Trainings Manual

SET(sea) - Cessna C208 Amphibian

DE.SH.ATO.004

BALTIC SEA PLANE GmbH
Lecker Chaussee 127
24 941 Flensburg

0049 / 461 99 574462
info@baltic-seaplane.de
www.baltic-seaplane.de

Initial issue written by Dipl. SV Peter Wilczek, MBA MAE

RECORD OF REVISIONS

Revision	Revision Date	Effective Date
1.0	01 SEP 2025	01 SEP 2025

Revision	Revision Date	Effective Date

LIST OF EFFECTIVE PAGES

Page	Rev.	Date
1	1.0	01 SEP 2025
2	1.0	01 SEP 2025
3	1.0	01 SEP 2025
4	1.0	01 SEP 2025
5	1.0	01 SEP 2025
6	1.0	01 SEP 2025
7	1.0	01 SEP 2025
8	1.0	01 SEP 2025
9	1.0	01 SEP 2025
10	1.0	01 SEP 2025
11	1.0	01 SEP 2025
12	1.0	01 SEP 2025
13	1.0	01 SEP 2025
14	1.0	01 SEP 2025
15	1.0	01 SEP 2025
16	1.0	01 SEP 2025
17	1.0	01 SEP 2025
18	1.0	01 SEP 2025
19	1.0	01 SEP 2025
20	1.0	01 SEP 2025
21	1.0	01 SEP 2025
22	1.0	01 SEP 2025
23	1.0	01 SEP 2025
24	1.0	01 SEP 2025
25	1.0	01 SEP 2025
26	1.0	01 SEP 2025
27	1.0	01 SEP 2025
28	1.0	01 SEP 2025
29	1.0	01 SEP 2025
30	1.0	01 SEP 2025
31	1.0	01 SEP 2025
32	1.0	01 SEP 2025
33	1.0	01 SEP 2025
34	1.0	01 SEP 2025
35	1.0	01 SEP 2025
36	1.0	01 SEP 2025
37	1.0	01 SEP 2025
38	1.0	01 SEP 2025
39	1.0	01 SEP 2025
40	1.0	01 SEP 2025
41	1.0	01 SEP 2025
42	1.0	01 SEP 2025
43	1.0	01 SEP 2025
44	1.0	01 SEP 2025
45	1.0	01 SEP 2025
46	1.0	01 SEP 2025
47	1.0	01 SEP 2025
48	1.0	01 SEP 2025
49	1.0	01 SEP 2025
50	1.0	01 SEP 2025
51	1.0	01 SEP 2025
52	1.0	01 SEP 2025
53	1.0	01 SEP 2025
54	1.0	01 SEP 2025
55	1.0	01 SEP 2025
56	1.0	01 SEP 2025
57	1.0	01 SEP 2025
58	1.0	01 SEP 2025
59	1.0	01 SEP 2025
60	1.0	01 SEP 2025
61	1.0	01 SEP 2025
62	1.0	01 SEP 2025
63	1.0	01 SEP 2025
64	1.0	01 SEP 2025
65	1.0	01 SEP 2025
66	1.0	01 SEP 2025
67	1.0	01 SEP 2025
68	1.0	01 SEP 2025
69	1.0	01 SEP 2025
70	1.0	01 SEP 2025
71	1.0	01 SEP 2025
72	1.0	01 SEP 2025
73	1.0	01 SEP 2025
74	1.0	01 SEP 2025
75	1.0	01 SEP 2025
76	1.0	01 SEP 2025
77	1.0	01 SEP 2025
78	1.0	01 SEP 2025
79	1.0	01 SEP 2025
80	1.0	01 SEP 2025
81	1.0	01 SEP 2025
82	1.0	01 SEP 2025
83	1.0	01 SEP 2025
84	1.0	01 SEP 2025
85	1.0	01 SEP 2025
86	1.0	01 SEP 2025
87	1.0	01 SEP 2025
88	1.0	01 SEP 2025
89	1.0	01 SEP 2025
90	1.0	01 SEP 2025
91	1.0	01 SEP 2025
92	1.0	01 SEP 2025
93	1.0	01 SEP 2025
94	1.0	01 SEP 2025
95	1.0	01 SEP 2025
96	1.0	01 SEP 2025
97	1.0	01 SEP 2025
98	1.0	01 SEP 2025
99	1.0	01 SEP 2025
100	1.0	01 SEP 2025
101	1.0	01 SEP 2025
102	1.0	01 SEP 2025
103	1.0	01 SEP 2025
104	1.0	01 SEP 2025
105	1.0	01 SEP 2025
106	1.0	01 SEP 2025
107	1.0	01 SEP 2025
108	1.0	01 SEP 2025
109	1.0	01 SEP 2025
110	1.0	01 SEP 2025
111	1.0	01 SEP 2025
112	1.0	01 SEP 2025
113	1.0	01 SEP 2025
114	1.0	01 SEP 2025
115	1.0	01 SEP 2025
116	1.0	01 SEP 2025
117	1.0	01 SEP 2025
118	1.0	01 SEP 2025
119	1.0	01 SEP 2025
120	1.0	01 SEP 2025
121	1.0	01 SEP 2025
122	1.0	01 SEP 2025
	END	

Page	Rev.	Date

TABLE OF CONTENTS

HIGHLIGHT OF CHANGES

Revision 1.0

Initial issue.

ABBREVIATIONS AND ACRONYMS

A	Aeroplane
A/C	Aircraft
AC	Alternating Current
AFM	Aircraft Flight Manual
ALT	Altitude
AP	Autopilot
AS	“Above standard” grading
ATC	Air Traffic Control
ATO	Approved Training Organization
ATPL	Airline Transport Pilot Licence
ATPL(A)	Airline Transport Pilot Licence (aeroplane)
CBT	Computer-Based Training
CD	Compact Disc
cont´d	Continued
CPL	Commercial Pilot Licence
CPL(A)	Commercial Pilot Licence (aeroplane)
CRI	Class Rating Instructor
CRM	Crew Resource Management
DC	Direct Current
DD	Day format
DOC	Document
DVD	Digital Video Disc
EASA	European Aviation Safety Agency
e.g.	For example
EGPWS	Enhanced GPWS
EU	European Union
FCL	Flight Crew Licensing i.a.w. Commission Regulation (EU) 1178/2011
FD	Flight Director
FL	Flight Level
FSTD	Flight Simulation Training Device
ft	foot *or* feet
GA	General Aviation
GEN	Generator
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
H	Helicopter

HDG	Heading
HH	Hours format
hrs	Hours
HT	Head of Training
HYD	Hydraulic
IAS	Indicated Airspeed
i.a.w.	in accordance with
ICAO	International Civil Aviation Organization
ID	Identification
KIAS	Knots Indicated Airspeed
kts	knots
LH	Left Hand side
LT	Local time
MAP	Missed Approach Point
MEL	Minimum Equipment List
min.	Minimum
MM	Minutes format
MMM	Month format
mo.	Month(s)
n/a	Not applicable
NOTAM	Notice to Airmen
OM	Operations Manual
OMM	Organizations Management Manual
OPS	Operations
ORA	Organisation Requirements for Aircrew
PANS OPS	Procedures for Air Navigation – Operations
Part-FCL	Annex I to the Regulation on Civil Aviation Aircrew
Part-ORA	Annex VII to the Regulation on Civil Aviation Aircrew
PF	Pilot Flying
PIC	Pilot-In-Command
PNF	Pilot Non-Flying
POH	Pilot Operating Handbook
PPL	Private Pilot Licence
PPL(A)	Private Pilot Licence (aeroplane)
PWR	Power
Rev.	Revision
RH	Right Hand side

RPM	Revolutions per Minute
R/T	Radio-telephone
S	“Standard” grading
SEA	Sea variant
SET	Single-Engine Turbine
SET(sea)	Single-Engine Turbine Sea variant
SI	“Should improve” grading
SMS	Safety Management System
SOP	Standard Operating Procedure
STBY	Standby
TBD	To be determined
TCAD	Traffic Collision Alerting Device
TCAS	Traffic Alert and Collision Avoidance System
TEM	Threat and Error Management
TKI	Theoretical Knowledge Instructor
TM	ATO Trainings Manual
T/O	Take-off
TODA	Take-Off Distance Available
TORA	Take-Off Run Available
TQ	Tourque
URL	Uniform Resource Locator
US	“Unsatisfactory” grading
V_A	Speed for Maximum Rudder Deflection / Design Manoeuvring Speed
V_{FE}	Maximum Flaps Extended Speed
V_{FO}	Maximum Speed for Flap Extension
V_{LE}	Maximum Speed for Extended Landing Gear
V_{LO}	Maximum Speed for Landing Gear Operation
V_{MCA}	Minimum Control Speed in the Air
V_{MO}	Maximum Normal Operating Limit Speed
V_{NE}	Never Exceed Speed
V_{REF}	Landing Reference Speed or Threshold Crossing Speed
V_{S0}	Stall Speed in Landing Configuration
V_{S1}	Stall Speed in a Specific Configuration
WBT	Web-Based Training
yr	Year
yrs	Years
YYYY	Year format
ZIP	Zone Improvement Plan (postal code)

Part A – General

A.1. PROCEDURES FOR TRAINING AND CHECKING

A.1.1. GENERAL

A.1.1.1. SCHEDULING OF TRAINING ACTIVITIES

All training and checking activities must be notified in advance to all persons concerned. Those trainings and checks which are not communicated via the training schedule (e.g. in case of short term changes) shall be coordinated by or on behalf of the HT via email and/or telephone and/or in person.

A.1.1.2. PERFORMANCE OF TRAINING

All theoretical knowledge instruction and practical training shall be carried out in accordance with the syllabus and the specifications described in the TM below.

Any practical training and checking shall be performed with the standardized and appropriate aircraft / FSTD, weather and environmental conditions as specified for the respective training session / event.

A.1.1.3. ASSESSMENTS

If not otherwise stated at the respective training syllabus, assessments are conducted by the instructor providing the training.

A.1.2. THEORETICAL KNOWLEDGE INSTRUCTION

A.1.2.1. GENERAL

All theoretical knowledge instruction shall be carried out by TKI´s in accordance with the syllabus and the specifications described in the TM below.

It is possible to combine different theoretical knowledge training courses in one class, as long as the required subjects and contents of instruction are congruent.

An attendance record shall be filed for every day of class room instruction in order to document the presence of the student(s) during theoretical knowledge instruction. The *Classroom Attendance Record* DOC ID ATO / 005 in the latest revision should be used.

A.1.2.2. CLASSROOM ATTENDNACE RECORD

A.1.2.2.1. GUIDELINE FOR STANDARDISATION OF RECORD ENTRIES

Classroom Attendance Record

- *Item 1 – Training course:*
  The TKI should enter the name of the training course(s) as applicable.
- *Item 2 – Subject of instruction:*
  The TKI should enter the subject(s) addressed during the theoretical knowledge instruction. The headline of the subject i.a.w. the relevant theoretical knowledge syllabus is sufficient – e.g. *“Limitations”*.
- *Item 3 – Date of classroom instruction / Location:*
  The TKI should enter:
  - the date the theoretical knowledge instruction was performed (in the format DD MMM YYYY – e.g. “*30 JAN 2016”*); and
  - the location where the theoretical knowledge instruction was performed.
- *Item 4 – Start Time (LT) [hh:mm] / End Time (LT) [hh:mm]:*
  The TKI should enter:
  - the local time when the theoretical knowledge instruction started in the format HH:MM – e.g. “*14:00”*; and
  - the local time when the theoretical knowledge instruction ended in the format HH:MM – e.g. “*14:00”*.
- *Item 5 – Name of instructor / Signature of instructor:*
  The TKI should:
  - enter his name; and
  - sign the form in order to certify the correctness.
- *Item 6 – Name of student / Signature of student:*
  - The name of each student should be entered in the first column, each using a single line; and
  - Each student should sign in the second column in the line of his name in order to certify his attendance.

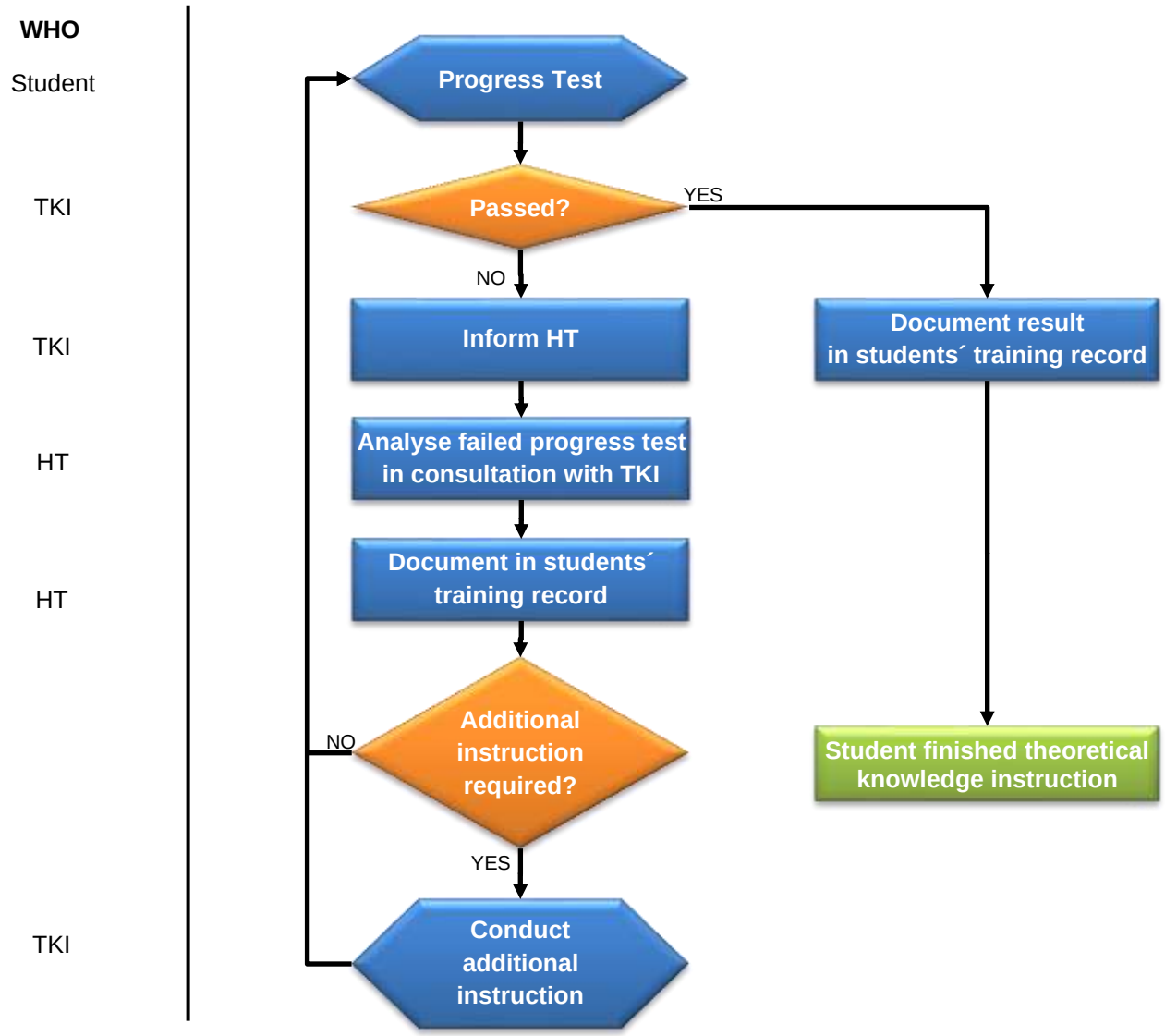
A.1.2.3. PROGRESS TEST (THEORETICAL KNOWLEDGE)

As far as not specified otherwise in the relevant training syllabus, an oral or written progress test should be conducted after completion of the theoretical knowledge instruction by the TKI with each participating student. The progress test is intended to standardize the proficiency level of the students at the applicable phase of training. This progress test may be also conducted on WBT basis.

The requirements to pass a progress test is 75%.

After successful completion of the applicable progress test the instructor should enter the result in the applicable students´ training record.

In case of failure of a progress test, the TKI should inform the HT. The HT will then analyse the failed progress test and – after consultation with the TKI – decide about the amount of additional theoretical knowledge instruction required prior to the next attempt and document this process leading to his decision in the student training record accordingly.



A.1.2.4. TRAINING AIDS AND COURSE MATERIAL

As far as not specified otherwise in the relevant training syllabus, the following regulations apply:

A.1.2.4.1. GENERAL

Different demonstration material which is available in the classroom and electronic formats may be used for all theoretical knowledge instruction.

Students may be required to provide additionally required tools (e.g. calculator, etc.) as applicable for the topic of instruction.

Before being used all training aids acquired by external providers shall be checked by the HT for completeness and relevance.

Training aids and presentations are stored by the HT. The HT, as appropriate, is responsible for providing all instructors with a current version of this documentation prior to any course.

All training aids and course material used in any training shall be checked for accuracy, relevance and currency by the instructor giving the course (supervising the course, in the case of CBT). Deficiencies, faults and obsolete information shall be reported to the HT, as appropriate, who will initiate the necessary revisions, corrections or updates.

A.1.2.4.2. DISTANCE LEARNING (CBT AND/OR WBT)

If distance learning (CBT and/or WBT) is intended to be used the HT shall in accordance with the requirements of TM-A.1.2.4.1. review the respective material. And follow the development or assessment processes in accordance with OMM-B.1.8.3.4.

If distance learning is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student. Therefore at least one instructor shall have received an introduction on the applicable system.

NOTE

CBT means a standalone IT system (e.g. a CD/DVD), which is not able to record the time a student has worked on the system.
WBT means a closed IT system (e.g. online), which is able to record the time the student has worked on the system.

NOTE

For the process of the assessment of Distance Learning Elements refer to OMM B.1.8.3.4.

Access to distance-learning programme is provided by or on behalf of the HT via e-mail and contains a URL, username and password.

The HT or a TKI for the respective course shall monitor the performance of the student during distance learning (in case of WBT through a specific instructor access, where the training progress, test results and training times are reflected).

Successful completion of the required test(s) shall be verified by the HT, as appropriate.

A.1.3. PRACTICAL FLIGHT TRAINING

A.1.3.1. BRIEFINGS & DE-BRIEFINGS

For all practical training sessions, the students will receive information from the instructor on the manoeuvres and malfunctions that might be presented during the training or check event, including the anticipated area of operation and a general outline of the weather conditions to be expected. Such information will be provided in written form in due time before the training or check.

Furthermore, a detailed briefing shall be held by the instructor immediately before the session, containing:

- the aim of the mission and the mission objectives;
- the exercises to be performed (for check flights: the general outline and schedule, without stating the exact sequence and circumstances under which they will occur; for training flights all details of the session may be briefed, to the discretion of the instructor, insofar as this is considered suitable to optimize the training effect);
- the level of performance expected of the student;
- possible treats and errors of the upcoming mission; and
- questions raised by the student to clarify relations to operating procedures, airmanship & seamanship, principles of flight and other relevant factors.

In case of instructor rating courses, the briefing should include additionally:

- common errors of students during manoeuvres and how and when to interfere as CRI;
- risks of manoeuvres to be practiced and effective risk mitigation; and
- how to select a suitable training area and safety margins for manoeuvres to be practiced.

The briefing shall be held in a relaxed and friendly atmosphere, encouraging the student to participate actively in the preparation for the lesson so as to enhance his performance and the benefits from the session.

De-briefings after training should be held in the same between the instructor and the student, where the instructor should give feedback on the performance of the student with regards to the exercises conducted. This de-briefing should equally emphasise positive and negative aspects of the student´s performance and should also contain suggestions for improving future performance.

A.1.3.2. GRADING CRITERIA FOR PRACTICAL FLIGHT TRAINING

The instructors are independent in their judgment and grading. A grade given by an instructor may only be changed by re-training, if required, and a repetition of the test/check/mission. There may be no interference or orders from superiors or other interested parties as to which result a specific test or check should produce.

In training phases, missions / flights will be graded as follows:

AS = above standard
S = satisfactory (standard)
SI = should improve
US = unsatisfactory

It will be used for the respective training item and also for the result of the whole training mission.

The following grading scales apply:

	ABOVE STANDARD (AS)	STANDARD (S)	SHOULD IMPROVE (SI)	UNSATISFACTORY (US)
Comments	Optional	Optional	Mandatory	Mandatory

General	Performance in accordance with all policies & procedures, and accomplished expeditiously and without error.	Student recognizes and corrects errors in a timely manner. Errors are limited to minor deviations from standards or targets. Margin of safety not affected.	Deviations and/or errors recognized or addressed in a timely manner. Student acknowledges lapses and formulates methods for avoiding similar errors. Margin of safety adequate.	Non-compliance with procedures. Failure to comply with ATC clearances. Poor airmanship or sub-standard performance. Reasonable time to perform tasks exceeded. Margin of safety, seriously in doubt or lost.
Manoeuvring	- Minor deviations: quickly corrected - Excellent techniques - Smooth controls - Always ahead of the aircraft	- Deviations at or near tolerances corrected in a timely manner - Tolerances occasionally exceeded but immediately corrected - Basic aircraft control usually smooth - Usually ahead of the aircraft, never behind	- Deviations near tolerance limits: not corrected in a timely manner - Tolerances momentarily exceeded: corrected HDG, ALT - Control inputs could be smoother - Sometimes behind the aircraft	- Deviations outside tolerances: frequent or sustained - Tolerances exceeded: HDG, ALT not corrected - Rough on controls - Positive aircraft control: lacking, behind the aircraft - Aircraft limitations exceeded - Crashed
Knowledge	- Operation limitations easily recalled and properly applied - System knowledge: excellent & in-depth - OPS, PANS OPS, general air regulations knowledge and application: superior	- Operating limitations easily recalled and properly applied - System knowledge - good - OPS, PANS OPS, general air regulations knowledge and application: good	- Aircraft limitations - recalled with difficulty - System knowledge - marginal - OPS, PANS OPS, general air regulations knowledge: questionable knowledge	- Aircraft limitations – not known - Systems – not known, not understood - OPS, PANS OPS, general air regulations knowledge: not understood
Automation	- Level and mode optimum of conditions - Full use and understanding of AP, FD, GNSS, EGPWS	- Level and mode usually optimum - always acceptable - Good use and understanding of AP, FD, GNSS, EGPWS	- Level or mode wrong for conditions - corrected in time - Fair use and understanding of AP, FD, GNSS, EGPWS	- Level and mode improper - not corrected - Poor use and understanding of AP, FD, GNSS, EGPWS
Procedures	- Procedures: always standard - Responses to checklist challenges: always standard - Briefings: always standard, tense and appropriate	- Procedures: occasionally minor errors, quickly corrected - Non-standard response to checklist challenges: rare - Briefings: complete, often too long, occasionally require clarification	- Major error(s): corrected in reasonable time - Non-standard responses to checklist challenges: frequent - Briefings: not complete, difficult to understand, require clarification - Flows/procedures slow	- Wrong checklist used - Major error(s): not corrected - Checklist not completed - Checklist not read properly - Flows/procedures not used - Scan: improper for conditions - Briefing: not accomplished, non-standard
Communication	- Assertive clear, concise & timely - Messages sent: always checks for receptions - Crew always informed of changes to automation, system status, flight status, configuration, the unexpected - Excellent responsive listening & feedback - Standard ATC terminology: always used - ATC informed asap - OPS requirements & expectations: pre-briefed	- Assertive and good, occasionally unclear and need to repeat - Messages sent: not always tested for receptions - Crew usually informed of changes to automation, system status, flight status, configuration, the unexpected - Good listening skills - Non-standard ATC terminology: occasionally used - ATC not informed asap - OPS requirements & expectations: occasionally pre-briefed	- Message sent: not tested for reception - Aggressive expressing ideas or in giving feedback - ATC terminology: not always standard - Terminology in the cockpit: often non-standard - Crew not informed of changes to automation, system status, flight status, configuration, the unexpected - ATC not kept fully informed	- Critical information not shared - Information or commands not acknowledged - Clarification not requested - Assertiveness: lacking - ATC terminology: non-standard, read-back missing required wording - Crew not informed of changes to automation, system status, flight status, configuration, the unexpected
Situational Awareness	- Acutely aware of factors affecting the flight - Anticipates effects conditions and system status - Always plans ahead effectively - Monitoring excellent and consistent: PF, ATC, fuel, navigation, system status, time, other traffic, passenger comfort, etc.	- Occasionally reacts, rather than anticipates, to conditions - Operation could be smoother in dynamic situations - Plans ahead effectively: most of the time - Monitoring good: PF, ATC, fuel, navigation, system status, time, other traffic, passenger comfort, etc.	- Reacts, rather than anticipates, to conditions - Situational awareness: occasionally lapses - Often geographically or vertically disoriented - Failure to plan ahead caused CRIs confusion - Monitoring not consistent: PF, ATC, fuel, navigation, system status, time, other traffic, etc. - CRI not always included in briefings	- OPS, ATC rules violated - Essential tasks not accomplished - Disoriented geographically or vertically - Failure to plan ahead caused CRIs confusion - No monitoring: PF, ATC, fuel, navigation, system status, time, other traffic, etc. - CRI not included in critical briefing - Cockpit discipline: lacking
Problem Solving & Decision Making	- Recognition and identification of problems: quick - Stabilization: positive & timely - Process: masterful - All factors and resources taken into account and utilized - All involved are kept informed throughout the process - Resolution: best possible	- Recognition and identification of problems: timely - Stabilization: in reasonable time - Process: effective - Most resources used properly - Most involved kept informed - Resolution: good	- Identification of problems: slow - Stabilization: slow - Process: fragmented but complete - Some resources: not utilized - Critical agencies: not informed - Resolution: acceptable	- Problems: not correctly identified - Stabilization: not accomplished or too slow - Process: not organized or not complete - Essential resources/factors: not utilized/considered - Critical agencies: not informed/considered - Resolution: not appropriate

Every ***Should Improve (SI)*** grading must be explained by the instructor with a short description in the "Remark"-Section of the applicable mission record. If necessary, recommendations should also be given on how the trainee can reach the required standard.

Every ***Unsatisfactory (US)*** grading must be explained along with a detailed description of any other related irregularities. If necessary, recommendations should also be given on how the trainee can reach the required standard. If within one mission, one or more items are **rated US** also after the second attempt, the following procedure shall be applied:

a. If only **one mission item** is rated US at the second attempt that item shall be repeated and the actual repetition of the mission item shall be recorded in the students training file in the applicable section.
b. If **two or more mission items** within one mission are rated US at the second attempt, the whole mission shall be repeated and recorded in the student´s training record accordingly.

A.1.3.3. SIMULATED ABNORMAL AND EMERGENCY SITUATIONS

The instructor should select suitable malfunctions in accordance with the training syllabus.

CAUTION

It is strictly forbidden to disengage circuit breakers in order to simulate any kind of system failure(s) / malfunction(s) in the aeroplane! Such items may be checked by other means i.e. oral or by touch drills, if required for safety, or in an FSTD only.

The instructor must be familiar about the alarm inhibitions and the inefficacy of a continuous alarm due to any failure simulation.

A.1.3.4. SERVICEABILITY OF SYNTHETIC TRAINING DEVICES

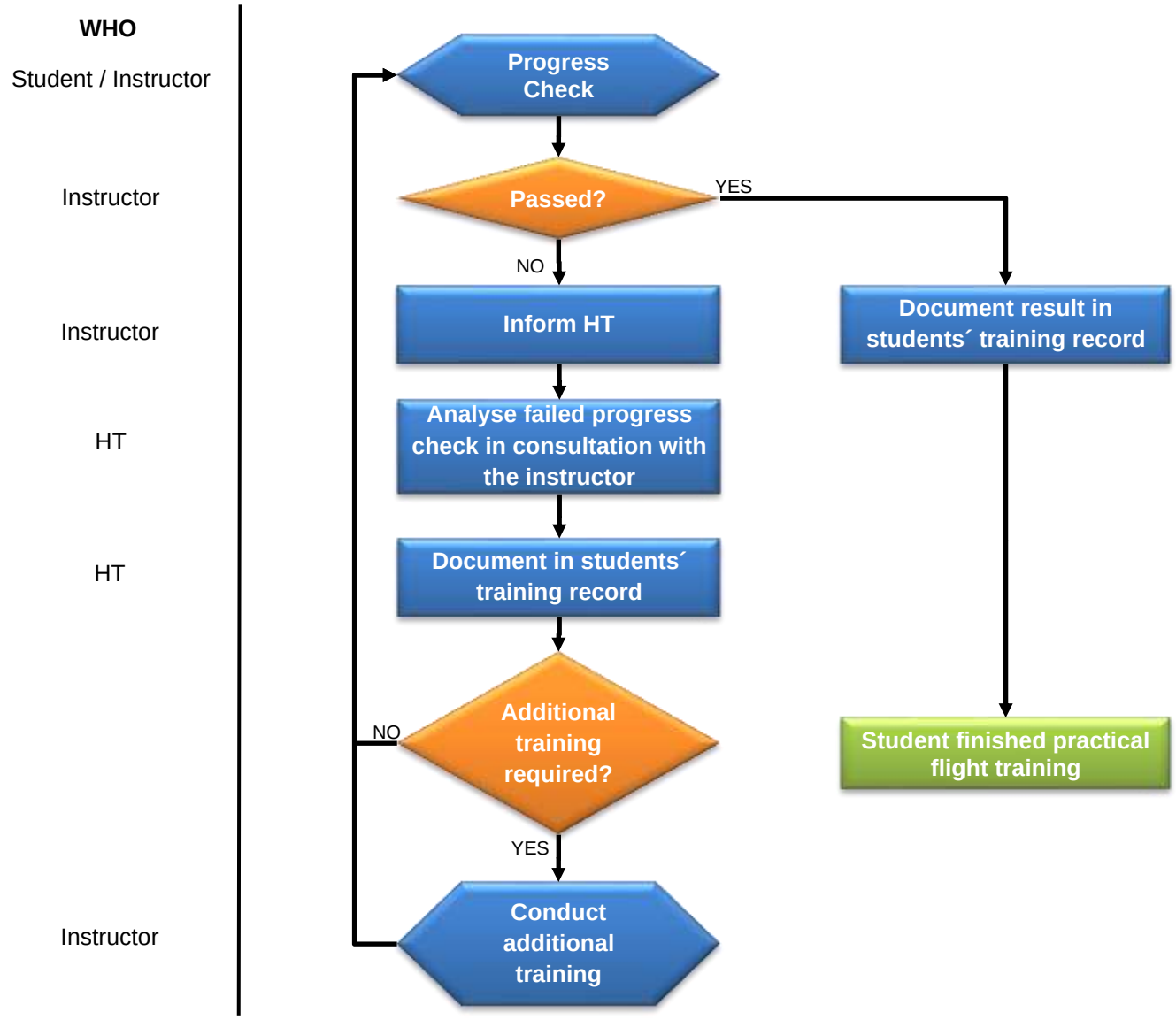
NOT APPLICABLE

A.1.3.5. PROGRESS CHECK (PRACTICAL FLIGHT TRAINING)

After successful completion of the applicable flight training the instructor may authorize a progress check. Progress checks are intended to standardize the proficiency level of the student at the applicable phase of training.

During a progress check, the applicant shall demonstrate the ability to:

- Operate the aeroplane within its limitations,
- Exercise good judgment, airmanship and seamanship,
- Complete all manoeuvres with smoothness and accuracy,
- Apply Single-Pilot Resource Management (SRM);
- Apply appropriate single-pilot checklist work;
- Apply aeronautical knowledge, and
- Maintain control of the aeroplane at all times in such a manner that a successful outcome of a procedure or manoeuvres is never seriously in doubt.



Although the following limits are for general guidance only, they shall normally not be exceeded. The instructor shall make allowance for adverse conditions such as turbulence and any other special handling characteristics of the aeroplane type being used.

At the discretion of the instructor any manoeuvres or procedure may be repeated once by the applicant. The instructor may stop the progress check at any stage if it is considered that the applicant's competency require a complete re-check.

Height

- Generally ± 100 ft
- Starting a go-around at decision height + 50 ft / - 0 ft
- Minimum descent height / MAP / altitude + 50 ft / - 0 ft

Tracking

- On radio aids ± 5°
- Precision approach half scale deflection, azimuth and glide path

Heading

- All engines operating ± 5°

- With simulated engine failure ± 10°

Speed

- All engines operating ± 5 kts
- With simulated engine failure + 10 kts / - 5 kts

In case of failure of a progress check, the instructor should inform the HT.

The HT will then analyse the failed progress check and – after consultation with the instructor – decide about the amount of additional practical flight training required prior to the next attempt and document this process leading to his decision in the student training record accordingly.

A.1.3.6. THREAT AND ERROR MANAGEMENT (PRACTICAL FLIGHT TRAINING)

A.1.3.6.1. INTRODUCTION

Most aircraft accidents are linked to deficiencies in human performance. These deficiencies may involve a variety of factors. The factors include poor lookout, situation awareness, decision-making, task organisation, communication, failure to recognise threats to safety and the commission of errors.

Worldwide statistics indicate that about 75% of aircraft accidents are caused by Human Factors deficiencies. The application of Threat and Error Management (TEM) practices requires the competent use of human factor skills. The International Civil Aviation Organization (ICAO) has acknowledged the need for this type of instruction and recommends that human factors and TEM should be introduced into all pilot training. A major component of TEM is the application of good human factor practices.

Traditionally these items have been associated with airmanship or just plain common sense; and knowledge was gained through experience and a process of 'infusion'. The move to link airmanship to human factors is in effect, tantamount to bringing science to the often nebulous concept of airmanship. This training must be structured and designed to meet competency standards. Therefore, it is essential that flight training organisations develop techniques and material for teaching human factors and those Flight Examiners conducting flight tests have methods and tools to assess competency.

Thus, as a measure of airmanship, if the pilot is maintaining an adequate lookout, they would (for example) see potential forced landing areas. By maintaining situation awareness (for example, wind velocity, visibility, and aircraft performance) the pilot can apply this information for contingency planning and reinforce the decision-making process if an engine failure occurs. These aspects would be observable and assessable. The purpose of linking human factors and airmanship is not to diminish the importance of airmanship, but to make the measurement of it valid and reliable.

A.1.3.6.2. TEACHING AND ASSESSING AN EFFECTIVE LOOKOUT

One area of concern is how to maintain an effective lookout. **Effective lookout** means seeing what is 'out there' and assessing the information that is received before making an appropriate decision. Teaching this skill is the domain of the instructor.

Vision is the primary source of information for a pilot. Whether it is aircraft attitude, position, physical hazards or other traffic, what a pilot sees is processed by the brain and used to build up situation awareness. Therefore, it is important for an instructor to effectively train a pilot how to

best utilise vision to maintain safety. In this context, lookout must not be thought of as just scanning the skies to locate other traffic; it also involves the internal and external environment of the aircraft. Inside an aircraft vision is used to interpret flight instruments, flight controls and aircraft systems and externally to observe and interpret weather, terrain, aircraft attitude and position.

Instructors should guide trainees through the multitude of factors that can adversely affect vision and lookout such as the amount of ambient light, window posts, the cleanliness and crazing of windscreens and other physiological and psychological concerns. Failure to address these issues could result in restrictions to visibility.

Workload mismanagement can lead to excessive 'head in the cockpit' with less time spent looking outside the aircraft during busy periods. Instructors should warn trainees about all these situations and highlight such incidents when they occur during flight training. For example, instructors should, during flight training, stress the importance of ensuring the windscreen and eyewear is always clean and free of crazing. Trainees must be taught to move their head to see beyond window posts and any other obstructions such as passengers in the adjacent seat.

Not only is **seeing** important, but accurately **interpreting** what is seen is equally vital.

Instructors may assume that a trainee interprets what they see in the same way as the instructor – but this may not always be the case and instructors should spend time explaining the logic of observations.

Examples for consideration are observing and interpreting:

- aircraft attitude;
- indications of adverse weather;
- wind strength and direction from clouds, blowing dust, smoke, trees and water;
- terrain effects on wind;
- other air traffic;
- reduced visibility;

Throughout training instructors must firstly teach and then assess a trainee's ability to observe what is happening around them and to apply that knowledge to ensure safety.

A great deal of a pilot's time must be spent **looking for and sighting air traffic** in order to avoid possible conflict. The concept of see-and-avoid is far from reliable. By employing an effective scanning technique and understanding how to enhance visual detection of other traffic, a pilot is more likely to reduce the likelihood of collision.

Size and contrast are the two primary factors that determine the likelihood of detecting other aircraft. Size is the more important parameter in detecting aircraft and as GA aircraft are usually small, the problem of detecting aircraft is exacerbated.

Passengers may also be used to help improve lookout. Trainees should be taught to ask their passengers to advise them if they sight anything that may be a threat or could compromise safety. An instructor must provide and demonstrate an acceptable lookout technique, and ensure that trainees practice and apply the technique and, most importantly, see all other traffic that is a threat to flight safety.

An **alerted search** is visual scanning when air traffic information has been provided and a pilot is, in effect, told where to look. Air traffic services or other pilots could provide this information. The likelihood of detecting other traffic is greater under these circumstances than during an unalerted scan. Other technologies that provide similar information include transponders, radar (both airborne and ground installations), Traffic Collision Alerting Devices (TCAD) and Traffic Alert and Collision Avoidance Systems (TCAS).

Although this equipment is not usually fitted to general aviation aircraft it demonstrates how technology can assist lookout and pilots must not disregard the benefits of 'alerted searching'; and listening to and interpreting radio transmissions in the circuit area are an ideal opportunity to teach these aspects to a trainee.

A summary of maintaining an effective lookout:

- threats are external to the aircraft; so
- the pilot must look outside the aircraft;
- search the available visual field to detect threats that will probably appear in the peripheral vision;
- shift vision directly to the threat and if identified as a collision risk, decide on what effective evasive action to take; and
- manoeuvre the aircraft to mitigate the risk.

Pilots must realise that this process takes time; and human factors deficiencies can reduce the chances of a threat being detected and avoided. The factors affecting lookout are not errors or poor airmanship, but are limitations of the human visual and information processing systems, which are present to various degrees in all humans. Nonetheless, effective training can improve the effectiveness of a lookout technique.

Assessment is the process of weighing evidence of an individual's performance against a standard. The evidence used must follow an established set of rules.

These are:

- alidity: it must cover all the performance criteria for the skills and knowledge of the standard being assessed;
- Authenticity: it must be the individual's own work;
- Sufficiency: enough evidence must be collected to judge the individual is competent across:
  - all elements and performance criteria;
  - all dimensions of competency; and
- Currency: the individual is competent now and meets the current standard.

Only with evidence which follows these rules can an accurate judgment of an individual's competence be made.

The 'dimensions of competency' referred to in the previous paragraph means that the assessment is not narrowly based on a task, but embraces all aspects of performance and represents an integrated and holistic approach to the assessment. The assessment process must take into account task skills, management and contingency skills, role skills and transfer skills. For example, instead of just assessing a 30° banked turn against the specified standard, it may be more realistic to observe the candidate performing the manoeuvre during a precautionary search (a contingency) where the turn is used to position the aircraft to observe and assess the landing surface (a role).

The skill is being applied to a new circumstance (transfer of skill), while managing a somewhat complex undertaking. This approach combines knowledge, understanding, problem solving, technical skills and application into the assessment.

Instructors and Flight Examiners have the task of **assessing the ability of trainees to maintain an effective lookout**. Their roles are slightly different: an instructor is required to conduct formative assessments during training to determine how well a trainee is learning, but the Flight Examiner must conduct a summative assessment at the conclusion of training to determine if the trainee is competent to be issued a licence.

There are two main elements to effective lookout. Firstly, to see an ‘object’ and secondly, to react appropriately to what has been seen. An 'object' could range from a speck in the windscreen that is an aircraft at long range, to a large feature like a mountain. The next step would be to determine if the object is a threat, and then take mitigating (more commonly known as avoiding action!). These are the processes the assessor is looking for.

The three performance criteria relevant to maintaining an effective lookout are:

- maintains lookout and traffic separation using a systematic scan technique at a rate determined by traffic density, visibility and terrain;
- maintains radio listening watch and interprets transmissions to determine traffic location and intentions; and
- performs 'airspace cleared' procedure before commencing any manoeuvres.

These three criteria must be achieved for a positive assessment of effective lookout. The key point is that the trainee covers the field of view from the cockpit, and varies the scan rate to accommodate the threats. Clearly, during periods in congested airspace, extra attention must be paid to other traffic. Unfortunately airspace congestion is usually encountered during busy stages of a flight, such as departure and approach. These high workload periods often focus a trainee’s attention inside the cockpit.

Instructors and Examiners must watch the trainee during these phases of flight to ensure that tasks are prioritised and managed to ensure a good lookout is maintained. This can be achieved by monitoring head and eye movement, when possible. Additionally the assessor must monitor the candidate to determine whether any traffic information received by radio transmissions is reacted to appropriately.

Pilots must always clear the airspace around them before manoeuvring the aircraft. This ‘clearing procedure’ must not only be used to locate other aircraft but also any terrain, weather or other hazards that may compromise safety. Flight Examiners must observe whether the trainee always uses an acceptable procedure and whether when they look, threats are seen and identified. Finally, assessors must ensure that trainees are aware of the limitations of vision and take these aspects into account when looking out. These include such aspects as blind spots, threshold of acuity, accommodation (focusing on an object), empty field myopia, focal traps, visual field narrowing and cockpit workload.

A.1.3.6.3. TEACHING AND ASSESSING SITUATION AWARENESS

From the moment training begins, a trainee must be made aware of situation awareness, its importance, and how it will be taught and assessed. In the normal course of flight training, trainees are shown how to monitor flight instruments, aircraft systems and flight attitudes and to manage them appropriately to achieve the desired performance. Instructors need to point out how all this information is applied to develop situation awareness. Additionally, trainees must learn to monitor, gather and interpret appropriate information from both inside and outside the aircraft. This continual monitoring assists perception (mental model) of what is happening and what is likely to happen in the near future, which is the basis of situation awareness. Visual information is the greatest source for building and maintaining situation awareness.

Instructors must also explain to trainees the importance of maintaining a good radio listening watch and, during initial training, explain how interpretation of radio-telephone (R/T) transmissions will enable them to anticipate other traffic and likely air traffic instructions.

As training progresses, the instructor must observe the trainee’s performance and if necessary develop scenarios to improve, challenge and assess situation awareness.

Observation and questioning are the primary means of making a formative assessment of situation awareness. For example, one of the first senses that can degrade during higher workload is hearing. If a trainee (or instructor) is aware they require ATC to read back clearances more often than normal, and/or they are starting to miss radio calls altogether, this could be the first sign of overload and degraded situation awareness. Questions like “What would you do if…?” can be used to assess a person’s situation awareness. This type of assessment must be conducted throughout a pilot’s training and the results used to modify the training plan when appropriate.

During training, instructors must include situation awareness as part of every flight. This could be achieved by stressing the importance of continually monitoring the total environment and updating options as situations change. Trainees must be encouraged to verbalise their observations so that the instructor is also informed and able to make assessments. Therefore, they may need to plan how they will conduct situation awareness instruction and possibly create scenarios to enable the learning to occur, it is likely however that, during the normal course of a flight, situations will evolve that present trainees with the opportunity to apply and demonstrate their situation awareness.

The most important aspect of **assessing situation awareness** is to confirm that the pilot’s mental model (or perception) of the environment is accurate. Next, find out what options have been generated and whether they are realistic. In other words, the assessor must see if the 'what ifs' complement the mental model and provide a basis for an accurate and timely decision if one is required. There may be no need to proceed to the next step of making a decision, as situation awareness is an ongoing process and further action only needs to be taken if some of the perceived situations compromise flight safety. For example, if there are thunderstorms in the area but they do not conflict with the intended track, and the adverse effects of the storm will not affect the flight, no action would need to be taken. However, it would indicate a lack of situation awareness if the pilot did not consider the storms and the associated hazards in their planning.

Assessors must determine if situation awareness is being maintained regardless of workload. During periods of high workload it is possible that information may be overlooked. For example, if the trainee is busy during an approach into a very active terminal area, radio transmissions may be missed or instructions forgotten. A possible cause for this reduction in situation awareness is failure to recall the information received (short-term memory breakdown causing faulty perception) which can lead to failure to take appropriate action.

Equally, assessors must continue to monitor the trainee during periods of low arousal or workload (inactivity) to ensure that an appropriate level of situation awareness is maintained. During a long navigation leg that is proceeding according to plan, a trainee may relax and stop thinking about "what is happening and what could happen". It would be appropriate to confirm that situation awareness is being maintained by the use of questions such as "Where would you divert to now if a passenger became seriously ill?", "If you suffered an engine failure where would you land?" or "What is our endurance now?"

Assessors must also observe the appropriate application or otherwise of knowledge, because situation awareness can be adversely affected by a lack of knowledge. For example, unfamiliarity with air traffic separation rules could result in unsatisfactory descent planning when opposing traffic is present. Deficiencies in aircraft systems knowledge could lead to unsatisfactory outcomes; fuel system mismanagement would be a typical example.

A.1.3.6.4. TEACHING AND ASSESSING DECISION MAKING

By applying situation awareness, a pilot may arrive at a number of options of 'what could happen', and the next step is to make a decision that achieves the optimum outcome. In daily life people are always making decisions - usually sub-consciously. However, in the aviation environment the

decisions that sometimes must be made can have tragic consequences if they are incorrect or inappropriate. Therefore, it is important for pilots to understand and be able to apply the decision making process and to be aware of the need to make timely and correct decisions.

Instructors must mentor trainee pilots through the decision-making process. For example, applying information sources such as meteorological reports, NOTAMs, radio transmissions, visual observations and knowledge to the situation to make decisions.

Trainees must be given the opportunity to decide and, if a decision is flawed, the reasons must be clearly explained. For example, if the weather is marginal before a flight, rather than cancelling the sortie, the instructor should ask the trainee (who probably is very eager to fly) whether or not it would be prudent to undertake the flight. It is quite normal for an instructor to make decisions during flight, but it may be of more benefit to ask the trainee for their opinions. By doing this it is possible to assess their progress and then to provide training if it is required.

During flight training there will be many occasions to observe, assess and improve a trainee pilot's decision making. Instructors must be conscious of when there is a requirement for a trainee to make a decision. They must then determine if it is an acceptable decision that has been made in the time available. If the decisions are defective, it may be necessary to go through the reasoning that was used and point out any faults and explain how considerations and logic should be applied to reach an acceptable decision.

Although this may seem to be a laborious procedure, it is an improvement on the traditional method of simply revealing to a person that they had made a wrong judgment, and telling them what they should have done, without analysing why the mistake was made and offering guidance to help them improve their decision-making skills.

The timeliness of decisions is another facet of decision-making that instructors must emphasise. During flight training opportunities will arise to gauge and advise a trainee about timely decisions, but there may be a need to create scenarios for the purpose of demonstration. For example, a mishandled landing may require a quick decision to go around to prevent damage to the aircraft. However, the decision to divert because of adverse weather or fuel shortage on a navigation flight may have a 'deadline', by which time a decision must be made.

Although the aforementioned decisions must be made in different timeframes, the information process will be the same. That is:

- receive information;
- convert information into reality;
- options are generated;
- options are analysed; and
- a decision is made.

What is also different is that in the second case the situation is dynamic, variable, emotive and subject to bias.

These aspects of decision-making make the process more difficult and susceptible to errors. The result could be an incorrect or 'non' decision. To give a trainee practice at this type of (more complex) decision-making, instructors may have to develop scenarios for different stages of flight training to provide opportunities to practice (and learn) decision-making. Another example to highlight this process is a simulated engine failure versus partial power loss. The first is a relatively clear outcome that requires well rehearsed decisions, checklists and actions to set up a forced landing.

The latter is more subjective, potentially offers more time and provides the trainee with a larger number of options from which to make a final decision. In itself this latter type of scenario is a richer training environment for decision-making as it leaves the trainee with a number of options

that can be discussed in the debrief: why the trainee chose a specific course of action, what were their considerations for reaching this conclusion etc.

Furthermore, with increased experience and exposure to known operating conditions and a specific aircraft type, a number of processes become more automated, which is the natural outcome from a positive transfer of learning. For those that have been driving a car for a number of years you probably don't have to think about what you are doing, your actions are automatic. For others who are learning to drive it is more mechanical and requires much more conscious effort and thought to consider the steps required. This automatic decision making process will occur within flight training as the trainee becomes more familiar with the local operating environment and the training aircraft. This familiarity also translates to an environment in which decision-making may not be fully tested in the latter stages of training as the local operating conditions are so well known and rehearsed that the trainee continues to have large amounts of spare capacity to deal with any simulated scenarios the instructor may wish to impose, many of which have been previously experienced.

Higher cognitive demands are potentially created any time a trainee experiences something new or unknown,. For example, if the trainee has conducted a large part of their training under conditions of clear weather, even with considerable training experience, the first flight in which they are required to deal with marginal weather in the same training area and aircraft could impose significantly increased workload with the potential to result in degraded performance and higher cognitive demands when making decisions.

Instructors should ensure that training sequences consider trainee familiarity and look for opportunities that expose the trainee to new situations with which they may not be as familiar, in order to consolidate and assess their ability to manage the flight, maintain situational awareness and make sound decisions.

Finally, when teaching decision-making, instructors must remember that individuals have different emotional attitudes, learning rates, thought processes, analytical skills, aspirations and cultural backgrounds which may influence how this skill is taught. Therefore, instructors must be flexible, imaginative and innovative in developing ways of passing on decisionmaking skills to pilots of all experience levels. The bottom line is that pilots must make timely, correct or correctable decisions…if not the consequences could be fatal!

Normal flight training provides ample opportunities for instructors to conduct formative **assessments of decision-making skills**, though it may be necessary to create scenarios to analyse a trainee's ability to manage complex decision-making. This process may be more difficult for a Flight Examiner to assess on a flight test because of a limited time frame and reduced opportunity. Nevertheless, a pilot's decision-making must be assessed as competent on a licence or rating flight test.

The pilot must recognise that a decision has to be made. The ongoing process of acquiring situation awareness, if working correctly, will provide the pilot with a perspective from which any number of options can be derived and ultimately the best action to follow. Problems must be identified and the assessor will use observation and questioning to determine the facts. Next, the problems must be analysed and solutions (options) proposed. This procedure will require the pilot to gather and process information. The pilot's actions must be observable, but some questioning may be required to obtain an accurate assessment. Using this information a decision can be made. Assessors must ensure the decision is the optimal one and is implemented effectively in the time available. The pilot then must monitor progress against their plan and re-evaluate as circumstances change, even if it is to confirm the desired outcome.

For an obvious decision such as a 'go around' after a mishandled landing, the action and results will be very evident. In such a case a point worth considering would be to ensure the pilot

recognised the mishandled landing soon enough and did not delay the recovery action. However, more complicated decisions may require greater analysis by both the pilot and the assessors. A complex problem may require a decision that does not lead to the optimum result, but could be modified at a later time.

It is acceptable to make a decision on the basis that it may require revision, if the safety of the flight is not compromised and the trainee continues to re-evaluate and update that initial decision. This situation could occur where a decision is made during flight planning, which may have to be modified after the pilot becomes airborne (operational requirements, insufficient information available or weather).

A.1.3.6.5. TEACHING AND ASSESSING PRIORITISATION AND TASK MANAGEMENT

The adage 'aviate, navigate and communicate' is the basis of prioritisation and task management. Task management means completing a job or operation competently in the time available. If the workload is high and many tasks have to be completed, they must be prioritised in a logical and efficient sequence. The brain is a single-channel processor (linear) and humans can normally only manage one activity at a time. Instruction to ensure competent task management must begin at the commencement of a pilot's flight training. Many things that experienced pilots take for granted must be pointed out and explained to the novice. For example, when a pilot is first introduced to the cockpit they must be shown how to adjust their harness and seat, and reach and touch controls and switches. Proficiency in these operations will make workload management easier.

During flight training trainees must be encouraged to prioritise tasks to ensure that the important and safety critical actions are dealt with first. Referring to the adage at the beginning of this section 'aviate' or maintaining control of the aircraft must be a pilot's first concern. One of the cornerstones of managing an undesired aircraft state in TEM is timely correction of the undesired state rather than concentrating on why an error may have occurred. This is prioritising correctly. Instructors must alert trainees when they have incorrectly prioritised and offer a more appropriate solution.

A question like "What is more important?" may prompt a pilot to prioritise correctly. Another practice that instructors must stress is good organisation in the cockpit. This is particularly applicable when navigating. Thoughtful selection and storage of charts, flight plans, computers, publications and writing implements should result in more precise and simpler navigation. In addition, achieving an appropriate work rate is critical during this phase of flight. Instructors must remember that rationalising the workload will ensure more efficient task completion which in turn must result in greater safety.

One of the keys to workload management is the ability to recognise factors that adversely affect a pilot's ability to operate efficiently. A non-comprehensive list of factors that can reduce a pilot's work efficiency follows:

- lack of preparation: (confusion, disorganisation);
- fatigue: (poor decision making, errors);
- discomfort: (distraction, fatigue);
- stress: (inefficiency, distraction);
- arousal: (increased or decreased work cycles);
- domestic stress: (distraction, lack of concentration);
- distraction: (diverted attention);
- non-use of automation: (increased work);
- destination or task obsession: (poor decision making, press-on-itis);
- bad health: (decreased physical and psychological performance); or

- overload: (fixation, tunnel vision, broken work cycles).

Although this is not a comprehensive list, instructors must be aware of these types of factors and look for these deficiencies in their trainees. Once the weaknesses have been identified, instructors must advise trainees of methods of developing and applying countermeasures or strategies to manage these inhibiters to efficient workload management.

Whether it is a minor or major problem that is being encountered it must always be remembered that the first priority is survival. To survive requires maintaining control of the aircraft and/or the situation. When dealing with a major system malfunction at the same time as Air Traffic Control is requesting information the choice is simple: deal with the malfunction first. Unfortunately, a pilot's response to 'authority' can dominate and time could be wasted with a long communication with ATC. This would be an example of incorrect prioritisation if it happened in a remote area, in bad weather, when uncertain of position, and dealing with a worried or annoyed passenger. This would be an unenviable position - nevertheless the pilot must think 'survival' and prioritise actions accordingly.

During flight training an instructor must develop and use appropriate scenarios to provide valuable and potentially lifesaving guidance.

An assessor must assemble evidence of competence in setting priorities and managing tasks on a flight test by simply observing a pilot's work pattern and task completion. The danger is that such assessment is prone to subjectivity. For example, if a pilot is told by ATC to "Expedite takeoff", and does so before completing pre-take-off checks then the pilot could be reasonably deemed as not competent at prioritising tasks.

When assessing task management the Flight Examiner must be looking for competent completion of a task in the time available. In particular, the assessor would be seeking confirmation that the pilot can manage multiple tasks (not an excessive amount) in a logical order. It may be necessary to create scenarios to fulfil this requirement. The assessment process will require detailed observation, information gathering and questioning because there will be a need to determine how a candidate’s mind is functioning while managing tasks. By obtaining this information and combining it with observations it is possible to judge a pilot's ability to competently set priorities and manage tasks.

A.1.3.6.6. TEACHING AND ASSESSING EFFECTIVE COMMUNICATIONS AND INTERPERSONAL RELATIONSHIPS

Communication is a two-way process; it involves the accurate transmission, receipt, and interpretation of information. Communication is not limited to the radiotelephone; it also involves direct verbal and non-verbal exchanges. ‘Effective interpersonal relationships’ is a topic that may seem to be 'touchy-feely', but involves being able to get a positive or helpful, rather than negative or obstructive, response from individuals or groups that a pilot deals with. A major component of interpersonal relationships is effective communication.

The first requirement for communication is a common language, which is the English language and 'aviation English'. Aviation English is the use of standardised, abbreviated, precise and agreed terminology and phraseology. Pilots are expected to use Aviation English and will gain knowledge and experience in its use as their flight training progresses. There may be a tendency for instructors to take the communication process for granted, without considering some of the deeper implications of not communicating clearly, or failing to consciously train novice pilots to communicate adequately.

Instructors must monitor and develop a pilot’s communication skills throughout flight training, pointing out when communications are confusing, ambiguous or out of context. The next step

would be to suggest a way to modify and improve the communication Extra care is required when teaching trainees who do not have English as a first language. The instructor must be precise with their use of language and be careful with slang and colloquial speech.

During flight training there will be many opportunities to observe and judge the effectiveness of a trainee's communication skills. It is important to make the trainee aware of the consequences of poor communication skills and for them to be self-critical of their own performance. Emphasise the safety issues that can result through miscommunication.

The intent of 'maintaining effective interpersonal relationships' is to make pilots aware of the need to always foster positive and cooperative relationships with persons involved with or affected by the flying operation to be performed.

Persons affected could be an instructor, refueller, maintenance engineer, an air traffic controller or the farmer who owns the airfield where the aircraft will land; and the pilot must be able to elicit positive reactions from them. This does not mean that instructors must be teaching manners or how to be nice, but they must provide guidance on achieving positive outcomes. The flight instruction will involve observation of the pilot's interaction with others and the results of these activities.

If the instructor detects inadequacies, then the trainee must be advised and given strategies to improve their performance. Some personal characteristics that must be evaluated are:

- tone and phrasing of communications;
- openness;
- reaction to criticism;
- aggressiveness or lack of assertion;
- willingness to listen;
- respect for others;
- arrogance; and
- use of authority.

This is not an all-encompassing list, but it highlights some of the positive and negative characteristics that, if applied inappropriately, could cause an adverse response from others. As an example, an aggressive, brusque or demanding tone of voice during an R/T transmission could garner an adverse response from an air traffic controller, and instructors must identify these issues when they occur. Failure to discuss and rectify this sort of problem could have a negative influence on a pilot's future performance.

The performance criteria for 'Establishes and maintains effective and efficient communications means that the pilot first makes the effort to communicate or interact. The behaviours that the instructor may look for could include tone of voice, nonaggressive approach, willingness to listen, body language (when applicable) and assertiveness. In summary, instructors must recognise and appreciate the importance of human factors skills and make them an integral part of training; and assessors must be prepared to incorporate human factors into flight tests. This will require diligence in the preparation of training plans by instructors and assessment planning by Flight Examiners. The application of good human factors is integral to, and inseparable from, competent TEM which is covered in the next section.

A.1.3.6.7. TEACHING THREAT MANAGEMENT

In the TEM model, threats can be defined as a situation or event that has the potential to impact negatively on the safety of a flight, or any influence that promotes opportunity for pilot errors. Instructors must understand that threats (and errors) are a part of everyday aviation operations

and must be managed. First, instructors must stress to trainees that threats fall into two main groupings: anticipated and unexpected. However, there is a third group called latent threats. These threats may not be observable by pilots involved in flight operations and may need to be uncovered by safety analysis. Some examples of latent threats are optical illusions (approaches to sloping runways), poor manuals, or equipment design faults (landing gear and flap levers located too close to each other) or unnecessary pressure to get a job done. Therefore, it is incumbent upon instructors to show trainees how to detect the three groups of threats, and the steps to take to mitigate these potential hazards.

Detection of anticipated threats relies mainly on knowledge and experience. As pilots learn (and gain experience) they will be able to predict where threats may occur. For example, being able to obtain and interpret a meteorological report will allow a pilot to prepare for adverse weather. Likewise, experience assists pilots to understand more about their own capabilities and limitations.

During flight training, instructors should point out meteorological observations and effects, and question the trainee to determine their application of the information that is available. Prior to each flight, the instructor should discuss the proposed flight and ask the trainee to identify the obvious threats to safety. During the early stages of training the instructor should not necessarily expect a comprehensive list of threats, but as the training progresses, a trainee's level of knowledge is expected to improve. Much will depend on the instructor's approach to TEM training. Some examples of threats that an instructor must be aware of with a new trainee (and which the instructor should inform the trainee about) are:

- conduct in the vicinity of aircraft on the ground;
- performance of competent pre-flight inspections;
- correct adjustment of flight controls and harness restraint;
- a clear handover/takeover procedure;
- ensuring propeller clearance before engine start; and
- listening before transmitting on the radio.

And the aircraft has not even moved yet!

In a very short time, instructors should expect a trainee to manage these identified threats as a matter of course. As the trainee gains knowledge, experience and skills, they will learn to manage all the threats that develop.

Unexpected threats are more likely during flight operations and must be well managed. These threats are generally managed by applying skills and knowledge acquired through training and flight experience. Typically, a practice engine failure or simulated system failure are methods of training a pilot to manage unexpected threats.

Knowledge and repetition prepare a trainee to mitigate these events, but an instructor should link such training activities to the threat management component of TEM. Again, if errors occur during these sequences, they must be highlighted and advice provided to reduce their effects. During flight training the instructor must identify unexpected threats such as incorrect ATC instructions, traffic hazards or adverse weather and point them out to the trainee should they fail to identify them. Then it is important to question the trainee to see what steps they would take to mitigate the threats, ensuring that the action is completed in the time available. Instructors may have to develop scenarios or 'what if' questions, to further test the trainee.

Threats are also categorised in the TEM model into environmental and organisational threats.

Environmental threats occur outside the control of the aircraft operator due to the environment in which the operations take place and have to be managed by the pilot in the available time. Some examples would be:

- **Weather:** turbulence, ice, wind;
- **Aerodromes:** congestion, complex surface navigation, poor signage/markings;
- **ATC:** non-standard phraseology, complex clearances, poor English language; and
- **Terrain:** mountains, valleys, built up areas.

On the other hand, **organisational threats** (which are often latent) can be controlled by the operator or reduced by aviation organisations putting in place mitigators such as safety management systems (SMS), fatigue risk management systems, standard operating procedures, checklists, ground handling measures (marshallers) or operational health and safety procedures. However, the last line of defence will be the pilot. Some examples of organisational threats in GA are:

- **operational pressure:** tight scheduling of training flights;
- **aircraft:** poor serviceability;
- **maintenance:** maintenance error or event; and
- **documentation error:** incorrect or expired charts.

A.1.3.6.8. TEACHING ERROR MANAGEMENT

The acknowledgement that errors will occur has changed the emphasis in aviation operations to error recognition and management rather than error prevention. Notwithstanding the fact that under ideal circumstances, errors will not occur, aviation is not an ideal situation and pilots must be trained to manage errors. So once again responsibility falls on the instructor to conduct the training. Rather than just pointing out errors as they occur, instructors must show trainees how to minimise the chances of errors happening, and then if they do happen, recognise the fact and implement strategies to manage them. Error management could be something as simple as "Oops, I should not have done that, I will do this now". If the subsequent actions are appropriate then the error has been mitigated.

The important point is that the error was recognised by the pilot, acknowledged and corrective action was taken. Instructors must afford the trainee the opportunity to recognise a committed error rather than intervening as soon as they see an error committed, they must wait (if time allows) to see if the error is identified by the trainee. If it is not, this is a deficiency on the part of the trainee, and the instructor should then analyse why the error happened, why it was not recognised and how to prevent future occurrences.

In the TEM model, errors must be observable and are classified as aircraft handling, procedural or communications errors. The point of reference that defines these classifications is the 'primary interactions'.

- A handling error would occur when a pilot is interacting with an aircraft’s controls, automation or systems.
- A procedural error would be when a pilot is using procedures such as checklists, SOPs or emergency actions.
- A communication error occurs when pilots are interacting with other people such as ATC, ground assistants or other crew members.

A question that instructors may also ask themselves is "Is it a communications error if I fail to get the message across to a trainee during training?"

Instructors must be familiar with these classifications so they can identify a trainee’s weakness and provide guidance to address the deficiencies.

When teaching TEM, instructors must emphasise the application of human factor skills (discussed earlier). If deficiencies are identified in any of the human factor skills, they must be rectified or general flying and TEM competency will be compromised.

Mitigators that are in place such as checklists, SOPs and aviation rules must be applied and complied with. Whether a checklist is used from memory or read, instructors must accept no deviations to its application and terminology. All of these are provided to enhance safety (by helping reduce errors) and instructors must continually stress their importance.

A.1.3.6.9. TEACHING UNDESIRED AIRCRAFT STATE MANAGEMENT

Unmanaged or mismanaged threats or errors may result in an undesired aircraft state. Ideally, pilots must be taught to manage threats and errors before an undesired aircraft state develops. During flight training, instructors will be dealing with many undesired aircraft states as trainees develop their flying skills. In this context, instructors have the dual role of practicing TEM by ensuring that undesired aircraft states are managed and then teaching trainees how to do the same. Because trainees may not have the manipulative and cognitive skills of a qualified pilot, they will often not meet specified flight tolerances or procedures. Some typical examples would be:

- taxiing too fast;
- too fast or slow on final approach; or
- inability to maintain altitude or heading during straight and level flight.

Although such examples would normally be classified as undesired aircraft states when committed by a qualified pilot, they are not unusual events during flight training. The difference is that the instructor should be aware of the threats and errors and should not let an undesired aircraft state develop into an undesired outcome (accident or incident).

Highlighting undesired aircraft states as they occur, and providing guidance and advice on their prevention will enrich the trainee’s learning experience. A critical aspect that instructors must teach is the switch from error management to undesired aircraft state management. During the error management phase, a pilot can become fixated on determining the cause of an error and forget the old adage 'aviate, navigate and communicate'. It is essential for a pilot to recognise when an undesired state must be managed, and then to take appropriate action. For example, if a pilot becomes uncertain of position on a navigation flight, a timely decision would need to be made to perform a 'lost procedure'. The pilot may be tempted to ascertain why they became lost and blunder on regardless (undesired aircraft state), rather than initiating a logical procedure to re-establish their position, seek assistance from other aircraft or ATC or plan a precautionary landing.

A.1.3.6.10. ASSESSING TEM

The basic concept for TEM is simple:

- identify the threat, error or undesired aircraft state; and
- manage the threat, error or undesired aircraft state.

Although this sounds uncomplicated, assessors must obtain evidence to ensure that TEM is being practiced. Assessors cannot assume that just because a pilot completed a faultless trip, competent TEM was used.

Trainees must be questioned and their actions observed to ensure the evidence is valid, authentic, sufficient and current. On a flight test it is likely that scenarios will need to be created

to allow proper assessment of TEM. A competent pilot on a flight test is less likely to get into an undesired aircraft state or would quickly correct an undesired aircraft state (e.g. low approach speed) and it could be necessary for the assessor to artificially create such a circumstance. For example:

- when approaching a destination aerodrome simulate a thunderstorm over the airfield to duplicate both a threat and an undesired aircraft state;
- simulate a radio failure approaching a reporting point or entering a control zone;
- simulate precautionary or forced landing;
- simulation of instrument or display failure;

Instructors are required to conduct formative assessments throughout flight training. Additionally, instructors will have many more opportunities than Flight Examiners to observe the progress of a pilot's human factor and TEM skills. Because they conduct ab initio training instructors will observe the improvement of these skills and must have a good idea of the trainee's expected rate of learning.

The results of these formative assessments may require that changes to the training plan are developed to ensure that competence is achieved. Ultimately it is the instructor who ensures the trainee meets the final competency standards.

The task is more difficult for the assessor in that the human factors and TEM assessment will be made on a test generally involving only one flight. Remember that at this stage of the training the candidate must be able to manage threats and errors, so scenarios will have to be developed to ensure adequate assessment. The assessment must be holistic with TEM being assessed from the very beginning of the test.

During the pre-flight, observation and questioning will give the assessor insight into the countermeasures that a pilot applies to anticipated threats. The simulation of systems malfunctions and emergencies will afford the opportunity to evaluate threat, error and undesired state management competencies.

Hand-in-hand with TEM assessment, human factors competencies will also be open to appraisal. In fact it would be impossible to assess TEM without looking at the human factors components. Although a flight test involves the assessment of a multitude of competencies, with proper planning and some thought, assessors will be able to successfully assess human factors and TEM on licence and rating tests. As a practical example, it would be possible to assess a number of elements from the human factors and TEM standards if an assessor sets a scenario for a precautionary landing.

Consider the list below:

- **Lookout:** selection of suitable landing area, weather and terrain avoidance;
- **Situation awareness:** perception of present situation and options, action plan, potential hazard awareness, aircraft configuration and performance;
- **Decision making:** decision to conduct precautionary search, assessment of landing area and decision to land;
- **Task prioritisation:** work management and prioritisation;
- **Communications:** communications with ATC, other aircraft;
- **Threat management:** weather, low-level operations, aircraft handling;
- **Error management:** recognition of any errors, countermeasures, checklist use;
- **Undesired aircraft state:** taking appropriate action to prioritise management of an undesired aircraft state.

It can be seen from any one activity that it is possible to assess a number of competencies.

A.1.4. STANDARDS AND LEVEL OF PERFORMANCE

A.1.4.1. INDIVIDUAL RESPONSIBILITIES

Every instructor is responsible to adhere to the standards stated in the ATO manuals.

A.1.4.2. STANDARDISATION

During individual training certain standards shall be achieved to assure a safe and efficient operation. Each trainee must therefore be proficient in three areas of competence:

- Technical
- Procedural
- Interpersonal (interpersonal might be also referred to as non-technical skills.)

Each area consists of vital elements. Optimum overall performance is achieved by integrated application of these elements.

Technical:

- *Manual control of the aeroplane:* Pilots should be able to control the aeroplane in all manoeuvres and at all times and to make the flight as accurate and smooth as possible. They should be able to stabilize the airplane in all phases of flight, to maintain horizontal and vertical profile, to apply required pitch and power values, to coordinate control inputs and recognize trends by instrument scanning and react appropriate. They must be able to maintain the tolerances stipulated for license proficiency checks.
- *Knowledge of Systems:* Pilots must know their aeroplane well, with special emphasis on operation, limits and interaction of systems. They must know the system design, structure, function, limitation and how to operate the system.

Procedural:

- *Use of automation:* Pilots must be able to operate their aeroplane in the optimum mode of automation, to manage the modes of automation for the purpose of workload reduction.
- *Knowledge of procedures:* Pilots must be familiar with the published normal and abnormal operating procedures.
- *Adherence to procedures:* Pilots must be able to execute discipline in application of the accurate use of the procedures. Deviation from standard procedures might only be advisable if a higher degree of safety is achieved by doing so.

Interpersonal:

- *Communication:* Generally, communication includes information and social aspects. Crewmembers share information and assure reception and understanding. Suggestions of other crewmembers should be considered, even if one does not agree. Ambiguities and uncertainties must be announced. An open and honest communication must be encouraged and suggestions be considered. Information must be shared and understanding assured. Intentions must be clearly stated and uncertainties announced.
- *Leadership and Teamwork:* The PIC must take the lead. Social interaction conflicts have to be addressed and managed. The PIC must establish goals, control outcome and correct if necessary. He must consider the condition of others. Pilots must be initiative, cooperative, provide feedback and able to manage conflicts.

- *Workload Management:* Pilots must set clear priorities on operational tasks and distribute them appropriately. They must complete tasks in good time by using external and internal resources. They must plan ahead.
- *Situation Awareness – Threat and Error Management and Decision Making:* Pilots should recognize and anticipate factors affecting the flight. After evaluation of these factors they should choose the appropriate course of action.

A.1.4.3. STANDARDISATION REQUIREMENTS AND PROCEDURES

The standards to be achieved during various phases of training are defined by the necessity to successfully pass all required progress checks and progress tests. The standards required for progress checks and progress tests are stated in the applicable part of the TM (respective chapter 2.7 for progress checks and chapter 4.5. for progress tests).

A.1.4.4. APPLICATION OF TEST CRITERIA

Refer to TM-A.1.3.2.

A.1.5. EXAMINATIONS

A.1.5.1. THEORETICAL KNOWLEDGE EXAMINATION

<FCL.025 (a)>

A.1.5.1.1. RESPONSIBILITIES OF THE APPLICANT

Applicants shall take the entire set of theoretical knowledge examinations for a specific licence or rating under the responsibility of one Member State.

Applicants shall only take the theoretical knowledge examination when recommended by the approved training organisation (ATO) responsible for their training, once they have completed the appropriate elements of the training course of theoretical knowledge instruction to a satisfactory standard.

The recommendation by an ATO shall be valid for 12 months. If the applicant has failed to attempt at least one theoretical knowledge examination paper within this period of validity, the need for further training shall be determined by the ATO, based on the needs of the applicant.

A.1.5.1.2. PROCEDURE FOR THEORETICAL KNOWLEDGE EXAMINATIONS

Document ATO / 023 contains the theoretical knowledge examination papers for the SET(sea) (sea) class rating, consisting of 40 questions each. For the theoretical knowledge examination one examination paper related to the respective training course shall be picked randomly for each applicant. If more than one applicant takes the theoretical knowledge examination at the same time, different theoretical knowledge examination papers should be selected – as far as possible – for the individual applicants.

Each theoretical knowledge examination shall be supervised by at least one person of Baltic Seaplane determined by the CTKI.

Document ATO / 024 contains the answers for all theoretical knowledge examinations and shall be used for the assessment of each theoretical knowledge examination. **This document shall not be made available to students/applicants at any time!**

<FCL.025 (b)>

A.1.5.1.3. PASS STANDARD

A pass in a theoretical knowledge examination paper will be awarded to an applicant achieving at least 75 % of the marks allocated to that paper. There is no penalty marking.

If an applicant fails to achieve the required pass mark the procedures contained in TM-A.3.1. have to be applied.

<FCL.030>

A.1.5.2. PRACTICAL SKILL TEST

Before a skill test for the issue of a licence, rating or certificate is taken, the applicant shall have passed the required theoretical knowledge examination.

The applicant for a skill test shall be recommended for the test by the organisation/person responsible for the training, once the training is completed. The training records shall be made available to the examiner.

A.2. DOCUMENTS, RECORDS & LOGBOOKS

A.2.1. RESPONSIBILITIES

The instructor is responsible to check prior to practical flight training the students´:

- logbook,
- pilots´ licence,
- medical certificate, and
- the individual student training.

A.2.2. STANDARDISATION FOR RECORD ENTRIES

A.2.2.1. GENERAL

Entries shall be made always as soon as possible in the applicable record(s) using the English language.

In case of all paper records, all entries shall be:

- of a permanent nature,
- legibly written with ball point pen and
- in capital letters (in order to enhance the readability of handwritten entries).

A guideline for the standardisation of record entries is contained for each form in the respective part of the TM below.

A.2.2.2. LOGBOOK ENTRIES

The instructor should ensure that all aircraft and pilot logbook entries are made immediately after the flight and verify all such entries made by the student (if applicable) to detect and prevent errors at an early stage.

If the instructor is required to make an entry in the student´s pilot logbook (e.g. to confirm the training), the instructor should enter his name and licence number next to the entry and sign it accordingly. A copy of such entries should be attached to the applicable student´s training record.

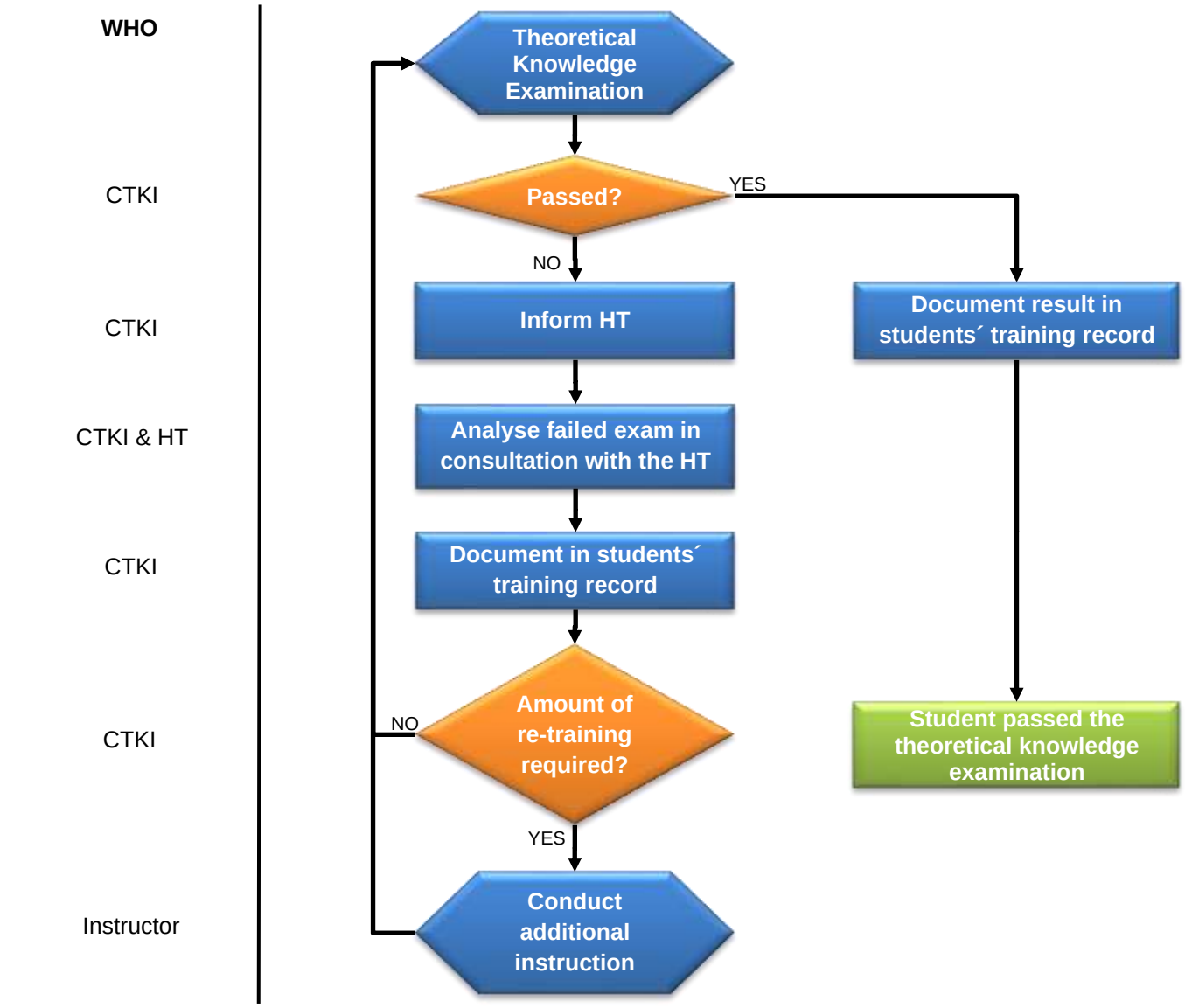
A.3. PROCEDURES FOR RE-TRAINING

A.3.1. EVALUATION AFTER A FAILED THEORETICAL KNOWLEDGE EXAM

After a failed theoretical knowledge examination the extent and scope of the training needed shall be determined by the CTKI in consultation with the HT, based on the needs of the applicant.

The CTKI shall document the required amount of re-training in the applicable student´s training record.

Before re-taking the theoretical knowledge examinations, the applicant shall undertake further training at Baltic Seaplane ATO as determined by the CTKI and the HT, based on the needs of the applicant.

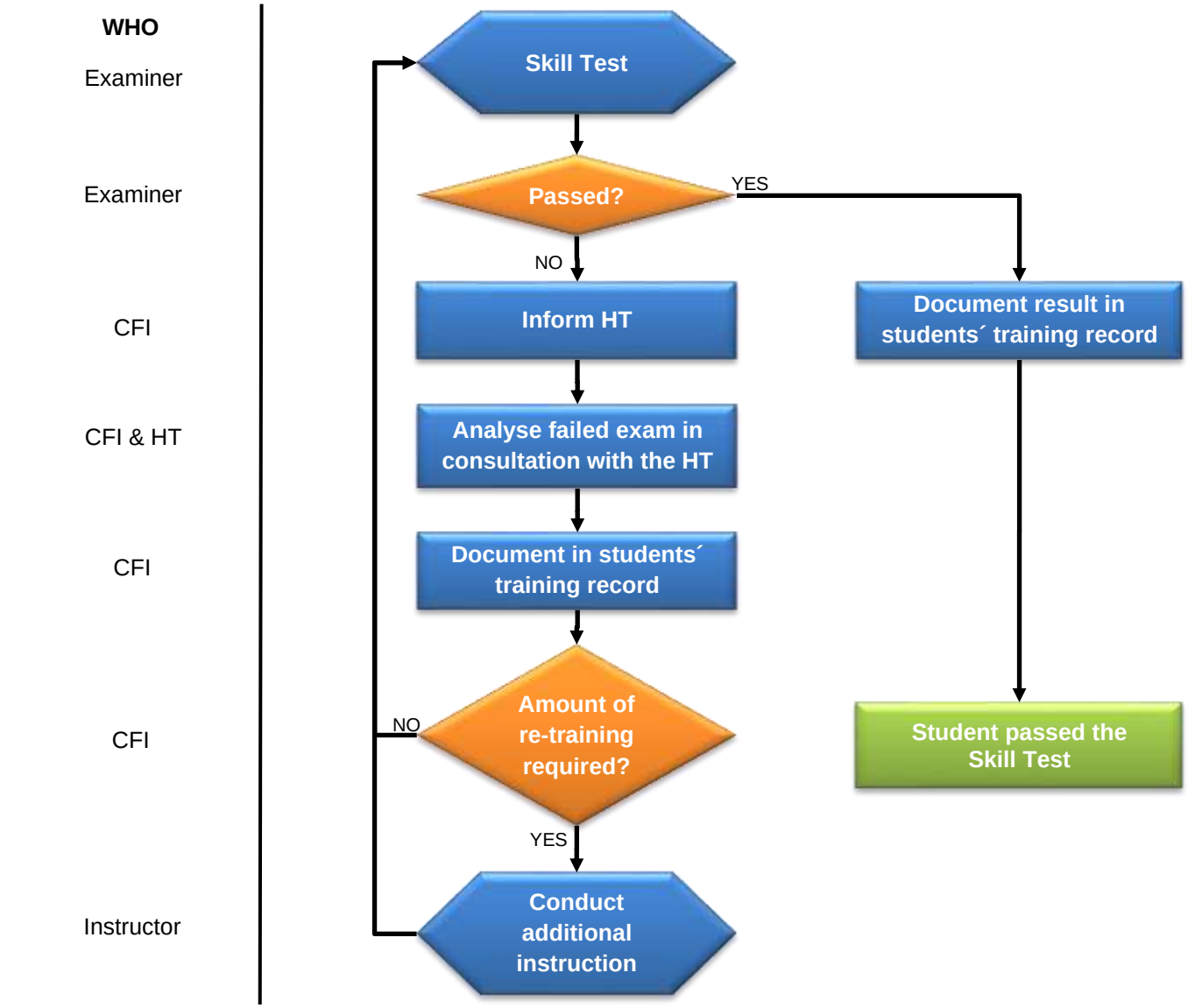


A.3.2. EVALUATION AFTER A FAILED SKILL TEST

After a failed skill test the extent and scope of the training needed shall be determined by the CFI in consultation with the HT, based on the needs of the applicant.

The CFI shall document the required amount of re-training in the applicable student´s training record.

Before re-taking the theoretical knowledge examinations, the applicant shall undertake further training at Baltic Seaplane ATO as determined by the CFI and the HT, based on the needs of the applicant.



A.4. SAFETY TRAINING

It is the responsibility of the instructor to ensure that the student has received an appropriate safety training at the beginning of the students´ training.

All students participating in theoretical knowledge instruction shall receive an oral introduction regarding alarm signals and evacuation procedures of the facility.

All students participating in practical flight training shall receive an oral introduction on safety and emergency procedures concerning the ramp / docking site as well as the aircraft.

Due to the fact that all ATO training courses have a very limited duration only, regular emergency drills are not feasible to be performed with every single student. Nevertheless each student shall receive an oral introduction from an instructor regarding emergency drill procedures.

Part B – Single Engine Turbine SET(sea) – INITIAL (Cessna C208 Amphibian)

B.1. TRAINING PLAN

B.1.1. AIM AND OBJECTIVES OF THE COURSE

B.1.1.1. GENERAL

The aim of this course is to provide a student without a valid SET(sea) class rating:

- a training course for the issue of a SET(sea) class rating i.a.w. FCL.725(a); and
- training to the level necessary to:
  - safely operate the SET(sea) variant as PIC; and
  - pass the SET(sea) class rating skill test on the C208 (sea) variant.

B.1.1.2. THEORETICAL KNOWLEDGE INSTRUCTION

< AMC1 FCL.725.A.(b)

The aim of the theoretical knowledge instruction is to learn:

- the importance of preparation for flight and the safe planning taking into consideration all the factors for manoeuvring the aircraft on the wind, tidal currents, high and low water times and water movements at sea, river estuaries and lakes In addition, icing conditions, ice covered water and broken ice flows;
- the techniques about the most critical moments at take-off, landing, taxiing and mooring the aircraft;
- the construction methods and characteristics of floats and water rudders and the importance of checking for leaks in the floats;
- the necessary requirements for the compliance of the rules for the avoidance of collisions at sea, in regard to sea charts, buoys and lights and horns.

After completing the theoretical knowledge instruction the student should be able to:

- describe the factors that have significance for planning and decision about initiation of seaplane flying and alternative measures for completion of flight;
- describe how the water level is affected by air pressure, wind, tide, regularisations and the flight safety depending on changes in the water level;
- describe the origin of different ice conditions in water areas;
- interpret nautical charts and maps about depths and shoals and risk for water currents, shifts of the wind, turbulence;
- decide what required equipment to bring during seaplane flying according to the operational requirements;
- describe the origin and extension of water waves, swells and water currents and their effect on the aeroplane;
- describe how water and air forces effect the aeroplane on water;
- describe the effect of water resistance on the aeroplanes' performance on glassy water and during different wave conditions;

- describe the consequences of taxiing with too high engine RPM;
- describe the effect of pressure and temperature on performance at take-off and climb from lakes located at higher altitude;
- describe the effect of wind, turbulence, and other meteorological conditions of special importance for flight over lakes, islands in mountain areas and other broken ground;
- describe the function of the water rudder and its handling, including the effect of lowered water rudder at take-off and landing;
- describe the parts of the float installation and their function;
- describe the effect of the floats on the aeroplanes' aerodynamics and performance in water and in air;
- describe the consequences of water in the floats and fouling of float bottoms;
- describe aviation requirements that apply specifically for the conduct of aircraft activity on water;
- describe requirements about animal, nature and environment protection of significance for flight by seaplane, including flight in national parks;
- describe the meaning of navigation buoys;
- describe the organisation and working methods of the Sea Rescue Service;
- describe the requirements in ICAO Annex 2 as set out in paragraph 3.2.6 'Water operation', including relevant parts of the Convention on the International Regulations for Preventing Collisions at Sea.

B.1.1.3. PRACTICAL TRAINING

< AMC1 FCL.725.A.(b)

The aim of the practical training is to learn:

- the skills in manoeuvring aeroplanes on water and in mooring the aeroplane;
- the skills required for the reconnaissance of landing and mooring areas from the air, including the take-off area;
- the skills for assessing the effects of different water depths, shoals, wind, height of waves and swell;
- the skills for flying with floats about their effect on performance and flight characteristics;
- the skills for flying in broken ground during different wind and turbulence conditions;
- the skills for take-off and landing on glassy water, different degree of swell and water current conditions.

After the practical training the student should be able to:

- handle the equipment that shall be brought during seaplane flying;
- perform pre-flight daily inspection on aeroplane, float installation and special seaplane equipment, including emptying of floats;
- sail, taxi and turn the aeroplane at swell with correct handling of the water rudder;
- taxi on the step and perform turns;
- establish the wind direction with the aeroplane;
- take necessary actions if loss of steering ability and person falling overboard;
- make land and moor aeroplane at bridge, buoy and beach with the use of appropriate knots to secure the aircraft;

- maintain given rate of descent by means of variometer only;
- perform take-off and landing on glassy water with and without outer references;
- perform take-off and landing under swell;
- perform power-off landing;
- from the air, reconnaissance of landing, mooring and take-off areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
- determine wind direction and assess wind strength from water level and when airborne;
- state, for the aeroplane type in question;
    - maximum wave height allowed;
    - maximum number of RPM allowed during taxi;
- describe how flying with floats affects the performance and flight characteristics of the aeroplane;
- take corrective action at critical moments due to wind shear and turbulence;
- navigate on the water with reference to buoys markers, obstacles and other traffic on the water.

B.1.2. PRE - ENTRY REQUIREMENTS

Prior to the start of the course the student shall hold:

- either a valid **PPL(A)** or **CPL(A)** or **ATPL(A)** i.a.w. Part FCL;
- a valid **medical certificate** (applicable to the licence); and
- a valid **English** language proficiency endorsement **level 4 or higher**.

NOTE

It is the responsibility of the CFI to verify that each student of this course meets the pre-entry requirements (refer to OMM B.1.4.5.3.).

B.1.3. CREDITS FOR PREVIOUS EXPERIENCE

B.1.3.1. STUDENT CHANGES TO BALTIC SEAPLANE FROM ANOTHER ATO

In case a student changes the ATO and has received already specific training elements in another ATO, the following process shall be followed in order to determine the content and quantity of previous training amount:

1. The HT shall request written documentation from the previous ATO with regards to detailed training amount and content. The HT may only grant credit only for those previous training received from another ATO if he is absolutely certain in respect of the amount and content of such training.
2. In addition the HT may request an assessment (written and/or oral and/or practical) of the candidate in order to cross-check the training status of the candidate. It has to be noted, that such an assessment shall never be a substitute for missing training documentation!
3. Based on the documentation received as well as on an optional assessment of the candidate, the HT shall finally decide on the amount of possible credits for previous training with another ATO and shall document this in the applicable student´s record together with the documentation received from the previous ATO.

B.1.3.2. OTHER CREDITS

Any other credits for previous training or experience as those granted directly by the Basic Regulation and its Implementing Rules or in TM-B.1.3.1. above must be approved by the competent authority on a case by case basis.

B.1.4. TRAINING SYLLABI

B.1.4.1. PHASE 1 – THEORETICAL KNOWLEDGE INSTRUCTION

1. Aeroplane systems structure and equipment, normal operation of systems and malfunctions
2. Limitations
3. Performance, Flight planning
4. Load, Balance and Service
5. Emergency Procedures
6. Special requirements for Garmin 430/530 equipped models
7. Seaplane specifics

For further details refer to TM-B.4.1.

B.1.4.2. PHASE 2 – PRACTICAL FLIGHT TRAINING

• Mission 1 – Familiarization, Water taxi, Sail techniques, Anchoring, Docking & Ramping

NOTE

Mission 1 is a NON-FLYING mission consisting of aircraft operation on the water only. It is intended as a transition from theoretical knowledge instruction to the practical flight training, introduce the student to good seamanship and familiarize the student with the new environment.

• Mission 2 – Airwork & Introduction to Amphibian Operations
• Mission 3 – Water take-off & full stop landing, Water work
• Mission 4 – Land landings & Amphibious gear operation
• Mission 5 – Water landings & Beaching and Buoying
• Mission 6 – Emergency procedures & Emergency landings
• Mission 7 – Progress check

For further details refer to TM-B.2.1.

B.1.5. TIME SCALE

B.1.5.1. MINIMUM DURATION

The following is considered as a minimum time scale required for the training:

Phase	*Topics*	***Minimum duration (hrs)***
Theoretical knowledge instruction	Chapters 1.1. – 7.4,	**20,0 hrs**
Practical flight training	Mission 1 – 7	**12,0 hrs (block time – dual instruction)**

< FCL.725.A. (b)>

NOTE

FCL.725.A (b) requires:
"Single-pilot aeroplanes-sea. The training course for single-pilot aeroplane-sea ratings shall include theoretical knowledge and flight instruction. The flight training for a class or type rating-sea for single-pilot aeroplanes-sea shall include at least 8 hours of dual flight instruction if the applicant holds the land version of the relevant class or type rating, or ***12 hours if the applicant does not hold such a rating****."*

B.1.6. TRAINING PROGRAMME

B.1.6.1. DAILY AND WEEKLY TRAINING PROGRAMMES

The theoretical knowledge instruction and flight training should be performed as expeditiously as possible, subject to the:

- prevailing weather situation,
- student progress,
- aircraft/classroom availability,
- instructor availability, and
- student availability.

The following schedule should be considered as a reference:

DAY 1	**4,0 hrs classroom (theory)** *LUNCH BREAK* **4,0 hrs classroom (theory)**
DAY 2	**4,0 hrs classroom (theory)** *LUNCH BREAK* **4,0 hrs classroom (theory)**
DAY 3	**4,0 hrs classroom (theory)** *LUNCH BREAK* **Mission 1** (transition phase)
DAY 4	*DAY OFF*
DAY 5	**Mission 2**
DAY 6	**Mission 3**
DAY 7	**Mission 4**
DAY 8	**Mission 5**
DAY 9	**Mission 6**
DAY 10	*DAY OFF*
DAY 11	**Mission 7** *BREAK* **WRITTEN TEST**
DAY 12	**SKILL TEST**

B.1.6.2. BAD WEATHER CONSTRAINTS

The weather minima in accordance with OM shall be adhered to at all times.

If a planned training flight cannot be commenced due to the present and/or forecasted weather conditions, this flight should be rescheduled.

Prolonged periods of bad weather should be considered for scheduling of training flights.

B.1.6.3. PROGRAMME CONSTRAINTS

Theoretical Knowledge Instruction may be gained during

- “Evening”-courses (3-4 hrs/day, 1-5 days/week), or
- “Weekend”-courses (2-3 days/week, 8-10 hrs/day; e.g. Friday to Sunday), or
- “Block”-courses (daily, 8-10 hrs/day; maximum 5 days in a row followed by minimum 2 days off; e.g. Sunday through Thursday)

depending on student availability and other training arrangements made.

The flight and duty time limitations for students (refer to OM A.14.2.2.) and instructors (refer to OM A.14.1.2.) shall be observed at all times.

B.1.6.4. RESTRICTIONS IN RESPECT OF DUTY PERIODS FOR STUDENTS

The flight and duty time limitations for students (refer to OM A.14.2.2.) shall be observed at all times.

B.1.6.5. DURATION OF FLIGHTS

The flight and duty time limitations for students (refer to OM A.14.2.2.) and instructors (refer to OM A.14.1.2.) shall be observed at all times.

B.1.6.6. MAXIMUM FLYING HOURS IN ANY DAY OR NIGHT

The flight and duty time limitations for students (refer to OM A.14.2.2.) and instructors (refer to OM A.14.1.2.) shall be observed at all times.

B.1.6.7. MAXIMUM NUMBER OF TRAINING FLIGHTS IN ANY DAY OR NIGHT

The flight and duty time limitations for students (refer to OM A.14.2.2.) and instructors (refer to OM A.14.1.2.) shall be observed at all times.

B.1.6.8. MINIMUM REST PERIOD BETWEEN DUTY PERIODS.

The minimum rest periods for students (refer to OM A.15.2.) and instructors (refer to OM A.15.1.) shall be observed at all times.

B.1.7. TRAINING RECORDS

B.1.7.1. RULES FOR SECURITY OF RECORDS AND DOCUMENTS

Refer to OMM C.1.2.4.

B.1.7.2. ATTENDANCE RECORD

For details regarding the use of the classroom attendance record for theoretical knowledge instruction refer to TM-A.1.2.2.

B.1.7.3. PERSONS RESPONSIBLE FOR CHECKING RECORDS AND STUDENTS´ LOGBOOKS

Refer to TM-A.2.1.

B.1.7.4. NATURE AND FREQUENCY OF RECORD CHECKS

Refer to OMM C.1.2.5.

B.1.7.5. RULES CONCERNING LOGBOOK ENTRIES

Refer to TM-A.2.2.2.

B.1.7.6. TRAINING RECORD FORMS

The training record form for this course Doc ID: **ATO / 008** in the latest revision (refer to OMM B.5.5.) should be used.

B.1.7.7. STANDARDISATION OF ENTRIES IN TRAINING RECORDS

The following guideline is intended to standardise the entries in the respective student training record:

General

The name of the student shall be entered on each page in the top right hand corner.

Section – Cover sheet

- *Item 1 – Last name:*
  The last name of the student should be entered.
- *Item 2 – First name:*

The first name of the student should be entered.

- *Item 3 – Company:*
  The name of company the student is working for should be entered, if applicable.
- *Item 4 – Type of pilot licence:*
  The type of the students´ pilot licence should be entered – e.g. "*ATPL(A)".*
- *Item 5 – Pilot licence number:*
  The number of the students´ pilot licence should be entered – e.g. "*AT.FCL.00000".*
- *Item 6 – Date of birth:*
  The students´ date of birth should be entered (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"*.
- *Item 7 – Address:*
  The students´ address should be entered.
- *Item 8 – ZIP:*
  The ZIP code belonging to the students´ address should be entered.
- *Item 9 – City:*
  The city belonging to the students´ address should be entered.
- *Item 10 – Email:*
  The students´ email address should be entered.
- *Item 11 – Best contact:*
  The telephone / mobile number through which the student may be contacted best should be entered.
- *Item 12 – Emergency contact(s):*
  The name and contact number(s) of those persons related to the student and which should be contacted in case of an emergency should be entered.
- *Item 13 – Copies of the following student´s documents have been attached to the record:*
  Set mark ☒ if copies of the following documents of the student should be attached to the training record:
  - Pilots´ licence,
  - Medical certificate,
  - Logbook, and
  - Photo ID.

  If additional documents are attached set mark ☒ *Other:* and describe the document attached.
- *Item 14 – Date training started / Date training ended:*
  The following should be entered:
  - Column 1: the date when the training course was started (in the format DD MMM YYYY) – e.g. *"30 JAN 2016"*; and
  - Column 2: the date when the training course ended (in the format DD MMM YYYY) – e.g. *"30 JAN 2016"*.

Section – Training Summary

- *Item 1 – Training Course / Course ID / Date training started / Date training ended:*

The following should be entered:

- Column 1: The name of the training course: *"Class Rating SET(sea) – INITIAL, SET(sea) Cessna C208 variant"*(already prefilled);
- Column 2: The course ID: *"SET.SEA/01"* (already prefilled);
- Column 3: The date when the training course was started (in the format DD MMM YYYY) – e.g. "*30 JAN 2016" – as stated in Section Cover sheet, item 14, column 1*;
- Column 4: The date when the training course ended (in the format DD MMM YYYY) – e.g. "*30 JAN 2016" – as stated in Section Cover sheet, item 14, column 2*;

- *Item 2 – Total duration of theoretical knowledge instruction / Date of final Progress Test / Result of final Progress Test /:*

The following should be entered:

- Column 1: The sum of the total theoretical knowledge instruction (in the format HH:MM) – e.g. "*20:00"* – as stated in *Section Theoretical Knowledge Instruction, item 2*;
- Column 2: The date when the final progress test was completed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"* – as stated in *Section Progress Test, item 1, column 1*);
- Column 3: The result of the final progress test – either "PASSED" or "FAILED" – as stated in *Section Progress Test, item 1, column 2*;

- *Items 3 to 9 – Aircraft / Date completed / Take-offs / Landings / Block Time:*

The following should be entered:

- Column 1: Either of the following:
  - *"AIRCRAFT"*, if the mission was competed on the aircraft only; or
  - *"FSTD"*, if the mission was competed on a FSTD only; or
  - *"AIRCRAFT/FSTD"*, if the mission was competed partially on the aircraft and partially on a FSTD ; or
- Column 2: The date when the mission was finally passed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"*;
- Column 3: The amount of take-offs completed during the respective mission*;*

NOTE

If the mission was repeated after a fail the sum of all take-offs during these missions shall be added and entered here.

- Column 4: The amount of landings completed during the respective mission*;*

NOTE

If the mission was repeated after a fail the sum of all landings during these missions shall be added and entered here.

- Column 5: The amount of block time completed during the respective mission (in the format HH:MM) – e.g. "*01:59"*.

NOTE

If the mission was repeated after a fail the sum of all block times during these missions shall be added and entered here.

- *Item 10 – Subtotal on aircraft:*
  - Column 1: The sum of all take-offs during all *Missions 1 to 6* which have been performed on the aircraft;
  - Column 2: The sum of all landings during all *Missions 1 to 6* which have been performed on the aircraft;
  - Column 3: The sum of all block times during all *Missions 1 to 6* which have been flown on the aircraft (in the format HH:MM) – e.g. "*01:59".*
- *Item 11 – Subtotal on FSTD:*
  - Column 1: If applicable, The sum of all take-offs during all *Missions 1 to 6* which have been performed on an FSTD;
  - Column 2: If applicable, the sum of all landings during all *Missions 1 to 6* which have been performed on an FSTD;
  - Column 3: If applicable, the sum of all block times during all *Missions 1 to 6* which have been flown on an FSTD (in the format HH:MM) – e.g. "*01:59".*
- *Item 12 – Total:*
  - Column 1: The sum of all take-offs during all *Missions 1 to 6*;
  - Column 2: The sum of all landings during all *Missions 1 to 6*;
  - Column 3: The sum of all block times during all *Missions 1 to 6* (in the format HH:MM) – e.g. "*10:59".*
- *Item 13 – Remarks:*

  The HT may enter remarks regarding the whole training course (if applicable);
- *Item 14 – Date / Student Signature / Signature, Stamp Head of Training:*
  - Column 1: The date the training has been completed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"*;
  - Column 2: The HT shall sign and may stamp here in order to confirm, that he has reviewed the training record i.a.w. OMM-C 1.2.5. and that the training record is finally closed.

Section – Writen Test Result

NOTE

The skill test is not part of the training course! Therefore completion of this section is optional.

- *Item 1 – Date completed / A/C Registration / A/C Type / Take-offs / Landings:*
  - Column 1: The date of the first attempt of the written test (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"*;
  - Column 2: The result of the first attempt of the written test in percent;
  - Column 3: The date of the second attempt of the written test (in the format DD MMM YYYY) – e.g. "*30 JAN 2016"*;
  - Column 4: The result of the second attempt of the written test in percent;

Section – Practical Skill Test Result

NOTE

The skill test is not part of the training course! Therefore completion of this section is optional.

- *Item 1 – Date completed / A/C Registration / A/C Type / Take-offs / Landings:*

  The examiner may enter in:

  - Column 1: The date the skill test has been completed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
  - Column 2: The aircraft registration on which the skill test has been completed – e.g. "*A6-SEA*";
  - Column 3: The aircraft type on which the skill test has been completed – e.g. "*C208*";
  - Column 4: The amount of take-offs completed during the skill test;
  - Column 5: The amount of landings completed during the skill test;

- *Item 2 – From / To / Result / Block time:*

  The examiner may enter in:

  - Column 1: The place of departure of the skill test;
  - Column 2: The place of arrival of the skill test;
  - Column 3: The result of the progress test – either "PASSED" or "FAILED";
  - Column 4: The sum of all block times during the skill test (in the format HH:MM) – e.g. "01:59".

- *Item 3 – Examiner name / Authorisation number / Signature, stamp:*

  The examiner may in:

  - Column 1: Enter his full name;
  - Column 2: Enter his examiner authorisation number;
  - Column 3: Sign and stamp.

Section – Theoretical knowledge instruction

- *Items 1 to 7 – Actual Duration / Date / of completion / TKI Signature:*

  The details of the theoretical knowledge instruction should be entered as follows:

  - Column 1: The actual duration of the theoretical knowledge instruction (in the format HH:MM) – e.g. "*08:00*";
  - Column 2: The date when the specific training objective was completed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
  - Column 3: The TKI providing theoretical knowledge instruction should sign the appropriately completed objective of theoretical knowledge instruction.

Section – Progress Test

- *Item 1 – Date / Result / Signature Instructor / Signature Trainee:*

  The details of the progress test should be entered as follows:

  - Column 1: The date when the progress test was completed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
  - Column 2: The result of the progress test – either "PASSED" or "FAILED".
  - Column 3: The instructor should sign if the progress test is finished; and
  - Column 4: The student should sign in order to document that he is aware of the result of the progress test.

Section – Mission 1

- *Item 1 – Instructor / Date:*

The following should be entered:

- Column 1: The name of the instructor;
- Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";

- *Item 2 – CRI Signature:*

  The CRI should sign here, if he has completed the Ramp / Docking Site safety training with the student i.a.w. the contents of TM-B.1.8.

- *Item 3:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".
- *Item 4:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 5 to 16:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.
- *Item 17 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);

- *Item 18 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** – e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**; e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 1 form should be attached to the training record.

- *Item 19 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 2

- *Item 1 – Instructor / Date:*

  The following should be entered:
  - Column 1: The name of the instructor;
  - Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".
- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 4 to 21:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.
- *Item 22 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);
- *Item 23 –Total mission grading / Passed / Failed:*

- Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
- Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** –

  e.g. PASSED;
- Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**;

  e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 2 form should be attached to the training record.

- *Item 24 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 3

- *Item 1 – Instructor / Date:*

  The following should be entered:
  - Column 1: The name of the instructor;
  - Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".
- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 4 to 20:*
  - Column 1: Gives a guideline of the practical training content;

- Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
- Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
- Column 4: The CRI should initial if the training element has been performed.

- *Item 21 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);

- *Item 22 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** –

    e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**;

    e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 3 form should be attached to the training record.

- *Item 23 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 4

- *Item 1 – Instructor / Date:*

  The following should be entered:
  - Column 1: The name of the instructor;
  - Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";

- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".

- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";

- Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. *"00:40"*;
- Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. *"5"*;
- Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. *"5"*.

- *Items 4 to 24:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.
- *Item 25 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);
- *Item 26 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** – e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**; e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 4 form should be attached to the training record.

- *Item 27 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 5

- *Item 1 – Instructior / Date:*

  The following should be entered:
  - Column 1: The name of the instructor;
  - Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. *"30 JAN 2016"*;
- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. *"A6-SEA"*;
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. *"08:00"*;
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. *"09:00"*;
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. *"01:00"*;

- Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
- Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".

- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 4 to 19:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.
- *Item 20 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);
- *Item 21 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** – e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**; e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 5 form should be attached to the training record.

- *Item 22 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 6

- *Item 1 – Instructor / Date:*

  The following should be entered:
  - Column 1: The name of the instructor;

- Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";

- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".
- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 4 to 19:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.
- *Item 20 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);
- *Item 21 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** – e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**; e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 6 form should be attached to the training record.

- *Item 22 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Mission 7

- *Item 1 – Instructor / Date:*
  The following should be entered:
  - Column 1: The name of the instructor;
  - Column 2: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
- *Item 2:*
  - Column 1: The aircraft registration *should be entered* – e.g. "*A6-SEA*";
  - Column 2: Off Block Time in UTC should be enter the (format HH:MM) – e.g. "*08:00*";
  - Column 3: On Block Time in UTC should be enter the (format HH:MM) – e.g. "*09:00*";
  - Column 4: Calculate & enter Block Time of the mission (format HH:MM) – e.g. "*01:00*";
  - Column 5: The airport/operating site of departure *should be entered* – e.g. "*DJH*";
  - Column 6: The airport/operating site of arrival *should be entered* – e.g. "*DJH*".
- *Item 3:*
  - Column 1: The applicable aircraft Techlog Number should be entered – e.g. "*00001*";
  - Column 2: Take-off Time in UTC should be entered (format HH:MM) – e.g. "*08:10*";
  - Column 3: Landing Time in UTC should be entered (format HH:MM) – e.g. "*08:50*";
  - Column 4: Calculate & enter Flight Time of the mission (format HH:MM) – e.g. "*00:40*";
  - Column 5: The CRI should enter the number of Take-offs performed by the Student during the mission – e.g. "*5*";
  - Column 6: The CRI should enter the number of Landings performed by the Student during the mission – e.g. "*5*".
- *Items 4 to 21:*
  - Column 1: Gives a guideline of the practical training content;
  - Column 2: The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 3: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.; and
  - Column 4: The CRI should initial if the training element has been performed.

- *Item 22 – Fit for Skill Test:*
  - If all the items 2 – 19 in this mission have been graded with either **S** or **AS** the student is fit for the Skill Test and the *YES* should be circled –

    e.g. 

- If one or more item (items 2 – 19) in this mission have been graded with either **SI** or **US** the student is not fit for the Skill Test and the *NO* should be circled –

  e.g. NO

- *Item 23 – Remarks:*

  The CRI may enter remarks regarding this session (if applicable);

- *Item 24 –Total mission grading / Passed / Failed:*
  - Column 1: The overall mission grading (**AS** / **S** / **SI** / **US**) should be entered by the CRI i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 2: PASSED shall be circled, if the total mission grading is either **S** or **AS** –

    e.g. PASSED;
  - Column 3: FAILED shall be circled, if the total mission grading is either **SI** or **US**;

    e.g. FAILED;

NOTE

If the mission is considered "FAILED" this mission shall be repeated and an additional Mission 7 form should be attached to the training record.

- *Item 25 –Signatures:*
  - Column 1: The student should sign here;
  - Column 2: The CRI should sign here.

Section – Repetition of training items

- *Item 1 – Mission No. / Item No. / Grades / Date / Name of CRI / CRI Initial:*

  The following should be entered:
  - Column 1: The mission number of the item to be repeated;
  - Column 2: The item number to be repeated;
  - Column 3 The CRI should enter the grading of the first attempt (**AS** / **S** / **SI** / **US**) i.a.w. the grading criteria of TM-A.1.3.2.;
  - Column 4: The CRI should enter the grading of the second attempt (**AS** / **S** / **SI** / **US**), if applicable, i.a.w. the grading criteria stated in TM-A.1.3.2.;
  - Column 5: The date when the was performed (in the format DD MMM YYYY) – e.g. "*30 JAN 2016*";
  - Column 6: The name of the instructor; and
  - Column 7: The CRI should initial if the training element has been performed.
- *Item 2 – Remarks:*
  - Column 1: The CRI may enter remarks regarding this session (if applicable);

B.1.8. SAFETY TRAINING

B.1.8.1. INDIVIDUAL RESPONSIBILITIES

Refer to TM-A.4.

B.1.8.2. ESSENTIAL EXERCISES

Refer to TM-A.4.

B.1.8.3. EMERGENCY DRILLS (FREQUENCY)

Refer to TM-A.4.

B.1.8.4. DUAL CHECKS (FREQUENCY AT VARIOUS STAGES)

NOT APPLICABLE

B.1.8.5. REQUIREMENTS BEFORE FIRST SOLO DAY, NIGHT OR NAVIGATION

NOT APPLICABLE

B.1.9. TESTS AND EXAMINATIONS

B.1.9.1. FLYING

B.1.9.1.1. PROGRESS CHECKS

Refer to TM-B.2.7.

B.1.9.1.2. SKILL TESTS

The skill test is not part of the training course. It is the sole responsibility of the student to arrange a check ride with an appropriate examiner.

B.1.9.2. THEORETICAL KNOWLEDGE INSTRUCTION

B.1.9.2.1. PROGRESS TESTS

Refer to TM-B.4.5.

B.1.9.2.2. THEORETICAL KNOWLEDGE EXAMINATIONS

The applicant for a SET(sea) class rating shall pass a theoretical knowledge examination organised by Baltic Seaplane ATO i.a.w. TM-A.1.5.1.2. to demonstrate the level of theoretical knowledge required for the safe operation of the SET(sea) aircraft class.

B.1.9.3. AUTHORISATION FOR THE THEORETICAL KNOWLEDGE EXAMINATION AND THE SKILL TEST

B.1.9.3.1. THEORETICAL KNOWLEDGE EXAMINATION

Before a theoretical knowledge examination for the issue of the rating is taken, the applicant shall have completed the theoretical knowledge instruction and passed the required progress test (TM-B.4.5.).

B.1.9.3.2. SKILL TEST

Before a skill test for the issue of the rating is taken, the applicant shall have:

- completed the theoretical knowledge examination (TM-B.1.9.3.1.);
- completed the practical flight training and passed the required progress check (TM-B.2.7.); and
- received a recommendation (“Fit for skill test confirmation”), which is valid for 12 months.

B.1.9.4. RULES CONCERNING REFRESHER TRAINING BEFORE RE-TEST

Refer to TM-A.3.1. and TM-A.3.2.

B.1.9.5. TEST REPORTS AND RECORDS

Progress checks (flying), progress tests (theoretical knowledge instruction) and authorization for the skill test shall be recorded in the students´ training file.

B.1.9.6. PROCEDURES FOR EXAMINATION PAPER PREPARATION, TYPE OF QUESTION AND ASSESSMENT, STANDARD REQUIRED FOR 'PASS'

NOT APPLICABLE

B.1.9.7. PROCEDURE FOR QUESTION ANALYSIS AND REVIEW AND FOR RAISING REPLACEMENT PAPERS

NOT APPLICABLE

B.1.9.8. EXAMINATION RESIT PROCEDURES

NOT APPLICABLE

B.1.10. TRAINING EFFECTIVENESS

B..10.1. INDIVIDUAL RESPONSIBILITIES

A high level of commitment of cooperation to achieve the applicable training standards and goals is expected from all students.

For further information on students´ responsibilities refer to OM-A.3.2.

All training and services provided shall be performed to the student´s entire satisfaction and maximum effort on the student´s skill improvement.

B.1.10.2. GENERAL ASSESSMENT

Refer to OM-A.2.3.

B.1.10.3. LIAISON BETWEEN DEPARTMENTS

Refer to OM-A.2.3.

B.1.10.4. IDENTIFICATION OF UNSATISFACTORY PROGRESS (INDIVIDUAL STUDENTS)

Refer to OM-A.2.4.

B.1.10.5. ACTIONS TO CORRECT UNSATISFACTORY PROGRESS

Refer to OM-A.2.4.

B.1.10.6. PROCEDURE FOR CHANGING INSTRUCTORS

Refer to OM-A.2.4.

B.1.10.7. MAXIMUM NUMBER OF INSTRUCTOR CHANGES PER STUDENT

Refer to OM-A.2.5.

B.1.10.8. INTERNAL FEEDBACK SYSTEM FOR DETECTING TRAINING DEFICIENCIES

Refer to OMM-C.1.2.8..

B.1.10.9. PROCEDURE FOR SUSPENDING A STUDENT FROM TRAINING

Refer to OM-A.2.4. – with regards to inadequate training progress.

Refer to OM-A.4.1.2. – with regards to disciplinary action.

B.1.10.10. DISCIPLINE

Refer to OM-A.4.1.1.

B.1.10.11. REPORTING AND DOCUMENTATION

Refer to OMM-C.1.2.2.

B.1.11. STANDARDS AND LEVEL OF PERFORMANCE

B.1.11.1. INDIVIDUAL RESPONSIBILITIES

Refer to TM-A.1.4.1.

B.1.11.2. STANDARDISATION

Refer to TM-A.1.4.2.

B.1.11.3. STANDARDISATION REQUIREMENTS AND PROCEDURES

Refer to TM-A.1.4.3.

B.1.11.4. APPLICATION OF TEST CRITERIA

Refer to TM-A.1.3.2.

B.2. BRIEFING AND AIR EXERCISES

B.2.1. AIR EXERCISES

B.2.1.1. MISSION 1 (TRANSITION) – FAMILIARIZATION, WATER TAXI, SAIL TECHNIQUES, ANCHORING, DOCKING & RAMPING

AIM OF THE MISSION

The aim of this mission is to familiarise the student with the aircraft (including checklist work and cockpit flow procedures) as well as to learn;

- the skills in manoeuvring aeroplanes on water and in mooring the aeroplane;
- the skills in docking and ramping procedures;
- the skills in anchoring and emergency procedures on water;
- the skills in seamanship as required for a safe seaplane operation.

MISSION OBJECTIVES

After the mission the student should be able to:

- handle the equipment that shall be brought during seaplane flying;
- perform pre-flight daily inspection on aeroplane, float installation and special seaplane equipment, including emptying of floats;
- sail, taxi and turn the aeroplane at swell with correct handling of the water rudder;
- establish the wind direction with the aeroplane;
- take necessary actions if loss of steering ability and person falling overboard;
- navigate on the water with reference to buoys markers, obstacles and other traffic on the water

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Checklist work and cockpit flow procedures
- Docking and ramping procedures
- Taxiing, turning and sailing techniques

- Anchoring & emergency procedures on water
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Outside check** (incl. use of checklist, pre-flight daily inspection, and equipment required for seaplane operation)
- **Condition of floats and gear** (incl. pumping of floats, etc.)
- **Cockpit familiarization** (incl. life vests, seat belts, etc.)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
- **Water techniques (engine running)**
  - Leaving the dock
  - Gear and water rudder check
  - Taxi into the wind
  - Taxi 360° LH circle
  - Taxi 360° RH circle
  - Taxi downwind
  - Taxi crosswind
  - Taxi on the step and perform turns
- **Sail techniques (engine out)**
  - Turns with aircraft rudder into the wind
  - Turns with aircraft rudder into downwind
  - Direction changes with water rudder and aircraft rudder
  - On float anchoring
- **Docking procedure**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review the difference between Single Pilot and Multi Crew Pilot Operation;
- Review the Power On and Power Off flows paired with checklist work,
- Review seamanship
- Review docking / ramping procedures.
- Review the importance and demonstrated performance in relation to anchoring in case of engine failure on water;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission.

B.2.1.2. MISSION 2 – AIRWORK & INTRODUCTION TO AMPHIBIAN OPERATIONS

AIM OF THE MISSION

The aim of this mission is the initial familiarization of the student to the amphibious operation of the SET(sea) aeroplane and to learn:

- the skills of flight planning for the amphibian operation of the SET(sea);
- the skills for single-pilot SOPs and checklist work;
- the skills for water take-off;
- the skills for flying with floats about their effect on performance and flight characteristics;
- the skills for land landing;
- the skills for taxing an amphibious aircraft on land;
- the skills for land take-off; and
- the skills for water landing; and
- the skills to moor aeroplane at the dock with the use of appropriate knots to secure the aircraft

MISSION OBJECTIVES

After the mission the student should be able to:

- establish the flight planning documentation for the amphibian operation of the SET(sea)
- state the single-pilot SOPs
- perform checklist work in single-pilot operation
- describe the technique for water take-off
- describe how flying with floats affects the performance and flight characteristics of the aeroplane
- describe the technique for land landing
- describe the safe taxi operation on land with an amphibious aircraft
- describe the technique for land take-off
- describe the technique for water landing
- describe the techniques to moor the aeroplane at the dock and use of appropriate knots to secure the aircraft

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation

- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables
- Operational flight plan (OFP)

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview
- Water take-off technique
- Land landing technique
- State the importance gear check – **DOWN (4 AMBER)** for land landing
- Land take-off technique
- Transition from land landing to water landing
- Precautions
- Water landing technique
- State the importance of gear check – **UP (4 BLUE)** for water landing
  Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. OFP, Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
  - Taxi into take-off position
- **Normal take-off on WATER**
  - Departure briefing
  - Emergency briefing
  - Water rudder check
  - Step technique
  - Aileron and aircraft rudder technique

  - Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
  - Callouts
  - After take-off check
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Airwork – Limitations**
  - SLOW flight @ 70 KIAS – flaps 0° (incl. 360° turn)
  - STALL – flaps 0° (PPGF – Power, Positive, Gear, Flaps)
  - SLOW flight @ 65 KIAS – flaps 10°
  - SLOW flight @ 60 KIAS – flaps 20°
  - STALL – flaps 20° (PPGF – Power, Positive, Gear, Flaps)
  - SLOW flight @ 60 KIAS – flaps 30°
  - STALL – flaps 30° (PPGF – Power, Positive, Gear, Flaps)
  - Steep turns (45° bank – 360 LH / 360° RH)
  - Unusual attitude (positive nose-up)
- **Descent / Approach to LAND** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Gear check **DOWN (4 AMBER)** for **LAND** landing
- **LAND landing** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **DOWN (4 AMBER)**
- **Taxi on LAND**
  - Techniques
  - Use of checklist
  - Aircraft preparation for take-off
- **Normal Take-Off on LAND**
  - Aircraft preparation for take-off
  - Departure & Emergency briefing
  - Aircraft security
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Descent / Approach to WATER** (75 – 85 KIAS)

  - Power setting
  - RPM setting
  - Flap setting
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Landing on WATER** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **UP (4 BLUE)**
- **Docking procedure**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review the difference between water operation and amphibious land operation
- Review of the importance of gear check – **UP (4 BLUE)** for water landing and gear check – **DOWN (4 AMBER)** for land landing
- Review possible threats and errors;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission.

B.2.1.3. MISSION 3 – WATER TAKE-OFF & FULL STOP LANDING, WATER WORK

AIM OF THE MISSION

The aim of this mission is to learn;

- the skills required for take-offs and landing on water;
- the skills required for the reconnaissance of landing and mooring areas from the air, including the take-off area;
- the skills for assessing the effects of different water depths, shoals, wind, height of waves and swell; and
- good seamanship as required for a safe seaplane operation.

MISSION OBJECTIVES

After the mission the student should be able to:

- maintain given rate of descent by means of variometer only;
- first introduction to emergency procedures (landing on water with propeller feathered);
- from the air, reconnaissance of landing, mooring and take-off areas, observing:
  - wind direction and strength during landing and take-off;
  - surrounding terrain;
  - overhead wires and other obstacles above and under water;
  - congested areas; and
- determine wind direction and assess wind strength from water level and when airborne:

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation
- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview;

- Water take-off technique;
- Water landing technique;
- Emergency procedures according POH and QRH and check the student´s knowledge of applicable memory items;
- Seamanship & Airmanship;
- Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
- **Water techniques (engine running)**
  - Leaving the dock
  - Gear and water rudder check
  - Taxi into the wind
  - Taxi 360° LH circle
  - Taxi 360° RH circle
  - Taxi downwind
  - Taxi crosswind
  - Taxi on the step and perform turns
- **Sail techniques (engine out)**
  - Turns with aircraft rudder into the wind
  - Turns with aircraft rudder into downwind
  - Direction changes with water rudder and aircraft rudder
  - On float approach on buoy
- **Normal take-off on WATER**
  - Determine wind direction and assess wind strength from water level
  - Reconnaissance of take-off area, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;

  - overhead wires and other obstacles above and under water;
  - congested areas;
- Departure briefing
- Emergency briefing
- Water rudder check
- Step technique
- Aileron and aircraft rudder technique
- Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
- Callouts
- After take-off check

- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Descent / Approach to WATER** (75 – 85 KIAS) **– Traffic Patterns**
  - Power setting
  - RPM setting
  - Flap setting
  - Reconnaissance of landing and mooring areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - determine wind direction and assess wind strength when airborne;
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Full stop landings on WATER** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **UP (4 BLUE)**
- **Simulated Emergency Landings**
  - 1 landing with propeller feathered
- **Taxi on WATER**
  - Water rudder operation
  - Taxi on water
  - High speed taxi
- **Docking procedure**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review seamanship & airmanship performance during air and water operation;
- Review of the importance of gear check – **UP (4 BLUE)** for water landing
- Review performance on reconnaissance of take-off, landing and mooring areas
- Review determination techniques for wind direction and assessment of wind strength
- Review the crosswind limitation of 13 KIAS in relation to the effectiveness of water rudders;
- Review the importance of technical knowledge and memory items to overcome initially an emergency situation which may occur during a single-pilot operation;
- State possible threats and errors;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission.

B.2.1.4. MISSION 4 – LAND LANDINGS & AMPHIBIOUS GEAR OPERATION

AIM OF THE MISSION

The aim of this mission is to learn;

- the skills for appropriate land landing techniques and land take-off in an amphibious aeroplane;
- the skills for taxing an amphibious aircraft on land;
- the skills for transition from water to land landing environment and vice versa;
- the skills for landing gear operation, including manual gear extension;
- the skills for using the navigation equipment and adherence to the Rules of the Air and navigation procedures; and
- the skills for single-pilot operation in an amphibian aeroplane.

MISSION OBJECTIVES

After the mission the student should be able to:

- perform a safe transition from water to land landing environment and vice versa;
- demonstrate proper use of the navigation equipment and adherence to the Rules of the Air and published navigation procedures;
- perform land landings and land take-offs;
- introduction to emergency procedures (landing on land with the standby flap system);
- demonstrate safe taxi operation on land with an amphibious aircraft
- perform landing gear operation, including manual gear extension (single-pilot); and
- demonstrate competent single-pilot operation in an amphibian aeroplane.

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation
- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables
- Operational flight plan (OFP)

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview
- Water take-off technique
- Different land landing techniques
- Safe transition from land landing operation back to water operation
- State the importance of gear check – **UP (4 BLUE)** for water landing
- Water landing technique
- VFR area navigation
- Emergency procedures according POH and QRH and check the student´s knowledge of applicable memory items;
- Seamanship & Airmanship;
- Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. OFP, Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
  - Taxi into take-off position
- **Normal take-off on WATER**
  - Determine wind direction and assess wind strength from water level
  - Reconnaissance of take-off area, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - Departure briefing
  - Emergency briefing
  - Water rudder check
  - Step technique

  - Aileron and aircraft rudder technique
  - Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
  - Callouts
  - After take-off check
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **VFR navigation and approach to controlled / uncontrolled airport**
  - Use of installed navigation equipment
  - Radio communication and clearances
  - Single-Pilot Resource Management (SRM)
- **Descent / Approach to LAND** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Gear check **DOWN (4 AMBER)** for **LAND** landing
- **LAND landings (Touch & go & 1 Full Stop)**
  - Flaps 20° → 2 landings / Touch & go
  - Flaps 10° → 1 landing / Touch & go
  - Flaps 0° → 1 landing / Touch & go
  - Flaps 30° → 2 landings / Touch & go
- **Simulated Emergency Landings**
  - 1 landing using the Standby Flap system
- **Taxi on LAND**
  - Techniques
  - Use of checklist
  - Aircraft preparation for take-off
- **Normal Take-Off on LAND**
  - Aircraft preparation for take-off
  - Departure & Emergency briefing
  - Aircraft security
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Amphibious Gear Operation**
  - Proactive operational procedures (lower the gear early enough)
  - HYD system
  - Manual gear extension (exercise)

- **Descent / Approach to WATER** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Reconnaissance of landing and mooring areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - determine wind direction and assess wind strength when airborne;
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Landing on WATER** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Docking procedure**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review the difference between water operation and amphibious land operation;
- Review of the importance of gear check – **UP (4 BLUE)** for water landing and gear check – **DOWN (4 AMBER)** for land landing;
- Review the demonstrated skills in using the navigation equipment and radio communication in relation to approach and departure procedures as required on controlled airports;
- Review the importance of technical knowledge and memory items to overcome initially an emergency situation which may occur during a single-pilot operation;
- Review the taxi and related steering technique as appropriate;
- Review possible threats and errors;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission.

B.2.1.5. MISSION 5 – WATER LANDINGS & BEACHING AND BUOYING

AIM OF THE MISSION

The aim of this mission is to learn;

- the skills for appropriate water landing techniques and water take-off;
- the skills for take-off and landing on glassy water; and
- the skills for mooring the aircraft at beach and buoy; and
- the skills to taxi the aircraft on water (incl. high speed taxi and turning)

MISSION OBJECTIVES

After the mission the student should be able to:

- perform water landings and water take-offs;
- perform take-off and landing on glassy water with and without outer references;
- moor the aircraft at beach and buoy; and
- taxi on the step and perform turns.

EQUIPMENT REQUIRED IN THE WATER

- Buoy; and
- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation
- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables
- Operational flight plan (OFP)

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview
- Water take-off technique
- Different water landing techniques
- Beaching procedure
- Buoying procedure

- Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. OFP, Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
  - Taxi into take-off position
- **Normal take-off on WATER**
  - Determine wind direction and assess wind strength from water level
  - Reconnaissance of take-off area, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - Departure briefing
  - Emergency briefing
  - Water rudder check
  - Step technique
  - Aileron and aircraft rudder technique
  - Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
  - Callouts
  - After take-off check
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Descent / Approach to WATER** (75 – 85 KIAS)
  - Power setting
  - RPM setting

  - Flap setting
  - Reconnaissance of landing and mooring areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - determine wind direction and assess wind strength when airborne;
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **WATER Landings** (75 – 85 KIAS)
  - Aircraft control
  - Glassy water approach
  - References
  - PWR setting
  - Gear check – **UP (4 BLUE)**
  - Flaps 20° → 3 landings / Touch & go
  - Flaps 10° → 3 landings / Touch & go
  - Flaps 0° → 3 landings / Touch & go
  - Flaps 30° → 3 landings / Touch & go
- **Taxi on WATER**
  - Water rudder operation
  - Taxi on water
  - High speed taxi
- **Beaching**
  - Land in the vicinity of a beach
  - Make land at the beach (FWD)
  - Turn the aircraft with / without ropes
  - Moor the aircraft at the beach
  - Leave the beach (FWD)
- **Buoying**
  - Approach a buoy
  - Moor the aircraft to the buoy
  - Leave the buoy
- **Docking procedure**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review the different landing techniques in relation to aircraft configuration;
- Review the appropriate decision-making depending on existing weather conditions and wave heights / glassy water;
- Review the beaching, buoying, docking, mooring and ramping procedures;
- Review possible threats and errors;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission.

B.2.1.6. MISSION 6 – EMERGENCY PROCEDURES & EMERGENCY LANDINGS

AIM OF THE MISSION

The aim of this mission is to learn:

- the skills required for handling emergencies by using memory items and the approved checklists in a single-pilot operation
- the skills to take corrective action at critical moments due to wind shear and turbulence;
- the skills for flying in broken ground during different wind and turbulence conditions;
- the skills required to perform take-off and landing under swell; and
- the skills required for emergency landings / power-off landings.

MISSION OBJECTIVES

After the mission the student should be able to:

- perform emergency procedures and emergency landings / power-off landings;
- perform take-off and landing under swell;
- describe the limitations of the aircraft including:
  - the maximum wave height allowed, and
  - the maximum number of RPM allowed during taxi;
- describe the required memory items;
- take corrective action at critical moments due to wind shear and turbulence; and
- demonstrate the handling of approved checklists in emergency situations in single-pilot operation.

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation
- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview;
- Water take-off technique;
- Emergency procedures according POH and QRH and check the student´s knowledge of applicable memory items;
- Water landing technique;
- Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work.
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
  - Taxi into take-off position
- **Normal take-off on WATER**
  - Determine wind direction and assess wind strength from water level
  - Reconnaissance of take-off area, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - Departure briefing
  - Emergency briefing
  - Water rudder check
  - Step technique
  - Aileron and aircraft rudder technique
  - Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
  - Callouts
  - After take-off check
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)

- Best rate of climb (V_Y 98 KIAS – Flaps UP)
- Power switches

- **Airwork – Emergency Procedures**
  - Pitot static system failures
  - Torque failure
  - Generator failure
  - Simulated flame out (prop feather)
  - Emergency power lever operation
  - Simulated engine restart procedure
  - Standby flap system operation
  - Fire drills
  - Anti-ice devices (optional, if installed)
  - Oxygen system (use in FL 150 optional, if installed)
- **Descent / Approach** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Gear check – **UP (4 BLUE)** for **WATER landing** *OR* **DOWN (4 AMBER)** for **LAND landing** as required
- **Simulated Emergency Landings**
  - 1 landing using the Emergency Power lever
  - 1 landing using the Standby Flap system
  - 1 landing high final approach
  - 1 landing with propeller feathered
- **Descent / Approach to WATER** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Reconnaissance of landing and mooring areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - determine wind direction and assess wind strength when airborne;
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Landings on WATER** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **UP (4 BLUE)**
- **Docking procedure**
  - Arriving at the docking place and docking procedures

- Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Review the importance of technical knowledge and memory items to overcome initially an emergency situation which may occur during a single-pilot operation;
- State possible threats and errors;
- Remind acronym driven mitigation procedures as an appropriate help in handling emergency procedures and decision-making processes as a follow up:
  - SMQS (= **S**ystem / **M**emory items / **Q**RH / **S**ystem) for emergency procedures; and
  - FORDEC (**F**acts / **O**ptions / **R**isks / **D**ecision / **E**xecution / **C**heck) for decision making;
- Inform the student about the result of the mission; and
- Give an outlook regarding the next mission (Progress Check).

AUTHORIZATION FOR THE PROGRESS CHECK

After the mission the CRI should review the student´s training record. If all missions and all mission items have been completed successfully, the CRI may authorize the student for Mission 7 (Progress Check) i.a.w. TM-A.1.3.5..

B.2.1.7. MISSION 7 – PROGRESS CHECK

AIM OF THE MISSION

The aim of this mission is to check the student´s level of proficiency at the end of the practical training phase, prior to signing him off for the skill test.

MISSION OBJECTIVES

After the mission the student should be able to safely operate the SET(sea).

EQUIPMENT REQUIRED IN THE WATER

- Rescue boat (if applicable – depending on the area of operation and weather conditions).

MATERIAL REQUIRED FOR THE BRIEFING

- POH
- Flip chart
- Flip chart pin models
- Aircraft model
- Aerial photography of the intended area(s) of operation as appropriate
- ICAO VFR chart of the area of operation
- Marine chart of the area of operation
- Airport charts of the area of operation
- Weather information regarding the area of operation valid for the planned training period
- NOTAMs for the time span and area of operation
- Mass & balance working sheet
- Performance tables
- Operational flight plan (OFP)

BRIEFING CONTENT

The CRI should conduct a briefing i.a.w. TM-A.1.3.1. and include:

- Mission overview
- Water take-off technique
- Land landing technique
- Land take-off technique
- Safe transition from land landing operation back to water operation
- Precautions
- Emergency Procedures (Engine inoperative / Prop feathered water landing)
- Water landing technique
- Importance of Single-Pilot Resource Management (SRM); and
- Appropriate single-pilot checklist work
- Possible treats and errors of the upcoming mission

MISSION EXERCISES

- **Flight Planning** (incl. OFP, Mass & Balance, and Performance calculation)
- **Pre-flight checks** (incl. use of checklist, pre-flight daily inspection, equipment required for seaplane operation, condition of floats, pumping of floats, life vests, and seat belts)
- **Use of Normal Checklist**
- **Radio setup procedure** (incl. check of GPS database)
- **Engine start – internal power**
- **Taxi – Preparation, clearance, checklist**
  - Ropes check
  - Water rudder check
  - Engine starting procedure
  - Standby power check
  - Inertial separator check
  - Ignition check
  - Taxi into take-off position
- **Normal take-off on WATER**
  - Determine wind direction and assess wind strength from water level
  - Reconnaissance of take-off area, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - Departure briefing
  - Emergency briefing
  - Water rudder check
  - Step technique
  - Aileron and aircraft rudder technique
  - Speeds and PWR setting (Max. Perf. – Flaps 20° – 81 KIAS)
  - Callouts
  - After take-off check
- **Climb**
  - Climb power setting
  - Best climb speed (V_X 80 KIAS – Flaps UP)
  - Best rate of climb (V_Y 98 KIAS – Flaps UP)
  - Power switches
- **Cruise**
  - Altitude (± 100 ft)
  - Attitude (± 5°)
  - Power setting
  - Avionic setting
- **Airwork**
  - SLOW flight

  - STALL recovery
- **Descent / Approach to LAND** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Gear check **DOWN (4 AMBER)** for **LAND** landing
- **LAND landing** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **DOWN (4 AMBER)**
  - Touch & go
- **Descent / Approach to WATER** (75 – 85 KIAS)
  - Power setting
  - RPM setting
  - Flap setting
  - Reconnaissance of landing and mooring areas, observing:
    - wind direction and strength during landing and take-off;
    - surrounding terrain;
    - overhead wires and other obstacles above and under water;
    - congested areas;
  - determine wind direction and assess wind strength when airborne;
  - Gear check **UP (4 BLUE)** for **WATER** landing
- **Landing on WATER** (75 – 85 KIAS)
  - Aircraft control
  - References
  - PWR setting
  - Gear check – **UP (4 BLUE)**
- **Emergency Landing**
  - 1 landing with propeller feathered
- **Taxi on WATER**
  - Water rudder operation
  - Taxi on water
  - High speed taxi
- **Docking**
  - Arriving at the docking place and docking procedures
  - Taxi out of the water (ramp), if applicable
- **After docking check**
- **Engine shut down / Mooring / Leaving / Floats** (pump floats, etc.)

DEBRIEFING CONTENT

After the mission the CRI should conduct a debriefing i.a.w. TM-A.1.3.1. and include:

- Self-reflection of student versus grading made by instructor i.a.w. TM-A.1.3.2. (recorded in the student´s training record);

NOTE

Student should state his personal feelings about the mission (What he did well and where he may improve) Thereafter will the instructor debrief the mission more in detail and will give an outlook regarding the next mission.

- Evaluate the outcome of the mission in relation to the planned Skill Test.
- Inform the student about the result of the mission, and
  - if positive – state that this was the last mission before the Skill Test and explain the further procedures towards the Skill Test (need of positive written exam and subsequent written “FIT FOR SKILL TEST” recommendation from Baltic Seaplane ATO); or
  - if negative – address clearly weak performance to be reviewed and state the further decision-making process regarding the evaluation of required retraining in consultation with the HT (refer to TM-A.1.3.5.).

B.2.2. AIR EXERCISE REFERENCE LIST

Mission	*Description*	*Block Time 1)*
1	Familiarization, Water taxi, Sail techniques, Anchoring, Docking & Ramping	1:00
2	Airwork & Introduction to Amphibian Operations	2:00
3	Water take-off & full stop landing, Water work	2:00
4	Land landings & Amphibious gear operation	2:00
5	Water landings & Beaching and Buoying	2:00
6	Emergency procedures & Emergency landings	2:00
7	Progress check	1:00
	MINIMUM PRACTICAL FLIGHT TRAINING	**12:00**

*1) The stated block hour values for each mission are considered as an estimate only and may vary due to weather and traffic situation as well as the individual flying skills of the student. Nevertheless the total amount of **12 hours** of practical flight training shall be considered as a **minimum** for applicants who do not hold a current SET(land) rating.*

NOTE

*In accordance with FCL.725.A(b) the **flight training** for a class or type rating-sea for single-pilot aeroplanes-sea shall include **at least** 8 hours of dual flight instruction if the applicant holds the land version of the relevant class or type rating, or **12 hours** if the applicant does not hold such a rating.*

B.2.3. COURSE STRUCTURE – PHASE OF TRAINING

This course consists of the following phases:

- Phase 1 – Theoretical knowledge instruction
- Phase 2 – Practical flight training
  - Mission 1 (transition from theoretical knowledge instruction to practical flight training)
  - Missions 2 – 6
  - Mission 7 (Progress Check)

B.2.4. COURSE STRUCTURE INTEGRATION OF SYLLABI

Theoretical knowledge instruction, synthetic flight training and flight training are interrelated. In order to give the students the ability to apply the knowledge gained from associated theoretical knowledge instruction and/or synthetic flight training the following guidelines apply:

- Before the start of the practical flight training (Mission 2 – 6) the theoretical knowledge instruction and Mission 1 should be completed; and
- Before the start of the Progress check (Mission 7) the missions 2 – 6 should be completed.

B.2.5. STUDENT PROGRESS

Refer to OM-A.2.4.

B.2.6. INSTRUCTIONAL METHODS

B.2.6.1. BRIEFINGS AND DE-BRIEFINGS

For all practical training sessions, students will receive briefings and de-briefings in accordance with TM-A 1.3.1.

B.2.6.2. PRACTICAL FLIGHT TRAINING

The practical flight training should be conducted in accordance with the relevant training syllabus.

The instructor should give the student sufficient opportunities to train the relevant tasks, but he shall ensure the safety of the flight at all times!

B.2.7. PROGRESS CHECKS

After the positive completion of *Missions 1 to 6* the *Mission 7* (progress check) shall be performed.

For regulations on progress checks refer to TM-A 1.3.5.

B.2.8. GLOSSARY OF TERMS

Refer to OM-A 1.3. and Abbreviations and Acronyms

B.2.9. APPENDICES

NOT APPLICABLE

B.3. FLIGHT TRAINING IN A FSTD

NOT APPLICABLE

B.4. THEORETICAL KNOWLEDGE INSTRUCTION

B.4.1. STRUCTURE OF THE THEORETICAL KNOWLEDGE COURSE

Objective	*Subject*	*Lessons*
1. Aeroplane systems structure and equipment, normal operation of systems and malfunctions		
1.1. Dimensions	1.1.1. Dimensions 1.1.2. Minimum required runway width for 180° turn 1.1.3. Differences with Amphibian Floats	0,25 Explain
1.2. Engine	1.2.1. Type of engine 1.2.2. In general, function of the following systems or components: ▪ engine ▪ oil system ▪ fuel system ▪ ignition system ▪ starting system ▪ fire warning system ▪ generator and generator drives ▪ power indication ▪ propeller system ▪ feathering system 1.2.3. Engine controls (including starter) engine instruments and indications in the cockpit, their functions, interrelation and interpretation 1.2.4. Engine operation, during engine start, start and engine malfunctions, procedures for normal operation in the correct sequence	1,0 Explain & Explore
1.3. Fuel system	1.3.1. Location of the fuel tanks, fuel pumps, fuel lines to the engines, tank capacities, valves and measuring 1.3.2. Location of the following systems: ▪ filtering ▪ heating ▪ fuelling and defueling ▪ venting 1.3.3. In the cockpit ▪ indicators of the fuel system ▪ quantity and flow indication, interpretation 1.3.4. Procedures ▪ fuel distribution into the various tanks ▪ fuel supply ▪ Fuel cock system	1,0 Explain & Explore

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
1.4. Air-conditioning (if installed)	1.4.1. Components of the system and protection devices 1.4.2. Cockpit indicators and interpretation with regard to the operational condition 1.4.3. Normal operation of the air-conditioning and temperature control	0,25 Explain & Explore
1.5. Ice and rain protection	1.5.1. Ice-protection components of the aeroplane including engine, heating sources, controls and indications 1.5.2. Operation of the anti-icing/de-icing system during take-off, climb, cruise, descent and landing conditions requiring the use of the protection systems 1.5.3. Controls and indications of the windshield de-ice operation	0,25 Explain & Explore
1.6. Hydraulic System	1.6.1. Components of the hydraulic system, quantities and system pressure, hydraulically actuated components associated with the respective hydraulic systems 1.6.2. Components of landing gear related HYD System (CSET-SEA)	0,25 Explain & Explore
1.7. Landing gear	1.7.1. Main components of the ▪ main landing gear, nose gear and wheel brake system ▪ water rudder system ▪ gear steering ▪ amphibious gear system ▪ retraction / undercarriage system (CSET SEA) 1.7.2. Required tire pressure, location of the relevant placards	0,5 Explain & Explore
1.8. Flight controls and flaps	1.8.1. Aileron system 1.8.2. Elevator system 1.8.3. Rudder system 1.8.4. Trim system 1.8.5. Flap system 1.8.6. Standby Flap system 1.8.7. Stall warning system 1.8.8. Flight control system from the cockpit controls to the flight control/surfaces 1.8.9. Controls and indicators including warning indicators of the systems mentioned under interrelation and dependencies 1.8.10. Stabilizer on elevator (CSET SEA)	1,0 Explain & Explore
1.9. Electrical power supply	1.9.1. Number, power, voltage, frequency and location of the main power system (AC and DC) and external power system 1.9.2. Location of the control indicators in the cockpit 1.9.3. Switch panel for main and backup power sources 1.9.4. Circuit breaker panel 1.9.5. External power 1.9.6. Generator operation and monitoring procedures of the electrical power supply	0,5 Explain & Explore

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
1.10. Flight Instruments, communication and navigation equipment, autopilot and flight recorder	1.10.1. Pitot static system and instruments 1.10.2. Controls and instruments of the following equipment in the cockpit during normal operation ▪ flight instruments ▪ radar altimeter ▪ communication and navigation systems ▪ warning systems ▪ autopilot	0,75 Explain & Explore
1.11. Cockpit, cabin and cargo pod compartment	1.11.1. Operation of the exterior, cockpit, cabin and cargo compartment lighting and emergency lighting (CSET LAND) 1.11.2. Operation of the cabin and cargo doors, stairs, windows and emergency exits 1.11.3. Cabin layout and capacity	0,25 Explain & Explore
1.12 Emergency Equipment operation and correct application of the following emergency equipment in the aeroplane	1.12.1. Portable fire extinguisher 1.12.2. First aid kits 1.12.3. Life vests 1.12.4. Life rafts 1.12.5. Emergency transmitter 1.12.6. Crash axes 1.12.7. Emergency signals 1.12.8. Flash lights	0,25 Explain & Explore
2. Limitations		
2.1. General limitations	2.1.1. Certification of the aeroplane, category of operation, noise certification and maximum and minimum performance data for all flight profiles, conditions and a/c systems ▪ max. tail and crosswind-components at T/O & landing ▪ V_{FO}, V_{FE}, V_{LO}, V_{LE}, $V_{A,}$ V_{MCA}, V_{S0}, V_{S1}, V_{NE}, V_{MO} ▪ tyres ▪ altitude and temperature limitations ▪ max. taxi mass ▪ max. take-off mass ▪ max. landing mass ▪ zero fuel mass ▪ certificated range of center of gravity 2.1.2. Differences CSET – SEA	0,5 Explain
2.2. Engine limitations	2.2.1. Operation data of the engines ▪ max. temperatures and torque ▪ minimum and maximum oil temperature and pressure ▪ max. starter time and required cooling (battery start) ▪ time between two start attempts for engines (external power) 2.2.2. Certified oil grades	0,25 Explain

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
2.3. System limitations	2.3.1. Operation data of the following systems ▪ air conditioning ▪ electrical power supply, max. load of main power systems / AC and DC) ▪ max. time of power supply by battery in case of emergency ▪ auto pilot limitations of various modes ▪ ice protection ▪ speed and temperature limits of window heat ▪ temperature limits of engine and wing de-ice 2.3.2. Fuel system ▪ certified fuel specification ▪ min. and max. pressures and temperatures of the fuel 2.3.3. Emergency fuel	0,5 Explain
2.4. Minimum Equipment List	2.4.1. Introduction and use of MEL	0,5 Explain
3. Performance, Flight planning		
3.1 Performance	3.1.1. Performance calculation concerning speeds, gradients, masses in all conditions for take-off, en-route, approach and landing according to the documentation: ▪ accelerate/stop distance, TORA/TODA ▪ ground temperature, pressure altitude, slope, wind ▪ max. load and max. mass ▪ min. climb gradient after engine failure ▪ influence of snow, slush, moisture and standing water on the runway ▪ possible single engine failure during cruise flight ▪ use of anti-icing systems ▪ safe approach speed V_{REF} with respect to V_{MCA} and turbulent conditions ▪ min. climb gradient during approach and landing ▪ min. fuel for flight ▪ max. allowable landing mass and landing distance for destination and alternate aerodrome with respect to the following factors: ◦ available landing distance ◦ ground temperature, pressure alt, slope, wind ◦ fuel consumption to destination and alternate ◦ influence of snow, slush, moisture and standing water on the runway 3.1.2. Differences Water OPS CSET SEA	0,5 Explain

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
3.2. Flight planning	3.2.1. Flight planning for normal and abnormal conditions ▪ optimum/max. flight level ▪ drift down procedure after engine failure ▪ power setting of the engines during climb, cruise and holding under various circumstances, as well as the most economic cruising flight level ▪ calculation of short range and long range flight planes ▪ optimum and max. flight level and power setting of the engine after engine failure ▪ Emergency power lever ▪ Operational flight plan	0,5 Explain
4. Load, Balance and Service		
4.1. Servicing	4.1.1. Servicing connections for ▪ fuel ▪ oil ▪ hydraulic ▪ oxygen ▪ nitrogen ▪ electric power	0,25 Explain & Explore
4.2. Mass and Balance	4.2.1. Load and trim sheet with respect to the ▪ max. Masses for take-off and landing ▪ centre of gravity limits 4.2.2.. Influence of fuel consumption of the centre of gravity 4.2.3.. Information and instructions / max. ground load 4.2.4.. Differences CSET – SEA	1,0 Explain
5. Emergency Procedures		
5.1 Recognition of the situation as well as immediate memory actions in correct sequence and for those conditions recognised as emergencies by the manufacturer and certification authority	5.1.1. Engine failure during take-off as well as in flight 5.1.2. Malfunction of the propeller system 5.1.3. Emergency Power Lever System 5.1.4. Engine fire on ground and in flight 5.1.5. Electrical smoke and /or fire 5.1.6. Emergency landing on water and land without engine PWR 5.1.7. STBY flap system 5.1.8. Fuel pump failure 5.1.9. Fuel freezing 5.1.10. Electrical power 5.1.11. Equipment cooling failure 5.1.12. Flight instrument failure 5.1.13. Partial or total hydraulic failure 5.1.14. Failure of flaps and flight controls 5.1.15. Landing gear malfunction procedures 5.1.16. Float leak CSET SEA 5.1.17. Water rudder lost CSET SEA	1,0 Explain & Explore

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
5.2. Actions according to the approved abnormal and emergency checklist	5.2.1. Engine restart in flight 5.2.2. Landing gear emergency extension	0,5 Explain & Explore
6. Special requirements for Garmin 430/530 equipped models		
6.1. Additional learning objectives	6.1.1. General rules of aeroplane computer hardware and software design 6.1.2. Logic of all crew information and alert systems and their limitations 6.1.3. Interaction of the different aeroplane computer systems, their limitations, the possibilities of computer fault recognition and the actions to be performed on computer failures 6.1.4. Normal procedures including all crew co-ordination duties 6.1.5. Aeroplane operation with different computer degradations (basic flying)	0,5 Explain & Explore
7. Seaplane specifics		
7.1. Seaplane specific knowledge & characteristics	7.1.1. Seaplane characteristics 7.1.2. Water characteristics 7.1.3. Determining sea conditions 7.1.4. Water effects on operation 7.1.5. Pre-flight inspection 7.1.6. Pumping the floats	1,0 Explain
7.2. Seaplane specific parts and differences in construction	7.2.1. Floats 7.2.2. Seaplane flight principles	1,0 Explain
7.3. Seaplane specific operation techniques & performance	7.3.1. Taxiing ▪ Idling position ▪ Plowing position ▪ Planing or Step position 7.3.2. Turns 7.3.3. Sailing 7.3.4. Porpoising 7.3.5. Skipping 7.3.6. Take-off ▪ General ▪ Normal take-off ▪ Crosswind take-off ▪ Downwind take-off ▪ Glassy water take-off ▪ Rough water take-off ▪ Confined area take-off	5,0 Explain

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
	7.3.7. Performance considerations 7.3.8. Reconnaissance and planning 7.3.9. Landing ▪ General ▪ Normal landing ▪ Crosswind landing ▪ Downwind landing ▪ Glassy water landing ▪ Rough water landing ▪ Confined area landing 7.3.10. Go-around 7.3.11. Emergency landing 7.3.12. Operations in open seas ▪ General ▪ Definitions ▪ Sea state evaluation ▪ Swell system evaluation ▪ High reconnaissance ▪ Lower reconnaissance ▪ Select landing heading ▪ Select touchdown area ▪ Landing parallel to the swell ▪ Landing perpendicular to the swell ▪ Landing with more than one swell system ▪ Effect of chop 7.3.13. Postflight procedures ▪ Anchoring (Danfort anchor) ▪ Anchoring (Sea anchor) ▪ Mooring ▪ Docking ▪ SET docking techniques ▪ Beaching ▪ Ramping 7.3.14. Salt water 7.3.15. Cold, frozen or partially frozen waters 7.3.16. A few knots for seaplane pilots ▪ General ▪ Bowline ▪ Bowline on a bite ▪ Trucker´s loop ▪ Half-hitch and double half-hitch ▪ Making fast to a cleat ▪ Ring hitch ▪ Sheet bend ▪ Constrictor ▪ Miller´s knot	

[continued on next page]

[cont´d]

Objective	*Subject*	*Lessons*
	7.3.17. Escaping a submerged seaplane ▪ General ▪ Orientation ▪ Water pressure ▪ Flotation equipment ▪ Normal and unusual exits	
7.4. Compliance and Rules of the Sea	7.4.1. Right-of-way rules: Water operation 7.4.2. Rules of the Sea 7.4.3. Buoys, Lights Recognition and Daybeacons ▪ Lights to be displayed by an aircraft ▪ The basics ▪ Safe water mark ▪ Isolated danger mark ▪ The “Special” mark 7.4.4. Sound signals 7.4.5. Maritime signal flags ▪ General ▪ Phonetic name and meaning of signal flags ▪ Number flags ▪ Some useful two letter signals	0,75 Explain
	TOTAL	**20,0**

B.4.2. LESSON PLANS

Refer to TM-B.4.1.

B.4.3. TEACHING MATERIALS

Refer to TM-A.1.2.4.

B.4.4. STUDENT PROGRESS

Refer to OM-A.2.4.

B.4.5. PROGRESS TESTING

After completion of the theoretical knowledge instruction the TKI shall perform an oral progress test covering all relevant topics in accordance with the syllabus.

For further regulations refer to TM-A.1.2.3.

B.4.6. REVIEW PROCEDURE

Refer to TM-A.1.2.3.