# PROCEDURE
## KATANA DV20

PH-MFT
PH-SKM

English version

PROCEDURES-DV20 – EN – VERSION 1.8 – 01.05.2026
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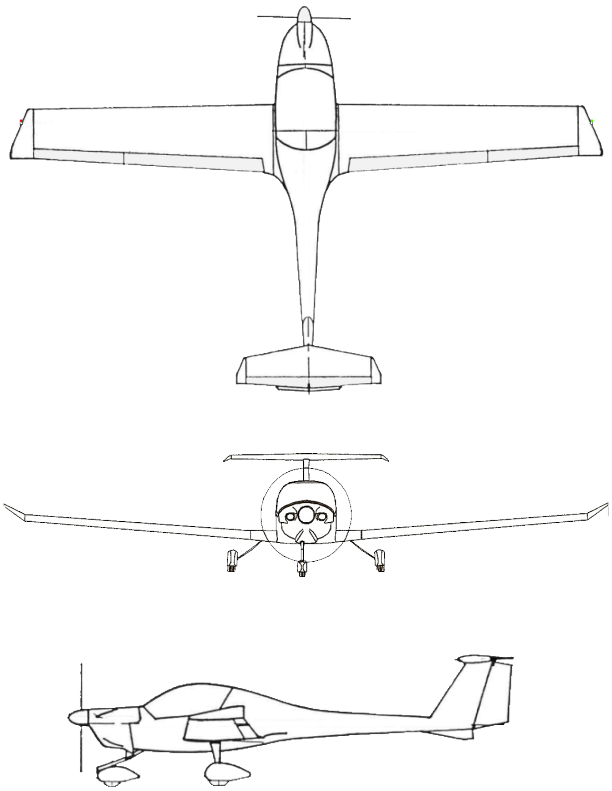
VLIEGCLUB HILVERSUM - AMSTERDAM

CUSTOMIZED FOR NL-ATO-227



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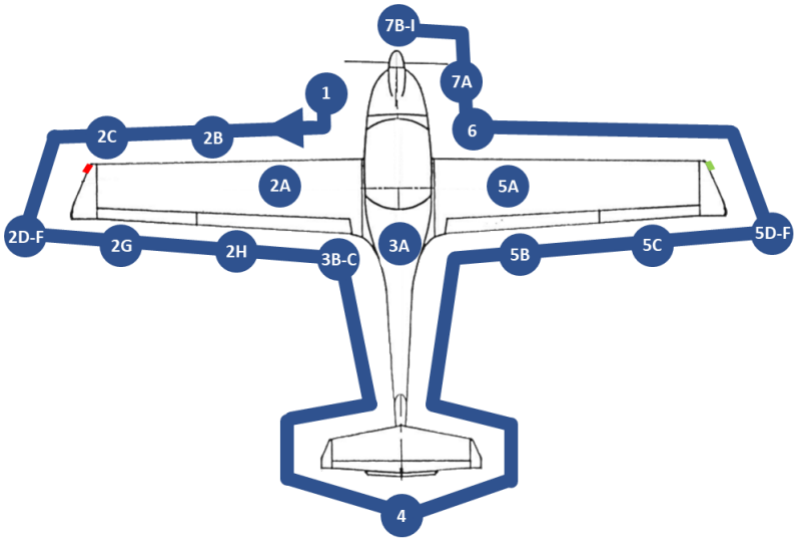
# Contents

## Revision record

| REVISION | REVISION DATE | TOTAL PAGES | REVISED PAGES | NOTES |
|---|---|---|---|---|
| 1.0 | 20-01-2022 | ALL | ALL | REVISED |
| 1.1 | 04-04-2022 | ALL | ALL | REVISED |
| 1.2 | 12-06-2022 | 40 | SLOW FLIGHT / CIRCUIT EN NORMAL LANDING / FLAPS UP LANDING / EMERGENCY LANDING | ADJUSTMENTS FOR SPEEDS AND POWERSETTINGS |
| 1.3 | 12-06-2022 | 40 | ALL | MINOR TEXTUAL ADJUSTMENTS, TERMINOLOGY MORE LIKE DV20-AFM |
| 1.4 | 01-07-2023 | 40 | 8,26-40 | INCLUSION RADIO PROCEDURES, RE ORDENING OF CIRCUIT PROCEDURES, NON NORMAL PROCEDURES AND DOWNWIND CHECKLIST & PROCEDURES |
| 1.5 | 08-04-2023 | ALL | ALL + 11, 12 | THE LAYOUT AND ALL IMAGES ADAPTED TO THE LATEST CHANGES ACCORDING TO OTHER MANUALS. POWERSETTING TABLE AND EXPLANATION TAXI CHECKS ADDED |
| 1.6 | 01-05-2024 | ALL | ALL | MINOR TEXTURAL CHANGES<br>ENG FAILURE AFTER T/O PROCEDURE CF AFM<br>CLIMB PROCEDURE CHANGE<br>R/T CHANGED<br>MIN ALT FOR MANOUVERS CHANGED CF OM<br>PROCURE ORDER STALLS CHANGED<br>PROCEDURE T&G ADDED<br>FLAP SELECTION PROCEDURES CHANGED |
| 1.7 | 01-04-2025 | ALL | ALL | MINOR TEXTURAL/GRAPHICS CHANGES<br>TEKST CHANGE T/O CIRCUIT CF AIP<br>INSERTED PROCURE FUEL DIPSTICK<br>INSERTED PROCURE OIL CHECK/REFILL<br>INSERTED CHECKLISTS<br>IINSERTED BRIEFING PROCEDURE<br>CHANGE PROCEDURE SLOWFLIGHT<br>INSERTED PROCEDURE APPR TO STALL IN LDG CONF IN DESC TURN<br>INSERTED PROCEDURE APPR TO STALL IN APPROACH CONFIG IN CLMB TURN<br>TEXTURAL CHANGE SOFT FIELD TAKEOFF<br>ADDED APPENDIX FOR PH-MFT CHECKLIST |
| 1.8 | 01-05-2026 | | | TEXTUAL CHANGES<br>ADDED NORMAL PROCEDURES<br>MINOR CHANGES IN PROCEDURES<br>ADDED R/T PROCEDURES EHHV |
| | | | | |

# Preflight Procedures

## Walk Around Check and Visual Inspection




**CAUTION**
Visual Inspection is defined as check for:

Defects, cracks, delamination, excessive play, insecure or improper mounting, and general condition.
Additionally, freedom of movement for control surfaces.

### CABIN

| | |
|---|---|
| Airplane documents | CHECK |
| Pitot Cover & Stall warning plug | REMOVED AND STOWED |
| Ignition key | OFF AND REMOVED |
| Canopy | CLEAN/UNDAMAGED |
| All circuit breakers | IN |
| Master Switch | ON |
| Fuel Quantity | CHECKED |
| Position Lights, ACL, Landing Light | ON CHECKED & OFF |
| Master Switch | OFF |
| Flight controls/Trim | FREE AND CHECKED |
| Loose objects/baggage | STOWED/HARNESS ATTACHED |
| Main wing bolts (between seats) | SECURED |
| Emergency Locator Transmitter | ARM |

### ❶ LEFT MAIN LANDING GEAR

| | |
|---|---|
| Landing Gear Strut | VISUAL INSPECTION |
| Tire Pressure | CHECK FOR PROPER INFLATION |
| Tire, Wheel, Brake | VISUAL INSPECTION |
| Creep Marks | VISUAL INSPECTION |

### ❷ LEFT WING

| | |
|---|---|
| Entire Wing | VISUAL INSPECTION |
| Stall Warning | CHECK (SUCK ON OPENING) |
| Pitot-Static Probe | CLEAN, HOLE OPEN |
| Position Light / ACL | VISUAL INSPECTION |
| Wing Tip, Aileron Balancing Mass | VISUAL INSPECTION |
| Aileron | VISUAL INSPECTION |
| Wing Flap | VISUAL INSPECTION |

### ❸ FUSELAGE

| | |
|---|---|
| Skin | VISUAL INSPECTION |
| Tank Vent | CHECK |
| Tank drain | DRAIN WATER |

### ❹ EMPENNAGE

| | |
|---|---|
| Fins and control surfaces | VISUAL INSPECTION |
| Trim Tab | VISUAL INSPECTION |

### ❺ RIGHT WING

| | |
|---|---|
| Entire Wing | VISUAL INSPECTION |
| Wing Flap | VISUAL INSPECTION |
| Aileron | VISUAL INSPECTION |
| Wing Tip, Aileron Balancing Mass | VISUAL INSPECTION |
| Position Light / ACL | VISUAL INSPECTION |

### ❻ RIGHT MAIN LANDING GEAR

| | |
|---|---|
| Landing Gear Strut | VISUAL INSPECTION |
| Tire Pressure | CHECK FOR PROPER INFLATION |
| Tire, Wheel, Brake | VISUAL INSPECTION |
| Creep Marks | VISUAL INSPECTION |

### ❼ NOSE

| | |
|---|---|
| Oil Level | CHECK 2 TO 3 LTR USING DIP-STICK |

**NOTE**
Notable consumption of oil or coolant does normally not occur. It is therefore neither necessary nor sensible to refill before the level has dropped below the minimum marking.

| | |
|---|---|
| Cowling & Fasteners | VISUAL INSPECTION |
| Air Intakes (six) | FREE |
| Propeller | VISUAL INSPECTION, GROUND CLEARANCE MIN: APPROX. 25 CM (10 IN) |
| Spinner | VISUAL INSPECTION |
| Nose Gear | VISUAL INSPECTION |
| Tire and Wheel | VISUAL INSPECTION |
| Tire Pressure | CHECK FOR PROPER INFLATION |

## Instructions for use fuel dipstick and fuel gauge

- Dipstick clean
- Aircraft horizontal, 10 cm difference in wingtip is no problem
- Black marking level with the edge of the filler neck
- The lowest notch indicates 10 liters of usable fuel
- 2nd mark 20 liters
- 3rd mark 30 liters
- 4th mark 40 liters
- 5th mark 50 liters
- Last mark 60 liters
- The total capacity of 77 liters is NOT marked.

Note: Due to the shape of the tank, the distances between the markings are not equal.

The fuel gauges do not reliably indicate the amount of fuel. The fuel gauge shows more fuel than the dipstick. The gauge gives a false positive impression of the amount of fuel. During flight, the gauge does decrease. To prevent running out of fuel, it has been decided that when the fuel gauge indicates ¼, landing must occur within 30 minutes.

## Instructions for checking and refilling oil

If the dipstick indicates a low oil level, the propeller must first be turned manually. Follow these steps:

1. Ensure safety first:
   - Confirm that the key has been removed from the ignition.
   - Set the throttle lever to fully open (this ensures the engine cannot start).
   - Engage the brakes on the Katana.
2. Prepare to turn the propeller:
   - Remove the oil filler cap, but leave the dipstick in place.
   - Turn the propeller only in its normal rotation direction (standing in front of the aircraft facing the propeller, this is counterclockwise). Continue turning until you hear a slurping sound.
3. Check the oil level:
   - Measure the oil level using the dipstick. A normal oil level is indicated on the flat section of the dipstick.
4. Finish up:
   - Reinsert the dipstick, tighten the oil filler cap, and close the compartment hatch.

If the oil level is too low, contact Ops so that maintenance can refill the oil.

## What can go wrong?

1. **Using the wrong oil:**
   The Katana requires **Aeroshell Sport Plus 4 oil**, which is not always stocked by ground services. Never add oil from ground services into the Katana without verifying it is the correct type.
2. Turning the propeller in the wrong direction:
   Never turn the propeller against the normal rotation direction. Doing so will damage the gearbox.
3. **Overfilling the oil:**
   The difference between minimum and maximum on the dipstick is only **0.45 liters**. Refilling often requires just a few deciliters, and too much oil can cause the engine to seize. Do not add oil unnecessarily.
4. **Reading the oil level when the engine is hot:**
   When the engine has just been running, the oil will be dispersed throughout the engine, causing the dipstick to show a lower level. If the dipstick shows minimum on a warm engine, the oil level is

sufficient. If the dipstick indicates a very low level, turn the propeller as per the instructions above. Always handle oil checks and refills with care to ensure the aircraft's proper functioning!

# NORMAL CHECKLIST DV-20
## PH-SKM

VFR DAY ONLY

Perform blue checklist items from memory

### BEFORE STARTING ENGINE
Walk around check and visual Inspection ..... COMPLETED
Rudder pedals .....ADJUSTED & LOCKED
Safety belts.....FASTENED
Departure/pax briefing..... COMPLETED
Canopy (check left and right) .....CLOSED AND LOCKED
Parking brake ..... PULL KNOB, PUSH BRAKES 3 TIMES
Fuel shut-off valve .....OPEN
Carburetor heat ..... FREE, OFF
Throttle ..... FREE, IDLE
Propeller speed control lever..... FREE, MAX RPM
Friction of throttle quadrant .....ADJUST
Avionics master switch .....OFF
Master switch (battery)..... ON
Generator warning light..... ON
Fuel pressure warning light ..... ON
Low voltage caution light..... ON
HOBBS & VUT ..... NOTED

### STARTING ENGINE
Electric fuel pump …… .....(noise of pump audible) ON
Fuel pressure warning light .....OFF
Anti-Collision Light..... ON

**COLD START** Throttle.....IDLE
Choke..... ON
**WARM START** Throttle.....APPROX. 2 CM FORWARD
Choke.....OFF

Propeller area .....CLEAR
Ignition key .....START

***CAUTION:*** *If oil pressure is below 1.5 bar shut down engine immediately (10 seconds maximum delay)*

### AFTER STARTING ENGINE
Throttle ..... 1100 - 1500 RPM
Oil pressure .....CHECK IN GREEN RANGE WITHIN 10 SEC
Choke .....OFF
Engine instruments ..... CHECKED
Generator warning light .....OFF
Low voltage caution light .....OFF
Electric fuel pump .....OFF
Fuel press warning light…..Might not illuminate (Wait for 10 sec)
Electric fuel pump ..... ON
Ammeter ..... CHARGING
Avionics master switch ..... ON
Radio equipment & transponder .....ON/SET/STBY
Flight instruments .....SET AND CHECKED
Flaps ..... CHECK, EXTEND & RETRACT
Parking brake ..... RELEASE

### DURING TAXIING
Brakes ..... CHECKED
Instruments..... (ouside parking area) CHECKED

***CAUTION:*** *warm up engine oil to a temperature of 50°at 1100 – 1500rpm (also possible during taxiing)*

### ENGINE RUNUP/BEFORE TAKE OFF
Parking brake ..... PULL KNOB, PUSH BRAKES 3 TIMES
Canopy (check left and right) .....CLOSED AND LOCKED
Engine instruments ..... WITHIN GREEN RANGE
Fuel quantity indicator ..... CHECK
Flaps.....T/O
Controls .....FREE AND CORRECT
Trim .....NEUTRAL
Throttle (check behind and feet on brakes).....1700 RPM
Propeller speed control lever ..... PULL COMPLETELY 3 TIMES
..... (RPM drop: 100 - 200 RPM)

### CONTINUED – ENGINE RUNUP/BEFORE TAKE OFF
Ignition switch .....(drop 150 RPM, diff 50 RPM) L/R/BOTH
Throttle .....1500 RPM
Carburetor heat .....(drop: 30 RPM) ON
Carburetor heat .. (RPM back to 1500 to check for carb ice) OFF
Throttle .....FULL for 5 Sec, back to IDLE
Throttle .....1000 RPM
Electric fuel pump ..... ON
Propeller speed control lever .....MAX RPM
Transponder .....ALT
Landing light .....AS REQUIRED
Take-Off briefing..... COMPLETED
Parking brake .....RELEASE

### AFTER TAKE-OFF (min 200ft AAL)
Flaps.....UP
Propeller speed control lever.....2400 RPM
Electric fuel pump ..... (above 1000ft AAL) OFF

### CRUISE
Throttle .....AS REQUIRED
Propeller speed control lever ..... 1900-2400 RPM

### APPROACH
Approach briefing ..... COMPLETED
Altimeter .....SET QNH
Electric fuel pump ..... ON
Landing light .....AS REQUIRED
Ignition switch .....BOTH
Brakes/belts/loose objects ....CHECKED/FASTENED/STOWED

### DOWNWIND (70 kts)
Carburetor heat ..... ON
Flaps..... (max 81 kts) T/O
Engine instruments/fuel quantity .....CHECKED

### FINAL (minimum approach speed 60 kts)
Propeller speed control lever ..... MAX RPM
Flaps.....AS REQUIRED

### BALKED LANDING
Propeller speed control lever ..... MAX RPM
Throttle .....FULL
Carburetor heat ..... OFF
Flaps .....T/O
Speed ..... ($V_X$) 58 KTS

### AFTER LANDING (stop aircraft clear of runway)
Throttle .....IDLE
Flaps .....UP
Carburetor heat ..... OFF
Landing light ..... OFF
Transponder ..... SBY

### ENGINE SHUT-DOWN
Throttle .....IDLE
Parking brake ..... PULL KNOB, PUSH BRAKES 3 TIMES
Electric fuel pump ..... OFF
Avionics master switch ..... OFF
All electric switches (except ACL) ..... OFF
Ignition switch .....OFF/KEY REMOVED
Anti Collision Light (after prop is stopped)..... OFF
Master switch ..... OFF
HOBBS and VUT .....NOTED
Emergency locator transmitter .....NOT TRIGGERED
Pitot cover & stall warning plug .....INSTALL
Check the aircraft and windows for dirt and clean if necessary.

# ABNORMAL CHECKLIST DV-20
## PH-SKM

**VFR DAY ONLY**

Perform **RED & BOLD** checklist items from memory

### ENGINE FAILURES / MALFUNCTION:

**ENGINE FAILURE DURING FLIGHT**
**Airspeed ..... 70 KTS**
**Propeller speed control lever ..... FULL FORWARD**
**Electric fuel pump ..... ON**
**Ignition ..... BOTH**
**Carburetor heat ..... ON**
**Choke ..... OFF**
**Fuel shut-off valve ..... OPEN**
**(If unable to start engine proceed with emergency landing with engine off below)**

**ENGINE RUNNING ROUGHLY**
**Carburetor heat ..... ON**
**Electric fuel pump ..... ON**
**Ignition ..... CHECK BOTH**
**Throttle ..... AT PRESENT POSITION**
**No improvement ..... REDUCE THROTTLE TO MIN REQ POWER AND LAND AS SOON AS POSSIBLE**

**LOSS OF OIL PRESSURE**
**Oil temperature ..... CHECK**

If oil pressure drops below green arc but oil temp is normal
..... LAND AT NEAREST AIRPORT

If oil pressure drops below green arc and oil temp is rising .....
LAND AS SOON AS POSSIBLE AND BE PREPARED FOR ENGINE FAILURE AND EMERGENCY LANDING

**LOSS OF FUEL PRESSURE**
**Electric fuel pump ..... ON**
If fuel pressure warning light does not extinguish .....
LAND AS SOON AS POSSIBLE AND BE PREPARED FOR ENGINE FAILURE AND EMERGENCY LANDING

**EMERGENCY LANDING WITH ENGINE OFF**
**Airspeed ..... 59 kts**
**Flaps ..... AS REQUIRED**
**Fuel shut-off valve ..... CLOSED**
**Ignition switch ..... OFF**
**Master switch (battery) ..... OFF**
**Belts ..... TIGHT**

### FIRES:

**ENGINE FIRE ON THE GROUND**
**Fuel shut-off valve ..... CLOSED**
**Throttle ..... FULL**
**Master switch (battery) ..... OFF**
**Ignition switch ..... OFF**
**..... EVACUATE AIRPLANE IMMEDIATELY**

**ENGINE FIRE IN FLIGHT**
**Airspeed ..... 70 KTS**
**Flaps ..... T/O**
**Fuel shut-off valve ..... CLOSED**
**Throttle ..... FULL**
**Electric fuel pump ..... OFF**
**Cabin heat ..... CLOSED**
**Master switch (battery) ..... OFF**
**..... PERFORM EMERGENCY LANDING WITH ENGINE OFF**

**ELECTRICAL FIRE OR SMOKE ON THE GROUND**
**Master switch (battery) ..... OFF**
**IF ENGINE RUNNING:**
Throttle ..... IDLE
Fuel shut-off valve ..... CLOSED
Ignition switch ..... OFF
Canopy ..... OPEN

**ELECTRICAL FIRE INCLUDING SMOKE IN FLIGHT**
**Master switch (battery) ..... OFF**
**Cabin heat ..... CLOSED**
**Cabin air ..... OPEN**
**In case the fire is extinguished and electric power is required for continuation of the flight:**
Avionics master switch ..... OFF
Electric consumers ..... OFF
Master switch (battery) ..... ON
Avionics master switch ..... ON
Radio ..... ON
..... LAND AS SOON AS POSSIBLE

**CABIN FIRE DURING FLIGHT**
**Master switch (battery) ..... OFF**
**Cabin heat ..... CLOSED**
**Cabin air ..... OPEN**
**..... LAND AS SOON AS POSSIBLE**

### ELECTRICAL FAILURES:

**GENERATOR WARNING LIGHT W/ENGINE RUNNING**
Ammeter ..... CHECK
If needle indicates discharge .....
..... SWITCH OFF ALL NONESSENTIAL EQUIPMENT AND LAND AT NEAREST SUITABLE AIRPORT

**LO/V CAUTION LIGHT ILLUMINATED INFLIGHT**

Landing light ..... OFF
Ammeter ..... CHECK
If LO/V caution light remains illuminated and ammeter shows discharge ..... SWITCH OFF ALL NONESSENTIAL EQUIPMENT AND LAND AT NEAREST SUITABLE AIRPORT

### FLAP SYSTEM FAILURE:

**FLAP POSITION**
Only UP available ..... RAISE APPROACH SPEED BY 10 KTS
Only T/O available ..... NORMAL APPROACH SPEED
Only LDG available ..... NORMAL LANDING

**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.*

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NL-ATO-227

## 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<br>- Runway condition<br>- NOTAMs | - Restrictions<br>- Phraseologies<br>- Required reporting points | - Aircraft defects<br>- Fuel status | - Tree tops<br>- Buildup areas to avoid<br>- Glider activity<br>- Noise abatement area's |

| **Weather** | **Crew** | **Terrain** |
|---|---|---|
| - Wind direction, gusts<br>- Visibility<br>- Sunrise/sunset visibility | - Who is PF/PIC<br>- Low experience<br>- Distraction of passengers | - Unfamiliar environment<br>- 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 and how to get there
- Wind direction
- 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 touchcheck)
- 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 strobelights on
- What other threats do you see ? (if flying with other 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 have to 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 other 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, DV20, 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." |

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 | : "Dutch Mil Info/ Amsterdam information, PH-ABC" (overhead .... " for Dutch Mil only, source: AIP) |
| Dutch Mil Info | : "PBC *, Dutch Mil Info" |
| PH-ABC | : "PBC, DV20, position) at (ALT), VFR EHHV-EHHV, Training Flight, 2 POB" |
| Dutch Mil Info | : "PBC, QNH 1020 no reported traffic at (ALT)" |
| PH-ABC | : "QNH 1020, PBC" |

* Note: The standard protocol requires an aircraft to always use its full call sign during initial contact with an ATS (Air Traffic Services) unit. The ground station (the "owner of the frequency") is the only entity permitted to initiate the abbreviation. Once ATC has shortened your identifier (e.g., from Papa Hotel Alpha Bravo Charly to Papa Bravo Charly), the pilot is required to use the abbreviated call sign in all subsequent transmissions.

**Initial call tower controlled airport:**

| | |
|---|---|
| PH-ABC | : “Eelde tower PH-ABC " |
| EHGG TOWER | : "PH-ABC Eelde Tower" |
| PH-ABC | : "PH-ABC, DV 20 at Position (Assen) Alt (1500ft) VFR, information A (ATIS), for landing |
| EHGG TOWER | : "PH-ABC Romeo (name) arrival, runway 23, QNH 1020. |
| PH-ABC | : "Romeo Arrival, Rwy 23, QNH 1020 PH-ABC" |

**Arrival at EHHV**

| | |
|---|---|
| PH-ABC | : "Hilversum radio, PH-ABC" |
| EHHV | : "PH-ABC, Hilversum radio" |
| PH-ABC | : "PH-ABC, DV-20 at Position ..... Alt…..Request aerodrome information" |
| EHHV | : "PH-ABC, Runway 25, left hand circuit. (Gilders.... Para's….)" |
| PH-ABC | : "Runway 25, lefthand circuit PH-ABC." |
| PH-ABC | : "PH-ABC, Entering downwind runway 25" |
| PH-ABC | : "PH-ABC, Turning base” (not required) |
| PH-ABC | : "PH-ABC, Final Runway 25 (full stop) (touch and go) |

**Changing Frequency from Ams Information/ Dutch Mill Info to Hilversum Radio**

| | |
|---|---|
| PH-ABC | : “PH-ABC, overhead … changing frequency to Hilversum radio” |
| Dutch Mil | : “PH-ABC, Roger“ |

**Changing Frequency from Dutch Mil to Amsterdam information (FIC)**

| | |
|---|---|
| PH-ABC | : “PH-ABC, overhead … changing frequency to Amsterdam Information” |
| Dutch Mil | : “PH-ABC, Roger“ |

**Excerpt of EHHV AIP to be noticed by pilots**

For glide-ins from 1000 FT downwind the following applies:

- Mandatory call;
- No other traffic ahead in the circuit;
- With instructor only.

Recommended calls:

- Initial call and position;
- Report (joining) downwind RWY NR;
- Report final RWY NR and intention.

For increased situational awareness of other traffic in the circuit and near the aerodrome, the following is recommended:

- Helicopters use call sign with prefix HELI;
- Gyrocopters use call sign with prefix GYROCOPTER;
- Gliders use call sign with prefix GLIDER;

- Student pilots flying solo use call sign with prefix STUDENT.

# General Aircraft Information

## Cockpit layout


What is where?

1. Turnindicator
2. Top: speed indicator, below: VOR
3. Left: Garmin G5, right: altimeter
4. Left: Garmin G5, right: vertical speed indicator
5. Electronic switches
6. Top: radio, below: transponder, above intercom control panel
7. Left: HOBBS-meter, right: VUT-meter
8. Left: ignition, right: flaps and flap position indicator
9. Left t. to b., manifold pressure, oil temp, AMP, right t. to b. coolant fluid temp, oil press, fuel quantity.
10. Above ELT, below RPM
11. Heating, choke, parking brake
12. Above: left to right, carburetor heat, throttle, propeller speed control lever; below: trim

## Approved fuel grades:

- AVGAS 100LL
- MOGAS in accordance with BAZ-Regulation ZI. 6412-1 1/1 6-83 (at EHHV this is our preferred fuel)
- Automotive fuel, ROZ minimum 95 octane, leaded or unleaded

## Aproved lubricant:

Use only name-brand oil marked "SF" or "SG" in accordance with the API-System. The viscosity should be selected according to the various climatic conditions using tabel in POH. Avoid using single grade oils.

**CAUTION**

**Do not use aviation lubricant!**

## General aircraft numbers

| Speeds | $V_{speeds}$ | PH-MFT | PH-SKM |
|---|---|---|---|
| Stall speed flaps up | $V_{S1}$ | 43 kts | 43 kts |
| Stall speed flaps down | $V_{SO}$ | 38 kts | 38 kts |
| Maneuver speed | $V_A$ | 104 kts | 104 kts |
| Max speed flaps extended: | $V_{FE}$ | 81 kts | 81 kts |
| Never exceed speed | $V_{NE}$ | 161 kts | 161 kts |
| Max structural cruising speed | $V_{NO}$ | 117 kts | 117 kts |
| Best rate of climb | $V_Y$ | 70 kts | 70 kts |
| Best rate of climb (flaps T/O) | $V_{Y\ (T/O)}$ | 65 kts | 65 kts |
| Best angle of climb (flaps T/O) | $V_{X\ (T/O)}$ | 58 kts | 58 kts |
| Max demonstrated cross wind | -- | 15 kts | 15 kts |
| Best glide speed (flaps UP) | -- | 70 kts | 70 kts |
| Best glide speed (flaps T/O) | -- | 64 kts | 64 kts |

| Weights | | PH-MFT | PH-SKM |
|---|---|---|---|
| Empty weight | | 511 Kg | 495 Kg |
| Max fuel in kg | | 58 Kg | 58 Kg |
| Max fuel in liters | | 79 L | 79 L |
| Max baggage | | 20 Kg | 20 Kg |
| Max T/O | | 730 Kg | 730 Kg |

| Average fuel usage | | PH-MFT | PH-SKM |
|---|---|---|---|
| Tank capacity (usable) | (L) | 77 | 77 |
| Tank capacity (unusable) | (L) | 2 | 2 |
| 2300 RPM 25.7” 75% (2000 ft) | (L / Hr) | ±15,3 | ±15,3 |
| 2400 RPM 26.7” 85% (2000 ft) | (L / Hr) | ±18,7 | ±18,7 |
| 2400 RPM 27.7” 95% (2000 ft) | (L / Hr) | ±22,3 | ±22,3 |

### G loads

| | | | | |
|---|---|---|---|---|
| Maximum G-load | - flaps up | normal category | -2,2G | +4,4G |
| Maximum G-load extended | - flaps | normal category | 0,0G | +2,0G |

Note: For Mass & Balance and other calculations, always use the approved AFM. And check the ACHA website for the most recent aircraft numbers.

## Powersetting / configuration versus speed table

| | throttle(MP) | RPM | flaps | speed |
|---|---|---|---|---|
| Climb | full throttle | PSCL* full fwd | TO | 65 kts |
| Climb | full throttle | 2400 | UP | 70 kts |
| Cruise | ±25” | 2400 | UP | 90 kts |
| Descent | ±18” | 2400 | UP | 90 kts |
| Circuit | ±21” | 2400 | UP | 75 kts |
| Circuit | ±24” | 2400 | TO | 70 kts |
| Base | ±15” | 2400 | TO | 70 kts |
| Final | **as required** | PSCL full fwd | LDG | 60 kts |

Note:

- Power settings in ISA atmosphere and depending on weight.
- Carburetor heat ON when power setting below 20”.

* PSCL = Propellor Speed Control Lever

# Normal procedures

## General advice

### Cockpit pracitical advice

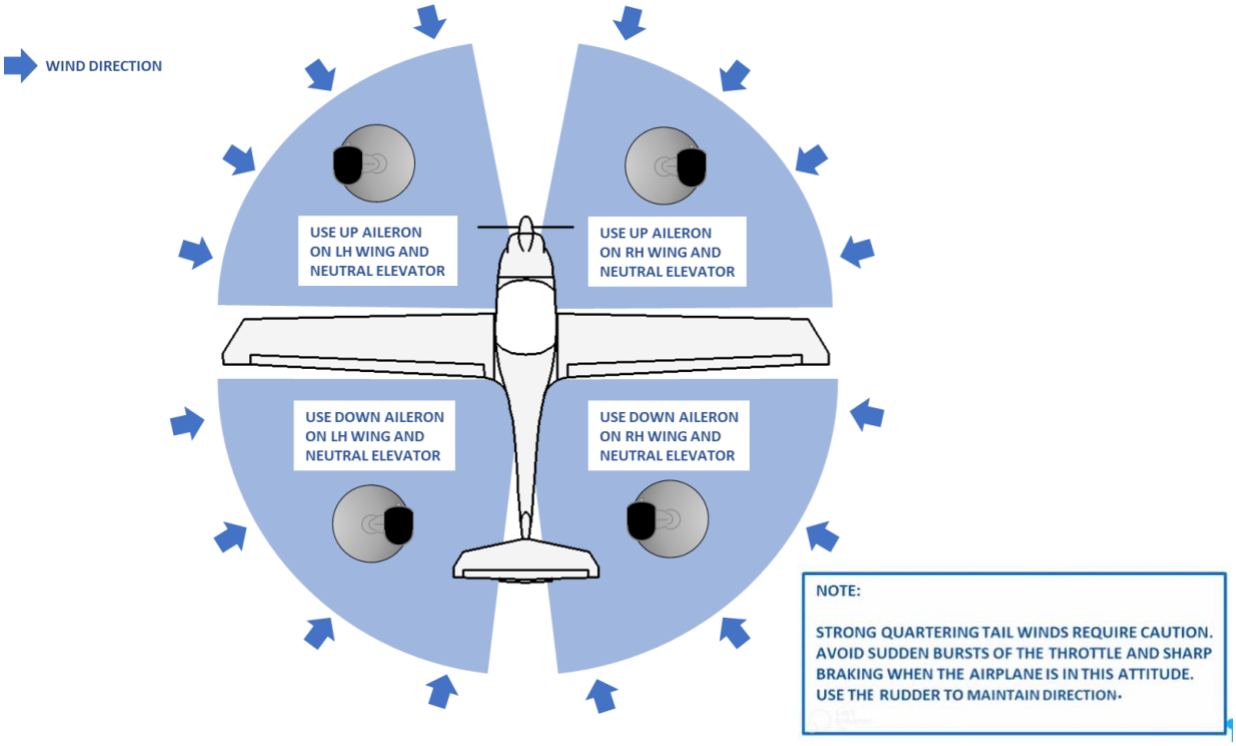
- Ensure the same seat position on every flight. See implies that you have the same reference sight picture on every flight and that you can predictably reproduce the aircraft attitude during climb, descend, banking etc.
- Use of checklist: Ensure that each item is checked by keeping the checklist in one hand with the thumb by last item.

### Instruments/brakes check during taxiing

When commencing taxiing at the beginning of a flight, the brakes shall be checked and proper functioning of the slip indicator, heading/track indicator (G5), attitude indicator (G5) and compass shall be checked and called out loud after leaving the parking area and preferably in the natural turns to the t/o runway.

### Taxiing with different wind directions

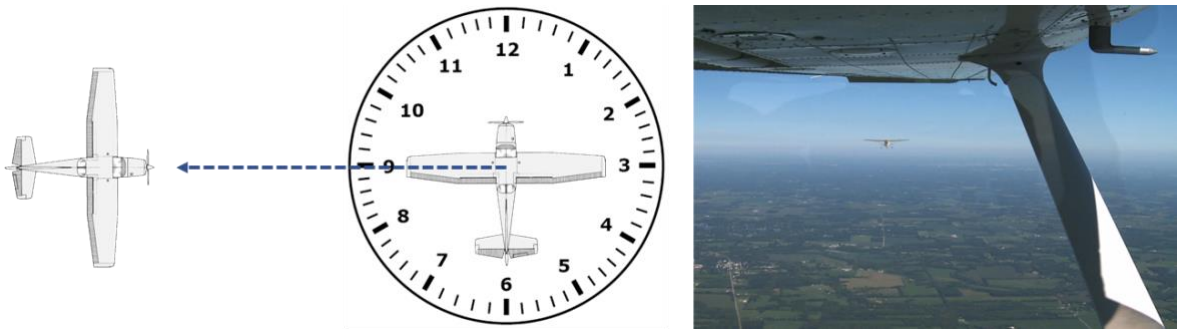
*Figure 1 - Taxiing with different wind directions. (taxiing diagram)*



**Reporting of other airplanes**

During the scanflow (lookout) you may see other airplane traffic. Report this directly by saying: "*Traffic, 10 o' clock, 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"*

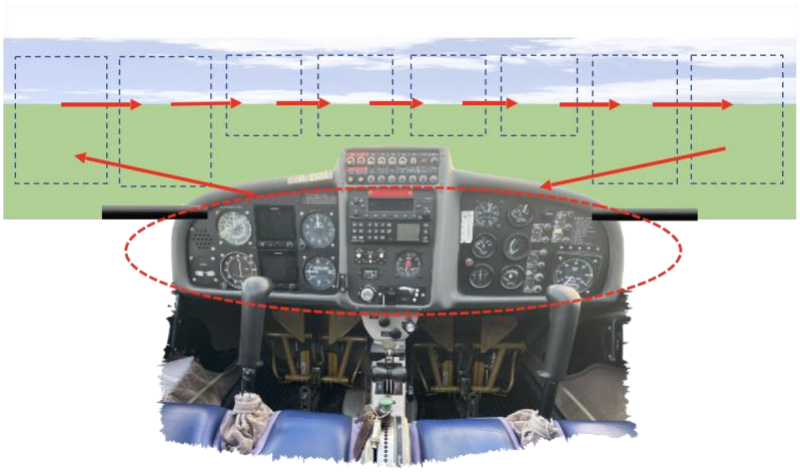
## Structured scanflow

- Scanflow for level flight (side-to-side scanning method)
- Scan in sectors (figure 3a and 3b)
- Check nose attitude
- Short inside checks (altitude, speed and slip 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.

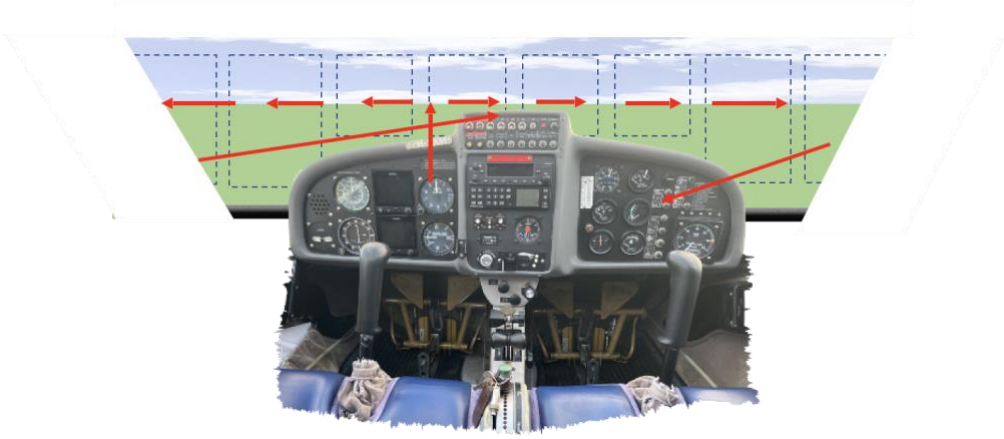
*Figure 3a - Structured scanflow side to side lookout.*



**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 scanflow front to side lookout*

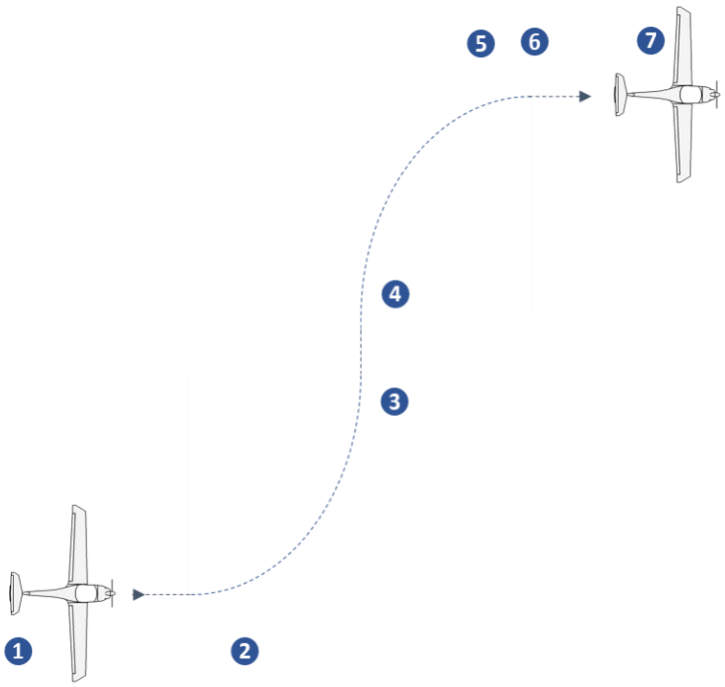


# Manoeuvres

## Clearing turns before maneuvers with reduced controlability

- 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)
  - ✓ Speed (90 kts)
  - ✓ Coordinated flight (ball centered, wings horizontal)
  - ✓ Proceed with planned maneuver

*Figure 4 - Clearing Turns*



## Straight and level flight

- Look out for traffic
- Set nose in position for straight and level flight (nose is about 5 fingers below the horizon)
- Maintain wings level
- Keep direction with rudder (ball centered)
- Power setting 25”, 2400 RPM, speed 90 kts
- Trim off forces

*Figure 3b – Straight and level flight*

## Transition from straight and level to climb

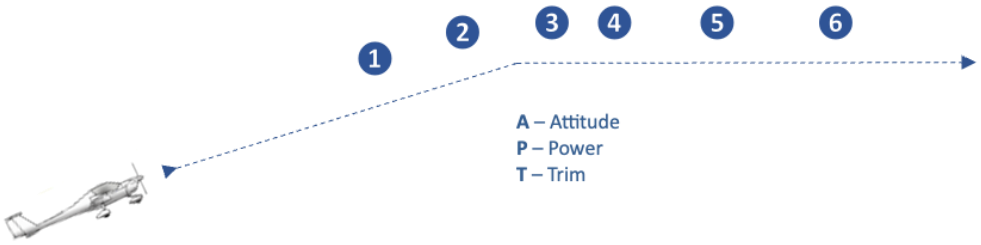
(1) Check engine instruments (and thereafter every 1000 ft)
(2) Look out for traffic
(3) Raise nose to climb attitude (cowling against horizon)
(4) Speed reduces
(5) Speed almost 70 kts, 2400 RPM, smoothly advance throttle FULL
(6) Wings level, coordinated rudder, PITD (point in the distance)
(7) Trim off forces
(8) Perform clearing turns every 500 ft (15° bank, 30° left and right of course) or lower nose for lookout

*Figure 5 - Transition to climb.*

## Transition from climb to straight and level

(1) Look out for traffic
(2) 20ft before desired altitude slowly lower nose to straight and level attitude
(3) Allow airspeed to increase to 90 kts
(4) Reduce power setting to 25”, 2400 RPM (throttle first, then RPM)
(5) Wings level, coordinated rudder (ball centered), PITD
(6) Trim off forces

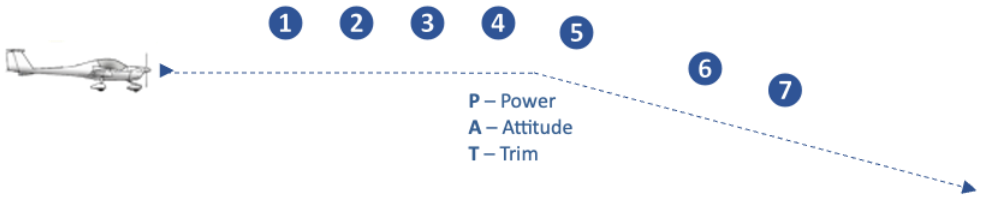
*Figure 6 - Transition climb to S&L.*




## Transition straight and level flight to descend

(1) Check engine instruments (and thereafter every 1000 ft)
(2) Carburetor heat ON
(3) Look out for traffic
(4) Reduce power setting to 18”, 2400 RPM (every inch MP less is ±100 ft/min extra descend rate) and;
(5) Simultaneously lower nose to descend attitude, maintain 90 kts
(6) Wings level, coordinated rudder, ball centered), PITD
(7) Trim off forces

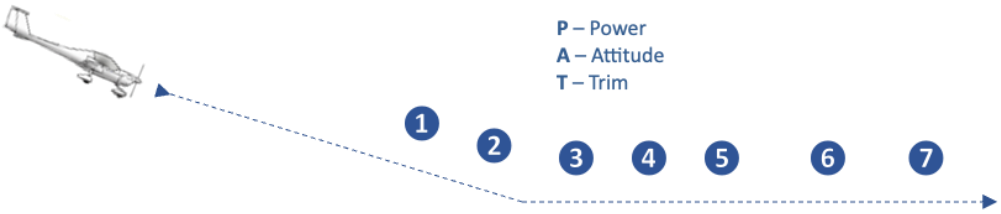
*Figure 7 - Transition to descend.*




## Transition from descent to straight and level flight

(1) Look out for traffic
(2) 100ft before desired altitude – carburetor heat OFF
(3) 50ft before desired altitude – increase power setting to 25”, 2400 RPM
(4) Set nose attitude for straight and level flight
(5) Maintain speed 90 kts
(6) Wings level, coordinated rudder (ball centered), PITD
(7) Trim off forces

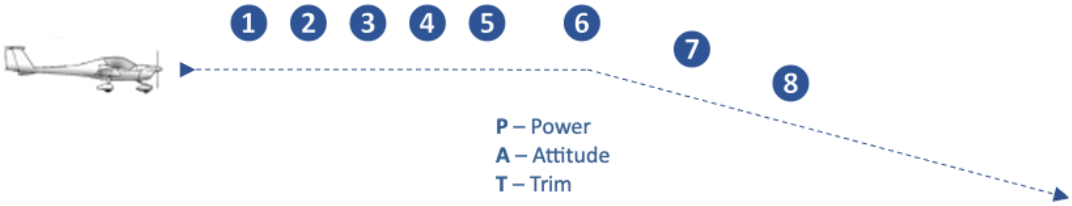
*Figure 8 - Level off from descent.*




## Transition from straight and level to glide

(1) Check engine instruments (and thereafter every 1000 ft)
(2) Carburetor heat ON
(3) Look out for traffic
(4) Smoothly retard throttle to idle, coordinated rudder, PITD
(5) Maintain altitude, slowly increase pitch attitude
(6) Speed nearly 70 kts, lower nose to glide attitude, maintain 70 kts
(7) Wings level, coordinated rudder, PITD
(8) Trim off forces

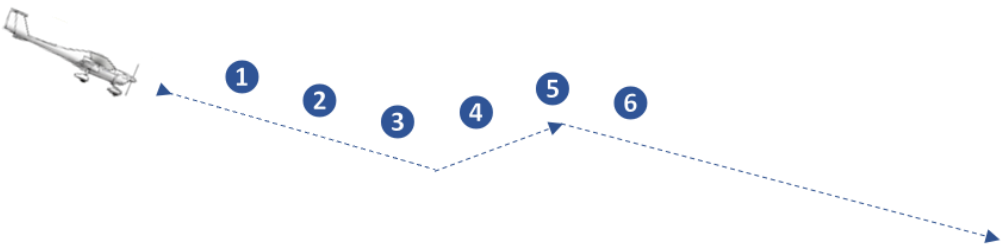
*Figure 9 - Establishing a glide.*




## Clearing the engine during a glide

(1) Check engine instruments
(2) Look out for traffic
(3) Smoothly advance throttle FULL, coordinated rudder (ball centered), PITD TEKST CF AFM
(4) Simultaneously put nose in climb attitude, maintain speed 70 kts
(5) After 3-5 sec smoothly retard throttle to idle, coordinated with rudder, PITD, simultaneously lower nose to glide attitude
(6) Continue with glide

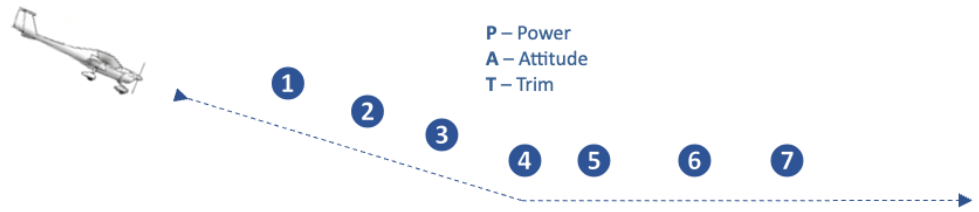
*Figure 10 - Clearing the engine during a glide.*



## Transition from glide to straight and level flight

(1) Look out for traffic
(2) 150ft before desired altitude, carburetor heat OFF and increase power setting to ±25", 2400 RPM
(3) Maintain glide attitude, speed increases
(4) 50ft before desired altitude set nose attitude for straight and level flight
(5) Speed 90 kts
(6) Wings level, coordinated rudder (ball centered), PITD
(7) Trim off forces

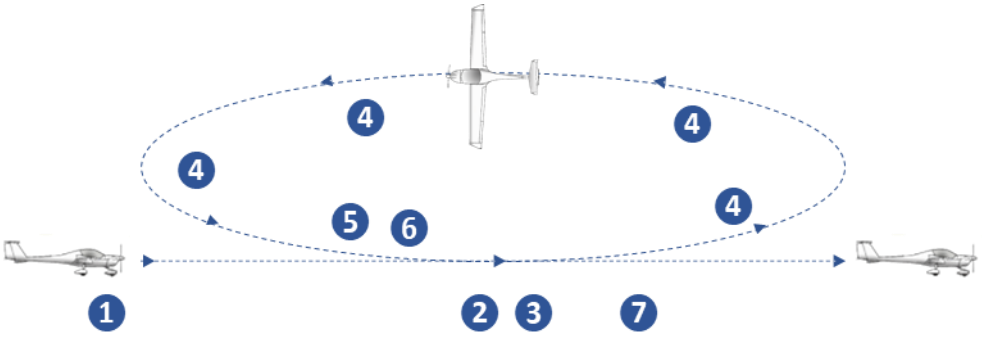
*Figure 11 - Transition from glide to straight and level flight.*




## Level turn

(1) Look out for traffic, take a PITD
(2) Roll 30° bank angle, coordinated with rudder (ball centered) and;
(3) Increase backpressure to maintain level flight
(4) Keep looking for traffic in the turn and check:
(5) Bank angle 30°
(6) Nose attitude
(7) Instruments: altimeter, VSI, speed ±95 kts, slip indicator
(8) 10° before desired heading (PITD), start to roll wings level, coordinated with rudder (ball centered) and;
(9) Decrease backpressure to maintain level flight
(10) Wings level, coordinated rudder (ball centered), PTID, 90 kts

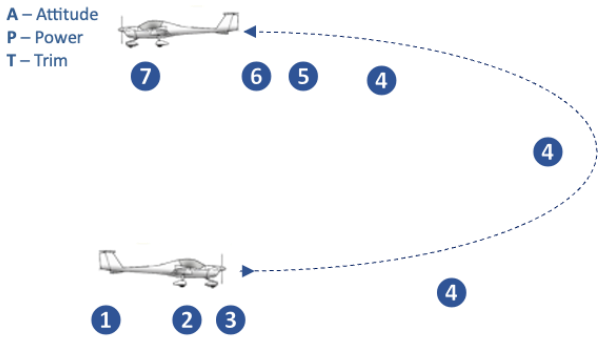
*Figure 12 - Level turn.*



## Climbing turn

(1) Look out for traffic
(2) Roll into max 15° bank
(3) Coordinated with rudder (ball centered)
(4) Keep looking for traffic and check:
  – Bank angle 15°
  – Climbing nose attitude
  – Instruments: approaching desired altitude, speed 70 kts, slip indicator
(5) 5° before desired heading or PITD, start to roll wings level
(6) Coordinated with rudder (ball centered)
(7) Wings level, coordinated rudder (ball centered), PITD, 70 kts

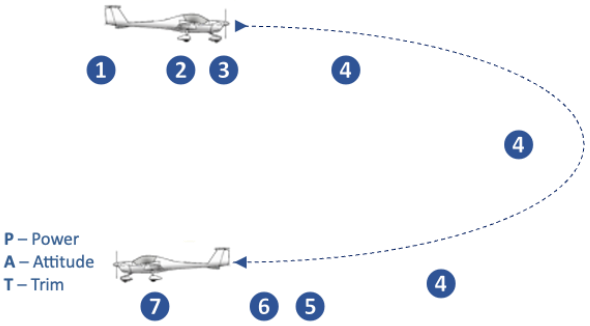
*Figure 13 - Climbing turn.*




## Descending turn

(1) Look out for traffic
(2) Roll into 30° bank
(3) Coordinated with rudder (ball centered)
(4) Keep looking  for traffic in direction of turn and check:
  – Bank angle 30°
  – Descending nose attitude
  – Instruments: approaching desired altitude, speed 90 kts, slip indicator
(5) 10° befored desired heading or PITD start to roll wings level
(6) Coordinated with rudder (ball centered)
(7) Wings level, coordinated with rudder (ball centered), PITD, 90 kts

*Figure 14 - Descending turn.*



## Steep turn (45°)

**NOTE:** Minimum altitude for this exercise is 2000 ft AGL solo

(1) Check engine instruments
(2) Look out for traffic, take a PITD
(3) Roll into 45° bank angle, coordinated with rudder (ball centered)
(4) Passing 30° bank angle, increase power setting by 2” and;
(5) Increase backpressure to maintain level flight
(6) Keep looking for traffic in the turn and check:
  – Bank angle 45°
  – Nose attitude
  – Instruments: altimeter, VSI, speed 90 kts, slip indicator
(7) 20° before desired heading or PITD start rolling wings level, coordinated with rudder (ball centered)
(8) Passing 30° bank angle, decrease power setting by 2” and;
(9) Decrease backpressure to maintain level flight
(10) Wings level, coordinated with rudder (ball centered), PITD, 90 kts

*Figure 15a - Steep turn.*

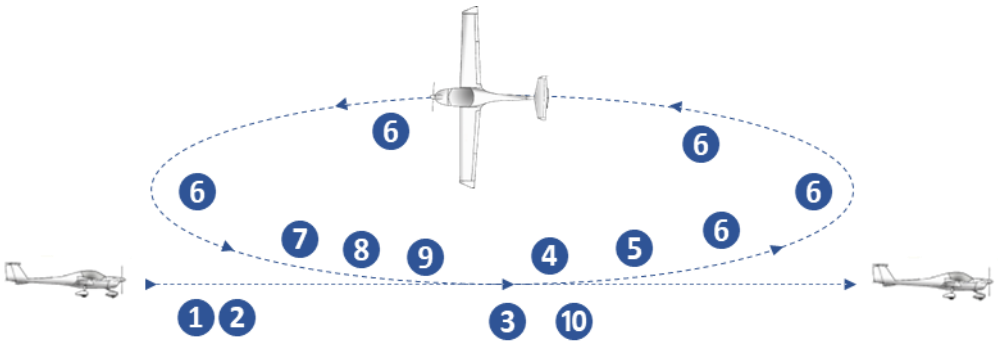



*Figure 15b – Steep turn – Pilot View (depending on seat position)*

## Slow flight Vs + 10

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

Slow flight can be performed with flaps up or with flaps down, with speed $V_S$+10.
Communicate before the exercise which variant you are to perform.

- Check engine instruments, carburator heat ON, electric fuel pump on
- Look out for traffic
- Reduce power setting to 12-15”
- Propeller control speed lever MAX RPM
- Maintain altitude, nose attitude increases, speed reduces
- Set flaps as required
  - When using flaps: check speed to be in the white arc, acknowledge with call-out “Speed checked”, then lower the flaps in steps to planned setting. Manage the ballooning effect, maintain altitude
- Speed approaches $V_S$+10 kts, increase power setting to 22-24"
- Respect the stall warning: increase speed enough to stop stall warning if warning comes on
- Wings level, coordinated with rudder, $V_S$+10 kts
- Trim off forces
- Keep looking for traffic and check:
  - Nose attitude, altitude, speed
  - PITD, coordinated with rudder (ball centered)
  - Speed VS+10 kts

| | PH-MFT | PH-SKM |
|---|---|---|
| stall speed flaps up | 43 kts | 43 kts |
| stall speed flaps takeoff | 39 kts | 39 kts |
| stall speed flaps landing | 38 kts | 38 kts |

**Accelerate to 90 kts**

- Smoothly advance throttle to FULL
- Carburetor heat OFF
- Wings level, coordinated with rudder (ball centered), PITD
- Decrease nose attitude with increasing speed, maintain altitude
- When using flaps, check speed to be in the white arc, acknowledge with call-out “Speed checked”, then select flaps up before 81 kts. Manage the sink effect.
- Speed 90 kts
- Reduce power setting to ±25”, set 2400 RPM, electric fuel pump off
- Trim off forces

# Air exercises

## The stall

### Planning, crewbriefing and checks before 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 goal 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.
Priority shall be given to recovery from the stall (decrease angle of attack) and not altitude loss!

**Crew briefing:**

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

- Inside checks:

| | | |
|---|---|---|
| ✓ | Electric fuel pump | : ON |
| ✓ | Landing light | : ON |
| ✓ | Ignition switch | : BOTH |
| ✓ | Fuel selector | : ON |
| ✓ | Power setting/prop speed control lever | : ±25”/2400 RPM |
| ✓ | Flaps | : UP |
| ✓ | Engine instruments | : TEMP AND PRESSURES IN THE GREEN |
| ✓ | Speed | : 90 kts |
| ✓ | Belts, loose items | : FASTENED/STOWED |

**Outside checks – APOS**

**Altitude**

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

**Position**

not above:

- Open water (because lack of horizon)
- Cities or industrial areas
- Airports or CTR’s
- Other traffic
- Open air assembly’s 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**

| | | |
|---|---|---|
| ✓ | Electric fuel pump | : OFF |
| ✓ | Landing light | : AS REQUIRED |
| ✓ | Flaps | : UP |
| ✓ | Carburetor heat | : OFF |
| ✓ | Power setting/prop speed control lever | : 25”/2400 RPM |
| ✓ | Engine instruments | : TEMP AND PRESSURES IN THE GREEN |
| ✓ | Orientation | : CHECK |

## Stall with flaps up

- Clearly state “starting the exercise”
- Carburetor heat ON.
- Smoothly retard throttle to idle
- Wings level, coordinated rudder (ball centered), PITD
- Propeller speed control lever MAX RPM
- Nose attitude increases with decreasing airspeed, maintain altitude, don’t trim off forces
- Wings level, maintain heading with rudder, PITD
- **Start recovery in case of full stall on:**
  - 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 to reduce angle of attack below critical angle
  - For full stall: lower nose to glide attitude
  - For approach to stall: lower nose just below straight and level attitude
- Roll wings level, PITD
- Power: Smoothly advance throttle FULL, carburetor heat OFF
- At minimum 60 kts, gently raise nose to climb attitude (avoid a secondary stall)
- Wings level, coordinated rudder (ball centered), PITD
- Adjust nose attitude for correct climb attitude with speed 70 kts
- Climb back to initial altitude and transition to straight and level flight

**Recovery without power**

- Call out “recover” and
- Unload to reduce angle of attack below critical angle and lower nose to position lower than glide attitude

- Roll wings level, PITD
- Adjust nose attitude to attitude for glide, 70 kts
- Trim of forces
- Transition to straight and level flight at desired altitude (see transition to straight and level from glide)

## Stall with flaps down

- Clearly state “starting the exercise”
- Carburetor heat ON
- Smoothly retard throttle to idle
- Wings level, coordinated rudder (ball centered), PITD
- Prop speed control lever MAX RPM
- Nose attitude increases with decreasing airspeed, maintain altitude, don’t trim of forces
- Wings level, coordinated rudder (ball centered), PITD
- Check speed to be in the white arc, acknowledge with call-out “Speed checked”, then lower the flaps in steps to planned setting. Manage the ballooning effect, 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 stall with flaps**

- Call out “recover” and:
- Unload to reduce angle of attack below critical angle
  - For full stall: lower nose to glide attitude
  - For approach to stall: lower nose just below straight and level attitude
- Roll wings level, PITD
- Power: Smoothly advance throttle FULL, carburetor heat OFF
- At minimum 60 kts, gently raise nose to climb attitude (avoid a secondary stall)
- Check speed in white arc, call out: “Speed checked”, select flaps T/O
- Adjust nose attitude for correct climb attitude flight with 65 kts
- Check speed in white arc, call out: “Speed checked”, select flaps UP, speed 70 kts
- Climb back to initial altitude and transition to straight and level flight

## Approach to stall in descending turn in approach or landing configuration

- Call out “starting the exercise”
- Carburetor heat ON
- Reduce power setting to 15“
- Wings level, coordinated rudder (ball centered), PITD
- Nose attitude increases with decreasing airspeed, maintain altitude, don’t trim of forces
- Speed in white arc, call out: “Speed checked”, select flaps in stages to T/O or LDG
- Lower the nose and start a descending turn with 20° bank angle
- Retard throttle to idle and slowly raise the nose
- **Start recovery on:**
  - Stall warning
  - Buffet
  - 5 kts above stall speed with flaps, whichever comes first

**Recovery with power from approach to stall during descending turn**

- Call out “Recover” and
- Unload to reduce angle of attack below critical angle
- Roll wings level
- **Start the go-around procedure:**
  - Power: Smoothly advance throttle FULL
  - Safe speed, minimum 55 kts, set nose just below normal climb attitude
  - Check positive rate, check speed in white arc and call out: “Speed checked” and at minimum speed 60kts select flaps up
  - Accelerate to Vy and climb to safe level or continue straight and level flight and accelerate to 90 kts

**Approach to stall in climbing turn without flaps**

- Clearly state “starting the exercise”
- Raise nose to climb at 70 kts
- Start a climbing turn with 15° bank angle
- Reduce power to 18”
- 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 with power approach to stall in climbing turn**

- Call out “Recover” and:
- Unload to reduce angle of attack below critical angle
- Roll wings level
- Power: Accelerate to 90 kts

## Approach to stall in climbing turn with flaps in approach configuration

- Clearly state “starting the exercise”
- Bring the aircraft in approach or landing configuration in level flight, check speed to be in white arc, call out: “Speed checked” and select flaps T/O

- Start a climbing turn with 15° bank angle
- Reduce power to 18“
- 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 approach configuration**

- Call out “recover” and:
- Unload to reduce angle of attack below critical angle
- Roll wings level
- Power: Smoothly advance throttle FULL
- Immediately check or select flaps T/O
- Safe speed, minimum 55 kts, set nose just below normal climb attitude
- Check positive rate, and at minimum speed 60kts call out: “Speed checked” select flaps up
- Accelerate to Vy and climb to assigned level or continue straight and level flight, accelerate to 90 kts

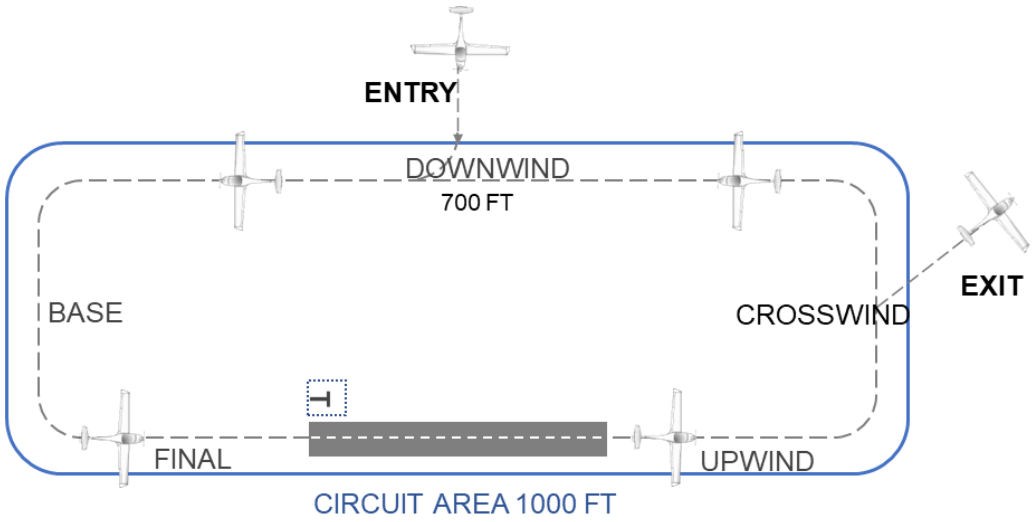
# Circuit procedures

## VFR standard 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.

The standard circuit looks like this:

*Figure 16 - The standard circuit area.*




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 acitivity's 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 an other 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

**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 para's. (ref AIP)

# Takeoff procedures

## Normal takeoff

**NOTE:** Hard surface, long runway, flaps UP
Short runway (<800m) or soft surface: flaps T/O

- Before entering the runway, ensure base, final and the 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, stick in the wind
- PITD (end of runway)
- Heels on the floor, feet off brakes
- Smoothly advance throttle FULL, control direction with rudder pedals
- Check and call out “engine instruments checked” (2400 RPM ±100 RPM) and “airspeed ‘alive”
- Reduce aileron input with increasing airspeed, keep wings level
- Rotate at 51 kts, wings level, nose against horizon
- If needed, establish a drift correction angle and stay above the (extended) centerline
- Allow the airspeed to increase to 65 kts
- Take a new PITD when the runway end disappears under the nose
- At minimum 200 ft select flaps UP, speed 70 kts
- At minimum 200 ft reduce propeller speed to 2400 RPM
- 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 ±21”MP, speed 70 kts
- Trim off forces

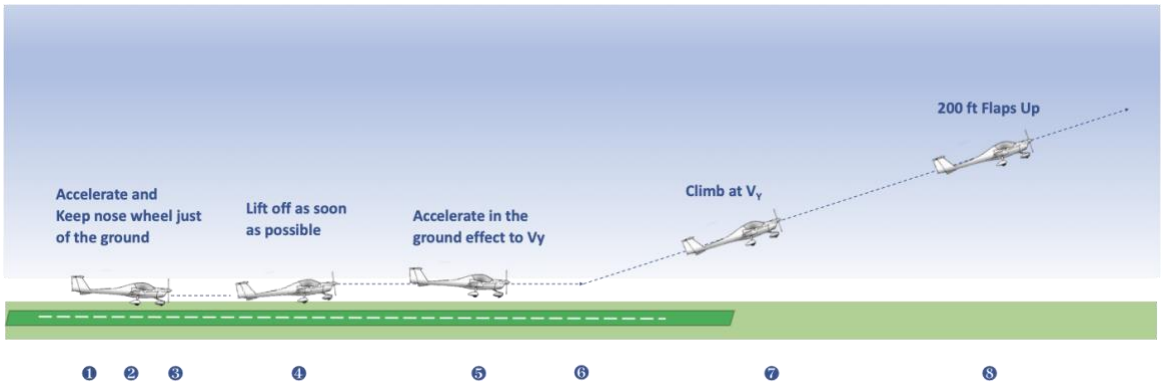
- WHEN LEAVING THE CIRCUIT
  - Exit the pattern as prescribed and resume climb when clear of the circuit area
  - Landing light off (if applicable)
  - Electric fuel pump off

- 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) Flaps T/O
(2) Keep stick full aft during taxi
(3) Make a rolling takeoff, stick full aft
(4) As airspeed increase, nose rises off ground, stick moves forward to keep nosewheel just off the ground
(5) The airplane flies itself off the ground in a slightly tail-low attitude
(6) Accelerate in groundeffect
(7) 60 kts, gently raise nose to climb attitude
(8) Accelerate to $V_y$ (65 kts Flaps T/O)
(9) Continue as normal takeoff, 200 ft Flaps UP 70 kts

*Figure 17 - Soft or Rough field takeoff.*

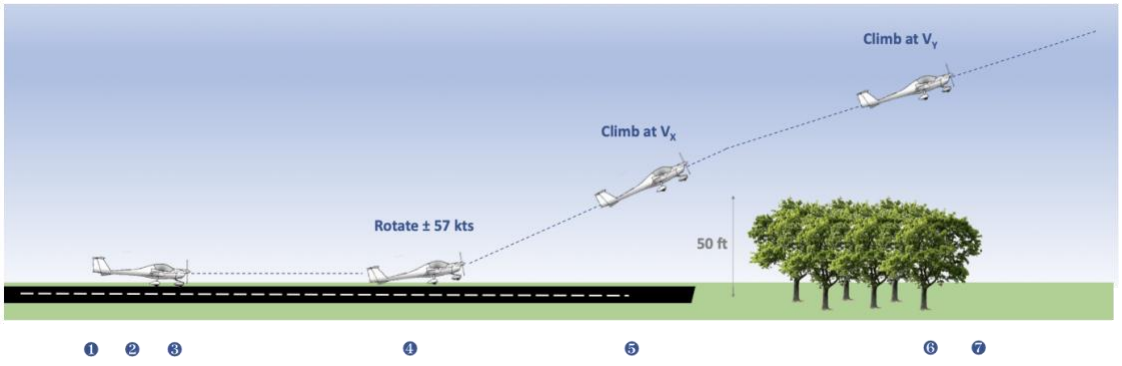



## Obstacle clearance takeoff (short field takeoff)

If for safety reason a 'obstacle clearence 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) Flaps T/O
(2) Hold brakes, advance throttle FULL, check engine instruments in the green.
(3) Release brakes, keep direction with rudder pedals
(4) Rotate at 57 kts
(5) Climb with 58 kts $V_x$
(6) When free off all obstacles: lower nose attitude and accelerate to Vy (65 kts Flaps T/O)
(7) Continue as normal takeoff, 200 ft Flaps UP 70 kts

Figure 18 - Obstacle clearance takeoff



# Enroute procedures

## Enroute climb

| | |
|---|---|
| ✓ Airspeed | BEST RATE($V_y$) or 70 kts |
| ✓ Throttle | FULL OPEN |
| ✓ Propeller speed control lever | 2400 RPM |

## Cruise

| | |
|---|---|
| ✓ throttle | AS REQUIRED |
| ✓ Propeller speed control lever | 1900-2400 RPM |

## Approach

| | |
|---|---|
| ✓ Altimeter | SET QNH |
| ✓ Electrical fuel pump | ON |
| ✓ Landing light | ON |
| ✓ Ignition switch | BOTH |
| ✓ Brakes/belts/loose objects | CHECKED/FASTENED/STOWED |

## Downwind (70 kts)

| | |
|---|---|
| ✓ Carburetor heat | ON |
| ✓ Flaps | Call out: “Speed checked” (max 81 kts) T/O |
| ✓ Engine instruments / fuel quantity | CHECKED |

WARNING

Only select flaps when speed is below 81 kts

**NOTE:** DOWNWIND checks may be done after the APPROACH checks before entering the circuit and joining downwind or at 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 700ft throttle to ±21"MP, speed 70 kts

(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 tot de baan (offset to runway)
- Richting parallel aan de baan (direction parallel to runway)
- Snelheid 70 kts (speed 70 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 | Call out: "Speed checked" (speed max 81 kts), flaps T/O, immediately advance throttle to ±24" MP to maintain speed 70 kts |
| – Engine instruments / fuel quantity. | CHECKED / SUFFICIENT |

WARNING

Only select flaps when speed is below 81 kts

(5) Threshold 45-60° behind the wing

(6) Simultaneously reduce throttle to 15" MP (initial setting, make adjustments as necesarry), adjust pitch to maintain 70 kts and turn to baseleg with 15° - 20° bank angle (max 30°)

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

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

(9) FINAL CHECK:

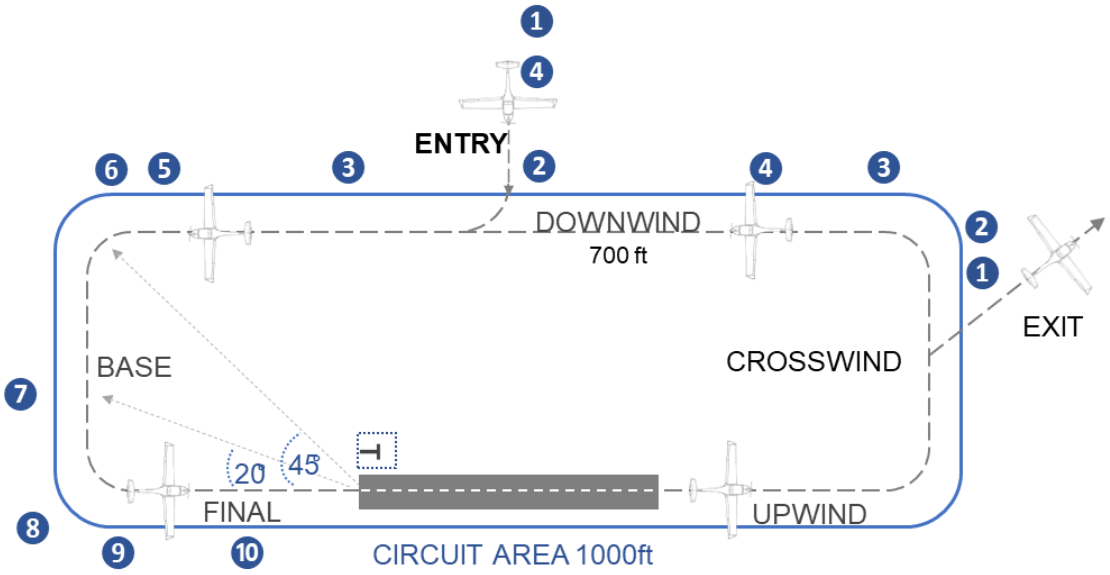
| | |
|---|---|
| – Flaps | Call out: "Speed checked", flaps LDG |
| – Propellers speed control lever | MAX RPM |

(10) Maintain minimum approach speed 60 kts

(11) Look for traffic (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!

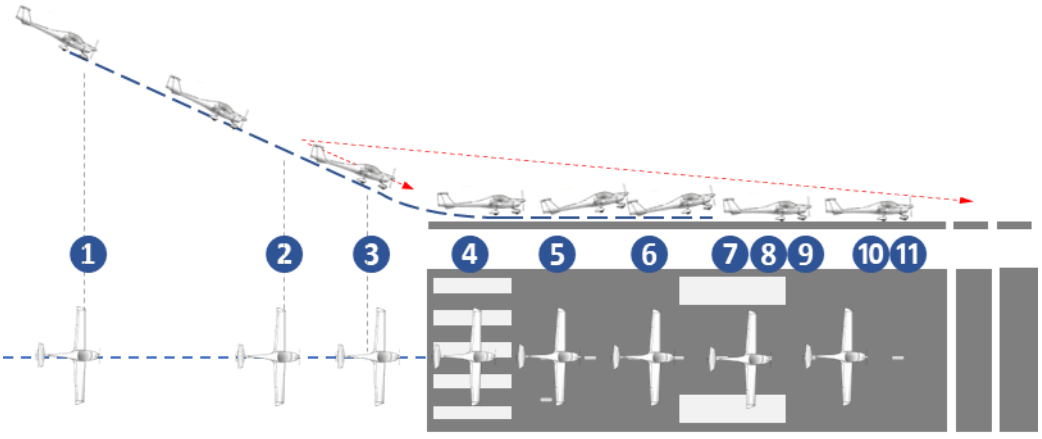
*Figure 19 - the standard circuit (hard surface).*




## 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 to the end off the runway
(3) After passing the threshold reduce vertical speed (round out)
(4) Establish level flight about 1m above the runway and simultaneously retard throttle to idle
  – NOTE: On shorter runways, close the throttle earlier — during the round out phase — to avoid floating too far down the runway.
(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 control stick in position where the airplane touched down, due to reducing speed the nosewheel will land itself
(10) Gentle braking if necessary
(11) Stop the airplane when clear off the runway and perform the after landing checklist

*Figure 20 - The 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 (see circuit), with the exception that no flaps will be selected
- When turning baseleg reduce throttle to 15”
- The speeds respectively are:
  - Downwind: 70 kts
  - Base: 70 kts
  - Final: 70 kts
- Execute a normal landing except:
- Nose attitude is higher than normal landing
- Aim for the landing spot
- Close throttle gently when 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:** Approach speed is 70 kts, a higher approach speed should be selected to account for wind, turbulent weather or windshear conditions. Take into account increased landing distance!

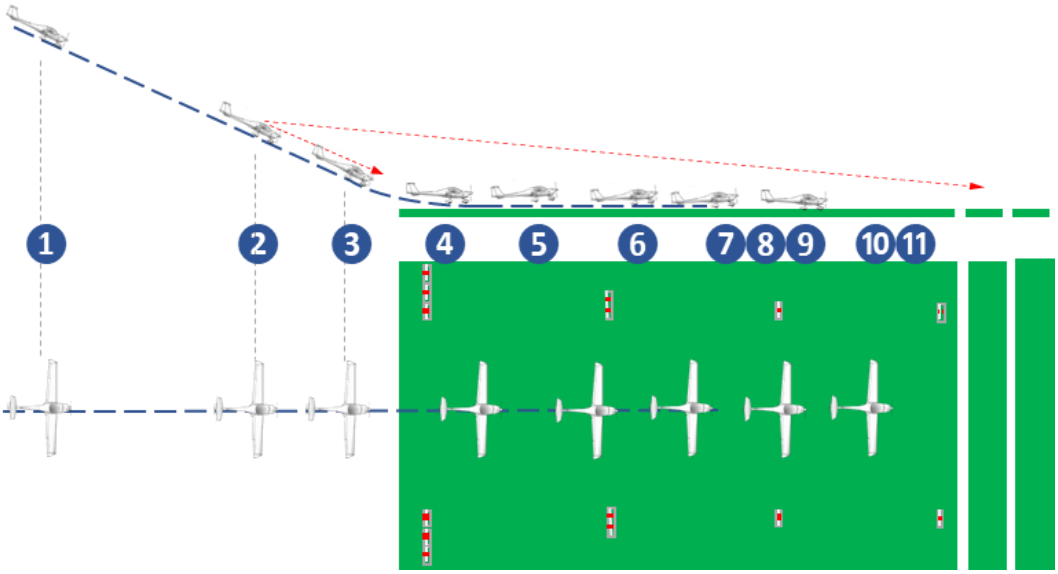
## Soft field landing

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 nosegear to lower to the ground. Try and keep the nosegear off as long as possible

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

(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 to the end off the runway
(3) After passing the threshold reduce vertical speed (round out)
(4) Establish level 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 control stick to keep the nosegear off the ground as long as possible
(10) Only brake when required by field length
(11) Keep rolling until a harder surface is reached.

*Figure 21 - The soft field landing.*




## Short field landing/precautionary landing

- Fly a standard circuit
- After turning final select full flaps
- Maintain an approx. 3° glidepath and aim slightly in front of the threshold
- Nose attitude to maintain 55 kts, Throttle to maintain glidepath
- Make a normal landing
- After the nosewheel has touched down, flaps UP 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.

- Call out: “Go-around”
- Propeller speed control lever MAX RPM, throttle FULL, carburetor heat OFF
- Simultaneously raise the nose to make the rate of descent disappear
- Check speed within white arc, Call out: “Speed checked”, flaps T/O
- Raise nose to climb attitude for speed 58 kts (Vx)
- When clear off obstacles accelerate to 65 kts (Vy)
- 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, flaps up above 200ft and accelerate to 70 kts, reduce propeller speed to 2400 RPM.

## Touch and go

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

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

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

WARNING

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

## 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
- Don’t 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 speed without trying to hard to hold on
- Consider a reduced flaps setting (UP or TO) because of greater controllability (see flaps up Landing)
- Consider to increase speed above normal speed on base and final

## Crosswind techniques

The maximum demonstrated crosswind component is 15 kts.

**During takeoff:**

- Control stick into the wind (maximum deflection)
- With increasing speed reduce control stick 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.

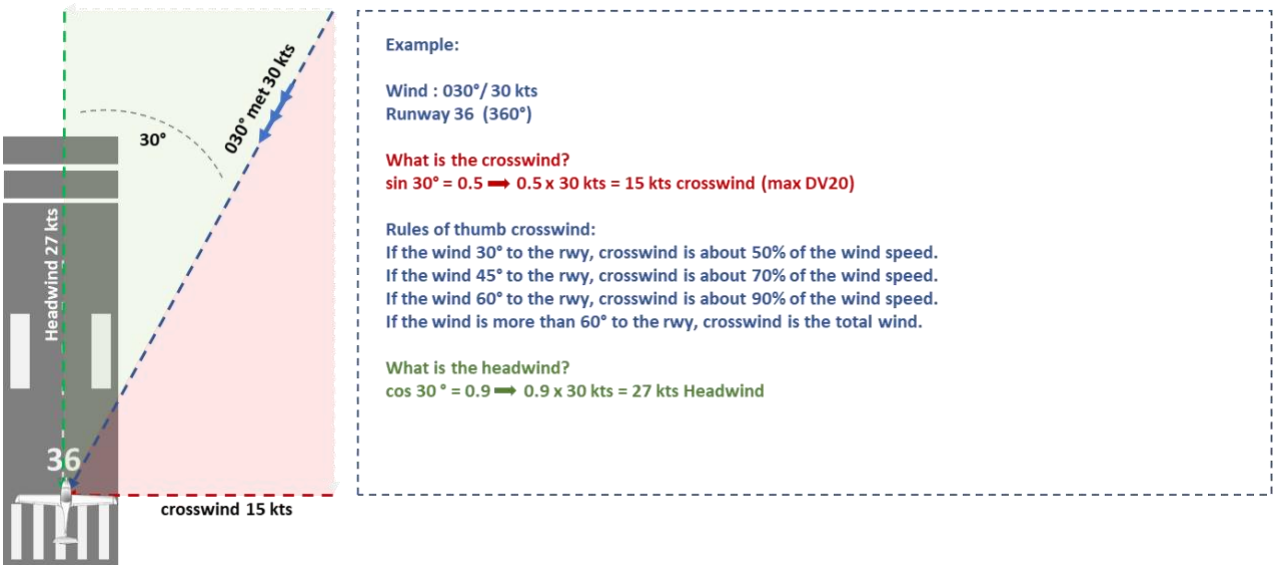
**During the circuit:**

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

**During the landing:**

- After throttle to idle / during the roundout and flare, align the longitudonal axis with the runway centerline with rudder
- Simultaneously put aileron into the wind to counteract any tendency to drift to the side
- Keep looking towards 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 23 – Crosswind*



# Abnormal procedures

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

## Rejected takeoff

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

- Call out "STOP"
- Retard throttle to idle, use rudder pedals to stay on the centerline
- If required, use brakes cautiously
- 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. However the AFM starts with a decision wether the engine has insufficient power or there is an engine failure. The procedure for insufficient power is written first. The focus will be on the procedure for an engine failure, since this procedure might be more time critical.

WARNING

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

The exercise should not be initiated below 300 ft AGL.

- Immediately lower nose to glide attitude, 59 kts with flaps T/O, or 70 kts with flaps UP
- Choose a suitable landing site 30° left / right from the nose
- Use minimum bank angle to avoid obstacles

## Insufficient engine power

| | | |
|---|---|---|
| ✓ | Throttle | FULL |
| ✓ | Carburetor heat | OFF |
| ✓ | Choke | OFF |
| ✓ | Fuel shut-off valve | OPEN |
| ✓ | Ignition switch | BOTH |
| ✓ | Electrical Fuel pump | ON |
| ✓ | Prop speed control lever | MAX RPM |

## Engine failure

- ✓ If possible do a short failure check:

| | | |
|---|---|---|
| ✓ | Carburetor heat | ON |
| ✓ | Electrical Fuel pump | ON |
| ✓ | Ignition switch | BOTH |
| ✓ | Prop speed control lever | MAX RPM |

- ✓ Accomplish an emergency landing without power using (full) flaps, if required

**Emergency landing with engine off checklist**

| | | |
|---|---|---|
| ✓ | Airspeed | 59 kts |
| ✓ | Flaps | AS REQUIRED |

| | | |
|---|---|---|
| ✓ | Fuel shut-off valve | CLOSED |
| ✓ | Ignition switch | OFF |
| ✓ | Master switch (battery) | OFF |
| ✓ | Belts | TIGHT |

✓ The instructor will end the exercise with the call out “go-around”.

## Engine failure during flight

The simulated engine failure is initiated by the instructor by retarding the throttle to idle 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 speed has reduced to 70 kts (see figure 25, best glide speed)
- Lower nose attitude to position for glide, maintain 70 kts
- Trim of forces
- Check wind direction
- Make a plan and depending on altitude and position fly direct to downwind, base or final
  - **>** 1500 ft downwind with 1000ft point
  - **<** 1500 ft direct base
  - **<** 700 ft direct final
- Accomplish failure drill

| | |
|---|---|
| Airspeed | 70 KTS |
| Propeller speed control lever | FULL FORWARD |
| Electric fuel pump | ON |
| Ignition | BOTH |
| Carburetor heat | ON |
| Choke | OFF |
| Fuel shut-off valve | OPEN |

- Choose a suitable landing site within range and into the wind
- In case of downwind procedure pick a 1000 ft point and fly to this point
- Mayday call,
- ELT ON manually,
- Transponder code 7700
- Check:
  - Nose attitude / airspeed 70 kts, forces trimmed off
  - Coordinated flight (ball centered, required due to loss of left turning tendency)
  - Route and altitude

- Threshold 30° behind the wing, turn base
- Aim for 1/3 off the landing field
- When assured landing can be made on 1/3 of the field, check speed within white arc, call out: “Speed checked” and flaps T/O
- Plan a full flap landing with 59 kts
  - Note: Depending on circumstances (gliding distance to field, wind speed/direction etc) a flaps up landing might be required.
- After selecting flaps LDG, aim for the threshold
- When certain engine is not going to start and flaps LDG are set then perform
  - CRASH DRILL:

WARNING

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

| | |
|---|---|
| ✓ Airspeed | 59 KTS |
| ✓ Flaps | Call out: “Speed checked” LDG |
| ✓ Fuel shut-off valve | CLOSED |
| ✓ Ignition switch | OFF |
| ✓ Master switch | OFF |
| ✓ Belts | TIGHT |

- Accomplish a short/soft field landing

*Figure 24 - Emergency landing without power.*

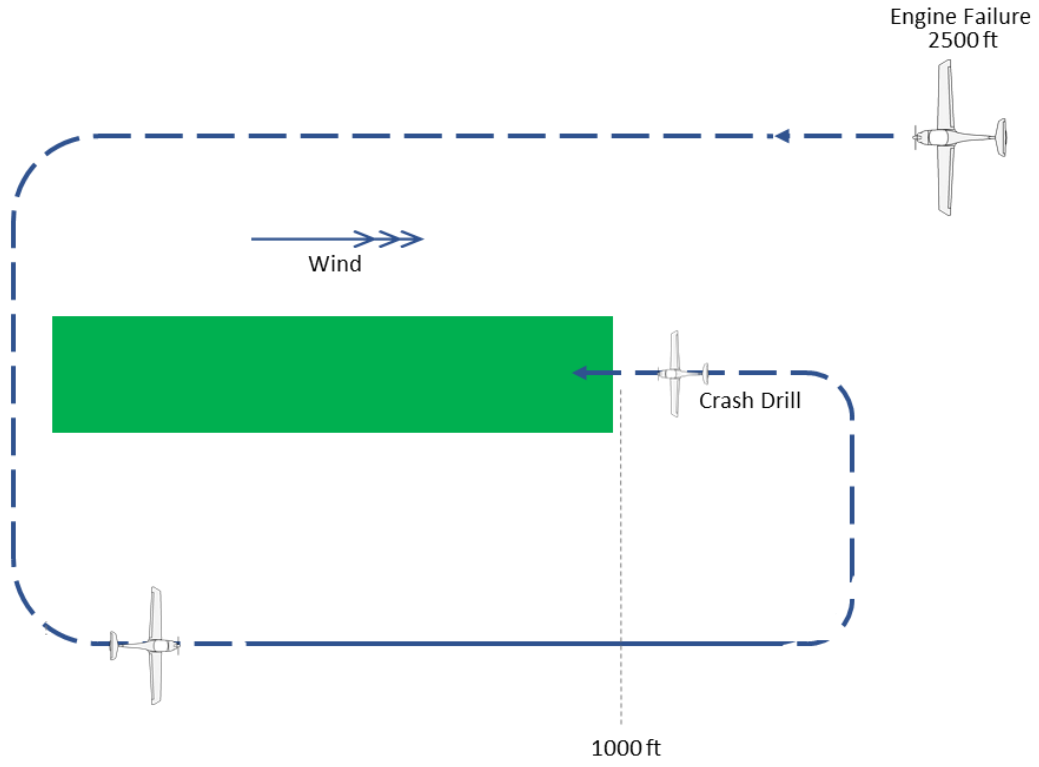
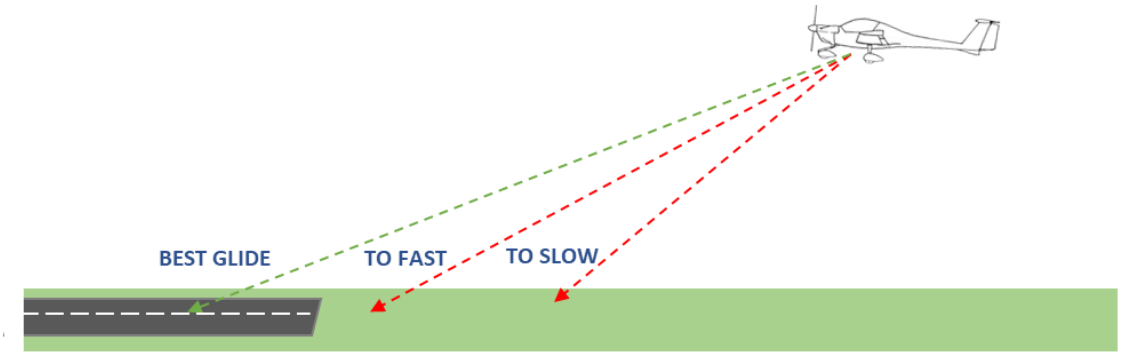


*Figure 25 – Best glide speed*




## Estimated gliding distance

The maximum L/D-ratio ($L/D_{max}$) of a Katana is approximately 14, so the glideratio is approximately 14:1 – meaning for every unit down the forward travel is 14 units. the Katana will glide approx. 14.000 feet for every 1.000 feet available altitude. This is a typical value for the katana.

*Figure 26a - Glide distance (no wind and not to scale)*

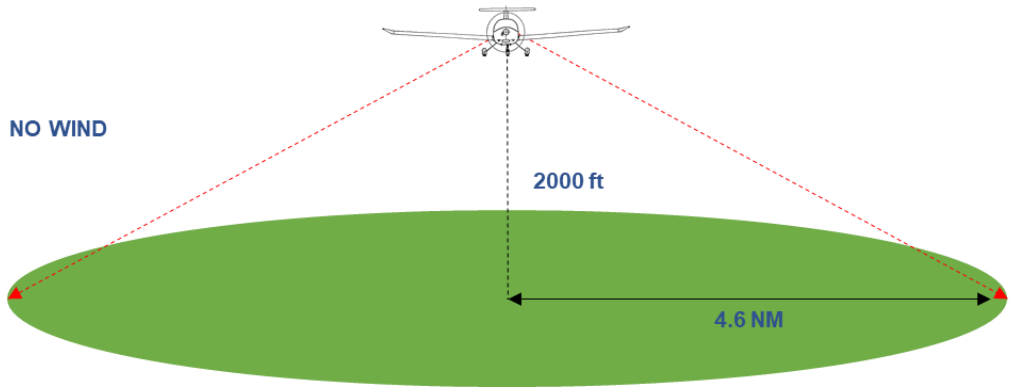
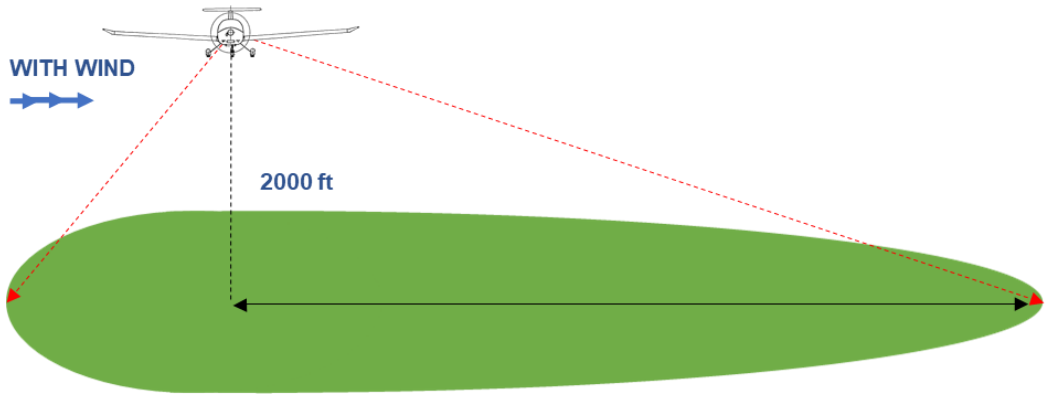



*Figure 26b - Glide distance (with wind and not to scale).*



## Precautionary landing

The airplane has to be in good technical condition for this procedure, if not, see emergency landing without power. Only fly mentioned altitudes if cloud base and visibilty allow this.

- BEFORE JOINING THE CIRCUIT CHECK
- Descend to 500 ft and turn downwind
- Choose a suitable landing site into the wind
- PAN PAN PAN PAN PAN PAN call
- Position the aircraft on a 500ft downwind, carburetor heat ON, call out: “Speed checked”, Flaps T/O, throttle to ±24”, speed 70 kts
- Throttle to 15”, start descend and turn base.
- Turn to final and level off at 200ft
- Advance throttle to ±24”, speed 70 kts, STOP DESCENT!
- Accomplish an inspection run abeam the field and start timing (± 40 m / 135 ft per/sec) and check
  - Slope
  - Obstacles
  - Length (see timing tabel)
  - 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
- Level off, reduce throttle to ±21”, speed 70-75 kts
- Turn crosswind and subsequently downwind
- DOWNWIND CHECK:

| | | |
|---|---|---|
| ✓ | Carburetor heat | ON |
| ✓ | Flaps | Call out: “Speed checked” (speed max 81 kts) T/O, immediately advance throttle to ±24” MP to maintain speed 70 kts |
| ✓ | Engine instruments / fuel quantity. | CHECKED / SUFFICIENT |

- Threshold 45° - 60° behind the wing. (Order CF NORMAL LANDING)
- Throttle to ±15” when intercepting the normal glidepath, turn base leg with 15°- 20° bank angle (max 30°),
- 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” LDG |
| ✓ | Propeller Speed Control Lever | MAX RPM |

- Maintain approach speed 55 kts. 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 runway conditions or wind, turbulent weather, windshear . Be aware that landing distance changes for different speeds!

*Figure 27a - Precautionary landing.*

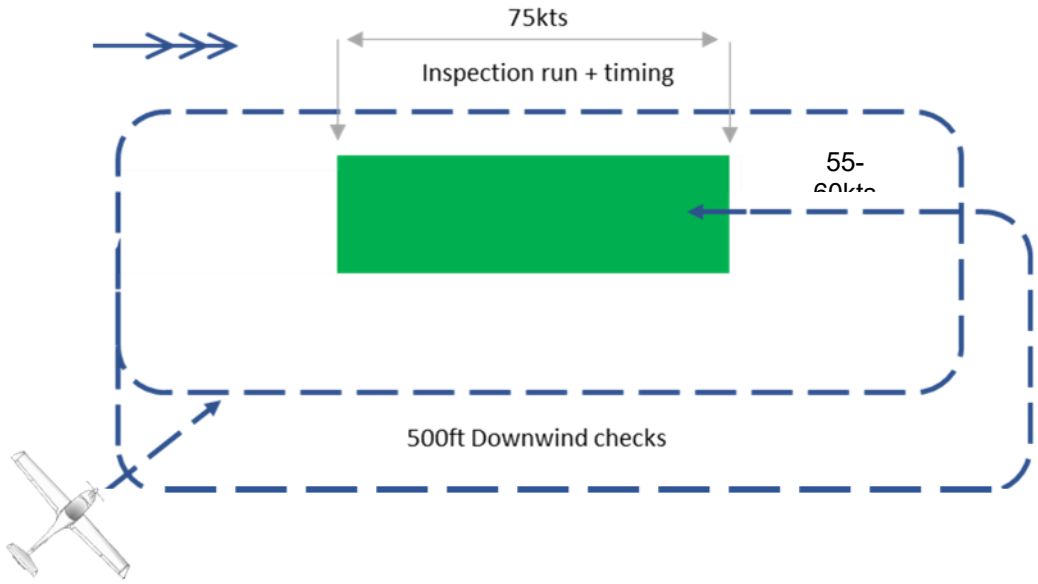



*Figure 27b – Precautionary landing – Inspection run, timing and distance table*

| **INSPECTION RUN + TIMING** | | |
|---|---|---|
| **Minimal landing distance @500m** | | |
| ***Ground speed*** | ***Meters per seconds*** | ***Timing in seconds*** |
| 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-MFT:**

# NORMAL CHECKLIST DV-20
## PH-MFT

Perform blue checks from memory

VFR DAY ONLY

### BEFORE STARTING ENGINE

| | |
|---|---|
| Walk around check and visual Inspection | COMPLETED |
| Rudder pedals | ADJUSTED & LOCKED |
| Safety belts | FASTENED |
| Departure/pax briefing | COMPLETED |
| Canopy (check left and right) | CLOSED AND LOCKED |
| Parking brake | PULL KNOB, PUSH BRAKES 3 TIMES |
| Fuel shut-off valve | OPEN |
| Carburetor heat | FREE, OFF |
| Throttle | FREE, IDLE |
| Propeller speed control lever | FREE, MAX RPM |
| Friction of throttle quadrant | ADJUST |
| Avionics master switch | OFF |
| Master switch (battery) | ON |
| Generator warning light | ON |
| Fuel pressure warning light | ON |
| Low voltage caution light | ON |
| HOBBS & VUT | NOTED |

### STARTING ENGINE

| | | |
|---|---|---|
| Electric fuel pump | | (noise of pump audible) ON |
| Fuel pressure warning light | | OFF |
| Anti Collision Light | | ON |
| **COLD START** | Throttle | IDLE |
| | Choke | ON |
| **WARM START** | Throttle | APPROX. 2 CM FORWARD |
| | Choke | OFF |
| Propeller area | | CLEAR |
| Ignition key | | START |

***CAUTION**: If oil pressure is below 1.5 bar shut down engine immediately (10 seconds maximum delay)*

### AFTER STARTING ENGINE

| | |
|---|---|
| Throttle | 1100 - 1500 RPM |
| Oil pressure | CHECK IN GREEN RANGE WITHIN 10 SEC |
| Choke | OFF |
| Engine instruments | CHECKED |
| Generator warning light | OFF |
| Low voltage caution light | OFF |
| Electric fuel pump | OFF |
| Fuel press warning light | Might not illuminate (Wait for 10 sec) |
| Electric fuel pump | ON |
| Ammeter | CHARGING |
| Avionics master switch | ON |
| Radio equipment & transponder | ON/SET/STBY |
| Flight instruments | SET AND CHECKED |
| Flaps | CHECK, EXTEND & RETRACT |
| Parking brake | RELEASE |

### DURING TAXIING

| | |
|---|---|
| Brakes | CHECKED |
| Instruments | CHECKED |

***CAUTION**: warm up engine oil to a temperature of 50°at 1100 – 1500rpm (also possible during taxiing)*

### ENGINE RUNUP/BEFORE TAKE OFF

| | |
|---|---|
| Parking brake | PULL KNOB, PUSH BRAKES 3 TIMES |
| Canopy (check left and right) | CLOSED AND LOCKED |
| Engine instruments | WITHIN GREEN RANGE |
| Fuel quantity indicator | CHECK |
| Flaps | T/O |
| Controls | FREE AND CORRECT |
| Trim | NEUTRAL |
| Throttle | 1700 RPM |
| Propeller speed control lever | PULL COMPLETELY 3 TIMES (RPM drop: 100 - 200 RPM) |

### CONTINUED – ENGINE RUNUP/BEFORE TAKE OFF

| | |
|---|---|
| Ignition switch | (drop 150 RPM, diff 50 RPM) L/R/BOTH |
| Throttle | 1500 RPM |
| Carburetor heat | (drop 30 RPM) ON |
| Carburetor heat | (RPM back to 1500) OFF |
| Throttle | FULL for 5 Sec, back to IDLE |
| Throttle | 1000 RPM |
| Electric fuel pump | ON |
| Propeller speed control lever | MAX RPM |
| Transponder | ALT |
| Landing light | AS REQUIRED |
| Take-off briefing | COMPLETED |
| Parking brake | RELEASE |

### AFTER TAKE-OFF (min 200ft AAL)

| | |
|---|---|
| Flaps | UP |
| Propeller speed control lever | 2400 RPM |
| Electric fuel pump | (above 1000ft AAL) OFF |

### CRUISE

| | |
|---|---|
| Throttle | AS REQUIRED |
| Propeller speed control lever | 1900-2400 RPM |

### APPROACH

| | |
|---|---|
| Approach briefing | COMPLETED |
| Altimeter | SET QNH |
| Electric fuel pump | ON |
| Landing light | AS REQUIRED |
| Ignition switch | BOTH |
| Brakes/belts/loose objects | CHECKED/FASTENED/STOWED |

### DOWNWIND (70 kts)

| | |
|---|---|
| Carburetor heat | ON/WARM |
| Flaps | (max 81 kts) T/O |
| Engine instruments/fuel quantity | CHECKED |

### FINAL (minimum approach speed 60 kts)

| | |
|---|---|
| Propeller speed control lever | MAX RPM |
| Flaps | AS REQUIRED |

### BALKED LANDING

| | |
|---|---|
| Propeller speed control lever | MAX RPM |
| Throttle | FULL |
| Carburetor heat | OFF |
| Flaps | T/O |
| Speed | ($V_X$) 58 KTS |

### AFTER LANDING

| | |
|---|---|
| Throttle | IDLE |
| Flaps | UP |
| Carburetor heat | OFF |
| Landing light | OFF |
| Transponder | SBY |

### ENGINE SHUT-DOWN

| | |
|---|---|
| Throttle | IDLE |
| Parking brake | PULL KNOB, PUSH BRAKES 3 TIMES |
| Electric fuel pump | OFF |
| Avionics master switch | OFF |
| All electric switches (except ACL) | OFF |
| Ignition switch | OFF/KEY REMOVED |
| Anti Collision Light | OFF |
| Master switch | OFF |
| HOBBS and VUT | NOTED |
| Emergency locator transmitter | NOT TRIGGERED |
| Pitot cover & stall warning plug | INSTALL |

Check the aircraft and windows for dirt and clean if necessary.

NORMAL & ABNORMAL CHECKLIST – PH-MFT – V1.8 13052026 1

# ABNORMAL CHECKLIST DV-20
## PH-MFT

Perform **RED AND BOLD** abnormal checklist items from memory

VFR DAY ONLY

### ENGINE FAILURES / MALFUNCTION:

**ENGINE FAILURE DURING FLIGHT**
**Airspeed ..... 70 KTS**
**Propeller speed control lever ..... FULL FORWARD**
**Electric fuel pump ..... ON**
**Ignition ..... BOTH**
**Carburetor heat ..... ON**
**Choke ..... OFF**
**Fuel shut-off valve ..... OPEN**
**(If unable to start engine proceed with emergency landing with engine off below)**

**ENGINE RUNNING ROUGHLY**
**Carburetor heat ..... ON**
**Electric fuel pump ..... ON**
**Ignition ..... CHECK BOTH**
**Throttle ..... AT PRESENT POSITION**
**No improvement ..... REDUCE THROTTLE TO MIN**
**..... REQ. POWER AND LAND AS SOON AS POSSIBLE**

**LOSS OF OIL PRESSURE**
**Oil temperature ..... CHECK**

If oil pressure drops below green arc but oil temp is normal
..... LAND AT NEAREST AIRPORT

If oil pressure drops below green arc and oil temp is rising .....
..... LAND AS SOON AS POSSIBLE AND BE PREPARED
..... FOR ENGINE FAILURE AND EMERGENCY LANDING

**LOSS OF FUEL PRESSURE**
**Electric fuel pump ..... ON**

If fuel pressure warning light does not extinguish .....
..... LAND AS SOON AS POSSIBLE AND BE PREPARED
..... FOR ENGINE FAILURE AND EMERGENCY LANDING

**EMERGENCY LANDING WITH ENGINE OFF**
**Airspeed ..... 59 kts**
**Flaps ..... AS REQUIRED**
**Fuel shut-off valve ..... CLOSED**
**Ignition switch ..... OFF**
**Master switch (battery) ..... OFF**
**Belts ..... TIGHT**

### FIRES:

**ENGINE FIRE ON THE GROUND**
**Fuel shut-off valve ..... CLOSED**
**Throttle ..... FULL**
**Master switch (battery) ..... OFF**
**Ignition switch ..... OFF**
**..... EVACUATE AIRPLANE IMMEDIATELY**

**ENGINE FIRE IN FLIGHT**
**Airspeed ..... 70 KTS**
**Flaps ..... T/O**
**Fuel shut-off valve ..... CLOSED**
**Throttle ..... FULL**
**Electric fuel pump ..... OFF**
**Cabin heat ..... CLOSED**
**Master switch (battery) ..... OFF**
**..... PERFORM EMERGENCY LANDING WITH ENGINE OFF**

**ELECTRICAL FIRE OR SMOKE ON THE GROUND**
**Master switch (battery) ..... OFF**

**IF ENGINE RUNNING:**

Throttle ..... IDLE
Fuel shut-off valve ..... CLOSED
Ignition switch ..... OFF
Canopy ..... OPEN

**ELECTRICAL FIRE INCLUDING SMOKE IN FLIGHT**
**Master switch (battery) ..... OFF**
**Cabin heat ..... CLOSED**
**Cabin air ..... OPEN**
**In case the fire is extinguished and electric power is required for continuation of the flight:**
Avionics master switch ..... OFF
Electric consumers ..... OFF
Master switch (battery) ..... ON
Avionics master switch ..... ON
Radio ..... ON
..... LAND AS SOON AS POSSIBLE

**CABIN FIRE DURING FLIGHT**
**Master switch (battery) ..... OFF**
**Cabin heat ..... CLOSED**
**Cabin air ..... OPEN**
**..... LAND AS SOON AS POSSIBLE**

### ELECTRICAL FAILURES:

**GENERATOR WARNING LIGHT W/ENGINE RUNNING**
Ammeter ..... CHECK
If needle indicates discharge .....
..... SWITCH OFF ALL NONESSENTIAL EQUIPMENT AND LAND AT NEAREST SUITABLE AIRPORT

**LO/V CAUTION LIGHT ILLUMINATED INFLIGHT**

Landing light ..... OFF
Ammeter ..... CHECK
If LO/V caution light remains illuminated and ammeter shows discharge ..... SWITCH OFF ALL NONESSENTIAL EQUIPMENT AND LAND AT NEAREST SUITABLE AIRPORT

### FLAP SYSTEM FAILURE:

**FLAP POSITION**
Only UP available ..... RAISE APPROACH SPEED BY 10 KTS
Only T/O available ..... NORMAL APPROACH SPEED
Only LDG available ..... NORMAL LANDING

**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.*

AEROCLUB HILVERSUM-AMSTERDAM

NL-ATO-227

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