



Handout **ENGLISH**

SEAPLANE OPERATION

Floats (Cessna 172P)

Boat (Buccaneer L-4)

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Fascination of Seaplane Flying

Welcome to seaplane training! This handout is designed to teach you the most important basics and procedures and will accompany you before and during your seaplane training.

It is not a textbook, but rather provides your flight instructor with graphics during training in the aircraft or on the water and is intended as a supplement to the instruction or as a refresher before extension/renewal.

Cessna 172P Amphibian

Our D-ECFP. A Cessna 172P on amphibian Floats from WipAir.



Seaplane flying differs in several aspects from land-based flying, particularly during takeoff and landing. Not only does the hydrodynamics of the floats come into play, but the aerodynamics of the aircraft also change significantly because of them.

The freedom and flexibility of seaplane operations demand a higher degree of independence and judgment from the pilot. Wind direction, wind strength, wave height, landing direction, positioning, currents, behavior of sailing boats, rowing boats, or motorboats.

Pilots must learn to anticipate these constantly changing factors and react accordingly. Before landing, you have to 'build' your own runway on the water. And within a few hours, everything can look completely different. The wind may have shifted and freshened, making landing on the water surface completely impossible.

Similarly, calm winds, cloudless skies, and smooth water can force you to land by instruments even in the most beautiful weather, because the sky reflects perfectly in the water, making it impossible to judge height.

In short; we need additional – nautical – knowledge for seaplane operations. This handout is intended to provide that basic foundation. It should not be understood as a manual but as a supplement to instruction with the flight instructor.

Enjoy the fascination of seaplane flying!

Your BALTIC SEAPLANE Team.



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01.

Cessna 172P

Amphibian



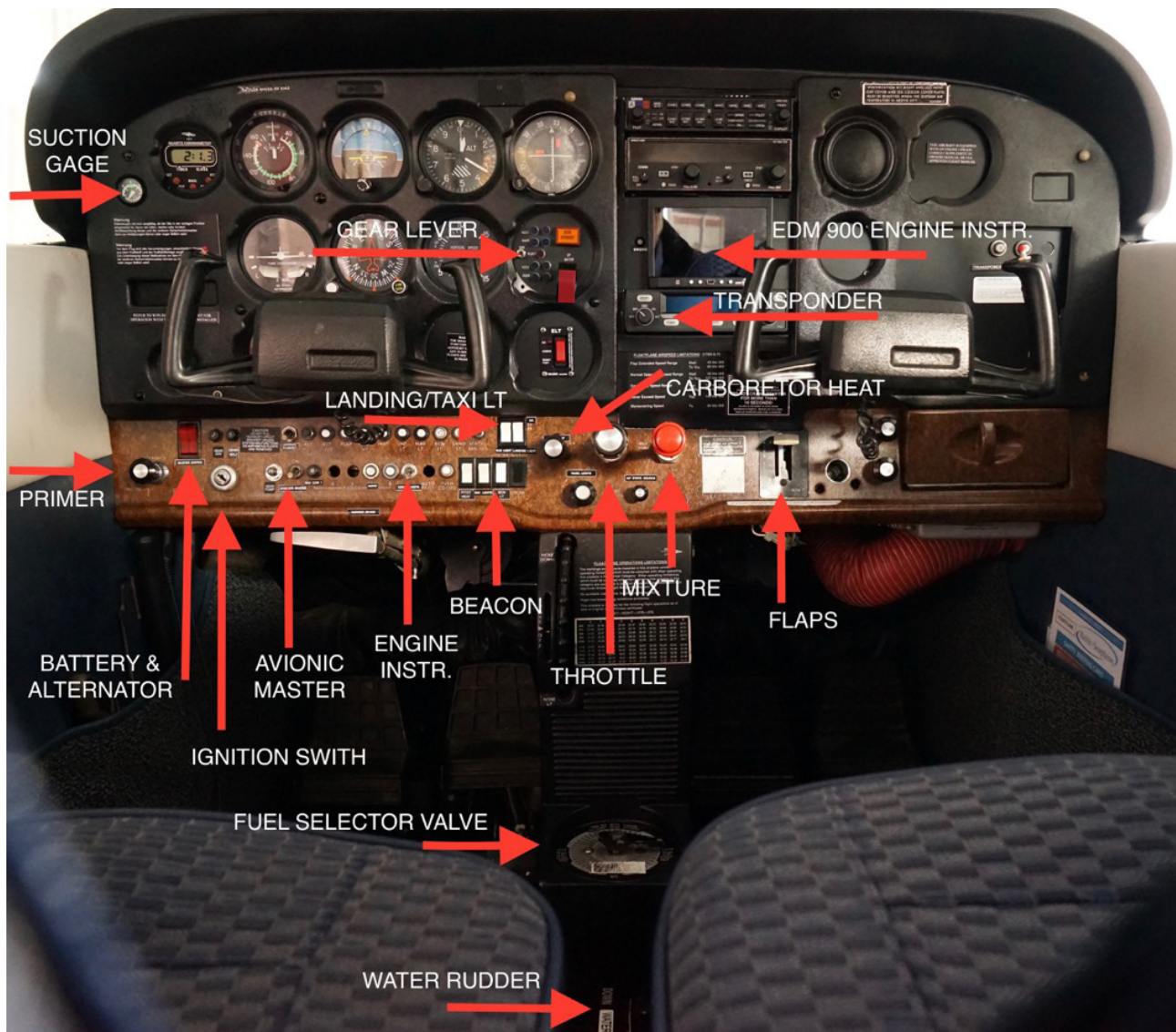
1.1. Cockpit

But first, let's start with the aircraft... Our D-ECFP is a Cessna 172P. Built in 1982 with a 180HP O Lycoming engine.

The floats are from Wipaire and all specifications listed here come from the Wipaire POH supplement to the 172P POH.

Both manuals can be downloaded from our website.

D-ECFP Panel



1.2. Fahrwerk

Four Blue

The landing gear status is monitored through 4 lights, the position of the landing gear lever, the indicators in the floats, and the position of the nose gear (fitting visible).



1.3. POH

PoH

You can find the POH on our homepage under Company / Aircraft <https://baltic-seaplane.de/home/unternehmen/unsere-flugzeuge/>

AIRCRAFT FLIGHT MANUAL

15A

AMPHIBIAN
MODEL 172M, N, P and F172M, N, P

DESCRIPTIVE DATA

ENGINE

O-360 180 BPH Lycoming

IO-360 180 BPH Lycoming

PROPELLER

Propeller Manufacturer: McCauley Accessory Division

Propeller Model Number: McCauley 1A200/DFA8243 or 1A200/WFA8243

Number of Blades: 2

Propeller Diameter, Maximum: 82 inches.

Minimum: 80.4 inches.

Propeller Type: Fixed Pitch.

or

Propeller Manufacturer: Hartzell

Propeller Model Number: HC-C2YK-1BF/F8477-4 or HC-C2YR/F8477-4

Number of Blades: 2

Propeller Diameter, Maximum: 80 inches.

Minimum: 78.4 inches.

Propeller Type: Constant Speed

MAXIMUM CERTIFICATED WEIGHTS

Takeoff: 2550 Lbs.

Landing 2550 Lbs.

MODELS	SPEED	172M	172M, N	REMARKS	172P
		F172M	F172M, N		KCAS
V _{NE}	Never exceed speed	182	160	Do not exceed this speed in any operation.	158
V _{NO}	Maximum structural cruising speed	145	128	Do not exceed this speed except in smooth air, and then only with caution.	127
V _A	Maneuvering Speed	112	97	Do not make full or abrupt control movements above this speed.	99
V _{FE}	Maximum Flap Extended Speed:	100	87	Do not exceed this speed with flaps down.	87
V _{LO} , V _{LE}	Max speed for gear operation, max speed with gear down.	140	120	Do not exceed this speed with gear extended or in operation.	120



1.3. POH

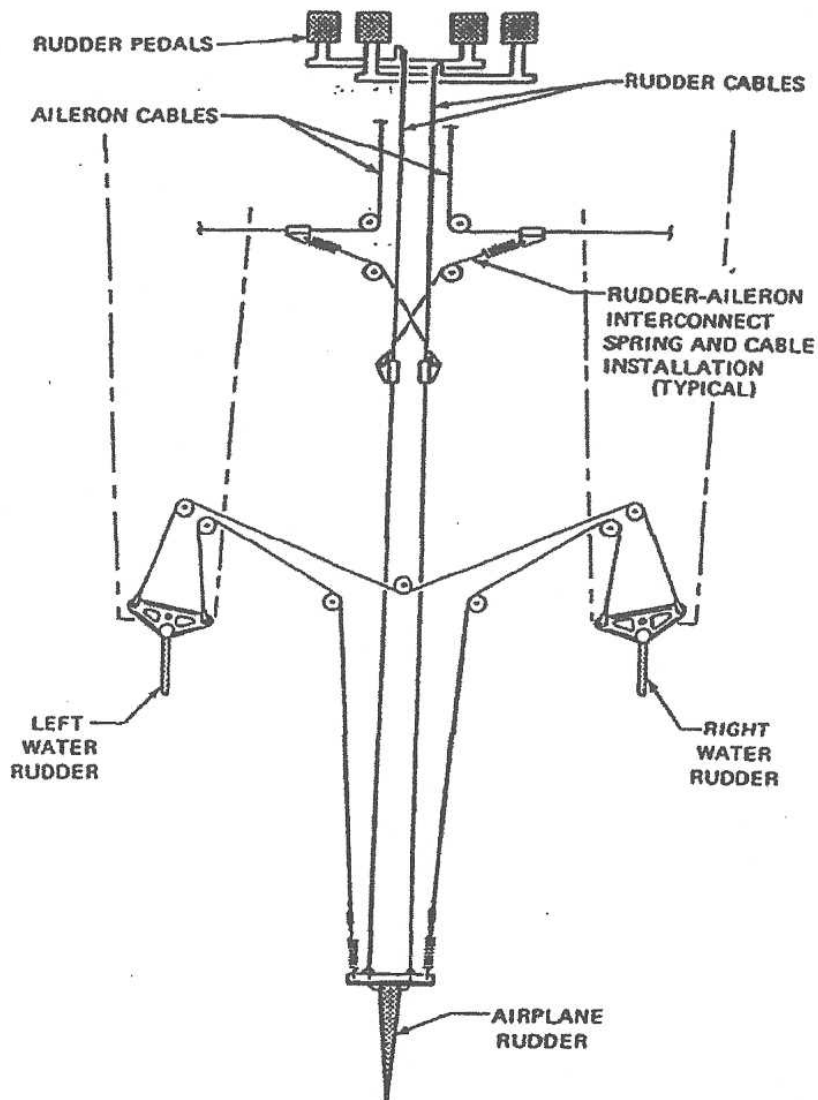
WATER RUDDER UP FOR ALL FLIGHT OPERATIONS

AIRCRAFT FLIGHT MANUAL

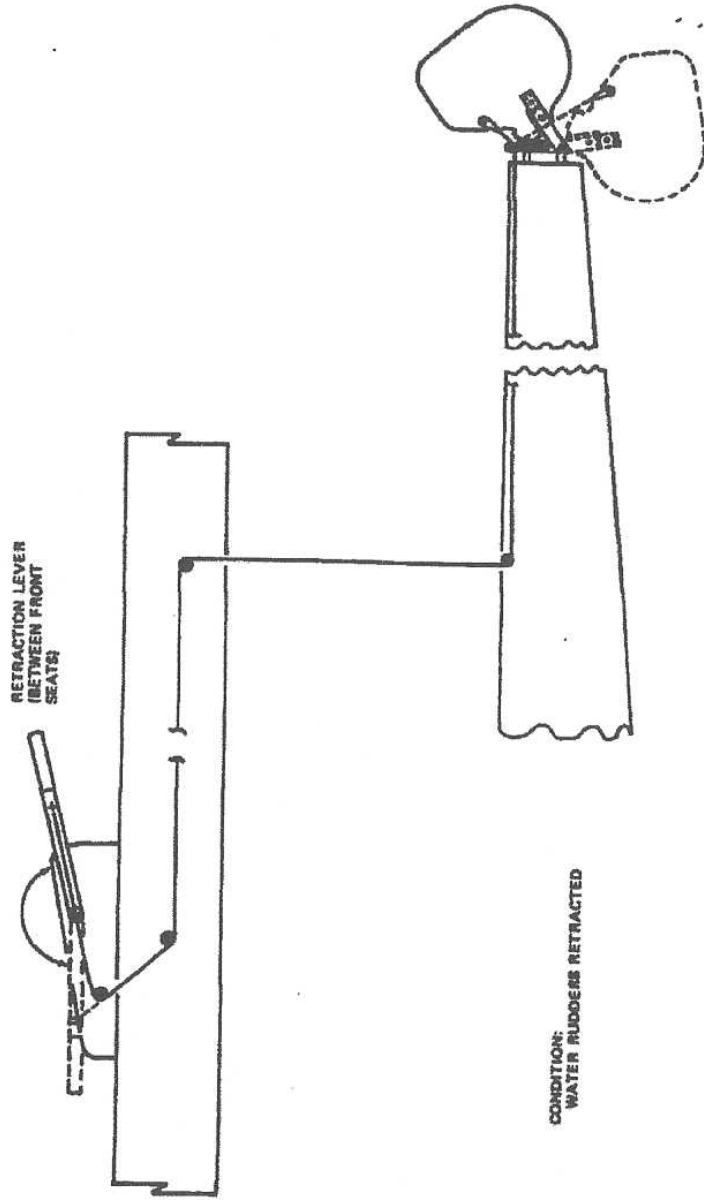
15A

AMPHIBIAN
MODEL 172M, N, P and F172M, N, P

Figure 8. Water Rudder Steering System



1.3. POH

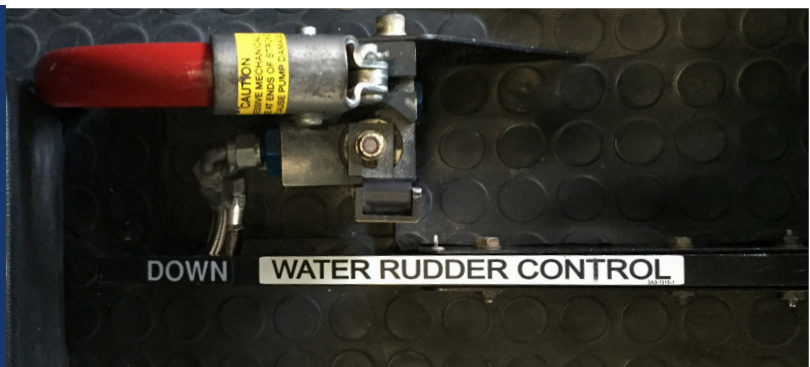


28

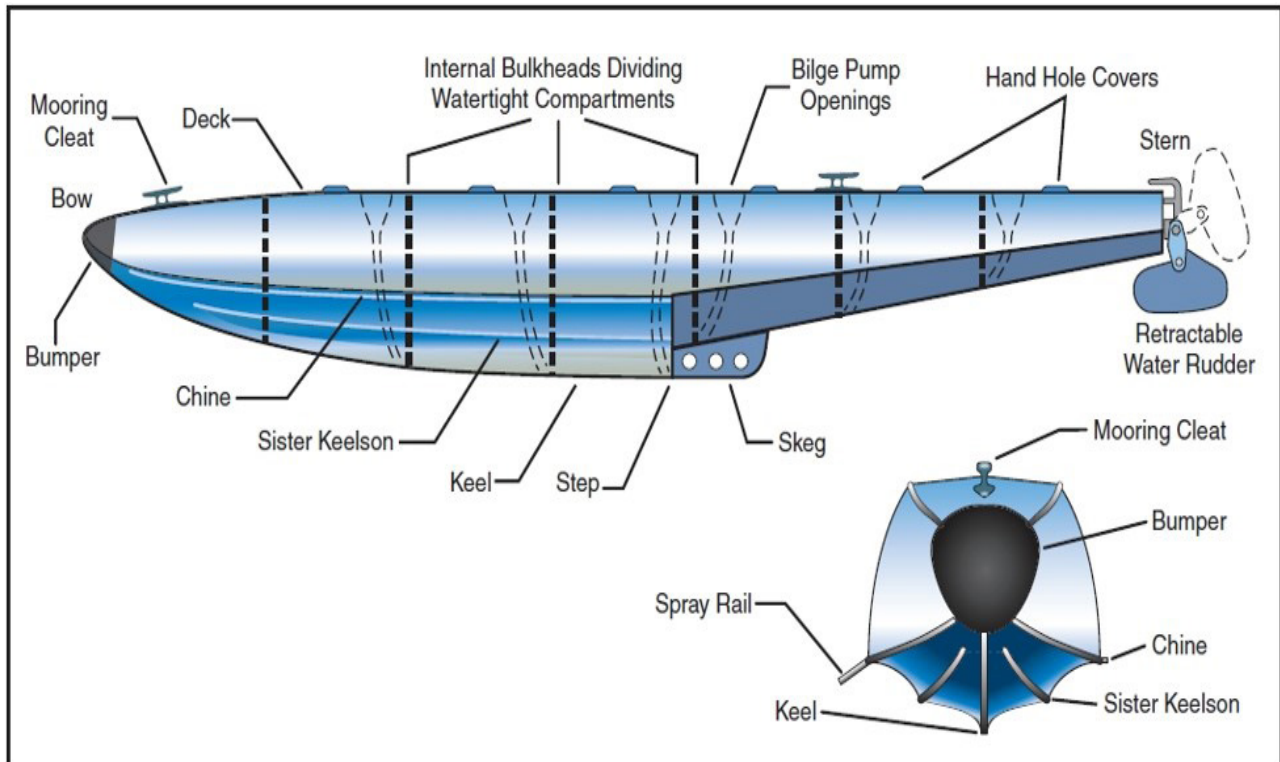
FAA APPROVED

UP FOR ALL FLIGHT OPERATIONS

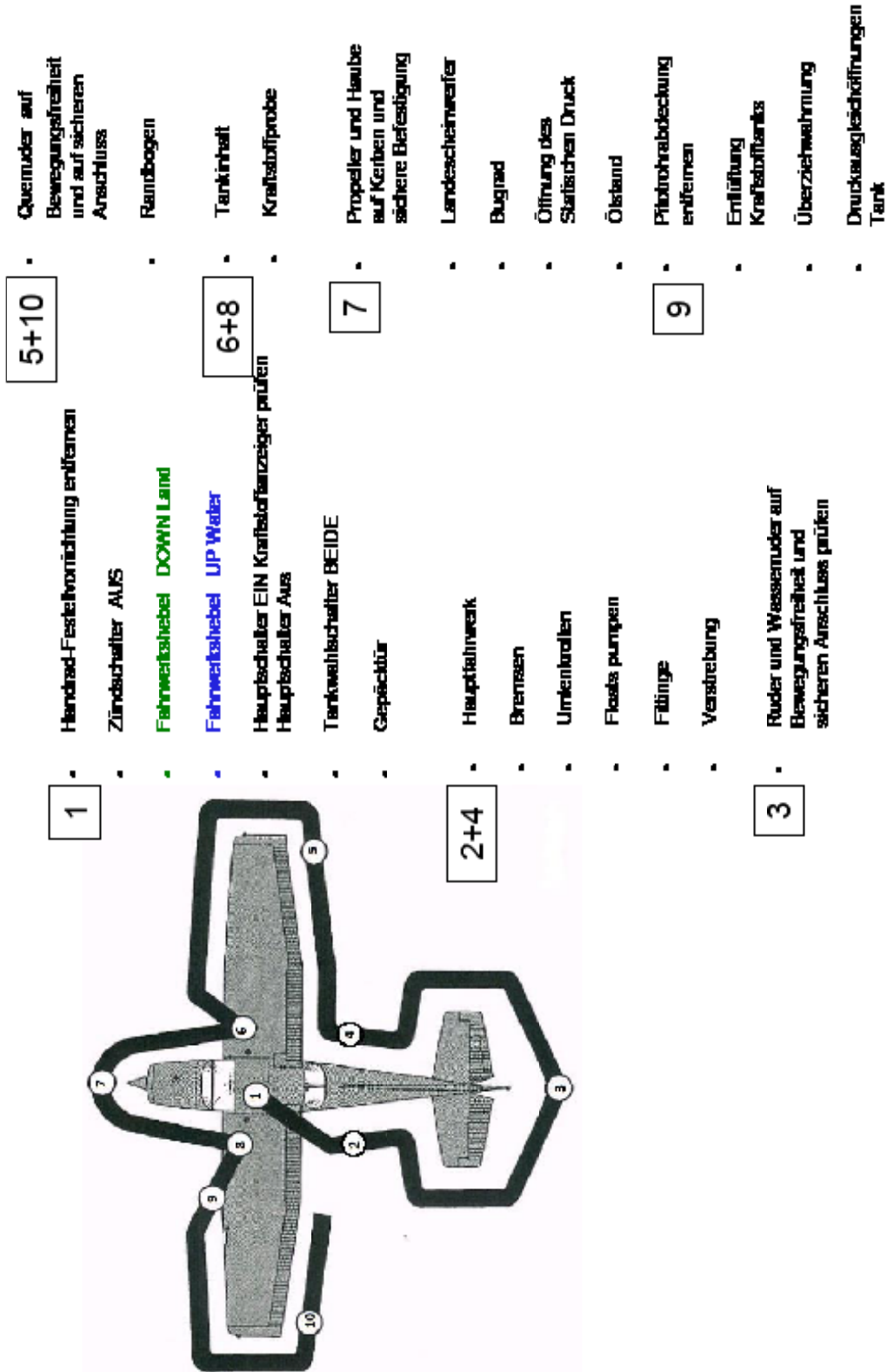
The water rudders are quite fragile and can be destroyed by water pressure during the takeoff run!



Schwimmer allgemein



1.4. Vorflugkontrolle



1.5. Checklisten before TO

NORMAL / EMERGENCY CHECKLIST
Cessna 172 P Amphibian

REV. 01.04.2022 V.4

COCKPIT CHECK	
Preflight Inspection	COMPLETED
V-Bar	CHECKED
Documents & Papers	CHECKED & ON BOARD
Emergency Equipment	ON BOARD
Seats, Seat Belts	ADJUSTED, FASTENED
Cabin Doors	CLOSED & LOCKED
All Switches	"OFF"
Avionic Master	"OFF"
Circuit Breakers	CHECKED
Gear Lever (Land)	DOWN
Gear Lever (Water)	UP
Throttle	CLOSED
Mixture	CUT OFF
Fuel Selector Valve	"BOTH"
Water Rudders (Land)	UP
Water Rudders (Water)	DOWN
COCKPIT CHECK COMPLETED	

2

1

BEFORE START-UP CHECK	
Battery & Alternator	"ON"
ENG.INSTR. / EDM-900	"ON"
Fuel Quantity	CHECK, ADJUST EDM-900
Beacon	"ON"
BEFORE START-UP CHECK COMPLETED	

C172

2

ENGINE START	
Mixture	"RICH" / FULL FORWARD
Carburetor Heat	"COLD" / FULL FORWARD
Primer	AS REQUIRED
Throttle	"IDLE" >> 3mm forward
Prop. Area	Call "CLEAR!"
Starter	"ENGAGE"
Throttle	Stabilize @ 1000 RPM
Oil Pressure/Temp.	CHECK
ENGINE START CHECK COMPLETED	

C172

3

AFTER START-UP / PRE-TAXI CHECK	
Avionic Master	"ON"
Radio & Navs	SET
Compass	SET
Flap operation	CHECKED
Flight Controls	FREE & FULL TRVL
Water Rudders (Land)	"UP"
Water Rudders (Water)	"DOWN"
Landing / Taxi Light	"ON"
AFTER START-UP / PRE-TAXI CHECK COMPLETED	

172

4

TAXI CHECK	
Turning Instruments	CHECK
T/O + Emerg. Briefing	PERFORM
TAXI CHECK COMPLETED	

172

5

ENGINE RUN-UP CHECK	
Engine Parameter	CHECK
Throttle	"1700 RPM"
Magnetos	CHECK (max 150/50)
Carburetor Heat	CHECK
Suction Gage	CHECK
Throttle	"IDLE", THEN "1000 RPM"
ENG RUN-UP CHECK COMPLETED	

172

6



1.5. Checklisten TO, CRUISE/LAND

BEFORE T/O CHECK	
Transponder	"ON" / ("ALT")
Gear (Land)	"DOWN" 4 GREEN
Flaps Set for T/O	10° - (LAND)
Gear (Water)	"UP" 4 BLUE
Flaps Set for T/O	20° - (WATER)
Elevator Trim	SET TAKEOFF
Water Rudders for T/O	"UP"
Landing Lights	"ON"
T/O + Emerg. Briefing	PERFORMED
Engine & Configuration	RECHECKED
BEFORE T/O CHECK COMPLETED	

Best rate of climb	70 KIAS
Normal climb	80 KIAS
Best glide speed	70 KIAS

CRUISE CHECK	
Power	SET @ ~ 2250 RPM
Altimeters	SET
Gear	Recheck UP
Ops Checks	PERFORM REGULARLY
CRUISE CHECK COMPLETE	

BEFORE LANDING CHECK	
Mixture	RICH / "FULL FORWARD"
Carburetor Heat	AS REQUIRED
Landing Light	"ON"
Tank Selector	BOTH / (FULLEST TANK)
Water Rudders	UP
BEFORE LANDING CHECK COMPLETE	

AFTER T/O CHECK	
Gear	"UP" 4x BLUE
Flaps (Land)	UP @ 70 KIAS
Flaps (Water)	10° @ 60 KIAS
Flaps (Water)	UP @ 70 KIAS
Climb Power Set	SET < 2500 RPM
Landing Lights	"OFF"
AFTER T/O CHECK COMPLETED	

FINAL CHECK	
Flaps Set (Land)	20° standard
Flaps Set (Water)	20° standard
Mixture	RICH / "FULL FORWARD"
Carburetor Heat	AS REQUIRED
Gear (Land)	"DOWN" 4x GREEN
Gear (Water)	"UP" 4x BLUE
FINAL CHECK COMPLETED	



1.5. Checklisten SHUT DOWN

AFTER LANDING CHECK	
Flaps	"UP"
Water Rudder (Land)	"UP"
Water Rudder (Water)	"DOWN"
Landing Light	"OFF"
Taxi Light	"ON"
Transponder	"STBY"
AFTER LDG CHECK COMPLETED	

12

ENGINE SHUT DOWN CHECK	
Avionic Master	"OFF"
Throttle	1000 RPM
EDM-900	NOTE FUEL / "OFF"
Mixture	"CUT OFF"
ENG. SHUT DOWN CHECK COMPLETED	

13

AFTER SHUT DOWN CHECK	
Ignition	"OFF"
Battery & Alternator	"OFF"
All Switches	"OFF"
Tank Selector	Set to one side
Water Rudders	"DOWN"
V-Bar	CHECK
Times, Fuel	NOTE
AFTER SHUT DOWN CHECK COMPLETED	

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1.5. Checklisten abnormal

LDG GEAR MALFUNCTION PROCEDURES	
LDG GEAR FAILS TO RETRACT OR EXTEND	
Battery Switch	"ON"
Ldg Gear Switch	RECHECK DSRD POS.
Ldg Gear Circuit Breaker	CHECK "IN"
Hand Pump Pos. Valve	CHECK "NEUTRAL"
Gear Lights	"UP" / 4x BLUE - "DOWN" / 4x GREEN
Gear Position	CHECK VISUALLY
IF GEAR STILL IN IMPROPER POSITION	
Ldg Gear Switch	RECYCLE
Ldg Gear Pump	CHECK RED LIGHT "ON"
Airspeed	REDUCE to minimize airload on Gear
IF PUMP IS RUNNING INTERMITTENTLY OR GEAR IS NOT MOVING	
Hand Pump Valve Pos.-Selector	PLACE IN SAME POS. as LDG Gear SWITCH
NOTE Hand Pump Position Selector must be aligned in the same position as the Ldg Gear Switch	
Gear Operation	VISUALLY VERIFY
IF GEAR PUMP IS INOPERATIVE OR GEAR IS STILL NOT IN DESIRED POSITION	
Ldg Gear Pump Circuit Breaker	PULL "OFF"
Ldg Gear Switch	DESIRED POSITION
Hand Pump Pos. Valve	PLACE IN SAME POSITION
Emergency Hand Pump	PUMP UNTIL RESISTANCE BECOMES HEAVY(~100 cycl)
Gear Position Lights	CHECK DESIRED LIGHTS(4)
Gear Position	CONFIRM VISUALLY
WARNING	
DO NOT LAND ON WATER UNLESS ALL FOUR WHEELS ARE FULLY RETRACTED	
LANDING GEAR	

15

ENGINE FAILURES		
ENGINE FAILURE DURING TAKEOFF RUN		
Throttle		IDLE
Brakes (Land)		APPLY
Flaps		RETRACT
Mixture		IDLE CUT-OFF
Ignition Switch		OFF
Master Switch		OFF
ENGINE FAILURE AFTER TAKEOFF		
Airspeed	Flaps 10°	70 KIAS
	Flaps 20°	70 KIAS
Mixture/Fuel Selector Valve		CUT OFF / OFF
Ignition Switch		OFF
Flaps		AS REQUIRED
Master Switch		OFF
ENGINE FAILURE DURING FLIGHT		
Airspeed		70 KIAS
Primer		IN & LOCKED
Fuel Selector Valve		BOTH
Mixture		RICH
Throttle		1/2 OPEN
Ignition Switch		BOTH/START
ENGINE FAILURES		

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1.5. Checklisten abnormal

FORCED LDG		
FORCED LANDINGS EMERGENCY LANDING WITHOUT POWER		
Airspeed	Flaps 0°-20°	70 KIAS
	Flaps Down	65 KIAS
Seat Belts	SECURE	
Mixture	CUT-OFF	
Fuel Shutoff Valve	OFF	
All Switches/ except Master!	OFF	
Flaps Set	20°	
Gear (Land -smooth)	"UP"	4x BLUE
Gear (Land -rough)	"DOWN"	4x GREEN
Gear (Water)	"UP"	4x BLUE
Master Switch	OFF	
Doors	UNLATCH PRIOR TO TOUCHDOWN	
Touchdown	SLIGHTLY TAIL LOW	
FORCED LDG		

17

FIRE	
FIRE DURING START ON GROUND	
Mixture	CUT-OFF
Parking Brake	RELEASE
Airplane	EVACUATE
Fire	EXTINGUISH
ENGINE FIRE IN FLIGHT	
Throttle	CLOSE
Mixture	CUT-OFF
Fuel Shutoff	OFF
Master Switch	OFF
Cabin Heat and Air	OFF
cont. FORCED LANDING (refer p.16)	
FIRE	

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02.

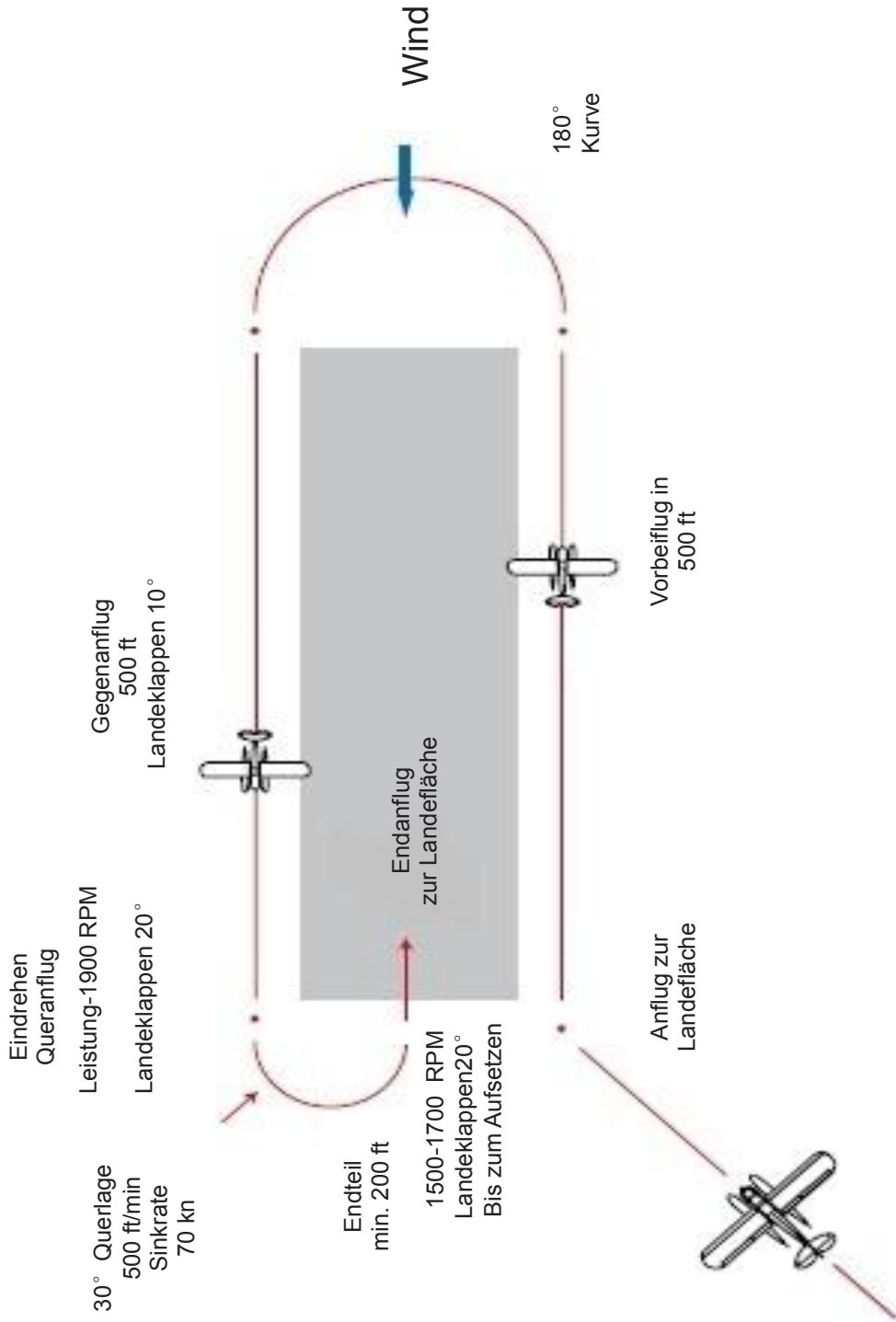
Procedures

FLOATS

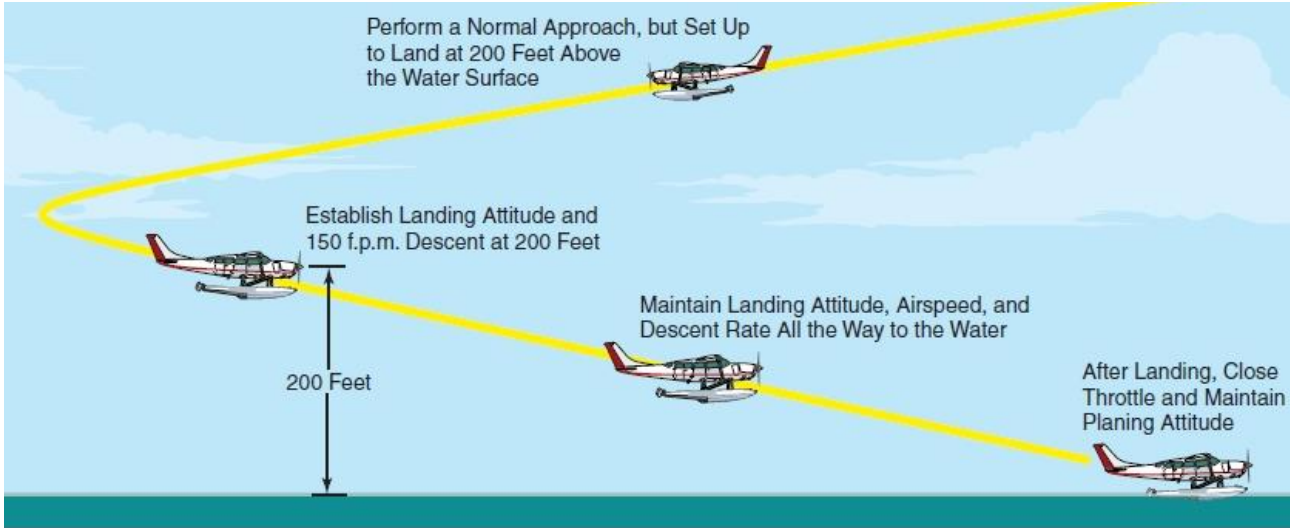


2.1. Pattern Water

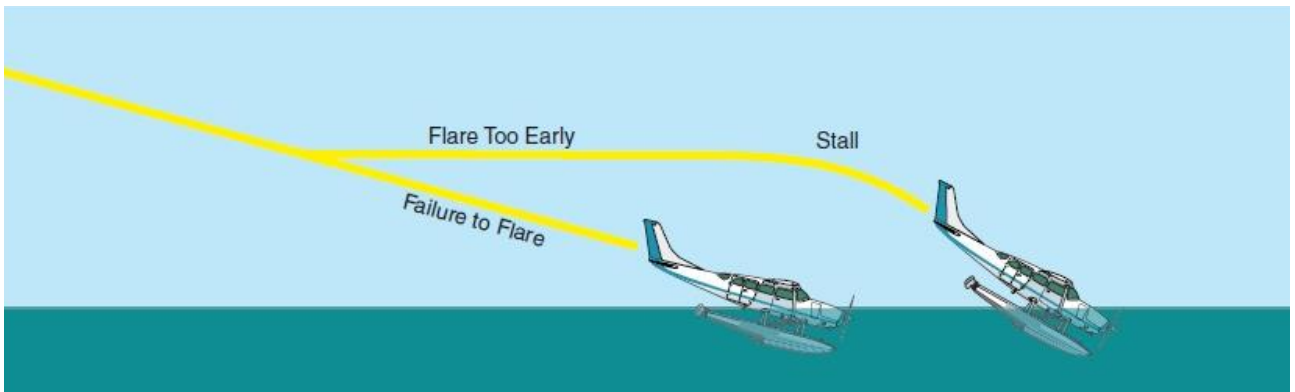
Platzrunde C 172 P



2.2. Glassy Water Landing

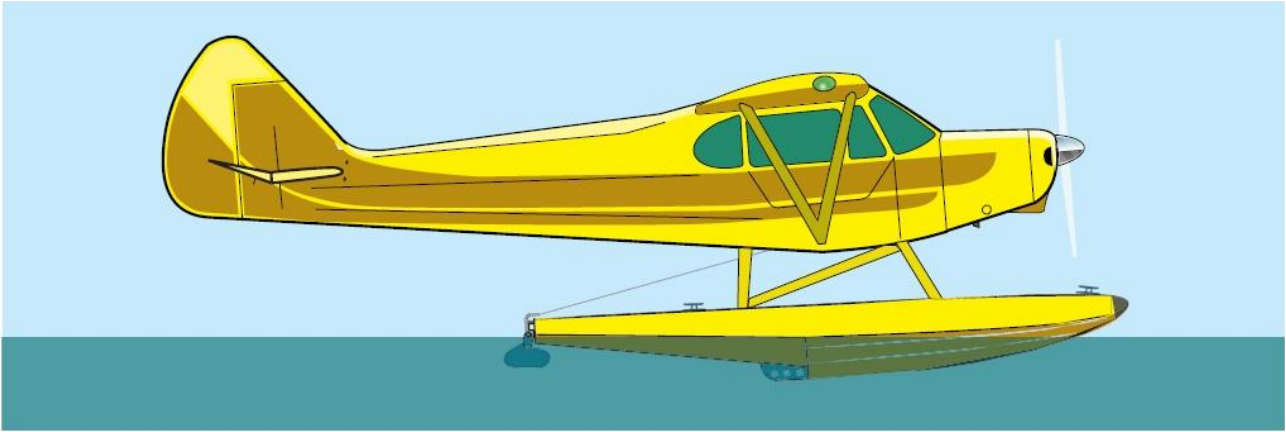


Geschwindigkeit: 60-65 IAS (ca. 1900 RPM)
Sinkgeschwindigkeit 100-150 ft/min (keine Landeklappen)



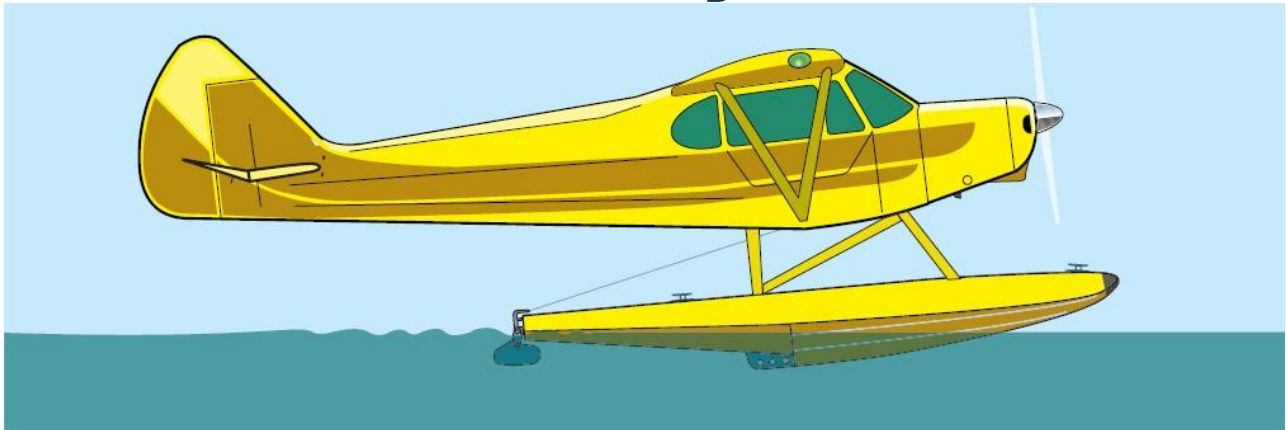
2.3. Taxi Water

Displacement mode



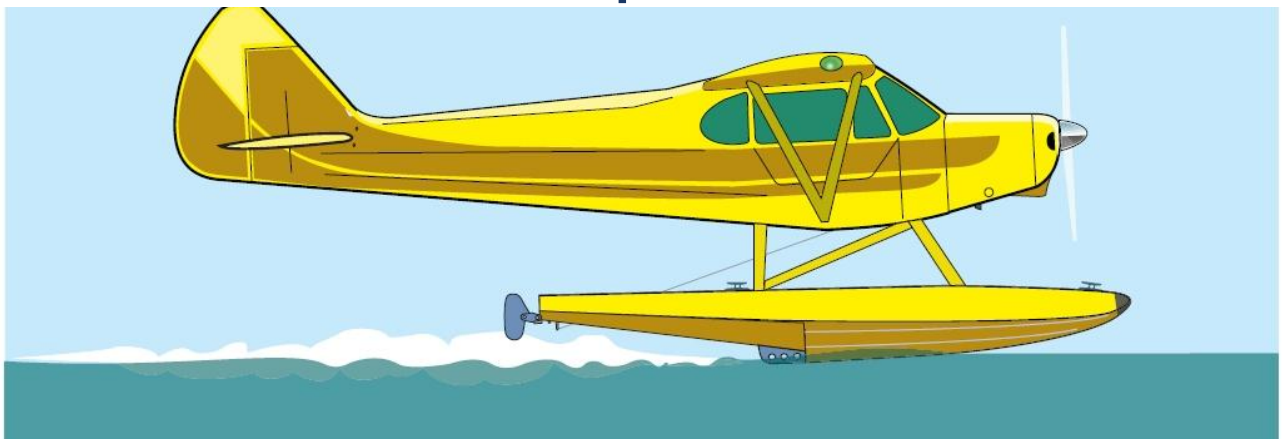
Engine power: Idle / Water rudders: Down / Flaps: Retracted

Plowing



Increased engine power / Water rudders down / Flaps retracted

Step Taxi

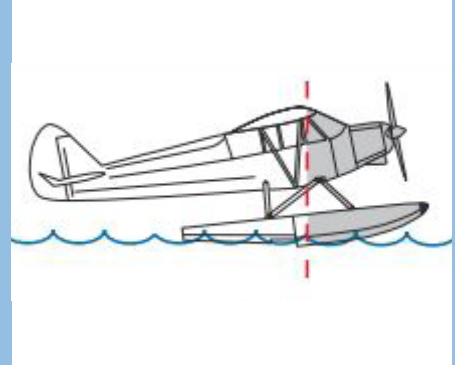


Increased engine power / Water rudders and flaps retracted

2.3. Taxi Water

Displacement Taxi

Displacement taxiing is the safest and most material-preserving way of moving aircraft on water. The RPM of the D-ECFP should not exceed 800 to prevent the propeller from getting spray damage and being damaged.

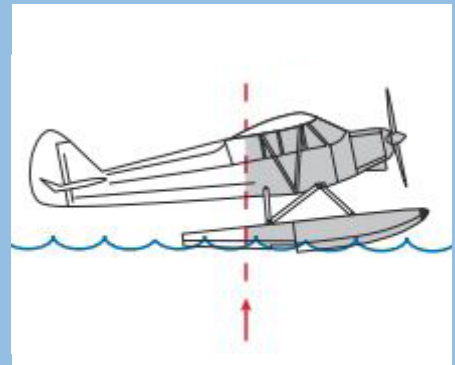


!Übergang so schnell wie möglich um Propellerschäden zu vermeiden!

Plowing

Plowing allows the pilot to stabilize the aircraft on the water, especially in crosswind conditions. The lateral surface area is increased at the front and the pivot point is moved backwards.

This maneuver must be executed very precisely and involves certain risks.



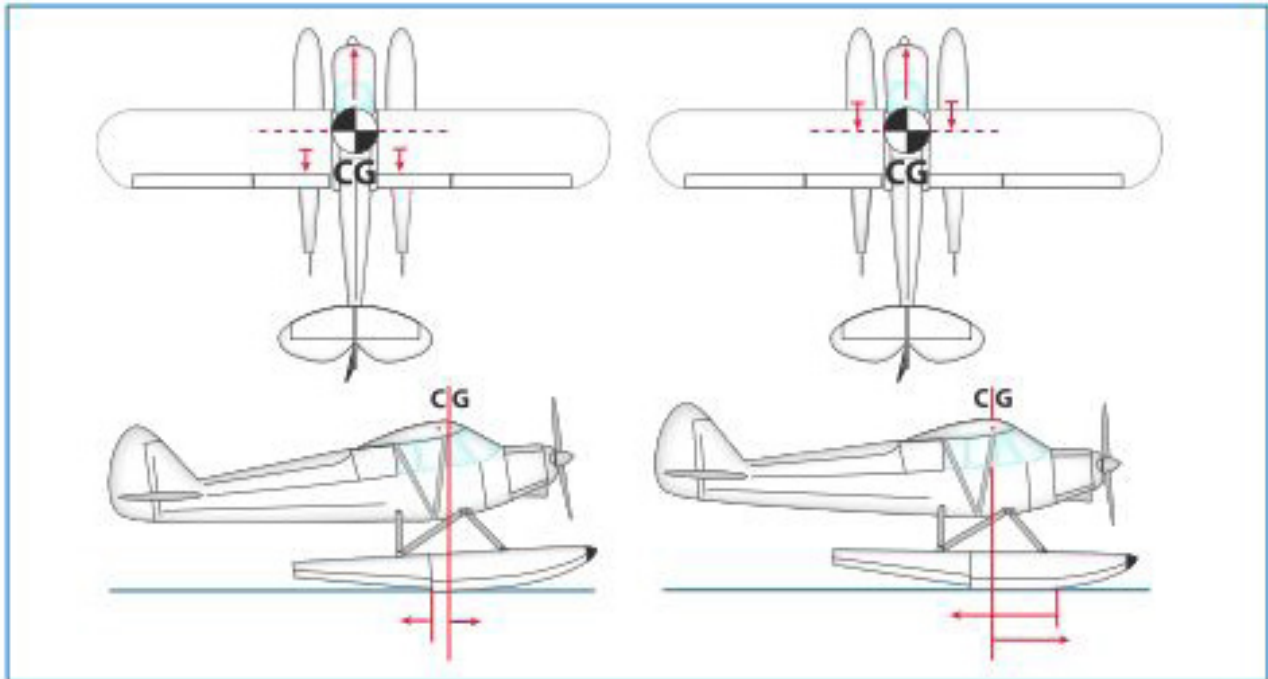
Step Taxi

Step-taxiing is a maneuver in which the seaplane operates in a planing condition (on the 'step' of the floats) at sub-takeoff speeds. While step-taxiing on floats provides an efficient method for rapid water movement, it comes with inherent risks.

The maneuver demands considerable pilot proficiency, vigilance, and experience for safe execution. As with taildragger operations, abrupt or unplanned control inputs during step-taxiing can lead to aircraft destabilization.

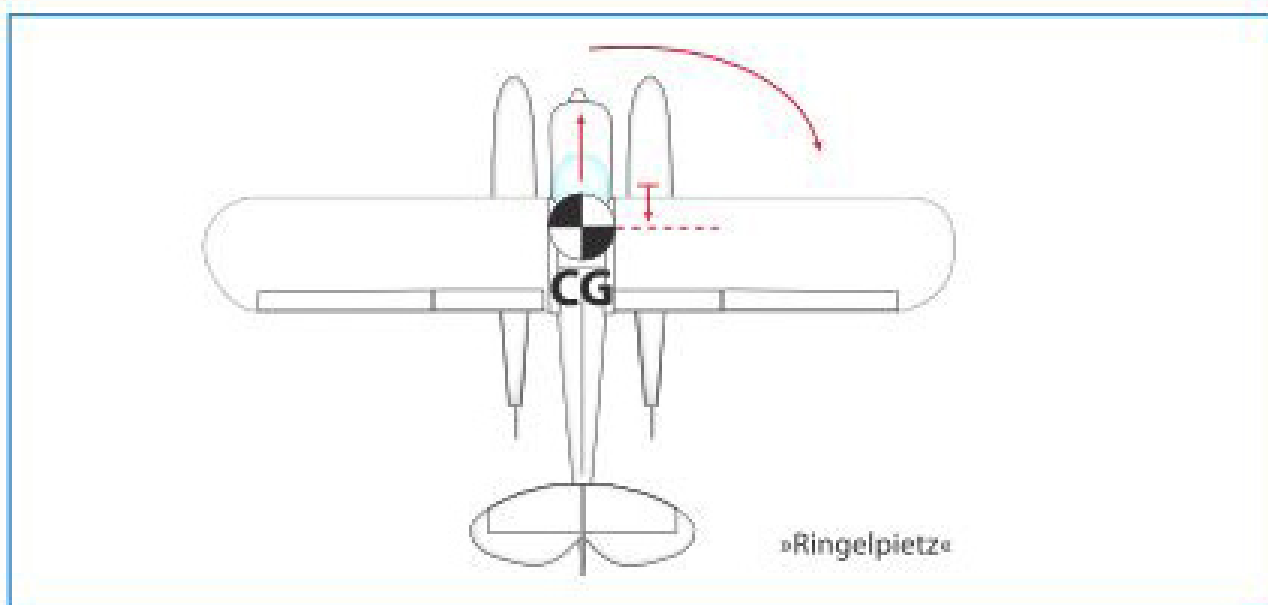


2.3. Taxi Wasser



**Step-Taxi Achtern
auf der Stufe**

**Step-Taxi Vorne
(„Taildragger“)**



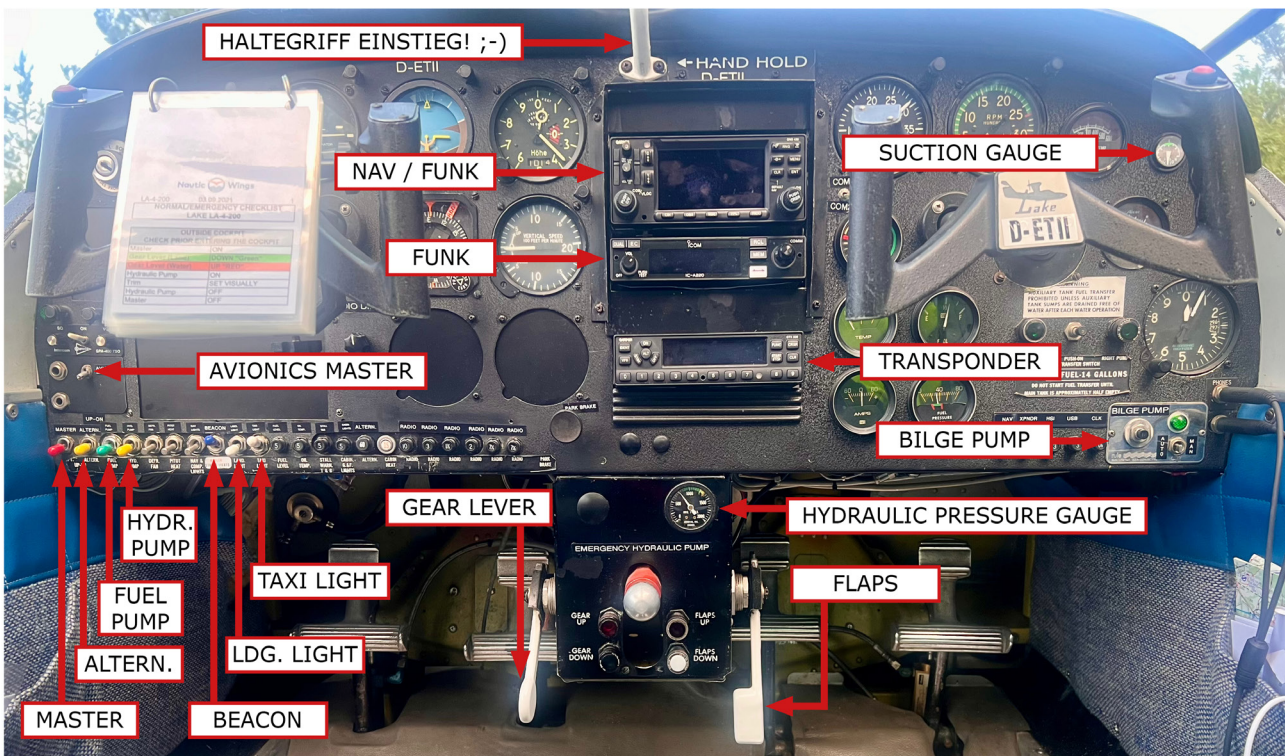
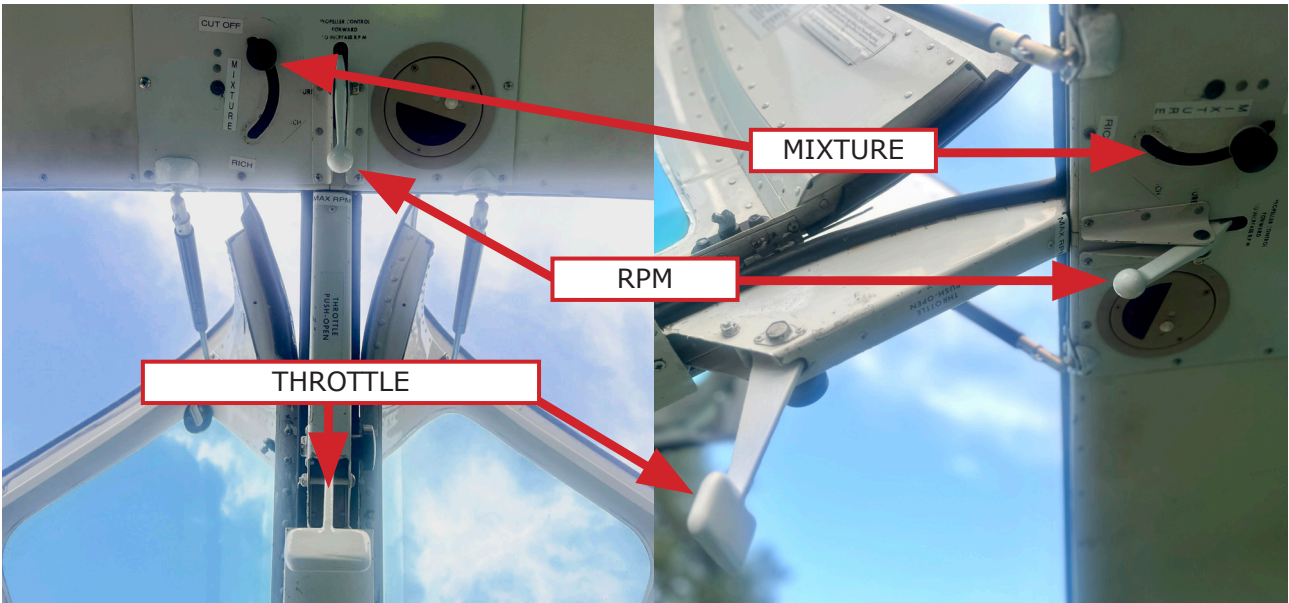
03.

Lake Buccaneer L-4 Flying Boat



3.1. Cockpit

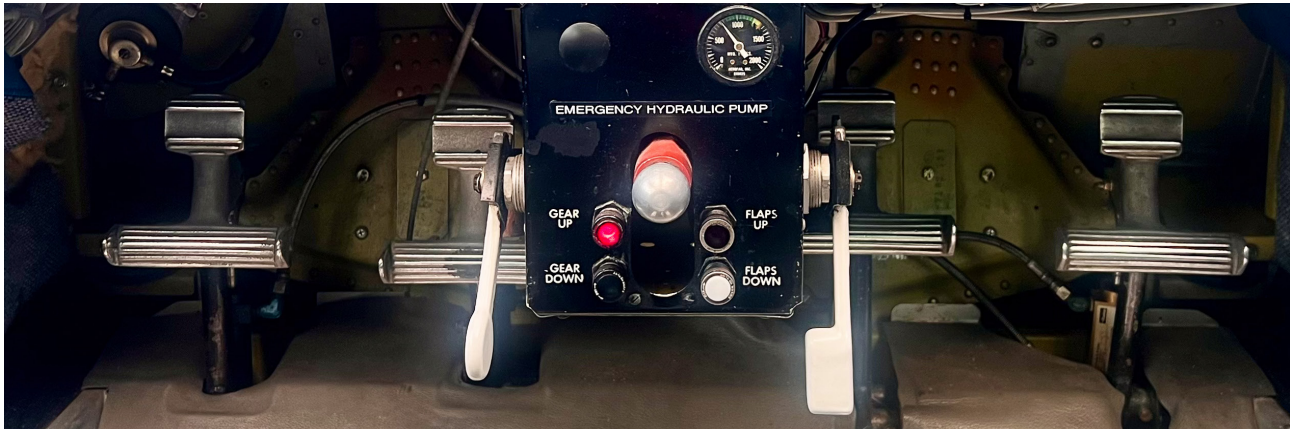
The trim operates hydraulically and is located between the seats.



3.2. Cockpit / Fahrwerk

THE TRIM operates hydraulically and is located between the seats. In front of it is the lever for the WATER RUDDERS.

GEAR UP for water landing is indicated by the RED light (Green for land). Control is maintained through the mirrors in the pontoons.



3.2. WASSERRUDER



3.2. POH

1 Allgemeines

1.5 Triebwerk

1 Lycoming IO-360-A1B
 Empfohlene Zeit zwischen den Überholungen: 1600 Stunden
 Leistung bei 2700 U/min: 200 BHP/147 kW
 Bohrung: 5.125 Inch
 Hub: 4.375 Inch
 Kompression: 8.7:1
 Einspritzsystem: Bendix RSA- -
 Magnete: Bendix D 10-349305-1 rechts
 10-349365-3 links

1.7 Propeller

Hydraulisch betätigter Constant-Speed-Verstellpropeller
 Modell Hartzell HC-C2YK-1BLF/FL-7666A-2
 ϕ 74 Inch maximal
 ϕ 72 Inch minimal
 Anzahl der Blätter: 2
Anstellwinkel bei 30 Inch Saugrohrunterdruck:
 Kleine Steigung: 14.0°
 Große Steigung: 27.0° bis 31.0°

1.9 Treibstoffsystem

Gesamtfassungsvermögen: 151,4 l (40 U.S. Gal)
 Ausfliegbare Benzinmenge: 151,4 l
 Oktanzahl: minimal 100 oder 100 LL

1.11 Schmierstoffsystem

Gesamtkapazität: 7,54 l (8 Quarts)

Viskosität, Spezifikationen und Wechselempfehlungen sind im Abschnitt 8 enthalten.

1.13 Höchstzulässige Gewichte

Höchstzulässiges Gesamtgewicht: 1179.3 kg = 2600 lbs
 Höchstzulässiges Gewicht im Gepäckraum: 91.0 kg = 200 lbs

1.15 Standard-Fluggewicht

Flugzeug-Leergewicht: 705.3 kg = 1555 lbs*
 Maximale Zuladung: 473.4 kg = 1045 lbs*

* Zur Ermittlung der zulässigen Beladung ist das aktuelle Leergewicht, Seite 6-9, zu beachten



3.2. POH

2 Betriebsgrenzen

2.3 Geschwindigkeitsbeschränkungen

In der folgenden Tabelle sind die Geschwindigkeitsbeschränkungen und ihre Bedeutung aufgeführt. Die Angaben der Geschwindigkeiten beruhen auf der Annahme von einem Instrumentenfehler "0".

Geschwindigkeit	CAS mph	IAS mph	Bedeutung
V_{NE} Never Exceed Speed	146		Diese Geschwindigkeit darf bei keiner Betriebsart überschritten werden!
V_{NO} Maximum Structural Cruising Speed	122	117	Dies ist die Geschwindigkeit, die nicht überschritten werden soll, ausgenommen bei ruhiger Luft und nicht mit vollen Ruderausschlägen.
V_A Maneuvering Speed	121	116	Dies ist die maximale Geschwindigkeit, bei der voller Ruderausschlag erlaubt ist und das Flugzeug nicht überlastet wird.
V_{FE} Maximum Flap Extended Speed	125	120	Höchstzulässige Geschwindigkeit mit ausgefahrenen Klappen.
V_{LE} Maximum Landing Gear Extended Speed	125	120	Höchstzulässige Geschwindigkeit bei der das Flugzeug mit ausgefahrenem Fahrwerk sicher geflogen werden kann.
V_{LO} (EXT) Maximum Speed for Gear Extension	125	120	Höchstzulässige Geschwindigkeit bei der das Fahrwerk sicher ausgefahren werden kann.
V_{LO} (RET) Maximum Speed for Gear Retraction	125	120	Maximale Geschwindigkeit bei der das Fahrwerk sicher eingefahren werden kann.



3.3. Vorflugkontrolle

Starting Point – Left Side of Aircraft:

- **Cabin Area:**

Check cabin door operation and seals

Verify windows for cleanliness and condition

Inspect emergency exits

- **Left Wing:**

Check wing surface and leading edge

Inspect struts and attachments

Check fuel tank caps

Verify navigation lights

- **Left Float/Hull:**

Check hull integrity

Inspect water rudder operation

Check for water in compartments

Verify mirror condition

Inspect landing gear mechanism

- **Nose Section:**

Check propeller condition

Inspect cowling security

Oil level check

Air intakes clear

Right Float/Hull:

Same inspection as left float

Check water rudder cables

Verify landing gear position

Inspect hull for damage

- **Right Wing:**

Same inspection as left wing

Check fuel quantity

Inspect control surfaces

- **Tail Section:**

Check elevator movement

Inspect rudder operation

Verify trim tabs

Check antennas

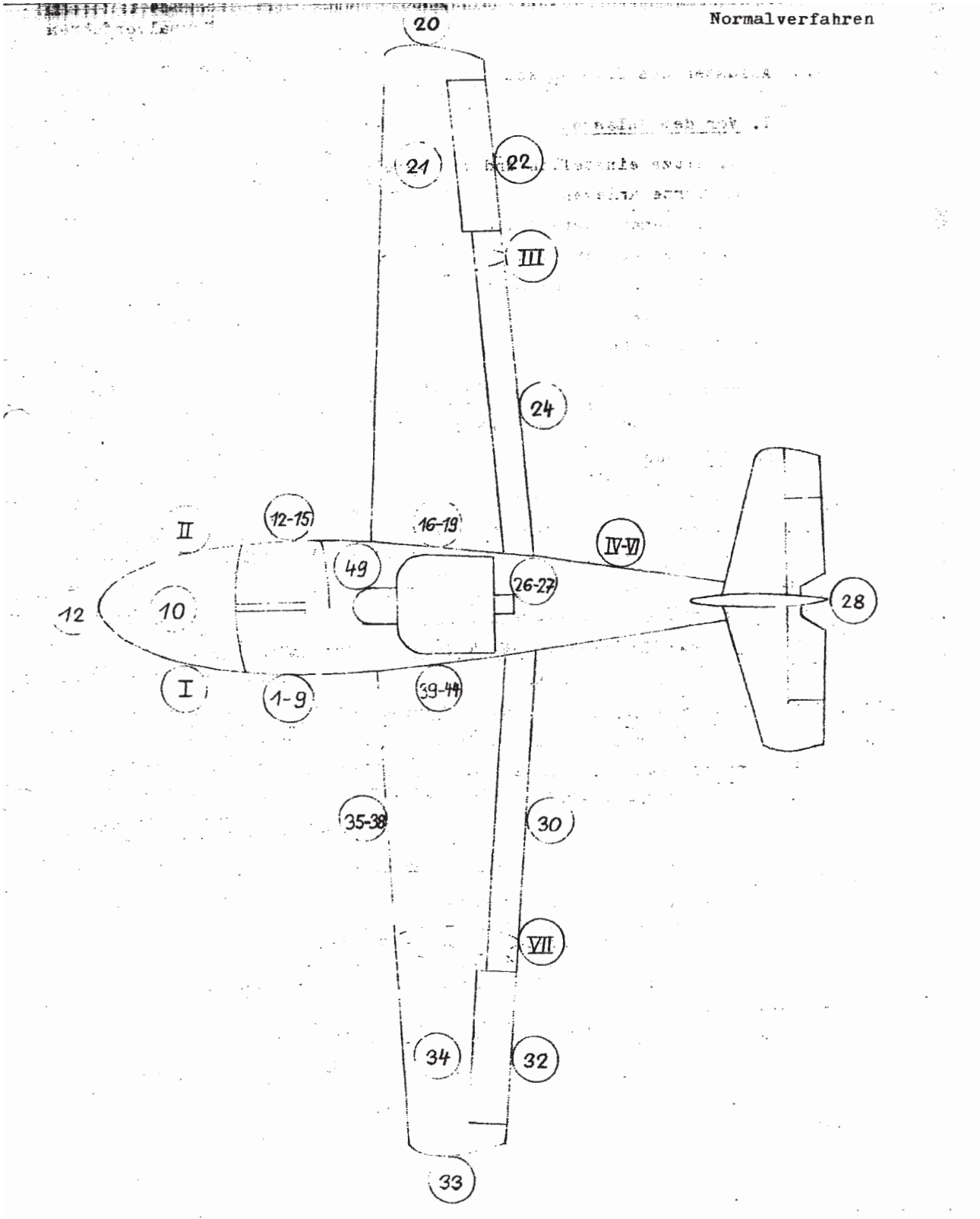


3.3. Vorflugkontrolle

- Interior Checks:
All switches OFF
Circuit breakers checked
Hydraulic system pressure
Instruments condition
Controls free and correct



3.3. Vorflugkontrolle



3.4. Checklisten before TO

LA-4-200 03.09.2021 1

**NORMAL/EMERGENCY CHECKLIST
LAKE LA-4-200**

OUTSIDE COCKPIT CHECK PRIOR ENTERING THE COCKPIT	
Master	ON
Gear Lever (Land)	DOWN "Green"
Gear Lever (Water)	UP "RED"
Hydraulic Pump	ON
Trim	SET VISUALLY
Hydraulic Pump	OFF
Master	OFF

LA-4-200 3

BEFORE START-UP CHECK	
Master	"ON"
Beacon	"ON"
Fuel Quantity	CHECKED
BEFORE START-UP CHECK COMPLETED	

ENGINE START	
Cabin Doors	AS REQUIRED
Brakes	SET
START WARM	
Throttle	10 mm OPEN
Mixture	"CUT OFF"
Fuel pump	Turn "ON" for a few
Prop. Area	"CLEAR"
Starter	Engage
When engine ignites	Move Mixture RICH
Throttle	800-1200 RPM
Oil Pressure	CHECK
Mixture	"LEAN"
ENG START-UP CHECK COMPLETED	

COCKPIT CHECK	
Preflight Inspection	COMPLETED
Documents & Papers	ON BOARD
Emergency Equipment	ON BOARD
Seats, Seat Belts	FASTENED
Cabin Doors	AS REQUIRED
Fuel Selector Valve	ON
Mixture	CUT OFF
Propeller	MAX RPM
Throttle	CLOSED
Gear Lever (Land)	"DOWN"
Gear Lever (Water)	"UP"
Flaps	CHECK LEVER DOWN
Emergency Hydraulic pump 600 psi	
Water Rudders	UP
Water Rudders	DOWN
Trim pos.	INDICATOR
Circuit Breakers	CHECKED
All Switches, Avionics Master, AUX FUEL	"OFF"
COCKPIT CHECK COMPLETED	

LA-4-200 4

ENGINE START	
Cabin Doors	AS REQUIRED
Brakes	SET
START COLD	
Throttle	10 mm OPEN
Mixture	"RICH"
Fuel pump	"ON"
Mixture	Mixture RICH for 4-10 Sec. than move CUT OFF
Prop. Area	"CLEAR"
Starter	Engage
When engine ignites	Move Mixture RICH
Fuel pump	"OFF"
Throttle	800-1200 RPM
Oil Pressure	CHECK
Mixture	"LEAN"
ENG START-UP CHECK COMPLETED	

ENGINE START	
Cabin Doors	AS REQUIRED
Brakes	SET
START FLOODED	
Throttle	FULL OPEN
Mixture	"CUT OFF"
Prop. Area	"CLEAR"
Starter	Engage
When engine ignites	Move Mixture RICH
Throttle	Reduce
Throttle	800-1200 RPM
Oil Pressure	CHECK
Mixture	"LEAN"
ENG START-UP CHECK COMPLETED	



3.4. Checklisten before T0

AFTER START-UP CHECK	
Cabin Doors	AS REQUIRED
Alternator	"ON"
Fuel pump	"OFF"
Hydraulic Pump	"ON"
Avionic Master	"ON" & SET
Flight Controls	FREE & FULL TRVL
T/O& Emergency Briefing	PERFORMED
AFTER START-UP CHECK COMPLETED	

LA-4-200 8

TAXI CHECK	
Cabin Doors	AS REQUIRED
Engine Parameter	CHECK
Landing/Taxi Light	"ON"
Turning Instruments	CHECKED
TAXI CHECK COMPLETED	

LA-4-200 9

ENGINE RUN-UP CHECK	
Cabin Doors	AS REQUIRED
Engine Instruments	CHECKED
Throttle	1800 RPM
Magnetos (max 100/50)	CHECKED
Throttle	1700 RPM
Propeller 3CYCLE	500 RPM/20 INCH
Suction Gage	CHECKED
Throttle	1000 RPM
Mixture	"RICH"
ENG RUN-UP CHECK COMPLETED	

BEFORE T/O CHECK	
Altimeter	"SET"
Gyro compass	"SET"
Engine Parameter	CHECK
Fuel pump	"ON"
Hydraulic Pump	"ON"
Landing Lights	"ON"
Transponder	"ALT"
Gear (Land)	"DOWN" / Green
Flaps	DOWN
Gear (Water)	"UP" / RED
Flaps Set for T/O	DOWN
Water Rudders for T/O	"UP"
Trim pos.	INDICATOR
Propeller	MAX RPM
Mixture	RICH
Cabin Doors	CLOSED
BEFORE T/O CHECK COMPLETED	
Climb / Flaps	65 mph
Normal climb	85 mph
Best glide / with Flaps	85 mph / 60-70 mph

Climb / Flaps 65 mph
 Normal climb 85 mph
 Best glide / with Flaps 85 mph / 60-70 mph



3.4. Checklisten TO , CRUISE &

LA-4-200 11

AFTER TAKE OFF CHECK	
Positiv rate of climb and insufficient Runway BRAKES/GEAR UP	
Climb Power Set	Set
Flaps	UP 85 mph
Landing Lights	OFF
AFTER T/O CHECK COMPL.	

Avoid RPM 2050-2350			
SEALEVEL			
RPM	MAN PRES	% / MPH	FUEL-GAL/HR
2000	25	60 / 115	10,5
2400	21	55 / 115	9,5
2400	2300	65 /125	10
2000 feet			
2400	20,4	55 /117	9,5
2400	22,6	65 / 127	10
2400	25,8	75 / 138	12
4000 feet			
2400	20,2	57 / 119	9,5
2400	23,3	65 / 131	10,7
2400	25,1	74 / 140	11,8

CRUISE CHECK	
Fuel pump	"OFF"
Power	SET
Altimeters	SET
CRUISE CHECK COMPLETE	

LA-4-200 12

BEFORE LANDING CHECK	
Fuel pump	"On"
Landing Lights	"ON"
Hydraulic Pressure	GREEN ARC
Water Rudders	UP
Mixture	ENRICH
BEFORE LANDING CHECK COMPLETE	

LA-4-200 14

AFTER LANDING CHECK	
Flaps	"DOWN"
Fuel pump	"OFF"
Landing Light	"OFF"
Transponder	"STBY"
Water Rudder	"UP"
Water Rudder	"DOWN"
Mixture	"LEAN"
AFTER LDG CHECK COMPLETED	

FINAL CHECK	
Gear (Land) 3X	"DOWN" / GREEN / VISUAL
Gear (Water) 3X	"UP" / RED / VISUAL
Flaps Set	DOWN (75-80 mph)
Mixture	RICH
Propeller	MAX RPM
FINAL CHECK COMPLETED	

LA-4-200 15

ENG SHUT DOWN CHECK	
Avonic Master	"OFF"
Throttle	1000 RPM
Magnetos	CHECKED
Mixture	"CUT OFF"
Hydraulic Pump	"OFF"
Hydraulic Pressure	RELIEVE
Ignition	"OFF"
All Swtiches	"OFF"
ENG SHUT DOWN CHECK COMPLETED	



3.4. Checklisten abnormal

DURING START ON GROUND	
Fluel Selector Valve	OFF
Throttle	FULL OPEN
Mixture	CUT-OFF
Ignition	"OFF"
Battery	"OFF"
Fire	EXTINGUISH
ENGINE FIRE IN FLIGHT	
Fluel Selector Valve	OFF
Throttle	FULL OPEN
Mixture	CUT-OFF
Ignition	"OFF"
Cabin Heat and Air	OFF
Flaps Set	DOWN
Gear (Land)	"DOWN" / GREEN
Gear (Water)	"UP" / RED
Battery	"OFF"
FORCE LANDING	

FIRE

LA-4-200 18

LDG GEAR/ FLAPS MALFUNCTION PROCEDURES	
Ldg Gear Lever	RECHECK DSRD POS.
Flaps Lever	RECHECK DSRD POS.
Emergency Hand Pump	PUMP
LDG Gear POSITION	CHECK LIGHT/MISUALLY
FLAPS POSITION	CHECK LIGHT/MISUALLY
Hydraulic Pressure Normal 900-1200 psi	
WARNING	
DO NOT LAND ON WATER UNLESS ALL 3 WHEELS ARE FULLY RETRACTED	

GEAR/FLAPS

FORCED LANDINGS		
EMERGENCY LANDING WITHOUT POWER		
Airspeed	Flaps UP	85 mph
	Flaps Down	60-70 mph
Seat Belts	SECURE	
Mixture	CUT-OFF	
Fuel Shutoff Valve	OFF	
All Switches/ no Master	OFF	
Flaps Set	DOWN	
Gear (Land)	"DOWN" / GREEN	
Gear (Water)	"UP" / RED	
Master Switch	OFF	
Doors	UNLATCH PRIOR TO TOUCHDOWN	
Touchdown	SLIGHTLY TAIL LOW	
FORCED LDG		

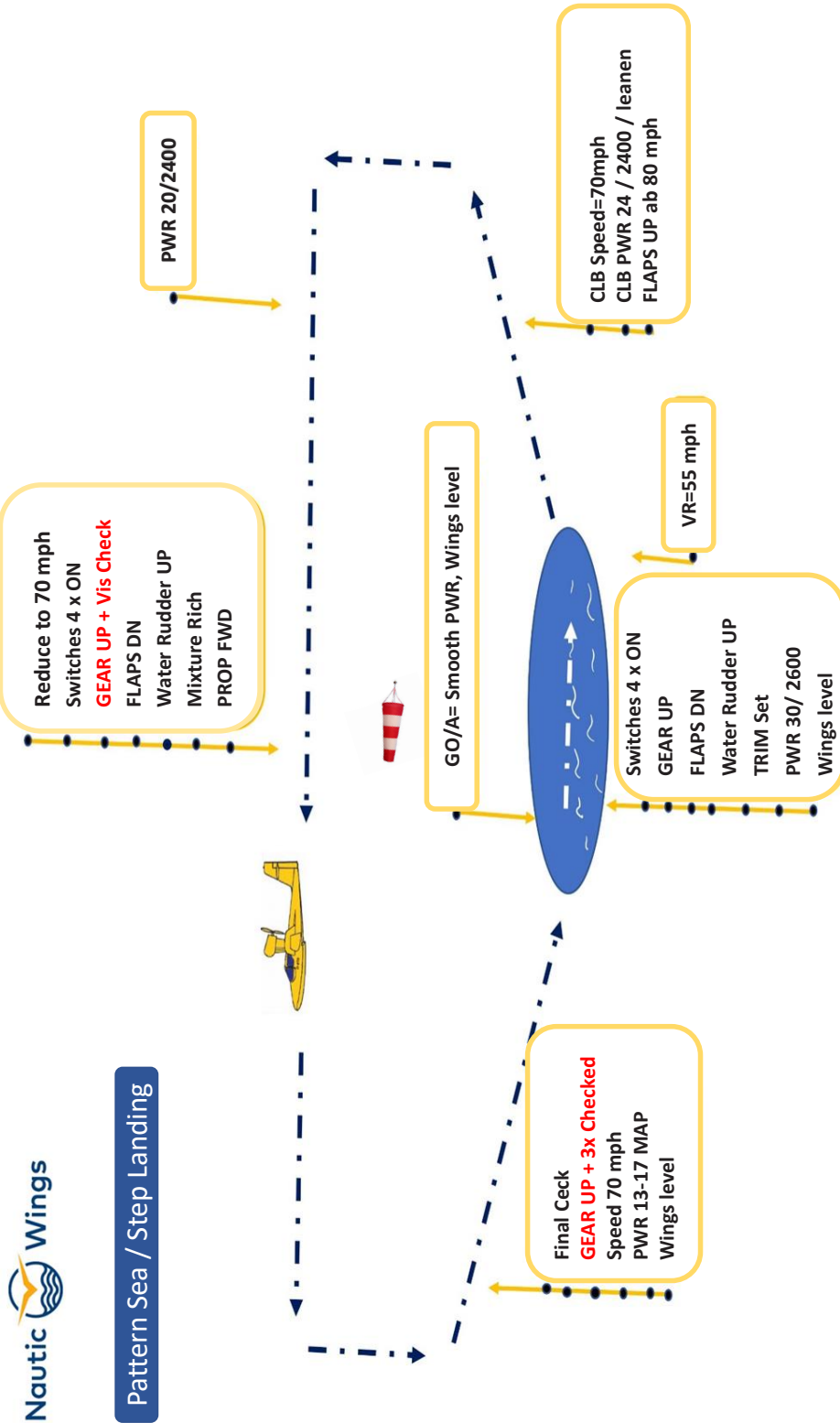


04.

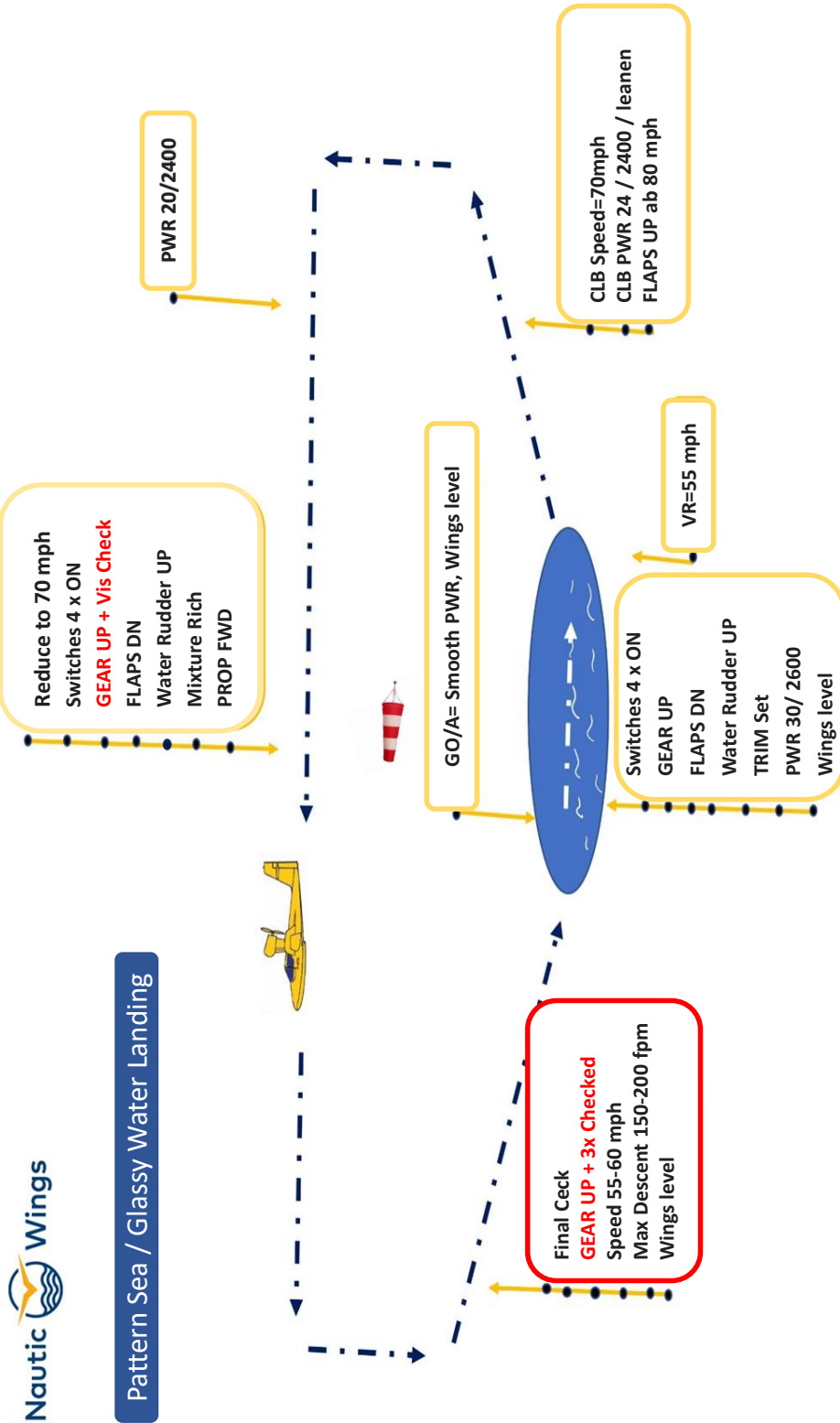
Procedures
FLYING BOAT



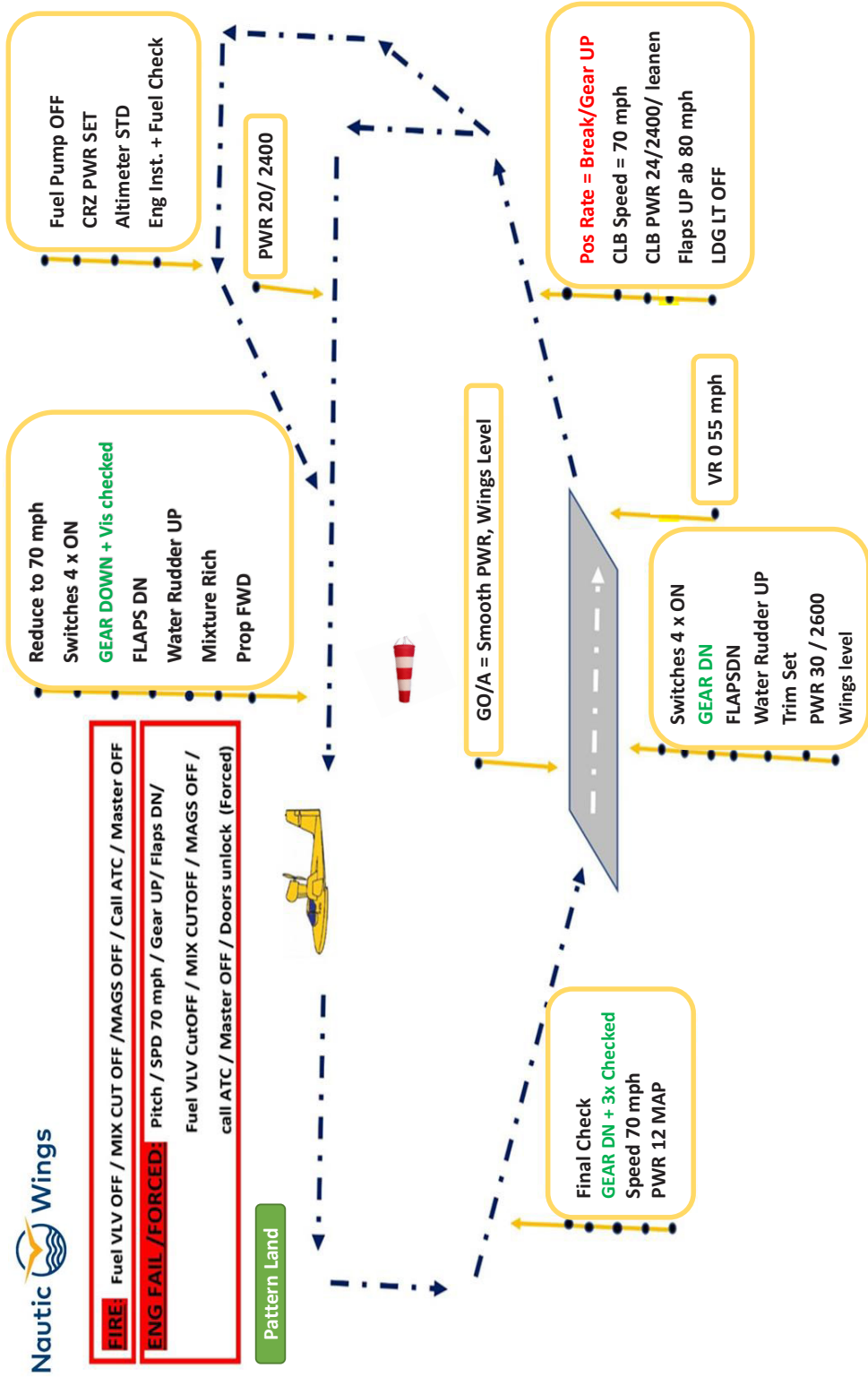
4.1. Step-Landing



4.2. Glassy Water Landing



4.3. Land-Landing



05.

Seamanship



5.1. Nautic Overview

Seamanship by definition is: ‚The knowledge and skills needed to safely operate a vessel and its crew.‘

For seaplane operations, this essentially means nautical training (SBF–Sea license).

The SBF–Sea provides basic nautical knowledge. It consists of:

- Maritime law
- Navigation
- Technical knowledge
- Seamanship

It is the only required license for seagoing vessels with engines over 15HP. For inland waters, the SBF–Inland is required. Both licenses are mandatory for seaplane pilots (in command).

Since the material of the ‚Sport Boat License for Sea Waters‘ (SBF–Sea) goes beyond the scope of the seaplane rating, we strongly recommend this first and only legally mandatory nautical qualification certificate for those with continued interest in seaplane operations.

The material of the SBF–Sea is manageable for pilots. Navigation takes up the largest portion. However, wind and current drift calculations are completely omitted here! These only appear in higher–level licenses.

The rest can be answered with some nautical common sense. Only the navigation lights, sea signs, and sound signals require relatively much memorization.

For this handout, we reduce seamanship to knots, and here only the most important ones...

FANCYWORK

Fancywork originated from the long periods of idle time experienced by early sailors. The sometimes amazingly inventive and practical knots were clever solutions for problems on board or simply served as artistic pastimes.

On our Cessna, you can find it on the handling ropes on the struts. A simple back splice.“

5.2. Knots

Knot tying is a fundamental seamanship skill. Incorrectly secured sea-planes have been known to break free, particularly hazardous with an unmanned cockpit.

Maritime knots must fulfill essential criteria:

- Simple to execute
- Maintain integrity under varying load conditions
- Allow for easy release when required“

We have listed only the most important knots here. Of these, the Figure–Eight knot, Square knot, Bowline, and especially securing a cleat are the most frequently used in seaplane operations.

When learning knots, it's important to repeat them thousands of times after understanding them. They must be stored in the memory of your fingers, not your head. If you use them rarely, they are already forgotten by the beginning of the next season.

Once you've discovered the joy of knot tying, there are countless other knots for innumerable applications and fancywork.

!NOTHING ON THE WATER NEEDS TO BE DONE QUICKLY – EXCEPT SECURING A CLEAT!

Bucht (A) und Auge (B) sind die Grundlagen zum Stecken (Stek) verschiedener Knoten. Geschlagenes (C) oder geflochtenes Tauwerk (D) sind die beiden Macharten von Fasertauwerk.

A

B

Kreuzknoten

Palstek

Schotstek

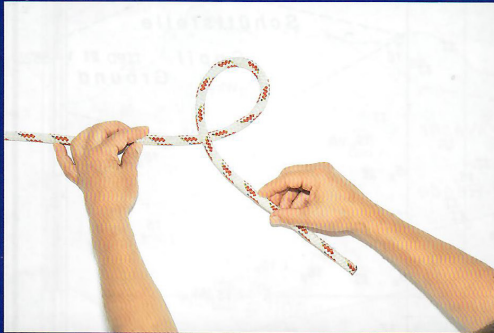
doppelter



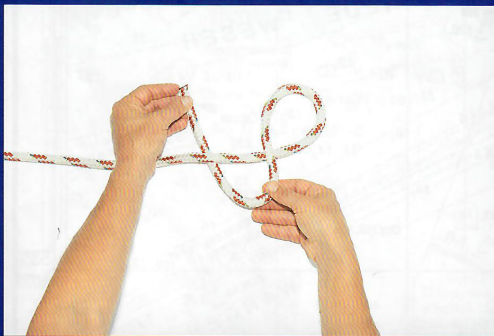
Achtknoten

Der Achtknoten wird am Ende eines Seils gemacht, um den Seildurchmesser zu vergrößern und somit das Ausrauschen aus einer Rolle oder Öse zu vermeiden.

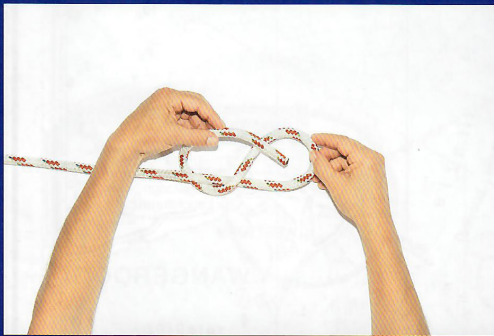
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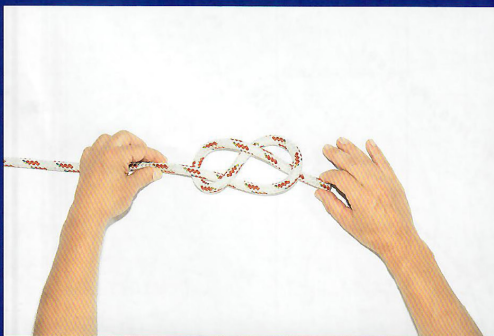
2



3



4



Bucht, Auge



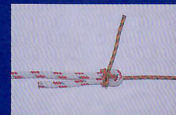
Kreuzknoten



Palstek



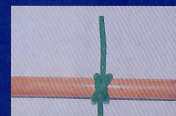
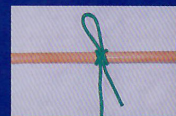
Schotstek

doppelter
Schotstek

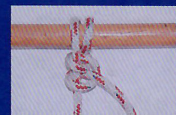
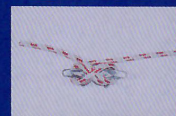
Stopperstek



Webleinstek

Webleinstek
auf Slip

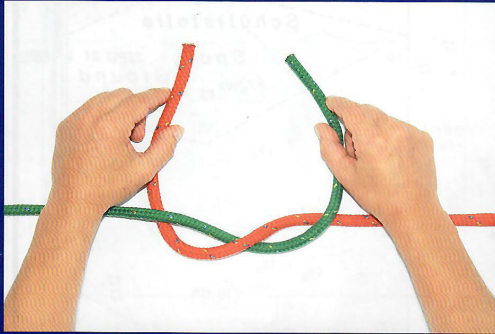
Rundtörn

Belegen
einer Klampe

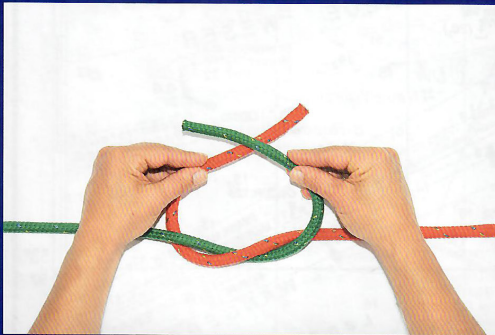
Kreuzknoten

Der Kreuzknoten wird zum Verbinden von zwei gleich starken Seilen verwendet.

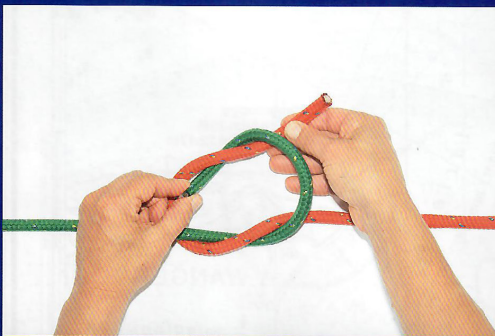
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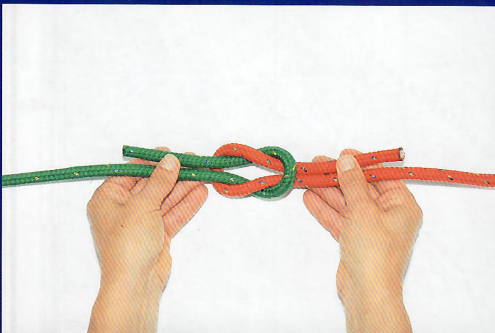
2



3



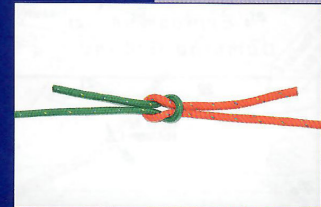
4



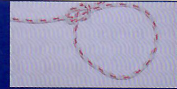
Bucht, Auge



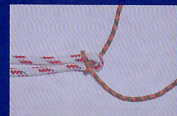
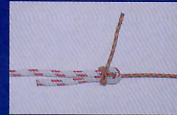
Achtknoten



Palstek



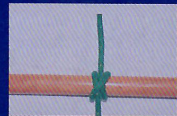
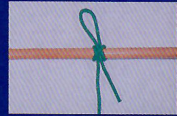
Schotstek

doppelter
Schotstek

Stopperstek



Webleinstek

Webleinstek
auf Slip

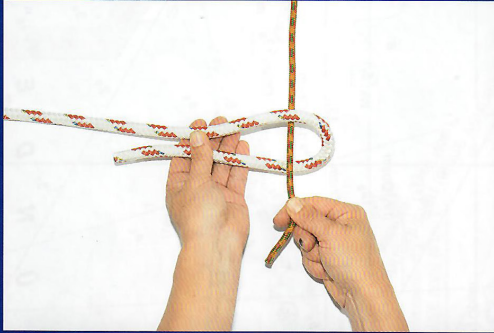
Rundtörn

Belegen
einer Klampe

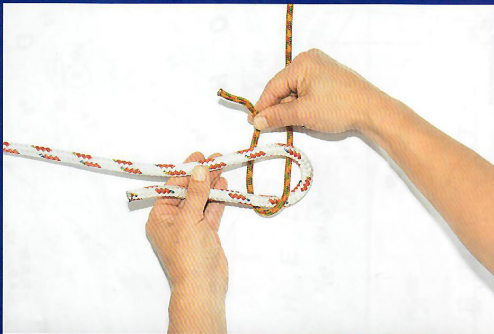
Schotsteg

Der Schotsteg wird zum Verbinden von zwei unterschiedlich starken Seilen verwendet.

1



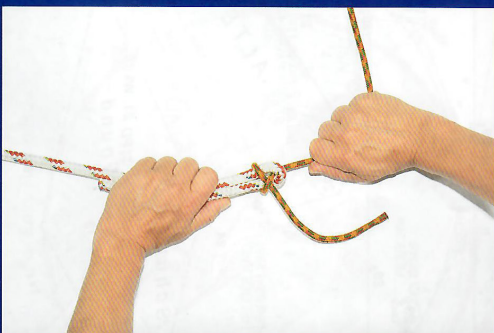
2



3



4



Bucht, Auge



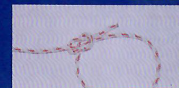
Achtknoten



Kreuzknoten



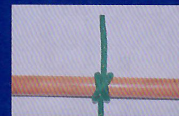
Palstek

doppelter
Schotstek

Stopperstek



Webleinstek

Webleinstek
auf Slip

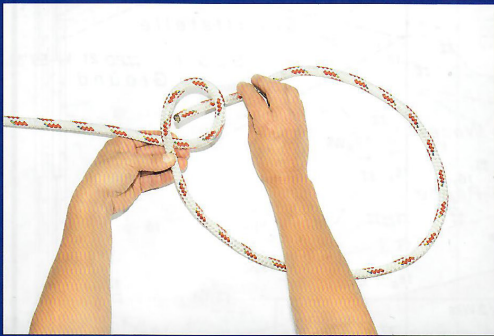
Rundtörn

Belegen
einer Klampe

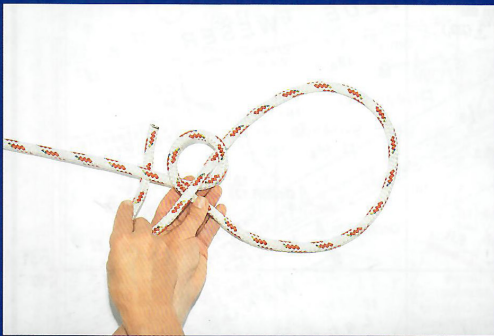
Palsteg

Der Palsteg wird verwendet, um ein sich nicht zuziehendes Auge an einem Poller oder einem Pfahl (Pal) zu befestigen.

1



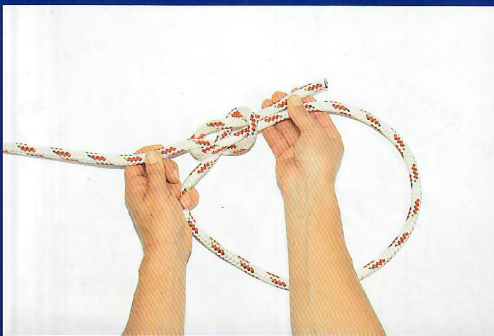
2



3



4



Bucht, Auge



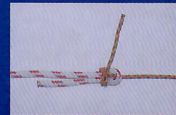
Achtknoten



Kreuzknoten



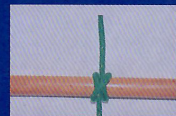
Schotstek

doppelter
Schotstek

Stopperstek



Webleinstek

Webleinstek
auf Slip

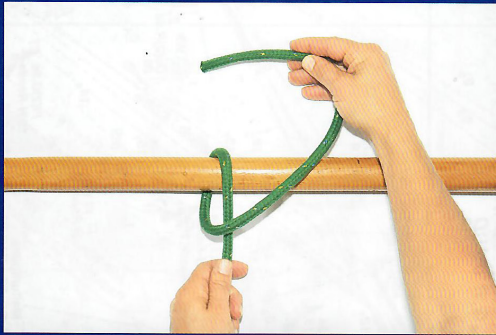
Rundtörn

Belegen
einer Klampe

Webleinstieg

Der Webleinstek wird zum Festmachen von Gegenständen (z.B. Fender an der Reling) verwendet.

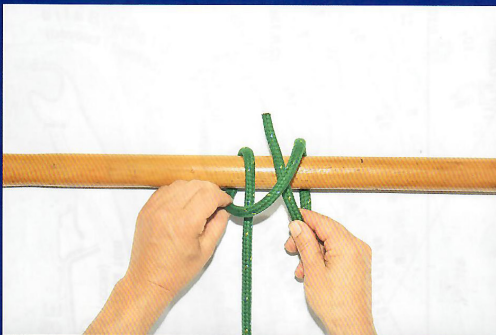
1



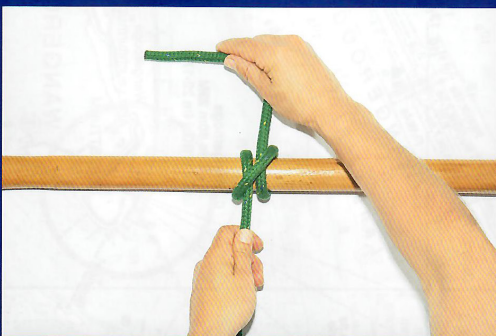
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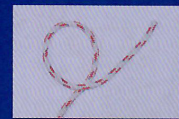
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4



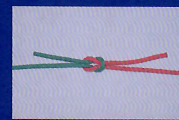
Bucht, Auge



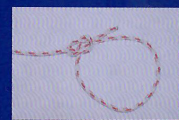
Achtknoten



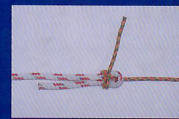
Kreuzknoten



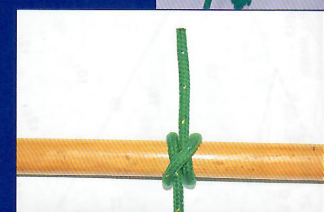
Palstek



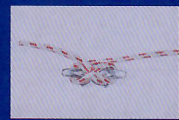
Schotstek

doppelter
Schotstek

Stopperstek

Webleinstek
auf Slip

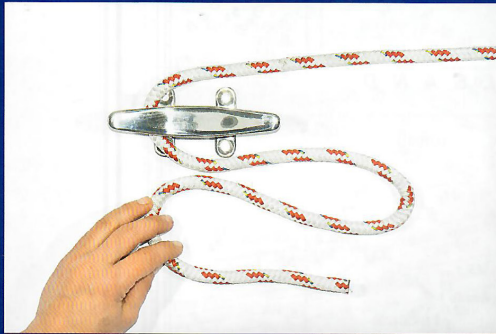
Rundtörn

Belegen
einer Klampe

Belegen der Klampe

Das Belegen einer Klampe mit Kopfschlag wird zum sicheren Festmachen einer Leine an einer Klampe verwendet. Der Kopfschlag verhindert dabei, dass sich die Kreuzschläge wieder lösen.

1



2



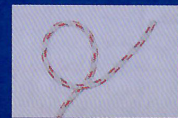
3



4



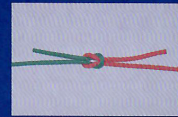
Bucht, Auge



Achtknoten



Kreuzknoten



Palstek



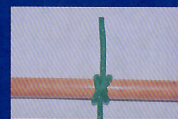
Schotstek

doppelter
Schotstek

Stopperstek



Webleinstek

Webleinstek
auf Slip

Notizen



06.

Maritime law



6.1. Overview Maritime law

Here we limit maritime law to a brief overview and the most important right-of-way and behavioral rules. In maritime law, seaplanes are only mentioned in the COLREGs (Collision Regulations). However, they define seaplanes as watercraft and thus subject them to the general and special hierarchy in the rules of giving way!

Important: In maritime law and rules of giving way, there is no right of way! Instead, there is only a ‚STAND-ON VESSEL‘ and a ‚GIVE-WAY VESSEL‘.

The COLREGs, signed in 1972 by all seafaring nations, are the most important set of rules on water, internationally valid on the high seas and connected waters (e.g., Flensburg Fjord).

The signatory nations committed themselves to transform these rules into national law. The Federal Republic of Germany has done this with the ‚Maritime Navigation Rules‘ (SeeSchStrO). Therefore, the SeeSchStrO is basically nothing more than the COLREGs converted into paragraphs and national law, plus some national additions.

In Rule 3, Paragraph a, seaplanes are treated equally with all other vessels: ‚The term „vessel“ includes every description of water craft, including non-displacement craft, WIG craft and seaplanes, used or capable of being used as a means of transportation on water.‘

SeeSchStrO (Seeschiffahrtsstraßen-Ordnung)

The Maritime Navigation Rules apply wherever sea navigation channels are marked, which means all buoyed waterways.

For the Flensburg Fjord, this means from buoy 13 at the height of Fahrensodde to the Flensburg harbor. Since the waterway is always restricted by buoys on port and starboard sides, and since there is no red buoy in Sonwik to terminate the waterway, the navigable water extends to the shore, and the Sonwik seaplane station is an approved navigation obstacle in the maritime waterway.

BinSchStrO (Binnenschiffahrtsstraßen-Ordnung)

The Inland Waterway Navigation Rules also adhere to the COLREGs and their prescribed rules of giving way. The only additions are numerous lights and signs.



6.2. Rules of Giving Way

As previously mentioned, there is no right of way on the water, only the stand-on vessel and the give-way vessel. This is important because the vessel with ‚right of way‘ is obligated to **MAINTAIN COURSE** and must avoid even small rudder movements.

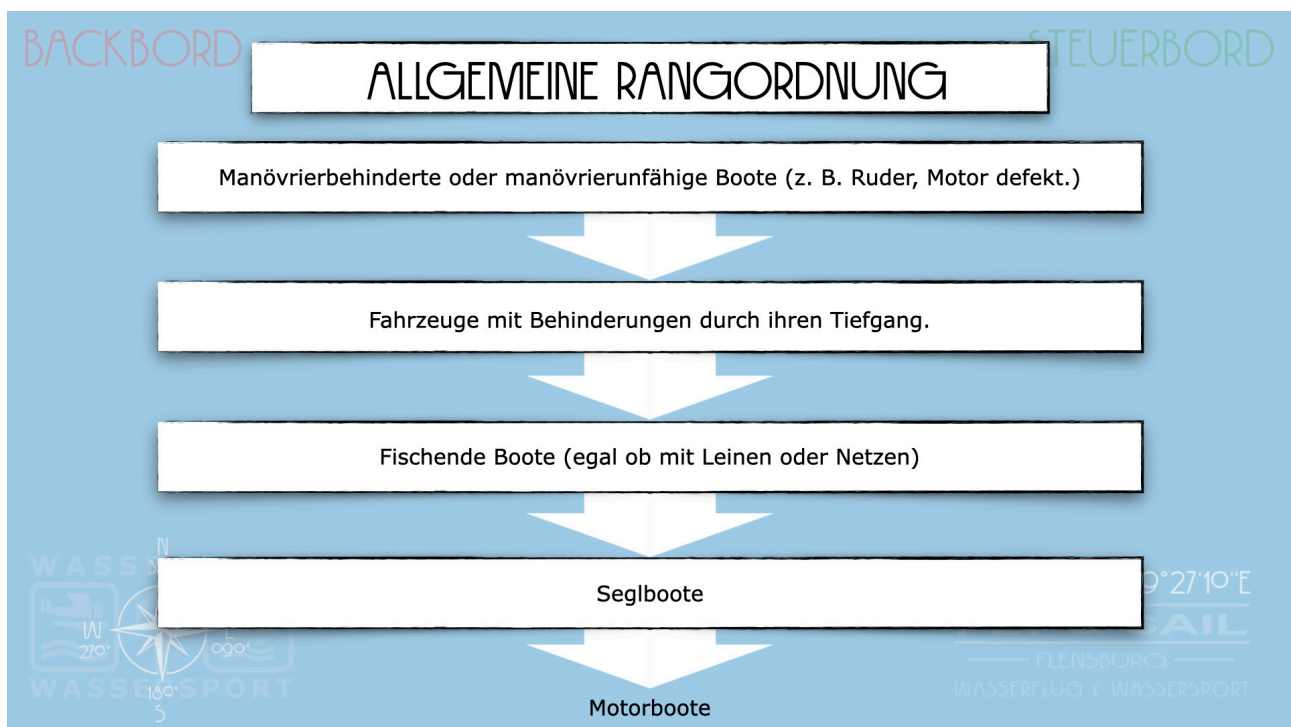
This is to prevent misunderstandings. On the water, we communicate through our ‚vessel movement direction‘! All maneuvers should be: **CLEAR, UNAMBIGUOUS** and **TIMELY**.

In the general hierarchy, right of way is always given to the weaker vessel, or more specifically, to the vessel that has less maneuverability.

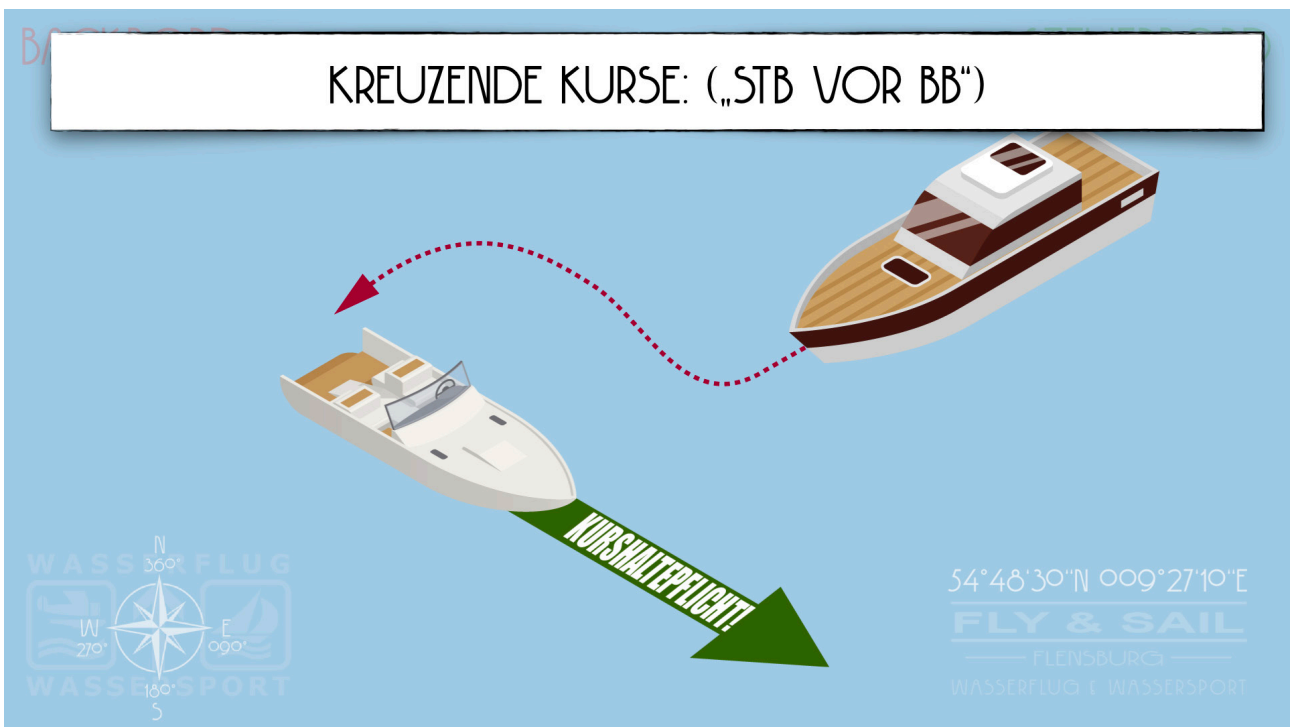
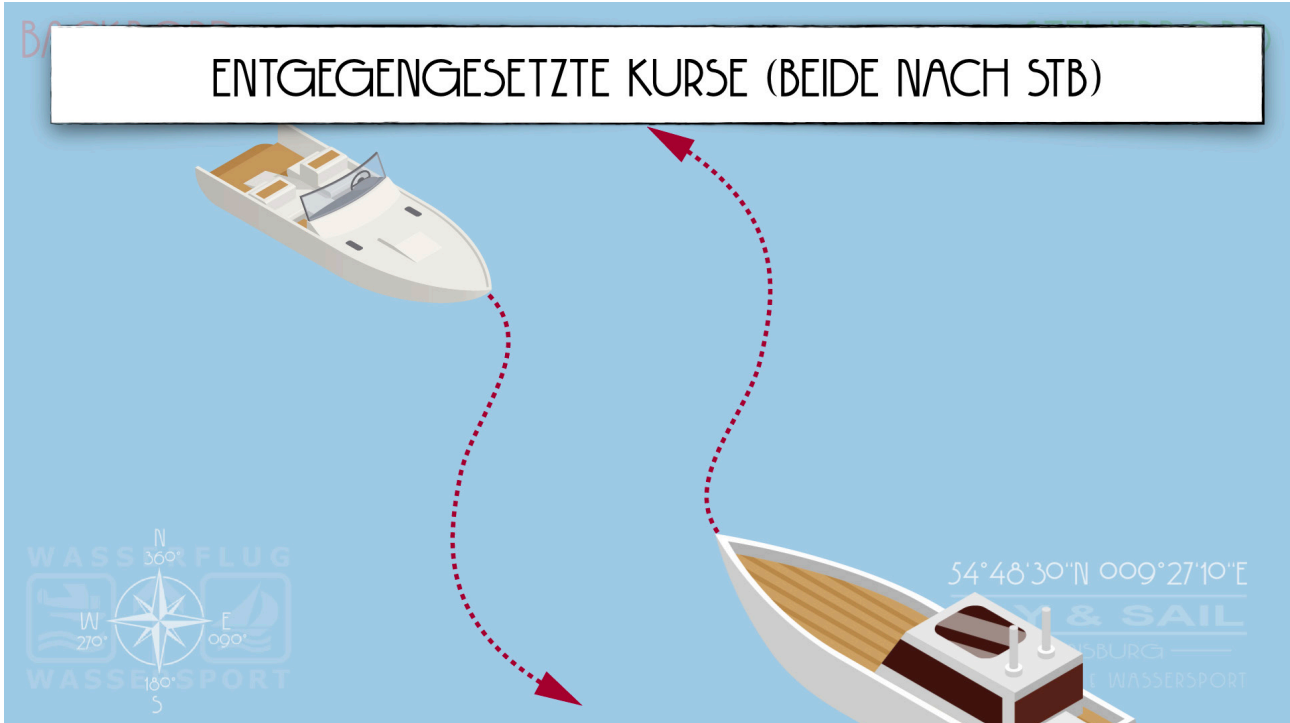
How to distinguish between a vessel restricted in its ability to maneuver and a vessel not under command during day and night will be taught in the SBF-Sea course.

For our purposes, it is sufficient to know that power-driven vessels (including seaplanes) must give way to sailing vessels, rowing boats, etc.

Contrary to common belief, there is no general ‚right of way‘ for commercial shipping.



6.2. Rules of Giving Way

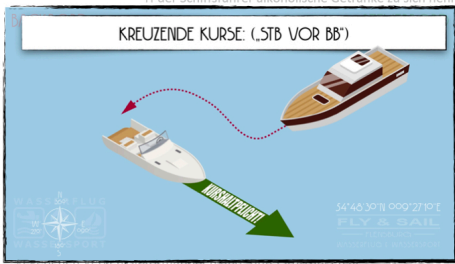


6.2. Rules of Giving Way

FLY & SAIL
FLENSBURG
 WASSERFLUG & WASSERSPORT

KOLLISIONSVERHÜTUNGSREGELN (KVR)

MAßNAHMEN DES AUSWEICHPFLICHTIGEN



Das Manöver muss entschlossen, rechtzeitig, eindeutig & nach guter Seemannschaft ausgeführt werden. (hinter dem Heck vorbei)!

- Kurs oder Geschwindigkeitsveränderungen sollten klar erkennbar & keine Folge mehrerer kleiner Kurs- / Geschwindigkeitsveränderungen sein
- beim ausweichen sollte nicht der Bug gekreuzt, sondern das Heck umfahren werden

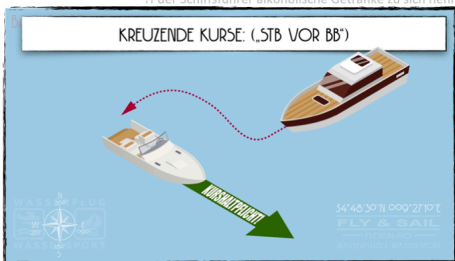
BACKBORD

STEUERBORD

FLY & SAIL
FLENSBURG
 WASSERFLUG & WASSERSPORT

KOLLISIONSVERHÜTUNGSREGELN (KVR)

MAßNAHMEN DES KURSHALTEPFLICHTIGEN



Kurs & Geschwindigkeit muss beibehalten werden

- weicht der Ausweichpflichtige nicht aus:
- Schallsignal (mind. fünf kurze Töne) abgeben !!
- Manöver des letzten Augenblicks !!!

BACKBORD

STEUERBORD



6.3. Sound Signals

Seaplanes rarely give sound signals. However, it's important for us to know that when a ferry to our right gives two short blasts, things are about to get tight.

One short blast
(approx. 1 second):



Ein langer Ton:
Ca. 4–6 Sekunden lang.



Course alteration to
starboard



Course alteration to
port



Engine running astern








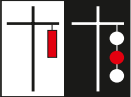
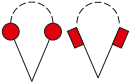

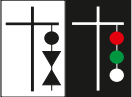









Attention










JUST FOR INFORMATION. NOT FOR LEARNING!

6.4. Signs (SEA)

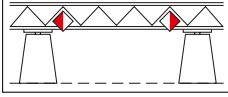
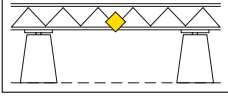
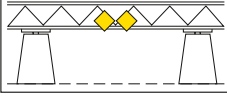
Gebots-, Verbotsschilder

								
Ankerverbot	Abstand von Tafelzeichen halten (m)	Geschwindigkeitsbeschränkung (km/h)	Höchstgeschw. 8 km/h vor Stränden	Sog u. Wellenschlag vermeiden	Sog und Wellenschlag vermeiden	vorübergehende Sperrung Seeschiffahrtsstraße	Sperrung Seeschiffahrtsstraße (Teilstrecke)	Sperrung Seeschiffahrtsstraße (gesamte Strecke)
								
Begegnungsverbot an Engstellen	Überholverbot für alle Fahrzeuge	Festmacherverbot	Liegeverbot	Fahrtrichtung einhalten	Schallsignal geben	Anhalten	Anhalten in Schleusen	Ende Gebots- oder Verbotsstrecke



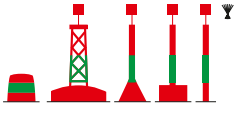
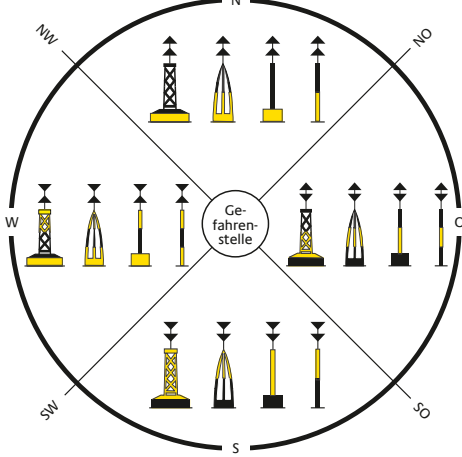

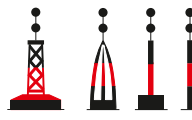

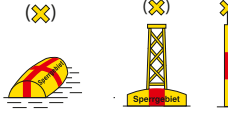

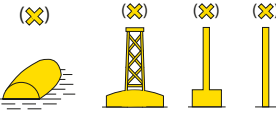
Warn- und Hinweiszeichen

						
Frei fahrende Fähre	Nicht frei fahrende Fähre	Wasserskilaufen im Fahrwasser erlaubt	Wassermotorradfahren im Fahrwasser erlaubt	Segelsurfen im Fahrwasser erlaubt	Querströmung (2 Lichtbalken)	Außergewöhnliche Schiffsbehinderung

Feste Brücken

		
Durchfahrtsverbot außerhalb der Markierung	Durchfahrt in beiden Richtungen	Durchfahrt in einer Richtung (Gegenverkehr gesperrt)

Schwimmende Schiffszeichen

 <p>Backbordseite Fahrwasser (von See kommend)</p>  <p>Zufahrt zu Fahrwassern und Mitte von Schiffsfahrwegen</p>  <p>Backbordseite des durchgehenden Fahrwassers/Steuerbordseite des abzwigenden oder einmündenden Fahrwassers</p>	 <p>Nord-, Ost-, Süd-, West-Kardinal-Zeichen</p>	 <p>Steuerbordseite Fahrwasser (von See kommend)</p>  <p>Einzelgefahrsstellen</p>  <p>Steuerbordseite des durchgehenden Fahrwassers/Backbordseite des abzwigenden oder einmündenden Fahrwassers</p>
 <p>Sperrgebiete</p>  <p>Fahrverbot für Maschinen-, Surfahrzeuge und Wassermotorräder</p>  <p>Reeden, besondere Gebiete und Stellen</p>	<p>„Warngebiet“ „Warnstelle“ „Fischerei“ „Schüttstelle“ „Kabel“ „Pipeline“ „Meile“ „ODAS“</p> <p>„Warn-G.“ „Warn-St.“ „Fisch“ „Schütt-St.“ „K“ „Pipe“</p>	



Lights (SEA)

Just for information. Not for learning!

Bewegliche Brücken, Sperrwerke, Schleusen			
<p>Einfahrt, Durchfahrt verboten</p> <p>Freigabe wird vorbereitet uneingeschränkt Anlage gesperrt</p>	<p>Einfahrt, Durchfahrt frei Durchfahrtshöhe beschränkt</p> <p>zusätzlich Vorfahrt beachten bis zur 1. Hubstufe</p>	<p>Einfahrt, Durchfahrt frei</p> <p>Gegenverkehr gesperrt Gegenverkehr frei, evtl. Vorfahrt</p>	<p>Ausfahrt</p> <p>verboten frei (ausfahren)</p>
Sichtzeichen der Fahrzeuge			
<p>Maschinenfahrzeug in Fahrt unter 12 m Länge</p>	<p>Maschinenfahrzeug in Fahrt unter 50 m Länge</p>	<p>Maschinenfahrzeug in Fahrt über 50 m Länge</p>	<p>Segelfahrzeug mit Maschinenkraft</p>
<p>Segelfahrzeug in Fahrt (Lichter im Topp wahlweise)</p>	<p>Segelfahrzeug in Fahrt unter 20 m Länge</p>	<p>Maschinen- unter 7 m (max. 7 kn) bzw. Segelfahrzeug (auch unter Ruder) unter 12 m Länge, wenn andere Lichter nicht geführt werden können</p>	
<p>Manövrierunfähiges Fahrzeug in Fahrt mit Fahrt durchs Wasser</p>	<p>Fahrzeug auf Grund von 50 m Länge und mehr</p>	<p>Manövrierbehindertes Fahrzeug mit Fahrt durchs Wasser</p>	<p>Tiefgangbehindertes Fahrzeug (KVR)</p>
<p>Fischender Trawler (Schleppnetz) in Fahrt durchs Wasser</p>	<p>Fischereifahrzeug mit Treibnetz (über 150 m Entfernung)</p>	<p>Fahrzeug mit gefährlichen Gütern oder ein nicht entgaster Tanker</p>	<p>Ankerndes Fahrzeug unter 50 m Länge</p>
<p>Maschinenfahrzeug, das Schießscheiben schleppt</p>	<p>Schubverband unter 50 m Länge</p>	<p>Lotse</p>	<p>Schlepperverbände in Fahrt, bis 200 m Länge (links), mit längsseits geschleppten Anhängen (Mitte), üb. 200 m Länge mit außergewöhnl. Schwimmkörper (rechts)</p>
<p>Nicht frei fahrende Fähre</p>	<p>„Ich habe Taucher unter Wasser, bitte Abstand halten“</p>		
Schallsignale			
<p>— Achtung</p> <p>— — Anforderungssignal Brücke/Sperrtor/Schleuse öffnen</p> <p>• Ich ändere meinen Kurs nach Steuerbord</p> <p>• • Ich ändere meinen Kurs nach Backbord</p> <p>• • • Ich arbeite rückwärts</p> <p>• • • • Durchfahren/Einfahren verboten (Brücke, Sperrwerk, Schleuse kann vorübergehend nicht geöffnet werden)</p> <p>• • • • • Zweifel- und Gefahrensignal</p> <p>• — — — — — Weib. — — — — — Bleib-weg-Signal (min. 5 x pro Min.)</p> <p>• — — • • Anhalten (Aufforderung durch Fahrzeuge des öffentlichen Dienstes)</p> <p>— — • • • • • Allgemeines Gefahr- und Warnsignal</p> <p>— — — — — Sperrung der Seeschiffahrtsstraße</p>	<p>— Maschinenfahrzeuge in Fahrt bei verminderter Sicht</p> <p>— — — Maschinenfahrzeuge gestoppt bei verminderter Sicht</p> <p>— • • • Manövrierunfähige, -behinderte, Tiefgang behinderte, segelnde, fischende oder schleppe Fahrzeuge (auch vor Anker) bei verminderter Sicht</p> <p>— • • • • Geschleppte Fahrzeuge bei verminderter Sicht</p> <p>• — — — — — Frei fahrende Fähren bei verminderter Sicht</p> <p>▲ ▲ ▲ ▲ ▲ Nicht frei fahrende Fähren bei verminderter Sicht</p> <p>— • — — — — — Bugsierende Maschinenfahrzeuge in Fahrt bei verminderter Sicht</p> <p>🔔 Fahrzeug vor Anker unter 100 m bei verminderter Sicht (5 Sek. pro Min.)</p> <p>🔔 📢 Fahrzeug vor Anker über 100 m bei verminderter Sicht (nacheinander jeweils 5 Sek. pro Min.)</p> <p>• — — • • Fahrzeug vor Anker bei verminderter Sicht (zusätzlich)</p> <p>• • • • • Lotsenfahrzeug bei verminderter Sicht (zusätzlich)</p>		



Signs (BINNEN)

Just for information. Not for learning!

Verbots-, Gebotszeichen und Einschränkungen									
Abstand von Tafelzeichen halten (m)	Geschwindigkeitsbeschränkung (in km/h)	Vorfahrt der Hauptwasserstraße beachten	Sog und Wellenschlag vermeiden	Lichte Höhe ist begrenzt	Gesperrte Wasserflächen; Kleinfahrzeuge ohne Maschinenantrieb frei				
Ankerverbot	Festmacherverbot	Stillliegeverbot	Vorgeschriebene Fahrtrichtung	Schallzeichen geben	Anhalten	Besondere Vorsicht walten lassen	Sprechfunk auf dem angegebenen Kanal benutzen	Verbot der Einfahrt in einen Hafen oder in eine Nebenwasserstraße (Lichtsignal)	
Empfehlende und Hinweiszeichen									
Erlaubnis zur Durchfahrt	Wehr	Nicht frei fahrende Fähre	Wasserskistrecke	Segelsurfer erlaubt	Wassermotorradfahren erlaubt	Ende Verbot, Gebot oder Einschränkung	Hochwassermark II, Einstellung der Schifffahrt		
Feste Brücken									
Durchfahrt innerhalb der Markierungen empfohlen	Durchfahrtsverbot außerhalb der Markierung	Empfohlene Durchfahrtsöffnung für Verkehr in beiden Richtungen	Empfohlene Durchfahrtsöffnung (Gegenverkehr gesperrt)						
Bezeichnung der Wasserstraße									
Linke Seite Fahrrinne (stromab)	Mitte Fahrwasser	Rechte Seite Fahrrinne (stromab)	Einzelfahrzeichen						
Linke Seite der durchgehenden Fahrrinne/rechte Seite der abzweigenden oder einmündenden Fahrrinne	Fahrrinnenspaltung	Rechte Seite der durchgehenden Fahrrinne/linke Seite der abzweigenden oder einmündenden Fahrrinne	Bezeichnung für gesperrte Wasserflächen	Bezeichnung von Radarzielen					
Hindernis linke Seite Wasserstraße	Hindernis rechte Seite Wasserstraße	Bezeichnung der Wasserstraße sowie von Hindernissen in oder an der Wasserstraße Linke Seite Spaltung Rechte Seite		Bezeichnung von gefährlichen Stellen und Hindernissen (Kardinalzeichen) Nord Ost Süd West					
Lage der Fahrrinne zum Ufer Linke Seite Linke Seite Rechte Seite Rechte Seite	Übergang der Fahrrinne von einem zum anderen Ufer Linke Seite Linke Seite Rechte Seite Rechte Seite		Einfahrtzeichen Linkes Ufer Rechtes Ufer						



07.

Anflugkarten



7.1. Welzow / EDCY

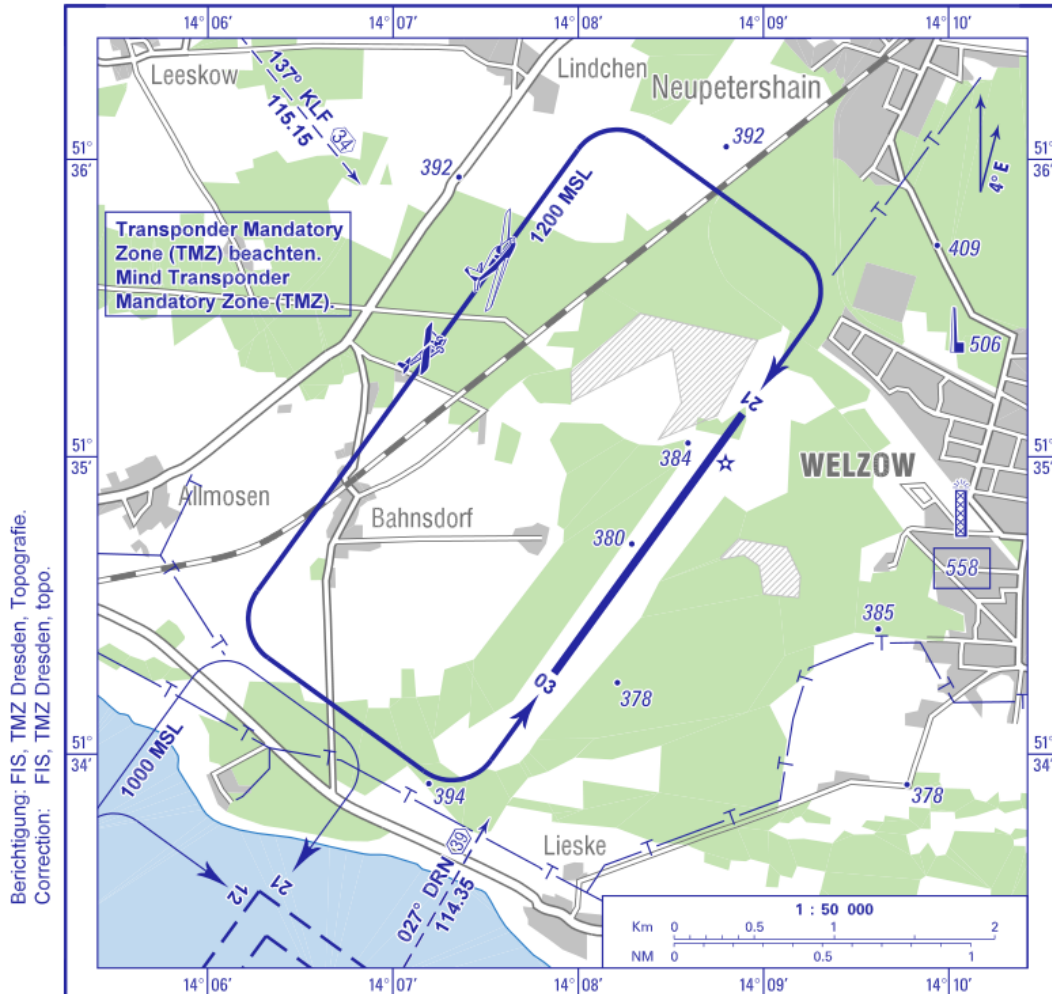
Sichtflugkarte
Visual Operation Chart

ELEV 375

WELZOW
EDCY

FIS
LANGEN INFORMATION
125.800

WELZOW INFO
134.855 En/Ge (15 NM 3000 ft GND)



Berichtigung: FIS, TMZ Dresden, Topografie.
Correction: FIS, TMZ Dresden, topo.

Die Orte Bahnsdorf, Welzow und Neupetershain sind lärmempfindliche Gebiete, Überflüge sind möglichst zu vermeiden.

The villages Bahnsdorf, Welzow and Neupetershain are noise-sensitive areas, overflights shall be avoided, if possible.

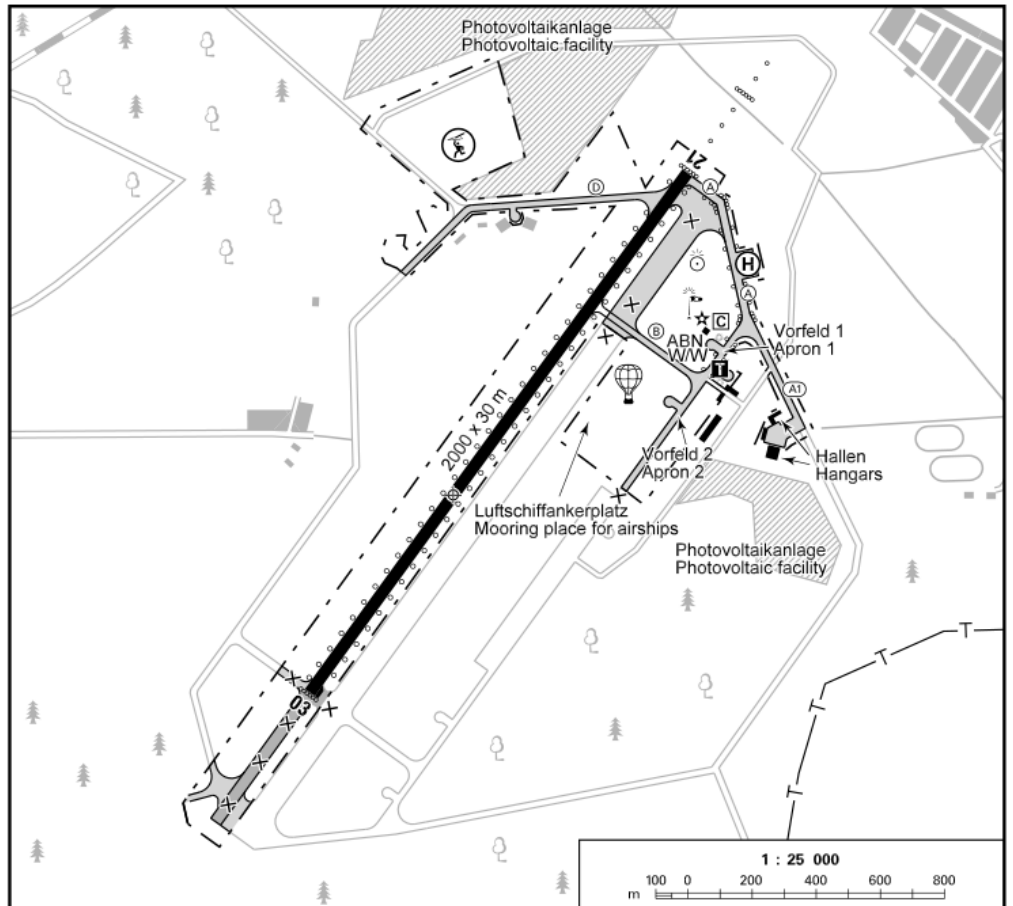
Auf Flugbetrieb des südlich gelegenen Wasserlandeplatzes Sedlitzer See ist zu achten.

Attention shall be paid to flight operations at the water airfield Sedlitzer See located to the south.



7.1. Welzow / EDCY

WELZOW N 51° 34,62' Flugplatzkarte
EDCY E 14° 08,22' Aerodrome Chart



RWY (MAG)	Dimensions	Surface	Strength	TORA	LDA
03 (032) 21 (212)	2000 x 30 m	CONC	14000 kg MPW	2000 m	2000 m



7s.2. Sedlitzer See / EDUY

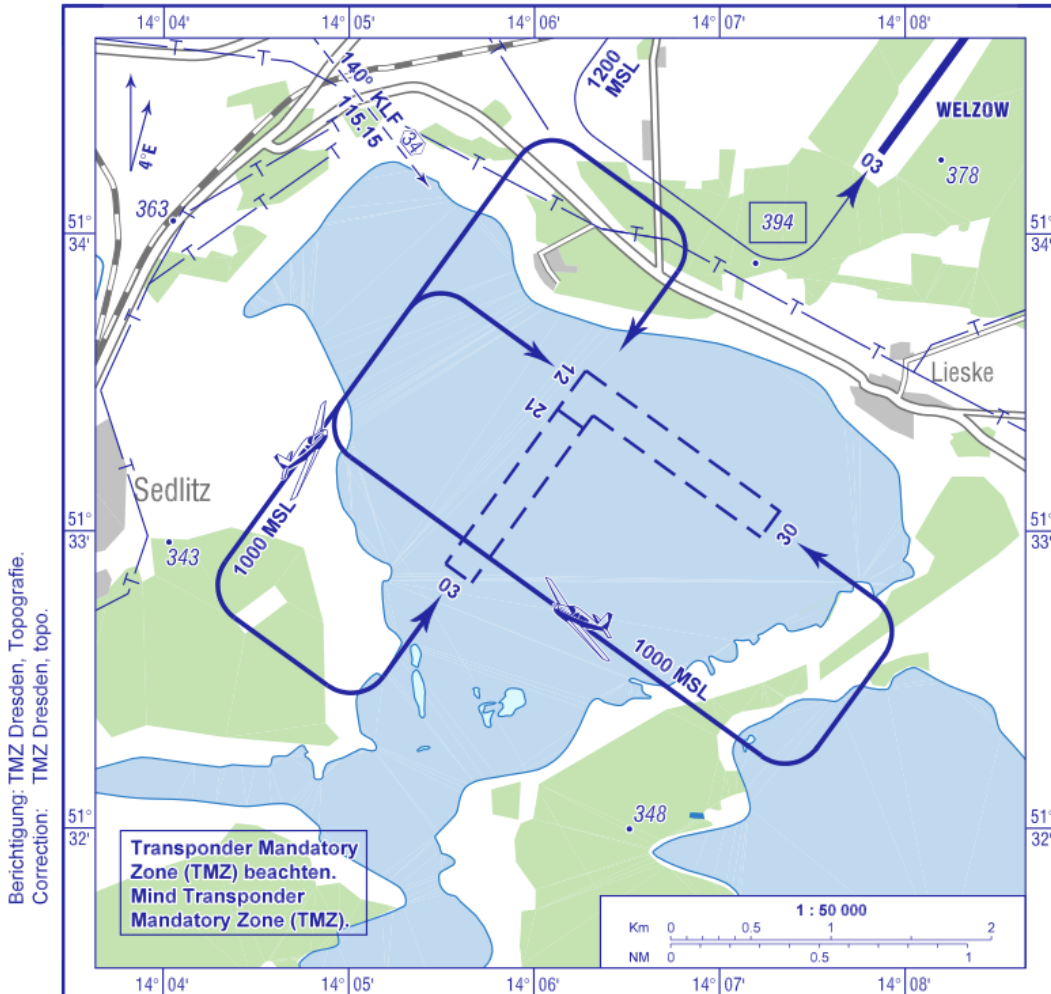
Sichtflugkarte
Visual Operation Chart

ELEV 331

**SEDLITZER SEE
EDUY**

FIS
LANGEN INFORMATION
125.800

SEDLITZ INFO
122.330 En/Ge (15 NM 3000 ft GND)



Berichtigung: TMZ Dresden, Topografie.
Correction: TMZ Dresden, topo.

Die in der Umgebung liegenden Wohn- und Naturschutzgebiete sind lärmempfindliche Gebiete. Überflüge sind möglichst zu vermeiden.

Vor Start und Landung davon überzeugen, dass sich keine Wasserfahrzeuge oder Wassersportler auf der Start- und Landefläche befinden.

Auf UL-Flugbetrieb des ca. 3 NM südlich gelegenen UL-Geländes Kleinkoschen ist zu achten.

The surrounding residential areas and nature sanctuaries are noise sensitive. Overflights shall be avoided as far as possible.

Prior to take-off and landing ensure, that there are no watercraft or athletes for watersports on the take-off and landing area.

Attention shall be paid to UL operations at the UL site Kleinkoschen located approx. 3 NM to the south.

