Pilot's Operating Handbook

for

SportStar MAX

Light Sport Airplane

Airplane Type:	SportStar MAX
Airplane Serial Number:	**2011 1408**
Airplane Registration Number:	**SE-MDO**
Publication Number:	POH-20111408
Date of Issue:	20.5.2015

This manual must be on the airplane board during operation. This manual contains information which must be provided to the pilot and also contains supplementary information provided by the airplane manufacturer - Evektor - Aerotechnik a.s.

This airplane must be operated in compliance with the information and limitations stated in this Manual.

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Airplane manufacturer:
EVEKTOR-AEROTECHNIK, a.s.
686 04 Kunovice – Letecká 1394
Czech Republic

0 Technical Information

0.1 Introduction

This Manual is valid only for SportStar MAX airplane with serial number and registration number shown on the cover page.

This Manual may not be used for airplane operation if it is not keep up to date.

0.2 Warnings, Cautions, Notes

WARNING

MEANS THAT NON-OBSERVATIONS OF THE CORRESPONDING PROCEDURE LEADS TO AN IMMEADIATE OR IMPORTENT DEGRADATION OF THE FLIGHT SAFETY.

CAUTION

MEANS THAT NON-OBSERVATIONS OF THE CORRESPONDING PROCEDURE LEADS TO A MINOR OR TO A MORE OR LESS LONG TERM DEGRADATION OF THE FLIGHT SAFETY.

NOTE

Draws the attention to any special item not directly related to safety but which is important or unusual.

0.3 Log of Revisions

All revisions or supplements to this Manual, except actual weighing data, are issued in form of revisions, which will have new or changed pages as an appendix and the list of which is shown in the Log of Revisions table.

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Rev. No.	Affected Pages	Description	Appr./ Date	Inserted by / Date

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0.5 Table of Contents

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1 General Information

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1.1 Introduction

This Pilot's Operating Handbook has been prepared to provide pilots and instructors with information for safe and efficient operation of the SportStar MAX airplane. It also contains supplementary information considered to be important by the airplane manufacturer.

The pilot is obliged to become familiar with all content of this Manual including supplements located in Section 9.

1.2 Certification Basis

The aircraft described herein complies with the Standard Specification for Design and Performance of a Light Sport Airplane, Designation F 2245-9, issued by ASTM International Committee F37.

1.3 Airplane Manufacturer

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1.4 Flight Conditions holder for aircraft S/N 2011 1408 (Individual Design Holder)

Niklas Bengtsson
Lilla Domestorp
312 97 Laholm
Sweden

1.5 Descriptive Data

1.5.1 Airplane Description

SportStar MAX airplane is a low-wing with two side by side seats and nose wheel landing gear. Airplane structure is a metal with high portion of composite materials used.

For further description see Section 7 - Airplane & System Description.

1.5.2 Power Plant

The standard power plant consists of ROTAX 912 ULS engine and WOODCOMP Klassic 170/3/R propeller.

For further description see Section 7 - Airplane & System Description.

1.5.3 Main Technical Data

Wing

Span ..... 8.646 m
Area ..... 10.6 sq.m
MAC depth ..... 1.25 m
Wing loading ..... 56.60 kg/sq.m
Aileron – area ..... 0.25 sq.m
Flap – area ..... 0.52 sq.m

Fuselage

Length ..... 5.980 m
Width ..... 1.082 m
Height ..... 2.476 m
Cockpit canopy max. width ..... 1.188 m

Horizontal tail units

Span ..... 2.50 m
HTU area ..... 1.94 sq.m
Elevator area ..... 0.78 sq.m

Vertical tail units

Height.....1.28 m

VTU area.....1.02 sq.m

Rudder area.....0,43 sq.m

Landing gear

Wheel track.....1.95 m

Wheel base.....1.35 m

Main and nose landing gear wheel diameter.....380 mm

1.5.4 Three View Drawing

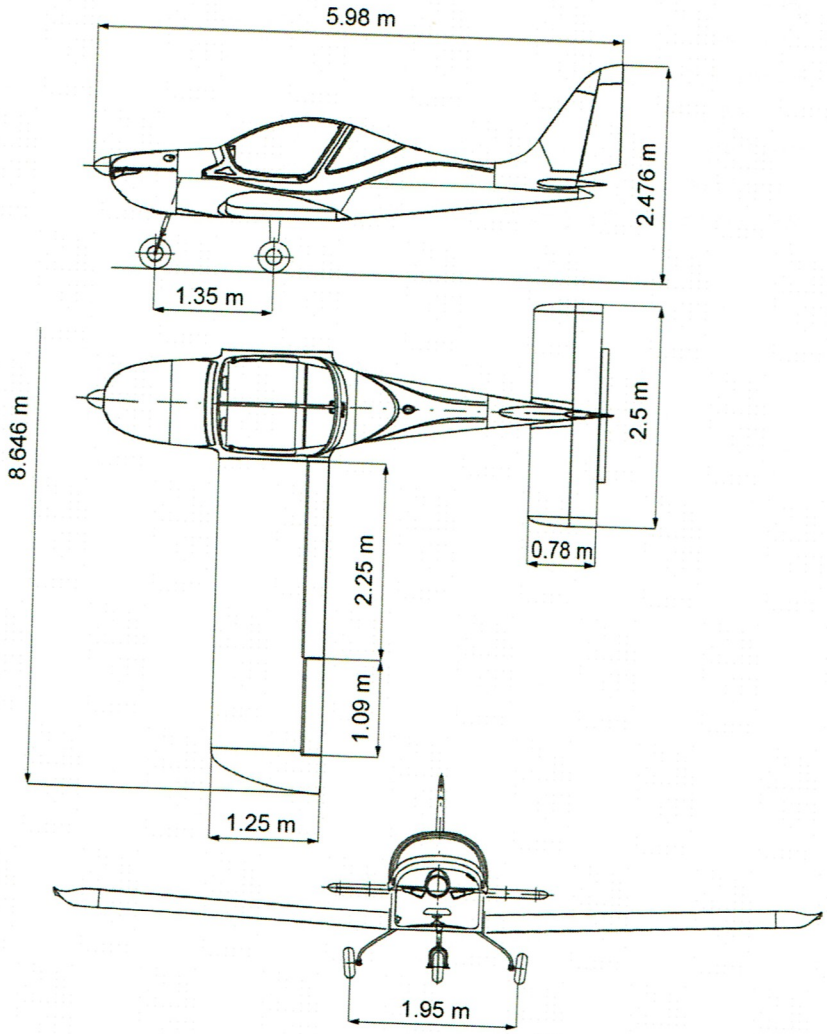

Figure 1-1

1.6 Definitions and Abbreviations

NOTE

The abbreviations on placards in the airplane cockpit are printed in **BOLD CAPITAL LETTERS** in the text of this Airplane Flight Manual.

ACCU	Accumulator
AKI	Anti knock index of fuel
ALT ENC	Encoding altimeter
AOA	Angle of attack
ATC	Air traffic control
bar	1 bar = 100 kPa
°C	Celsius degree
CAS	Calibrated airspeed
ELT	Emergency locator transmitter
fpm	Foot per minute
ft	Foot/feet (1 ft = 0.305 m)
GEN	Generator
GPS	Global positioning system
IAS	Indicated airspeed
IC	Intercom
IFR	Instrument flight rules
ISA	International standard atmosphere
kg	Kilogram
KIAS	Indicated airspeed in knots
km/h	Kilometers per hour
kt, kts	Knot, knots (1 kt = 1.852 km/h)
l	Liter
lb, lbs	pound/pounds (1 lb = 0.453 kg)
m	Meter
MAC	Mean aerodynamic chord
max.	Maximum
MCP	Maximum continuous power
min.	Minimum / minute
mm	Millimeter

m/s	Meter per second
MTP	Maximum take-off power
nm	Nautical mile (1 nm = 1.852 km)
OAT	Outside air temperature
OFF	System is switched off or control element is in off position
ON	System is switched on or control element is in on position
Pa	Pascal (1 Pa = 1 N/sq.m)
PSI	Pound per sq.in (1 PSI = 6.89 kPa)
POH	Pilot's Operating Handbook
RON	Research octane number
RPM	Revolutions per minute
RWY	Runway
sq.ft	Foot squared
sq.in	Inch squared
sq.m	Meter squared
U.S. gall	U.S. gallons (1 U.S. gall = 3.785 l)
V_A	Maneuvering speed
V_C	Design cruising speed
V_{FE}	Maxim flap extended speed
VFR	Visibility flight rules
V-METER	Voltmeter
V_{NE}	Never exceed speed
V_{NO}	Maximum structural cruising speed
V_{S0}	Stall speed with flaps in 50° position
V_{S1}	Stall speed with flaps in 0° position
VTU	Vertical tail units
V_X	Best angle of climb speed
V_Y	Best rate of climb speed
XPDR	Transponder

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2 Limitations

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2.1 Introduction

Section 2 contains operation limitation, instrument marking and basic placards necessary for safe operation of airplane and its engine, standard systems and equipment.

Limitation for aditional systems and equipment are stated in section 9 - Supplements.

2.2 Airspeed Limitation

Airspeed limitations and their meaning for operation are stated in the table below:

Airspeed		KIAS	km/h IAS	Meaning
V_{NE}	Never exceed speed	146	270	Do not exceed this speed in any operation.
V_{NO}	Maximum structural cruising speed	115	213	Do not exceed this speed, with exception of flight in smooth air, and even then only with increased caution.
V_A	Design maneuvering speed	90	170	Do not make full or abrupt control movement above this speed, because under certain conditions the airplane may be overstressed by full control movement.
V_{FE}	Maximum flap extended speed	70	130	Do not exceed this speed with the given flap setting.

2.3 Airspeed Indicator Marking

Airspeed indicator markings and their color-code significance are shown in the table below:

Marking	Range		Meaning
	KIAS	km/h IAS	
Red line	39	72	V_{S0} at maxim weight (flaps in landing position 50°)
White arc	39 – 70	72 - 130	Operating range with extended flaps. Lower limit - V_{S0} at maximum (flaps in landing position 50°) Upper limit - V_{FE}
Green arc	43 - 115	80 - 213	Normal operating range Lower limit - V_{S1} at maximum weight (flaps retracted - 0°) Upper limit – V_{NO}
Yellow arc	115 – 146	213 - 270	Maneuvers must be conducted with caution and only in smooth air
Red line	146	270	Maximum speed for all operations - V_{NE}.

2.4 Power Plant

Engine manufacturer:	BRP-Powertrain GmbH & Co KG	
Engine type:	ROTAX 912 ULS	
Power:	max. take-off	73.5 kW / 100 HP
	max. continuous	69.0 kW / 93 HP
Engine speed:	max. take-off	5800 RPM max. 5 minutes
	max. continuous	5500 RPM
	idle	1400 RPM
Cylinder head temperature:	maximum	135°C / 275 °F
Oil temperature:	maximum	130°C / 266 °F
	optimum operation	90 - 110°C / 190 - 230°F
Oil pressure:	maximum	102 PSI / 7 bar (for short period admissible at cold start)
	minimum	0.8 bar / 12 PSI
	optimum operation	2 - 5 bar / 29 - 73 PSI
Fuel pressure:	maximum	5.8 PSI / 0.4 (0.5*) bar
	minimum	2.2 PSI / 0.15 bar
Fuel grades:	see para 2.13.2 Approved Fuel Grades	
Oil grades:	see para 2.14 Oil Limits	
Engine start, operating temperature		
	maximum	50°C / 120°F (ambient temperature)
	minimum	-25°C / -13°F (oil temperature)
Propeller manufacturer:	WOODCOMP s.r.o.	
Propeller type:	KLASSIC 170/3/R	
	3-blade, composite, on-ground adjustable	
Propeller diameter:		1712 mm / 68 in

* Applicable only for fuel pump from S/N 11.0036

2.5 Power Plant Instrument Marking

The color-code of engine parameters displayed on the Integra's display is shown in the following table:

Instrument	Units	Red arc	Green arc	Yellow arc	Red arc
		Lower limit	Normal operation range	Caution range	Upper limit
RPM indicator	RPM	-	1400 - 5500	5500 - 5800	5800
Oil temperature indicator	°C	-	90 - 110	50 – 90 110 - 130	130
Oil pressure indicator	bar	0,8	2 - 5	0.8 – 2 5 - 7	7
Fuel pressure	bar	0.15	0.15 – 0.4 (0.15 – 0.5*)	-	0.4 (0.5*)
Cylinder head temperature	°C	-	50 - 135	-	135

* Applicable only for fuel pump from S/N 11.0036

2.6 Miscellaneous Instrument Marking

Instrument	Units	Red arc	Green arc	Yellow arc	Red arc
		Lower limit	Normal operation range	Caution range	Upper limit
Voltmeter	V	10	12.4 - 15.1	10 – 12.4	15.1
Ammeter	A	-20	-20 - 0	0 - 50	50

2.7 Weight Limits

Maximum empty weight.....335 kg ± 2 %
Maximum take-off weight.....600 kg
Maximum landing weight.....600 kg
Maximum weight in baggage compartment.....25 kg

2.8 Centre of Gravity

Empty airplane C.G. position (standard equipment) .....20 ± 2 %MAC
Operating C.G. range .....20 to 34 %MAC
Reference datum is the wing leading edge.

WARNING

DO NOT EXCEED MAXIMUM WEIGHTS AND LIMITATION OF CENTER OF GRAVITY! THEIR EXCEEDING LEADS TO AIRPLANE OVERLOADING AND TO DEGRADATION OF FLIGHT CHARACTERISTICS AND DETERIORATION OF MANOEUVRABILITY.

2.9 Approved Maneuvers

SportStar MAX airplane is approved to perform the following maneuvers:

- Steep turns up to bank of 60°
- Climbing turns
- Lazy eights
- Stall (except for steep stalls)
- Normal flight maneuvers

WARNING

AEROBATICS AS WELL AS INTENTIONALL SPINS ARE PROHIBITED!

2.10 Maneuvering Load Factors

Maximum positive load factor.....4.0
Maximum negative load factor.....-2.0

2.11 Flight Crew

Minimum flight crew..... 1 pilot
Minimum weight of flight crew ..... 55 kg
Maximum weight of flight crew ..... see sec. 6, para 6.3

WARNING

DO NOT EXCEED MAXIMUM WEIGHTS AND LIMITATION OF CENTER OF GRAVITY! THEIR EXCEEDING LEADS TO AIRPLANE OVERLOADING AND TO DEGRADATION OF FLIGHT CHARACTERISTICS AND DETERIORATION OF MANOEUVRABILITY.

2.12 Kinds of Operation

The airplane is standardly approved for VFR daylight flights.

WARNING

NIGHT FLIGHTS ACCORDING TO VFR, FLIGHTS ACCORDING TO IFR AND INTENTIONAL FLIGHTS UNDER ICING CONDITIONS ARE PROHIBITED.

Instruments and equipment for daylight flights according to VFR:

- 1 Airspeed indicator (the color marking according to para 2.3)
- 1 Sensitive barometric altimeter
- 1 Magnetic compass
- 1 Fuel gauge indicator for each fuel tank
- 1 Oil temperature indicator
- 1 Oil pressure indicator
- 1 Cylinder head temperature indicator
- 1 Engine speed indicator
- 1 Safety harness for every used seat

CAUTION

ADDITIONAL EQUIPMENT NECESSARY FOR AIRPLANE OPERATION IS GIVEN IN APPROPRIATE OPERATION REGULATION OF AIRPLANE OPERATOR'S COUNTRY.

2.13 Fuel Limits

2.13.1 Fuel Capacity

Fuel tank capacity (each) .....60 l
Total fuel capacity.....120 l
Total usable fuel .....118 l
Total unusable fuel .....2 l (1 l per tank)

NOTE

It is not recommended to fully tank the fuel tanks. Due to fuel thermal expansions keep about 8.0 liters of free space in the tank to prevent fuel bleed through the vents in the wing tips. This should be adhered especially when cold fuel from an underground tank is tanked.

2.13.2 Approved Fuel Grades

Automotive gasoline with octane index min. RON 95 (or anti-knock index min. AKI 91) meets the following standards:

- Europe – EN 228 Super, EN 228 Super plus
- Canada – CAN/CGSB-3.5 Quality 3
- USA – ASTM D4814
- Russia - R51866-2002

Aviation gasoline:

- AVGAS 100 LL aviation fuel according to ASTM D910.
- AVGAS UL91 (unleaded) aviation fuel according to ASTM D7547.

CAUTION

APPROVED AND UP TO DATE FUEL GRADES ARE STATED IN THE ACTUAL ISSUE OF SERVICE INSTRUCTION SI-912-016.

NOTE

AVGAS 100 LL places greater stress on the valve seats due to its high lead content and forms increased deposits in the combustion chamber and leads sediments in the oil system. Thus it should only be used when automotive gasoline is unavailable.

Risk of vapor formation if using winter fuel for summer operation.

2.14 Oil Limits

Performance classification SG or higher according to API.

Oil volume:

- minimum ..... 2.5 l (min. mark on the dip stick)
- maximum ..... 3.0 l (max. mark on the dip stick)

CAUTION

RECOMMENDED OIL GRADES ARE STATED IN THE ACTUAL ISSUE OF SERVICE INSTRUCTION SI-912-016.

2.15 Maximum Number of Passengers

Maximum number of passengers including pilot .. 2

2.16 GPSMAP 296 Limitations

1. The GPSMAP 296 unit must be switched off during the engine starting.
2. The altitude calculated by the GPSMAP 296 never use for vertical navigation.
3. Never use the GPSMAP 296 as the sole navigation equipment.
4. If you use the GPSMAP 296 for navigation, the GPSMAP 296 User's Guide, must be on the airplane aboard.

2.17 TL Elektronic Integra

1. The altitude calculated by the INTEGRA is geometric height above mean sea level and could vary significantly from altitude displayed by pressure altimeters in aircraft. The altitude calculated by INTEGRA never use for vertical informations.
2. If you use the INTEGRA for navigation, the INTEGRA EFIS User Guide, must be on the airplane aboard.

2.18 Other Limitations

SMOKING IS PROHIBITED on the airplane board.

2.19 Limitation Placards

The following placards are located on the titling canopy:

This Light Sport Aircraft has been approved only for VFR day flights under no icing conditions.

Aerobatics and intentional spins are prohibited!

AIRSPEED IAS	
Never exceed	270 km/h
Manoeuvring	170 km/h
Max. Flap Extended	130 km/h
Stalling	72 km/h

ENGINE SPEED	
Max. Take-off (max. 5 min.)	5800 rpm
Max. Continuous	5500 rpm
Idling	1400 rpm

Unusable quantity of fuel 2.0 litres

or

This Light Sport Aircraft has been approved only for VFR day flights under no icing conditions.

AIRSPEED IAS	
Never exceed	146 kts
Manoeuvring	90 kts
Max. Flap Extended	70 kts
Stalling	39 kts

ENGINE SPEED	
Max. Take-off (max. 5 min.)	5800 rpm
Max. Continuous	5500 rpm
Idling	1400 rpm

Unusable quantity of fuel 0.5 Usgal

LOAD LIMITS						
Max.take-off weight					600	kg
Empty weight					335	kg
Max.baggage weight					25	kg
PERMITTED CREW WEIGHT						[kg]
Fuel quantity ltr.		120	100	75	50	25
Baggage weight	max. 25 kg	154	168	186	204	222
	1/2 12 kg	167	181	199	217	235
	No baggage	179	193	211	229	247
Fuel reserve (1/8 on the fuel indicator)				8 litres		

NOTE

The values stated on the placard "LOAD LIMITS" are valid for the empty weight of the airplane with standard equipment. The placard with values valid for the actual empty weight of the airplane will be placed in the cockpit.

CANOPY IS UNLOCKED IF A LATCH IS VISIBLE UNDER THE GLASS

CAUTION ! FINGERS OFF WHEN CLOSING THE CANOPY!

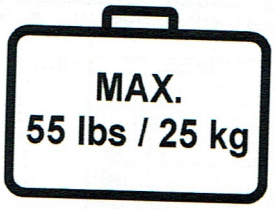
The following placards are located on the instrument panel

This aircraft is not type certified and is accepted for EASA Permit to Fly. See the related EASA approved Flight Conditions for the operational limitations and airworthiness conditions.

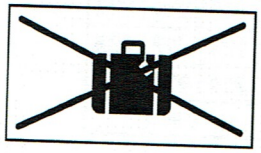
BEFORE TAKE-OFF PUSH CANOPY HANDLE UP
TO CHECK CANOPY FULL CLOSING

WARNING
ASI AND ALT ON EFIS ARE INFORMATIVE ONLY!
SEE ANALOGUE INSTRUMENTS.

The following placard is located in the baggage compartment:



The following placard is located behind the baggage compartment:



NOTE

Other placards and labels are shown in Airplane Maintenance Manual for SportStar MAX airplane.

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3 Emergency Procedures

3.1 Introduction

Section 3 describes operations and procedures for emergency situation solutions that could possibly occur during airplane operation.

3.2 Speeds for Performing Emergency Procedures

Airspeed for the best gliding ratio
(flaps retracted) .....59 KIAS (110 km/h IAS)

Precautionary landing (engine running,
flaps in **LANDING II** position – 50°).....55 KIAS (100 km/h IAS)

Emergency landing (engine stopped,
flaps in **LANDING II** position – 50°).....55 KIAS (100 km/h IAS)

3.3 Engine Failure

3.3.1 Engine Failure at Take-off Run

3. **THROTTLE** lever .....idle
4. Brakes .....as necessary
5. **FUEL** selector.....**OFF**
6. Ignition.....**OFF**
7. **MASTER SWITCH** .....**OFF**

3.3.2 Engine Failure at Take-off

1. Push the control stick to get the airplane to gliding.
2. Gliding speed:
   - Flaps in take–off position (15°) .....min. 55 KIAS (100 km/h IAS)
   - Flaps retracted (0°) .....min. 59 KIAS (110 km/h IAS)
3. **THROTTLE** lever.....idle
4. Flaps.....as needed
5. **FUEL** selector.....**OFF**
6. Ignition.....**OFF**
7. **MASTER SWITCH** .....**OFF**
8. After touch down.....brake as needed

3.3.3 Engine Failure in Flight

1. Gliding speed ..... 59 KIAS (110 km/h IAS)
2. Altitude ..... take a decision and carry out:
   - Engine starting in flight – see para 3.4
   - Emergency landing – see para 3.9.1

3.4 Engine Starting in Flight

NOTE

It is possible to start the engine by means of the starter within the whole range of operation speeds as well as flight altitudes. The engine is started up after switching the ignition to **START** position.

If the engine is shut down, the altitude loss during engine starting can reach up to 1000 ft.

1. Gliding speed ..... 59 KIAS (110 km/h IAS)
2. Altitude ..... check
3. **MASTER SWITCH** ..... **ON**
4. Unnecessary electrical equipment ..... **OFF**
5. **FUEL** selector ..... **LEFT**
6. **CHOKE** ..... as needed
7. **THROTTLE** lever ..... idle (choke open)
   increased idle (choke closed)

The propeller is rotating:

8. Ignition ..... **BOTH**

The propeller is not rotating:

9. Ignition ..... **START**
10. If engine starting does not occur, increase gliding speed up to 108 KIAS (200 km/h IAS), so that air-flow turns the propeller and engine will start.
11. Ignition ..... **BOTH**
12. If engine starting is unsuccessful, then continue according to para 3.9.1Emergency Landing – with Non-operating Engine.

3.5 Engine Fire

3.5.1 Fire on the Ground

1. **FUEL** selector ..... **OFF**
2. Brakes ..... brake
3. **THROTTLE** lever ..... full
4. **HOT AIR** knob ..... close
5. **COLD AIR** knob ..... close

After the engine stops:

6. Ignition ..... **OFF**
7. **MASTER SWITCH** ..... **OFF**
8. Airplane ..... leave
9. Portable extinguisher (if available) ..... use

3.5.2 Fire at Take-off

1. **FUEL** selector ..... **OFF**
2. **THROTTLE** lever ..... full
3. **HOT AIR** knob ..... close
4. **COLD AIR** knob ..... close
5. Gliding speed ..... 55 KIAS (100 km/h IAS)
6. Ignition ..... **OFF**
7. Land
8. **MASTER SWITCH** ..... **OFF**
9. Airplane ..... leave
10. Portable extinguisher (if available) ..... use

3.5.3 Fire in Flight

1. **FUEL** selector ..... **OFF**
2. **THROTTLE** lever ..... full
3. **HOT AIR** knob ..... close
4. **COLD AIR** knob ..... close
5. Gliding speed ..... 59 KIAS (110 km/h IAS)
6. Ignition ..... **OFF**

7. **MASTER SWITCH** ..... **OFF**

NOTE

For extinguishing the engine fire, you can perform slip under assumption that you have sufficient altitude and time.

If you manage to extinguish the engine fire, then it is possible to switch on the **MASTER SWITCH** again. You will switch all the section switches and after switching on the **MASTER SWITCH** the electrical system is switched on which is necessary to complete the flight.

WARNING

NEVER START THE ENGINE AGAIN!

8. ATC ..... report, if possible
9. Emergency landing ..... carry out according to para 3.9.1
10. Airplane ..... leave
11. Portable extinguisher (if available) ..... use

3.6 Fire in the Cockpit

1. Fire source ..... identify
2. **MASTER SWITCH** in case that the source of fire is electrical equipment ..... **OFF**
3. Portable extinguisher (if available) ..... use
4. After extinguishing the fire ..... aerate the cockpit
5. Carry out Precautionary landing according to para 0

WARNING

NEVER SWITCH ON THE DEFECTIVE SYSTEM AGAIN.

NOTE

If a defective electrical system circuit was detected as the fire source, then switch off appropriate circuit breaker and switch over **MASTER SWITCH** to **ON** position.

3.7 Emergency descent

1. **THROTTLE** lever ..... idle
2. Flaps ..... **RETRACTED** position (0°)
3. Airspeed ..... max. V_{NE}
   146 KIAS (270 km/h IAS)

3.8 Gliding Flight

NOTE

Gliding flight can be used for example in case of engine failure.

Wing flaps position	Retracted (0°)	Take-off (15°)
Airspeed	59 KIAS (110 km/ IAS)	55 KIAS (100 km/h IAS)

3.9 Emergency Landing

3.9.1 Emergency Landing – with Non-operating Engine

1. Airspeed ..... 59 KIAS (110 km/h IAS)
2. Landing area ..... choose, determine wind direction
3. Safety harness ..... tighten up
4. Flaps:
   - **LANDING II** position (50°) ..... 55 KIAS (100 km/h IAS)
5. ATC ..... notify situation, if possible
6. **FUEL** selector ..... **OFF**
7. Ignition ..... **OFF**
8. **MASTER SWITCH** ..... **OFF** before touch down

3.9.2 Precautionary Landing – with Engine Operating

1. Area for landing ..... choose, determine wind direction, carry out passage flight with speed of 59 KIAS (110 km/h IAS) flaps in take-off position (15°)
2. ATC ..... notify situation, if possible
3. Safety harness ..... tighten up
4. Flaps:
   - **LANDING II** position (50°) ..... 55 KIAS (100 km/h IAS)
5. Landing ..... carry out

3.9.3 Landing with Burst Tire

CAUTION

WHEN LANDING AT HOLDING, KEEP THE WHEEL WITH BURST TIRE ABOVE THE GROUND AS LONG AS POSSIBLE BY MEANS OF AILERONS. IN CASE OF NOSE WHEEL BY MEANS OF ELEVATOR.

1. At running hold airplane direction by means of foot control and elevator.

3.9.4 Landing with Damaged Landing Gear

1. In case of nose landing gear damage touch down at the lowest possible speed and try to keep the airplane on main landing gear wheels as long as possible.
2. In case of main landing gear damage touch down at his lowest possible speed and if possible keep direction at running.

3.10 After Emergency Landing

NOTE

Carry out the following procedure in case of necessity.

1. Check if the emergency locator transmitter was switched on – green light on the remote control panel is flashing, buzzer is buzzing and radio station is receiving an audio signal on frequency of 121.5 MHz.
   If the ELT was not switched on automatically – press the ON button on the remote control panel.

2. If the main antenna was damaged or if there is a danger of ELT damage, then:
   - Remove the ELT from the airplane and place it in a safe distance from the airplane.
   - Install the antenna
   - Set the **ON-OFF-ARM** switch to **ON** position

3.11 Unintentional Spin Recovery

NOTE

The airplane has not, when using normal techniques of pilotage, tendency to go over to spin spontaneously.

Standard procedure of recovery from spin:

1. Flaps ..... retract – 0°
2. **THROTTLE** lever ..... idle
3. Control stick ..... ailerons - neutral position
4. Pedals ..... kick the rudder pedal push against spin rotation direction
5. Control stick ..... push forward at least to middle position as minimum and hold it there until rotation stops
6. Pedals ..... immediately after rotation stopping, set the rudder to neutral position
7. Control stick ..... by gradual pulling recover the diving

CAUTION

ALTITUDE LOSS PER ONE TURN AND RECOVERING FROM THE SPIN IS 500 UP TO 1000 FT.

3.12 Low Oil Pressure

1. Oil pressure indicator ..... check
2. **THROTTLE** lever ..... min. necessary power
3. Perform Precautionary landing – see para 0

3.13 Generator Failure

Failure of generator is signalized by switching on the red signaling light **CHARGING** on the left side of the instrument panel.

1. **GEN** circuit breaker ..... **PULL** and then **PUSH**

If the red signaling light **CHARGING** is still on:

2. **GEN** circuit breaker ..... **PULL**
3. Decrease consumption of electric energy by switching off instruments and other electrical appliances which are not necessary for safety flight.

3.14 Unintentional Flight in Icing Conditions

1. **CARBURET. PREHEAT.** knob ..... **ON**
2. Heating ..... direct the hot air toward canopy glazing
3. Icing area ..... leave immediately

3.15 Other Emergency Procedures

3.15.1 Failure of Lateral Control

1. Control the airplane in lateral direction by means of the rudder.
2. **THROTTLE** lever ..... adjust power as needed
3. Land on the nearest suitable airport or in case of need carry out Precautionary landing - see para 0

3.15.2 Failure of Longitudinal Control

1. Control the airplane in longitudinal direction by means of elevator trim tab and by changing the engine power.
2. Land on the nearest suitable airport or in the case of need carry out Precautionary landing - see para 0

3.15.3 Failure of Trim Tab Control

1. **THROTTLE** lever ..... adjust power as needed
2. Land on the nearest suitable airport or in the case of need carry out Precautionary landing - see para 0

3.15.4 Vibrations

If abnormal vibrations occur on the airplane then:

1. **THROTTLE** lever..... Set engine RPM to the mode in which the vibrations are the lowest.
2. Land on the nearest possible airport, possibly perform safety landing according to para 0

3.15.5 Carburetor Icing

Carburetor icing happens when air temperature drop in the carburetor occurs due to its acceleration in the carburetor and further cooling by evaporating fuel. Carburetor icing mostly happens during descending and approaching for landing (low engine RPM).

Carburetor icing shows itself by engine power decreasing, by engine temperature increasing and by irregular engine running.

CAUTION

CARBURETOR ICING MAY OCCUR AT AMBIENT TEMPERATURE HIGHER THAN 32°F (0°C).

Recommended procedure for engine power regeneration is as follows:

1. **CARBURET. PREHEAT.** knob ..... **OPEN**
2. **THROTTLE** lever..... set idle and cruising power again

NOTE

Ice coating in the carburetor should be removed by decrease and reincrease of engine power.

3. If the engine power is not successfully increased, then carry out landing at the nearest suitable airport or, if it is not possible, carry out safety landing according to para 0

3.15.6 Clogging of Air Inlet to Engine Intake

Clogging of the air inlet to the engine intake results in engine power reduction, increase of engine temperatures and irregular engine running.

The recommended procedure for engine power recovery is as follows:

1. **CARBURET. PREHEAT.** knob ..... **OPEN**

3.16 Canopy Opening in Flight

WARNING

ALWAYS MAKE SURE BEFORE A TAKEOFF, THAT COCKPIT CANOPY IS FULLY CLOSED - THE RED WARNING LIGHT ON THE THE FLYMAPLD DISPLAY MUST INDICATE CLOSED CANOPY!!!

If the canopy would open in flight due to improper closing, wake behind opened canopy would cause vibrations of the horizontal tail unit and consequently vibrations of the control sticks and airplane controllability would be affected.

Proceed as follows to solve such situation:

1. Grasp shaking control stick(s). This will reduce control sticks and horizontal tail unit vibrations caused by wake behind opened canopy.
2. Pull the throttle lever to reduce airspeed to approximately 65 KIAS (120 km/h IAS).
3. Pull opened canopy down by holding the canopy frame on either side (solo flight) or on both sides (dual flight) and keep holding the canopy pulled down. This will reduce wake acting on the horizontal tail unit and improve airplane controllability.

WARNING

PRIORITY IS TO MAINTAIN AIRPLANE CONTROLLABILITY!

ATTEMPTS TO CLOSE THE CANOPY ARE SECONDARY!

4. Try to close the canopy; this could be possible in dual flight. If not, keep holding the canopy down by either hand.
5. Perform Safety landing according to para 0
6. It is required after landing to check conditions of the canopy and lock system. Horizontal tail unit must be inspected, as well.
7. Found faults must be fixed before next flight.