



*: nur beim ersten Flug des Tages
Schnee, Eis, Raureif immer vollständig entfernen

1 Kabine

- Notwendige Papiere Vorhanden
- Bord-, Flughandbuch, Checklisten, Abgangverfahren*
- Hobbs Hours Note
- Notausrüstung Prüfen, gesichert
- Ruderverriegelung Entfernen
in linker Sitztasche verstauen
- Zündung AUS
Schlüssel auf Blendschutz (Glareshield) legen
- Hauptschalter (Bat, Alt) AN
- Kraftstoffvorrat Prüfen
- *Landklappen 10°
- bei Flügen in der Nacht
 - Innenbeleuchtung AN, Prüfen
 - Externen Lichter Alle AN, Prüfen
 - Taschenlampe Mitführen, Prüfen
- Hauptschalter AUS
- ELT ARMED
- Brandhahn AUF
- Peilstab, *Drain-Becher Entnehmen
aus dem Handschuhfach mitnehmen

2 Leitwerk

- Seitenruderstellvorrichtung Entfernen
- Heckverankerung Lösen
- Verankerungsring Prüfen
- Flugzeug-Unterseite Prüfen
- Ruder Freigängig
- Ruder, Trimmung Zustand prüfen
Anschlüsse, Steuerseile, Anschlagschrauben
- Positionsleuchte Unbeschädigt
- Beacon Unbeschädigt
- Antennen Prüfen

3 Rechte Flügelhinterseite

- Landeklappen Prüfen
- Reifen Prüfen
Bremsen, Rutschmarkierung, Reifenprofil
- Querruder Freigängig, Zustand prüfen
Anschlüsse, Steuerstange, Gewichte
- Randbogen, Positionsleuchte Prüfen

4 Rechte Flügelvorderkante

- Flügelvorderkante, Strebe Prüfen
- Flügel-Verankerung Lösen
- Kabinenlufteinlass Prüfen
- *Flächentank Drainen
- Kraftstoffvorrat mit Peilstab prüfen
unterer Rand des Anzeigers im Füllstutzen: 49 ltr
- Tankdeckel Schliessen

5 Flugzeugnase

- Ölstand (ca. 5 Quarts) Prüfen
- *Schnellablaß Brandhahn Drainen
- *Kraftstoffsieb-Ablaßknopf Drainen
- Sichtkontrolle Motorraum Durchführen
- Motorabdeckung Prüfen
- Propeller Prüfen
- Ölkühler Prüfen
- Alternator Keilriemen Spannung prüfen
- Land-, Rollscheinwerfer Unbeschädigt
- Vergaserlufffilter Prüfen
- Bugrad, Reifen, Federbein Prüfen
- Öffnung für statischen Druck Prüfen

6 Linke Flügelvorderkante

- *Flächentank Drainen
- Kraftstoffvorrat mit Peilstab prüfen
unterer Rand des Anzeigers im Füllstutzen: 49 ltr
- Tankdeckel Schliessen
- Kabinenlufteinlass Prüfen
- Pitot-Schutz Entfernen
- Pitotrohr Prüfen
- Flügelvorderkante, Strebe Prüfen
- Tankentlüftung Prüfen
- Überziehwarnung Prüfen
Sauberkeit und Funktion
- Flügel-Verankerung Lösen

7 Linke Flügelhinterseite

- Randbogen, Positionsleuchte Prüfen
- Querruder Freigängig, Zustand prüfen
Anschlüsse, Steuerstange, Gewichte
- Reifen Prüfen
Bremsen, Rutschmarkierung, Reifenprofil
- Landeklappen Prüfen

COCKPIT Checklist

Preflight-Inspection Completed
 Hobbs Hour..... Note
 Seats, Seatbelts..... Locked
 Elec. Switches, Avionic OFF
 Flight Controls, Trim..... Checked
 Fuel Shutoff Valve..... OPEN

STARTING ENGINE Checklist

Master (Bat, Alt)..... ON
 Fuel-Quantity Checked
 Beacon (BCN) ON
 Carburetor Heat..... OFF

ENGINE START

Brakes Set
Mixture RICH
Throttle 1 cm
Primer As required
Cold engine: 1-3 times

Prop. area Clear
Ignition START
Throttle 1000 RPM
Cold weather: 1200-1500 RPM

Oil pressure Check
Ammeter Check

AFTER START Checklist

Avionic ON, set
 Transponder ID ____, GND / ALT
VFR US: 1200, Europe: 7000
 Flaps 0° / 10°
 Gyro-instruments Checked
 Altimeter..... ____, __ ft
QNH, Elevation
 Circuit breakers Checked

TAXI Checklist

Brakes Checked
 Flight-Instruments Checked
 Dep., Emer. Briefing Completed

ENGINE CHECK

Brakes Set
Doors, windows..... Closed
Engine-Instruments Check
Throttle 1700 RPM
Ignition Check, BOTH
RPM drop ≤ 125, diff. ≤ 50
Carburetor Heat..... Check, OFF
Suction Check
Throttle IDLE, then 1000 RPM
Circuit breakers Check

TAKE-OFF Checklist

Tracking/Timing..... START
Transponder GND / ALT
Flaps 0° / 10°
Mixture..... RICH
Carburetor Heat..... OFF
Trim..... T/O set
Primer Locked
----- immediately prior line up -----
Lights As required
Pitot Heat..... As required
----- on the runway -----
Heading Indicator Set

CLIMB Checklist

Flaps 0°
Lights As required
----- when passing Transition Altitude -----
Altimeter Standard, __ ft

APPROACH Checklist

Mixture Enriched
 Carburetor Heat..... As required
 Landing light..... **ON**
 Approach Briefing..... **Completed**
 Altimeter..... ____, __ ft
QNH, Altitude

LANDING Checklist

Flaps °
 Mixture **RICH**
 Carburetor Heat..... **ON**

Go-Around

Throttle *Full OPEN*
 Carburetor Heat *OFF*
 Flaps *20°*
continue with CLIMB Checklist

AFTER LANDING Checklist

Flaps **0°**
 Carburetor Heat..... **OFF**
 Trim..... **T/O Set**
 Lights **As required**
 Pitot Heat **OFF**

ENGINE SHUTDOWN

Throttle..... **1000 RPM**
 Avionic **OFF**
 Mixture **CUTOFF**
 Electrical switches.....**All OFF**
 Ignition **OFF**
 Master (Bat, Alt)..... **OFF**

PARKING Checklist

Rudder..... **Locked**
 Tracking/Timing **Stop**
 Hobbs Hour..... **Note**
 Personal Items..... **Remove**
Headset, Ext. GPS, Checklist, Tablet, Camera(s)
 Pitot-Cover **Attached**
 Airplane.... **Secure, Tie Down, Chock**

Reference speed

Flaps	V _{REF}
0°	70 kts
10°	65 kts
20°	60 kts
30°	55 kts

Targetspeed for Final

$$V_{TGT} = V_{REF} + \frac{1}{2} \text{ Headwind} + \text{Gusts}$$

(min 5 kts, max 15 kts)

Windcorrectionangle
 = (Windangle x Windspeed)/TAS
 Crosswindcomponent
 = (Windangle + 20) % Windspeed
 Headwindcomponent
 = (110 - Windangle) % Windspeed

max. demonstrated Crosswindcomponent:
 12 kts (T/O, Ldg)

Mixture setting (leaning)

Taxiing:
 lean until RPM rises by 25-50 or RPM drops.
 Cruise with exhaust gas temperature (EGT):
 set power (RPM), then lean Mixture until peak EGT. Thereafter turn Mixture clockwise until EGT drops app. 50°F below peak („rich-of-Peak“)
 Cruise with RPM:
 set power (RPM),
 then lean Mixture until RPM drops and/or rough engines and/or engines backfires.
 Thereafter turn Mixture clockwise twice (for 50°F rich-of-Peak)
 Descent (rule of thumb):
 2 turns clockwise per 1000 ft or per 3 NM distance to destination

Engine Fire during Engine Start

Cabin Heat OFF
 Cabin Air OFF
 Ignition Continue START

• if engine starts:

Throttle 1700 RPM
for min. 2 Minutes

• if engine does not start:

Throttle Full OPEN

Mixture CUTOFF
 Fuel Shutoff Valve CLOSE
 Master (Bat, Alt) OFF
 Ignition OFF
 Brakes Release as required
 Fire Extinguisher Take along
 Aircraft Evacuate

Smoke In Cabin / Electrical Fire

Cabin Heat OFF
 Cabin Air OFF
 Master (Bat, Alt) OFF
 Electrical Equipment All OFF

leave Ignition on

Fire Extinguisher Use as req.
 Cabin Ventilate

Land as soon as possible

• if electric power required:

Master (Bat, Alt) ON
 Circuit breakers Check
do not reset

Electrical Equipment ON
turn on required equipment one after the other

Engine Fire in Flight

Land as soon as possible

Cabin Heat OFF
 Cabin Air OFF
 Throttle Full OPEN
 Mixture CUTOFF
 Fuel Shutoff Valve CLOSE
 Master (Bat, Alt) OFF
 Ignition OFF
 Speed 85 kts

• if Fire does not extinguish:

Speed Increase

Normal Checklist included

Landing site Select
Range appr. 1,4 NM / 1000 ft

Master (Bat, Alt) ON
if Flaps are required

Flaps As required
30° recommended

Master (Bat, Alt) OFF
 Seats Upright, locked
 Seatbelts Tighten
 ELT ON

• when landing is assured:

Doors Unlock
 Touchdown lowest poss. speed
 Brakes Apply heavily

Wing Fire

Vents CLOSE
 Positionlights OFF
 Pitot Heat OFF
 Slip Perform

keep flames away from fuel tank, cabin

Land as soon as possible

Perform landing with Flaps 0°: V_{REF} 70 kt

Engine Failure during Take-Off

Throttle IDLE

♦ Aircraft on the ground:

Brakes Apply
 Flaps 0°
to increase brake efficiency

Mixture CUTOFF
 Master (Bat, Alt) OFF
 Ignition OFF

♦ Aircraft in Flight:

Speed 60 kts
 Landing site Select
 Mixture CUTOFF
 Fuel Shutoff Valve CLOSE
 Ignition OFF
 Flaps As required
 Master (Bat, Alt) OFF
 Seatbelts Tighten
 Doors Unlock

Engine Failure in Flight

Speed..... 60 kts
 Landing site Select
Range appr. 1,4 NM / 1000 ft
 Carburetor Heat..... ON
 Mixture..... RICH
 Fuel Shutoff Valve OPEN
 Primer Locked
 Ignition BOTH

- if engine does not turn:
 Ignition START

- if engine does not start:

Normal Checklist included

Mixture CUTOFF
 Fuel Shutoff Valve CLOSE
 Ignition OFF
 Radio Transmit Mayday
 Transponder 7700
 Speed

- Flaps 0° 65 kts
- Flaps ≥ 10° 60 kts

Flaps As required
30° recommended

Master (Bat, Alt)..... OFF
 Seats Upright, locked
 Seatbelts Tighten
 ELT ON

- when landing is assured:

Doors Unlock
 Touchdown... lowest poss. speed
 Brakes Apply heavily

Landing with damaged tire

Approach..... Perform normal
 Flaps 30°

- ◆ Main tire damaged:

Touchdown with good wheel
keep damaged tire in the air as long as possible

- ◆ Nose tire damaged:

Touchdown on main tires
keep nose tire in the air as long as possible

- after nose tire landing:

Elevator Pull fully

Spin Recovery

Aileron Neutral
 Throttle IDLE
 Rudder Apply and hold
 opposite direction of rotation

Maximum deflection

*Use turn coordinator if disorientation precludes
 determination of direction of rotation.*

Elevator Move briskly forward

*Move elevator briskly forward to break the stall
 Full down elevator may be req. at aft CG loading*

Rudder, Elevator Hold
 until rotation stops

Premature relaxation may extend recovery

- when rotation stops:

Rudder Neutralize
 Flightpath Recover smoothly

Landing without Elevator control

*Control aircraft with Elevator Trim and Throttle,
 plan a long final*

Normal Checklist included

Cabine Prepared
 Mixture RICH
 Carburetor Heat As required
 Lights As required
 Approach Briefing Completed
 Altimeter ____, __ ft
QNH, Altitude

Seats Upright, locked
 Seatbelts Tighten
 Flaps 20°
 Speed 60 kts

Horizontal flight Achieve
 with Elevator trim and throttle

Throttle As required
 Rate of descent < 300 ft/min

Elevator trim Do NOT change

- for landing:

Throttle Close
 Elevator trim Nose-up
 to touchdown attitude

Oil-Pressure low

- ◆ Oil-Temperature normal
Land at nearest suitable airfield
- ◆ Oil-Temperature high
 - a. Oil-Temperature high apply

Oil -Temperature high

Throttle.....Reduce power
Land as soon as possible

Electrical Power Supply Malfunction

- Ammeter.....Check
- ◆ Ammeter shows excessive charge:
Full scale deflection
 - Alternator OFF
 - ALT. Circuit breaker..... Pull
 - Electrical Equipment OFF
*leave only essential equipment on***Land at nearest suitable airfield**
 - ◆ Ammeter shows discharge
(negative values) or
large fluctuations or
Low-Volt Lgt illuminates (< 24,5 V):
 - Avionic OFF
 - ALT Circuit breaker..... Check in
Master (Bat, Alt) OFF
 - Master (Bat, Alt) ON
 - ◆ Low-Volt Light extinguished:
 - Avionic ON
 - ◆ Low-Volt Light illuminated:
 - Generator (Alt)..... OFF
 - Electrical Equipment OFF
*leave only essential equipment on***Land at nearest suitable airfield**

Suction low

Indication < 4,5" (green area)

Horizon, Heading Ind. Unreliable
Turn Coordinator..... Use
Magnetic compass Use
Throttle..... Increase power
Descent Initiate as req.
to maintain suction in green arc

Door open

Speed 65 kts
Door Close

Rough Engine**Loss of engine power**

- Magnetos/Ignition
Ignition Check on L, R, BOTH
Mixture Adjust
- if engines still runs rough:
 - Mixture Enrich
 - Ignition BOTH**Land at nearest suitable airfield**
- Carburetor icing
Throttle..... Consider Full Power
Carburetor Heat..... ON
- if engines still runs smooth:
 - Carburetor Heat..... As required
 - Mixture As required

Inadvertent Icing Encounter

Flight into icing conditins prohibited

- Pitot-Heat ON
Turn back or change altitude
leave icing conditions ASAP
- Cabin Heat..... ON
Throttle Increase power
to prevent ice buildup on propeller blades
- Carburetor Heat..... ON as required
Mixture..... As required
Land at nearest suitable airfield
- if fast/significant ice buildup:
Land as soon as possible
- Flaps 0°
do not extend
- if ice accumulation at wing
leading edge >0,6 cm:
Stall Speed Vs.....Increased
 - ice accumulation on windshield:
 - Left window Open
 - Ice on windshield Scrape off
retain visibility for landing
 - for landing:
 - Forward-Slip As required
 - Speed 65-75 kts
*depending on ice accumulation***Perform landing in level attitude**

Carbon monoxide high*CO-Sticker has black spots*

Cabin Heat OFF
 Cabin Air ON
 Vents Open
 Windows Open

Land at nearest suitable airfield**Precautionary Landing / Ditching***Normal Checklist included*

Heavy equipment Secure
jettison as required

Life vests Put on

Mixture RICH

Carburetor Heat As required

Lights As required

Approach Briefing Completed

Altimeter , ft
QNH, Altitude

Seats Upright, locked

Seatbelts Tighten

Landing site Select, overfly

Avionic OFF

Flaps 30°

Speed 55 kts

Master (Bat, Alt) OFF

Approach Parallel to swells

- if high winds, heavy seas:

Approach Into the wind

Sinkrate appr. 300 ft/min

- when landing is assured:

Doors Unlock

Fuel Shutoff Valve CLOSE

Ignition OFF

Face Cushion

Touchdown lowest poss. speed

Brakes Apply heavily