



SOARING SOCIETY OF SOUTH AFRICA



THIS DECLARED TRAINING ORGANISATION TRAINING AND PROCEDURES MANUAL (DTOTPM) IS DEVELOPED IN ACCORDANCE WITH SOUTH AFRICAN CIVIL AVIATION REGULATIONS, 2011 AS AMENDED CAR 141 SUB PART 8

DTO Approval Number: SACAA/0006/DTO
(EX RAASA Approval Number: RAA0099)

PHYSICAL ADDRESS:

Potchefstroom Aerodrome
Potchefstroom
North West
2520

OPERATIONAL ADDRESS:

Potchefstroom Aerodrome
Potchefstroom
North West
2520

CONTACT DETAILS

Steven Mommen
+27 82 925 8247
glidingsa@gmail.com

Revision 7
08/04/2026





1. TABLE OF CONTENTS

1.	TABLE OF CONTENTS	2
2.	TERMS AND ABBREVIATIONS	4
3.	AMENDMENT RECORD	5
4.	LIST OF EFFECTIVE PAGES	6
5.	DETAILS AND APPROVAL	7
6.	STATEMENT OF CONFIDENTIALITY	7
7.	TYPE OF TRAINING PROVIDED BY DTO	8
8.	PERSONNEL	9
8.1	TITLES AND NAMES	9
8.2	PERSONNEL PLAN FOR THE DTO	9
8.2.1	Personnel post and positions	9
8.2.2	Statement and list of initial and recurrent training provided for personnel.	10
8.2.3	Declaration of the Head of Training (HOT)	10
8.2.4	HOT Duties and Responsibilities (manage all training, training standards and instructors etc)	10
8.2.5	CFI Duties and Responsibilities	11
8.2.6	Sub DTO	11
8.3	DUTIES AND RESPONSIBILITIES OF NOMINATED PERSON/PERSONS TO MANAGE SAFETY	11
8.3.1	DUTIES (TO DEVELOP AND IMPLEMENT THE SAFETY POLICY OF THE DTO)	11
8.3.2	RESPONSIBILITIES	11
8.3.3	Club Safety Officer Duties	12
8.3.4	Club Safety Officer Responsibilities	12
	ORGANISATION ORGANOGRAM	13
9.	OPERATING LOCATIONS, FACILITIES, AERODROMES OR SITES	14
10.	AIRCRAFT	15
11.	TRAINING MATERIAL, EQUIPMENT AND FSTD's	16
	SAFETY POLICY AND QUALITY ASSURANCE SYSTEM	17
13.1	SAFETY POLICY	17
13.2	SAFETY PROCEDURES	17
13.3	QUALITY POLICY	18
13.4	QUALITY ASSURANCE SYSTEM	19
13.1.1	Duties of the QAP	19
13.1.2	Responsibilities of the QAP	19
12.	RECORD KEEPING	20
14.1	METHOD FOR RETAINING RECORD	20
14.2	TRAINING RECORDS AND INSTRUCTOR LOGBOOKS	20
14.3	AIRCRAFT AND EQUIPMENT MAINTENANCE	21



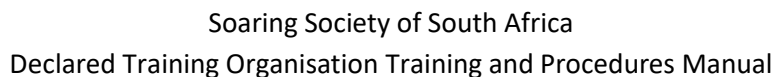
14.4	SINGLE INTEGRATED REPORTING SYSTEM	22
14.5	– RISK ASSESSMENT & ANNUAL ACTIVITY REPORT	23
13.	SYLLABI AND TRAINING MANUAL	27
14.	GRADUATION CERTIFICATE	27
15.	TESTING FOR ISSUING OF A LICENSE, CERTIFICATION, RATING OR ENDORSEMENT	28
16.	COMPETENCY- BASED TRAINING AND ASSESSMENT	28
17.	CONTROL AND DISTRIBUTION OF DOCUMENTATION	28
	APPENDIX A - POST HOLDER CV's	30
	APPENDIX B - LOCATION AERODROMES AND AIRFIELDS	31
	APPENDIX C - WEATHER STATIONS	44
	APPENDIX D - AIRCRAFT	45
	APPENDIX E - WINCHES	47
	APPENDIX F - SMS MANUAL	48
	APPENDIX H - QMS MANUAL	49
	APPENDIX I – Facility Agreements	50
	APPENDIX J – LIST OF INSTRUCTORS	51
	APPENDIX K – SYLLABI	53
	K1 - Theoretical Knowledge GLD/TMG	53
	K2 - Gliding Practical Syllabus	66
	K2 - TMG Practical Syllabus	67
	K4 – Theoretical Knowledge LSA	68
	K5 – LSA Practical Training Syllabus	74
	K6 – Theoretical Knowledge for LSA Instructors Course	80
	K7 - Practical Syllabus for LSA Instructor Course	90
	K8 - Pupil Progress Chart	98



2. TERMS AND ABBREVIATIONS

TERM	DEFINITION
Declared Training Organisation	Means a declared training organisation approved in terms Part 141 Subpart 8 of the Civil Aviation Regulations 2011 (as amended). A DTO is approved to provide training towards the issuance of National Pilots Licence
DTO approved training programme	Means a document established by a DTO describing in detail a training course provided by that DTO as approved by a competent Authority

ABBREVIATION	DESCRIPTION
AM	Accountable Manager
CAR	Civil Aviation Regulation
CFI	Chief Flying Instructor (Club Designated/Nominated Instructor)
CSO	Club Safety Officer
DTO	Declared Training Organisation
DTOTPM	Declared Training Organisation Training and Procedures Manual
ENR	SACAA's en-Route Publications
FSTD	Flight Simulator Training Devices
HOT	Head of Training
SACAA	South African Civil Aviation Authority
SACAR	South African Civil Aviation Regulations
SACATS	South African Civil Aviation Technical Standards
SMS	Safety management system
SO	Nominated Person responsible for Safety i.e., Safety Officer
QAP	Quality Assurance Program
QAM	Nominated Person responsible for Quality Assurance
QMS	Quality Management System

[illegible]



4. LIST OF EFFECTIVE PAGES

PAGE	REVISION & AMENDMENT NO	EFFECTIVE DATE	PAGE	REVISION & AMENDMENT NO	EFFECTIVE DATE
1	Revision 7	08/04/2026	25	Revision 7	08/04/2026
2	Revision 7	08/04/2026	26	Revision 7	08/04/2026
3	Revision 7	08/04/2026	27	Revision 7	08/04/2026
4	Revision 7	08/04/2026	27	Revision 7	08/04/2026
5	Revision 7	08/04/2026			
6	Revision 7	08/04/2026			
7	Revision 7	08/04/2026			
8	Revision 7	08/04/2026			
9	Revision 7	08/04/2026			
10	Revision 7	08/04/2026			
11	Revision 7	08/04/2026			
12	Revision 7	08/04/2026			
13	Revision 7	08/04/2026			
14	Revision 7	08/04/2026			
15	Revision 7	08/04/2026			
16	Revision 7	08/04/2026			
17	Revision 7	08/04/2026			
18	Revision 7	08/04/2026			
19	Revision 7	08/04/2026			
20	Revision 7	08/04/2026			
21	Revision 7	08/04/2026			
22	Revision 7	08/04/2026			
23	Revision 7	08/04/2026			
24	Revision 7	08/04/2026			





5. DETAILS AND APPROVAL

Title of Training Manual: SSSA DTO Training and Procedures Manual
Revision Number: Revision 7
Effective Date: 8 April 2026

PROCESS	NAME	SIGNATURE	DATE
Prepared By	Nicholas Oberhofer		8 April 2026
Reviewed by the Accountable Manager	Steven Mommen		8 April 2026
Approved by the South African Civil Aviation Authority			

6. STATEMENT OF CONFIDENTIALITY

This Declared Training Organisation Training and Procedures Manual contains information that is confidential and proprietary to **the Soaring Society of South Africa**.

The Soaring Society of South Africa submits this document to the regulator which shall be held in strict confidence and will not be disclosed, duplicated, or disseminated or used, in whole or in part, for any purpose other than the purpose for which it is provided without the written consent of the **Soaring Society of South Africa**

Copyright ©2021 SSSA All rights reserved.



7. TYPE OF TRAINING PROVIDED BY DTO

	SACARS 141.08.3. 1. (3)
---	-------------------------

This Declared Training Organisation Training and Procedures Manual is accepted by the Director of Civil Aviation confirming this organisation provides theoretical knowledge training and practical instruction for the issuance of the applicable license, certificate, rating, endorsement via the below listed course/course to the standards and syllabi contained in the applicable section civil aviation regulations **Part 68 and 62 as applicable**

1	Glider Pilot License
2	Glider endorsement training I Aero Tow/ Winch
3	Self-Launching Gliders / Sustainer, jet and electric
4	TMG
5	LSA
6	Instructor training
7	Competency checks
8	Foreign validations
9	Type conversions

I, the undersigned Accountable Manager, will ensure that there is a suitable and applicable operational safety system and quality system which provides for the necessary oversight of all administrative and training activities conducted and contained in the approved Training Operational Specification. I shall ensure that this declared organisation and all staff will operate according to the approved syllabi documented on the applicable Training Operational Specification, conduct training within the approved exercises and/or training manual and meet the minimum standards contemplated in the applicable regulations and technical standards. I will ensure that the annual report is completed and submitted as required timeously to the regulator and will avail the organisation for any audits that may be required.

SIGNED:		8 April 2026
ACCOUNTABLE MANAGER:	Steven Mommen	DATE

The AM shall keep a current list on file with names and accompanying signatures confirming that the nominated quality person, safety person, HOT and CFI/ CFI's will perform their duties and will adhere to their duties, responsibilities and provide training as required and as is applicable. The AM will ensure that the organisation keeps a Single Integrated Reporting System Log in operation however may delegate the upkeep of this log to a HOT, CFI or another nominated person as applicable.



8. PERSONNEL

	<i>SACARS 141.08.12. (1)</i>
---	------------------------------

8.1 TITLES AND NAMES

This section includes the titles and names of the nominated person to be the accountable manager and other nominated positions as required

Title	Name
PERSON NOMINATED AS THE ACCOUNTABLE MANAGER (AM)	STEVEN MOMMEN
PERSON NOMINATED AND RESPONSIBLE FOR QUALITY ASSURANCE (QAM)	JASON ADRIAAN
PERSON NOMINATED TO MANAGE SAFETY (SM)	CHRIS VAN NOORD

The AM will ensure that a list of all instructors and their currencies with applicable files are kept current and on record at the DTO.

8.2 PERSONNEL PLAN FOR THE DTO

	<i>SACARS 141.08.12. (2) & (10)</i>
---	---

This section will outline the personnel, their duties and responsibilities within the DTO to perform and supervise the training to be conducted and provided.

A current record of personnel and their duties are recorded on file at the DTO. There is a file on each staff member detailing respective positions, including duties and responsibilities scope, authorisations qualifications and designations held with a signature confirming that they have accepted them and are responsible

The file will contain:

- An aviation CV
- A signed and accepted appointment letter detailing duties, responsibilities, scope, authorisation, qualification and designation as applicable

8.2.1 Personnel post and positions

Title	Name
Head of Training	KARL VON SEYDLITZ-KURZBACH
Club/Location Chief Flying Instructor	As per ENR 5.5

Any other temporary pilot, instructor, or course provider as approved by the AM shall be listed and records will be kept on file.



SACARS 141.08.1 (9)

8.2.2 Statement and list of initial and recurrent training provided for personnel.

SSSA personnel shall initially complete instructor qualifications (for assistants at least the assistant instructor induction) and the following training comprising familiarisation with:

- Applicable regulations and technical standards
- Applicable DTOTPM
- Participation with the SSSA instructor seminar when held
- Annual or Biennial renewal of applicable license, ratings, certification, and endorsements
- Other than the this above no other training is required to be scheduled

Their training and currency shall be reviewed on an annual basis based upon their expiry of their license, rating, certificate, or endorsement as the case may be.

All training further training as required will be noted upon each personnel's staff file. Only if there are changes to the applicable regulations or syllabi shall there be a familiarisation with any new requirements unless covered at an instructor seminar.

8.2.3 Declaration of the Head of Training (HOT)

I, the HOT declares that I shall ensure all the duties and responsibilities detailed hereunder, including all training and instruction provided SHALL comply with the applicable current SACAR's, SACAT's, appendices and syllabi and shall maintain the applicable standards of training and safety and I shall manage mentor and guide all CFIs or other instructors that I manage as applicable.

SIGNED:		DATE
HEAD OF TRAINING:	KARL VON SEYDLITZ-KURZBACH	8 April 2026
CONTACT NUMBER:	084 245 8921	
EMAIL:	seydlitz@tiscali.co.za	

8.2.4 HOT Duties and Responsibilities (manage all training, training standards and instructors etc)

The HOT has the Authority to coordinate and control all flying training conducted by the SSSA Affiliates on Gliders, Self Sustainer Gliders, Self-Launch Gliders and TMG, and is answerable to the AM of SSSA.

The Head of Training may delegate the authorities invested in him to the nominated instructor at each location.

The Head of Training has the Authority to suspend an instructor or training at an Affiliated Location pending an investigation into breach of standards or safety by the Board of SSSA, SACAA/SACAA or other applicable delegated body.

The Head of Training will hold a valid Full Glider Instructors rating, a Grade A/B Touring Motor Glider Instructors rating and shall:

- Manage all CFI and provide oversight on their training activities.
- Plan, perform and manage all elements for training.
- Shall manage all training related activities and staff.
- Access all instructors utilised with the location schools.
- Review, issue, access and manage all applicable training documentation.
- Have oversight of the maintenance of records and student training files.
- Sign out license, ratings, endorsement, certificates, logbooks, proficiency checks, skill tests. and graduation certificates.
- Undertake quality control of all learner/student related documentation.
- Manage all training equipment and ensure it is airworthy when required for use.



NB: The HOT may delegate some of the duties above to CFI's if utilised within the organisation

The HOT is responsible for all training activities, training and provision of theoretical knowledge classes, material and site choice and weather analysis suitable for training.

8.2.5 CFI Duties and Responsibilities

SSSA CFI duties and responsibilities are;

- i) all training members are versed in the content of the DTO training and procedures manual.
- ii) all training is carried out in accordance with the DTO Training Plan and that relevant regulations are complied with.
- iii) The theoretical training syllabi and DTO curriculum is adhered to.
- iv) Records are kept in accordance with this document.
- v) The flight authorization sheets as required are comprehensively completed and controlled in accordance with the DTO training and procedures manual.
- vi) a high standard of flying discipline is maintained.
- vii) Oversight is carried out over instructors to uphold training standards and mentor instructors in preparation for upgrading as instructors, as applicable by;
 - a) allocation of instructors to students and training flights.
 - b) briefing of instructors on exercise to be carried out, recap on instructional techniques, common errors that may be expected from students and safety.
 - c) the regular monitoring of pre-flight and post-flight briefings.
 - d) evaluating instructor progress in relation to student progress;
 - e) implementing and monitoring the instructors flight/practical training to assess if training is meeting the DTO and regulatory requirements prescribed in Part 4 of this document; and
- viii) oversight of student training
 - a) student progress, records and maintenance of student training files.
 - b) the training plan
 - c) training syllabi
 - d) theoretical knowledge syllabi; and
 - e) tests and checks

8.2.6 Sub DTO

SSSA is instituting sub DTO's however at this stage shall not activate the provision.

8.3 DUTIES AND RESPONSIBILITIES OF NOMINATED PERSON/PERSONS TO MANAGE SAFETY

8.3.1 DUTIES (TO DEVELOP AND IMPLEMENT THE SAFETY POLICY OF THE DTO)

The National **Safety Officer** shall ensure that all flight operations are conducted in a safe and reliable manner at all affiliates schools and locations.

He will ensure that the appropriate personnel at the location and schools have the experience, training and qualifications to perform their assigned duties in respect of and with regard to Civil Aviation Safety. He will identify record and report any safety or security problems as well as ensure that all accidents and/or incidents, with the correct information, are recorded on the correct forms and provided to HOT for dissemination to the applicable CFI's and the AM

SSSA recognises Safety as one of its core values, however it must be recognised as a small organisation and not operated to the levels of an airline or like organisation, this requires simple and reasonable systems that are easily administered:

8.3.2 RESPONSIBILITIES

- The person responsible for safety at the location /schools shall ensure risk assessments are conducted as applicable.
- Daily on-site safety decisions and calls on weather and conditions.
- Completed accident/ incidents forms as required.
- Participates in safety training.



- Notify the National Safety Officer or if the national safety officer notifies the HOT and AM of any safety matters.
- Ensure airworthiness checking and safety of all equipment and aircraft.
- Monitors any changes to site rules or regulations.
- Ensure completion of [Single Integrated Reporting System Log](#) as applicable and compliance with the SMS system.

8.3.3 Club Safety Officer Duties

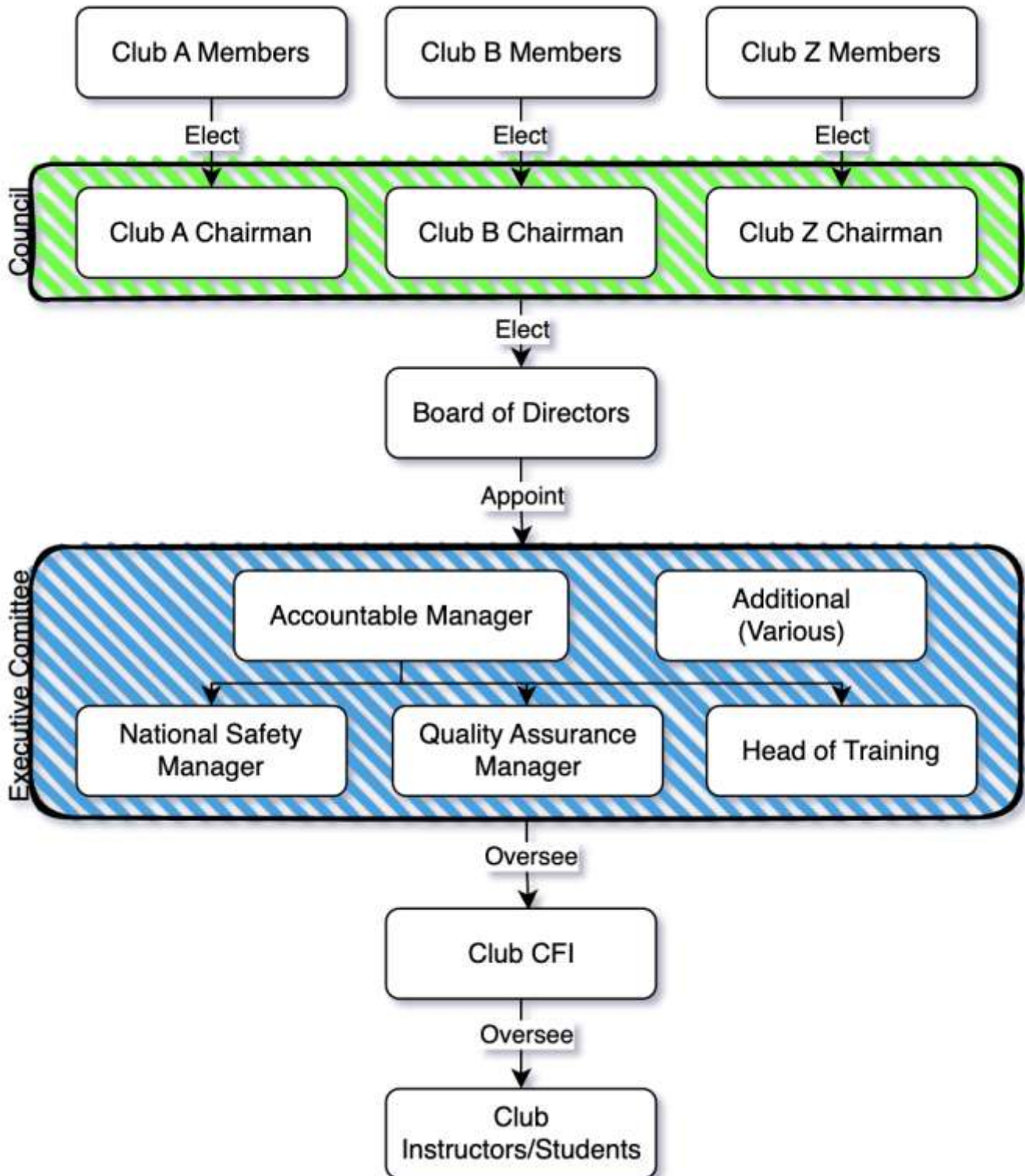
- Notify the National Safety Officer or if the national safety officer notifies the HOT and AM of any safety matters.

8.3.4 Club Safety Officer Responsibilities

- The person responsible for safety at the location /schools shall ensure risk assessments are conducted as applicable.
- Daily on-site safety decisions and calls on weather and conditions.
- Completed accident/ incidents forms as required.
- Participates in safety training.
- Notify the National Safety Officer or if the national safety officer notifies the HOT and AM of any safety matters.
- Ensure airworthiness checking and safety of all equipment and aircraft.
- Monitors any changes to site rules or regulations.
- Ensure completion of [Single Integrated Reporting System Log](#) as applicable and compliance with the SMS system.

ORGANISATION ORGANOGRAM

	SACARS 141.08.12. (2) aligning to 7.7.1
---	--



9. OPERATING LOCATIONS, FACILITIES, AERODROMES OR SITES

	<i>SACARS 141.08.11. (5) & (9)</i>
---	--

SSSA utilises gliding airfields/aerodromes and sites as documented in ENR 5.5 and will operate with landowners' permission gained by SSSA as applicable as per APPENDIX B.

The official sites utilised as follows:

Location	GPS COORDINATE	RUNWAYS	RT Frequency
Potchefstroom FAPS	S26-40.1 E027-05.1	03/21	123.0

FACILITIES (as applicable)	LIST	REVIEW
AVIATION MAPS	APPLICABLE AVIATION CHARTS	Annual
AERONAUTICAL INFORMATION	FILE2FLY AND SACAA PUBLICATIONS	Annual
METROLOGICAL INFORMATION	SAWS, IWEATHER, WEATHER PHOTOS, WINDGURU, LOCATION / AIRFIELD PROVIDED WEATHER STATIONS/ ANEMOMETER OR WINDSOCKS	Annual
WEATHER STATION	AS PER APPENDIX C	Annual
WINDSOCK	ON RUNWAY AND MOBILE WINDSOCK	Annual
FIRST AID KIT	AT LAUNCH POINT AND CLUB HOUSE	Annual
COMMUNICATION EQUIPMENT	AIRBAND RADIOS ON APPLICABLE FREQUENCIES	Annual
CLASSROOM	LOCATION FACILITIES	Annual
AUDIO VISUAL	VIDEOS AND COMPUTER & POWER POINT PRESENTATIONS	Annual
ONLINE LECTURES	– MOSTLY ZOOM OR TEAMS	Annual
EXAM CENTRE	EXAMS CONDUCTED ON MY GLIDING CLUB	Annual
FIRE EXTINGUISHER	ON Launch point and at club houses List held at each location	Annual



10. AIRCRAFT

	SACARS 141.08.11. (7)
---	-----------------------

Aircraft as per Appendix D

AIRCRAFT	MODEL	REG
AS per Appendix D		



11. TRAINING MATERIAL, EQUIPMENT AND FSTD's



SACARS 141.08.11. (2) & (8)

SSSA utilises these books and manuals (not exhaustive)

- SSSA GPL Manual V2
- SSSA SSSA Instructors Manual V1
- Ken Stewart The Glider Pilot Manual
- Various authors The Cape Gliding Club Manual
- The FAA Glider Flying Handbook
- Birch and Bramson Flight Briefing For Pilots
- Ann Welch Pilots Weather
- Robert Buck Weather Flying
- Snyder and Welch Light plane Construction and Repair
- Rotax Two Stroke and Four Stroke Engines
- Roy Vogel Aeronautical Radiotelephony Procedures
- Roy Vogel Aviation Law and Regulations
- South African Civil Aviation Regulations (Extraction) Issued by SACAA

Any other applicable publication suitable for the discipline trained.

FSTD	TYPE	AUTHORISATION
N/A	N/A	N/A



EQUIPMENT TYPE	NAME	ADDITIONAL INFO
Winches		APPENDIX E

TRAINING MATERIAL	NAME	ADDITIONAL INFO
Videos	N/A	N/A

SAFETY POLICY AND QUALITY ASSURANCE SYSTEM

	SACARS 141.08.14. (1) to (7)
---	------------------------------

13.1 SAFETY POLICY

SSSA is committed to Safety and our Safety system. SSSA has established a simple and efficient integrated system that is user friendly; includes regular checks conducted daily during any training. The reporting of safety matters is integrated into the company and the regular reviews and processes. The SMS system in use by SSSA is contained in a separate manual.

SSSA has chosen to retain their SMS system as it works and is already integrated. This is provided in Appendix F

Incidents and accidents are reported via the SSSA reporting system and we implement the SSSA risk analysis system for sites, and any new training operations and existing operations are reviewed only if there are differences to the existing risk profiles already undertaken or if we operate outside of the site-controlled parameters. Safety is looking at Risk and the Safety System is user friendly, comprehensive, and compliant with all applicable statutory requirements. Reporting of potential hazards and safety concerns and events will be welcomed using “Just Culture” as the underlying principle.

13.2 SAFETY PROCEDURES

SSSA utilises a [Single Integrated Reporting System Log](#) that continually monitors safety and location and SSSA matters with recognition, noting, corrective actions and dates. Each location will implement and maintain this log

These are reviewed annually.

- i. occurrence reporting and recording is undertaken within the month they occur.
- ii. accident and incident reporting within the SSSA timelines (4 hours to 7 days)

- a) Safety interventions are undertaken immediately thus no need for Corrective Action plans.
- b) Hazard identification and associated risk assessments (Example in Appendix C) are undertaken initially for regularly used sites and are reviewed if there is significant change or once annually.
- c) Mitigation to any risk is noted in the [Single Integrated Reporting System Log](#) unless dealt with by the SMS system.
- d) All logged events etc, are reviewed annually unless an immediate threat, whereupon they are reviewed and dealt with immediately.
- e) All training equipment is operated within their respective operation limitations as detailed in their respective manufacturer manuals and all operations are conducted within the suggested safety envelopes set by an applicable authority.
- f) Any safety matter that is of concern will be raised on the SSSA “whatsapp group” or similar and/or the website as applicable – Safety briefings are conducted on site and prior to flying.



SSSA attempts as far as possible to utilise this safety circle above as a guide and as applicable.

13.3 QUALITY POLICY

SSSA is committed to deliver training excellence to their clients and stakeholders by ensuring that the flight training conducted is of quality and standard as per the requirements in the applicable regulations, technical standards and incorporates the applicable syllabi. SSSA will comply with all reasonable requirements that complement safety and the effectiveness of the training delivered acceptable safety standard.

All staff will be familiar with the provisions and content of our manuals, syllabi and procedures which include all policy and procedures. Through our methodology of checking and where review processes are in place, recorded evidence training activities conducted as applicable and ensure our training delivered is in accordance with the applicable training requirements, standards, and procedures. Monitoring events and day to day issues and our response to any safety or quality issues are recorded in our **Single Integrated Reporting System Log** and dealt with accordingly with at least an annual review. Quality is essentially looking at compliance.



13.4 QUALITY ASSURANCE SYSTEM

The SSSA Quality assurance system is an internal review program that operates in tandem with our **Single Integrated Reporting System Log** and is scheduled as per table below. The annually required activity report compiled as per Appendix C is on record and may be requested or submitted as applicable to the applicable authority.

ANNUAL ACTIVITY REPORT ITEMS		NUMBER				
TRAINING COURSES PROVIDED						
REFRESHER TRAINING PROVIDED						
NUMBER OF STUDENTS TRAINED						
INCIDENTS						
ACCIDENTS						

PROGRAM REVIEW ITEMS		DATE SCHEDULED					COMPLETED
		Q 1	Q 2	Q3	Q 4	Annually	
Certificate and ops spec review						🕒	
Student files		🕒	🕒	🕒	🕒		
Instructor files		🕒		🕒		🕒	
Incident and accident reports		🕒	🕒	🕒	🕒		
Safety occurrences		🕒	🕒	🕒	🕒		
Theory training review and material review						🕒	
Practical training review and content review						🕒	
Single Integrated Reporting System Log review		🕒	🕒	🕒	🕒		
Aircraft review and airworthiness			🕒		🕒	🕒	
Equipment review			🕒		🕒	🕒	
Safety review						🕒	
Annual activity report completion						🕒	
SMS and Quality review			🕒		🕒	🕒	
myGlidingClub Software and records review			🕒		🕒	🕒	
Schedule of location auditing (including authosheets)						🕒	

ANY issue or rectification that is highlighted in any review or audit that may need rectification is recorded and completed and signed off in the **Single Integrated Reporting System Log** which is under constant review and is a living document.

13.1.1 Duties of the QAP

The QAP must ensure that the standards are met, and the organisation is in compliance with the DTOTPM and the applicable regulations.

13.1.2 Responsibilities of the QAP

The QAP must ensure that:

- The applicable schedule and policies of the organisation complied with and completed.
- The documentation and **Single Integrated Reporting System Log** is completed and up to date.

- The activity report is compiled and submitted to the applicable authority.
- The record keeping is completed and maintained by the relevant responsible appointed persons.

12. RECORD KEEPING



SACARS 141.08.15. (1) to (3)

14.1 METHOD FOR RETAINING RECORD

ALL records are retained in the SSSA filing system that is in either hardcopy or digitally within myGlidingClub software. All myGlidingClub records are stored by electronic backup, and online backup and can be reduced to paper on request.

Student Instructor files and Aircraft training files are stored at the affiliated location training premises in a locked secure cabinet or on myGlidingClub. Records to be updated on SSSA -myGlidingClub within 7 days of flight.

Only the QAP, SO, HOT or CFI or an applicable authority may have access to these files and are in compliance with the POPI act. Other than files, all training material, audio visual material are stored on the company digital storage facilities, be they computers, cloud, hard drives etc. the instructor logbook and **Single Integrated Reporting System Log** store all relevant details along with ERP and means to document all elements of the training systems.

14.2 TRAINING RECORDS AND INSTRUCTOR LOGBOOKS

The records are kept in hard or digital copy on myGlidingClub software.

The student/instructor files will contain:

- A ID photo of student or pilot,
- ID or passport copy,
- next of kin details,
- physical and postal address,
- contact details
- Cell
- email,
- waivers and indemnities as applicable,
- medical as applicable,
- current licences and ratings as applicable.
- Last page of logbook when last renewed for instructors.

The instructor logbook details: Date, course, student, hours-trained, total hours, practical or theory, comments and exercise and a signature.

The student logbook captures exercises and practical training provided.

Location training records need to be stored at the affiliated location training premises in a locked secure cabinet. The following information is always retained for inspection.

- Flight authorisation sheets
- Daily inspection records
- Launch Equipment inspection and maintenance records.

All records shall be retained on myGlidingClub where applicable, at the soonest convenience.



14.3 AIRCRAFT AND EQUIPMENT MAINTENANCE

Aircraft and equipment utilised by SSSA are checked daily before each flight as standard. Any equipment brought back into use after being unused for a period as applicable is checked and noted if airworthy or in operational condition. Any maintenance schedule required by the manufacturer is adhered to.

Training aircraft files need to be stored at the affiliated location training premises in a locked secure cabinet. The following information needs to be contained in the file. All documents must be uploaded to myGlidingClub within 30 days of renewal or change.

The following must be on file;

- d. Aircrafts Airframe and Engine Logbooks
- e. Copy of the Flight Manual
- f. Original or certified copy of the Certificate of Registration
- g. Original of the current Weight and Balance.
- h. Duplicate pages of the Flight folio
- i. Copy of the current Radio station license
- j. Original of the Current Authority to Fly
- k. Aircraft maintenance schedule



14.4 SINGLE INTEGRATED REPORTING SYSTEM

Each location will maintain a **Single Integrated Reporting System Log** which is reviewed regularly to ensure all elements of quality, safety and operational occurrences are properly managed. There are elements in this system namely logbook of events that are documented and dated. This will be updated in myGlidingClub quarterly.

Example of the **Single Integrated Reporting System Log**

DATE	EVENT LOG /ACTIVITY	ACTION	DATE COMPLETED AND COMMENTS	BY WHO
22 Nov 2021	Instructor file review	Check files and update	2 Dec 2021	"Piet Pompies" 
22 Nov 2021	Fire Extinguisher check	Needs check expires December – must get a sign out – fire company contacted – will complete by end Nov 2021		
1 Sept 2021	ATF required	ATF expires end Nov - applied for and submitted to authority. expected back-end Nov – follow up mid Nov		
Nov 19 2021	Student ABC	Photo and medical still outstanding	Received 1 Dec 2021	Piet Pompies" 
Sept 15 2021	Student Number "abc" had hard landing	Submit incident report, check the equipment, discuss with student, monitor progress, add to logbook	24 Nov 2021 discussion – intervention with different technique -	Piet Pompies" 

The **Single Integrated Reporting System Log** integrates, plans, checklists, review, internal audit, corrections, maintenance records, and accident etc into one ongoing continuous record system. It is ostensibly a logbook of events, actions, and completion of all matters pertinent to the DTO. This is aligned to a schedule of checks and reviews staggered throughout the year which regularly requires review of this system/log.



14.5 – RISK ASSESSMENT & ANNUAL ACTIVITY REPORT

Risk Assessment

Date: _____

NAME of SITE: _____ undertaken by: _____

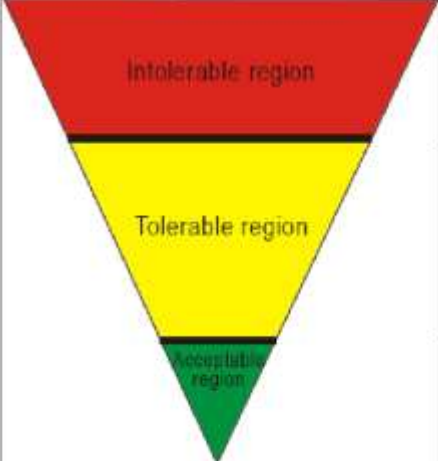
Training operation

SAFETY CONCERN: _____

	Meaning	Value
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

Severity of occurrence	Meaning	Value
Catastrophic	— Equipment destroyed — Multiple deaths	A
Hazardous	— A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely — Serious injury — Major equipment damage	B
Major	— A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency — Serious incident — Injury to persons	C
Minor	— Nuisance — Operating limitations — Use of emergency procedures — Minor incident	D
Negligible	— Little consequences	E

Risk probability	Risk severity				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	5A	5B	5C	5D	5E
Occasional 4	4A	4B	4C	4D	4E
Remote 3	3A	3B	3C	3D	3E
Improbable 2	2A	2B	2C	2D	2E
Extremely improbable 1	1A	1B	1C	1D	1E

Suggested criteria	Assessment risk index	Suggested criteria
	5A, 5B, 5C, 4A, 4B, 3A	Unacceptable under the existing circumstances
	5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C	Acceptable based on risk mitigation. It may require management decision.
	3E, 2D, 2E, 1A, 1B, 1C, 1D, 1E	Acceptable

RISK ALLOCATION:

RECOMMENDATION:

NOTES:



ANNUAL ACTIVITY REPORT

N O	ITEM UNDER REVIEW	COM MEN T AND DAT E	☒ COM PLE TED	N O	ITEM UNDER REVIEW	COM MEN T AND DATE	☒ COM PLE TED
1	Availability of resources			10	Incidents in past year		
2	Training conducted as per programs and syllabi			11	Accidents in past year		
3	Training conducted as per safety policy			12	Review of safety, quality and recording systems		
4	List of dates checks completes (at least 2 per year)			13	Any remediation or corrective actions taken		
5	Review of adequacy of training programs and content			14	Reporting system logbook reviewed		
6	Review of aircraft			15	Maintenance of aircraft checked		
7	Review of equipment			16	Number of course provided		
8	Review of training sites or aerodromes			17	Number of students completed		
9a	Review of Manuals and ops spec			18	Number of students signed up		
9b	Review of location records			19	Review and audit of myGlidingClubSoftware		

As per numbering the company or person submitting may append additional information

Date provided.

Completed by

Signed

13. SYLLABI AND TRAINING MANUAL

	SACARS 141.08.13.
---	-------------------

This DTO shall refer to pertinent regulation and comply with the current CARS, CATS and appendices and notices as applicable – Our theoretical knowledge and practical training syllabi and exercises are available in the approved appendices.

14. GRADUATION CERTIFICATE

	SACARS 141.08.16. (1)
---	-----------------------

Example



15. TESTING FOR ISSUING OF A LICENSE, CERTIFICATION, RATING OR ENDORSEMENT



SACARS 141.08.17. (1)

The HOT or any Instructor listed or temporarily empowered by this DTO may sign off as having completed the applicable requirements and met applicable standard for any proficiency check, skill test, logbook, license, certificate rating or endorsement by signing on any applicable form or document by placing their name and signature and their instructor's licence, rating, endorsement, or certificate number. The initial list is documented in Appendix H on an annual basis.

The instructor is as per the instructor list for this DTO is approved to assess any student or pilot be they local or foreign, conduct any applicable examination, mark, and review any test or invigilate any exam as provided for in this DTO operational specification provided they hold a current applicable license, endorsement, certificate and or rating. Furthermore, they may also test any piece of equipment or aircraft for which they are rated to fly for purposes of checking, instructing or deconstructing as is applicable.

16. COMPETENCY- BASED TRAINING AND ASSESSMENT



SACARS 141.08.19. (1)

All competency checks, skill tests or assessments that are required to undertake the processes for training as contemplated in this DTO are authorised to all instructors.

The instructor will have checked the status, currency, briefed and delivered the required

Competency checks, skill tests or assessments, recording of the outcome on the applicable form with applicable dating and signatures and place record of it upon the applicants file and provide the applicable documentation to the applicant or present it to the applicable authority as is required by the applicable process

17. CONTROL AND DISTRIBUTION OF DOCUMENTATION

All documents that are developed by the company will be stored digitally and the latest revisions will be documented on the said documents. All shall be available to the applicable persons within the company's and where necessary stored upon an accessible digital system or on the applicable website.

The company will utilise only documentation provided by the regulator as stored and made accessible on the regulators website and refer to all regulations also documented on the regulator's website.

The End



APPENDIX A - POST HOLDERS CV's

APPENDIX B - LOCATION AERODROMES AND AIRFIELDS

APPENDIX C - WEATHER STATIONS

APPENDIX D - AIRCRAFT

APPENDIX E - WINCHES

APPENDIX F - SMS MANUAL

APPENDIX H - QMS MANUAL

APPENDIX I – Airfield Agreements

APPENDIX J – LIST OF INSTRUCTORS

APPENDIX K - SYLLABI



APPENDIX A - POST HOLDER CV's

See SSSA ATO Personnel Files for CV's of Post Holders



APPENDIX B - LOCATION AERODROMES AND AIRFIELDS

Club Name	Location
AKA Vlieg Potchefstroom	FAPS – Potchefstroom Airfield
Bloemfontein Gliding Club	FATP - New Tempe Airfield
Cape Gliding Club	FAWC - Worcester Airfield
Drakensberg Soaring Club	FAUB- Underberg Airfield
East Rand Gliding Club	FASI – Springs Airfield
Goldfields Gliding Club	FAWM- Welkom Airport
Howick Gliding Club	FAHC- Howick Airfield
Kranskop Gliding Club	FABS – Brits Airfield
Kroonstad Gliding Club	FAKS – Kroonstad Airfield
Magaliesberg Gliding Club	FAOI – Orient Airfield
Vall River Gliding Club	FAOY – Orkney Airfield
Whispering Wings Gliding Club	FAPY – Parys Airfield

Potchefstroom FAPS	S26-40.1 E027-05.1	03/21	124.8
-----------------------	--------------------	-------	-------



TRAINING FACILITY



New Tempe FATP	29 ° 02.333" S 026 ° 09.500" E	36/18 27/09	131.300
-------------------	--------------------------------	----------------	---------



TRAINING FACILITY



Worcester Airfield FAWC	33 ° 40.000" S 019 ° 25.000" E	33/15 30/12	124.80
----------------------------	--------------------------------	----------------	--------



TRAINING FACILITY



Utopia Airfield	29 ° 48.491" S 029 ° 23.380" E	14/32 23/05	123.40
-----------------	--------------------------------	----------------	--------



TRAINING FACILITY



Springs FASI	26 ° 14.500" S 028 ° 23.500" E	03/21	122.400
		14/32	
		04/22	



TRAINING FACILITY



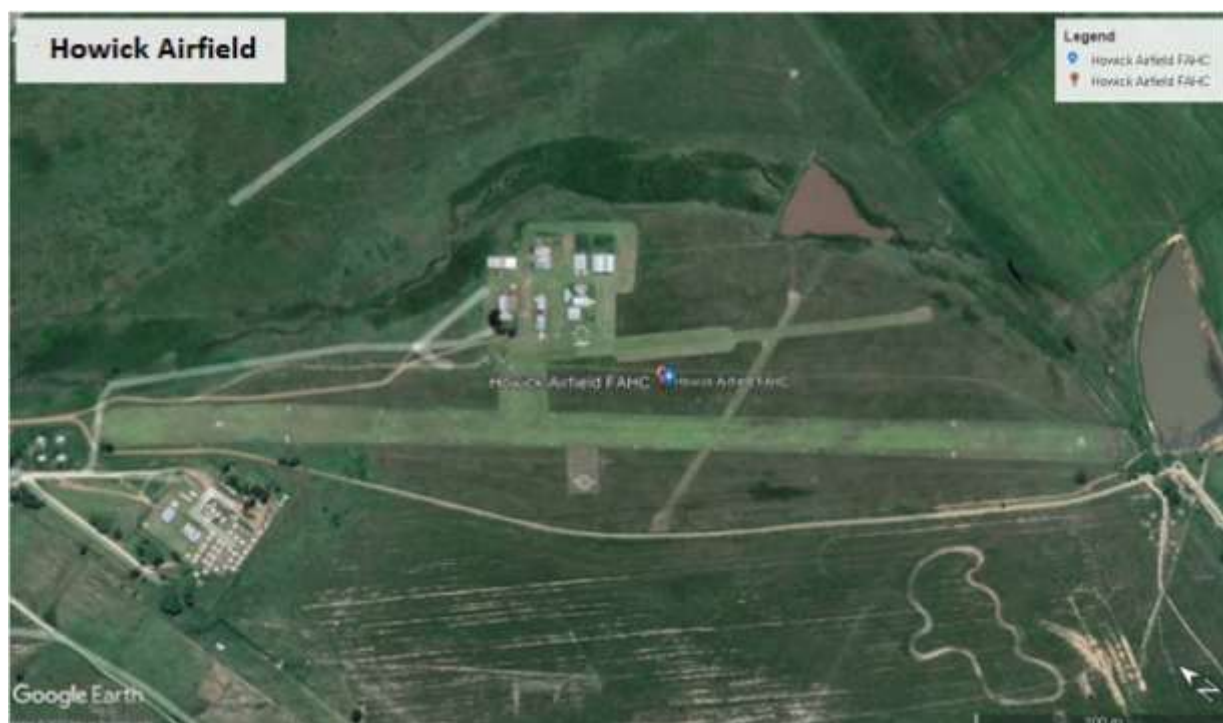
Welkom Airfield FAWM	28 ° 01.883" S 027 ° 05.033" E	16/34	118.00
-------------------------	--------------------------------	-------	--------



TRAINING FACILITY



Howick Airfield FAHC	29 ° 33.167" S 030 ° 12.667" E	16/34	123.40
-------------------------	--------------------------------	-------	--------



TRAINING FACILITY



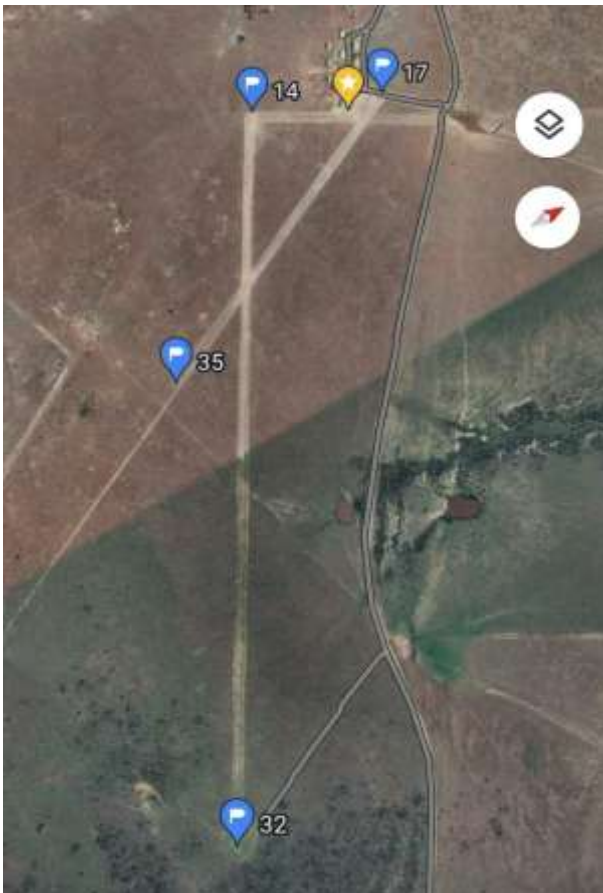
Brits Airfield FABS	25 ° 31.950" S 027 ° 46.550" E	20/02	123.20
------------------------	--------------------------------	-------	--------



TRAINING FACILITY



Mooizvlei Farm Kroonstad	25 ° 31.950" S 027 ° 46.550" E	14/32	123.40
-----------------------------	--------------------------------	-------	--------



TRAINING FACILITY



Orient	26 ° 02.383" 027 ° 35.650" E	18/36	123.
FAOI			



TRAINING FACILITY



Parys Airfield FAPY	26 ° 57.610" S 026 ° 45.290" E	06/24	123.50
------------------------	--------------------------------	-------	--------



TRAINING FACILITY



Vaal Reefs Airfield FAOY	26 ° 57.610" S 026 ° 45.290" E	06/24	124.8
-----------------------------	--------------------------------	-------	-------



TRAINING FACILITY





APPENDIX C - WEATHER STATIONS

AIRFIELD	DEVICE	LOCATION
New Tempe	Windsock	Near intersection of runways 36 and 27
Worcester Airfield	Windsock x2 SAWB Weather Station	NE of Runway 15 and next Fuel Bay Located in WFC Clubhouse, PC readout
Springs Airfield	Windsock	East of RW 03/21
Utopia Airfield	Windsock x2	05 / 23 and 14 / 32
Welkom Airfield	3x Windsocks Weather station	Located middle of airfield and 07 and 25 Located in clubhouse
Howick Airfield	Windsock x2	Located next to 16/34 and Hanger
Brits Airfield	Windsock	Located next to 20/02
Mooizvlei farm (Kroonstad) Airfield	Windsock x2	Located RW 14 & 32
Orient Airfield	Windsock x1 Weather Stations online	Located Next to 36L Online weather station located in hanger and launch point
Potchefstroom Airfield	3x Windsocks 1x Weather Station	Next to runway, 21, 03 and hangers Weather station in clubhouse
Parys Airfield	Windsock x2	1x next to restaurant, 1x on launch site trailer
Vaal River Airfield	Windsock	Next to Hangar



APPENDIX D - AIRCRAFT

AIRCRAFT	MODEL	REGISTRATION
Glider	Schleicher K7	ZS-GSH
TMG	UFM-13 LAMBADA	ZS-OTE
Glider	Schempp-Hirth Janus C	ZS-GFL
Glider	Rollanden Schneider LS1f	ZS-GOF
Glider	Schempp-Hirth Janus B	ZS-GVK
Glider	Schleicher ASK-13	ZS-GHB
Glider	Schleicher ASK-13	ZS-GHV
Glider	Schleicher ASK-13	ZS-GAI
Glider	Single Astir (jeans)	ZS-GUC
Glider	Grob G102 Astir CS 77	ZS-GYX
Glider	Schleicher K8B	ZS-GZD
TMG	RotaxFalke SF25	ZS-GZF
TMG	Scheibe SF28	ZS-GVM
Glider	Schleicher Ask13	ZS-GOA
Glider	Grob G102 Twin Astir	ZS-GSN
TMG	Scheibe Falke SF27c	ZS-GBB
TMG	Fournier RF5B	ZS-GUF
TMG	Scheibe SF25	ZS-GZA
Glider	Grob 103 Astir	ZS-GTH
Glider	Grob 102 Astir	ZS-GOH
TMG	X 294 Whisper TMG	ZU-FDI
Glider	Schleicher K7	ZS-GUK
Glider	Schleicher ASK13	ZS-GUL
Glider	Schleicher ASK 21	ZS-GME
Glider	Schleicher ASK 23	ZS-GRJ
Glider	Schleicher ASK 21	ZS-GGE
Glider	Schleicher K7	ZS-GUB
TMG	Scheibe SF25c Falke	ZS-GWX
Glider	Schleicher K7	ZS-GUR
Glider	Schleicher K6	ZS-GDJ
Glider	Blanik L23	ZS-GTD
TMG	Vivat L13SEH	ZU-BKF
TMG	Scheibe SF25D Falke	ZS-GXP
Glider	Schleicher ASK 13	ZS-GHH
TMG	Scheibe SF25 Falke	ZS-SHS
Glider	Grob G103a	ZS-GNX
Glider	Grob G103a	ZS-GNJ
Glider	Grob G103a	ZS-GPJ
Glider	Grob G102 Jeans Astir	ZS-GLG
TMG	Scheibe SF25c Falke	ZS-GYH



AIRCRAFT TYPE	MODEL	REGISTRATION
TMG	Scheibe SF25b Falke	ZS-GSZ
Glider	Blanik L13	ZS-GEL
TMG	Grob 109	ZS-UZV
TMG	Scheibe SF25	ZS-GAE
TMG	Scheibe SF25	ZS-GYK
TMG	Scheibe SF25	ZS-GWH
TMG	Scheibe SF25	ZS-SDV
TMG	Scheibe SF25	ZS-URY
Glider	Schleicher ASK 13	ZS-GGH
Glider	Schleicher K7	ZS-GXE
TMG	Scheibe SF25	ZS-SEY
TMG	Scheibe SF25	ZS-GVU
Glider	Grob 103 Twin Astir	ZS-GPD
TMG	Pipistrel Sinus	ZU-MAG
TMG	Scheibe SF25 Motor Falke	ZS-GVV
TMG	Grob 109a	ZS-UZV
TMG	Scheibe SF25	ZS-GDB
TMG	Scheibe SF25	ZS-GWM
TMG	X 294 Whisper TMG	ZS-EYU
TMG	X 294 Whisper TMG	ZU-GAK
TMG	Scheibe SF25	ZS-GWB
TMG	Scheibe SF28	ZS-GFV
Glider	Janus	ZS-GFG
LSA	Kitfox	ZU-BNA
LSA	Wt9 Dynamc	ZU-DUF
LSA	CAW Sportcruiser	ZU-MEW
LSA	Samba	ZS-GWJ



APPENDIX E - WINCHES

MAKE	MODEL
Custom Built	Opel V8 Engine, double drum winch enclosed cabin
Custom Built	International 302 CID engine driving a Ford C4 automatic gearbox, double drum
Custom Built	V8 Petrol
Custom Built	V8 Petrol
Custom Built	Ford v8
Custom Built	Chevrolet V8, Two Drum, enclosed cabin
Desoto/Hemmi	V8 Petrol
Custom Built	Ford v8 Double Drum Winch



APPENDIX F - SMS MANUAL

Refer to SSSA-SMS-001



APPENDIX H - QMS MANUAL

Refer to SSSA-QMS-001



APPENDIX I – Facility Agreements

See SSSA facility files for copies of the airfield agreements for each location.



APPENDIX J – LIST OF INSTRUCTORS

NAME	GRADE	RATING
Riaan Bezuidenhout	Full	Glider
Phil Fellows	Assistant/Grade C	Glider/TMG
Jacques van Wyk	Assistant/Grade C	Glider/TMG
Dick Bradley	Full	Glider
Clinton Birch	Full	Glider
Niel Viljoen	Full	Glider
Paul Bailey	Full/Grade B	Glider/TMG
Ockert Brits	Assistant/Grade C	Glider
Peter Clemence	Full/Grade A TMG/Grade B LSA	Glider/TMG/LSA
Boet Coetsee	Full/Grade B	Glider/TMG
Ari Cotton	Full/Grade B	Glider/TMG
Charles Enever	Full/Grade A TMG/Grade A LSA	Glider/TMG/LSA
Ian Forbes	Full/Grade B	Glider/TMG
Markus Geisen	Full	Glider
Martin Gruenert	Full/Grade A TMG/Grade B LSA	Glider/TMG/LSA
Nico le Roux	Full	Glider
Kevin Mitchell	Full	Glider
Wilhelm Mosehuus	Assistant/Grade C	Glider/TMG
Nicholas Oberhofer	Full/Grade B	Glider/TMG
Sven Olivier	Full/Grade B	Glider/TMG
Mike Pascoe	Full/Grade B	Glider/TMG
Durr Pieters	Full	Glider
Michel Reolon	Full/Grade B	Glider/TMG
Colin Sindle	Assistant	Glider
Findlay Smith	Assistant/Grade C	Glider/TMG
Jac Snyman	Full	Glider
Wally Tamsen	Full/Grade B	Glider/TMG
Stephan van den Berg	Assistant	Glider
John Spargo	Full/Grade B	Glider/TMG
William Whittaker	Full/Grade B	Glider
Gavin Brown	Full/Grade B	Glider/TMG
Albert Willemse	Full/Grade B	Glider/TMG
Ken Brown	Full	Glider
Donovan Barton-Hobbs	Assistant	Glider
Gavin Stephens	Assistant	Glider
Trevor Perkel	Grade A	TMG
Barry Turner Jnr	Grade B	TMG
John Olsson	Grade B	TMG
Robert Bristow	Assistant/Grade B/Grade C LSA	Glider/TMG/LSA
Jean du Plessis	Full/Grade B/Grade C LSA	Glider/TMG/LSA
Pieter Geldenhuys	Assistant/Grade C/Grade C LSA	Glider/TMG/LSA
Johan	Grade C/Assistant	Glider/TMG
Mark Hardman	Full/Grade B	Glider/TMG
Piet Le Roux	Full/Grade B	Glider/TMG
Dirk Smit	Assistant/Grade C	Glider/TMG
Kobas Botha	Assistant/Grade C	Glider/TMG
Ian Buchanan	Full/Grade A	Glider/TMG
Tex Impey	Full/Grade B	Glider/TMG
Mike Hancock	Assistant/Grade C	Glider/TMG
Ken Brown	Full/Grade B	Glider
Dave Taylor	Full/Grade B	Glider/TMG



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

Karl von Seydlitz	Full/Grade B	Glider/TMG
Louw van Zyl	Full/Grade C	Glider/TMG
Bennie du Plessis	Full	Glider
Chris Burger	Assistant/Grade A	Glider/TMG
Riaan Denner	Full/Grade A TMG/Grade A LSA	Glider/TMG/LSA
Robert Unwin	Full	Glider
Richard Hoffman	Assistant	Glider
Michael Dittberner	Assistant	Glider
Stojan Korda	Full/Grade B	Glider/TMG
Ivan Hancock	Full/Grade B	Glider/TMG
Christian Kuschke	Full/Grade B	Glider/TMG
Stephen Haselum	Full/Grade B	Glider/TMG
Gavin Johnson	Full/Grade A TMG/Grade B LSA	Glider/TMG/LSA
Laurence Hardman	Full/Grade A	Glider/TMG
Jason Adriaan	Full/Grade A TMG/Grade A LSA	Glider/TMG
Martin Lessle	Full/Grade B	Glider/TMG
Hendrik Stheeman	Assistant	Glider
Adri Vinke	Full	Glider/TMG
Dieter Krug	Full/Grade B	Glider/TMG
Andreas Siebold	Full/Grade C	Glider/TMG
Walter Burki	Full	Glider
John Coutts	Full/Grade C	Glider/TMG
Daniel Rodic	Full	Glider
Mike Barenbrug	Full/Grade B	Glider/TMG
Dawie Olivier	Full	Glider
Fourie Grobler	Assistant	Glider
Mark Kopel	Assistant	Glider
Stephen Young	Full	Glider
Christoffel Horn	Assistant	Glider
Craig Fisher	Full/Grade B	Glider/TMG
Ian Wentzel	Grade B	TMG
Barry Becke	Full/Grade A	Glider/TMG
Colin Dettman	Grade B	TMG



APPENDIX K – SYLLABI

K1 - Theoretical Knowledge GLD/TMG

Ref. No.	SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE GLIDER PILOT AND TOURING MOTOR GLIDER LICENSE	GLD	TMG
1.0	AIR LAW		
1.1	Civil Aviation Regulations (CAR) and Technical Standards (CATS)		
1.1.1	PART 1: DEFINITIONS AND ABBREVIATIONS		
	Definitions	X	X
	Abbreviations	X	X
1.1.2	PART 12: AVIATION ACCIDENTS AND INCIDENTS		
	12.02.1 – Notification of accidents	X	X
	12.02.2 – Notification of incidents	X	X
	12.02.4 – Particulars of notification	X	X
	12.04.1 – Guarding of aircraft involved in accident	X	X
	12.04.4 – Interference with objects and marks at scene of accident	X	X
1.1.3	PART 68: FLIGHT CREW LICENSING		
	Subpart 1: General		
	68.01.1 - Applicability	X	X
	68.01.2 - Authority to act as pilot	X	X
	68.01.3 - Ratings for glider pilots	X	X
	68.01.4 - Competency	X	X
	68.01.5 - Medical fitness	X	X
	68.01.6 - Language	X	X
	68.01.7 - Logging of flight time	X	X
	68.03.9 - Period of validity	X	X
	68.03.10 - Privileges and limitations	X	X
	68.03.11 - Maintenance of competency	X	X
1.1.4	PART 67: MEDICAL CERTIFICATION	X	X
	67.00.2 Classes of medical certificates	X	X
	67.00.6 Period of validity of medical certificates	X	X
	67.00.9 – Duties of holder of medical certificate	X	X
1.1.5	PART 91 – GENERAL OPERATING AND FLIGHT RULES		
	Subpart 1: General Provisions		
	91.01.2 – Authority of pilot-in-command	X	X
	91.01.10 – Endangering safety	X	X
	91.01.11 – Preservation of documents	X	X
	Subpart 2: Flight Crew		
	91.02.2 – Flight crew member emergency duties	X	X
	91.02.3 – Flight crew member responsibilities	X	X
	91.02.4 – Recency	X	X
	91.02.6 – Laws, regulations, and procedures	X	X
	91.02.7 – Duties of pilot-in-command regarding flight preparation	X	X
	91.02.8 – Duties of pilot-in-command regarding flight operations	X	X
Ref. No.	Subpart 3: Documentation and Records	GLD	TMG
	91.03.1 – Documents to be carried on board	X	X



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

91.03.2 – Aircraft flight manual	X	X
91.03.4 – Air traffic service flight plan		X
91.03.5 – Flight folio	X	X
91.03.6 – Fuel and oil record		X
91.03.7 – Certificate of release to service	X	X
Subpart 4: Instruments and Equipment		
91.04.1 – Use of instruments and equipment by pilot		X
91.04.2 – Circuit protection devices		X
91.04.3 – Aircraft operating lights		X
91.04.4 – Flight, navigation and associated equipment for aircraft operated under VFR		X
91.04.11- Seat Safety Belts	X	X
91.04.14 – Seats, seat safety belts, harnesses and child restraint devices		X
91.04.15 –Stowage of articles, baggage, and cargo	X	X
91.04.16 –Standard first aid kit	X	X
91.04.19 – Supplemental oxygen in the case of non-pressurised aircraft	X	X
91.04.21 – Hand-held fire extinguishers		X
SUBPART 5 COMMUNICATION AND NAVIGATION		
91.05.1- Communication equipment	X	X
91.05.3- Use of global navigation satellite system	X	X
Subpart 6: Rules of the Air – Flight Rules		
91.06.1 – Landing on roads		X
91.06.2 – Dropping objects spraying or dusting		X
91.06.3 – Picking up objects		X
91.06.4 – Towing	X	X
91.06.5 – Operation of vehicle towed	X	
91.06.6 – Proximity and formation flights	X	X
91.06.7 – Right of way	X	X
91.06.8 – Following line features		X
91.06.9 – Aircraft speed	X	X
91.06.10 – Lights to be displayed by aircraft		X
91.06.11 – Taxi rules		X
91.06.12 – Operation on and in the vicinity of aerodrome	X	X
91.06.13 – Signals (Gliding launch and air/ground)	X	X
91.06.15 – Reporting position		X
91.06.16 – Mandatory radio in controlled airspace	X	X
91.06.17 – Mandatory radio in advisory airspace	X	X
91.06.18 – Compliance with air traffic control clearance and instructions	X	X
91.06.19 – Prohibited areas	X	X
	GLD	TMG
91.06.20 – Restricted areas	X	X
91.06.21 – Visibility and distance from cloud	X	X
91.06.22 – Special VFR weather minima		X
91.06.23 – Responsibility to ascertain whether VFR flight is permitted		X
91.06.29 – Identification and interception of aircraft		X
91.06.30 – Air traffic service procedures		X
91.06.31 – Priority		X
91.06.32 – Minimum heights		X
91.06.33 – Semi-circular rule		X
Subpart 7: flight operations		



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	91.07.1 – Routes and areas of operation		X
	91.07.2 – Minimum flight altitudes		X
	91.07.3 – Use of aerodromes		X
	91.07.9 – Meteorological conditions		X
	91.07.10 – VFR operating minima		X
	91.07.11 – Mass and balance	X	X
	91.07.12 – Fuel and oil supply		X
	91.07.13 – Refuelling or de-fuelling with passengers on board		X
	91.07.14 – Smoking in aircraft		X
	91.07.17 – Submission of air traffic service flight plan		X
	91.07.18 – Seats, safety belts and harnesses	X	X
	91.07.19 – Passenger seating	X	X
	91.07.20 – Passenger briefing	X	X
	91.07.23 – Use of supplemental oxygen	X	X
	91.07.28 – Starting of engines		X
	91.07.29 – Acrobatic flights		X
	91.07.32 – Simulated instrument flight in aircraft		X
	Part 94 Operation of Non-Type Certified Aircraft		
	94.01.2- Authority to Fly	X	X
	Subpart 3 – Documentation and records	X	X
	Subpart 4 – Communication Equipment	X	X
Ref. No.	TECHNICAL	GLD	TMG
2.0	AIRCRAFT GENERAL KNOWLEDGE		
2.1	Airframe and Engines		
	Airframe structure (aeroplane)	X	X
	–components	X	X
	–fuselage, wings, tailplane, fin	X	X
	–primary flying controls	X	X
	–trim	X	X
	–flap systems	X	X
	–landing gear	X	X
	–Engines		X
2.2	Instruments		
	Pitot/static system	X	X
	–pitot tube, function	X	X
	–pitot tube, principles and construction	X	X
	–static source	X	X
	–alternate static source	X	X
	–system drains	X	X
	–errors caused by blockage or leakage	X	X
	–effect of pressure/density altitude	X	X
	–performance as a function of pressure and temperature	X	X
	–Slip indicator and similarity to the string	X	X
2.3	Airspeed indicator		
	–principles of operation and construction	X	X
	–relationship between pitot and static pressure	X	X
	–definitions of indicated, calibrated and true airspeed	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	-instrument errors	X	X
	-airspeed indications, colour coding	X	X
	-pilot's serviceability checks	X	X
2.4	Altimeter		
	-principles of operation and construction	X	X
	-function of the subscale	X	X
	-effects of atmospheric density	X	X
	-pressure altitude	X	X
	-true altitude	X	X
	-international standard atmosphere	X	X
2.5	Variometer	X	X
	-principles of operation and construction	X	X
	-function	X	X
		GLD	TMG
	-inherent lag	X	X
	-Mechanical variometer (types)	X	X
	-instantaneous VSI		X
	-presentation	X	X
	-pilot's serviceability checks	X	X
2.6	Magnetic compass		
	-construction and function	X	X
	-earth's magnetic field	X	X
	-variation and deviation	X	X
	-turning, acceleration errors	X	X
	-precautions when carrying magnetic items	X	X
	-pilot's serviceability checks	X	X
2.7	Airworthiness and Emergency Procedures		
	Airworthiness		
	-certificate to be in force	X	X
	-compliance with requirements	X	X
	-periodic maintenance inspections	X	X
	-compliance with flight manual (or equivalent), instructions	X	X
	Limitations, placards		
	-flight manual supplements	X	X
	-provision and maintenance of documents	X	X
	-glider logbooks	X	X
	-recording of defects	X	X
	-permitted maintenance by pilots	X	X
	Emergency Procedures		
	-emergency equipment and its use	X	X
	-fire extinguisher		X
	-engine/cabin fires		X
	-flammable goods/pressurised containers		X
Ref. No.		GLD	TMG
3.0	FLIGHT PERFORMANCE AND PLANNING		
3.1	Mass and balance		
	Terminology:	X	X
	-Arm, moment, reference datum, flight station, centre of gravity	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	-Forward and aft limitations of centre of gravity, normal and utility operation	X	X
	-Maximum ramp and taxi mass	X	X
	-Maximum take-off mass	X	X
	-Limitations on maximum mass	X	X
	-Forward and aft limitations of centre of gravity, normal and utility operation	X	X
	-Mass and centre of gravity calculations	X	X
3.2	Abbreviations, definitions and symbols		
	-IAS, RAS, TAS	X	X
	-Vx, Vy, Vfe, Vfo, Vle, Vlo, Va, Vne, Vno, Vs, Vso (as applicable)	X	X
	-OAT, IOAT		X
	-ISA temperature/deviation from ISA	X	X
	-pressure altitude, density altitude	X	X
	-QNH, QFE, QNE	X	X
	-glide range	X	X
	-landing performance, effect of flaps, mass, wind, density altitude, approach speed, ground surface and gradient	X	X
	-stall speeds	X	X
Ref. No.		GLD	TMG
4.0	HUMAN PERFORMANCE AND LIMITATIONS		
4.1	The atmosphere		
	-composition of the atmosphere	X	X
	-the gas laws	X	X
	-oxygen requirement of tissues	X	X
4.2	The heart		
	-basic physiology	X	X
	-blood pressure, pulse rate	X	X
	-composition of blood and circulation	X	X
	-ailments, recognition and treatment	X	X
4.3	The lungs		
	-physiology	X	X
	-respiration	X	X
	-ailments and treatment	X	X
	-effects of partial pressure	X	X
	-effect of increasing altitude	X	X
	-gas transfer	X	X
	-hypoxia, symptoms, prevention	X	X
	-time of useful consciousness	X	X
	-the use of oxygen masks and rapid descent	X	X
	-hyperventilation, symptoms, avoidance	X	X
	-effects of accelerations	X	X
4.4	Vision		
	-physiology of vision	X	X
	-limitations of the visual system	X	X
	-vision defects	X	X
	-optical illusions	X	X
	-night vision	X	X
	-spatial disorientation	X	X
	-avoidance of disorientation	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	–ailments and treatment	X	X
		GLD	TMG
4.5	Hearing		
	–basic physiology	X	X
	–vestibular system	X	X
	–inner ear sensations	X	X
	–effects of altitude/pressure change	X	X
	–noise and hearing loss	X	X
	–protection of hearing	X	X
	–spatial disorientation	X	X
	–conflicts between ears and eyes	X	X
	–prevention of disorientation	X	X
	–motion sickness, causes, symptoms, prevention	X	X
4.6	Flying and health		
	–medical requirements	X	X
	–effect of common ailments and cures	X	X
	–colds and flu	X	X
	–stomach upsets	X	X
	–hypotension, hypertension, coronary disease	X	X
	–obesity	X	X
	–nutrition hygiene	X	X
	–drugs, medicines, and side effects	X	X
	–alcohol	X	X
	–tobacco	X	X
	–self medication	X	X
	–personal fitness	X	X
	–scuba diving – precautions before flying	X	X
	–decompression sickness	X	X
	–acceleration/deceleration and vibration	X	X
	–effects of pressure change	X	X
	–incapacitation	X	X
	–faints	X	X
	–toxic hazards	X	X
	Threat and Error Management		
	Single Pilot CRM and threat and error management	X	X
Ref. No.		GLD	TMG
5.0	METEOROLOGY		
5.1	The atmosphere		
	–composition and structure	X	X
	–vertical divisions	X	X
	–International standard atmosphere (ISA)	X	X
5.2	Pressure, density and temperature		
	–barometric pressure, isobars	X	X
	–changes of pressure and density with altitude	X	X
	–insolation and terrestrial energy radiation	X	X
	–diurnal variation of temperature	X	X
	–adiabatic process	X	X
	–temperature lapse rate	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	–stability and instability	X	X
	–effects of advection and convection	X	X
5.3	Humidity and precipitation		
	–water vapour in the atmosphere	X	X
	–dew point, relative humidity	X	X
	–condensation and vaporization	X	X
	–precipitation	X	X
5.4	Pressure and wind		
	–high- and low-pressure areas	X	X
	–troughs, ridges, cols	X	X
	–pressure gradient, Coriolis force	X	X
	–geostrophic and surface winds	X	X
	–vertical and horizontal motion, convergence, divergence	X	X
	–effect of wind gradient and windshear on take-off and landing	X	X
	–relationship between isobars and wind, Buys Ballot’s law	X	X
	–turbulence and gustiness	X	X
	–local winds	X	X
	–föhn wind	X	X
	–land and sea breezes	X	X
	–anabatic and katabatic winds	X	X
5.5	Cloud formation		
	–cooling by advection, radiation and adiabatic expansion	X	X
	–cloud types (high, medium, low and vertical development)	X	X
	–formation of cloud types	X	X
	–flying conditions associated with each cloud type	X	X
5.6	Fog, mist and haze	GLD	TMG
	–visibility		X
	–radiation fog		X
	–advection fog		X
	–frontal fog		X
	–freezing fog		X
	–steam fog		X
	–valley fog		X
	–formation and dispersal		X
	–assessment of probability of reduced visibility		X
	–hazards in flight due to low visibility, horizontal, vertical and slant angle		X
5.7	Air masses		
	–characteristics and factors affecting the properties of air masses	X	X
	–classification of air masses, region of origin	X	X
	–modification of air masses during their movement	X	X
	–development of low and high pressure systems	X	X
	–weather associated with pressure systems	X	X
5.8	Frontology		
	–cold fronts	X	X
	formation	X	X
	associated clouds and weather	X	X
	flying conditions	X	X
	changes with the passage of the front	X	X
	–warm fronts	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	formation	X	X
	associated clouds and weather	X	X
	weather in the warm sector	X	X
	flying conditions	X	X
	changes with the passage of the front	X	X
	–occlusions	X	X
	formation	X	X
	associated clouds and weather	X	X
	–stationary fronts	X	X
5.9	Thunderstorms		
	–conditions required	X	X
	–formation, trigger action	X	X
	–air mass, frontal, orographic	X	X
	–development process	X	X
	–hazards for aircraft	X	X
	–effects of lightning and severe turbulence	X	X
	–avoidance of flight in the vicinity of thunderstorms	X	X
5.10	Flight over mountainous areas	GLD	TMG
	–hazards	X	X
	–influence of terrain on atmospheric processes	X	X
	–mountain waves, windshear, turbulence, vertical movement, rotor effects	X	X
	–valley winds	X	X
5.11	Climatology		
	–Basic Climatology	X	
	–general seasonal circulation in the troposphere over Southern Africa		X
	–local seasonal weather and winds		X
	–development of a coastal low (orographic depression)		X
	–South Westerly Buster		X
	–Cape Doctor		X
	–Black South Easter		X
	–Berg winds		X
5.12	Altimetry		
	–operational aspects of pressure settings	X	X
	–pressure altitude, density altitude	X	X
	–height, altitude, flight level	X	X
	–QNH, QFE, standard setting	X	X
5.13	Weather analysis and forecasting		
	–synoptic weather charts, symbols, signs	X	X
	–significant (prognostic) weather charts		X
	–upper wind and temperature charts		X
	–Tephigram use and interpretation	X	X
	–gliding weather forecasting information and software	X	X
5.14	Weather information for flight planning		
	–interpretation of coded information METAR, TAF, SPECI, SIGMET		X
	–Meteorological broadcasts for aviation		X
	–ATIS		X
	–interpretation of coded information Tephigrams, using commercial/non-commercial software	X	X
	Practical Soaring Techniques	GLD	TMG



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	THERMALLING		
	-Locating Thermals	X	X
	-Entering Thermals	X	X
	-Bank Angle, Canter and exiting thermals	X	X
	-Collision avoidance	X	X
	RIDGE/SLOPE SOARING		
	-traps	X	X
	-Bowls and Spurs	X	X
	-obstructions	X	X
	-Safe Flying Procedures	X	X
	WAVE SOARING		
	-Getting into the wave	X	X
	-Flying the Wave	X	X
	SOARING CONVERGENCE LINES	X	X
Ref. No.		GLD	TMG
6.0	NAVIGATION		
6.1	Form of the earth		
	-true north, axis, poles, direction and rate of rotation	X	X
	-cardinal and quadrantal points	X	X
	-meridians of longitude	X	X
	-prime (Greenwich) meridian	X	X
	-parallels of latitude	X	X
	-equator	X	X
	-great circles, small circles, rhumb lines	X	X
	-convergence between meridians	X	X
	-hemispheres, north/south, east/west	X	X
	-distances	X	X
	-units in use	X	X
	-derivation of nautical mile and kilometre	X	X
6.2	Time		
	-Arc to time, relationship between universal coordinated (UTC) time, local mean time (LMT) and Standard time factor (STF)	X	X
	-definitions of sunrise and sunset times	X	X
	-official day and official night	X	X
6.3	Mapping – general		
	-aeronautical maps and charts (topographical)	X	X
	-Lambert's conic conformal, (ICAO 1: 500,000 chart)	X	X
	orthomorphism	X	X
	-construction	X	X
	-convergence of meridians	X	X
	-presentation of meridians, parallels, great circles and rhumb lines		
	-measurement of tracks	X	X
	-indication of magnetic variation	X	X
	-scale, standard parallels	X	X
	-measurement of distance in relation to map projection	X	X
	-conversion of units	X	X
	-map analysis	X	X
	depiction of height	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	topography	X	X
	relief	X	X
	cultural features	X	X
	permanent features (e.g. line features, spot features, unique or special features)	X	X
	features subject to change (e.g. water)	X	X
	aeronautical symbols	X	X
	aeronautical information	X	X
6.4	Direction		
	–true north	X	X
	–earth’s magnetic field, variation – annual change	X	X
	–magnetic north	X	X
	–isogonals, agonic lines	X	X
6.5	Practical Navigation	GLD	TMG
	–measurement of tracks and distances	X	X
	–dead reckoning, position, fix	X	X
	–procedure when uncertain of position	X	X
	–plotting positions	X	X
	–latitude and longitude	X	X
	–bearing and distance	X	X
	–use of navigation protractor	X	X
	–calculating headings (T), (M), (C)	X	X
	–EET and ETA		X
	–Final Gide	X	X
	–rate of descent and rate of climb	X	X
	–ETA for top of descent		X
	–compass headings, use of deviation card	X	X
6.6	GPS		
	–application	X	X
	–principles	X	X
	–presentation and interpretation	X	X
	–coverage	X	X
	–errors and accuracy	X	X
	–factors affecting reliability and accuracy	X	X
6.7	CROSS-COUNTRY FLYING		
	Preparation and planning	X	
	Personal and Special Equipment	X	
	Cross Country Techniques	X	
	Soaring Faster or Further	X	
	Final Glide	X	
	Cross Country using other lift sources	X	
	Out-landing	x	
Ref. No.		GLD	TMG
7.0	PRINCIPLES OF FLIGHT		
7.1	The atmosphere		
	–composition and structure	X	X
	International standard atmosphere (ISA)	X	X
	atmospheric pressure	X	X



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	Lift	X	X
	–Newton’s Laws of motion	X	X
	–Equation of continuity	X	X
	–IAS, CAS, TAS	X	X
	–Bernoulli’s principle – venturi effect	X	X
	–airflow around a flat plate	X	X
	–airflow around a curved plate (aerofoil)	X	X
	–Description of aerofoil cross section	X	X
	Relative Airflow	X	X
	Chord line	X	X
	Mean camber line	X	X
	Camber	X	X
	Symmetrical aerofoils	X	X
	Surface area	X	X
	Shape	X	X
	Angle of Attack	X	X
	Centre of Pressure	X	X
	Lift Force	X	X
7.2	Pressure distribution about an aerofoil		
	–The lift formula – definitions	X	X
	Velocity	X	X
	Coefficient of Lift (CL)	X	X
	Density	X	X
	Surface area	X	X
	–Lift curve	X	X
7.3	Drag		
	–Parasite (profile) drag	X	X
	form	X	X
	skin friction	X	X
	interference drag	X	X
	–Induced drag	X	X
	wingtip and trailing edge vortices	X	X
	downwash angle	X	X
	–Total Drag Curve	X	X
	–The Drag Formula	X	X
	–lift/drag ratio	X	X
	–aerofoil shapes and wing planforms	X	X
	–aspect ratio	X	X
7.4	Thrust		
	–Glider forward vector (force)	X	X
7.5	Flying controls	GLD	TMG
	–the three planes	X	X
	–pitching about the lateral axis	X	X
	–rolling about the longitudinal axis	X	X
	–yawing about the normal axis	X	X
	–primary effects of the elevator (stabilators), ailerons and rudder	X	X
	–further effects of the elevator (stabilators), ailerons and rudder	X	X
	–spiral dive recovery	X	X
	–Control in pitch, roll and yaw	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	cross coupling, roll and yaw	X	X
	mass and aerodynamic balance of control surfaces	X	X
	effect of rotor configuration on control power	X	X
	adverse aileron yaw	X	X
7.6	Trimming controls		
	–basic trim tab, balance tab and anti-balance tab	X	X
	–purpose and function	X	X
	–method of operation	X	X
7.7	Flaps and slats		
	–simple, split, slotted and Fowler flaps	X	X
	–purpose and function	X	X
	–operational use	X	X
7.8	Climbing		
	–forces	X	X
	–maximum rate and maximum angle of climb		X
	–effects of configuration, weight, temperature and altitude, wind	X	X
7.9	Descending		
	–forces	X	X
		GLD	TMG
	–effects of configuration, weight, temperature and altitude, wind	X	X
7.10	Turning		
	–forces	X	X
	–load factor	X	X
	–turn rate and turn radius	X	X
	–effects of weight, speed, angle of bank, wind, configuration	X	X
	–Advanced turning	X	X
	reduction of performance during climbing and descending turns (reduction of performance during turning Gliding)	X	X
	steep turns	X	X
7.11	The stall		
	–boundary layer	X	X
	–laminar and turbulent flow	X	X
	–stalling angle of attack	X	X
	–disruption of smooth airflow	X	X
	–reduction of lift, increase of drag	X	X
	–movement of centre of pressure	X	X
	–symptoms of development	X	X
	–glider characteristics at the stall	X	X
	–factors affecting stall speed	X	X
	–stalling from level, climbing, descending and turning flight	X	X
	–inherent and artificial stall warnings	X	X
	–recovery from the stall	X	X
	–effect of weight and flaps	X	X
	–basic stalling speed	X	X
7.12	Avoidance of spins		
	–wing tip stall	X	X
	–the development of roll and autorotation	X	X
	–recognition at the incipient stage	X	X
	–recovery technique	X	X



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	-full spin recovery technique	X	X
7.13	Stability		
	-definitions of static and dynamic stability	X	X
	-longitudinal, lateral and directional stability	X	X
	-effect of location of centre of gravity and speed	X	X
7.14	Load factor and manoeuvres	GLD	TMG
	-structural considerations	X	X
	-manoeuvring and gust envelope	X	X
	-limiting load factors, (glider – with and without flaps)	X	X
	-changes in load factor in turns and pull-ups	X	X
	-vibrations, control feedback		X
	-changes in load factor in turns and pull-ups	X	
	-manoeuvring speed limitations	X	X
	-in-flight precautions	X	X
7.15	Stress loads on the ground		
	-side loads on the landing gear	X	X
	-landing	X	X
8.0	OPERATIONAL PROCEDURES	GLD	TMG
8.1	-Aerotow abnormal and emergency procedures	X	
8.2	-Winch Launch emergency and abnormal procedures	X	
8.3	--self-launch glider malfunctions	X	
8.4	-system equipment malfunctions	X	X
8.5	-Flight control malfunctions	X	X
8.6	-other malfunctions	X	X



K2 - Gliding Practical Syllabus

Ex No	Exercise/Description
1	Aircraft System & Familiarization/Introduction with the aircraft, equipment, Cockpit Layout/Rigging and Derigging
1E	Emergency Drills
2	Preparation for flight and actions after Flight and Pre-Flight Inspection
3	Air Experience.
4	Effect of controls
5	Ground Handling
6	Straight glide
7	Climbing (Soaring)
9	Medium Turns
10a	Slow Flight
10b	Stalling
11	Spin Avoidance/Spinning
12a	Aerotow take off & climb to release
12b	Winch Launch take off and climb to release
12c	Cross wind Take off / Landing
13	Circuit approach and landing
14	First Solo (Gliding)
14a	Solo Consolidation
15	Advanced Turning
16	Sideslips
17	Conversion to Single Seater
18	Navigation



K2 - TMG Practical Syllabus

Ex No	Exercise/Description
1	Aircraft System & Familiarization/Introduction with the aircraft, equipment, Cockpit Layout
1E	Emergency Drills
2	Preparation for flight and actions after Flight and Pre-Flight Inspection
3	Air Experience.
4	Effect of controls
5	Taxying
5e	Emergencies
6	Straight and Level
7	Climbing
8	Descending
9	Turning
10a	Slow Flight
10b	Stalling
11	Spin Avoidance/Spinning
12	Take-off and Climb to Downwind Position
13	Circuit approach and landing
14	First Solo
14a	Solo Consolidation
15	Advanced Turning
16	Forced Landing Without Power (Engine off)
16a	Sideslips
17a	Low Level Flying
17b	Precautionary Landings
18a	Navigation
18b	Navigation problems at lower levels and in reduced visibility



K4 – Theoretical Knowledge LSA

	ITEM DESCRIPTION	LSA
1.	<u>Aim of training course</u>	
	The aim of the course is to train a candidate to the level of proficiency required for the issue of a category rating for Light Sport Aeroplanes (LSA), and to provide the training necessary to act as pilot in-command of any LSA for which he or she holds a valid type rating, engaged in non-revenue flights under visual flight rules.	✓
2.	Theoretical Knowledge course	✓
2.1	The theoretical knowledge course must cover the subjects as detailed in the syllabus:	
	- Principles of Flight - Aviation Legislation - Aviation Meteorology - Aircraft Engines, Airframes and Instruments - General Navigation - Human Performance Limitations and Passenger care - Restricted Radio Telephony Operator's Certificate as prescribed in AIC 30.	
3.	<u>Theoretical Knowledge course syllabus</u>	✓
	<u>3.1 Principle of Flight:</u>	✓
	<u>3.1.1 GENERAL:</u>	
	PHYSICS AND MECHANICS - Speed, velocity, force - Pressure – Bernoulli's Principle - Motion of body along a curved path	
Note:	<i>The student must have a good understanding of the speed squared law as applicable to Lift with specific reference to gusts and lulls, and their effect on your flight path.</i>	
	AEROFOILS, LIFT AND DRAG - Air resistance and air density - Aerofoil shapes - Lift and drag – Angle of attack and airspeed - Distribution of lift, Centre of pressure - Drag – Induced, parasite – Form, skin, interference - Lift/drag ratio and aspect ratio - Wake turbulence	✓
	EQUILIBRIUM - The four forces: Lift, weight, thrust and drag - Centre of gravity (C of G) position - The balance of the four forces: Straight & Level - Climbing - Descending	✓
	STABILITY - Positive, neutral, negative - Lateral and directional stability - Longitudinal stability - Wash-out - Weight - turbulence and gusts ground effect - gusts ground effect	✓



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	<u>3.1.1 PRINCIPLE OF FLIGHT – CONVENTIONAL CONTROL SPECIFIC</u>	
	➤ FLYING CONTROLS	
	• The three axes: Vertical, Lateral, Longitudinal	
	Yaw, Pitch, Roll	
	• Operation and function of elevators, ailerons and rudder	
	• Principles and purpose of mass and aerodynamic balance	
	• Operation and purpose of trimming controls	
	• Operation and function of flaps	
	• Operation and function of spoilers, spoilerons and tip rudders	
	➤ WEIGHT AND BALANCE	✓
	• Limitations on aircraft weight	
	• Limitations in relation to aircraft balance	
	• Weight and Centre of gravity calculations	
	➤ THE SPIN	✓
	• Causes of a spin	
	• Autorotation	
	• Effect of the C of G on spinning characteristics	
<u>3.</u>	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.1 Principle of Flight:</u>	✓
	➤ PERFORMANCE	✓
	• Use of flaps	
	- take off and initial climb performance	
	- Approach and landing performance – effect of use of flaps	
	- Cross control	
	- Forward slipping	
	- Side slipping	
	➤ STABILITY	✓
	• Relationship of C of G to control in pitch	
	➤ LOAD FACTOR AND MANOEUVRES	✓
	➤ THE SPIN	✓
	• Causes of a spin	
	• Autorotation	
	• Effect of the C of G on spinning characteristics	
<u>3.</u>	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.1 Principle of Flight:</u>	✓
	➤ PERFORMANCE	✓
	• Use of flaps	
	- take off and initial climb performance	
	- Approach and landing performance – effect of use of flaps	
	- Cross control	
	- Forward slipping	
	- Side slipping	
	➤ STABILITY	✓
	• Relationship of C of G to control in pitch	



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	➤ LOAD FACTOR AND MANOEUVRES	✓
	• Definition of load factor – V_n envelope	
	• Effect on stalling speed	
	• In-flight precautions	
	3.2 Air Law :	✓
	➤ Applicable acts, regulations and other documents	
	➤ Structure and function of CAR's, CATS AIP's, Notams, AIC's and AIPsupplements.	
	➤ Classification of aircraft	
	➤ Aircraft documentation	
	➤ Aircraft equipment	
	➤ Aircraft radio equipment	
	➤ Aircraft weight schedule	
	➤ Documents to be carried on board	
	➤ Documents and records to be maintained and produced on request	
	➤ Offences in relating to documents and records	
	➤ Airworthiness aspects	
	➤ Flight crew licensing	
	➤ Microlight aeroplane pilot - Privileges and limitations	
	➤ Microlight aeroplane ratings	
	➤ Personal flying logbook	
	➤ Airspace classification	
	➤ General flight rules	
	➤ Visual flight rules	
	➤ Special flight rules	
	➤ FRONTS	✓
	• Formation of cold and warm fronts	
	• Associated clouds and weather, cold front	
	➤ ICE ACCRETION	✓
	• Conditions conducive to ice formation	
	• Effects of hoar frost, rime ice, clear ice	
	• Effects of icing on microlight performance	
	• Precautions and avoidance of icing conditions	
	• Powerplant icing	
3.	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.3 Aviation Meteorology:</u>	✓
	➤ THUNDERSTORMS	✓
	• Formation - airmasses, frontal, orographic	
	• Conditions required	
	• Development process	
	• Recognition of favourable conditions for formation	
	• Hazards	
	• Effects of lightning and severe turbulence	
	• Avoidance of flight in the vicinity of thunderstorms	
	➤ FLIGHT OVER MOUNTAINOUS AREAS	✓
	• Hazards	
	• Influence of terrain on atmospheric processes	
	• Mountain waves, windshear, turbulence, vertical movement, rotoeffects	
	➤ CLIMATOLOGY	✓
	• General world circulation	
	• South African summer patterns	
	• South African winter patterns	
	• The South Westerly Buster	
	• The Cape Doctor	
	• The Black South Easter	
	➤ ALTIMETRY	✓
	• Operational aspects of pressure settings	
	• Pressure altitude, density altitude	



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	• Height, altitude, flight level	
	➤ THE METEOROLOGICAL ORGANISATION	✓
	• Forecasting service	
	➤ WEATHER ANALYSIS AND FORECASTING	✓
	• Weather charts, symbols, signs	
	• Significant weather charts	
	• Prognostic charts for general aviation	
	➤ WEATHER INFORMATION FOR FLIGHT PLANNING	✓
	• Reports and forecasts for departure, <i>en route</i>, destination and alternate(s)	
	• Interpretation of coded information METAR, TAF	
	• availability of ground reports for surface wind, windshear, visibility	
	➤ METEOROLOGICAL BROADCASTS FOR AVIATION - ATIS, SIGMET	✓
	- Methods to maintaining correct mixture ratio ❖ carburetor jetting and needle and seat inspection ❖ balancing carburetors - Carburetor icing - Emergency use of Fuel-bypass (choke)	
	• Fuel - Types - Suitability - Hazards of avgas - Contamination - Fuel strainers and drains - Fire hazards ❖ containers ❖ transportation ❖ de-canting	
3.	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.4 Aircraft Engines, Airframes and Instruments:</u>	✓
	• Electrical system - general - batteries - circuit breakers and fuses - recognizing malfunctions	
	➤ PROPELLER	✓
	• nomenclature • forces on blades • designs • effect of blade pitch changes • maintenance and care	
	➤ INSTRUMENTS	✓
	• Airspeed indicator • Altimeter • VSI • Magnetic compass - Precautions when carrying magnetic objects - Errors • Engine instruments • Temperature and pressure gauges • Digital instruments • RPM	
	<u>3.5 General Navigation:</u>	
	➤ FORM OF THE EARTH	✓
	• Axis, poles • Meridians of longitude • Parallels of latitude	
	➤ DIRECTION	✓



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	• True north	
	• Earth's magnetic field, variation $\pm$ annual change	
	• Magnetic north	
	• Magnetic influences within the microlight	
	• Compass deviation	
	• Turning, acceleration errors	
	• Avoiding magnetic interference with the compass	
	➤ DISTANCE	✓
	• Nautical mile, statute mile, kilometre	
	➤ AERONAUTICAL MAPS AND CHARTS (TOPOGRAPHICAL)	✓
	• Projections and their properties	
	• Scale	
	• ICAO 1:250 000 and 1: 500 000 charts	
	• main properties	
	• Scale	
	• depiction of height	
	• Topography	
	• Relief	
3.	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.5 General Navigation:</u>	✓
	• Cultural features	
	• Aeronautical symbols	
	• Aeronautical information	
	➤ CHARTS IN PRACTICAL NAVIGATION	✓
	• Plotting positions	
	• Latitude and longitude	
	• Bearing and distance	
	• Use of navigation protractor	
	• Measurement of tracks and distances	
	• Conversion of units	
	➤ PRINCIPLES OF NAVIGATION	✓
	• IAS, RAS (CAS) and TAS	
	• Track, true and magnetic	
	• Wind velocity, heading and ground speed	
	• Triangle of velocities	
	• Calculation of heading and ground speed	
	• Drift, wind correction angle	
	• EET and ETA	
	• Dead reckoning, position, fix	
	➤ FLIGHT PLANNING	✓
	• Selection of charts	
	• Route and aerodrome weather forecasts and reports	
	• Assessing the weather situation	
	• Plotting the route	
	• Considerations of controlled airspace, airspace restrictions, dangerareas, etc.	
	• Use of AIP and NOTAMS	
	• ATC liaison procedures in controlled airspace	
	• Fuel considerations	
	• <i>En-route</i> safety altitude(s)	
	• Alternate aerodromes	
	• Communications and radio/navaid frequencies	
	• Compilation of flight log	
	• Compilation of ATC flight plan	
	• Selection of check points, time and distance marks	
	➤ PRACTICAL NAVIGATION	✓
	• Compass headings, use of deviation card	
	• Organisation of in-flight workload	



Soaring Society of South Africa

Declared Training Organisation Training and Procedures Manual

	• Departure procedure	
	• Maintenance of heading and altitude	
	• Use of visual observations	
	• Establishing position, checkpoints	
	• Revisions to heading and ETA	
	• Arrival procedures, ATC liaison	
	• Use of minute marker graph.	
	➤ GLOBAL POSITIONING SYSTEM (GPS)	✓
	• Limitations	
	• Application	
	• Principles	
	• Presentation and interpretation	
3.	<u>Theoretical Knowledge course syllabus</u>	
	<u>3.5 General Navigation:</u>	✓
	• Coverage	
	• Errors and accuracy	
	• Factors affecting reliability and accuracy	
	• Legalities	
	<u>3.6 Human Performance Limitations and Passenger Care:</u>	
	<u>3.6.1 Human Performance Limitations :</u>	
	➤ Introduction	✓
	➤ Oxygen	✓
	• Hypoxia	
	• Hyperventilation	
	➤ Barotraumas	✓
	➤ Common ailments	✓
	➤ Decompression	✓
	➤ Air sickness	✓
	➤ Hearing	✓
	➤ Sight	✓
	➤ Toxic hazards	✓
	➤ Blood pressure	✓
	➤ Epilepsy	✓
	➤ Alcohol and drugs	✓
	➤ Knowledge and the senses	✓
	➤ Disorientation	✓
	➤ Avoiding the air proximity	✓
	➤ Stress	✓
	➤ Management of stress	✓
	➤ Emotional factors	✓
	➤ Social psychology	✓
	• The Ego Factor	
	• Intermediate syndrome	
	<u>3.6.2 Passenger Care:</u>	
	➤ Embarking / Disembarking	✓
	➤ Seatbelt and comfort	✓
	➤ Briefing	✓
	• Open cockpit flying (If applicable)	
	• clothing, long hair and security	
	• cameras and loose articles	
	➤ Human performance limitation as applicable to your passenger	✓
	➤ Eye-contact and communication	✓
	➤ Air law as applicable to passengers	✓
	➤ Passenger seat and flying control access	✓
	➤ Signing of indemnities	



K5 – LSA Practical Training Syllabus

EXERCISE	ITEM DESCRIPTION	LSA
<u>Exercise 1</u>	<u>Familiarisation with the aircraft</u>	✓
	➤ Characteristics of the aircraft	
	➤ Cockpit layout	
	➤ Systems	
	➤ Check lists, drills, controls	
<u>Exercise 1E</u>	<u>Emergency drills</u>	✓
	➤ Action in the event of fire on the ground and in the air	
	➤ Engine cabin and electrical system fire	
	➤ Systems failure	
	➤ Escape drills, location and use of emergency equipment and exits	
<u>Exercise 2</u>	<u>Preparation for and action after flight</u>	✓
	➤ Flight authorisation and aircraft acceptance	
	➤ serviceability documents	
	➤ equipment required, maps, etc.	
	➤ external checks	
	➤ internal checks	
	➤ harness, seat or rudder panel adjustments	
	➤ starting and warm up checks	
	➤ power checks	
	➤ running down system checks and switching off the engine	
	➤ parking, security and picketing (e.g. tie down)	
	➤ completion of authorisation sheet and serviceability documents	
<u>Exercise 3</u>	<u>Air experience</u>	✓
	➤ Flight exercise	
	➤ introduce student to fixed-wing / Aircraft Type Specific flight	
<u>Exercise 4</u>	<u>Effects of controls</u>	✓
	➤ Primary effects when laterally level and when banked	
	➤ Secondary effects of aileron and rudder	
	➤ Effects of:	
	• Airspeed	
	• Slipstream	
	• Power	
	• Trimming controls	
	• Flaps	
	• Other controls, as applicable	
	➤ Operation of:	
	➤ Mixture control	
	➤ Carburettor heat	
	➤ Cabin heating/ventilation	
	➤ Airmanship	
<u>Exercise 5</u>	<u>Taxiing</u>	✓
	➤ Pre-taxi checks	
	➤ Starting, control of speed and stopping,	
	➤ Engine handling	
	➤ Control of direction and turning	
	➤ Turning in confined spaces	
	➤ Parking area procedure and precautions	
	➤ Effects of wind and use of flying controls,	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	➤ Effects of ground surface	
	➤ Freedom of rudder movement	
	➤ Marshalling signals	
	➤ Instrument checks	
	➤ Air traffic control procedures	
	➤ Airmanship	
Exercise 5E	<u>Emergencies</u>	✓
	➤ Brake and steering failure	
	➤ Taxi Emergencies	
	➤ Engine Emergencies	
Exercise 6	<u>Straight and level</u>	✓
	➤ At normal cruising power, attaining and maintaining straight and level flight	
	➤ Flight at critically high airspeeds	
	➤ Demonstration of inherent stability, including recovering from PIO (Pilot Induced Oscillations)	
	➤ Control in pitch, including use of trim	
	➤ Lateral level, direction and balance, trim	
	➤ At selected airspeeds (use of power)	
	➤ During speed and configuration changes	
	➤ Use of instruments for precision	
	➤ Shutting down engine in flight, restarting engine in flight	
	➤ Airmanship	
Exercise 7	<u>Climbing</u>	✓
	➤ Entry, maintaining the normal and max rate climb, levelling off	
	➤ Levelling off at selected altitudes	
	➤ En route climb (cruise climb)	
	➤ Climbing with flap down (If applicable)	
	➤ Recovery to normal climb	
	➤ Maximum angle of climb	
	➤ Use of instruments for precision	
	➤ Airmanship	
Exercise 8	<u>Descending</u>	✓
	➤ Entering, maintaining and levelling off	
	➤ Levelling off at selected altitudes	
	➤ Glide, powered and cruise descent (including effect of power and airspeed)	
	➤ Side slipping (Consideration of aircraft limitations)	
	➤ Use of instruments for precision flight	
	➤ Airmanship	
Exercise 8	<u>Side - slips</u>	✓
	➤ Effects of controls in a side slip	
	➤ Principles involved.	
	➤ Types of side slip.	
	➤ How exercise applies to flying	
	➤ Airmanship	
Exercise 9	<u>Turning</u>	✓
	➤ Entry and maintaining medium level turns	
	➤ Resuming straight flight	
	➤ Faults in the turn – (in correct pitch, bank, balance), corrections	
	➤ Climbing turns	
	➤ Descending turns	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	➤ Slipping turns (or suitable types)	
	➤ Turns onto selected headings, use of gyro heading indicator and compass	
	➤ Use of instruments for precision	
	➤ Airmanship	
Exercise 9A	<u>Descending and Climbing Turns</u>	✓
NOTE:	Ideally, climbing turns should not exceed 15° bank angles, to optimize rate of climb	
	➤ Entry and maintaining medium descending and climbing turns	
	➤ Resuming straight and level flight	
	➤ Turns onto selected headings, use of gyro heading indicator and compass	
	➤ Use of instruments	
	➤ Airmanship.	
Exercise 10A	<u>Slow flight</u>	✓
NOTE:	The objective is to improve the student's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.	
	➤ Safety checks	
	➤ Introduction to slow flight	
	➤ Controlled flight down to critically slow airspeed	
	➤ Application of full power with correct altitude and balance to achieve normal climb speed	
	➤ Airspeed recognition / trim speed	
	➤ Airmanship	
Exercise 10B	<u>Stalling</u>	✓
	➤ Safety checks	
	➤ Symptoms	
	➤ Recognition	
	➤ Clean stall and recovery without power and with power	
	➤ Recovery when a wing drops	
	➤ Approach to stall in the approach and in the landing configurations, with and without power,	
	➤ Airmanship	
Exercise 11	<u>Spin avoidance/Spinning</u>	✓
	➤ Safety checks	
	➤ Stalling and recovery at the incipient spin stage (stall with excessive wing drop, about 45°)	
	➤ Instructor induced distractions during the stall	
	➤ Airmanship	
NOTE 1:	➤ <i>At least two hours of stall awareness and spin avoidance flight training shall be completed during the course.</i>	
NOTE 2:	➤ Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.	
Exercise 12	<u>Take-off and climb to downwind position</u>	✓
	➤ Pre-take-off checks	
	➤ Into wind take-off	
	➤ Safeguarding the nosewheel	
	➤ Crosswind take-off	
	➤ Crosswind	
	➤ Drills during and after take-off	
	➤ Short take-off and soft field procedure/techniques including performance calculations	
	➤ Noise abatement procedures	
	➤ Airmanship	
Exercise 13	<u>Circuit, approach and landing</u>	✓



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	➤ Circuit procedures, downwind, base leg	
	➤ Powered approach and landing	
	➤ Crosswind Landings	
	➤ Crosswind approach techniques	
	➤ Safeguarding the nose wheel	
	➤ effect of wind on approach and touchdown speeds, use of flaps	
	➤ crosswind approach and landing	
	➤ glide approach and landing	
	➤ short landing and soft field procedures/techniques	
	➤ flapless approach and landing	
	➤ wheel landing (tail wheel aeroplanes/gyroplanes)	
	➤ missed approach/go around	
	➤ noise abatement procedures	
	➤ Airmanship	
Exercise 12/13E	<u>Emergencies</u>	✓
NOTE:	In the interests of safety it will be necessary for pilots trained on nosewheel aeroplanes to undergo dual conversion training before flying tail wheel aeroplanes, and vice versa.	
	➤ aborted take-off	
	➤ engine failure after take-off	
	➤ engine shutdown and restarting in flight	
	➤ go-around	
Exercise 14	<u>First solo</u>	✓
NOTE:	During flights immediately following the solo circuit consolidation the following should be revised.	
	➤ Instructor's briefing, observation of flight and de-briefing	
	➤ The local area, restrictions, map reading	
	➤ Use of radio aids for homing	
	➤ Turns using magnetic compass, compass errors	
	➤ Airmanship	
Exercise 15	<u>Advanced turning</u>	✓
	➤ steep turns (45°), level and descending	
	➤ stalling in the turn and recovery	
	➤ recoveries from unusual altitudes, including spiral dives	
	➤ Airmanship	
Exercise 16	<u>Forced landing without power</u>	✓
	➤ forced landing procedure	
	➤ choice of landing area, provision for change of plan	
	➤ gliding distance	
	➤ descent plan	
	➤ key positions	
	➤ engine cooling	
	➤ engine failure checks	
	➤ use of radio	
	➤ base leg	
	➤ final approach	
	➤ landing	
	➤ Forced landing with Power	
	➤ actions after landing	
	➤ Airmanship	
Exercise 17A	<u>Low level flying</u>	✓



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	➤ Safety considerations	
	➤ Selection of the appropriate speed and configuration	
	➤ Awareness of the danger factors and their recognition	
	➤ Transition to low level flight	
	➤ Control of speed and height	
	➤ Following ground contours	
Exercise 17B	<u>Precautionary landing</u>	✓
	➤ Full procedure away from aerodrome to break-off height	
	➤ Occasions necessitating	
	➤ In-flight conditions	
	➤ Landing area selection	
	➤ Normal aerodrome	
	➤ Disused aerodrome	
	➤ Ordinary field	
	➤ Circuit and approach	
	➤ Actions after landing	
	➤ Airmanship	
Exercise 18 A	<u>Navigation</u>	✓
	➤ Flight planning	
	• weather forecast and actuals	
	• map selection and preparation	
	- choice of route	
	- controlled airspace	
	- danger, prohibited and restricted areas	
	- safety altitudes	
	• calculations	
	- magnetic heading(s) and time(s) en route	
	- fuel consumption	
	- mass and balance	
	- mass and performance	
	- flight information	
	- NOTAMS etc.	
	- Radio frequencies	
	- Selection of alternate aerodromes	
	• Aeroplane documentation	
	• Notification of the flight	
	- pre-flight administrative procedures	
	- Flight plan form	
	➤ Departure	
	• organisation of cockpit workload	
	• departure procedures	
	- altimeter settings	
	- ATC liaison in controlled/regulated airspace	
	- setting heading procedure	
	- noting of ETAs	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	• maintenance of altitude and heading	
	• revisions of ETA and heading	
	• log keeping	
	• use of radio	
	• use of nav aids	
	• minimum weather conditions for continuation of flight	
	• in-flight decisions	
Exercise 18 B	<u>Navigation problems at lower levels and in reduced visibility</u>	✓
	• transiting controlled/regulated airspace	
	• diversion procedures	
	• uncertainty of position procedure	
	• lost procedure	
	• Arrival, aerodrome joining procedure	
	• ATC liaison in controlled/regulated airspace	
	• altimeter setting	
	• entering the traffic pattern	
	• circuit procedures	
	• parking	
	• security of aeroplane/aircraft	
	• refuelling	
	• closing of flight plan, if appropriate	
	• post-flight administrative procedures	
Exercise 18 B	<u>Navigation problems at lower levels and in reduced visibility</u>	✓
	• Actions prior to descending	
	• Hazards (e.g. obstacles, and terrain)	
	• Difficulties of map reading	
	• Effects of wind and turbulence	
	• Vertical situational awareness (avoidance of controlled flight into terrain)	
	• Avoidance of noise sensitive areas	
	• Joining the circuit	
	• Bad weather circuit and landin	
Exercise 18C	<u>Navigation (Other)</u>	✓
	• Navigation with GPS	
	• Navigation with Efix	
Exercise 19	<u>Basic instrument flight</u>	
	(Not applicable to NPL training)	



K6 – Theoretical Knowledge for LSA Instructors Course

1.	AIM OF TRAINING COURSE	
	The aim of the course is to train a candidate to the level of proficiency required for the issue of a Grade C national flight instructors rating in the category Light Sport Aeroplanes (LSA) or Conventional Controlled Microlight Aeroplanes (CCM).	
2.	THEORETICAL KNOWLEDGE COURSE	✓
	Restricted Radio Telephony Operator's Certificate as prescribed in AIC 30.9	
3	THEORETICAL KNOWLEDGE COURSE SYLLABUS	
3.1	GENERAL	✓
3.2	PHYSICS AND MECHANICS	✓
	(a) Speed, velocity, force	
	(b) Pressure – Bernoulli's Principle	
	(c) Motion of body along a curved path	
	Note: The student must have a good understanding of the speed squared law as applicable to Lift with specific reference to gusts and lulls, and their effect on your flight path.	
3.2	AEROFOILS, LIFT AND DRAG	✓
	(a) Air resistance and air density	
	(b) Aerofoil shapes	
	(c) Lift and drag – Angle of attack and airspeed	
	(d) Distribution of lift, Centre of pressure	
	(e) Drag – Induced, parasite – Form, skin, interference	
	(f) Lift/drag ratio and aspect ratio	
	(g) Wake turbulence	
3.4	EQUILIBRIUM	✓
	(a) The four forces: Lift, weight, thrust and drag	
	(b) Centre of gravity (C of G) position	
	(c) The balance of the four forces: Straight and level	
	i. Climbing	
	ii. Descending	
3.5	STABILITY	✓
	(a) Positive, neutral, negative	
	(b) Lateral and directional stability	
	(c) Longitudinal stability	
	(d) Wash-out	
3.6	LOOSE FORMATION/ GROUP FLYING	✓
	(a) Law Governing	
	(b) Procedures and hazards	
3.7	TURNING FLIGHT	✓
	(a) The forces in the turn	
	(b) Compensation for loss of lift	
3.8	THE STALL	✓
	(a) Airflow separation	
	(b) Stalling angle – Relationship to airspeed	
	(c) Wing loading	
	(d) Wing loading increase with bank angle increase	
	(e) High-speed stall	
3.9	AIRCRAFT PERFORMANCE	✓
	(a) Power curves	
	- Effect of temperature, altitude, density, moisture etc.	
	- Range and endurance	
	(b) Climbing performance	
	- Rate of climb	
	- Angle of climb	
	(c) - Take-off and landing performance	
	- Take-off run available	
	- Take-off distance available	
	- Landing distance available	
	(d) Take-off and initial climb - performance	
	Effect of –	
	- Wind, wind gradient and wind shear	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	- Weight	
	- Pressure, altitude, temperature and density	
	- Ground surface and gradient	
	(e) Approach and landing – performance	
	Effect of –	
	- Wind, wind gradient and wind shear	
	- Weight	
	- Turbulence and gusts	
	- Ground effect	
4	PRINCIPLES OF FLIGHT	✓
4.1	FLYING CONTROLS	✓
	(a) The three axes: Vertical, Lateral, Longitudinal	
	Yaw, Pitch, Roll	
	(b) Operation and function of elevators, ailerons and rudder	
	(c) Principles and purpose of mass and aerodynamic balance	
	(d) Operation and purpose of trimming controls	
	(e) Operation and function of flaps	
	(f) Operation and function of spoilers, spoilerons and tip rudders (where applicable)	
4.2	WEIGHT AND BALANCE	✓
	(a) Limitations on aircraft weight	
	(b) Limitations in relation to aircraft balance	
	(c) Weight and centre of gravity calculations	
4.3	THE SPIN	✓
	(a) Causes of a spin	
	(b) Autorotation	
	(c) Effect of the C of G on spinning characteristics	
4.4	PERFORMANCE	✓
	(a) Use of flaps	
	- take off and initial climb performance	
	- Approach and landing performance – effect of use of flaps	
	(b) Cross control	
	- Forward slipping	
	- Side slipping	
4.5	STABILITY	✓
	(a) Relationship of C of G to control in pitch	
4.6	LOAD FACTOR AND MANOEUVRES	✓
	(a) Definition of load factor – Vn envelope	
	(b) Effect on stalling speed	
	(c) In-flight precautions	
5	AIR LAW	✓
	(1) Applicable acts, regulations and other documents	
	(2) Structure and function of CAR's, CATS AIP's, Notams, AIC's and AIP supplements.	
	(3) Classification of aircraft	
	(4) Aircraft documentation	
	(5) Aircraft equipment	
	(6) Aircraft radio equipment	
	(7) Aircraft weight schedule	
	(8) Documents to be carried on board	
	(9) Documents and records to be maintained and produced on request	
	(10) Offences in relating to documents and records	
	(11) Airworthiness aspects	
	(12) Flight crew licensing	
	(13) NPL - Privileges and limitations	
	(14) NPL aeroplane ratings and categories	
	(15) Personal flying logbook	
	(16) Airspace classification	
	(17) General flight rules	
	(18) Visual flight rules	
	(19) Special flight rules	
	(20) Flight operations	
	(21) General provisions	
	(22) Air traffic services	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	(23) Flight plans	
	(24) Air-proximity reporting procedures	
	(25) Incident/accident reporting	
	(26) International operations	
	(27) Operation of Non-type certified aircraft	
	(28) Marine living resources act and Proclaimed nature reserves	
6	AVIATION METEOROLOGY	✓
6.1	THE ATMOSPHERE	✓
	(a) Composition and structure	
	(b) Vertical divisions	
6.2	PRESSURE, DENSITY AND TEMPERATURE	✓
	(a) Barometric pressure, isobars	
	(b) Changes of pressure, density and temperature with altitude	
	(c) Solar and terrestrial energy radiation, temperature	
	(d) Lapse rate	
	(e) Stability and instability	
	(f) Effects of radiation, advection subsidence and convergence	
6.3	HUMIDITY AND PRECIPITATION	✓
	(a) Water vapour in the atmosphere	
	(b) Dew point and relative humidity	
6.4	PRESSURE AND WIND	✓
	(a) High- and low-pressure areas	
	(b) Gradient wind	
	(c) Vertical and horizontal motion	
	(d) Effect of wind gradient and windshear on take-off and landing	
	(e) Relationship between isobars and wind, Buys Ballot's law	
	(f) Turbulence and gustiness	
	(g) Local winds, land and sea breezes, berg winds, valley winds	
6.5	CLOUD FORMATION	✓
	(a) Cloud types	
	(b) Convection clouds	
	(c) Orographic clouds	
	(d) Stratiform and cumulus clouds	
6.6	VISIBILITY	✓
	(a) Fog, mist and haze	
	(b) Radiation, advection, frontal	
	(c) Formation and dispersal	
	(d) Reduction of visibility due to mist, snow, smoke, dust and sand	
	(e) Hazards of flight due to low visibility, horizontal and vertical	
6.7	AIRMASSES	✓
	(a) Weather associated with pressure systems	
6.8	FRONTS	✓
	(a) Formation of cold and warm fronts	
	(b) Associated clouds and weather, cold front	
6.9	ICE ACCRETION	✓
	(a) Conditions conducive to ice formation	
	(b) Effects of hoar frost, rime ice, clear ice	
	(c) Effects of icing on microlight performance	
	(d) Precautions and avoidance of icing conditions	
	(e) Powerplant icing	
6.10	THUNDERSTORMS	✓
	(a) Formation of airmasses, frontal, orographic	
	(b) Conditions required	
	(c) Development process	
	(d) Recognition of favourable conditions for formation	
	(e) Hazards	
	(f) Effects of lightning and severe turbulence	
	(g) Avoidance of flight in the vicinity of thunderstorms	
6.11	FLIGHT OVER MOUNTAINOUS AREAS	✓
	(a) Hazards	
	(b) Influence of terrain on atmospheric processes	
	(c) Mountain waves, windshear, turbulence, vertical movement, rotor effects	



6.12	CLIMATOLOGY	✓
	(a) General world circulation	
	(b) South African summer patterns	
	(c) South African winter patterns	
	(d) The South Westerly Buster	
	(e) The Cape Doctor	
	(f) The Black South Easter	

6.13	ALTIMETRY	✓
	(a) Operational aspects of pressure settings	
	(b) Pressure altitude, density altitude	
	(c) Height, altitude, flight level	
6.14	THE METEOROLOGICAL ORGANISATION	✓
	(a) Forecasting service	
6.15	WEATHER ANALYSIS AND FORECASTING	✓
	(a) Weather charts, symbols, signs	
	(b) Significant weather charts	
	(c) Prognostic charts for general aviation	
6.16	WEATHER INFORMATION FOR FLIGHT PLANNING	✓
	(a) Reports and forecasts for departure, <i>en route</i> , destination and alternate(s)	
	(b) Interpretation of coded information METAR, TAF	
	(c) availability of ground reports for surface wind, windshear, visibility	
6.17	METEOROLOGICAL BROADCASTS FOR AVIATION	✓
	ATIS, SIGMET	
	(18) MICRO-METEOROLOGY	
	(a) Rotors	
	(b) Venturies	
	(c) Katabatic and Anabatic winds	
	(d) Thermal activity	
	(e) Dust devils	
	(f) The immediate environment.	
	1. Wind indicators	
	2. Cloud forms	
	3. Topography	
7	AIRCRAFT ENGINES, AIRFRAMES AND INSTRUMENTS	✓
7.1	AIRCRAFT AIRFRAME	✓
	(a) Structure	
	(b) Materials (Steel, composite, dacron, aluminium, Stainless, Mylar, Carbon etc)	
	(c) Wear and tear considerations	
	- Repairs	
	- Sail assessment	
	- Wind	
	- UV	
	- Turbulence	
	- Hard Landings	
	- Causes of wear (vibration. Corrosion, UV, Turbulence, Hard landings, trailering)	
	- Suspension (Types eg. Steel, shocks, bungees, composite)	
	- Wheels and tires	
7.1	POWERPLANT AND SYSTEMS	✓
	(a) Engines –	✓
	The 4 stroke engines	
	- The principal of operation of the four-stroke engine.	
	- Operation of the inlet and exhaust valves	
	- The four-stroke Engine	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	- The principal of operation of the four-stroke engine.	
	- Operation of the inlet and exhaust valves.	
	- The crankshaft and connecting rod.	
	- Piston and piston rings.	
	- Cylinders.	
	- Arrangement of cylinders.	
	- Cylinder head.	
	The 2-stroke Engine	
	- The construction of the 2-stroke engine.	
	- The operation of the 2-stroke engine and the 2-stroke cycle.	
	- The operation of the rotary valve. (Rotax 582, 618).	
	The fuel system.	
	- The operation of the carburettor.	
	- The float and float chamber.	
	- The main jet.	
	- The idle jet.	
	- The power jet.	
	- The choke system.	
	- The throttle control.	
	- The fuel filter.	
	- The water trap.	
	- The air filter.	
	- Maintenance of the carburettor.	
	- The operation of the constant-vacuum carburettor.(As per Rotax 912)	
	- The operation of the piston-type carburettor.(As per Rotax 503, 582, 618)	
	The cooling system	
	- The operating principle of the cooling system.	
	- Coolants (glycol based), anti freeze.	
	- The water pump, operating principle and the tell-tail hole.	
	- The pressure cap, operating principle.	
	- The thermostat, operating principle.	
	- Operating temperature, problems associated with engine operatingtemperature too hot and too cold.	
	- The radiator, operating principle.	
	- The radiator overflow-header tank, operating principle.	
	- The air-cooled engine operating principle.	
	- The fan and fan belt.	
	- Service intervals and preventative maintenance.	
	The exhaust system	
	- The function and operation of the exhaust, muffler, after-muffler.	
	- Back pressure and its importance to the 2-stroke engine.	
	- De-coking and carbon build-up, when to de-coke, 2-stroke engines.	
	- Exhaust springs, locking wire, copper slip.	
	- Checking for cracks and security of system.	
	- Exhaust temperature min/max, operational.	
	- The principle of carburettor heat and the exhaust.	
	- The vibration mounting, engine and exhaust	
	- Causes of vibration and types of vibration.	
	- The purpose of the vibration mounting.	
	The Fuel System	
	- Fuel storage	
	- Water contamination.	
	- Dirt contamination.	
	- Aircraft fuel tanks	
	Types of fuel	
	- Octane number.	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	- Avgas.	
	- Types	
	- Suitability	
	- Hazards of avgas	
	- Contamination	
	- Fuel strainers and drains	
	- Fire hazards	
	- containers	
	- transportation	
	- de-canting	
	Two-stroke oil	
	- Outboard oil	
	- Mixing ratios.	
	Fuel hose and fittings	
	- The fuel hose.	
	- Braided fuel hose.	
	- Hose clamps.	
	- Rooting of fuel hose.	
	Aircraft fuel tanks	
	- Water trap position and operation.	
	- Fuel tank caps and breathers.	
	- Fuel cocks, and reserve fuel tanks.	
	Fuel pumps, their construction and operation	
	- Fuel pressure.	
	- The electrical fuel pump.	
	- The vacuum pump.	
	- The hand-primer fuel pump.	
	- the combination of vacuum and electric fuel pumps.	

	Layout of the complete fuel system	
	- Carburettor.	
	- Fuel filters.	
	- Fuel water trap.	
	- Fuel hosing.	
	- Fuel taps/reserve.	
	- Fuel tanks and breather systems.	
	Carburettor icing	
	- Theory of carburettor icing.	
	- Weather conditions conducive to carburettor icing.	
	- Preventing carburettor icing.	
	- Warning signs of carburettor icing.	
	Service schedules and intervals	
	- Air filter.	
	- Fuel filter.	
	- Cables and connecting linkages.	
	- Carburettor flange/to inlet manifold.	
	The oil lubrication system	
	- The qualities of oil, engine oil, gear oil, 2-stroke oil.	
	- Types: mineral and synthetic oils.	
	- Oil grades and viscosity's.	
	- The four functions of oil.	
	- The operation of the lubrication system of the 2-stroke engine.	
	- The operation of the lubrication system of the 4-stroke engine.	
	- The operation of oil pressure relief valve, oil pressure min/max 4-strokeengine.	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	- The oil pressure pump operation, 4-stroke engine.	
	- The oil filter operation, 4-stroke engine.	
	- The oil filter checking for contamination, 4-stroke engine.	
	- The automatic oil lubrication system, 2-stroke engine.	
	- Mixing of 2-stroke oil.	
	- Differences between wet and dry oil sump, 4-stroke engine.	
	- Oil and oil filter change schedules, 4-stroke engine.	
	- Oil temperature, min/max, warm up, operating temperature.	
	- Testing of water contamination, 2- and 4-stroke engines.	
	Electrical system	
	- general	
	- batteries	
	- circuit breakers and fuses	
	- recognizing malfunctions	
	- The battery basic principle of operation.	
	- Battery maintenance.	
	- The operating principle of the starter motor.	
	- The rectifier regulator, operating principle.	
	- The charging circuit.	
	- The spark plug, types of spark plug hot/cold, long/short reach, electrode/gap setting, colour of electrodes, engine operating conditions (rich/lean, amount of oil), problems associated with spark plugs, plug caps, high tension cables.	
	- The ignition circuit dual and single CDI (capacitor discharge ignition).	
	- Points, condenser.	
	- Fuses (correct fuses), values.	
	- The earth straps and connections.	
	- Preventative maintenance.	
	- Service intervals.	
	The gear box and reduction gear	✓
	• Types of gear box and construction.	
	• The operating principle of the gear box.	
	• Engine-to-gear box coupling	
	○ The slipper clutch, 4-stroke engine (Rotax 912/914).	
	• Locking Wire	
	○ The correct locking-wire procedures.	
	○ Parts on the engine to be secured with locking wire.	
7.2	PROPELLER	✓
	- The operational principle of the propeller	
	- Types of propeller: pusher, tractor.	
	- Fixed pitch, ground adjustable, in-flight adjustable	
	- Forces on blades	
	- The effects of incorrect pitch setting, out of balance, engine rpm	
	- Tracking and its effects if adjustment is incorrect	
	- Designs	
	- Effect of blade pitch changes	
	- Maintenance and care	
7.3	INSTRUMENTS	✓
	(a) Airspeed indicator	
	(b) Altimeter	
	(c) VSI	



	(d) Magnetic compass	
	- Precautions when carrying magnetic objects	
	- Errors	
	(e) Engine instruments	
	(f) Temperature and pressure gauges	
	(g) Digital instruments	
	(h) RPM	
8	GENERAL NAVIGATION	✓
8.1	FORM OF THE EARTH	✓
	(a) Axis, poles	
	(b) Meridians of longitude	
	(c) Parallels of latitude	
8.2	DIRECTION	✓
	(a) True north	
	(b) Earth's magnetic field, variation & annual change	
	(c) Magnetic north	
	(d) Magnetic influences within the microlight	
	(e) Compass deviation	
	(f) Turning, acceleration errors	
	(g) Avoiding magnetic interference with the compass	
8.3	DISTANCE	✓
	(a) Nautical mile, statute mile, kilometre	
8.4	AERONAUTICAL MAPS AND CHARTS (TOPOGRAPHICAL)	✓
	(a) Projections and their properties	
	(b) Scale	
	(c) ICAO 1:250 000 and 1: 500 000 charts	
	(d) main properties	
	(e) Scale	
	(f) depiction of height	
	(g) Topography	
	(h) Relief	
	(i) Cultural features	
	(j) Aeronautical symbols	
	(k) Aeronautical information	
8.5	CHARTS IN PRACTICAL NAVIGATION	✓
	(a) Plotting positions	
	(b) Latitude and longitude	
	(c) Bearing and distance	
	(d) Use of navigation protractor	
	(e) Measurement of tracks and distances	
	(f) Conversion of units	
8.6	PRINCIPLES OF NAVIGATION	✓
	(a) IAS, RAS (CAS) and TAS	
	(b) Track, true and magnetic	
	(c) Wind velocity, heading and ground speed	
	(d) Triangle of velocities	
	(e) Calculation of heading and ground speed	
	(f) Drift, wind correction angle	
	(g) EET and ETA	
	(h) Dead reckoning, position, fix	
8.7	FLIGHT PLANNING	✓
	(a) Selection of charts	
	(b) Route and aerodrome weather forecasts and reports	
	(c) Assessing the weather situation	
	(d) Plotting the route	
	(e) Considerations of controlled airspace, airspace restrictions, danger areas, etc.	
	(f) Use of AIP and NOTAMS	
	(g) ATC liaison procedures in controlled airspace	
	(h) Fuel considerations	
	(i) <i>En-route</i> safety altitude(s)	
	(j) Alternate aerodromes	
	(k) Communications and radio/navaid frequencies	



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	(l) Compilation of flight log	
	(m) Compilation of ATC flight plan	
	(n) Selection of check points, time and distance marks	
8.8	PRACTICAL NAVIGATION	✓
	(a) Compass headings, use of deviation card	
	(b) Organisation of in-flight workload	
	(c) Departure procedure	
	(d) Maintenance of heading and altitude	
	(e) Use of visual observations	
	(f) Establishing position, checkpoints	
	(g) Revisions to heading and ETA	
	(h) Arrival procedures, ATC liaison	
	(i) Use of minute marker graph.	
8.9	GLOBAL POSITIONING SYSTEM (GPS)	✓
	(a) Limitations	
	(b) Application	
	(c) Principles	
	(d) Presentation and interpretation	
	(e) Coverage	
	(f) Errors and accuracy	
	(g) Factors affecting reliability and accuracy	
	(h) Legalities	
9	HUMAN PERFORMANCE LIMITATIONS AND PASSENGER CARE	✓
9.1	HUMAN PERFORMANCE LIMITATIONS	✓
	(1) Introduction – Basic physiology	
	(2) Oxygen	
	(a) Hypoxia	
	(b) Hyperventilation	
	(3) Barotraumas	
	(4) Common ailments	
	(5) Decompression	
	(6) Air sickness	
	(7) Hearing	
	(8) Vision	
	(9) Toxic hazards	
	(10) Blood pressure	
	(11) Epilepsy	
	(12) Alcohol and drugs	
	(13) Knowledge and the senses	
	(14) Disorientation	
	(15) Avoiding the air proximity	
	(16) Stress	
	(18) Management of stress	
	(19) Emotional factors	
	(20) Social psychology and Emotional factors	
	(a) The Ego Factor	
	(b) Intermediate syndrome	
	(c) family and work related problems	
	(d) Recognizing potential problems in your passenger	
9.2	PASSENGER CARE	✓
	(1) Embarking / Disembarking	
	(2) Seatbelt and comfort	
	(3) Briefing	
	(a) Open cockpit flying	
	(b) clothing, long hair and security	
	(c) cameras and loose articles	
	(4) Human performance limitation as applicable to your passenger	
	(5) Eye-contact and communication	
	(6) Air law as applicable to passengers	
	(7) Passenger seat and flying control access	
	(8) Signing of indemnities	
10	PRINCIPLES OF FLIGHT INSTRUCTION	✓



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

	(1) The learning Process	
	(a) Characteristics of Learning	
	(b) The Principles of Learning	
	(c) Perception and Insight	
	(d) Memory	
	(e) Forgetting and Retention	
	(f) Transfer of Learning	
	(g) Levels of Learning	
	(h) Domains of Learning	
	(i) Learning skills and Learning curve	
	(2) Barriers to learning	
	(a) Self-concepts	
	(b) Defence mechanisms	
	(c) Stress and Anxiety	
	(d) The overconfident and impatient student	
	(3) Human behaviour and effective communication	
	(a) Human needs	
	(b) Motivation	
	(c) Effective communication	
	(d) Barriers to effective communication	
	(e) Instructor responsibilities	
	(f) Instructor professionalism	
	(4) Teaching Methods	
	(a) Lecture Method	
	(b) Co-operative of Group Learning Method	
	(c) Guided Discussion Method	
	(d) Demonstration / Performance Method	
	(e) Computer based Training Method	
	(f) Integrated Method of Flight Instruction	
	(g) The Positive approach to Flight Instruction	
	(5) Planning Instructional Activity	
	(a) Course development	
	(b) Organization of material	
	(c) Lesson Plan	
	(d) Instructional Aids	
	(6) Critique and Evaluation	
	(a) The Instructor's Critique	
	(b) Types of Testing	
	(c) Oral Quizzing	
	(d) Types of Written Test Questions	
	(e) Characteristics of a Good Test	
	(f) Review and Evaluation	
11	TECHNIQUES OF INSTRUCTION	✓
	(1) Practical lesson planning	✓
	(a) assessing student	
	(b) progressive practical skills planning	
	(c) assessing weather	
	(2) Familiarization with the practical training course for national pilots licence	✓
	(a) lesson codes	
	(b) familiarisation with lessons	
	(c) goals for each lesson	
	(3) Techniques	✓
	(a) Pre-empting known problem areas	
	(b) Eye height memory	
	(c) Teaching multi-tasking	
	(d) Handing over control	
	(e) Showing and doing technique	
	(4) Common problems in the training environment	
	(a) Identifying the formation of bad habits	
	(b) Repetition of mistakes	
	(c) Attitude problems	
	(d) Reckless behaviour	



	(e) Personality clashes	

K7 - Practical Syllabus for LSA Instructor Course

1	ADMINISTRATION	✓
	(1) Student training files	
	(2) Progress reports	
	(3) Logbooks	
	a. Student log book	
	b. Aircraft log book	
	c. Instructor log book	
	(4) Authorization sheets	
	(5) Application forms	
	(6) Medicals	
	(7) Maintenance of Instructor personal training file	
	(8) The filing, use and format of legislation, AIPs, AIP amendments, AIC's, Notams and other relevant documents.	
2	GROUND SCHOOL	✓
	(1) Instructional aids	
	(2) Textbooks	
	(3) Additional notes	
	(4) Reference library	
	(5) Lecture methods and preparation	
	(6) Lecture schedules	
	(7) Student briefings	
	a. Pre-flight briefing	
	b. Post-flight briefing	
	c. Preparation for exams	
	d. After exams	
3	PATTER FLYING (CONVENTIONAL CONTROLLED MICROLIGHT AND LIGHT SPORT AEROPLANES)	✓
	<i>In the case of a Grade C national flight instructor rating (Conventional Controlled Microlight and Light Sport Aeroplanes), patter training to include the following exercises. All the patter flying will be with a Grade A instructor.</i>	
	EXERCISE 1: FAMILIARISATION WITH THE AIRCRAFT	✓
	Aim: To become familiar with the component parts, controls and system of the aeroplane.	
	(1) characteristics of the aircraft	
	(2) cockpit layout	
	(3) systems	
	(4) check lists, drills, controls	
	EXERCISE 1 E: EMERGENCY DRILLS	✓
	ACTION IN EVENT OF FIRE	✓
	Aim: Fire is extremely rare in modern microlight aeroplanes but it is essential that a pilot has a thorough knowledge of the procedures to be adopted in his or her particular type of aeroplane in order to extinguish a fire both on the ground and in the air.	
	(1) Identification of fire	
	(2) Isolation / extinguishing of fire	
	(3) Flight procedures / emergency actions	
	(4) Airmanship	
	RESTARTING THE ENGINE IN FLIGHT	✓
	Aim: Most two-stroke engines will at some time or another stop whilst in flight. It is important that the candidate must show exceptional presence of mind in this situation, and be able to either take over from his student immediately, or guide him through it.	
	Note: This exercise only to be attempted within easy glide of the training airfield and to be treated as a simulated emergency until the engine is successfully re-started.	
	(1) Engine failure checks	
	(2) Engine restart procedures	
	(3) Airmanship	
	EXERCISE 2: PREPARATION FOR, AND ACTION AFTER FLIGHT	✓
	AIM: To explain how to prepare the aircraft and pilot for flight, and how to leave the aircraft after flight.	
	(1) Flight authorisation and aeroplane acceptance	
	(2) Serviceability documents	



(3)	Required equipment, maps, etc.	
(4)	External checks	
(5)	Internal checks	
(6)	Seat, harness and controls adjustment	
(7)	Starting and warming-up checks including safety, people, animals, aircraft and air law	
(8)	Power checks	
(9)	Action in the event of being blown over	
(10)	Running down and switching off of engine	
(11)	Parking, security and picketing; and	
(12)	Completion of authorisation and flight folio sheets	
(13)	Ground handling	
(14)	Assessing student, communication and explanation of each aspect	

EXERCISE 4 : EFFECT OF CONTROLS	✓
AIM: To explain and demonstrate how each control affects the aircraft in flight.	
(1) Methods of assessing aircraft attitude	
(2) Primary effects when laterally level and when banked;	
(3) Further effects of aileron and rudder – effects of –	
(a) airspeed	
(b) slipstream	
(c) power changes	
(d) trimming of controls	
(e) flaps	
(f) other controls, as applicable	
(4) Use of engine controls	
(5) How much control to hand over to the student and when,	
(6) How to get full control back from the student – action in the event of a student locking on controls.	
(7) Typical errors to expect during type conversions.	
(8) Airmanship	
EXERCISE 5 : TAXIING	✓
AIM: To safely control the aeroplane while manoeuvring on the ground in different wind conditions and on different surfaces.	
(1) Pre-taxi checks	
(2) Starting, control of speed, and stopping	
(3) Engine handling	
(4) Control of direction and turns	
(5) Turns in confined spaces	
(6) Tail-wheel considerations (if applicable)	
(7) Parking area procedure and precautions	
(8) Effects of wind and use of flying controls	
(9) Effects of ground surface	
(10) Freedom of rudder movement	
(11) Marshalling signals	
(12) Instrument checks	
(13) Air traffic control procedures	
(15) Emergencies (brake and steering failure)	
(16) Typical problems with student co-ordination	
(17) What to expect from a student during type conversion.	
(18) Airmanship	
EXERCISE 6A : STRAIGHT AND LEVEL FLIGHT	✓
AIM: To attain and maintain flight in a straight line and at a constant altitude.	
(1) At normal cruising power, attaining and maintaining straight and level flight	
(2) Demonstration of inherent stability	
(3) Control in pitch, including use of trim	
(4) Lateral level, direction and balance, trim	
(5) At selected airspeeds (use of power)	
(6) During speed and configuration changes	
(7) Use of instruments.	
(8) Typical student problems and how to address them.	
(9) Airmanship	



EXERCISE 6B: ADVANCED- LOOSE FORMATION / GROUP FLYING	✓
AIM: to safely fly in loose formation with other aircraft and know safe landing and taking off procedures	
(1) Positioning in front, behind or alongside other aircraft	
(2) Taking off and landing considerations	
(3) Turning	
(4) Wake turbulence	
(5) Awareness of other aircraft	
(6) Blind spots	
(7) Manoeuvres in front of other aircraft and their effect	
(8) Radio work	
(9) Common perception errors of students and how to rectify it.	
EXERCISE 7 : CLIMBING	✓
AIM: To enter and maintain a steady full-power climb and then return to level flight at a predetermined altitude, and to enter and maintain a steady cruise-climb.	
(1) Entry, maintaining the normal and maximum rate climb and levelling off, with and without flaps (if applicable)	
(2) Levelling off at selected altitudes	
(3) <i>En-route</i> (cruise) climb	
(4) Maximum angle of climb	
(5) Use of instruments	
(6) Typical student problems and how to address it.	
(7) Airmanship	
EXERCISE 8 : DESCENDING	✓
AIM: To enter and maintain a steady glide-descent and then, at a predetermined altitude, to return to level flight or to climb, and to enter and maintain a steady cruise descent.	
(1) Entry, maintaining and levelling off	
(2) Levelling off at selected altitudes	
(3) Glide, powered and cruise descent (including effect of power and airspeed)	
(4) Use of instruments for precision	
(5) Side-slipping	
(6) Typical student reactions and problems	
(7) Airmanship	
EXERCISE 8: SIDE-SLIPPING	✓
AIM: The learner should be shown and become convinced of the effect of side-slipping on the relationship between heading and ground path. How this out-of-balance manoeuvre can be used to increase the rate of descent for a given airspeed and its usefulness in crosswind landings. (While the learner is learning how to use the controls during a side-slip, the exercise should be performed at altitude.)	
(1) Effects of controls in a side-slip	
(2) Principles involved	
(3) Types of side-slips	
(4) How exercise applies to flying	
(5) Common reactions and errors of students and how to rectify it	
(6) Airmanship	
EXERCISE 9: MEDIUM TURNS	✓
AIM: To enter and maintain a medium (up to approximately 30o bank angle) turn whilst maintaining level flight and then to return to straight and level flight on a new predetermined heading.	
(1) Entry and maintaining medium level turns	
(2) Resuming straight and level flight	
(3) Faults in the turn – balance	
(4) Turns onto selected headings, use of gyro heading indicator and compass	
(5) Use of instruments	
(6) Addressing typical student errors	
(7) Airmanship.	
EXERCISE 9: DESCENDING AND CLIMBING TURNS	✓
Note: Ideally, climbing turns should not exceed 15 deg bank angles, to optimise rate of climb.	
AIM: To enter and maintain a medium (up to approximately 30o bank angle) turn whilst maintaining a climb or descent, or to enter and maintain a turn from a straight climb or descent.	
(1) Entry and maintaining medium descending and climbing turns	
(2) Resuming straight and level flight	
(3) Faults in the turn – balance	
(4) Turns onto selected headings, use of gyro heading indicator and compass	
(5) Use of instruments	
(6) Addressing typical student errors	
(7) Airmanship.	



EXERCISE 9: SLIPPING TURNS	✓
Note: A thorough explanation of the side slip characterises of different wings must be explained, and if possible, demonstrated.	
AIM: To understand the initiation of a slipping turn and know when it is appropriate.	
(1) Use of controls to induce and recover from a slipping turn	
(2) Height loss in a slipping turn	
(3) Recovery from a slipping turn	
(4) Recognizing disorientation in the student	
(5) Pre-empting reactions from students and formulating appropriate responses	
(6) Airmanship	
EXERCISE 10 A. SLOW FLIGHT	✓
The objective is to improve the learner's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the microlight aeroplane in balance should this situation occur.	
(1) Safety checks	
(2) Introduction to slow flight	
(3) Controlled flight	
(a) clean at stall speed plus 10 MPH	
(b) full flaps at stall speed plus 10 MPH	
(4) Application of full power with correct attitude to achieve level speed	
(5) Typical student problems and addressing them	
(6) Airmanship.	

EXERCISE 10 B : STALLING	✓
AIM: To recognise and enter a fully-developed stall from various modes of flight both straight and turning, and to recover with minimum height-loss to a safe flight mode; to become familiar with the 'feel' of the aeroplane in slow flight just above the stall speed; and to recognise the symptoms of the incipient stall and to restore the aeroplane to safe flight before the stall occurs.	
(1) Airmanship	
(2) Safety checks	
(3) Symptoms	
(4) Recognition	
(5) Clean stall and recovery without power and with power	
(6) Recovery when a wing drops	
(7) Approach to stall in the approach configuration, with and without power, recovery at the incipient stage	
(8) After engine failure while climbing steeply at full power	
(9) Understanding student reluctance and gradually building confidence.	
(10) Pre-empting reactions from students and formulating appropriate responses	
EXERCISE 11– SPINNING & SPIN AVOIDANCE (Ground Lecture only)	✓
AIM: To understand and recognise the onset of situations that may lead to an inadvertent spin, and to learn how to instinctively take the necessary control actions to affect a recovery back to normal flight condition before a spin occurs; i.e.: to recover at the incipient stage.	
(1) Cause of spin	
(2) Recognition of incipient spin	
(3) Recovery from the incipient spin	
(4) Understanding student reluctance and gradually building confidence.	
(5) Recognizing disorientation in the student	
(6) Pre-empting reactions from students and formulating appropriate responses	
(7) Airmanship	
EXERCISE 12 : TAKE OFF AND CLIMB TO DOWNWIND POSITION	✓
AIM: To safely take-off and climb the aeroplane to position on the downwind leg at circuit height; to land safely in the event of an engine failure after take-off or at any time in the circuit; and to decide against continuation of the take-off – taking the appropriate action – if for some reason continuation would be unsafe.	
(1) Pre-take-off checks	
(2) Factors affecting the length of the take-off roll and the initial climb	
(3) Into wind take-off	
(4) Nose wheel / tail wheel considerations	
(5) Drills during and after take-off	
(6) Short take-off and soft-field procedures / techniques, including performance calculations	
(7) Undulating (rough field) considerations	
(8) Abandoned take-off	
(9) Engine failure after take-off up to early downwind	
(10) Addressing typical student errors	



	(11) Airmanship	

	EXERCISE 13: CIRCUIT, APPROACH AND LANDING	✓
	AIM: To fly an accurate circuit and carry out a safe approach and landing.	
	(1) Circuit procedures, downwind, base leg, key points	
	(2) Powered approach and landing	
	(3) Nose wheel / tail wheel considerations	
	(4) Effect of wind on approach and touchdown speeds, use of flaps (if applicable)	
	(5) Glide approach and landing	
	(6) Short-landing and soft-field procedures / techniques	
	(7) Missed approach / go-around	
	(8) Correcting bad approaches	
	a. Hot and high	
	b. Low and slow	
	(11) The hold-off period and touch-down	
	(12) Effect of ground surface and gradient on the landing run	
	(13) Use of brakes (if applicable)	
	(14) Control during ground run	
	(15) Addressing typical student errors	
	(16) Airmanship	
	EXERCISE 12 & 13 E: CROSS-WIND TAKE-OFF AND LANDING	✓
	AIM: To be able to handle both cross-wind take-offs and landings, including downwind landings in an emergency; to be able to input the correct amount of control to correct drift to ensure the track is a continuation of the take-off and landing path of the aeroplane.	
	(1) Aerodynamic and mechanical considerations	
	(2) Cross-wind take-offs	
	(3) The circuit	
	(4) Approach and cross-wind landings	
	a. crabbing method	
	b. forward slipping method	
	(5) Addressing typical student errors	
	(6) Airmanship	
	EXERCISE 12 & 13 E: RESTARTING THE ENGINE IN FLIGHT	✓
	AIM: Most two-stroke engines will at some time or another stop whilst in flight. It is important that the candidate must show exceptional presence of mind in this situation, and be able to either take over from his student immediately, or guide him through it.	
	Note: This exercise only to be attempted within easy glide of the training airfield and to be treated as a simulated emergency until the engine is successfully re-started.	
	(1) Engine failure checks	
	(2) Engine restart procedures	
	(3) Airmanship	
	EXERCISE 12 & 13 E: RECOVERY FROM PILOT INDUCED OSCILLATIONS	✓
	AIM: To identify the situation where PIO can occur and rectify it.	
	(1) Demonstrate the cause of Pilot Induced Oscillations	
	(2) Recognition of symptoms of Pilot Induced Oscillations	
	(3) Recover from PIO	
	(4) Most common situations of PIO	
	a. Rotation and early climb out	
	b. finals	
	(5) Recognising when the student is entering PIO	
	(6) Addressing typical student errors and taking control from the student	
	(7) Airmanship	
	EXERCISE 12 & 13 E: UNUSUAL AND DANGEROUS ATTITUDES / CONDITIONS	✓



Soaring Society of South Africa
Declared Training Organisation Training and Procedures Manual

AIM: To recognise potentially dangerous conditions of flight and to recover safely from unusual attitudes, with the emphasis of situations where a student may inadvertently cause unusual and dangerous attitude, how to recognize the onset and correct timorously	
(1) Recovery from inadvertent mishandling of controls –	
(b) at high speeds	
(c) in stall recovery in various configurations	
(d) in a steep turn	
(e) following hitting wake turbulence in a 360° steep turn at 45° to 60° bank angles	
(f) in high nose whip stall attitude	
(g) typical reactions of students, and how to manage them	
(2) Airmanship	
EXERCISE 15: ADVANCED TURNING (STEEP TURNS)	✓
AIM: To carry out a co-ordinated level turn at steep angles of bank and to recognise and recover from a spiral dive; and to avoid wake turbulence.	
(1) Steep 360° turns (up to 45° bank angle) maintaining altitude, recovering to straight and level flight.	
(2) Steep descending turns (up to 60° bank angle), completing a minimum of 2 complete orbits, without engine power and without entering spiral dive, then recovering to straight and level flight.	
(3) Wake turbulence / disorientation	
(4) Stalling in the turn and recovery	
(5) Recoveries from unusual attitudes, including spiral dives	
(6) Understanding student reluctance and gradually building confidence.	
(7) Recognizing disorientation in the student	
(8) Pre-empting reactions from students and formulating appropriate responses	
(9) Airmanship	
EXERCISE 16: FORCED LANDING WITHOUT POWER	✓
AIM: To carry out a safe descent and landing in the event of the engine failing during flight. To be practiced at the training airfield, outside of the circuit pattern. The touch down must be no more than 25m before or after a point chosen by the candidate, and verbally conveyed to the patter instructor before commencement.	
(1) Forced-landing procedure	
(2) Choice of landing area, provision for change of plan	
(3) Gliding distance	
(4) Descent plan	
(5) Key positions	
(6) Engine cooling	
(7) Use of radio, Mayday call	
(8) Base leg	
(9) Final approach	
(10) Landing	
(11) Actions after landing	
(12) Techniques of building student confidence.	
(13) Airmanship	

EXERCISE 17 A: LOW LEVEL FLYING	✓
AIM: To safely operate the aeroplane at heights lower than those normally used.	
(1) Emphasis on regulations governing low flying	
(2) Low-level familiarisation	
(3) Effect of drift	
(4) Effect of wind on ground speed	
(5) Effect of wind in inducing apparent skids and slips in turns	
(6) Effect of precipitation (as applicable to type)	
(7) Joining circuit in poor weather	
(8) Bad-weather circuit	
(9) Addressing typical student errors	
(10) Airmanship	
EXERCISE 17 B: PRECAUTIONARY LANDINGS	✓
AIM: A precautionary landing is one not contemplated before the flight commenced and where engine power is still available, enabling the pilot the opportunity of selecting and inspecting a suitable landing area before executing a landing in an unfamiliar place.	
(1) Occasions necessitating	
(2) Full procedure away from aerodrome to break-off height	
(3) In-flight conditions	
(4) Landing area selection -	



Soaring Society of South Africa Declared Training Organisation Training and Procedures Manual

	a. normal aerodrome;	
	b. disused aerodrome	
	c. ordinary field.	
	d. habitation for after-landing assistance	
	(5) Inspection of landing area	
	(6) Circuit and approach	
	(7) PAN call	
	(8) Actions after landing	
	(9) Flight information	
	(9) Specific emphasis on areas where students are generally weak.	
	(10) Airmanship	
	ii. radio frequencies	
	iii. selection of alternate aerodromes	
	EXERCISE 18 A: NAVIGATION	✓
	AIM: To fly accurately and safely in VMC under VFR conditions, a predetermined route (CAR 62.04.2 (1) (a) and (b) without infringing the rules governing regulated airspace. To fly from one place to another using simple pilot navigation techniques, whilst relying on the minimum of artificial aids.	
	i. pre-flight administrative procedures	
	(1) Flight planning	
	ii. flight plan form	
	a. weather forecast and actuals	
	(2) Departure	
	b. map selection and preparation	
	a. Organisation of cockpit workload	
	b. choice of route	
	ii. Departure procedures	
	i. controlled airspace	
	iii. altitude, speed and restricted areas	
	iv. ATIS liaison in controlled/regulated airspace	
	v. safety altitudes	
	c. heading procedure	
	iv. calculations	
	i. holding of ETAs	
	ii. magnetic heading(s) and time(s) on route	
	c. Maintenance of altitude and heading	
	i. fuel consumption	
	d. Revisions of ETA and heading	
	iii. mass and balance	
	e. Log keeping	
	f. Use of radio	
	g. Use of nav aids	
	h. Minimum weather conditions for continuation of flight	
	i. In-flight decisions	
	j. transiting controlled/regulated airspace	
	k. diversion procedures	
	l. uncertainty of position procedure	
	m. Lost procedure	
	(3) Arrival, aerodrome joining procedure	
	a. ATC liaison in controlled/regulated airspace	
	b. altimeter setting	
	c. entering the traffic pattern	
	d. circuit procedures	
	e. parking	
	f. security of aeroplane/aircraft	
	g. refuelling	
	h. closing of flight plan, if appropriate	
	i. post-flight administrative procedures	
	EXERCISE 18 B: NAVIGATION PROBLEMS AT LOWER LEVELS AND IN REDUCED VISIBILITY	✓
	AIM: To fly the aircraft safely at low levels and to observe the misleading visual effects caused by strong winds at low levels	
	(1) Actions prior to descending	
	(2) Hazards (e.g. obstacles, and terrain)	
	(3) Difficulties of map reading	
	(4) Effects of wind and turbulence	
	(5) Vertical situational awareness (avoidance of controlled flight into terrain)	
	(6) Avoidance of noise sensitive areas	
	(7) Joining the circuit	
	(8) Bad weather circuit and landing	



	EXERCISE 18 C : NAVIGATION (OTHER)	✓
	(1) Navigation with GPS	
	(2) Navigation with Efis	
	EXERCISE 19 : BASIC INSTRUMENT FLYING (N/A)	
4	PRACTICAL AIRCRAFT WORK (CONVENTIONAL CONTROLLED MICROLIGHT AND LIGHT SPORT AEROPLANES)	
	In the case of a Grade C recreational flight instructor rating practical aircraft work covering the following:	
	(1) PRE-FLIGHT	✓
	AIM: To enhance pre-flight ability and the ability to encourage systematic, thorough and regular pre-flights on a variety of aircraft	
	(1) Airframe	
	a. Symmetry	
	b. Materials	
	c. Control surfaces	
	d. suspension	
	e. steering	
	f. brackets	
	g. Instrument console, including power supply to instruments, intercom, radio and aerial connections.	
	h. engine mount	
	i. wheels and tyres	
	j. brakes	
	k. tubing	
	l. cables	
	m. seats and seatbelts	
	n. fuel-tank	
	o. battery	
	(2) Engine, exhaust and gearbox	
	a. Oil leaks	
	b. Spark plug caps	
	c. Cables and electrical wiring	
	d. Carb rubbers	
	e. Fan belt / Radiator / Cooling system	
	f. Exhaust blow-by	
	g. Exhaust springs	
	h. Air filters	
	i. Carburettors	
	(3) Systems	
	a. Fuel system	
	b. Electrical system	
	(2) BASIC ENGINE MAINTENANCE	✓
	(1) Spark plug changes	
	(2) Main jets, needle jets and jet needles	
	(3) Balancing carburettors	
	(4) Replacing carb rubbers	
	(5) Cleaning air filters	
	(6) Replacing fuel filters	
	(7) Adjusting fan belts	
	(8) When to call the AP or Mechanic	
	(3) PROPELLOR	✓
	(1) Replacing	
	(2) Torque	
	(3) Track	
	(4) Pitch and Track adjustments	

K8 - Pupil Progress Chart

PUPILS'S PROGRESS CHART				
Flight Number:				
Ex#	DESCRIPTION	SCR	BRF	Comments
1	Familiarisation with the Aircraft			
1E	Emergency drills			
2	Preparation for flight and action after flight			
3	Air Experience			
4	Effects of controls			
5	Ground Handling/Taxing (TMG)			
5E	Emergencies			
6	Straight and Level(TMG)/Straight glide			
7	Climbing/Soaring			
8	Descending (TMG only)			
9	Shallow Turning			
9	Lookout			
9	Medium Turns			
9	S Turns			
10a	Slow Flight			
10b	Stall - Mushy			
10b	Stall - Deep			
11a	Spins - Incipient			
11a	Spins - Full			
12	Take-off and climb /downwind (tmg)			

Ex#	DESCRIPTION	SCR	BRF	Comments
12a	Aeroflow			
12a	Aeroflow release			
12a	Aeroflow Box			
12b	Winch Launch			
12c	Crosswind Takeoff			
13	Circuit			
13	Approach			
13	Landing			
13	Crosswind landing			
13E	Aeroflow Emergencies			
13E	Winch Launch Emergencies			
14	First Solo			
14a	Solo Consolidation			
15	Advanced Turning - Steep Turns			
15	Advanced Turning - Stalls in a Turn			
16	Forced Landing (TMG) without power			
16a	Sideslips			
17a	Conversion to Single Seater			
17a	Low Level Flying (TMG)			
17b	Precautionary Landing (TMG)			
18a	Navigation			
18b	Navigation Problems at lower altitude and reduced visibility (TMG)			
MY GLIDING CLUB UPDATED				
DATE				
INSTRUCTOR				
AIRCRAFT CALLSIGN/TYPE				
FLIGHT BRIEFING DURATION				

A-Proficient for Solo. B-Safe but needs to polish the exercise C-Needs to practice this exercise D-Demonstrated to/Attempted