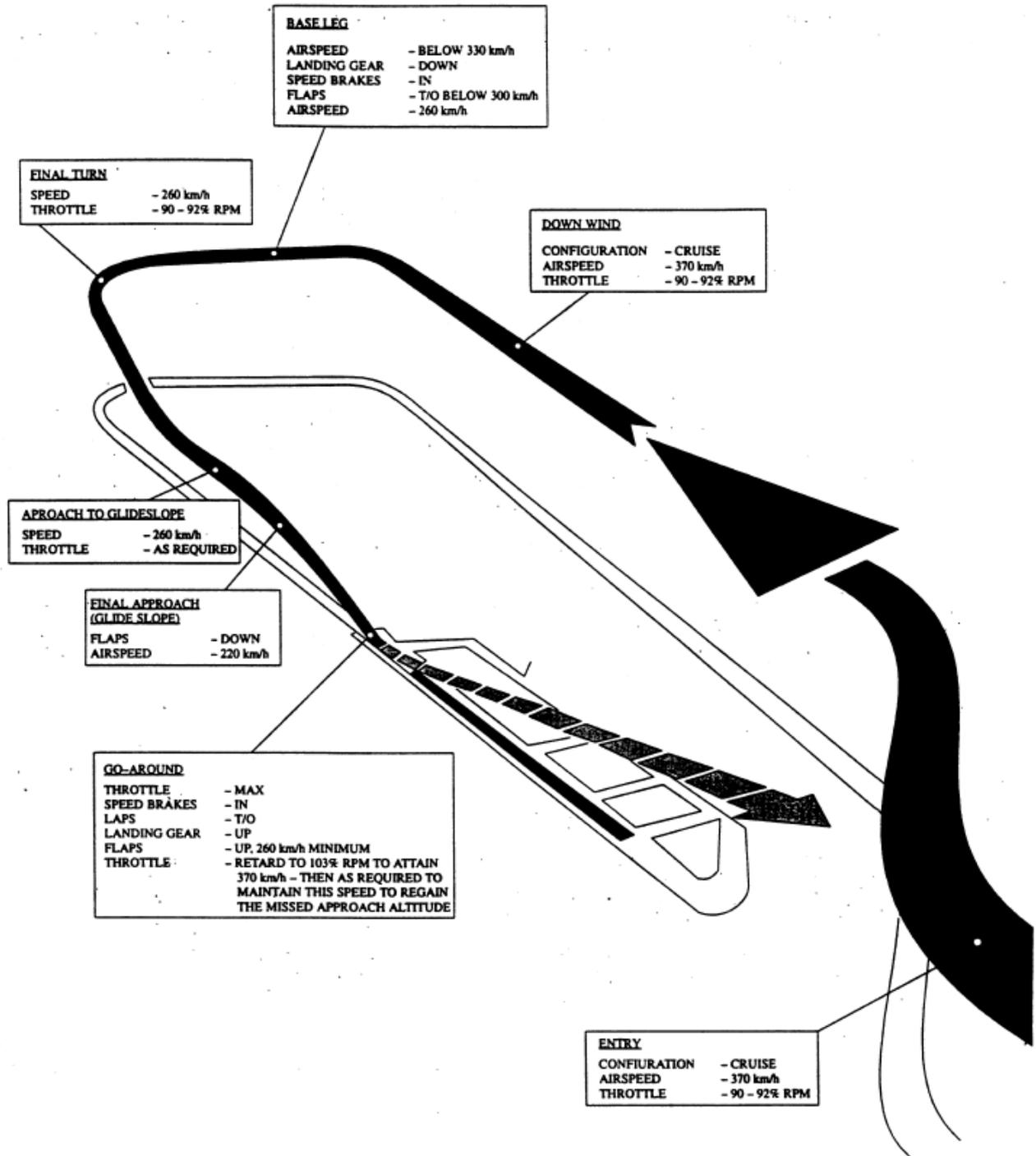
BASE LEG

1.	AIRSPEED	BELOW 330 km/h IAS
2.	LANDING GEAR	DOWN CHECK INDICATORS
4.	AIRSPEED	BELOW 280 km/h IAS
5.	FLAPS	T/O CHECK INDICATORS
6.	TRIM	AS REQUIRED
7.	AIRSPEED	260 km/h IAS

FINAL APPROACH

1.	FLAPS	DOWN
2.	LANDING GEAR	VERIFY DOWN AND LOCKED
3.	AIRSPEED	230 km/h IAS
4.	POWER	AS REQUIRED TO MAINTAIN 230 km/h IAS MINIMUM
5.	LANDING LIGHTS	AS REQUIRED
6.	THRESHOLD SPEED	200 km/h IAS MINIMUM
7.	FLARE ALTITUDE	6 TO 8 m AGL
8.	THROTTLE	IDLE
9.	FLOAT	UP TO 1 m
10.	TOUCH-DOWN SPEED	180 km/h IAS
END		

INSTRUMENT APPROACH (RADAR APPROACH)



INSTRUMENT MISSED APPROACH		
1.	THROTTLE	MAXIMUM
2.	SPEEDBRAKE	IN IF EXTENDED
3.	FLAPS	T/O
4.	SPEED	210 km/h IAS
5.	ATTITUDE WITH POSITIVE RATE OF CLIMB	APPROX. 8° NOSE UP
6.	LANDING GEAR	UP
7.	FLAPS	UP
8.	POWER	RETARD THROTTLE TO NOM (103 %) TO ATTAIN 350 km/h IAS THEN AS REQUIRED TO MAINTAIN 350 km/h IAS TO MISSED APPROACH ALTITUDE
END		

AFTER LANDING CHECKS**NOTE**

Conduct the following steps when clear of the runway.

1.	LANDING / TAXI LIGHTS	AS REQUIRED
2.	FLAPS	UP
3.	SPEEDBRAKES	IN
4.	TRIMS	NEUTRAL
5.	DE-ICING	OFF
6.	PITOT TUBE HEATING	OFF
END		

ENGINE SHUT DOWN		
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">CAUTION</div> <p>Avoid applying the parking brake if brakes are suspended to be exceptionally hot.</p>		
1.	PARKING BRAKE	APPLY
2.	THROTTLE	IDLE
3.	ENGINE COOLING	2 MINUTES
4.	PRESSURIZATION / ECS LEVER	OFF
5.	VENTILATION SUIT CONTROLLER	CLOSE (CW)
6.	ELECTRICAL SWITCHES	OFF EXCEPT ENGINE, BATTERY AND JPT REG
7.	THROTTLE	TO STOP
8.	ENGINE RUN DOWN	CHECK FROM IDLE TO 0% RPM: 20 SEC. HPC, 25 SEC. LPC
9.	ENGINE AND JPT REG	OFF
10.	FDR	OFF
11.	BATTERY	OFF
12.	CANOPY	OPEN
13.	WHEEL CHOCKS	IN PLACE
14.	PARKING BRAKE	RELEASE WHEN CHOCKS IN PLACE
15.	OXYGEN VALVE	CLOSE (CW)
END		