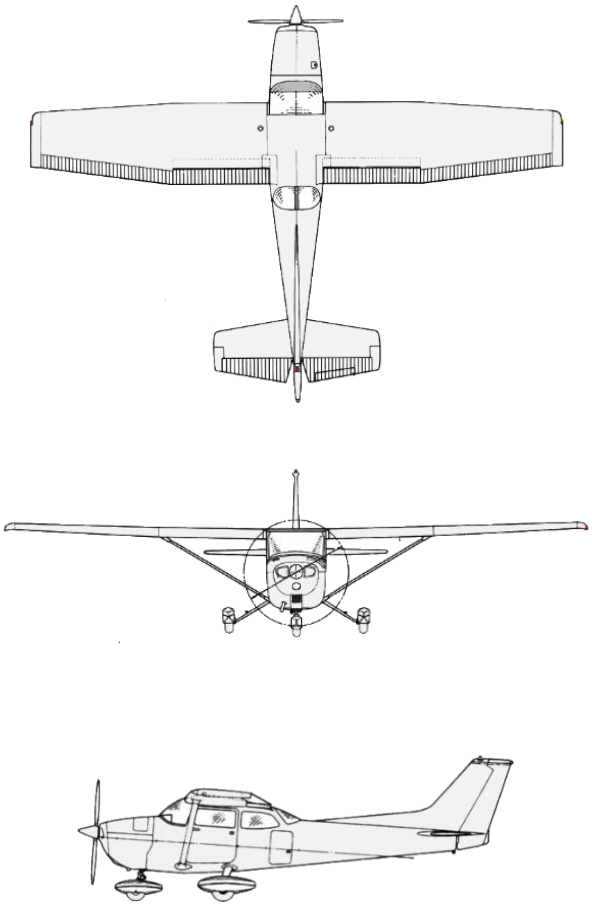
PROCEDURES
CESSNA 172

PH-SKC
PH-JBC
PH-DON

PROCEDURES-C172 – EN – VERSIE 1.9 – 01.04.2025

info@vliegclubhilversum.nl



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Disclaimer:

This publication has been compiled with the greatest care. However, neither the authors nor the authors and the ACHA assume any liability for any damages resulting from any inaccuracies and/or omissions in this publication. Despite the information in this release, the respective official Pilot handbook (POH) is the main source of information regarding the operations of the Cessna 172s flown in the ACHA and should therefore take precedence over the information contained in this publication.

Versie 1.09. 01.04.2025

Contents

Revision record

Revision pages from version 1.0

REVISION NUMBER:	REVISION DATE:	TOTAL PAGES:	REVISED PAGES:	NOTES:
	26-01-2022	ALL	ALL	-
	29-01-2022	3	2 - 8 - 41	CORRECTED ITEMS
	30-01-2022	ALL	ALL	CORRECTED ITEMS
	01-02-2022	1	39	CORRECTED ITEMS
	26-02-2022	4	25,34,39,43	CORRECTED ITEMS
	20-03-2022	ALL	ALL	CORRECTED ITEMS
	04-04-2022	ALL	ALL	CORRECTED ITEMS
	05-05-2022	3	8 - 9 - 23	CORREDTED SPEEDS
	22-05-2022	1	8	CORRECTED ITEMS
	26-05-2022	ALL	22, 25, 26, 27	REVISED SLOW FLIGHT AND CARB HEAT STALL EXER.
	31-08-2022	1	12	ADDED RADIO TELEPHONY EXAMPLES
	31-08-2022	1	35	REVISED CIRCUIT PROCEDURES
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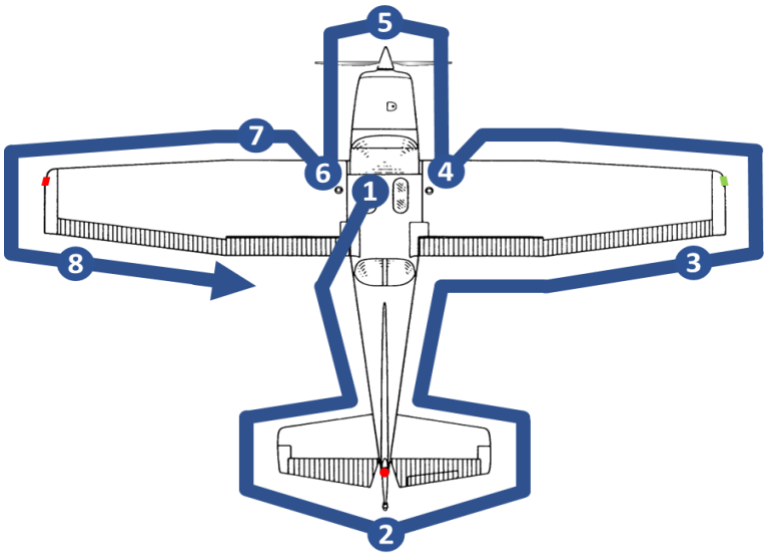
	10-09-2022	1	44	PRECAUTIONARY LANDING
	19-09-2022	1	15	ADDED MISSING NUMBERING
1.8	27-12-2022	47	ALL	INCLUSION RADIO PROCEDURES, RE ORDENING OF CIRCUIT PROCEDURES, NON-NORMAL PROCEDURES AND DOWNWIND CHECKLIST&PROCEDURES
1.7	08-04-2023	ALL	ALL 14 AND 15 SPECIFIC	LAYOUT AND IMAGES ADAPTED TO LATEST CHANGES CF OTHER MANUALS AND CHECKLISTS. PWR SETTING TABLE AND TAXI CHECKS
1.8	01-05-2024	ALL	ALL	MINOR TEXTUAL ADJUSTMENTS WALKAROUND OIL LEVEL CHANGE GENERAL INFO WEIGHT CHANGE CLIMB PROCEDURE CHANGE R/T EXAMPLES CHANGE MIN ALT FOR MANOUVERS CHANGED CF OM PROCEDURE T&G ADDED FLAPS SELECTION PROCEDURE CHANGE
1.9	01-04-2025	ALL	ALL	SEVERAL MINOR TEXTUAL AND GRAPHICAL CHANGES ADDED NORMAL AND ABNORMAL CHECKLIST ADDED ITEM BRIEFING IN NORMAL C/L AND ADDED BRIEFING PROCEDURE CHANGED NORMAL C/L ORDER AVIONICS MASTER SWITCH AND RADIO'S CHANGED CHECKLIST NAME CHANGED MEMORY ITEMS EMERGENCY C/L CHANGED MAX T/O WEIGHT UTILITY CATEGORY ADDED STALL EXERCISE APPR TO STALL IN LDG

				CONFIG IN DESC TURN ADDED STALL EXERCISE APPR TO STALL IN APPR CONFIG IN CLMB TURN CHANGED CLIMB OUT TEXT IN T/O PROCEDURE CF AIP
1.9	01-04-2025	ALL	ALL	TEXTURAL CHANGE SOFT FIELD TAKEOFF CHANGED DOWNWIND SPEED AND NOTE FOR FINAL APPROACH SPEED ADDED APPENDICES FOR ALL CESSNA AIRCRAFT CHECKLISTS AND PH-JBC DIFFERENCES

CESSNA 172
WALK-AROUND CHECK AND VISUAL INSPECTION



1 CABIN

Airplane documents ..... CHECKED
Gust lock & Pitot cover ..... REMOVED AND STOWED
Parking brake ..... ON
Ignition key ..... OFF
Canopy ..... CLEAN
All circuit breakers ..... IN
Master Switch ..... ON
Fuel Quantity Indicators ..... CHECK QUANTITY
Flaps ..... DOWN
All aircraft lights ..... ON, CHECK OPERATION
All aircraft lights ..... OFF
Master Switch ..... OFF
HOBBS and VUT ..... CHECKED
Foreign object inspection in cabin ..... CHECKED
Emergency Locator Transmitter (ELT) ..... AUTO or ARM

2 EMPENNAGE AND TAIL

Baggage door ..... CHECK LOCKED
Control Surfaces ..... CHECK FREEDOM

3 RIGHT WING – Trailing Edge

Flap ..... CHECK FOR SECURITY & CONDITION
Aileron ..... CHECK FREEDOM OF MOVEMENT & SECURITY

4 RIGHT WING

Main Wheel Tire ..... CHECK FOR PROPER INFLATION
Fuel Tank Sump ..... SAMPLE
Fuel Quantity ..... CHECK VISUALLY
Fuel Filler Cap ..... SECURE

5 NOSE

Engine oil level ..... PH-DON/PH-SKC MIN 5 MAX 7 QRTS
..... PH-JBC MIN 6 MAX 8 QRTS
Fuel Strainer ..... DRAIN
Propeller and Spinner ..... CHECK FOR NICKS AND SECURITY
Landing Light ..... CHECK CLEANLINESS
Air Filter ..... CHECK FOR FOREIGN MATTER
Nose Gear Shock Strut ..... CHECK FOR PROPER INFLATION
Nose Wheel Tire ..... CHECK FOR PROPER INFLATION
Static Source Opening ..... CHECK FOR BLOCKAGE

6 LEFT WING

Main Wheel Tire ..... CHECK FOR PROPER INFLATION
Fuel Tank Sump ..... SAMPLE
Fuel Quantity ..... CHECK VISUALLY
Fuel Filler Cap ..... SECURE

7 LEFT WING – Leading Edge

Pitot tube ..... CHECK OPENING FOR BLOCKAGE
Fuel Tank Vent Opening .. CHECK OPENING FOR BLOCKAGE
Stall Warning Opening ..... CHECK OPENING FOR BLOCKAGE

8 LEFT WING – Trailing Edge

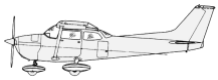
Aileron ... CHECK FREEDOM OF MOVEMENT AND SECURITY
Flap ..... CHECK FOR SECURITY AND CONDITION

WALK-AROUND CHECKLIST COMPLETED

NORMAL CHECKLISTS C-172
PH-SKC

Perform blue checklist items from memory

VFR DAY ONLY



BEFORE STARTING ENGINE

Gust lock & pitot cover	REMOVED & STOWED
Walk-around and visual inspection	COMPLETED
Aircraft documents	ON BOARD
Seats & seatbelts	ADJUSTED & SECURED
Departure/pax briefing	COMPLETED
Doors & windows	CLOSED & LOCKED
Parking brake	SET
Fuel selector	BOTH
All electrical switches	OFF
Avionics masters switch	OFF
Circuit breakers	IN
Master switch	ON
Fuel quantity	CHECKED
HOBBS & VUT	NOTED

STARTING ENGINE

Mixture	RICH
Carburetor heat	OFF
Prime	AS REQUIRED & LOCKED
Throttle	1 CM
Beacon light	ON
Propeller	CLEAR
Ignition switch	START

AFTER STARTING ENGINE

Throttle	1000 RPM
Oil pressure	CHECK
Starter warning light	OFF
Ammeter	CHARGING (+)
Flaps	UP
Avionics master switch	ON
Radio equipment & transponder	ON/SET
Flight instruments	SET & CHECKED
Parking brake	RELEASE

DURING TAXIING

Brakes	CHECK
Instruments	CHECK

ENGINE RUNUP

Throttle	1000 RPM
Parking brake	SET
Check behind	CLEAR
Throttle	1700 RPM
Engine instruments	CHECK
Carburetor heat	(check RPM drop) ON
Carburetor heat	(RPM back to 1700) OFF
Magnetos	(drop 125 RPM, diff. 50) R / BOTH / L / BOTH
Ammeter	CHARGING (+)
Throttle idle	±700 RPM
Throttle	1000 RPM
Throttle friction	SET

BEFORE TAKEOFF

Flight controls	CHECKED
Rudder & elevator trim	SET FOR TAKEOFF
Flaps	(Grass, 10°) SET FOR TAKEOFF
Transponder	ALT
Landing light	ON
Takeoff briefing	COMPLETED
Parking brake	RELEASE

AFTER TAKEOFF (Above 200ft AAL)

Flaps	UP
Landing light	OFF

APPROACH

Approach briefing	COMPLETED
Altimeter	SET QNH
Primer	CLOSED AND LOCKED
Magnetos	BOTH
Landing light	ON
Mixture	RICH
Fuel selector	BOTH
Brakes	CHECKED
Seat belts	FASTENED

DOWNWIND (80-75 kts)

Carburetor heat	ON
Flaps	(<85 kts) 10°
Engine instruments/fuel quantity	CHECKED

BASE LEG (70 kts)

Flaps	20°

FINAL (70 -60 kts)

Flaps	AS REQUIRED

BALKED LANDING

Throttle	FULL
Carburetor heat	COLD
Flaps	20°
Speed	MIN 55 kts

AFTER LANDING

Flaps	UP
Carburetor heat	OFF
Landing light	OFF

AFTER PARKING

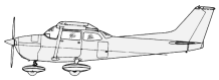
Throttle	1000 RPM
Parking brake	SET
Avionics master switch	OFF
All electrical switches (Except Beacon Light)	OFF
Mixture	IDLE CUT OFF
Beacon light	OFF
Ignition	OFF AND KEY REMOVED
Master switch	OFF
HOBBS & VUT	NOTED
Emergency locator transmitter	NOT TRIGGERED
Gust lock & pitot cover	INSTALL

AEROCLUB HILVERSUM-AMSTERDAM

NL-ATO-227

ABNORMAL CHECKLISTS C-172
PH-SKC

VFR DAY ONLY



Perform RED & BOLD checklist items from memory

ENGINE FAILURES:

ENGINE FAILURE DURING TAKEOFF RUN
Throttle ..... IDLE
Brakes ..... APPLY
Flaps ..... RETRACT
Mixture ..... IDLE CUT OFF
Ignition switch ..... OFF
Master switch ..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF
Airspeed ..... (flaps down) 60 kts
..... (flaps up) 65 kts
Mixture ..... IDLE CUT OFF
Fuel selector valve ..... OFF
Ignition switch ..... OFF
Flaps ..... AS REQUIRED
Master switch ..... OFF
Forced landing ..... EXECUTE

ENGINE FAILURE DURING FLIGHT
Airspeed ..... 65 kts
Carburetor heat ..... ON
Fuel selector valve ..... BOTH
Mixture ..... RICH
Ignition switch .....(START if propeller is stopped) BOTH
Primer ..... IN AND LOCKED
(If engine fails to start)
Forced landing ..... EXECUTE

ENGINE FIRES:

FIRES DURING START ON GROUND
Cranking ..... CONTINUE
IF ENGINE STARTS:
Throttle ..... 1700 RPM FOR A FEW MINUTES
Mixture ..... IDLE CUT OFF
IF ENGINE FAILS TO START:
Throttle ..... FULL OPEN
Mixture ..... IDLE CUT OFF
Cranking ..... CONTINUE FOR 2 TO 3 MINS
Engine ..... SECURE:
Master switch ..... OFF
Ignition switch ..... OFF
Fuel selector valve ..... OFF

ENGINE FIRE IN FLIGHT
Mixture ..... IDLE CUT OFF
Fuel selector valve ..... OFF
Master switch ..... OFF
Cabin heat and air ..... (except overhead vents) OFF
Airspeed ..... 100 kts
(if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture)
Forced landing ..... EXECUTE

ELECTRICAL FIRE IN FLIGHT
Master switch ..... OFF
Avionics power switch ..... OFF
All other switches (except ignition) ..... OFF
Vents/cabin air/heat ..... CLOSED
if fire appears out and electrical power is necessary for continuance for flight
Master switch ..... ON
Circuit breakers ..... CHECK
for faulty circuit, do not reset
Radio switches ..... OFF
Avionics power switch ..... ON
Radio/electrical switches ..... ON
one at a time, with delay after each until short circuit is localized
Vents/cabin air/heat ..... OPEN
when it is ascertained that fire is completely extinguished

CABIN FIRE
Master switch ..... OFF
Vents/cabin air/heat ..... CLOSED
Land ..... AS SOON AS POSSIBLE

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS:

AMMETER SHOWS DISCHARGE (during flight)
Alternator ..... OFF
Non-essential radio/electrical equipment ..... OFF
Land ..... **AS SOON AS PRACTICAL**

OVER VOLTAGE LIGHT ILLUMINATES
Avionics power switch ..... OFF
Master switch ..... (both sides) OFF
Master switch ..... ON
Over voltage light ..... CHECK OFF
Avionics power switch ..... ON
IF OVER VOLTAGE LIGHT ILLUMINATES AGAIN:
Land ..... **AS SOON AS POSSIBLE**

NOTE:
This checklist is a Recommended Operator Checklist and for reference only. It is not a substitute for and does not supersede the current approved Airplane Flight Manual.
For a comprehensive listing see the Airplane Flight Manual.

Departure and approach briefing & threat and error management

Operational briefings such as the departure and approach briefing are an integral element of the Treat and Error Management process for each flight. Briefings should focus on the identification of threats that affect the intended operations and how to mitigate those identified threats.

Furthermore, a briefing serves as mental preparation for the upcoming flight and to share with the other people on board a mental model of the intended operation.

A briefing creates capacity in thinking and acting, it enables team confidence building (e.g. when you fly with another rated pilot) and minimizes the startle effect when non-standard situations are encountered. This increases resilience.

Threats

All of the following are threats:

- Events or errors that occur beyond the influence of the flight crew
- Increased operational complexity
- Situations that must be managed to maintain the margin of safety.

There is no limit to the possible number of threats that may occur. Examples of possible threats are:

Airport	ATC	Aircraft	Environment
- Infrastructure - Runway condition - NOTAMs	- Restrictions - Phraseologies - Required reporting points	- Aircraft defects - Fuel status	- Tree tops - Buildup areas to avoid - Glider activity - Noise abatement area’s

Weather	Crew	Terrain
- Wind direction, gusts - Visibility - Sunrise/sunset visibility	- Who is PF/PIC - Low experience - Distraction of passengers	- Unfamiliar environment - Specific visual dep/arr routes

Preparation for briefing:

Preparation for each briefing starts with the preparation for the flight by collecting the data for your flight such as aircraft technical status, route planning, weather, NOTAMs and fuel planning. Once ready to brief, which can be done after the walkaround once settled in the seat before starting the checklists, the suggested briefing structure is:

PLAN, THREATS, THREAT MANAGEMENT, MISCELLANEOUS

Suggested items of a departure briefing are:

PLAN

- Takeoff runway, wind direction and how to get there
- Type of takeoff (normal, short field, soft field etc.)
- First altitude and where to go after takeoff
- Available (extra) fuel
- What to do in case of rejected takeoff
- What to do in case of engine failure after takeoff
- Who is PF, who is PIC, who does what when flying with 2 rated pilots

THREATS

- Brief any threats (see examples in matrix above)

THREAT MANAGEMENT

- Brief what you can do to mitigate the mentioned threats

MISCELLANEOUS

- E.g., pax briefing if not already briefed (e.g. request to remain silent till after departure)

An EXAMPLE of a departure briefing is:

PLAN

- Runway 25 in use, wind direction 230/10
- From here 2 times right and then to the beginning of the runway for engine checks
- We are going to make a soft field takeoff (and if necessary, explain how)
- We leave the circuit at 700 ft at the crosswind leg under 45 degrees
- We have ¾ tank so one-hour extra fuel on top of minimum required
- In case we reject. (explain actions with touch check)
- In case of failure after takeoff, available fields are limited in takeoff direction so if needed we turn 90 degrees to the left
- I am PF, you are PIC (e.g. in case of flying with instructor)
- Who does what when flying with 2 rated pilots (I fly the airplane, you do the RT and back me up where required).

THREATS AND THREAT MANAGEMENT

- Gliders active so in case of go around, we stay clear of the right side of the runway)
- Sun is low, so sunglasses on and if necessary, we ask the havenmeester for the strobe lights on
- What other threats do you see? (if flying with another rated pilot or instructor)

MISCELLANEOUS

- Passengers, please stay silent until I give a sign, somewhere after leaving the circuit

The same briefing structure can be used for the approach briefing with the following suggested items:

PLAN

- Landing runway and pattern
- Wind direction
- How to approach the field
- Available fuel
- Type of landing (normal, short field, flapless, touch and go)
- Where to leave the runway and where to go next

THREATS

- Brief any threats (see examples in matrix above)

THREAT MANAGEMENT

- Brief what you can do to mitigate the mentioned threats

MISCELLANEOUS

- E.g., pax briefing (e.g. request to remain silent)

An EXAMPLE of an arrival briefing is:

PLAN

- Landing runway 25 left hand pattern, wind 230/10
- I approach the field by flying around St. Maartensdijk while descending to 700 ft and aim to arrive perpendicular to the downwind track.
- Available fuel is 1/4 tank, so we must land within 30 minutes
- For practice I make a flapless landing so downwind/base/final speeds are X/Y/Z kts.
- After landing we leave the runway on the lefthand side and stop to do the after landing checklist, then we taxi to the fuel pump

THREATS AND THREAT MANAGEMENT

- Gliders active so in case of go around, we stay clear of the right side of the runway
- Grass is still wet so careful on the brakes to prevent slipping
- What other threats do you see? (if flying with another rated pilot or instructor)

MISCELLANEOUS

- Passengers, please stay silent from now on, until we have stopped after landing

Radio telephony examples

Before departing: EHTE

PH-ABC : "Teuge radio, PH-ABC." *
EHTE : "PH-ABC, Teuge radio."
PH-ABC : "PH-ABC, C172, parked on the apron, local training flight, 2 pob."
EHTE : "PH-ABC, runway 26, left hand circuit."
PH-ABC : "Runway 26, lefthand circuit, PH-ABC."
PH-ABC : "PH-ABC, lining up runway 26."
PH-ABC : "PH-ABC, leaving the circuit."
PH-ABC : "PH-ABC, changing frequency to Dutch Mil info."

* Note: For departure at EHHV first call is a radio check and no aerodrome information is requested since a visit to the 'havendienst' is mandatory before departure to inform yourself about the departure information.

Initial call Dutch Mil Info/Amsterdam Information: (132.350, 124.300)

PH-ABC : "Amsterdam information, PH-ABC." or "Dutch Mil Info, overhead *position* (e.g. Soest)."; source: AIP
Dutch Mil Info : "PH-ABC, Dutch Mil Info."
PH-ABC: : "PH-ABC, C172, *position* (e.g. 3 nm south of Hilversum), *altitude* (e.g. 1500 ft), VFR EHHV-EHHV, Training Flight, 2 POB."
Dutch Mil Info : "PH-ABC, QNH 1020, no reported traffic at *altitude* (e.g. 1500 ft)."
PH-ABC : "QNH 1020, PH-ABC."

Initial call tower controlled airport:

PH-ABC : "Eelde tower, PH-ABC."
EHGG TOWER : "PH-ABC, Eelde Tower."
PH-ABC : "PH-ABC, C172, *position* (e.g. Assen), *altitude* (e.g. 1500 ft), VFR, information ATIS (e.g. A), for landing."
EHGG TOWER : "PH-ABC, Roger, *arrival* (e.g. Romeo), runway 23, QNH 1020."
PH-ABC : "*arrival* (e.g. Romeo), runway 23, QNH 1020, PH-ABC."

Arrival at EHHV

PH-ABC : "Hilversum radio, PH-ABC."
EHHV : "PH-ABC, Hilversum radio."
PH-ABC : "PH-ABC, C172, VFR from *departure airport* (e.g. Lelystad), at *position* (e.g. 10 nm south of Hilversum), *altitude* (e.g. 1500 ft), request aerodrome information."
EHHV : "PH-ABC, runway 25, left hand circuit, (gilders ...., paras ….)."
PH-ABC : "Runway 25, lefthand circuit, PH-ABC."
PH-ABC : "PH-ABC, entering lefthand downwind runway 25."
PH-ABC : "PH-ABC, turning base." (optional)
PH-ABC : "PH-ABC, final runway 25, (full stop or touch and go)."

Changing Frequency from Amsterdam Information/ Dutch Mill Info to Hilversum Radio

PH-ABC : "PH-ABC, overhead *postion* (e.g. Zeist), changing frequency to Hilversum radio."
Dutch Mil : "PH-ABC, Roger."

Changing Frequency from Dutch Mil to Amsterdam information (FIC)

PH-ABC : "PH-ABC, overhead *position* (e.g. Woerden), changing frequency to Amsterdam Information."
Dutch Mil : "PH-ABC, Roger."

Cockpit layout (PH-DON)

1 Flight Instruments

Airspeed indicator
Attitude indicator (Garmin G5)
Altitude indicator
Turn and bank indicator
Directional gyro indicator (Garmin G5)
Vertical speed indicator
Magnetic compass

2 Navigation Indicators

VOR/ILS indicator
VOR indicator
ADF bearing indicator

3 Radio Stack

Audio control panel
NAV / COM 1
NAV / COM 2
DME
ADF radio
Transponder

4 Engine Instruments

Tachometer (not visible)
Oil temperature and pressure
Fuel quantity indicators
EGT, exhaust gas temperature
CHT, cylinder head temperature

5 Engine Controls

Mixture control (red)
Throttle (power)
Carburetor heat
Fuel selector valve handle
Primer
Ignition switch

6 Flight Controls

Control column
Rudder control
Elevator trim
Rudder trim
Flaps (electrical)

7 Electrical

Magnetos
Master switch
Ammeter
Avionics master switch
Landing lights
Strobe lights
ELT, emergency locator Transmitter switch
Pitot head
Fuses
Headset connection
External mic

8 Others

Hobb's
VUT
Parking brake
Cabin air

General information

Speeds	V_{speeds}	PH-SKC	PH-JBC	PH-DON
Stall speed flaps up	V_{S1}	44 kts	49 kts	44 kts
Stall speed flaps down	V_{SO}	33 kts	42 kts	33 kts
Maneuvring speed	V_A	97 kts	97 kts	99 kts
Max speed flaps extended: 10°	V_{FE}	85 kts	87 kts	110 kts
Max speed flaps extended: 10°- 30°	V_{FE}	- -	- -	85 kts
Never exceed speed	V_{NE}	160 kts	158 kts	158 kts
Max structural cruising speed	V_{NO}	128 kts	126 kts	127 kts
Best rate of climb (sea level) speed	V_Y	73 kts	70 kts	76 kts
Best angle of climb, (sea level) speed	V_X	60 kts	60 kts	60 kts
Max demonstrated cross wind	--	15 kts	15 kts	15 kts
Max takeoff cross wind	--	--	20 kts	--
Best glide speed flaps up	V_{BG}	65 kts	70 kts	65 kts
Best glide speed flaps down	V_{BG}	60 kts	65 kts	60 kts

Weights	PH-SKC	PH-JBC	PH-DON
Empty weight (Note: Check actual weighing rapport)	691.3 Kg	670,5 Kg	694.3 Kg
Max fuel in kg	136.1 Kg	103.4 Kg	108.9 Kg
Max fuel in litres	189 L	143.6 L	151.2 L
Maximum baggage in baggage - 1	54 Kg	54 Kg	54 Kg
Maximum baggage in baggage - 2	23 Kg	23 Kg	23 Kg
Max T/O normal category	1089 Kg	1043 Kg	1089 Kg
Utility category	952.5 Kg	907.1 Kg	955.7 Kg

Average fuel consumption		PH-SKC	PH-JBC	PH-DON
Tank capacity (unusable)	USG | l	4 | 15,1	4 | 15.1	3 | 11.4
Tank capacity (usable)	USG | l	50 | 189	38 | 144	40 | 151
2300 RPM cruise 60%	USG | l/hr	±6,7 | 25.4	±6,7 | 25.4	±6,7 | 25.4
2500 RPM climb 72%	USG | l/hr	±7.8 | 29.5	±7.8 | 29.5	±7.8 | 29.5
Full power gallon / Hr	USG | l/hr	±9.7 | 36,7	±9.7 | 36,7	±9.7 | 36,7

G Loads

Maximum G-load – flaps up	normal category	-1,52G	+3,8G
	utility category	-1,76G	+4,4G
	with (any) Flaps	-0,00G	+3,0G

NOTE: For mass & balance and the other calculations, always use the aircraft's POH.

NOTE: Mass and balance: check the ACHA website for the latest information.

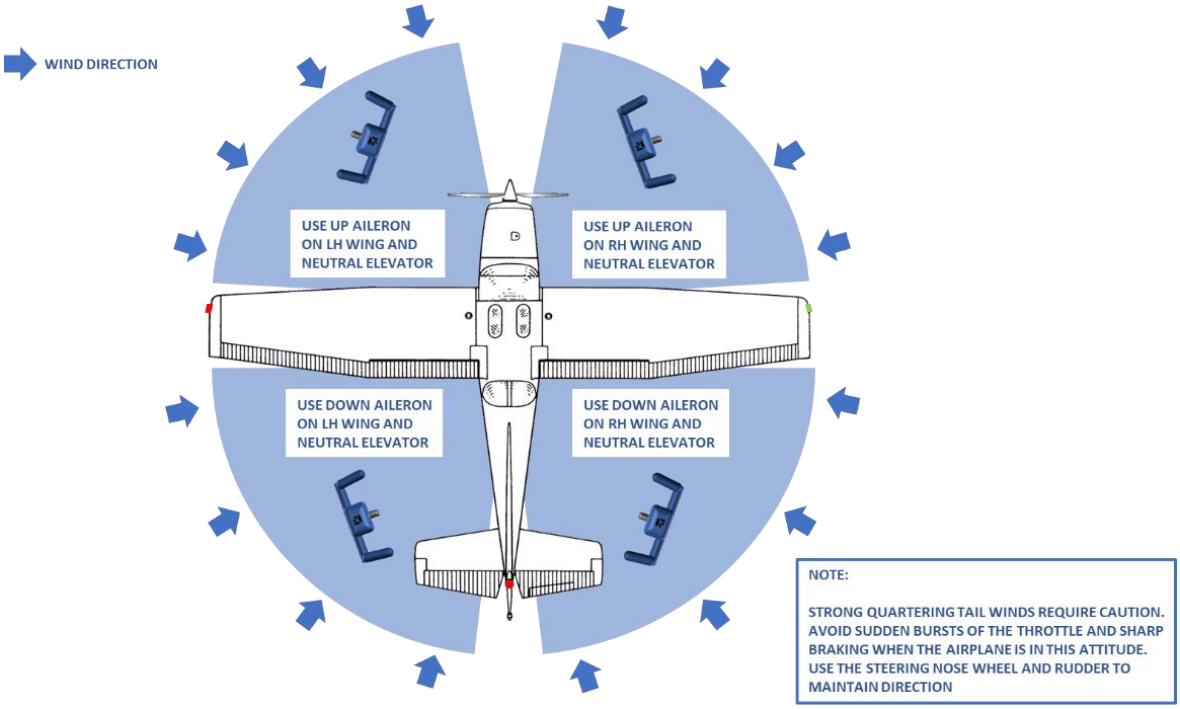
Power setting / configuration versus speed table

	throttle(RPM)	flaps	speed
Climb	full throttle	10°	70 kts
Climb	full throttle	UP	V_Y or 80 kts
Cruise	±2300RPM	UP	100 kts
Descent	±1800RPM	UP	100 kts
Downwind	±1900RPM	UP	80 kts
Downwind	±1900RPM	10°	75 kts
Base	±1500RPM	20°	70 kts
Final	as required	30°	70-60 kts

Normal procedures

Taxiing with different wind directions

Figure 1 – Taxiing with different wind directions. (taxiing diagram)



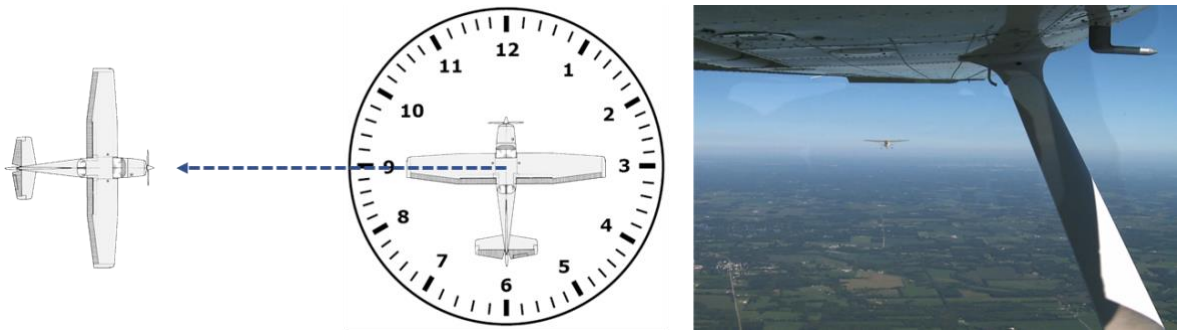
Instruments / brakes check during taxiing

When commencing taxiing at the beginning of a flight, the brakes and proper functioning of the turn/slip indicator, heading/track indicator (G5), attitude indicator (G5) and compass shall be checked and called out loud.

Reporting other aircraft

During the scanflow (lookout) you may see other airplane traffic. Report this directly by saying: "*Traffic, 9 o' clock, just above the horizon*". Use the clock method combined with above, below or on the horizon.

Figure 2 – Clock method



"Traffic, 9 O'clock, just above the horizon"

Structured scanflow

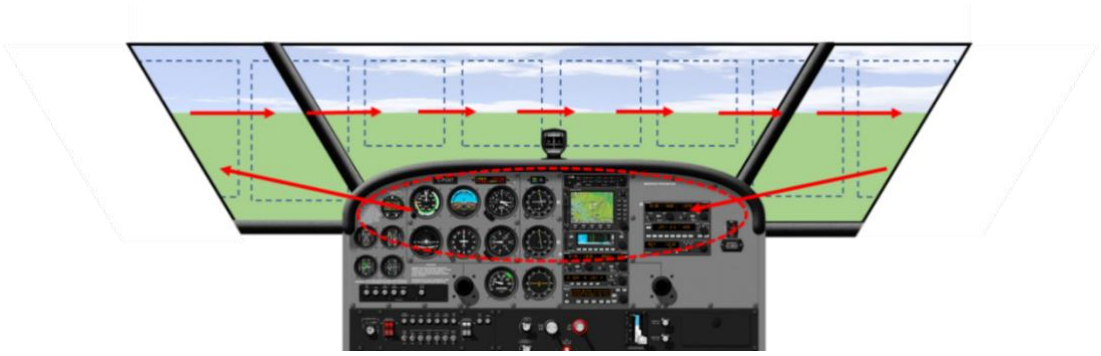
Scanflow for straight and level flight (side to side scanning method and front to side scanning method)

- Scan in sectors (see Figure 3a and 3b)
- Check nose attitude
- Short inside scan (altitude, speed, skid indicator)
- Approx. every 15 min, engine instruments and fuel quantity

Side to side scanning method

Start at the far left of your visual area and make a methodical sweep to the right, pausing very briefly in each block of the viewing area to focus your eyes. At the end of the scan, return to and scan the instrument panel and then repeat the external scan.

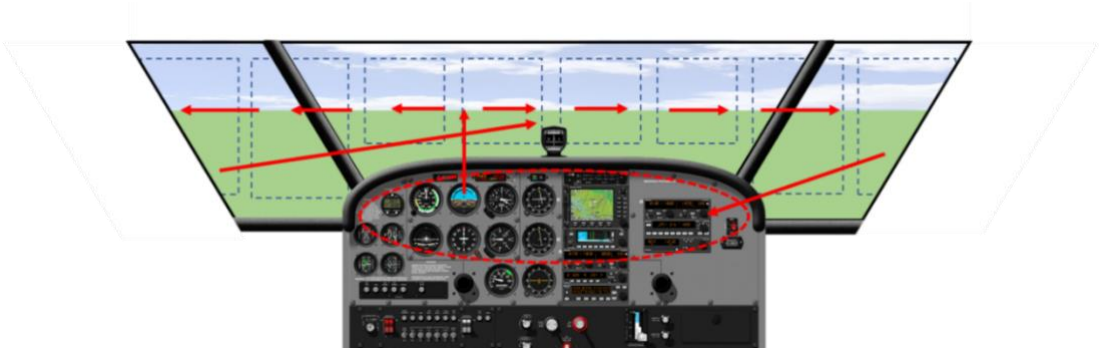
Figure 3a – Structured lookout side to side scanning technique



Front to side scanning method

Start in the center block of your visual field (center of front windshield); move to the left, focusing very briefly in each block, then swing quickly back to the center block after reaching the last block on the left and repeat the action to the right. Then, after scanning the instrument panel, repeat the external scan.

Figure 3b — Structured lookout front to side scanning technique



Manoeuvres

Clearing turns before manoeuvres with reduced controllability

Check:

- ✓ Engine instruments
- ✓ Take a point in the distance (PITD)

First make a left turn:

- ✓ Check right for traffic above
- ✓ Check in front for other traffic
- ✓ Check left for other traffic below

Roll out:

- ✓ Check left, front and right for other traffic

Make a subsequent right turn:

- ✓ Check left for other traffic above
- ✓ Check in front for other
- ✓ Check right for other traffic below

Roll out:

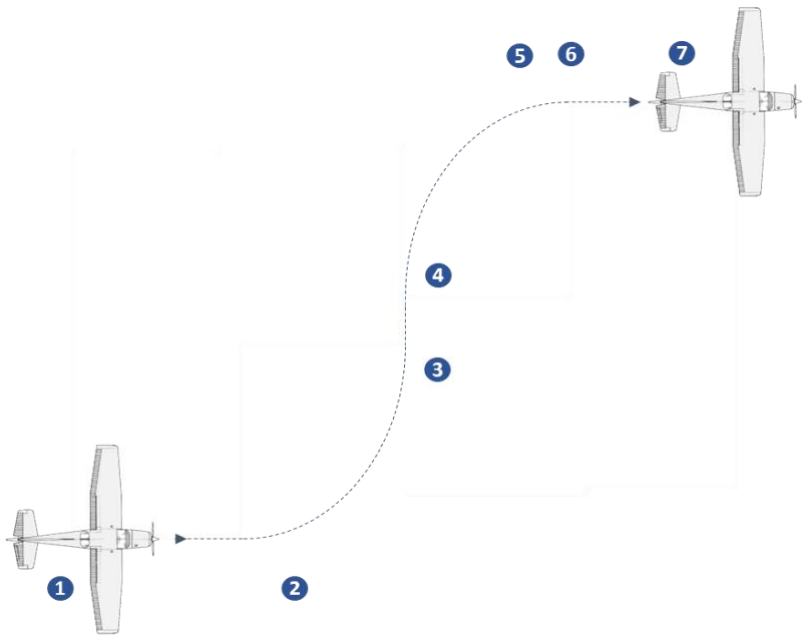
- ✓ Check left, front and right for other traffic

Keep scanning and regularly check:

- ✓ Nose attitude
- ✓ Altitude (constant)
- ✓ Airspeed (100 kts)
- ✓ Coordinated flight (ball centered, wings horizontal)

Proceed with planned maneuver

Figure 4 – Clearing Turns for every maneuver



Straight and level flight

(1) Look out for traffic
(2) Set nose attitude for straight and level flight (glareshield approx. 4 fingers below horizon)
(3) Maintain wings level
(4) Keep direction with rudder (ball centered)
(5) Power setting 2300 RPM
(6) Airspeed 100 kts
(7) Trim off forces

- ✓ Maintain lookout and regularly check:
- ✓ Nose attitude
- ✓ Altitude (constant)
- ✓ Airspeed (100 kts)
- ✓ Coordinated flight (ball centered)

Figure 5a – Straight and level flight

Figure 5b – Straight and level flight

Transition from straight and level flight to climb

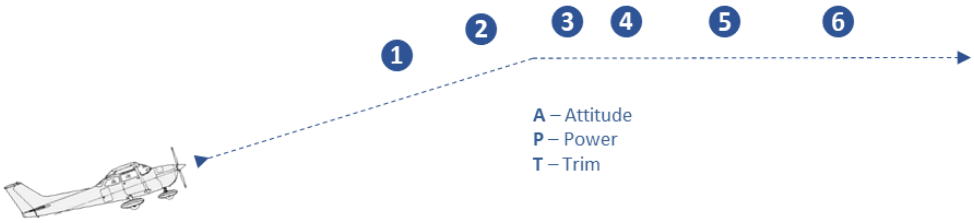
(1) Check engine instruments (and thereafter every 1000 ft)
(2) Look out for traffic
(3) Raise nose to climb attitude
(4) Speed decreases
(5) Airspeed approaches 80 kts, smoothly advance throttle FULL
(6) Maintain wings level, coordinated rudder, PITD
(7) Trim off forces
(8) Perform clearing turns every 500ft (15° bank angle, 30° left and right off course) or lower nose for lookout

Figure 6 – Transition from straight and level flight to Climb

Transition from climb to straight and level flight

(1) Look out for traffic
(2) 20ft before desired altitude, slowly lower nose to straight and level attitude with 100 kts.
(3) Airspeed accelerates to 100 kts
(4) Reduce throttle to 2300 RPM
(5) Maintain wings level, coordinated rudder, PITD
(6) Trim off forces

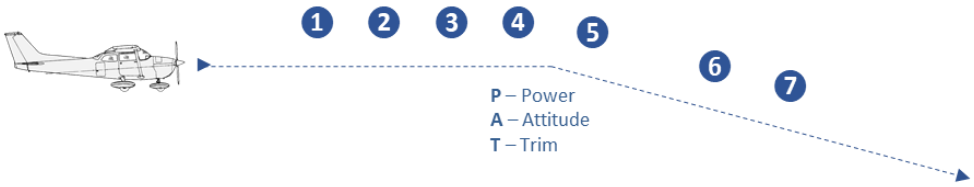
Figure 7 – Transition from Climb to Straight and Level Flight



Transition from straight level flight to descending flight

(1) Check engine instruments
(2) Carburetor heat ON
(3) Look out for traffic
(4) Throttle 1800 RPM (every 100 RPM equals ±100 ft/min extra descent rate)
(5) Simultaneously lower nose to descent attitude, maintain 100 kts
(6) Maintain wings level, coordinated rudder, PITD
(7) Trim off forces

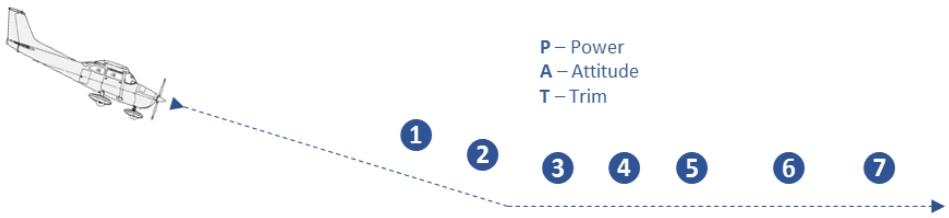
Figure 8 – Transition from straight level flight to descending flight



Transition from descent to straight and level flight

(1) Look out for traffic
(2) 100ft before desired altitude – carburetor heat OFF
(3) 50 ft before desired altitude – increase throttle to ±2300 RPM
(4) Raise nose to straight and level flight attitude
(5) Airspeed 100 kts
(6) Maintain wings level, coordinated rudder, PITD
(7) Trim off forces

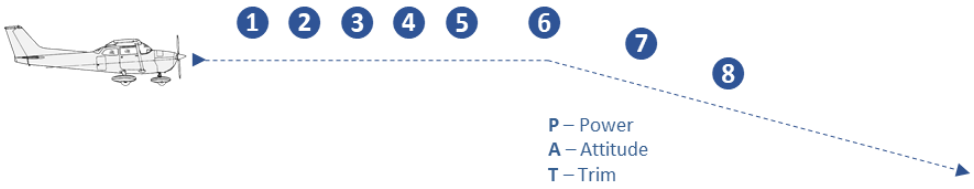
Figure 9 – Transition descent to straight and level flight



Transition from straight and level to glide

(1) Check engine instruments
(2) Carburetor heat ON
(3) Look out for traffic
(4) Smoothly retard throttle to idle
(5) Maintain altitude by slowly raising nose attitude
(6) Airspeed approaches 65 kts, lower nose to glide attitude
(7) Maintain wings level, coordinated rudder, PITD
(8) Trim off forces

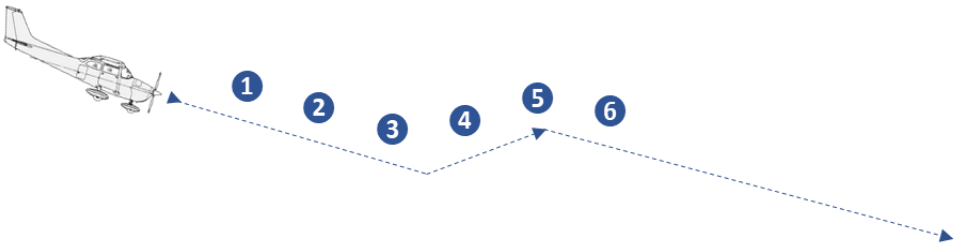
Figure 10 – Transition from straight and level to glide



Clearing the engine during glide

(1) Check engine instruments
(2) Look out for traffic
(3) Smoothly advance throttle full forward
(4) Simultaneously raise nose to climb attitude, maintain 65 kts
(5) After 3-5 sec smoothly close throttle, lower nose to glide attitude with 65 kts, maintain wings level, coordinated rudder, PITD
(6) Continue with glide

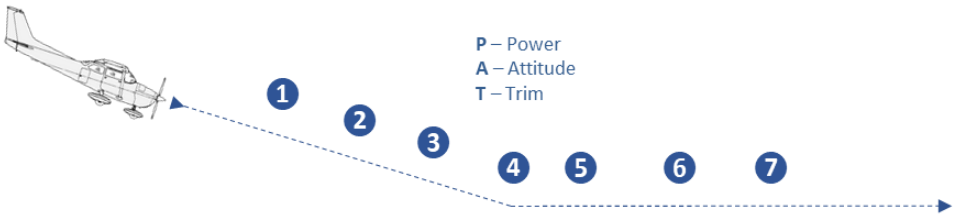
Figure 11 – Clearing the engine during glide



Transition from glide to straight and level flight

(1) Look out for traffic
(2) 150ft before desired altitude, advance throttle to ±2300 RPM, carburetor heat OFF
(3) Maintain glide attitude, airspeed increases
(4) 50ft before desired altitude, raise nose to straight and level flight attitude
(5) Airspeed 100 kts
(6) Maintain wings level, coordinated rudder, PITD
(7) Trim off forces

Figure 12 – Transition from glide to straight and level flight

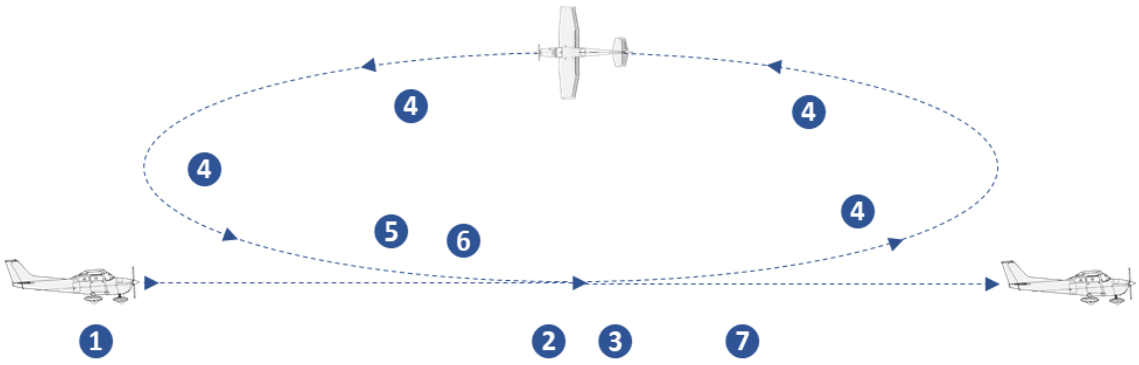


Level turn

(1) Look out for traffic and take a PITD
(2) Roll into turn, 30° bank angle, coordinated rudder and;
(3) Increase backpressure and set nose attitude to maintain altitude
(4) Keep scanning for traffic and check:
- Bank angle 30°
- Nose attitude
- Instruments: altitude indicator, vertical speed indicator and airspeed, slip indicator

(5) 10° before desired heading or PITD start to roll wings level, coordinated rudder and;
(6) Decrease backpressure to maintain altitude
(7) Maintain wings level, coordinated rudder, PITD, 100 kts

Figure 13 – Horizontal turn

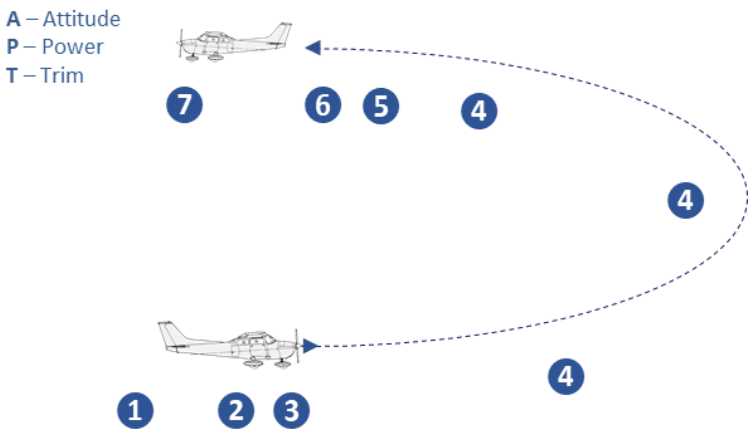


Climbing turn

(1) Look out for traffic
(2) Roll into turn max 15° bank angle
(3) Coordinated rudder
(4) Keep scanning and check:
- Bank angle 15°
- Nose attitude
- Instruments: approaching altitude, airspeed 80 kts, slip indicator

(5) 5° before desired course or PITD, start to roll wings level
(6) Coordinated rudder
(7) Maintain wings level, coordinated rudder, PITD, airspeed 80 kts

Figure 14 – Climbing turn

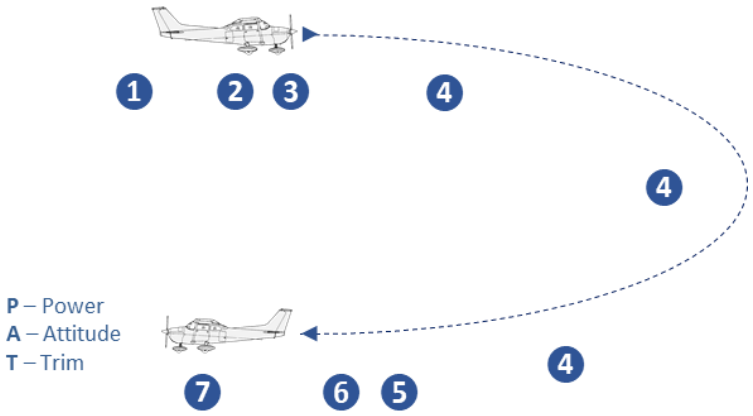


Descending turn

(1) Look out for traffic
(2) Roll into turn, 30° bank angle
(3) Coordinated rudder
(4) Keep scanning for traffic and check:
- Bank angle 30°
- Nose attitude
- Instruments: approaching altitude, airspeed 100 kts, slip indicator

(5) 10° before desired course or PITD start to roll wings level
(6) Coordinated rudder
(7) Maintain wings level, coordinated rudder, PITD, airspeed 100 kts

Figure 15 – Descending turn

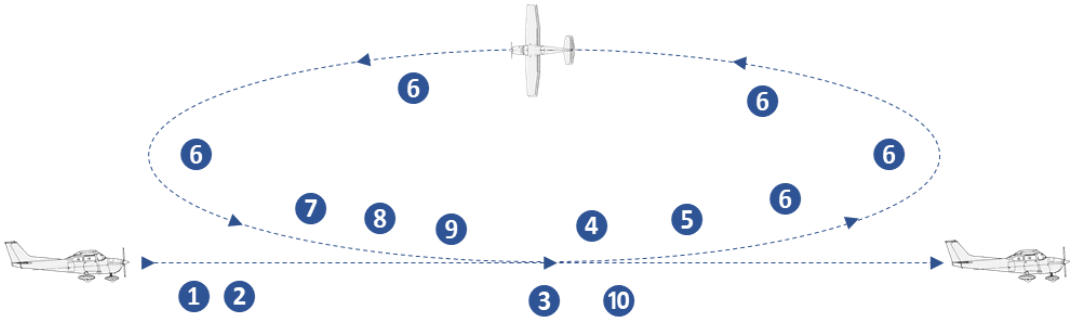


Steep turn (45°)

(1) Check engine instruments
(2) Look out for traffic and take a PITD
(3) Roll into turn, 45° bank angle, coordinated rudder
(4) When bank angle passes 30°, increase RPM by 200 and;
(5) Increase backpressure and set nose attitude to maintain altitude
(6) During the turn keep scanning for traffic and check:
- Bank angle 45°
- Nose attitude
- Instruments: altitude indicator, vertical speed indicator and airspeed 100 kts

(7) 20° before desired course or PITD start to roll wings level, coordinated rudder
(8) When bank angle passes 30° decrease RPM by 200 and;
(9) Decrease back pressure to maintain altitude and set nose attitude to straight and level flight
(10) Maintain wings level, coordinated rudder, PITD, 100 kts

Figure 16a – Steep turn with constant height and airspeed



NOTE: Minimum altitude for this exercise is 1500 ft AGL Dual / 2000 ft AGL Solo

Figure 16b – Steep turn – Pilot View

Left and right turn

Left and right turn

Slow flight Vs +10

NOTE: Minimum altitude for this exercise is 2000 ft AGL Solo

- Agree before the exercise which flap setting will be used
- Calculate beforehand the Vs with the used flap setting
- The POH for the PH-DON gives stall speeds for flaps UP, 10° and 30°, interpolate for flaps 20°
- The POH for the PH-SKC gives stall speeds for flaps UP, 10° and 40°. However, due to the modification The max flap setting is 30°, use stall speeds as given in the AFM, interpolate for flaps 20°.
- Max bank angle 15° during exercise due to margin to stall

Exercise slow flight

- Check engine instruments
- Carburetor heat ON
- Look out for traffic
- Reduce throttle to 1500 RPM
- Maintain altitude by slowly raising nose, airspeed decreases
- When using flaps as soon as the airspeed is in the white arc, call out: “Speed checked” and lower flaps in steps to planned setting, watch out for ballooning
- As airspeed approaches planned speed, advance throttle to ± 2200 RPM
  - Respect the stall warning: increase speed enough to stop stall warning if warning comes on
- Maintain wings level, coordinated rudder
- Trim off forces
- Keep scanning for traffic and check:
  - Nose attitude
  - Coordinated rudder, PITD
  - Airspeed Vs+10 kts

	V_{speeds}	PH-SKC	PH-DON	PH-JBC
Stall Speed Flaps Up	V_{S1}	44 kts	44 kts	49 kts
Stall Speed Flaps 10°	V_{S1}	37 kts	37 kts	47 kts
Stall speed Flaps 20°	V_{S1}	35 kts	35 kts	44 kts
Stall Speed Flaps 30°	V_{SO}	33 kts	33 kts	42 kts

Accelerate to 100 kts

- Smoothly advance throttle full forward
- Carburetor heat OFF
- Maintain wings level, coordinated rudder, PITD
- When speed above 60 kts, call out: “Speed checked” and raise flaps in steps before speed increases above white arc
- Lower nose as speed increases, maintain altitude
- Speed 100 kts, throttle 2300 RPM

- Trim off forces

Air Exercises

The stall

Planning, crew briefing and checks before the stall

The main purpose of the stall exercise is to teach the student to recognize the symptoms of an approaching stall so as to avoid getting into a stall. The second goals is to, in the event that an actual stall occurs, be able to recover the airplane to normal flight. Because the airplane has limited maneuverability during this exercise, extra precautions have to be taken before starting the exercise.

NOTE: Make a plan first to ensure a safe execution of the maneuver.

NOTE: Priority shall be given to recovery from the stall (breaking the stall) and not height loss!

Crew briefing:

- Type of stall
- Altitude and heading/course during the maneuver
- When the recovery starts and in what manner

Inside checks:

- ✓ Ignition ..... BOTH
- ✓ Landing light ..... ON
- ✓ Throttle ..... 2300 RPM
- ✓ Mixture ..... RICH
- ✓ Flaps ..... UP
- ✓ Fuel selector ..... BOTH
- ✓ Engine instruments ..... (temp and pressures in the green) CHECK
- ✓ Speed ..... 100 kts
- ✓ Belts, loose equipment ..... FASTENED/STOWED

Outside checks – APOS

Altitude:

- Full stall: recovered above 3000 ft solo or 2000 ft dual
- Approach to stall: recovered above 2000 ft solo or 1500 ft dual

Position:

not above**:**

- Open water (because lack of horizon)
- Cities or industrial areas
- Airports or CTRs
- Other traffic
- Open air assemblies of people
- 4/8 cloud cover or more

Orientation:

- Keep track of position and airspace
- Do not fly in direction of above-mentioned points
- Take a PITD or significant line

Sky clearing turns:

- Clearing turns 2 x 90° or;
- Clearing turn 180° (take a new PITD)

Checks after the stall

- ✓ Flaps ..... UP
- ✓ Carburetor heat ..... OFF
- ✓ Throttle ..... 2300 RPM
- ✓ Check engine instruments (temp and pressures in the green) ..... CHECK
- ✓ Orientation ..... CHECK

Stall with flaps up

- Clearly state “starting the exercise”
- Smoothly close the throttle, carburetor heat ON
- Raise nose with decreasing airspeed to maintain altitude, don’t trim off forces
- Maintain wings level, maintain heading with rudder, PITD

  - **Start recovery in case of full stall:**
    - Nose dip (self-recovery)
    - Wing dip (initially with rudder, after the nose is lowered and stall is recovered, use ailerons)
    - High descent rate with full aft elevator; whichever comes first

  - **Start recovery in case of approach to stall:**
    - Stall warning
    - Buffet
    - 5 kts above stall speed; whichever comes first

Recovery with power

- Call out “recover” and:
- Unload: break angle of attack
  - For full stall, lower nose to glide attitude
  - For approach to stall lower nose just below straight and level attitude
- Roll: Wings level with rudder
- Power: Smoothly advance throttle full forward, carburetor heat OFF
- At minimum 60 kts, gently raise nose to climb attitude (avoid a secondary stall)
- Maintain wings level, coordinated rudder, PITD
- Adjust nose attitude for correct climb attitude with airspeed 80 kts
- Climb back to initial altitude and transition to straight and level flight

Recovery without power

- Call out “recover” and:
- Unload: break angle of attack
- Roll: Wings level with rudder PITD
- Adjust nose to attitude for glide, 65 kts
- Trim off forces
- Transition to straight and level flight at desired altitude (see transition from glide to straight and level flight)

Stall with flaps down

- Clearly state “starting the exercise”
- Smoothly close the throttle, carburetor heat ON
- Maintain wings level, coordinated rudder, PITD
- Nose attitude increases with decreasing airspeed, maintain altitude, don’t trim off forces
- Maintain wings level, coordinated rudder, PITD
- As soon as airspeed is in white arc call out: “Speed checked” and lower flaps in steps
- Watch out for ballooning, maintain altitude

  - **Start recovery in case off full stall:**
    - Nose dip (self recovery)
    - Wing dip (initially with rudder, after the nose is lowered and stall is recovered, use ailerons)
    - High descent rate with full aft elevator; Whichever comes first

  - **Start recovery in case off approach to stall:**
    - Stall warning
    - Buffet
    - 5 kts above stall speed; Whichever comes first

Recovery with power from stall with flaps

- Call out “recover” and:
- Unload: break angle of attack
  - For full stall, lower nose to glide attitude
  - For approach to stall lower nose just below straight and level attitude
- Roll: Wings level with rudder, PITD
- Power: Smoothly advance throttle full forward, carburetor heat OFF
- At minimum 60 kts, gently raise nose to climb attitude (avoid a secondary stall)
- Call out: “Speed checked” and Select flaps 10°
- Adjust nose to correct climb attitude flight with 65 kts
- Call out: “Speed checked” and select flaps UP, airspeed 80 kts
- Climb back to initial altitude and transition to straight and level flight

Approach to stall in descending turn in approach or landing configuration

- Clearly state “starting the exercise”
- Carburetor heat ON, reduce throttle to 1500 RPM
- Maintain wings level, coordinated rudder, PITD
- Maintain altitude, nose attitude increases with decreasing speed, don’t trim off forces
- Airspeed in white arc, call out: “Speed checked” and select flaps in stages to 20° (for approach) or 30° (for landing)
- Start a descending turn with 20° bank angle
- Close the throttle and slowly raise the nose

  - **Start recovery on**
    - Stall warning
    - Buffet
    - 5 kts above stall speed (whichever comes first)

Recovery with power from approach to stall during descending turn

- Call out “recover” and:
- Unload: break angle of attack
- Roll: Wings level with rudder, PITD
- Power: Smoothly advance throttle full forward, carburetor heat OFF
- Start the go-around procedure

  note: compared to standard go-around procedure flaps 20° are already set for recovery from approach configuration, for everything else proceed the same way as in a standard go-around

Approach to stall in climbing turn without flaps

- Clearly state “starting the exercise”
- Start a climbing turn with 15° bank angle
- Raise the nose attitude to decelerate speed, maintain 15° bank angle

  - **Start recovery on:**
    - Stall warning
    - Buffet
    - 5 kts above the stall speed without flaps (whichever comes first)

Recovery from approach to stall in climbing turn

- Call out “recover” and:
- Unload: break angle of attack
- Roll: Wings level with rudder
- Power: Smoothly advance throttle full forward
- Accelerate to 100 kts

Approach to stall in climbing turn with flaps in takeoff configuration (Flaps 10°)

- Clearly state “starting the exercise”
- Bring the aircraft in approach configuration in level flight, speed 70kts. Airspeed in white arc, call out: “Speed checked” and select flaps 10° (for takeoff)
- Start a climbing turn with 15° bank angle
- Reduce power to 1500 RPM
- Raise the nose attitude to decelerate speed, maintain 15° bank angle

  - **Start recovery on:**
    - Stall warning
    - Buffet
    - 5 kts above the stall speed without flaps (whichever comes first)

Recovery from approach to stall in climbing turn in takeoff configuration

- Call out “recover” and:
- Unload: break angle of attack
- Roll: Wings level (with rudder)
- Power: Smoothly advance throttle full forward
  - Immediately check or select flaps 10°
  - Safe speed, minimum 55 kts, set nose just below normal climb attitude
  - Check positive rate, call out: “Speed checked” and select flaps up
  - Minimum speed 60 kts, flaps up and accelerate to Vy and climb to assigned level or continue straight and level flight and accelerate to 100 kts

Circuit procedures

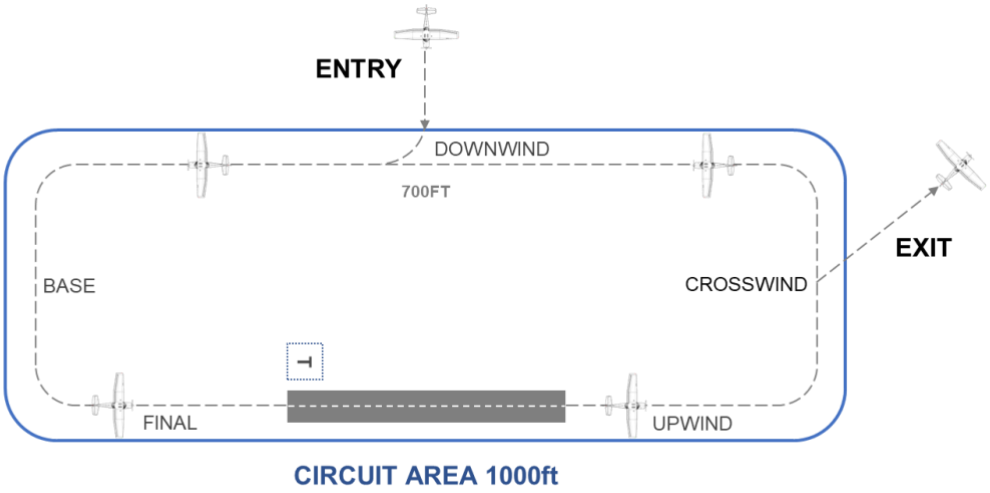
VFR circuit

With regard to safe, orderly and expeditious aerodrome traffic at uncontrolled aerodromes, rules are laid down for the standard aerodrome traffic circuit and circuit areas.:

Standard circuit

The standard circuit:

Figure 17 – Standard lefthand circuit.



With every takeoff and landing runway there is a circuit area. The traffic circuit as depicted above, is inside the circuit area. The aerodrome circuit area is established for each runway. The lateral dimensions are also dependent on the local circumstances. The standard aerodrome traffic circuit as depicted above is situated within the aerodrome circuit area. The vertical dimensions extend from aerodrome level up to 1000 ft AAL. The traffic circuit is flown at 700 ft AAL.

Before executing the joining of the aerodrome traffic circuit, pilots have to take notice of the signals displayed in the signal area or of the information given by radio. Overflying the circuit area for observing the signal area shall be done at a height of at least 1000 ft AAL.

Within the aerodrome traffic circuit it is not allowed to overtake other aircraft.

Other arial activities may take place above this altitude. Climbing or descending to cruising level must take place outside the lateral limits of the aerodrome circuit area.

The joining of the standard aerodrome traffic circuit shall take place half-way downwind leg at an interception angle of 90° (the right of way rules when joining the circuit and if somebody is on downwind already, the best way of acting can be flying 360° for spacing in direction of downwind).

Leaving of the aerodrome traffic circuit shall take place at an angle of 45° half-way crosswind leg unless local circumstances force to establish another route which will be promulgated separately.

At those aerodromes where gliding activities take place, special procedures may be in place to reduce the risk of collision with winching cables.

- *Reference AIP, AIS-NETHERLANDS.NL. ENR 1.2 - 8 CIRCUIT PROCEDURES FOR AERODROME TRAFFIC*
- *ICAO Doc 4444 PANS-ATM*
- *ICAO Doc 9432 Manual of Radiotelephony*

NOTE: If there is no ATC or radio online you can overfly the airport and determine which runway is in use from

the signal area, do this at a minimum of 1000 ft AAL. However, the local situation might dictate otherwise, e.g., at Hilversum due to gliders or paras.

Takeoff procedures

Normal takeoff

NOTE: Hard surface, no flaps
Short runway (<800m) or soft surface: flaps 10°

- Before entering the runway, ensure base, final and runway are clear
- Line-up checks before or passing the hold short line or entering the runway
  - ✓ Check correct runway
  - ✓ Flaps checked
- Line up with centerline (check compass or heading indicator/G5)
- Check windsock, control column into the wind
- PITD (end of runway)
- Heels on the floor, feet of brakes!
- Smoothly advance throttle full forward, control direction with rudder pedals.
- Check and call out “engine instruments checked” and “airspeed alive”
- Reduce aileron input with increasing speed, maintain wings level
- Rotate at 55 kts, maintain wings level, nose against horizon
- If needed establish a drift correction angle to stay above the (extended) centerline
- Allow airspeed to increase to 70 kts
- Take a new PITD when the runway end disappears under the nose
- 200 ft check/select flaps UP, airspeed 80 kts
- Full power, keep hand on throttle
- Trim off forces
- Climb to 700 ft AAL. A climbing turn to crosswind leg is allowed, if necessary to stay within the aerodrome traffic circuit area (Ref. AIP Part 2, 1.2.8.6)
- At 700 ft, reduce power setting to ±1900 RPM, 80 kts
- Trim off forces

- **WHEN LEAVING THE CIRCUIT**
  - Exit the pattern as prescribed and resume climb when clear of the circuit area
  - Landing light off (if applicable)

- **WHEN STAYING IN THE CIRCUIT**
  - Look for traffic and turn to crosswind
  - Proceed with the CIRCUIT AND NORMAL LANDING PROCEDURE

Soft or rough field takeoff

(1) Keep yoke full back during taxi

(2) Select 10° of Flaps, make a rolling takeoff, full throttle, yoke full aft, check engine instruments in the green, check airspeed alive

(3) As airspeed increase, nose rises of ground, yoke moves forward to keep nosewheel just off the ground

(4) The airplane flies itself of the ground in a slightly tail-low attitude

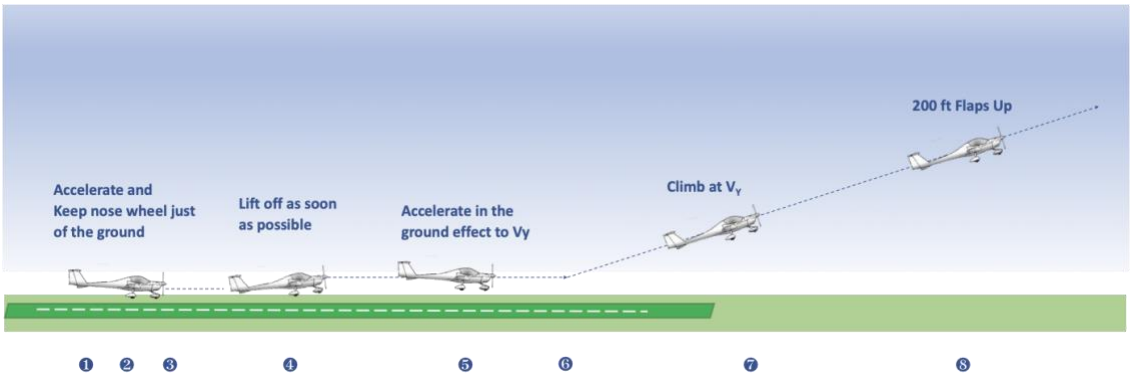
(5) Accelerate in ground effect

(6) 65 kts, gently raise nose to climb attitude

(7) Accelerate to V_y

(8) Continue as normal takeoff

Figure 18 – Soft or rough field takeoff



Obstacle clearance takeoff (short field takeoff)

If for safety reason a “obstacle clearance takeoff” is required, consider all safety aspects: engine failure, loss of power, ability to see other traffic, etc. if all aspects are considered, and a decision is made to perform a obstacle clearance takeoff, proceed as below.

(1) Select flaps 10°

(2) Hold brakes, advance throttle FULL forward, check engine instruments in the green

(3) Release brakes, keep direction with rudder pedals, check airspeed alive

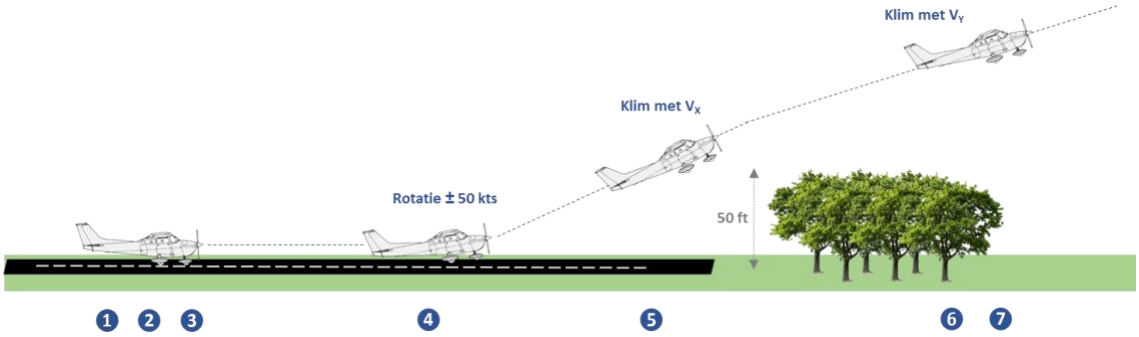
(4) Rotate at 50 kts

(5) Climb with 60 kts V_x

(6) When free of all obstacles: lower nose attitude and accelerate to V_y

(7) Continue as normal takeoff

Figure 19 – Obstacle clearance takeoff



Enroute procedures

Enroute climb

- ✓ Airspeed ..... BEST RATE (V_y) or HIGHER
- ✓ Throttle ..... FULL OPEN
- ✓ Mixture ..... LEAN above 3000 ft, RICH below 3000 ft

Cruise

- ✓ Power ..... 75% or LESS
- ✓ Elevator trim ..... ADJUST
- ✓ Rudder trim (if installed) ..... ADJUST
- ✓ Mixture ..... LEAN

Approach

- ✓ Altimeter ..... SET QNH
- ✓ Primer ..... CLOSED AND LOCKED
- ✓ Magnetos ..... BOTH
- ✓ Landing light ..... ON
- ✓ Mixture ..... RICH
- ✓ Fuel selector ..... BOTH
- ✓ Brakes ..... CHECKED
- ✓ Seat belts ..... FASTENED

Downwind check

- ✓ Carburetor heat ..... ON
- ✓ Flaps ..... Call out: “Speed checked” (speed below V_{FE}) 10°
- ✓ Engine instruments / fuel quantity ..... CHECKED

NOTE: Downwind checks may be done after the Approach checks before joining the actual downwind or on the beginning of downwind when remaining in the circuit after takeoff / touch & go / go-around

Landing procedures

Circuit and normal landing

Entering the circuit or remaining in the circuit after takeoff, touch & go or go-around

(1) At 700 ft, speed 80 kts, throttle ±1900 RPM

(2) Look for traffic, turn downwind or look for joining traffic when staying in the circuit

(3) On downwind continuously check “HARS”

- ✓ Hoogte (Altitude)
- ✓ Afstand (Offset from runway)
- ✓ Richting (Direction parallel to runway)
- ✓ Snelheid (Airspeed 80 kts)

(4) If joining the circuit accomplish the before joining circuit check and downwind check before joining, if staying in the circuit: only DOWNWIND CHECK

- ✓ Carburetor heat ..... ON
- ✓ Flaps (check airspeed below V_{FE}) ..... Call out: “Speed checked” 10°

Maintain speed 75 kts

- ✓ Engine instruments/fuel quantity ..... CHECKED

(5) Threshold 45° - 60° behind the wing Reduce throttle to ±1500 RPM and set nose attitude to maintain 75 kts

(6) Turn base leg with 15°- 20° bank angle (max 30°)

(7) call out: “Speed checked” and Select 20° flaps and trim to maintain 70 kts, look for traffic on final

(8) Approximately at 500 ft and 20° before the extended centerline, turn final with 15° bank angle (max 20°)

(9) Roll out on centerline, established at 300ft

(10) FINAL CHECK:

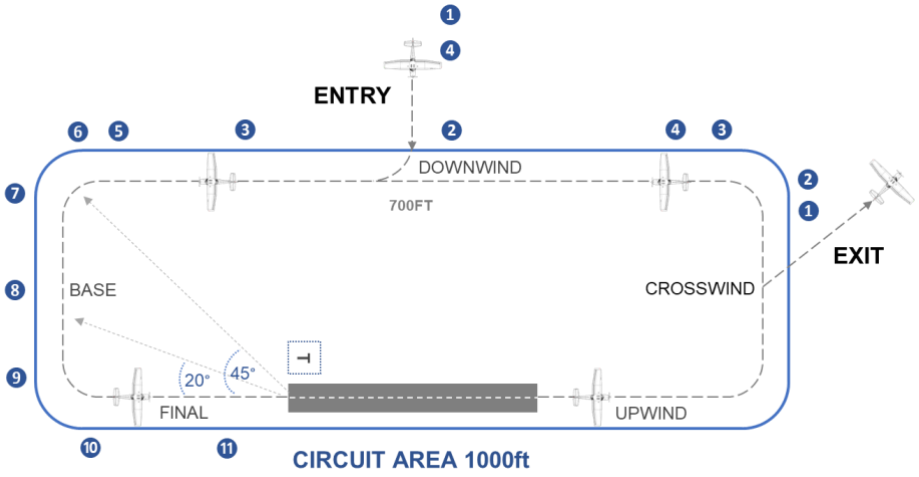
- ✓ Flaps ..... Call out: “Speed checked” 30°

Maintain speed 70-60 kts

(11) Look for traffic, speed 60 kts on short final (see normal landing)

NOTE: Normal minimum speed over the threshold is 60 kts, corrections up to -5 to +15 kts may be made to account for runway conditions or wind, turbulent weather, windshear. Be aware that landing distance changes for different speeds!

Figure 20 – Standard Circuit



Normal landing

(1) Position the aircraft on a ±3° glidepath and aim just before the threshold

(2) As the aircraft gets closer to the runway, shift eyesight towards the end of the runway

(3) After passing the threshold reduce vertical speed (round out). (On shorter general aviation runways the round might start before the threshold like it is depicted in the graph below)

(4) Establish horizontal flight about 1m above the runway and simultaneously close the throttle

(5) Use ailerons to maintain wings level and rudder to keep longitudinal axis aligned with the centerline

(6) As airspeed reduces, increase nose attitude to maintain altitude (flare)

(7) Land the airplane on the main gear

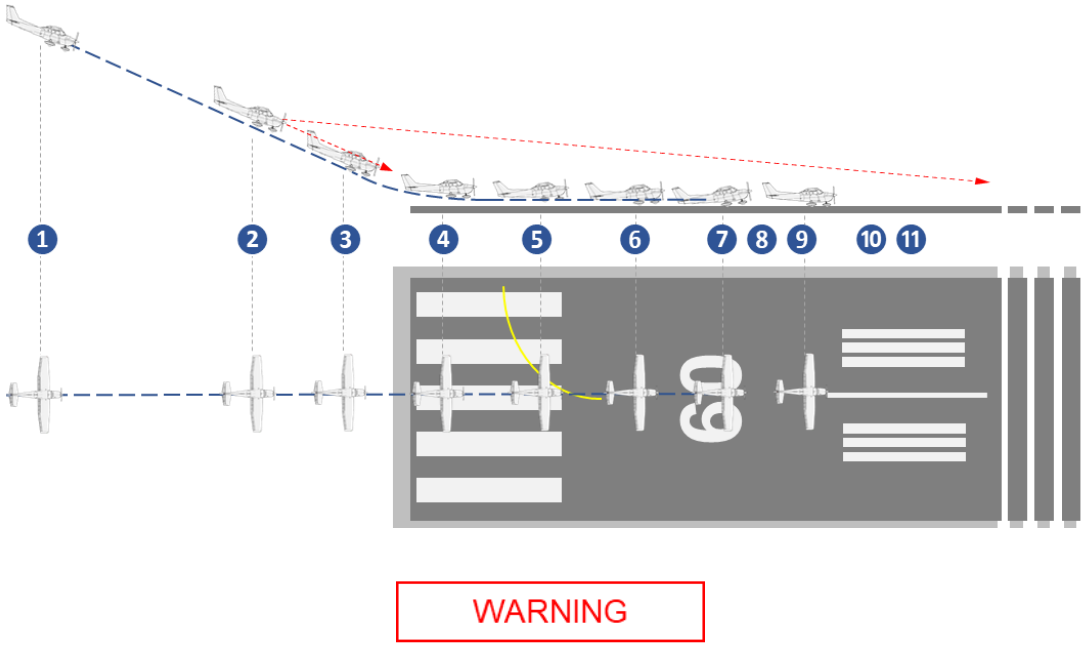
(8) Aileron into the wind to keep the wings level

(9) Keep the yoke in position where the airplane touched down, due to reducing airspeed the nosewheel will land itself

(10) Gentle braking if necessary

(11) Stop the airplane when clear of the runway and perform the after landing checklist

Figure 21 – Normal Landing



WARNING

NOTE: Do not brake excessively in order to exit the runway sooner, this may lead to blown tires!

Flaps up landing

- Fly a standard circuit
- When turning baseleg reduce throttle to 1500 RPM
- Fly a normal circuit (see circuit), with the exception that:
- No flaps will be selected
- The speeds respectively are:
  - ✓ Downwind: .....80 kts
  - ✓ Base: .....75 kts
  - ✓ Final: .....70 kts
- Execute a normal landing except:

- Nose attitude is higher than normal landing
- Aim for the landing spot
- Close throttle gently before approaching flare altitude and use only a very shallow roundout
- Take into acount that due to the flapless condition:
  - The airplane responds more directly to control inputs
  - The airplane has a tendency to float
  - More runway length is needed

NOTE: Normal minimum speed over the threshold is 70 kts, corrections up to -5 to +15 kts may be made to account for runway conditions or wind, turbulent weather, windshear. Be aware that landing distance changes for different speeds!

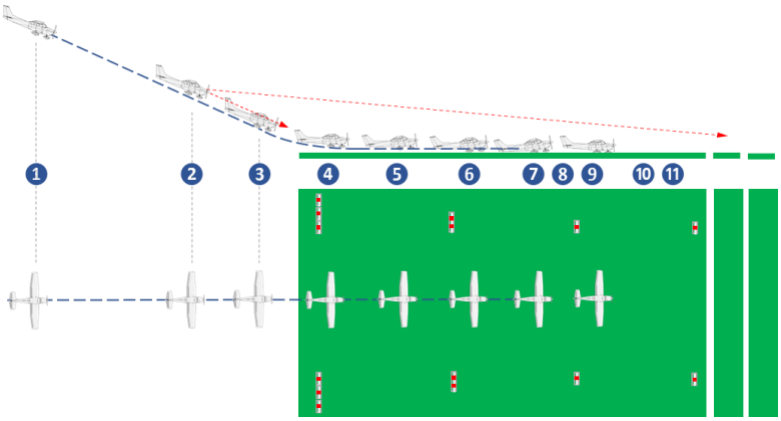
Soft field landing

A soft surface runway has more friction compared to a hard surface runway. When the main gear touches, the airplane has the tendency to slow down immediately and for the nose gear to lower to the ground. Try and keep the nose gear off as long as possible.

- Fly a standard circuit and normal final
- Maximize the flare and after landing maintain full back pressure on the yoke
- After landing and during taxi, keep the yoke fully aft

(1) Position the aircraft on a ±3° glidepath and aim just before the threshold
(2) As the aircraft get's closer to the runway, shift eyesight towards the end of the runway
(3) After passing the threshold reduce vertical speed (round out)
(4) Establish horizontal flight about 1m above the runway and simultaneously close the throttle
(5) Use ailerons to maintain wings level and rudder to keep longitudinal axis aligned with the centerline
(6) As airspeed reduces, increase nose attitude to maintain altitude (flare)
(7) Land the airplane on the main gear
(8) Aileron into the wind to keep wings level
(9) Increase back pressure on the yoke to keep the nose gear of the ground as long as possible
(10) Only brake when required by field length
(11) Keep rolling until a hard surface is reached if possible.

Figure 22 – Soft-field Landing



Short field landing

- Fly a standard circuit
- After turning final select full flaps
- Reduce throttle to ±1400 RPM
- Maintain an approx. 3° glidepath and aim slightly in front of the threshold
- Nose attitude to maintain 60 kts, Throttle to maintain glidepath
- speed 55 kts on short final
- Make a normal landing
- After the nosewheel has landed, select flaps UP (this reduces lift, increases braking action) and brake carefully

NOTE: Normal minimum speed over the threshold is 55 kts, corrections up to -5 to +15 kts may be made to account for runway conditions or wind, turbulent weather, windshear . Be aware that landing distance changes for different speeds!

Go-Around, balked landing

There is always a possibility that the runway is not clear or that you are not stabilized on final. In such a case, it is good airmanship to discontinue the landing attempt. A good option is to perform a Go Around. The procedure is the same for hard and soft surface runways.

- State ”Go-around!”
- Smoothly advance throttle FULL, carburetor heat OFF
- Immediately select flaps 20°
- Safe speed, minimum 55 kts, set nose just below normal climb attitude
- Check positive rate, call out: “Speed checked” and select flaps 10°, climb with V_x until obstacles are cleared
- Minimum 200 ft and speed 60 kts, flaps up and accelerate to V_y
- If necessary to keep other traffic in sight, a turn to the dead side of the runway should keep you clear of other circuit traffic. However, the local situation might dictate otherwise e.g. at Hilversum due to gliders or para’s. Choose the safest course of action.
- Continue as normal takeoff
- Keep a good lookout for other traffic

WARNING

During the go around it may happen that other traffic gets obscured by the airplane wings and disappear from view. Try to avoid this!

Touch and go

On final include in R/T call your intention for touch and go.

After performing a landing including touchdown of the nosewheel, perform the following:

- Maintain direction
- Set flaps
  - flaps 10 on grass
  - flaps UP on paved runway (considering distance available)
  - In case of flapless landing, maintain flaps UP
- Set FULL power while setting carburetor heat OFF (when remaining distance is marginal, set FULL power first before above steps)
- Continue according to normal takeoff procedure

Circuit with low ceilings/visibility weather

- Always remain clear of clouds
- Adjust traffic circuit altitude if necessary
- Maintain enough ground visibility
- Don’t fly a wide pattern, do not lose sight of the runway
- Check direction of flight with heading indicator
- Do not continue into marginal VFR weather

Circuit with turbulent weather

- Fly a standard pattern as much as possible(see circuit)
- Try and maintain normal altitudes and airspeed without trying to hard to hold on
- Consider a flaps up landing because of greater controllability (Flaps up landing)
- Consider to increase airspeed above normal airspeed on base and final

Crosswind techniques

- The maximum demonstrated crosswind component is 15 kts

During takeoff:

- Yoke into the wind (maximum deflection)
- With increasing speed reduce yoke input to maintain wings level
- Maintain directional control with rudder (aircraft has a tendency to weathervane, so with wind from left nose wants to turn left, with wind from the right, nose wants to turn right). Rotate at a slightly higher airspeed than normal, this ensures a positive lift off and minimizes the risk of settling back on the runway.

After takeoff:

- After rotation reduce rudder input while simultaneously reducing stick input to normal. Airplane should self establish correct drift angle. Make small adjustments if necessary.

During the circuit:

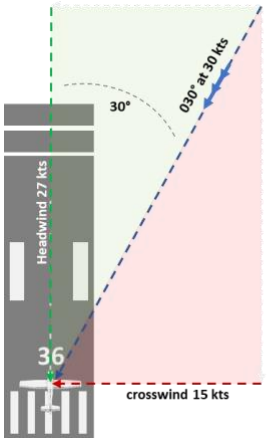
- Establish drift angle so as to correctly fly the circuit over the ground.

During the landing:

- After closing the throttle / during the roundout and flare align the longitudonal axis with the runway centerline
- Simultaneously input aileron into the wind to counteract any tendency to drift to the side
- Keep looking towards toward the end of the runway
- Make small corrections with the rudder to keep the longitudonal axis aligned
- Make small corrections with the ailerons to keep the airplane above the centerline
- Flare normally
- The main gear on the upwind side touches first, then the other main gear and the nose gear last

With a strong crosswind it may be advisable to execute a flapless landing

Figure 24 – Crosswind



Example:

Wind : 030°/ 30 kts
Runway 36 (360°)

What is the crosswind?
sin 30° = 0.5 ➡ 0.5 x 30 kts = 15 kts crosswind. (max Cessna 172)

Rules of thumb:
If the wind 30° to the rwy, crosswind is about 50% of the wind speed.
If the wind 45° to the rwy, crosswind is about 70% of the wind speed.
If the wind 60° to the rwy, crosswind is about 90% of the wind speed.
If the wind is more than 60° to the rwy, crosswind is the total wind.

What is the headwind?
cos 30 ° = 0.9 ➡ 0.9 x 30 kts = 27 kts Headwind

Abnormal procedures

First and foremost: maintain airplane control, fly the airplane!!

Rejected takeoff

NOTE: Commence a rejected takeoff if a situation arises before rotation that makes a continued takeoff unsafe or impossible

- Call out “abort” or “stop”
- Close the throttle, use rudder pedals to maintain centerline, flaps up
- If required, use brakes
- Report situation over radio and state intentions

Engine failure after takeoff (EFATO)

The goal of the simulated engine failure after takeoff is to prepare the student for a real engine failure after takeoff. The simulated engine failure is initiated by the instructor by closing the throttle and calling out “simulated engine failure”. React promptly and correctly, the procedures should be done quickly.

WARNING

If it is a simulated exercise, don’t turn anything off! Point to switches and controls (touch-drill only!)

- Immediately lower nose to glide attitude, (60 flaps 10° kts) 65 kts
- Choose a suitable landing site 30° left/right from the nose
- Use minimum bank angles to avoid obstacles
- If possible, do a short failure check (touch drill only!):
- Ignition both
- Carburetor heat ON
- Mixture full rich
- Fuel selector open
- Accomplish an emergency landing without power using (full) flaps, if required
- The instructor will end the exercise with the call out “Go-around”.

Engine failure during flight

- Maintain altitude until airspeed has reduced to 65 kts (see figure 25b best glide speed)
- Lower nose attitude to position for glide, maintain speed 65 kts
- Perform engine failure memory items (touch drill only!):
  - ✓ Airspeed..... 65 KIAS
  - ✓ Carburetor heat..... ON
  - ✓ Fuel selector valve..... BOTH
  - ✓ Mixture .....RICH
  - ✓ Ignition switch .....(Start if propeller is stopped) BOTH
  - ✓ Primer .....IN & LOCKED

    (if engine fails to start)
  - ✓ Emergency landing without engine power ..... EXECUTE

Emergency landing without engine power

The simulated engine failure is initiated by the instructor by closing the throttle and stating “simulated engine failure”.

WARNING

If it is an exercise, don’t turn anything off! Point to the switches and controls (touch-drill only!)

- Maintain altitude until airspeed has reduced to 65 kts (see figure 25b best glide speed)
- Lower nose attitude to position for glide, maintain speed 65 kts
- Trim of forces
- Check wind direction
- Make a plan and depending on altitude amd position fly direct to downwind, base or final

  > 1500 ft downwind with 1000 ft punt

  < 1500 ft direct base

  < 700 ft direct final
- Accomplish a failure drill (if not already done in previous procedure)
  - ✓ Carburetor heat..... ON
  - ✓ Fuel selector valve..... BOTH
  - ✓ Mixture .....FULL RICH
  - ✓ Ignition ..... (start if propellor is stopped) BOTH
  - ✓ Primer ..... IN AND LOCKED
- Check engine instruments and fuel quantity
- Choose a suitable landing site within range and into the wind
- In case of downwind procedure pick a 1000 ft point abeam the threshold
- Mayday call, ELT ON manually, transponder code 7700
- Check:
  - ✓ Nose attitude / airspeed 65 kts, forces trimmed off
  - ✓ Coordinated flight (ball centered, required due to loss of left turning tendency)

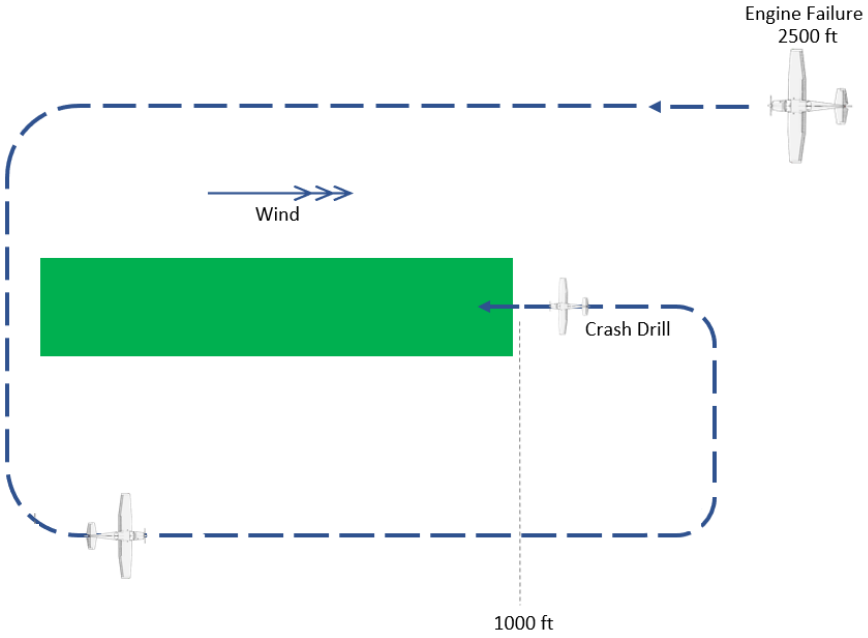
- ✓ Route and altitude

- Threshold between 30° and 45° behind wing (depending on wind and altitude), turn base
- Aim for 1/3 off the landing field
- When assured landing can be made on 1/3 of the field call out: “Speed checked” and lower flaps in stages
- Plan a full flap landing with 60 kts
- After selecting full flaps, aim for the threshold
- When certain engine is not going to start and final flaps set;
- **CRASH DRILL**:

  If it is an exercise, don’t turn anything off! Point to the switches and controls (touch-drill only!)

  - ✓ Mixture ..... IDLE CUT OFF
  - ✓ Fuel selector valve ..... OFF
  - ✓ Ignition switch ..... OFF
  - ✓ Wing flaps ..... AS REQUIRED
  - ✓ Master switch ..... OFF
  - ✓ Doors ..... UNLATCH
  - ✓ Belts/loose equipment ..... FASTENED/STOWED
- Accomplish a short/soft field landing

Figure 25 – Emergency landing without engine power



Estimated gliding distance

The maximum L/D-ratio (L/D_{max}) off a Cessna is approximately 9, so the glide ratio is approximately 9:1 – meaning for every unit down the forward travel is 9 units. the Cessna 172 will glide approx. 9.000 feet (1.5 NM) for every 1.000 feet available altitude. This is a typical value for the Cessna 172.

Figure 26a – Estimated gliding distance (not to scale)

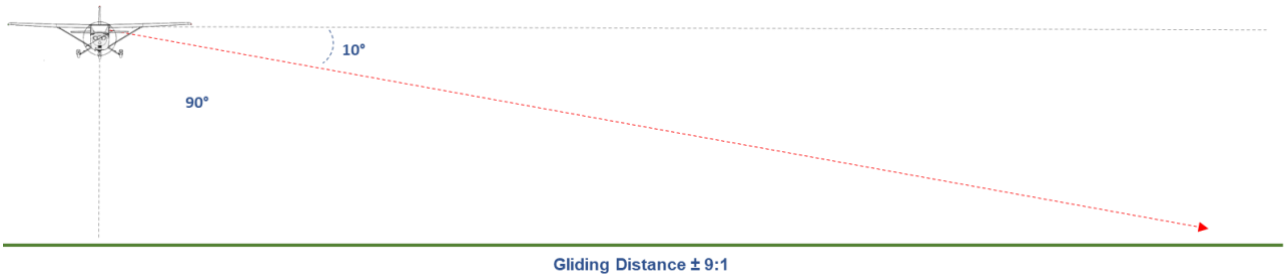
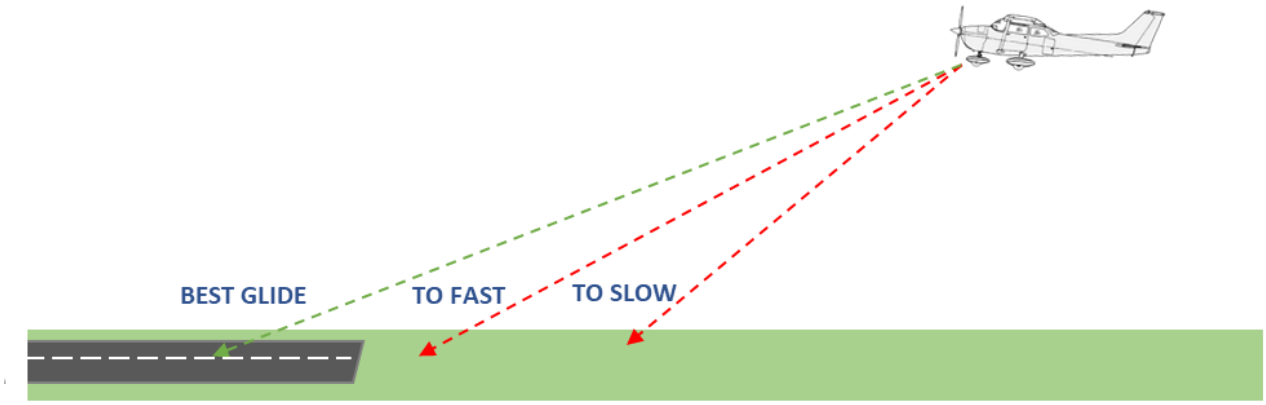


Figure 26b – Best glide speed



Wind affects gliding range over the ground

Figure 27a – Gliding Distance - no wind (not to scale)

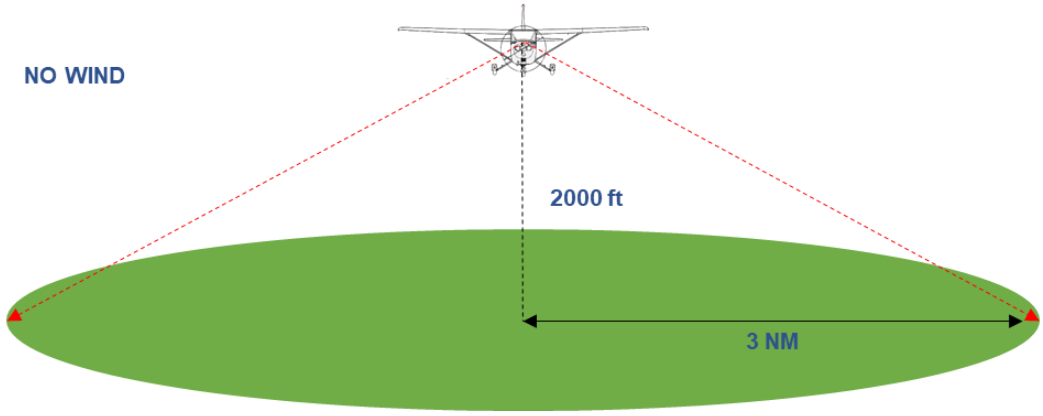
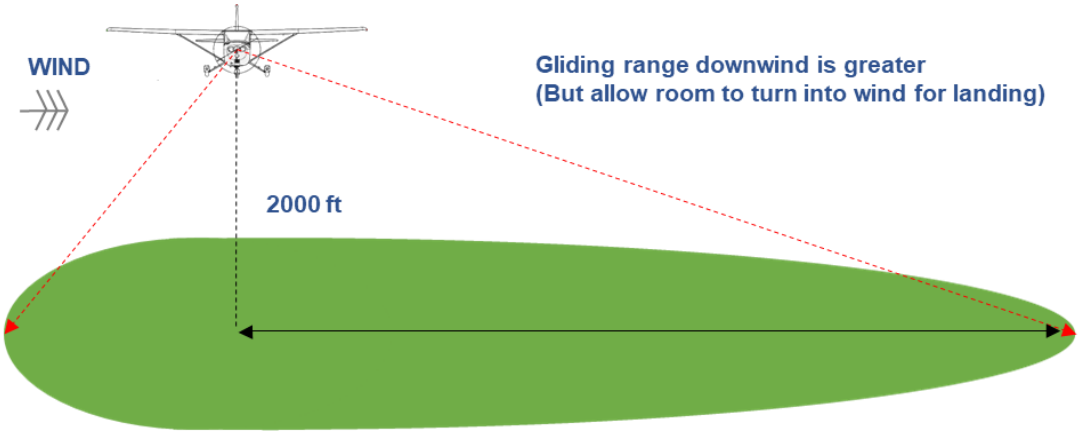


Figure 27b – Gliding Distance - with wind (not to scale)



Precautionary landing

The airplane must be in good technical condition for this procedure, if not, see emergency landing without power.

Only fly mentioned altitudes if cloud base and visibility allow this.

- BEFORE JOINING THE CIRCUIT checks
- Descend to 500 ft and turn downwind
- Choose a suitable landing site into the wind
- PAN PAN call
- Position the aircraft on a 500 ft downwind, carborator heat ON, flaps 10°, ±1900 RPM
- Turn to base and start descend, throttle to ±1500 RPM
- Turn to final and level off at 200 ft
- Advance throttle to ±1900 RPM, airspeed 75 kts, STOP DESCENT!
- Accomplish an inspection run abeam the field and start timing and check:
  - Slope
  - Obstacles
  - Length (see Figure 27b timing table)
  - Landing site condition
  - Obstacle free final and takeoff leg
- Start a go-around procedure at the end of the field
- Climb back to circuit altitude 500 ft
- Level off, throttle ±1900 RPM, airspeed 80 kts
- Turn crosswind and subsequently downwind
- DOWNWIND CHECK
  - ✓ Carburetor heat ..... ON
  - ✓ Flaps (check speed below V_{FE})..... Call out: “Speed checked”10° Maintain speed 75 kts
  - ✓ Engine instruments/fuel quantity..... CHECKED
- Threshold 45° - 60° behind the wing
- Turn base leg with 15°- 20° bank angle (max 30°), throttle naar ±1500 RPM when intercepting the glidepath
- Call out: “Speed checked” and Select 20° flaps and trim to maintain 70 kts
- Approximately 20° before the extended centerline, turn final with 15° bank angle (max 20°)
- Roll out on centerline
- FINAL CHECK:
  - ✓ Flaps ..... Call out: “Speed checked” 30°
- Maintain approach speed 60 kts
- Speed 55kts on short final, accomplish a short/soft field landing

NOTE: Normal minimum speed over the threshold is 55 kts, corrections up to -5 to +15 kts may be made to account for wind, turbulent weather windshear or runway conditions. Be aware that landing distance changes for different speeds!

Figure 28a – Precautionary landing with engine power

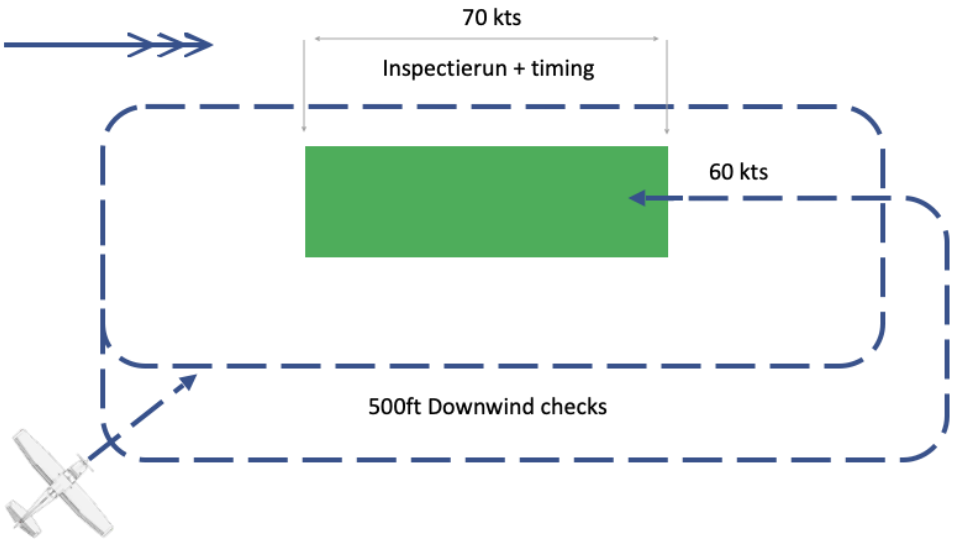


Figure 28b – Precautionary landing – Inspection run, timing and distance table

INSPECTION RUN + TIMING		
Minimal landings distance @500m		
Ground speed	***Meters per seconds***	***Amount of seconds to time***
60kts	31 m/s	16
70kts	36 m/s	14
80kts	41 m/s	12
90kts	46 m/s	11

Important links

ACHA Aero Club Hilversum-Amsterdam:

- https://vliegclubhilversum.nl/

Vliegveld Hilversum:

- http://www.ehhv.nl/

AIS-publicaties:

- https://www.lvnl.nl/informatie-voor-luchtvarenden/publicaties-voor-luchtvarenden

MILAIP:

- https://english.defensie.nl/topics/m/milaip-military-aeronautical-information-publication

NOTAMS / Flightplan /

- https://www.homebriefing.nl

METEO:

- https://www.luchtvaartmeteo.nl/

EASA Regulations:

- https://www.easa.europa.eu/regulations

SKYBRARY

- https://skybrary.aero/

Notes:

APPENDIX Checklist PH-DON

NORMAL CHECKLISTS C-172 PH-DON

Perform blue checklist items from memory

VFR DAY AND NIGHT ONLY

BEFORE STARTING ENGINE

Gust lock & pitot cover	REMOVED & STOWED
Walk-around and visual inspection	COMPLETED
Aircraft documents	ON BOARD
Seats & seatbelts	ADJUSTED & SECURED
Departure/pax briefing	COMPLETED
Doors & windows	CLOSED & LOCKED
Parking brake	SET
Fuel selector	BOTH
All electrical switches	OFF
Avionics master switch	OFF
Circuit breakers	IN
Master switch	ON
Fuel quantity	CHECKED
HOBBS & VUT	NOTED

STARTING ENGINE

Mixture	RICH
Carburetor heat	OFF
Prime	AS REQUIRED & LOCKED
Throttle	1 CM
Beacon light	ON
Propeller	CLEAR
Ignition switch	START

AFTER STARTING ENGINE

Throttle	1000 RPM
Oil pressure	CHECK
Starter warning light	OFF
Ammeter	CHARGING (+)
Flaps	UP
Avionics master switch	ON
Radio equipment & transponder	ON/SET
Flight instruments	SET & CHECKED
Parking brake	RELEASE

DURING TAXIING

Brakes	CHECK
Instruments	CHECK

ENGINE RUNUP

Throttle	1000 RPM
Parking brake	SET
Check behind	CLEAR
Throttle	1700 RPM
Engine instruments	CHECK
Carburetor heat	(check RPM drop) ON
Carburetor heat	(RPM back to 1700) OFF
Magnetos	(drop 125 rpm, diff. 50) R / BOTH / L / BOTH
Ammeter	CHARGING (+)
Throttle idle	±700 RPM
Throttle	1000 RPM
Throttle friction	SET

BEFORE TAKE-OFF

Flight controls	CHECKED
Rudder & elevator trim	SET FOR TAKE OFF
Flaps	(Grass, 10°) SET FOR TAKE OFF
Transponder	ALT
Landing light	ON
Strobe light	ON
Pitot heat	AS REQUIRED
Take-Off briefing	COMPLETED
Parking brake	RELEASE

AFTER TAKE-OFF (Above 200ft AAL)

Flaps	UP
Landing light	OFF

APPROACH

Approach briefing	COMPLETED
Altimeter	SET QNH
Primer	CLOSED AND LOCKED
Magnetos	BOTH
Landing light	ON
Mixture	RICH
Fuel selector	BOTH
Brakes	CHECKED
Seat belts	FASTENED

DOWNWIND (80-75 kts)

Carburetor heat	ON
Flaps	(<110 kts) 10°
Engine instruments/fuel quantity	CHECKED

BASE LEG (70 kts)

Flaps	20°

FINAL (70 - 60 kts)

Flaps	AS REQUIRED

BALKED LANDING

Throttle	FULL
Carburetor heat	OFF
Flaps	20°
Speed	MIN 55 kts

AFTER LANDING

Flaps	UP
Carburetor heat	OFF
Landing light	OFF
Strobe lights	OFF
Pitot heat	OFF

AFTER PARKING

Throttle	1000 RPM
Parking brake	SET
Avionics master switch	OFF
All electrical switches (Except Beacon Light)	OFF
Mixture	IDLE CUT OFF
Beacon light	OFF
Ignition	OFF AND KEY REMOVED
Master switch	OFF
HOBBS & VUT	NOTED
Emergency locator transmitter	NOT TRIGGERED
Gust lock & pitot cover	INSTALL

AEROCLUB HILVERSUM-AMSTERDAM

NL-ATO-227

ABNORMAL CHECKLISTS C-172 PH-DON

VFR DAY AND NIGHT ONLY

Perform RED & BOLD checklist items from memory

ENGINE FAILURES:

ENGINE FAILURE DURING TAKEOFF RUN

Throttle ..... IDLE
Brakes ..... APPLY
Flaps ..... RETRACT
Mixture ..... IDLE CUT OFF
Ignition switch ..... OFF
Master switch ..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

Airspeed ..... (flaps down) 60 kts
..... (flaps up) 65 kts
Mixture ..... IDLE CUT OFF
Fuel selector valve ..... OFF
Ignition switch ..... OFF
Flaps ..... AS REQUIRED
Master switch ..... OFF
Forced landing ..... EXECUTE

ENGINE FAILURE DURING FLIGHT

Airspeed ..... 65 kts
Carburetor heat ..... ON
Fuel selector valve ..... BOTH
Mixture ..... RICH
Ignition switch ..... (START if propeller is stopped) BOTH
Primer ..... IN AND LOCKED
(If engine fails to start)
Forced landing ..... EXECUTE

ENGINE FIRES:

FIRE DURING START ON GROUND

Cranking ..... CONTINUE
IF ENGINE STARTS:
Throttle ..... 1700 RPM FOR A FEW MINUTES
Mixture ..... IDLE CUT OFF
IF ENGINE FAILS TO START:
Throttle ..... FULL OPEN
Mixture ..... IDLE CUT OFF
Cranking ..... CONTINUE FOR 2 TO 3 MINS
Engine ..... SECURE
Master switch ..... OFF
Ignition switch ..... OFF
Fuel selector valve ..... OFF

ENGINE FIRE IN FLIGHT

Mixture ..... IDLE CUT OFF
Fuel selector valve ..... OFF
Master switch ..... OFF
Cabin heat and air ..... (except overhead vents) OFF
Airspeed ..... 100 kts
(if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture)
Forced landing ..... EXECUTE

ELECTRICAL FIRE IN FLIGHT

Master switch ..... OFF
Avionics power switch ..... OFF
All other switches (except ignition) ..... OFF
Vents/cabin air/heat ..... CLOSED
if fire appears out and electrical power is necessary for continuance for flight
Master switch ..... ON
Circuit breakers ..... CHECK
for faulty circuit, do not reset
Radio switches ..... OFF
Avionics power switch ..... ON
Radio/electrical switches ..... ON
one at a time, with delay after each until short circuit is localized
Vents/cabin air/heat ..... OPEN
when it is ascertained that fire is completely extinguished

CABIN FIRE

Master switch ..... OFF
Vents/cabin air/heat ..... CLOSED
Land ..... AS SOON AS POSSIBLE

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS:

AMMETER SHOWS EXCESSIVE RATE OF CHARGE (Full Scale Deflection)

Alternator ..... OFF
Alternator circuit breaker ..... PULL
Non-essential electrical equipment ..... OFF
Land ..... **AS SOON AS PRACTICAL**

LOW VOLTAGE LIGHT ILLUMINATES DURING FLIGHT (Ammeter indicates discharge)

(Illumination of the low-voltage light may occur during low RPM conditions with an electrical load on the system such as during a low RPM taxi. Under these conditions, the light will go out at higher RPM. The master switch need not be recycled since an over-voltage condition has not occurred to deactivate the alternator system)

Avionics power switch ..... OFF
Alternator circuit breaker ..... CHECK IN
Master switch ..... (both sides) OFF
Master switch ..... ON
Low voltage light ..... CHECK OFF
Avionics powers switch ..... ON
IF LOW VOLTAGE LIGHT ILLUMINATES AGAIN:
Alternator ..... OFF
Non-essential radio and electrical equipment ..... OFF
Land ..... **AS SOON AS PRACTICAL**

NOTE:

This checklist is a Recommended Operator Checklist and for reference only. It is not a substitute for and does not supersede the current approved Airplane Flight Manual.
For a comprehensive listing see the Airplane Flight Manual.

APPENDIX Checklist PH-JBC en Afwijkingen

NORMAL CHECKLISTS C-172 PH-JBC

Perform blue checklist items from memory

VFR DAY ONLY

BEFORE STARTING ENGINE

Gust lock & pitot cover	REMOVED & STOWED
Walk-around and visual inspection	COMPLETED
Aircraft documents	ON BOARD
Seats & seatbelts	ADJUSTED & SECURED
Departure/pax briefing	COMPLETED
Doors & windows	CLOSED & LOCKED
Parking brake	SET
Fuel selector	BOTH
All electrical switches	OFF
Avionics master switch	OFF
Circuit breakers	IN
Master switch	ON
Fuel quantity	CHECKED
HOBBS & VUT	NOTED

STARTING ENGINE

Mixture	RICH
Carburetor heat	OFF
Prime	AS REQUIRED & LOCKED
Throttle	1 CM
Beacon light	ON
Propeller	CLEAR
Ignition switch	START

AFTER STARTING ENGINE

Throttle	1000 RPM
Oil pressure	CHECK
Starter warning light	OFF
Ammeter	CHARGING (+)
Flaps	UP
Avionics master switch	ON
Radio equipment & transponder	ON/SET
Flight instruments	SET & CHECKED
Parking brake	RELEASE

DURING TAXIING

Brakes	CHECK
Instruments	CHECK

ENGINE RUNUP

Throttle	1000 RPM
Parking brake	SET
Check behind	CLEAR
Throttle	1700 RPM
Engine instruments	CHECK
Carburetor heat	(check RPM drop) ON
Carburetor heat	(RPM back 1700) OFF
Magnetos	(drop 125 RPM, diff. 50) R / BOTH / L / BOTH
Ammeter	CHARGING (+)
Throttle idle	±700 RPM
Throttle	1000 RPM
Throttle friction	SET

BEFORE TAKEOFF

Flight controls	CHECKED
Elevator trim	SET FOR TAKE OFF
Flaps	(grass 10°) SET FOR TAKE OFF
Transponder	ALT
Landing light	ON
Pitot heat	AS REQUIRED
Take-Off briefing	COMPLETED
Parking brake	RELEASE

AFTER TAKEOFF (Above 200ft AAL)

Flaps	UP
Landing light	OFF

APPROACH

Approach briefing	COMPLETED
Altimeter	SET QNH
Primer	CLOSED AND LOCKED
Magnetos	BOTH
Landing light	ON
Fuel selector	BOTH
Mixture	RICH
Brakes	CHECKED
Seat belts	FASTENED

DOWNWIND (80-75 kts)

Carburetor heat	ON
Flaps	(<87 kts) 10°
Engine instruments/fuel quantity	CHECKED

BASE LEG (70 kts)

Flaps	20°

FINAL (70 - 60 kts)

Flaps	AS REQUIRED

BALKED LANDING

Throttle	FULL
Carburetor heat	OFF
Flaps	20°
Speed	Safe speed, min 55 kts

AFTER LANDING

Flaps	UP
Carburetor heat	OFF
Landing light	OFF
Pitot heat	OFF

AFTER PARKING

Throttle	1000 RPM
Parking brake	SET
Avionics master switch	OFF
All electrical switches (Except Beacon Light)	OFF
Mixture	IDLE CUT OFF
Beacon light	OFF
Ignition	OFF AND KEY REMOVED
Master switch	OFF
HOBBS & VUT	NOTED
Emergency locator transmitter	NOT TRIGGERED
Gust lock & pitot cover	INSTALL

AEROCLUB HILVERSUM-AMSTERDAM

NL-ATO-227

ABNORMAL CHECKLISTS C-172 PH-JBC

VFR DAY ONLY

Perform RED & BOLD checklist items from memory

ENGINE FAILURES:

ENGINE FAILURE DURING TAKEOFF RUN
Throttle ..... **IDLE**
Brakes ..... **APPLY**
Flaps ..... **RETRACT**
Mixture ..... **IDLE CUT OFF**
Ignition switch ..... OFF
Master switch ..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF
Airspeed ..... **(flaps 10) 65 kts**
..... **(flaps up) 70 kts**
Mixture ..... **IDLE CUT OFF**
Fuel selector valve ..... **OFF**
Ignition switch ..... **OFF**
Flaps ..... **AS REQUIRED**
Master switch ..... **OFF**
Forced landing ..... **EXECUTE**

ENGINE FAILURE DURING FLIGHT
Airspeed ..... **70 kts**
Carburetor heat ..... **ON**
Fuel selector valve ..... **BOTH**
Mixture ..... **RICH**
Ignition switch ..... **(START if propeller is stopped) BOTH**
Primer ..... **IN AND LOCKED**
(If engine fails to start)
Forced landing ..... **EXECUTE**

ENGINE FIRES:

FIRE DURING START ON GROUND
Cranking ..... **CONTINUE**
IF ENGINE STARTS:
Throttle ..... **1700 RPM FOR A FEW MINUTES**
Mixture ..... **IDLE CUT OFF**
IF ENGINE FAILS TO START:
Throttle ..... **FULL OPEN**
Mixture ..... **IDLE CUT OFF**
Cranking ..... **CONTINUE FOR 2 TO 3 MINS**
Engine ..... **SECURE:**
Master switch ..... **OFF**
Ignition switch ..... **OFF**
Fuel selector valve ..... **OFF**

ENGINE FIRE IN FLIGHT
Mixture ..... **IDLE CUT-OFF**
Fuel selector valve ..... **OFF**
Master switch ..... **OFF**
Cabin heat and air ..... **(except overhead vents) OFF**
Airspeed ..... **100 kts**
(if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture)
Forced landing ..... **EXECUTE**

ELECTRICAL FIRE IN FLIGHT
Master switch ..... **OFF**
Avionics power switch ..... OFF
All other switches (except ignition) ..... **OFF**
Vents/cabin air/heat ..... **CLOSED**
if fire appears out and electrical power is necessary for continuance for flight
Master switch ..... ON
Circuit breakers ..... CHECK
for faulty circuit, do not reset
Radio switches ..... OFF
Avionics power switch ..... ON
Radio/electrical switches ..... ON
one at a time, with delay after each until short circuit is localized
Vents/cabin air/heat ..... OPEN
when it is ascertained that fire is completely extinguished

CABIN FIRE
Master switch ..... **OFF**
Vents/cabin air/heat ..... **CLOSED**
Land ..... **AS SOON AS POSSIBLE**

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS:

INSUFFICIENT RATE OF CHARGE
(Ammeter shows discharge during flight)
Alternator ..... OFF
Non-essential radio/electrical equipment ..... OFF
Land ..... **AS SOON AS PRACTICAL**

EXCESSIVE RATE OF CHARGE
Over voltage light is illuminated
Avionics power switch ..... OFF
Master switch ..... (both sides) OFF
Master switch ..... ON
Over voltage light ..... CHECK OFF
Avionics power switch ..... ON
IF OVER VOLTAGE LIGHT ILLUMINATES AGAIN:
Land ..... **AS SOON AS POSSIBLE**

NOTE:
This checklist is a Recommended Operator Checklist and for reference only. It is not a substitute for and does not supersede the current approved Airplane Flight Manual.
For a comprehensive listing see the Airplane Flight Manual.

De JBC is gewoon een Cessna 172, maar wijkt op onderdelen iets af. Daarom is het goed je te verdiepen in die verschillen, voordat je ermee gaat vliegen.

Hier een korte opsomming, die je niet ontslaat van je eigen verantwoordelijkheid om kennis te nemen van de POH en de manuals van sommige avionica. Beiden op onze website terug te vinden onder https://vliegclubhilversum.nl/flightplanning/checklists-manuals/

1. Lay-out cockpit dashboard

De 4 motor gages zitten rechtsboven, in plaats van linksonder.

Globaal zitten de andere klokjes wel in de basic-six opstelling, met de G5's links van het midden in plaats van in het midden.

2. Flaps

De 172M kent de oude maximale flapsetting van 40 graden. Bij de DON en de SKC is die teruggebracht naar 30 graden. Waarmee de MTOW iets omhooggaat. Voor de JBC, in de serie 172M, bestaat nog geen 'supplemental type certificate' (STC) voor de wijziging van de flapsetting, waardoor we de maximale flapsetting niet kunnen terugbrengen naar 30 graden. De MTOW voor de JBC blijft daardoor 1.043 kg. Advies, gebruik de 40 graden setting standaard niet, tenzij je deze heel bewust wel wilt selecteren.

De bediening van de flaps is ook anders dan bij onze andere Cessna's. Het is een **traploze kantelknop**, die je naar beneden moet vasthouden, totdat je de gewenste flapsetting hebt verkregen. Rechtsboven deze knop, zit een meter waarop de graden zijn af te lezen, maar gewoon kijken en/of tellen kan ook. Omhoog is de knop naar boven trekken en vasthouden tot je de gewenste setting hebt. Maar pas op (!) als de gewenste stand is bereikt, moet je de knop ***actief*** in de neutraal (midden) stand zetten. Als je dat niet doet, blijft de elektromotor lopen totdat de flapsetting nul is geworden. Dat kan vervelend uitkomen als je wilt doorstarten op short final. Dus check dat je de knop op neutraal zet als je de juiste setting hebt bereikt.

3. Motorolie
   Afwijkend van oil level bij de SKC & DON is bij de JBC het minimum **6** Quarts**,** maximaal is 8 Quarts.

4. Deurklink
   De deurklink zit verder naar achteren als je op de stoel zit. Even wennen om die goed te bedienen.