REMOS GXiS

Pilot's Operating Handbook for Light Sport Aircraft

Airplane Registration Number _____

Airplane Serial Number _____

REMOS Publication No. 104714, dated December 2017

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Introduction

Record of Manual Revisions

Please make a notation below if any changes have been made to this manual or to the aircraft. This manual is an important document for the pilot in command to ensure safe operation of the aircraft. Therefore, it is recommended to keep this Operating Handbook updated with the newest information available. You can get the latest updates of this manual from your dealer or directly from the manufacturer's homepage.

no.	page	concern	date	sign

Introduction

List of Content and Revisions

This POH consists of the following listed pages and sections. You will find a marking indicating the revision and date of issue at the top border of each page. Insert the latest changed pages.

Pilot Operating Handbook – Main Part

sect.	description	document-no.	revision
0	Introduction	G3-8 MA FM 9400	01
1	General Information	G3-8 MA FM 9401	01
2	Operating Limitations	G3-8 MA FM 9402	01
3	Emergency Procedures	G3-8 MA FM 9403	01
4	Normal Procedures	G3-8 MA FM 9404	01
5	Performance	G3-8 MA FM 9405	01
6	Weight and Balance	G3-8 MA FM 9406	01
7	Systems	G3-8 MA FM 9407	01
8	Handling and Servicing	G3-8 MA FM 9408	01

Pilot Operating Handbook – Supplement

sect.	description	document-no.	revision
9	Continued Airworthiness	G3-8 MA FM 9409	01
10	Continued Airworthiness	G3-8 MA FM 9410	01

Introduction

Light Sport Aircraft REMOS *GXiS*

The REMOS ***GXiS*** was manufactured in accordance with the Light Sport Aircraft airworthiness standards and does not conform to standard category airworthiness requirements.

The standards to be used for certification are given by FAA and can be obtained from the FAA's website. For this airplane the following standards have been used:

number	revision	purpose
ASTM F2245	16c	Design and Performance
ASTM F2245	16c	Required Equipment
ASTM F2245	16c	Aircraft Operating Instructions
ASTM F2972	15	Quality Assurance
ASTM F2295	06	Continued Airworthiness
ASTM F2483	12	Maintenance Manual
ASTM F2746	14	Pilot Operating Handbook

This table is applicable only for newly delivered aircraft. It is not applicable in case the POH has been updated for existing aircraft.

Manufacturer and Contact Information

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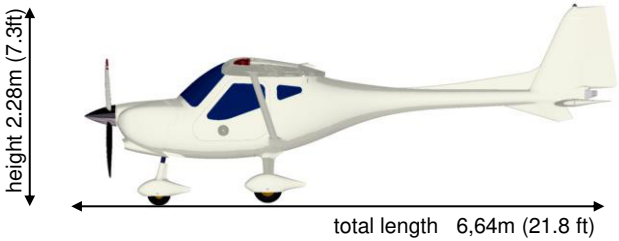
Introduction

Views



1 General Information

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1 General Information

1.1 Introduction

This Operating Handbook is designed to help enable a safe and successful completion of each flight with the REMOS ***GXiS***. It provides you with all necessary information for regular maintenance and operation of the aircraft. Therefore we recommend that the pilot keep this Operating Handbook updated with the newest information available. You can get the latest version of this Handbook from your local dealer or directly from the manufacturer's homepage.

1.2 Certification

The REMOS ***GXiS*** was manufactured in accordance with the Light Sport Aircraft airworthiness standards and does not conform to standard category airworthiness requirements.

1.3 Continued Airworthiness

Technical publications for continued airworthiness are released on the REMOS website www.remos.com and they may be downloaded free of charge.

Bombardier-Rotax releases technical publications on their website www.flyrotax.com from which they may be downloaded free of charge. Documentation update for avionics may be downloaded on www.dynonavionics.com and www.garmin.com.

It is the responsibility of the owner/operator of the aircraft to keep the aircraft and its documentation up to date and to comply with all technical publications.

1 General Information

1.4 Quick Reference

Type: Full composite carbon fiber aircraft with two seats.

Design: High wing design with struts, front mounted engine and propeller, traditional stabilizer concept, differential ailerons. Electrically operated flaps (0°, 15° and 35°), electric elevator trim, three-wheel landing gear with steerable nose wheel. Main gear with hydraulic disc brakes. The cabin is equipped with two seats side by side and can be entered and exited by doors on the left and right side of the fuselage.

Layout: Main components are built in half shells from composite fiber material, which are bonded together (carbon fiber, Kevlar and glass fiber).

1.5 Technical Specifications

wingspan	9.32 m	(30 ft 7 in)
length	6.64 m	(21 ft 10 in)
height	2.28 m	(7 ft 4 in)
wing area	10.97 m^2	(118 sq ft)

MTOW	600 kg	(1,320 lb)
wing loading	54.7 kg/m^2	(11.2 lb/sq ft)

1 General Information

1.6 Performance

This section shall give a summary of the performance of the REMOS ***GXiS***. Detailed performance data is given in section 5 of this Pilot Operating Handbook.

top speed at MSL		105 kTAS	@° 5,300 rpm	
cruise speed at 4,000 ft		95 kTAS	@° 4,800 rpm	(*)
range at 4,000 ft		451 nm	@° 4,800 rpm	(*)
endurance at 4,000 ft		4.75 h	@° 4,800 rpm	(*)
rate of climb	**at V_X** **at V_Y**	680 ft/min 710 ft/min	@ V_X = 50 kIAS @ V_Y = 60 kIAS	
stall speed	**flaps clean** **flaps 15deg** **flaps 35deg**	43 kIAS 40 kIAS 39 kIAS		

[*] 30min reserve, 21 USgal usable fuel

1.7 Engine

manufacturer		Bombardier-Rotax
engine type		912 iS Sport or 912 iSc Sport
max. power	**take-off** **max. cont.**	73.5 kW / 100 HP 72.0 kW / 97 HP
max. engine speed	**take-off** **continuous**	5,800 rpm 5,500 rpm
gear ratio		2.43 : 1
coolant	**type**	BASF Glysantin Protect Plus/G48
	mixing ratio	see section 7

1 General Information

1.8 Fuel

fuel quantity	**usable**	21 US gallons
	total	22 US gallons
fuel qualities		Fuel released by actual revision of ROTAX service instruction SI-912i-001, preferably free of ethanol.

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 latest revision for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

1.9 Oil

engine oil		oil released by ROTAX SI-912i-001
oil rating		RON 424
oil quantity	**min.**	3.0 ltr (3.2 qts)
	max.	3.5 ltr (3.7 qts)
recommended oil		AeroShell Sport PLUS 4 10W-40

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 latest revision for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

1 General Information

1.10 Propeller

manufacturer	type	number of blades
DUC Hélices	FLASH	3

1.11 ICAO Designator

ICAO Designator: GX (as per ICAO Doc. 8643)

1.12 Noise Certification

According to noise requirements for Ultralight aircraft (LS-UL) dated August 1996, the REMOS ***GXiS*** is certified to a noise level of 60 dB (A).

2 Operating Limitations

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2 Operating Limitations

2.1 Reference Airspeeds

speed		IAS	description
V_{NE}	never exceed speed	135 kts	airspeed which shall never be exceeded
V_{NO}	maximum speed in turbulence	107 kts	airspeed which shall not be exceeded in gusty weather
V_O	operating maneuvering speed	 59 kts 88 kts	maximum airspeed for all permissible maneuvers with 880 lb (400kg) all up weight with 1,320lb (600kg) all up weight
V_{FE}	max. speed with flaps fully extended	78 kts	airspeed which may never be exceeded with flaps down
V_T	target airspeed	60 kts	recommended airspeed for approach at gross weight
V_Y	airspeed for best rate of climb	60 kts	airspeed for the greatest altitude gain in the shortest time, flaps up
V_X	airspeed for best angle of climb	50 kts	airspeed for the steepest climb any flap setting
V_S	stall speed with flaps retracted (0°)	43 kts	stall speed at gross weight with flaps up
V_{S0}	stall speed with flaps extended (35°)	39 kts	stall speed at gross weight with flaps down

2 Operating Limitations

2.2 Airspeed Indicator Range and Markings

marking	IAS	range	description
white arc	39…78 kts	V_{S0} - V_{FE}	airspeed range for flaps extended
green arc	43…107 kts	V_{S1} - V_{NO}	normal use
yellow arc	107…135 kts	V_{NO} - V_{NE}	caution in gusty conditions
red line	135 kts	V_{NE}	maximum permissible airspeed

The yellow arc defines the “caution” range in which the aircraft should be flown with care as vertical gusts can damage the airframe structure. At V_{NO} the airframe is able to support a gust with 3.000 ft/min, at V_{NE} the vertical gust velocity is limited to 1.500 ft/min.

2.3 Stalling Speeds at Maximum Takeoff Weight

stall speed with flaps extended V_{S0} = 39 kIAS
stall speed with flaps retracted V_S = 43 kIAS

2 Operating Limitations

2.4 Flap Extended Speed Range

Flaps may be operated and the aircraft may be flown at airspeeds higher than V_{FE} as long as flap deflection is limited. Following restrictions apply as a function of airspeed:

δ [deg]	V_{FE} [kIAS]
0	135
15	113
35	78

With flaps set to any deflection the safe load factor is limited to 2.

2.5 Operating Maneuvering Speed

operating maneuvering speed with 600kg all up weight V_O = 88 kIAS

operating maneuvering speed with 400kg all up weight V_O = 59 kIAS

For any weight between 400kg and 600kg, the operating maneuvering airspeed may be interpolated linearly.

At operating maneuvering speed one control, i.e. ***either*** aileron, ***or*** elevator ***or*** rudder control, may deflected until its stop ***once***. Above V_A permissible deflection is reduced, until at never exceed speed V_{NE} only one third of the deflection is permitted.

2 Operating Limitations

2.6 Never Exceed Speed

never exceed speed V_{NE} = 135 kTAS

Due do the reduced density of air at altitude, true airspeed is higher than calibrated or indicated airspeed. Therefore, V_{NE} is limited to 135 kts true airspeed in order to prevent flutter. With increasing altitude V_{NE} is limited to lower values than indicated by redline according to the following table.

altitude [ft]	**V_{NE}** [kTAS]	**V_{NE}** [kIAS]
0	135	135
5,000		125
10,000		116
15,000		107

At never exceed speed V_{NE} only one third of the maximum control deflection (aileron, elevator, rudder) is permitted.

2.7 Service Ceiling

service ceiling 15,400 ft

2.8 Load Factors

safe load factors +4.0 g / -2.0 g

With flaps set to any deflection the safe load factor is limited to 2.

2 Operating Limitations

2.9 Approved Flight Maneuvers

The following maneuvers are permitted

- all non-aerobatic maneuvers,
  including stalls and departure stalls

2.10 Prohibited Maneuvers

Flight maneuvers not permitted

- whip stalls
- aerobatics
- spins
- flight in icing conditions

2.11 Crosswind and Wind Limitations

maximum demonstrated cross wind
component for take-off and landing 15 knots

The maximum demonstrated crosswind component is not a limitation. The pilot may exceed this demonstrated crosswind component on his or her own discretion. In case the pilot operates the aircraft in crosswind components higher than demonstrated he or she shall be aware of the fact that this flight regime has not been tested. A general wind limitation is not defined for the REMOS ***GXiS***.

2 Operating Limitations

2.12 Engine

manufacturer		Bombardier Recreational Products Rotax
engine type		912 iS Sport
max. power	take-off	73.5 kW / 100 HP
	max. cont.	69.0 kW / 95 HP
max. engine speed	take-off	5,800 rpm
	continuous	5,500 rpm
gear ratio		2.43 : 1
exhaust gas temp	max	950°C
coolant	type	BASF Glysantin Protect Plus G48
	mixing ratio	see section 7
coolant temp	min	not defined
	max	120°C = 248°F

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

2 Operating Limitations

2.13 Fuel

fuel quantity	usable	80 ltr (21 US gallons)
	total	84 ltr (22 US gallons)
fuel pressure	min.	2.8 bar = 40.5 psi
	max.	3.2 bar = 46.5 psi
fuel qualities		Fuel released by actual revision of ROTAX service instruction SI-912i-001, preferably free of ethanol.

NOTE	Fuel pressure varies with engine speed. Limits given above apply for normal operation in flight (4,200 – 5,800 rpm). Fuel pressure with engine idling may be less.

2.14 Oil

engine oil		oil released by actual revision of ROTAX service instruction SI-912i-001
oil rating		RON 424
oil quantity	min.	3.0 ltr (3.2 qts)
	max.	3.5 ltr (3.7 qts)
recommended oil		AeroShell Sport PLUS 4 10W-40
oil pressure	min.	0.8 bar = 12 psi (below 3500rpm) 2.0 bar = 29 psi (above 3500rpm)
	max.	7.0 bar = 102 psi
oil temperature	min.	50°C (120°F)
	max.	130°C (266°F)

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912-016/SI-914-019 for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

2 Operating Limitations

2.15 Maximum Wind Velocity for Tie-Down

max. wind velocity for tie-down in the open V_R = 38 kts

2.16 Maximum Structure Temperature

max. certified structure temperature 54°C

2.17 Weight and Balance

front limit of C.G.	9.6 in	245 mm
rear limit of C.G.	16.3 in	415 mm

maximum take-off weight (MTOW)	1,320 lb	600 kg
max. baggage in baggage compartment	66 lb	30 kg
max. baggage in each bin	4.4 lb	2 kg
max. fuel	133 lb	60.5 kg

2.18 Crew

The REMOS ***GXiS*** is certified to be operated with a minimum of 1 occupant (the pilot in command) and a maximum of 2 occupants.

REMOS does not define a seat for the pilot in command. The seat of the pilot in command may be otherwise defined by regulations or by the owner/operator.

2 Operating Limitations

2.19 Flight Conditions and Minimum Equipment List

operation	minimum equipment
Day-VFR	as per D-VFR Minimum Equipment List
Night-VFR	as per N-VFR Minimum Equipment List
IFR in IMC	not approved
IFR in VMC	as per IFR/VMC Minimum Equipment List
Aerobatics	not approved

D-VFR minimum equipment list

- ROTAX 912 iS Sport
- silencer
- propeller as defined in chapter 2
- compass (*)
- altimeter (*)
- airspeed indicator (*)
- safety belts and seat for each occupant
- ELT
- electrical system including SMARTstart System, ignition key and circuit breakers
- engine instruments (*)

(*) information displayed in glass cockpit only is acceptable

2 Operating Limitations

N-VFR Minimum equipment list

- as per D-VFR minimum equipment list, plus
- electrical artificial horizon (*)
- instrument panel lighting
- position lights
- taillight
- anti collision lights
- landing light
- communication radio
- transponder

IFR/VMC Minimum equipment list

- as per N-VFR minimum equipment list, plus
- navigation radio
- audio panel

(*) information displayed in glass cockpit only is acceptable

2 Operating Limitations

2.20 Placards and Markings Inside Cabin

The placards and markings feature the following color codes.

Type	Inside
Information	white lettering on a black background - white framed 
Safety	white lettering on a black background - red framed 
Warning	white lettering on a red background - white framed 

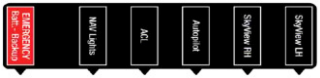
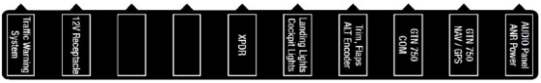
The following list does not define the layout but the content and intent of the placards.

2 Operating Limitations

The following information placards are installed inside the cabin. Installation of these placards is ***mandatory***.

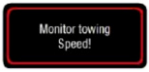
placard	location
	center stack actual callsign of aircraft
	center stack between lane reset switches
	center stack at engine test button
	center stack around ignition key

2 Operating Limitations

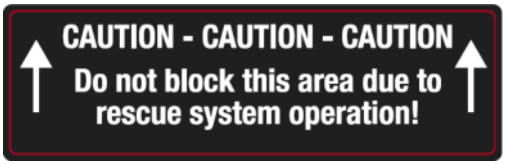
placard	location
	center console at power lever
	left panel labeled with CB's installed
	right panel labeled with CB's installed

2 Operating Limitations

The following safety placards are installed inside the cabin. Installation of these placards is ***mandatory***.

placard	location
	left cockpit above left cockpit screen
	left cockpit above left cockpit screen installed in combination with towing clutch only
	center stack on top of center stack
	right cockpit above right cockpit screen
	hatrack between baggage nets
	fuel tank sight hose indicating minimum fuel level
	cabin ceiling at recovery system release handle when recovery system is installed
	aileron pushrod

2 Operating Limitations

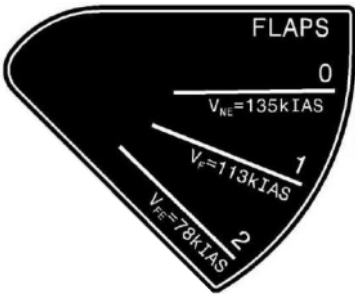
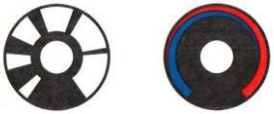
placard	location
	aileron pushrod cut out
	baggage compartment when recovery system is installed

The following warning placards are installed inside the cabin. Installation of these placards is ***mandatory***.

placards	location
	door
	door

2 Operating Limitations

The following information placards and markings are found inside the cabin. Attaching these placards is not mandatory; these placards provide additional information to the pilot.

placards	location
	center stack at flap switch
	center stack at landing light switch
	center stack at panel light dimmer
	inside armrest on brake fluid reservoir
	baggage compartment on compartment cover imperial units acceptable
	hatrack close to baggage nets imperial units acceptable
	center stack around air/heat control knobs

2 Operating Limitations

placards	location
	armrest at parking brake valve

2 Operating Limitations

2.21 Placards and Markings Outside Cabin

The placards and markings feature the following color codes.

Type	Outside
Information	black lettering on a white background - black framed 
Safety	red lettering on a white background - red framed 
Warning	red lettering on a white background - red framed 

The following list does not define the layout but the content and intent of the placards.

2 Operating Limitations

The following information placards are installed outside the cabin. Installation of these placards is ***mandatory***.

placards	location
	fuel tank filler cap metric units acceptable

2 Operating Limitations

The following safety placards are installed outside the cabin. Installation of these placards is ***mandatory***.

placards	location
	center of elevator
	next to the opening for aileron pushrod, covered by wing if not folded
	center of fixed surface of elevator, covered if elevator is installed

The following warning placards are installed outside the cabin. Installation of these placards is ***mandatory***.

placards	location
	recovery system egress area when recovery system installed

2 Operating Limitations

The following information placards and markings are found outside the cabin. Attaching these placards is not mandatory; these placards provide additional information to the pilot.

placards	location
2,0 BAR MAX 29 PSI MAX 2,4 BAR MAX 34 PSI MAX	wheel fairings placard set with one unit only acceptable
KEEP CLEAN	static ports

The following safety placards and markings are found outside the cabin. Attaching these placards is not mandatory; these placards provide additional information to the pilot.

placards	location
! WARNING ! Before removing wing bolt disconnect aileron rod-connection!	wing main bolt
! WARNING ! Wing not foldable !	wing when wing folding mechanism not installed
Do not lift	strut

3 Emergency Procedures

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3 Emergency Procedures

3 Emergency Procedures

3.1 Definitions

Procedures

are instructions that must be performed in the given sequence, as far as possible without interruption.

Checklists

are lists for items to be checked in the applicable phase of flight (taxi, take-off, climb, etc.). Timing and sequence of the steps to be executed may vary according to the individual flight.

Briefings

are guidelines for upcoming procedures. With the help of briefings, the pilot and passenger should recapitulate those procedures.

3 Emergency Procedures

3.2 Jettison of Doors — Procedure

1.	door lock	OPEN
2.	hinge pin	PULL
3.	door	JETTISON

3.3 Spin Recovery — Procedure

1.	engine	IDLE
2.	control stick	NEUTRAL
3.	rudder	OPPOSITE SPIN DIRECTION
4.	after stopping of rotation	RECOVER

3.4 Recovery System — Procedure

1.	engine	STOP
2.	recovery system	RELEASE
3.	declare emergency	MAYDAY MAYDAY MAYDAY
4.	master switch	OFF
5.	safety belts	TIGHTEN

3.5 Emergency Descent — Procedure

1.	engine	IDLE
2.	flaps	UP
3.	airspeed in rough air	107 kIAS
	airspeed in calm air	135 kTAS

3 Emergency Procedures

3.6 Inadvertent Icing Encounter Procedure

1.	engine	FULL POWER
2.	flaps	UP
3.	carburetor heat	PULL
4.	electric fuel pump	ON
5.	heading change	BACKTRACK
6.	descent	LEAVING ICING CONDITIONS
7.	altitude	KEEP SAFE ALTITUDE

3.7 Loss of Altimeter Procedure

for aircraft with more than one altimeter installed

1. AVIATE – NAVIGATE – COMMUNICATE
2. altimeter USE ALTERNATE ALTIMETER
3. in case of failure of all altimeters installed continue with procedure below

aircraft with just one altimeter and within airspace requiring clearance

1. radio communication INFORM ATC
2. instructions by ATC ACT ACCORDINGLY
3. continue flight and land on appropriate airfield to determine the reason for the altimeter failure

aircraft with just one altimeter but outside airspace requiring clearance

1. altitude KEEP SAFE ALTITUDE
2. instructions by ATC ACT ACCORDINGLY
3. continue flight and land on appropriate airfield to determine the reason for the altimeter failure

3 Emergency Procedures

3.8 Loss of Airspeed Indicator Procedure

for aircraft with more than one airspeed indicator installed

1. AVIATE – NAVIGATE – COMMUNICATE
2. airspeed indicator USE ALTERNATE ASI
3. in case of failure of all airspeed indicators installed continue with procedure below

for aircraft with one airspeed indicator installed or total failure of ASI

1. engine speed in cruise 4.200…4.600 rpm

landing without airspeed indicator

1. airfield APPROPRIATE RWY LENGTH
2. flaps UP
3. carburetor heat PULL
4. electric fuel pump ON
5. engine speed in decent 2.500…3.000 rpm
6. pitch KEEP WITHIN estd. +/-10 deg
7. short final approach POWER IDLE
8. flare AS APPROPRIATE
9. touch down on main wheels first with very little flare.
10. brakes IMMEDIATELY

NOTE	Landing distance with this procedure is significantly longer than a standard landing. Expect distances far in excess of 2.000 ft / 600m or even more. Select an airfield with sufficient runway length available.

3 Emergency Procedures

3.9 Total Loss of Glass Cockpit Procedure

failure of one glass screen (frozen or black)

1. AVIATE – NAVIGATE – COMMUNICATE
2. glass screen USE ALTERNATE SCREEN
3. continue flight and land on appropriate airfield to determine the reason for the failure

failure of both glass screens (frozen or black)

1. AVIATE – NAVIGATE – COMMUNICATE
2. glass screen IGNORE
3. flight instruments USE STAND-BY INSTRUMENTS
4. continue flight and land on appropriate airfield to determine the reason for the failure

NOTE	Even the total loss of the glass cockpit system does not lead to an immediate emergency. Losing both screens leads to loss of engine indication. This will not lead to engine problems or engine failure. Continue flight to appropriate destination.

NOTE	Failure of the glass screens might lead to failure, misleading or missing warning of the stall warning. Check accuracy of ASI and altimeter (compare with GPS). Assume the stall warning has failed.

3 Emergency Procedures

3.10 Loss of Elevator Control Procedure

aircraft equipped with recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. recovery system DEPLOY

aircraft without recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. power setting FOR LEVEL FLIGHT
4. elevator control USE TRIM SYSTEM
5. landing EMERGENCY LANDING

NOTE	With a failed elevator control the aircraft might be controlled with the trim system. Pitch control is extremely limited. Engine power control might support pitch control.

NOTE	**stuck/blocked elevator control** UP trim will result in a nose down response DOWN trim will result in a nose up response **disconnected/floating elevator control** UP trim will result in a nose up response DOWN trim will result in a nose down response

WARNING	Loss of elevator control is an extremely severe situation that might result in loss of control of the aircraft, serious injuries or even death.

3 Emergency Procedures

3.11 Loss of Aileron Control Procedure

aircraft equipped with recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. recovery system DEPLOY

aircraft without recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. power setting FOR LEVEL FLIGHT
4. control USE RUDDER CONTROL
5. landing EMERGENCY LANDING

NOTE	With a failed aileron control the aircraft might be controlled with the rudder control resulting in excessive sideslip conditions.

WARNING	Loss of aileron control is an extremely severe situation that might result in loss of control of the aircraft, serious injuries or even death.

3 Emergency Procedures

3.12 Loss of Rudder Control Procedure

aircraft equipped with recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. recovery system DEPLOY

aircraft without recovery system

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. power setting FOR LEVEL FLIGHT
4. control USE AILERON CONTROL
5. landing EMERGENCY LANDING

NOTE	With a failed rudder control the aircraft might be controlled with the aileron control resulting in excessive sideslip conditions.

WARNING	Loss of rudder control is an extremely severe situation that might result in loss of control of the aircraft, serious injuries or even death.

3 Emergency Procedures

3.13 Loss of Trim System Procedure

pitch down trim runaway or stuck trim with lot of trim down

1. AVIATE – NAVIGATE – COMMUNICATE
2. expect nose down attitude
3. keep nose up with manual stick input
4. release trim circuit breaker
5. expect higher stick forces than usual
6. continue flight and land on appropriate airfield to determine the reason for the trim system failure

pitch up trim runaway or stuck trim with lot of trim up

1. AVIATE – NAVIGATE – COMMUNICATE
2. expect nose up attitude
3. keep nose level with manual stick input
4. release trim circuit breaker
5. expect higher stick forces than usual
6. continue flight and land on appropriate airfield to determine the reason for the trim system failure

NOTE	The aircraft is controllable even with a complete trim runaway. Keep your airspeed below V_{NO} to keep stick forces within reasonable limits.

3 Emergency Procedures

3.14 Loss of Flaps Control System Procedure

flaps stuck in deflected position or flaps down runaway

1. AVIATE – NAVIGATE – COMMUNICATE
2. max. flap speed V_{FE} = 78 kIAS
3. approach airspeed V_{APP} = 60 kIAS
4. return to airfield or continue flight and land on appropriate airfield to determine the reason of the failure

flaps stuck in retracted position or flaps up runaway

1. AVIATE – NAVIGATE – COMMUNICATE
2. stall speed V_S = 43 kIAS
3. approach airspeed V_{APP} = 60 kIAS
4. return to airfield or continue flight and land on appropriate airfield to determine the reason of the failure

NOTE	Keep in mind that landing distances presented in section 5 of this POH are applicable to the normal landing procedure. Landing with flaps up will result in longer landing distances.

3 Emergency Procedures

3.15 Loss of Oil Pressure Procedure

oil temperature not stable (constantly and rapidly rising)
smell of oil, oil fumes, oil on windscreen

5. AVIATE – NAVIGATE – COMMUNICATE
6. PERFORM PRECAUTIONARY LANDING

oil temperature stable (constant oil temperature)
no obvious oil leakage, engine running smooth

1. monitor oil temperature STABLE
2. CHT max. 248°F = 120°C
3. oil temperature 120…266°F = 50…130°C
4. continue flight and land on appropriate airfield to determine the reason for the indicated oil pressure loss

WARNING	Loss of oil pressure may be a result of an oil leakage. This is an extremely dangerous situation as it implies the immediate danger of an in-flight fire. Be sensitive to any kind of abnormal smell or fire. Be prepared for an immediate precautionary landing, maybe emergency landing!

3 Emergency Procedures

3.16 High Oil Pressure Procedure

oil temperature not stable (constantly and rapidly rising)
smell of oil, oil fumes, oil on windscreen

1. AVIATE – NAVIGATE – COMMUNICATE
2. PERFORM PRECAUTIONARY LANDING

oil temperature stable (constant oil temperature)
no obvious oil leakage, engine running smooth

1. monitor oil temperature STABLE
2. CHT max. 248°F = 120°C
3. oil temperature 120…266°F = 50…130°C
4. continue flight and land on appropriate airfield to determine the reason for the indicated high oil pressure

WARNING	High oil pressure may result in an oil leakage. This is an extremely dangerous situation as it implies the immediate danger of an in-flight fire. Be sensitive to any kind of abnormal smell or fire. Be prepared for an immediate precautionary landing, maybe emergency landing!

3 Emergency Procedures

3.17 High Cylinder Head Temperature Procedure

1. AVIATE – NAVIGATE – COMMUNICATE
2. power setting REDUCE TO MIN. POSSIBLE
3. continue flight and land on appropriate airfield to determine the reason of the high cylinder head temperature
4. record max. observed temperature and duration

NOTE	The engine has water cooled cylinder heads. Therefore, a failure of the cooling system does not imply immediate danger of engine failure.

NOTE	In case cylinder head temperature can be kept within limits (max. 248°F = 120°C) flight can be continued to planned destination.

NOTE	In case cylinder head temperature rises uncontrollable be prepared for precautionary landing, although the engine is not expected to stop suddenly.

NOTE	The ROTAX manual gives advice for inspection and release to service after such an occurrence.

3 Emergency Procedures

3.18 Engine Stoppage during Take-Off Procedure

during take-off run (aborted take-off)

1. AVIATE – NAVIGATE – COMMUNICATE
2. brakes AS REQUIRED
3. ignition key OFF

during climb out (altitude below 500ft)

1. AVIATE – NAVIGATE – COMMUNICATE
2. declare emergency MAYDAY MAYDAY MAYDAY
3. ignition key OFF
4. safety belts TIGHTEN
5. emergency landing APPROPRIATE TERRAIN

NOTE	No course deviations should be made in excess of 30° to the left or right. Do not return to the airfield.

3 Emergency Procedures

3.19 Engine Stoppage in Flight Procedure

case 1: altitude not enough for engine re-start

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	landing site	IDENTIFY
3.	declare emergency	MAYDAY MAYDAY MAYDAY
4.	safety belts	TIGHTEN
5.	emergency landing	APPROPRIATE TERRAIN

case 2: altitude sufficient for engine re-start

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	landing site	IDENTIFY
3.	emergency switch	PULL to ON and START
4.	SkyView LH	STAY ON
5.	landing light	OFF
6.	landing	SUITABLE AIRFIELD

NOTE	By engaging the emergency mode non-essential systems are switched off, i.e.: • SkyView (has internal backup battery) • NAV lights and strobes • Autopilot • Second COM • 12 V receptacle Selecting STAY ON on the SkyView keeps the system powered on internal backup batteries. Switching on or off the SkyView system is done by pressing the left softkey. It is recommended to have only one SkyView switched on at a time.

WARNING	When engine failure is caused by double generator failure, remaining flight time is not more than 30min. Thereafter the engine will definitely and finally quit.

3 Emergency Procedures

3.20 Engine on Fire During Start-Up Procedure

1.	ignition key	OFF
2.	vacate aircraft	IMMEDIATELY

3.21 Engine on Fire During Take-Off Procedure

during take-off run (aborted take-off)

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	ignition key	OFF
3.	brakes	AS REQUIRED UNTIL STOP
4.	vacate aircraft	IMMEDIATELY

during climb out (altitude below 500ft)

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	declare emergency	MAYDAY MAYDAY MAYDAY
3.	ignition key	OFF
4.	safety belts	TIGHTEN
5.	emergency landing	APPROPRIATE TERRAIN
6.	vacate aircraft	IMMEDIATELY AFTER STOP

NOTE	No course deviations should be made in excess of 30° to the left or right. Do not return to the airfield.

WARNING	Never release the recovery system in case of fire.

3 Emergency Procedures

3.22 Engine on Fire in Flight Procedure

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	declare emergency	MAYDAY MAYDAY MAYDAY
3.	ignition key	AVIONIC (engine off)
4.	sideslip	AS REQUIRED
5.	safety belts	TIGHTEN
6.	emergency landing	APPROPRIATE TERRAIN

WARNING	Never release the recovery system in case of fire.

3.23 Rough Engine Procedure

1.	Lane A	RESET
2.	Lane B	RESET
3.	corrupt lane	DEAKTIVATE
4.	landing	SUITABLE AIRFIELD

NOTE	LANE RESET means to switch off the affected LANE (flashing or permanent warning light) and after a couple of seconds to switching it on again.

3 Emergency Procedures

3.24 Loss of Power Procedure

1. AVIATE – NAVIGATE – COMMUNICATE
2. landing site IDENTIFY
3. power and setting CHECK

power not sufficient for safe flight

4. declare emergency MAYDAY MAYDAY MAYDAY
5. safety belts TIGHTEN
6. ignition key AVIONIK
7. emergency landing SUITABLE TERRAIN

power sufficient

4. landung SUITABLE AIRFIELD

3 Emergency Procedures

3.25 Generator Failure / Voltage Drop Procedure

1. AVIATE – NAVIGATE – COMMUNICATE
2. Identification — LANE A and B FLASHING and or LOW VOLTAGE WARNING
3. emergency switch — LIFT and ENGAGE
4. SkyView LH — press STAY ON
5. landing light — OFF

NOTE	By engaging the emergency mode non-essential systems are switched off, i.e.: • SkyView (has internal backup battery) • NAV lights and strobes • Autopilot • Second COM • 12 V receptacle Selecting STAY ON on the SkyView keeps the system powered on internal backup batteries. Switching on or off the SkyView system is done by pressing the left softkey. It is recommended to have only one SkyView switched on at a time.

WARNING	Sudden double generator failure leads to engine failure. Engine restart is possible. Remaining flight time is not more than 30min. Thereafter the engine will definitely and finally quit.

WARNING	Usually a single generator failure is observed prior to a double generator failure. Sudden double generator failure leads to engine failure.

3 Emergency Procedures

3.26 Battery Warning Checklist

If installed, battery warning is coming up as lighting or flashing battery status light in the DYNON SkyView system. Proceed as follows:

warning light flashing

voltage	*possible cause*	*action*
< 13.2 V	battery over-discharged	Charge battery on ground. Once charged, the light will stop flashing.
< 13.2 V	weak or failing cell	Charge battery on ground. If voltage drops below 13.2V within a few days, discontinue use.
13.2 V … 14.6 V	weak or failing cell	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.
13.2 V … 14.6 V	cell to cell charge levels are not balanced	May come on briefly during periods of high current charging until the cells are automatically balanced. Try charging with a plugin charger.
> 15.2 V	over-charging	Both the aircraft voltage regulator and aircraft overvoltage protection have failed. Land on appropriate airfield, soon. Consider precautionary landing.

warning light permanently on

voltage	*possible cause*	*Recommended action*
any	battery management system electronic issue	Not an immediate issue unless it is in conjunction with a charging system failure. In this case: Both the aircraft voltage regulator and aircraft overvoltage protection have failed. Land on appropriate airfield, soon. Consider precautionary landing.
any	short circuit protection was activated	Solid light will turn off without further action, noting needs to be done.

3 Emergency Procedures

3.27 Over-Voltage Procedure

The aircraft is equipped with an overvoltage protection. This subsystem protects the aircraft systems and the avionics in case of an overvoltage event.

The overvoltage protection is integrated into the PSU (power supply unit) and needs neither maintenance not operation. In case the overvoltage protection releases due to a voltage regulator failure, it isolates the electric system from the engine charging system

In such an event, the overvoltage warning light in the DYNON system lights up, followed by a low voltage warning. For the pilot, this has the identical effect as a generator failure: charging power of the generators is not available anymore and the aircraft batteries will discharge.

1. AVIATE – NAVIGATE – COMMUNICATE
2. Identification — LANE A and B FLASHING and or LOW VOLTAGE WARNING
3. emergency switch — LIFT and ENGAGE
4. SkyView LH — press STAY ON
5. landing light — OFF

NOTE	The procedure is identical as defined in section ***3.24 - generator failure***. Once the emergency mode is activated, section ***3.27 - flight with INOP generator(s)*** applies.

3 Emergency Procedures

3.28 Flight with INOP Generator(s) Briefing

The engine is equipped with two generators – one for the engine systems (ignition, fuel pumps, ECU, fuse box) and a second one for the aircraft systems.

After a single generator failure, the ECU switches to the remaining generator to ensure safe operation of the engine. Therefore, a single generator failure does not cause a dangerous situation.

After a single generator failure, the aircraft systems are powered by the aircraft batteries only. Engaging the emergency mode by switching the emergency switch on will provide excess power of the remaining generator to the electric system, which is also still supported by the batteries.

The flight may be safely continued even with one generator offline. Essential systems are still powered for a sufficient time. Non-essential systems are cut off the electric system and will fail now. As soon as the internal backup batteries of the SkyView system are discharged, there is no PFD or EMS available anymore.

Due to the generator failure, the full power of the electric system is not available anymore and the aircraft batteries will discharge. As soon as these batteries are fully discharged, the entire avionic system incl. radio. This does impede safe continuation of flight, but makes any contact with ATC impossible. Depending on the actual situation, additional electric consumers may be switched off by releasing its circuit breaker to safe electric energy.

After a double generator failure, the aircraft is not fed with electric energy anymore. In such a situation, all systems are powered by the aircraft batteries only.

WARNING	Double generator failure leads to engine failure. Engine restart is possible. Remaining flight time is not more than 30min. Thereafter the engine will definitely and finally quit.

3 Emergency Procedures

3.29 misc. Engine Trouble Procedure

1. AVIATE – NAVIGATE – COMMUNICATE
2. landing site IDENTIFY
3. emergency switch LIFT and ENGAGE
4. SkyView LH press STAY ON
5. landing light OFF
6. troubleshooting SEE TABLE

NOTE	By engaging the emergency mode non-essential systems are switched off, i.e.: • SkyView (has internal backup battery) • NAV lights and strobes • Autopilot • Second COM • 12 V receptacle Selecting STAY ON on the SkyView keeps the system powered on internal backup batteries. Switching on or off the SkyView system is done by pressing the left softkey. It is recommended to have only one SkyView switched on at a time.

NOTE	In case a generator failure can be excluded, the emergency switch may be deactivated at safe altitude.

NOTE	LANE RESET in the following table means to switch off the affected LANE (flashing or permanent warning light) and after a couple of seconds to switching it on again.

3 Emergency Procedures

LANE fault	procedure
one LANE flashing	1. LANE RESET 2. distress solved CONTINUE FLIGHT 3. Flight may be continued to suitable destination on own discretion with one corrupt LANE.
both LANES flashing	1. LANE A RESET 2. LANE B RESET 3. distress solved CONTINUE FLIGHT 4. one LANE ok CONTINUE WITH CASE ABOVE 5. Two flashing LANES may indicate a generator failure. See relevant procedure.
one LANE lights up	1. LANE RESET 2. distress solved CONTINUE FLIGHT 3. Flight may be continued to suitable destination on own discretion with one corrupt LANE.
on LANE lights up & one LANE flashing	1. LANE A RESET 2. LANE B RESET 3. distress solved CONTINUE FLIGHT 4. one LANE ok CONTINUE WITH FIRST CASE ABOVE 5. Flight may be continued to suitable destination on own discretion with one corrupt LANE.
both LANES light up	1. LANE A RESET 2. LANE B RESET 3. distress solved CONTINUE FLIGHT 4. one LANE ok CONTINUE WITH FIRST CASE ABOVE 5. Flight may be continued to suitable destination on own discretion with one corrupt LANE.

3 Emergency Procedures

NOTE	One flashing LANE indicates an error with lower severity that has been detected by the internal testing procedures of the ECU and does not imply any risk for an engine failure.

NOTE	With one corrupt LANE, the associated engine instruments will fail. This is no reason to be worried.

NOTE	Two flashing LANE warning lights indicate an error with lower severity and does not lead to an engine failure. Nevertheless, this might indicate a failure of generator A (the one for the engine systems). The ECU switches to generator B in this case.

EMS Messages	procedure
main fuel pump INOP	1. main fuel pump FAILED 2. fuel pressure MONITOR 3. continue flight to suitable destination for troubleshooting
Voltage indication RED	1. generator B FAILED 2. continue flight to suitable destination for troubleshooting
temp/pressure out of limits	1. power ADJUST 2. in case alarm does not vanish, continue flight to suitable destination for troubleshooting

3 Emergency Procedures

3.30 Flight with ONE deactivated LANE Briefing

The engine is equipped with a dual lane engine control unit. Failure of one of those lanes does not lead to an engine failure and does not lead into an immediate dangerous situation.

Once one lane has failed, the associated engine instruments will fail as well. This is no reason to be worried.

In case the engine is operated on one lane only, the POWER mode is activated, meaning: the engine is now fed with a rich fuel to air mixture. This leads to higher fuel consumption and by this to reduced range. An increase of 30% in fuel consumption compared to the values given in section 5 has to be taken into account.

Flight may be continued to a suitable destination to troubleshoot the system.

3.31 Flight with ONE INOP Fuel Pump Briefing

The engine is equipped with two redundant fuel pumps. In case the MAIN pump fails, the system automatically switches to the AUX pump. This is indicated by a warning light in the EMS page of the SkyView system.

With one fuel pump inoperative the engine is operated without limitations. However, redundancy for a vital engine system is not given anymore. Continue flight for landing on suitable destination.

3 Emergency Procedures

3.32 Precautionary Landing Procedure

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	landing site	IDENTIFY
3.	direction of wind	IDENTIFY
4.	landing direction	INTO THE WIND or UPHILL
5.	landing site inspection	PERFORM LOW APPROACH
6.	approach airspeed	V_{APP} = 60 kIAS
7.	max. flap speed	V_{FE} = 78 kIAS
8.	declare emergency	OWN DISCRETION
9.	safety belts	TIGHTEN
10.	flaps	DOWN
11.	landing light	RECOMMENDED
12.	engine power	AS REQUIRED
13.	elevator trim	AS REQUIRED
14.	CHT	max. 248°F = 120°C
15.	oil temperature	120…266°F = 50…130°C
16.	touch down on main wheels first with min. airspeed	
17.	brakes	AS REQUIRED
18.	ignition key	OFF
19.	recovery system	SECURED
20.	parking brake	SET

3 Emergency Procedures

3.33 Emergency Landing on Land Procedure

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	landing site	IDENTIFY
3.	direction of wind	IDENTIFY
4.	approach airspeed	V_{APP} = 60 kIAS
5.	max. flap speed	V_{FE} = 78 kIAS
6.	flaps	DOWN
7.	trim	AS REQUIRED
8.	declare emergency	MAYDAY MAYDAY MAYDAY
9.	ignition key	OFF
10.	safety belts	TIGHTEN
11.	landing direction	INTO THE WIND or UPHILL
12.	touchdown with full elevator on main wheels first	
13.	after landing, release safety belts and vacate aircraft	

3.34 Emergency Landing on Water Procedure

1.	AVIATE – NAVIGATE – COMMUNICATE	
2.	direction of wind	IDENTIFY
3.	approach airspeed	V_{APP} = 60 kIAS
4.	max. flap speed	V_{FE} = 78 kIAS
5.	flaps	DOWN
6.	trim	AS REQUIRED
7.	declare emergency	MAYDAY MAYDAY MAYDAY
8.	ignition key	OFF
9.	safety belts	TIGHTEN
10.	doors	JETTISON
11.	touchdown with full elevator on water surface	
12.	after landing release safety belts and vacate aircraft	

4 Standard Procedures

Table of Content

4 Standard Procedures

4.1 Definitions

Procedures

are instructions that must be performed in the given sequence, as far as possible without interruption.

Checklists

are lists for items to be checked in the apropriate phase of flight (taxi, take-off, climb, etc.). Timing and sequence of the steps to be executed may vary according to the individual flight.

Briefings

are guidelines for upcoming procedures. With the help of briefings, the pilot and passenger should recapitulate those procedures.

4 Standard Procedures

4.2 Preflight Check Checklist

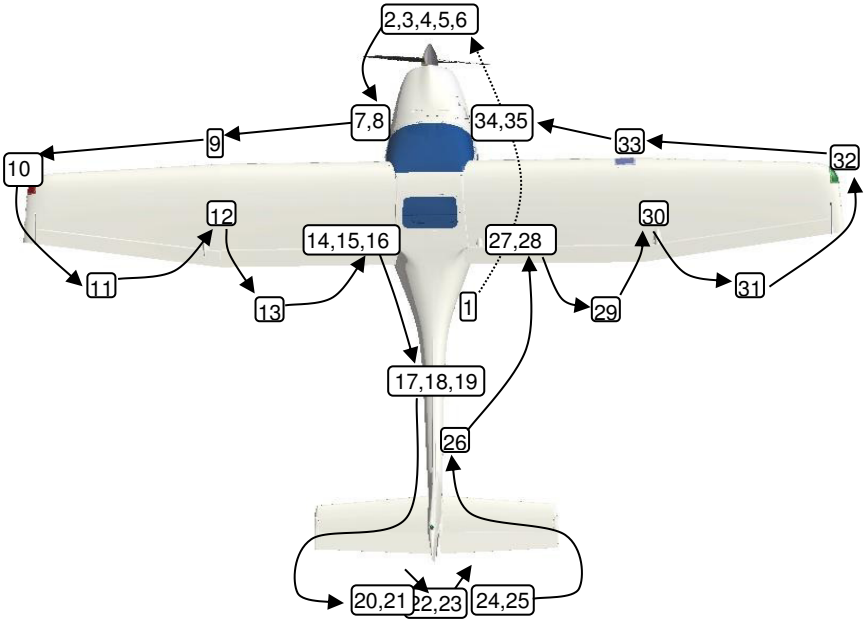
Checks outside the aircraft

1. fuel system drained before moving the aircraft at all
2. engine oil level (between min. and max. markings)
3. level of engine coolant (between min. and max. markings)
4. cowling is closed and properly secured
5. propeller has no damage or wear
6. nose gear and wheel/tire have no damage or wear, air pressure is correct and suspension is free
7. static port is clean
8. main wing bolt properly secured with Fokker needle
9. pitot tube is clean and properly fixed
10. wingtip and cover glass are securely mounted and not damaged
11. aileron, linkage and hinges have free travel and no damage, counterweights are securely fixed
12. upper wing strut attachment is secured
13. flap, linkage and hinges have no damage, rubber stops (flutter damper) on outer hinges are in place
14. lower wing strut attachment is secured
15. belly top antennas are securely mounted and free of damage
16. left main gear and wheel/tire have no damage or wear, air pressure is correct and suspension is free
17. cover of ejection opening has no damage
18. top antennas are securely mounted and free of damage
19. fuselage has no damage
20. horizontal tail, elevator, linkage and hinges have free travel and no damage
21. trim actuator linkage securely mounted and not damaged
22. elevator quick-fastener is securely locked
23. rudder linkage and hinges have free travel and no damage
24. horizontal tail attachment bolts are secured
25. horizontal tail, elevator, linkage and hinges have free travel and no damage

4 Standard Procedures

26. fuselage has no damage
27. right main gear and wheel/tire have no damage or wear, air pressure is correct and suspension is free
28. lower wing strut attachment is secured
29. flap, linkage and hinges have no damage, rubber stops (flutter damper) on outer hinges are in place
30. upper wing strut attachment is secured
31. aileron, linkage and hinges have free travel and no damage, counterweights are securely fixed
32. wingtip and cover glass are securely mounted and not damaged
33. landing light glass is not damaged
34. static port is clean
35. main wing bolt properly secured with Fokker needle

It is suggested to perform the outside check according to the following flow diagram:



Insecurely connected, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!!

4 Standard Procedures

Checks inside the aircraft

1. aileron quick-fasteners are securely locked
2. enough fuel on board for the flight
3. both seats are properly secured in intended position
4. both doors can be locked
5. check proper functioning of the flap drive and gauge

Insecurely connected, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!!

4 Standard Procedures

4.3 Before Start-Up Checkliste

1.	doors	LOCKED
2.	safety belts	FASTENED
3.	parking brake	SET
4.	recovery system	ARMED

4.4 Engine Start Procedure

1.	ignition key	AVIONIC
2.	avionics	SET UP (if applicable)
3.	ignition key	ENGINE
4.	engine power	CRACKED OPEN
5.	propeller	FREE
6.	engine start	START

NOTE	As long as the engine is not running, engine instrumentation is offline. They become online as soon as the engine is running.

NOTE	It is not required to switch off avionics during engine start. Once the START button has been hit, they are shed from the engine starter circuit and are thereby protected against overvoltage.

NOTE	Once the START button has been hit, the start procedure is performed automatically. After app. 3 seconds the starter engine is engaged and the propeller starts turning. To interrupt the start-up procedure, turn ignition key onto position AVIONIC or OFF.

4 Standard Procedures

4.5 After Start-Up Procedure

1. oil pressure OK
2. engine speed for warm-up 2,000 … 2,500 rpm

NOTE	Once the engine has started it is supported by generator B, the aircraft systems are powered by the aircraft batteries only. Once engine speed is above 2,500 rpm for at least 5 seconds, electric supply for the engine is switched to generator A and the aircraft systems are powered by generator B. Avoid longer operation without having switched the generators.

NOTE	Warming up the engine works best with engine speeds below 2,500 rpm. Higher engine speeds improve cooling and therefore increases time to warm up the engine and stress on the engine.

4.6 Engine Run Up Checklist

1. oil temperature min. 50°C / 120°F
2. engine speed 4,000 rpm
3. engine TEST TEST
4. LANE check max. 180 rpm DROP
5. main fuel pump INOP WARNING COMES UP
6. main fuel pump INOP WARNING LAPSES
7. engine speed IDLE

NOTE	Usually a slight increase in engine speed is observed instead of a decrease in engine speed.

4 Standard Procedures

4.7 Taxi Procedure

1.	landing light	RECOMMENDED
2.	parking brake	RELEASE
3.	engine speed	AS REQUIRED
4.	control on ground	VIA PEDALS
5.	min. turn radius	ca. 20 ft = 7 m
6.	braking	AS REQUIRED
7.	taxi speed	APPROPRIATE

4.8 Departure Briefing

1.	wind, weather, visibility	OK
2.	ATIS	CHECKED
3.	runway	CORRECT DIRECTION
4.	traffic pattern	ALTITUDE and ROUTING

4 Standard Procedures

4.9 Take-Off Procedure

standard take-off

1.	brakes	SET
2.	flaps	UP
3.	elevator trim	GREEN MARK ON INDICATOR
4.	rudder and aileron	NEUTRAL
5.	engine power	FULL POWER
6.	brakes	RELEASE
7.	rotate and lift-off	52 kIAS
8.	initial climb speed	57 kIAS
9.	best climb	60 kIAS

NOTE	Take-off distances given in chapter 5 have been determined with this procedure. Take-off distance varies significantly with precise handling and condition of the runway.

NOTE	Take-off with reduced power is possible, though not recommended. No take-off shall be performed with engine speed lower than 4,500 rpm. A drastically reduced take-off performance must be taken into account.

NOTE	Engine speed prior to take-off run is app. 5,200 rpm.

4 Standard Procedures

comfort take-off

1.	flaps	UP
2.	elevator trim	GREEN MARK ON INDICATOR
3.	rudder and aileron	NEUTRAL
4.	engine power	FULL POWER
5.	rotate	45 kIAS
6.	lift-off	50 … 55 kIAS
7.	best climb	60 kIAS

NOTE	Take-off with this procedure is way more comfortable, but take-off distances increase significantly as when using standard take-off procedure.

NOTE	Take-off with reduced power is possible, though not recommended. No take-off shall be performed with engine speed lower than 4,500 rpm. A drastically reduced take-off performance must be taken into account.

NOTE	Engine speed prior to take-off run is app. 5,200 rpm.

4 Standard Procedures

short/soft field take-off

1.	brakes	SET
2.	flaps	15 deg
3.	elevator trim	GREEN MARK ON INDICATOR
4.	rudder and aileron	NEUTRAL
5.	engine power	FULL POWER
6.	brakes	RELEASE
7.	rotate and lift off	50 kIAS
8.	initial climb speed	52 kIAS
9.	retract flaps	SAFE ALTITUDE
10.	best climb	60 kIAS

NOTE	When using the short/soft field take-off procedure, take-off with reduced power is not permitted.

NOTE	Engine speed prior to take-off run is app. 5,200 rpm.

4 Standard Procedures

4.10 Best Angle of Climb Speed (V_X) Checklist

1.	flaps	15deg or CLEAN
2.	steepest climb	V_X = 50 kIAS
3.	engine power	FULL POWER
4.	coolant temperature	max. 248°F = 120°C
5.	oil temperature	120…266°F = 50…130°C

NOTE	Best angle of climb is achieved with flaps 15deg.

4.11 Best Rate of Climb Speed (V_Y) Checklist

1.	flaps	CLEAN
2.	best climb	V_Y = 60 kIAS
3.	engine power	FULL POWER
4.	coolant temperature	max. 248°F = 120°C
5.	oil temperature	120…266°F = 50…130°C

4.12 Cruise Checklist

1.	flaps	CLEAN
2.	landing light	ON (recommended)
3.	engine speed	AS REQUIRED
4.	operating maneuvering speed	V_O = 88 kIAS (600kg AUW) = 59 kIAS (400kg AUW)
5.	normal operating speed	V_{NO} = 107 kIAS
6.	never exceed speed	V_{NE} = 135 kIAS
7.	max. cont. engine speed	5,500 rpm
8.	coolant temperature	max. 248°F = 120°C
9.	oil temperature	120…266°F = 50…130°C

4 Standard Procedures

4.13 Flying in Rain — Checklist

1.	engine speed	AS REQUIRED
2.	coolant temperature	max. 248°F = 120°C
3.	oil temperature	120…266°F = 50…130°C

NOTE	• visibility to the front is very limited • windscreen may need defogging • flight performance is reduced • fuel consumption increases • stall speed increases • braking efficiency during landing is reduced

4.14 Recovery from Stall — Procedure

1.	stick back pressure	RELEASE
2.	rudder	OPPOSITE to BANK
3.	aileron	NEUTRAL
4.	engine power	AS REQUIRED

4 Standard Procedures

4.15 Flying Without Doors — Procedure

1.	door lock	OPEN
2.	gas spring on door	DETACH
3.	hinge pin	PULL
4.	door	TAKE OUT CAREFULLY

NOTE	V_{NE} is reduced to 100 kIAS when flying without doors.

NOTE	Flying without doors leads to high wind velocities inside the cabin.

NOTE	For flight without doors, either one door or both doors must be taken out before flight.

NOTE	Unlocking and opening doors in flight is prohibited.

It is not required to prepare a separate weight and balance report and/or equipment list for operation without doors in case the detachment of the door(s) has been taken into consideration during flight preparation. A logbook entry is not required after the door(s) have been taken out or installed again.

Following data shall be used for the flight's individual weight and balance:

weight of door	3,350 g	=	7.7 lbs	(each)
station of door	150 mm	=	5.9 in	

4 Standard Procedures

4.16 Descent Checklist

1.	flaps	CLEAN
2.	engine speed	AS REQUIRED
3.	operating maneuvering speed	V_O = 88 kIAS (600kg AUW) = 59 kIAS (400kg AUW)
4.	normal operating speed	V_{NO} = 107 kIAS
5.	never exceed speed	V_{NE} = 135 kIAS
6.	max. cont. engine speed	5,500 rpm
7.	coolant temperature	max. 248°F = 120°C
8.	oil temperature	120…266°F = 50…130°C

4.17 Approach Checklist

1.	wind, weather, visibility	OK
2.	ATIS	CHECKED
3.	runway	CORRECT DIRECTION
4.	traffic pattern	ALTITUDE and ROUTING
5.	radios	ON and FREQUENCY SET
6.	transponder	AS REQUIRED
7.	full flaps airspeed	V_{FE} = 78 kIAS
8.	approach airspeed	V_{APP} = 60 kIAS
9.	flaps	AS REQUIRED
10.	landing light	RECOMMENDED

NOTE	In windy and gusty conditions increase approach airspeed as appropriate and take care for increased landing distances.

4 Standard Procedures

4.18 Landing Procedure

1. full flaps airspeed V_{FE} = 78 kIAS
2. approach airspeed V_{APP} = 60 kIAS
3. flaps DOWN
4. target airspeed AS RECOMMENDED
5. engine power AS REQUIRED
6. elevator trim AS REQUIRED
7. touch down on main wheels first
8. brakes IMMEDIATELY

The target airspeed (airspeed on short final, app. 50ft above threshold) differs with actual aircraft weight. Please refer to the following table to select the correct approach airspeed.

aircraft weight	recommended target airspeed
1,000 lb	45 kIAS
1,100 lb	47 kIAS
1,200 lb	50 kIAS
1,320 lb	52 kIAS

NOTE	Landing distances given in chapter 5 have been determined with approach airspeeds given above. Landing with partial flaps or clean is possible and permitted, but landing distance will be significantly longer due to higher approach speeds required by higher stall speed.

NOTE	In high wind or gusty conditions less than full flap setting or clean flaps might be appropriate.

4 Standard Procedures

advise

In landing configuration, the airplane is very draggy and the propeller provides additional braking. Therefore, airspeed bleeds off quickly during flare.

It is easy to misjudge altitude during flare. When flare is initiated too high and airspeed bleeds away the airplane may stall or bounce.

In doubt or without an urge to achieve shortest landing distance as possible, keep a higher target airspeed.

rule of thumb

Keep it at sixty knots!
Or use all your guts.

4 Standard Procedures

4.19 Balked Landing Procedure

1.	engine power	FULL POWER
2.	initial climb	52 kIAS
3.	flaps retract	SAFE ALTITUDE
4.	best climb	60 kIAS
5.	coolant temperature	max. 120°C
6.	oil temperature	50…130°C

4.20 After Landing Checklist

1.	landing light	RECOMMENDED
2.	flaps	UP
3.	radio and transponder	AS REQUIRED

4.21 Shutdown Checklist

1.	landing light	OFF
2.	ignition key	OFF
3.	recovery system	SECURED
4.	parking brake	SET

NOTE	It is permissible to switch avionics (GPS, radio, transponder, intercom) together with the avionics switch rather than separately.

NOTE	The engine may only be switched off on ground. Engine shut-down in flight is not an approved procedure. Without technical reason (see section 3 – emergency procedures), engine shut-down in flight shall be avoided.

5 Performance

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5 Performance

5.1 General

NOTE	All flight performances given in this section (speed, range, fuel flow, rate of climb, etc.) are reference values. Tolerances of engine and propeller as well as deviations from standard temperature and density of air may reveal divergent performances.

NOTE	Flying without doors reduces flight performance drastically. Effect varies significantly with airspeed. Flying without sideslip has a large impact on flight performance when flying without doors. Longer cross-country flights without doors are not recommended.

NOTE	The aircraft may be operated without fairings on wheels and/or landing gear legs or with flight school tires. If not otherwise mentioned, performance is reduced by app. 5% on any of the following criteria: climb, cruise, range

5 Performance

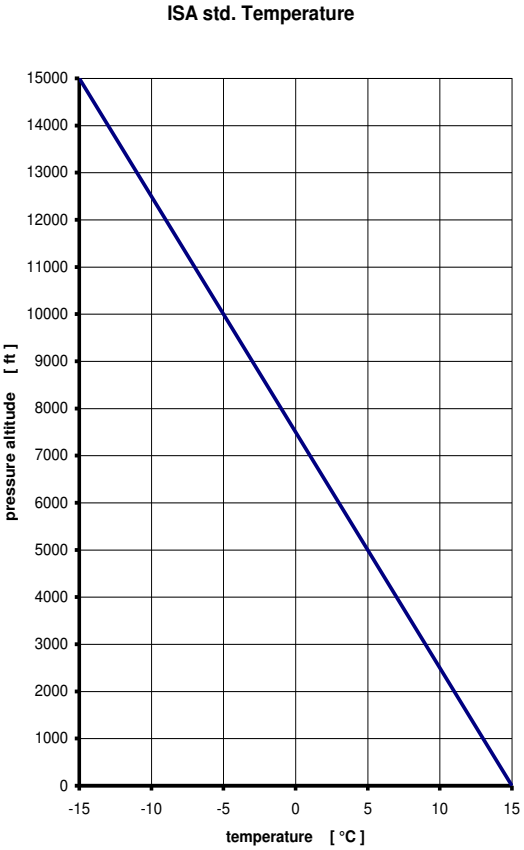
5.2 Summary of Flight Performances

V_{S0} (stallspeed flaps 35°)	kIAS	39
V_{S1} (stallspeed flaps 15°)	kIAS	40
V_S (stallspeed flaps 0°)	kIAS	43
V_X (any flap setting)	kIAS	50
V_Y (flaps clean)	kIAS	60
rate of climb at MSL flaps clean	ft/min	710
rate of descent at MSL in idle	ft/min	520
best glide	kIAS	60
take-off roll distance (flaps 0°)	ft	784
take-off air distance	ft	666
take-off distance	ft	1,450
take-off roll distance (flaps 15°)	ft	689
take-off air distance	ft	459
take-off distance	ft	1,148
landing air distance (flaps 35°)	ft	584
landing roll distance	ft	381
landing distance	ft	965

5 Performance

5.3 ISA Atmosphere

All flight performance data are given for ISA standard atmosphere at sea level and standard temperature. To determine temperature in relation to ISA conditions please refer to the following chart:



Flight performance can vary significantly due to tolerances, setting of propeller and engine, flight without doors, deviation of temperature and air density from standard ISA conditions, etc.

Range applies to the 22 gallon fuel tank system (21 gallons usable) without reserve, within the ICAO standard atmosphere at given altitude.

5 Performance

5.4 Take-Off Distances

For take-off with max. take-off weight on an even, dry, paved runway with ISA conditions on sea level, dry aircraft, wind calm, standard tires with wheel pants and doors closed the following take-off distances apply:

flaps 0°

take-off roll distance	ft	784
take-off air distance	ft	666
take-off distance	ft	1,450

flaps 15°

take-off roll distance	ft	689
take-off air distance	ft	459
take-off distance	ft	1,148

NOTE	Take-off distances have been determined at ISA standard conditions at mean sea level and over a virtual 50ft obstacle.

NOTE	Standard procedures apply. Diverting from the standard procedures defined in section 4 will lead to different take-off distances.

5 Performance

Performance data apply under ISA conditions on an even, dry, hard runway surface, standard tires with wheel pants and doors closed. Various circumstances have an effect on take-off performance, it is recommended to use following add-ons on roll- and air distances:

add-ons on take-off roll distance	
for dry grass	+ 20%
for wet grass	+ 30%
for soft surface	+ 60%
for flight school tires (main tires 15x6.0-6)	+ 5%
per 5 knots tailwind component	+ 20%
per 2% uphill slope	+ 10%
for high temperatures above standard	+ 10% per 10°C
for altitude above sea level (density altitude)	+ 10% per 1,000 ft

add-ons on take-off air distance	
for dirty or wet wings	+ 30%
per 5 knots tailwind component	+ 20%
for high temperatures above standard	+ 10% per 10°C
for altitude above sea level (density altitude)	+ 10% per 1,000 ft
for flight without fairings (main tires 4.00-6)	+ 5%
for flight school tires (main tires 15x6.0-6)	+ 5%
for flight without doors	+ 10%

NOTE	Reduction of take-off distances due to downhill slope or headwind must not be taken into account.

5 Performance

example calculation:

Take-off in 2.000ft at 35°C from wet grass runway, 5kt tailwind, wet wing, take-off with flaps 15°. Standard wheels are mounted with wheel fairings.

1.	temperature acc. to ISA diagram	12°C
	real temperature	30°C
	temperature above ISA:	18°C
	add-on for 18°C above ISA	18%
2.	add-on for 2.000ft	20%
3.	add-on for tailwind	20%
4.	add-on for wet grass runway	30%
5.	add-on for wet wing	30%

take-off roll distance = 689ft + 18% (temperature)
+ 20% (altitude)
+ 20% (tailwind)
+ 30% (wet grass runway)
=1,522ft

take-off air distance = 461ft + 18% (temperature)
+ 20% (altitude)
+ 20% (tailwind)
+ 30% (wet wing)
=1,014ft

take-off distance =2,536ft

NOTE	Take-off distance has more than doubled compared to ideal conditions!

NOTE	Real-life take-off distance can be even higher.

5 Performance

5.5 Landing Distances

Landing is to be done with full flaps (35 deg). After touchdown, brake to the max for shortest landing distance, but do not block the wheels.

For landing with max. take-off weight on dry, paved runway with ISA conditions on sea level, dry aircraft, wind calm, standard tires with wheel pants and doors closed the following landing distances apply:

Flaps 35°

landing air distance	ft	584
landing roll distance	ft	381
landing distance	ft	965

NOTE	Landing distances have been determined at ISA standard conditions at mean sea level and over a virtual 50ft obstacle.

NOTE	Standard procedures apply. Diverting from the standard procedures defined in section 4 will lead to different landing distances.

5 Performance

Performance data apply under ISA conditions on an even, dry, hard runway surface, standard tires with wheel pants and doors closed. Various circumstances have an effect on take-off and landing performance, it is recommended to use following add-ons on roll- and air distances:

add-ons on landing roll distance	
for dry grass	+ 15%
for wet grass	+ 35%
for soft or slippery surface	+ 60%
for flight school tires (main tires 15x6.0-6)	+ 5%
per 5 knots tailwind component	+ 20%
per 2% downhill slope	+ 10%
for high temperatures above standard	+ 5% per 10°C
for altitude above sea level (density altitude)	+ 5% per 1,000 ft

add-ons on landing air distance	
for dirty or wet wings	+ 30%
per 5 knots tailwind component	+ 50%
for high temperatures above standard	+ 5% per 10°C
for altitude above sea level (density altitude)	+ 5% per 1,000 ft
for flight without fairings (main tires 4.00-6)	+ 5%
for flight school tires (main tires 15x6.0-6)	+ 5%
for flight without doors	+ 10%

NOTE	Reduction of landing distances due to uphill slope or headwind must not be taken into account.

5 Performance

example calculation:

Landing on soft surface with 2.000ft field elevation at 22°C, 5kt tailwind, wet wing and 2% downhill slope

1.	temperature acc. to ISA diagram	12°C
	real temperature	22°C
	temperature above ISA:	10°C
	add-on for 10°C above ISA	10%
2.	add-on for 2.000ft	10%
3.	add-on for downhill slope	10%
4.	add-on for soft runway	60%
5.	add-on for wet wing	30%

landing air distance = 584ft + 10% (temperature)
+ 10% (altitude)
+ 30% (wet wing)
= 919ft

landing roll distance = 382ft + 10% (temperature)
+ 10% (altitude)
+ 10% (slope)
+ 60% (soft runway)
= 811ft

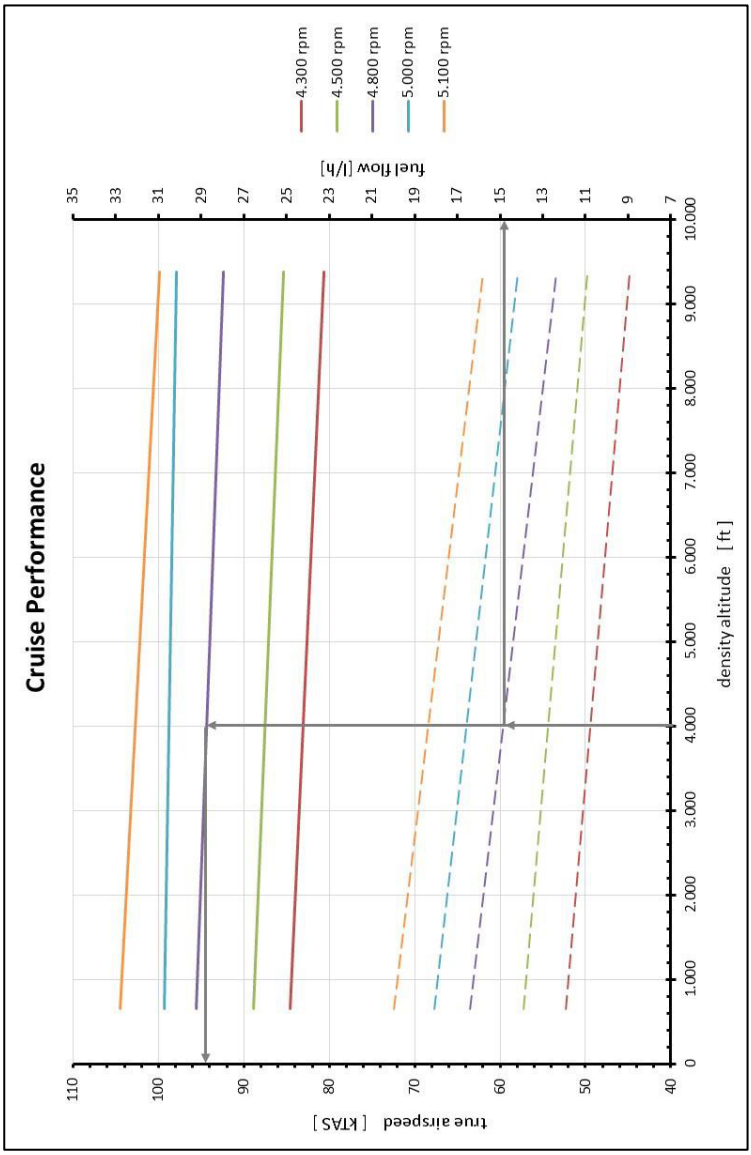
landing distance =1,730ft

NOTE	Landing distance has almost doubled compared to ideal conditions!

NOTE	Real-life landing distance can be even higher.

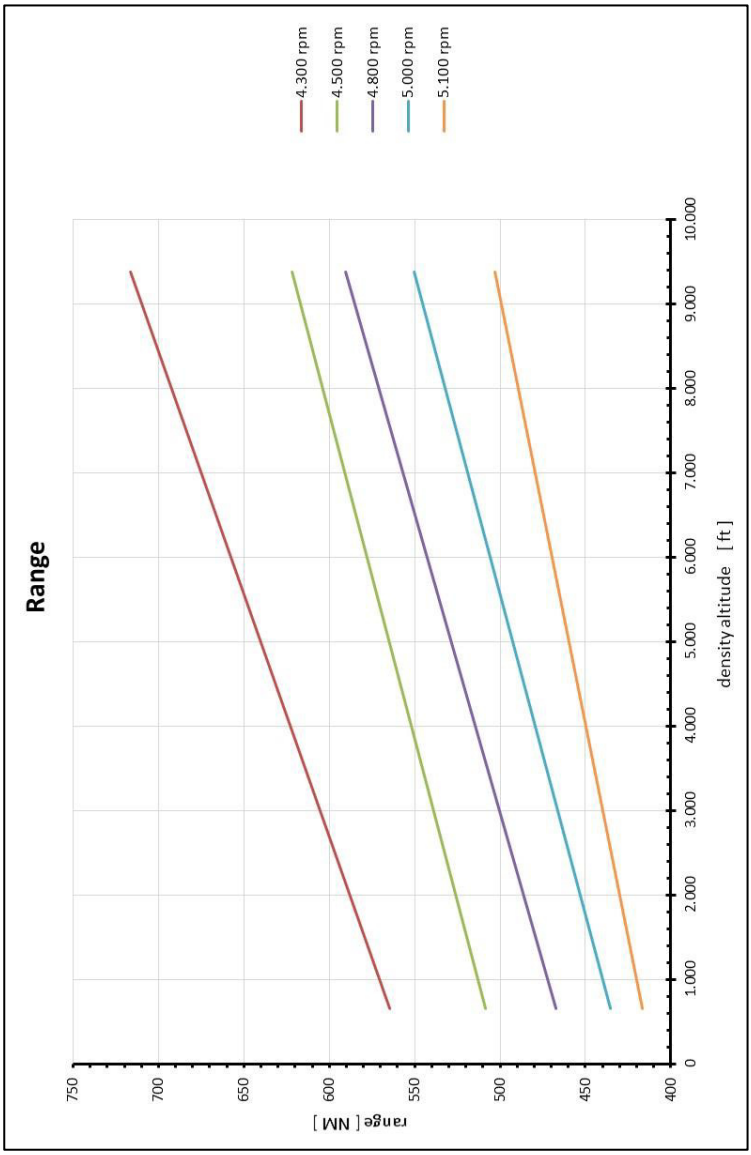
5 Performance

5.6 Cruise Speed and Fuel Flow

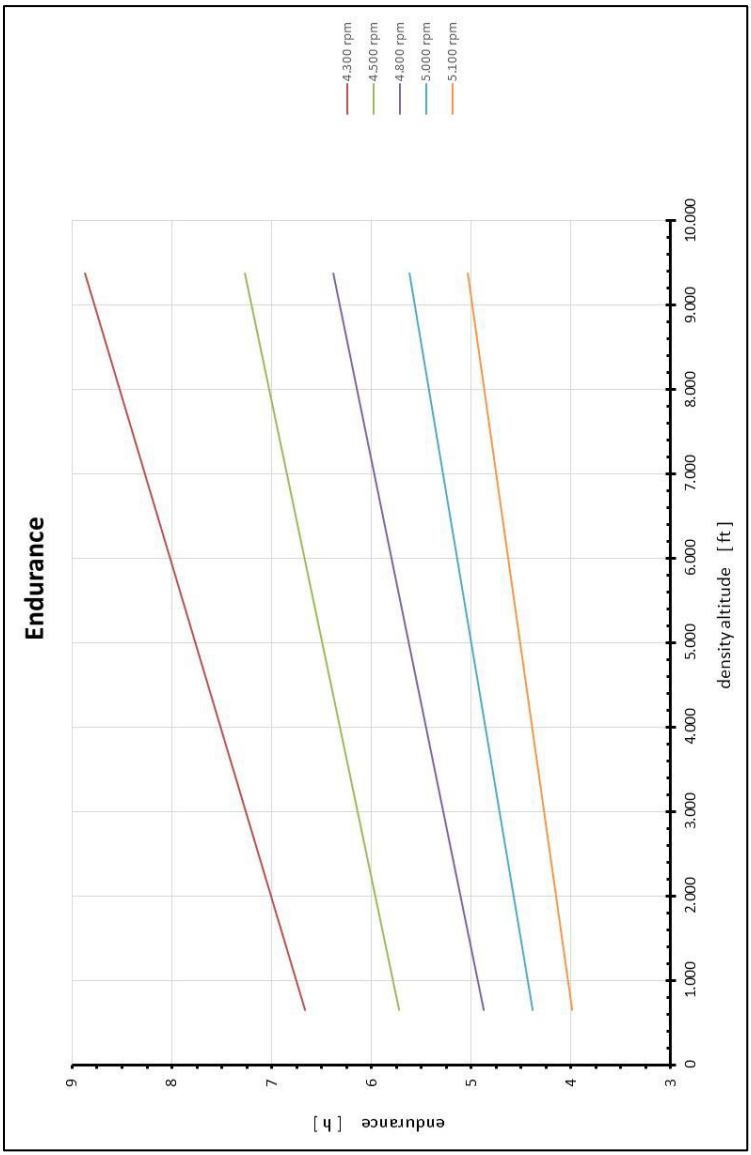


5 Performance

5.7 Range and Endurance

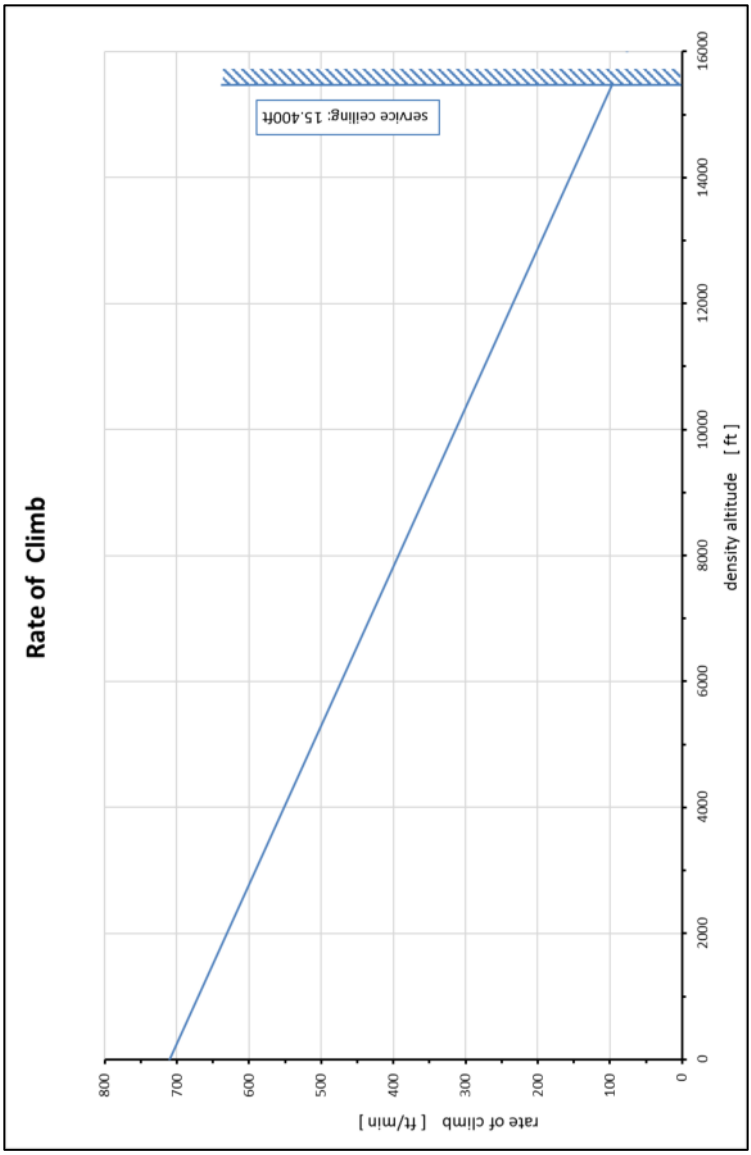


5 Performance



5 Performance

5.8 Rate of Climb



5 Performance

best angle of climb airspeed (any flap setting)	**V_X**	kIAS	50
best rate of climb airspeed (flaps clean)	**V_Y**	kIAS	60
best rate of climb at MSL initial climb	**ROC**	fpm	710

NOTE	Climb is flown with flaps retracted, see section 4

NOTE	Expect a performance loss of about 5% when flying without wheel fairings.

NOTE	Expect a performance loss of about 10% when flying without doors

5 Performance

5.9 Low Airspeed and Stall

If the center of gravity is within the permissible range, the aircraft will be fully controllable until reaching the stall speed. As the aircraft approaches the stall speed, this will be indicated by slight aerodynamic buffeting. The stall speed is reached when the aircraft drops the nose or the elevator control comes to a stop. Once stall speed is reached, the pilot should lower the nose of the aircraft to re-establish a safe airspeed. Only release of the back pressure of the elevator is required, a significant “push” input is not required. When staling the aircraft while in a turn the stall speed will increase.

stall speeds in level flight with engine idle

CG at most forward position

flap position	**deg**	**0**	**15**	**35**
stall speed	kIAS	43	40	39

CG at most rearward position

flap position	**deg**	**0**	**15**	**35**
stall speed	kIAS	42	37	35

Stalling the aircraft with engine at full power and/or in turns is possible and permissible. Expect airspeed indication outside the reliable range of the airspeed indicator. A significant stall break will occur. Without experience a mentionable altitude loss shall be considered for safe recovery.

5 Performance

5.10 Safe Glide Ratio

Airspeed for best glide is 60kIAS. Safe glide ratio of the airplane with wind milling propeller is approximately 1:11. This will result in following glide distances:

airspeed for best glide	[kIAS]	60
glide ratio	[--]	1 : 11
flaps	[deg]	0

altitude	[ft]	2,000	4,000	6,000	8,000	10,000
glide range	[nm]	3.6	7.2	10.9	14.5	18.1

NOTE	Glide performance is given for a clean airframe with flaps retracted, airspeed for best glide is 60kIAS. Deflected flaps, dirty airframe or other airspeeds will lead to lower glide ratio.

5 Performance

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6 Weight and Balance

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6 Weight and Balance

6.1 General

This section provides information how to determine the inflight center of gravity. Prior to each take-off, the pilot in command shall ensure that the center of gravity is within its permissible envelope.

For a correct determination of the inflight center of gravity the pilot needs following information:

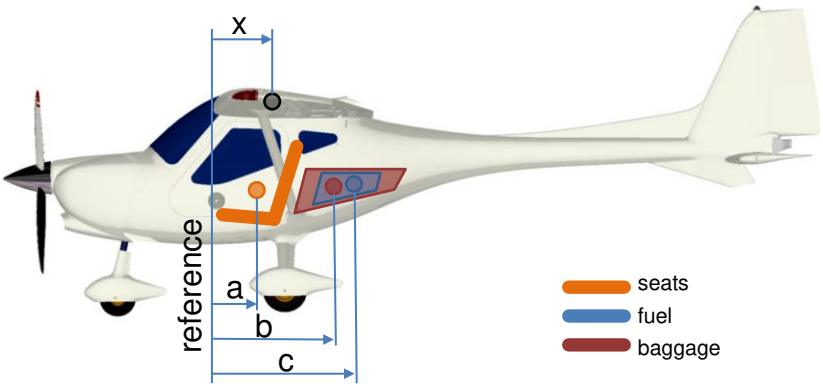
- weight of pilot
- weight of passenger
- weight of baggage
- weight of fuel on board
- weight and center of gravity of the empty aircraft

The weight and balance report of the empty aircraft (empty CG) shall always be up to date and noted in section 6.7 of this manual. The procedure to determine the empty weight and CG is given in section 6.3 of this manual and in section 1 of the maintenance manual. The empty CG must be updated:

- after significant change of equipment
- after major repair

6 Weight and Balance

6.2 Station Definitions



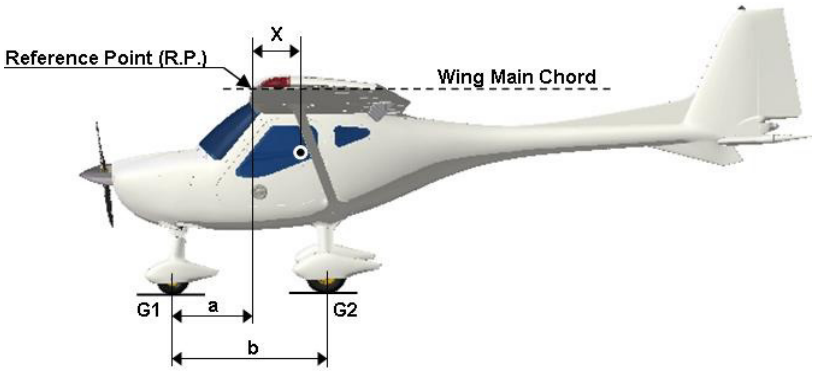
item		station
a	seats	210 mm
b	baggage	950 mm
c	fuel	960 mm
x	empty/inflight CG	variable

Procedure for determination of empty CG is given in the maintenance handbook. Actual empty CG can be obtained from the aircraft's individual weight and balance report and/or section 6.8 of this manual.

6 Weight and Balance

6.3 Aircraft Weighing Procedure

To determine the aircraft empty weight and CG, put the aircraft on 3 weighing scales, positioned on a level surface. Before weighing, a level wing main chord has to be established (use pads between main wheels and scale beneath). A check-mark reference point (R.P.) on the leading edge of the left wing, adjacent to the pitot tube, is provided to ease the levelling procedure. To level the wing main chord, use a flexible clear hose, filled with water, as a spirit level.



aircraft empty weight $G = G_1 + G_2$

aircraft empty CG $x = \frac{G_2 * b}{G_1 + G_2} - a$

6 Weight and Balance

6.4 Change of Equipment

After change of equipment with known weight and CG of the added or removed equipment the new empty weight and CG of the aircraft can also be calculated instead of being determined by weighing as follows:

old empty weight	G_o
new empty weight	G_n
weight of item added/removed	G_i
old empty CG	x_o
new empty CG	x_n
station item added/removed	x_i

new empty weight $G_n = G_o + G_i$

new empty CG $x_n = \dfrac{G_o x_o + G_i x_i}{Go + Gi}$

NOTE	Use negative sign of weight for items removed.

NOTE	Refer to section 6.9 for stations and weight of equipment items that may be added or removed without re-certification (release to service as per EASA Part-ML still required).

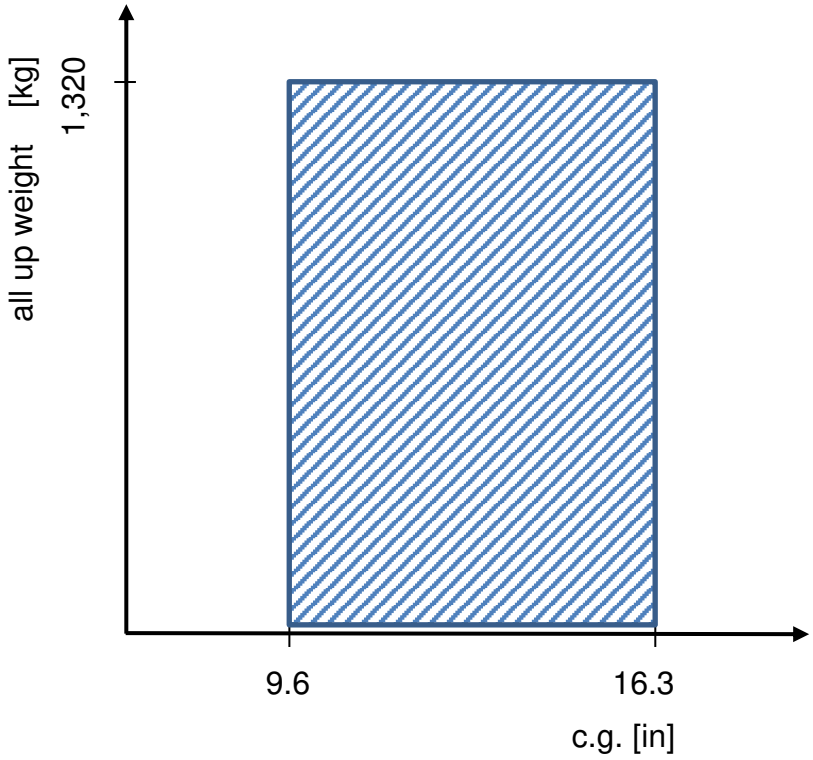
6 Weight and Balance

6.5 Operating Weights and Loading

The CG range for any given airborne weight, measured from reference, must be within the permissible limits of 9.6in to 16.3in.

minimum airborne weight	880 lb
maximum take-off weight	1.320 lb
front limit of CG	9.6 in
aft limit of CG	16.3 in

6.6 Weight and Balance Chart



6 Weight and Balance

6.7 Center of Gravity Range and Determination

The following procedure must be used to calculate the inflight CG.

1. moment calculation

moment	**(lb-inch)**	**=**	**weight (lb) x station (inch)**

	weight lb	**station** inch	**moment** lb-inch
empty weight	_____	_____	_____
occupants	_____	8.3	_____
Baggage	_____	37.4	_____
fuel	_____	37.8	_____
weight total:	_____	**moment total:**	_____

2. center of gravity

center of gravity	**(inch)**	**=**	**moment total** / **weight total**	**(lb-inch)** / **(lb)**

front limit of CG 9.6 in
aft limit of CG 16.3 in

NOTE	Calculate CG for the entire planned flight. Calculate CG with fuel at take-off and for landing.

NOTE	Occupants on board shift CG significantly. When filling up the fuel tank, the airplane may tilt on its tail skid. This is acceptable as long as the inflight CG is within limits.

WARNING	Never fly with an inflight c.g. outside the permitted envelope!

6 Weight and Balance

6.8 Calculation Example

	weight lb	**station** inch	**moment** lb-Inch
empty weight	670	12.5	8,375
occupants	175	8.3	1,453
baggage	30	37.4	1,122
fuel	120	37.8	4,536
Weight Total:	995	**Moment Total:**	15,486

center of gravity (inch) = moment total (lb-inch) / weight total (lb)

= 15,486 (lb-inch) / 995 (lb)

= 15.6 inch -> OK!

NOTE	1 liter of fuel equals 0,72 kg (density of fuel 0,72 kg/ltr)

NOTE	The example above is given to show how to calculate the center of gravity. Do not use the weights and the empty CG in this example for your own flight preparation.

6 Weight and Balance

6.9 Equipment List

Mooring

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
2	tie down ring	REMOS	G3-8_WG-04-00-30	0.05	0.30	O
2	Ceiling hanging brackets	REMOS	G3-8_AC-01-00-00	0.09	0.30	O

Venting

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	fresh air inlet	REMOS	G3-8_FU-14-00-01	0.10	-0.57	R
2	door vents	REMOS	G3-8_FU-11-10-00	0.05	- 0.04	O
2	windscreen ventilation	REMOS	G3-8_FU-14-00-45	0.05	0.00	O

Cockpit

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	Instrument Panel	REMOS	G3-8_CP-50-02-00	1.50	- 0.35	R
1	Seat Belt RH	Schroth	8-2520M0M0N22-88	1.20	0.34	R / O (1*)
1	Seat Belt LH	Schroth	8-2620M0M0N22-88	1.20	0.34	R / O (1*)
1	Seat RH std.	REMOS	G3-8_SE-00-00-01	1.7	0.28	R / O (1*)
1	Seat LH std.	REMOS	G3-8_SE-00-00-02	1.7	0.28	R / O (1*)
1	Seat RH tall-man	REMOS	G3-8_FU-15-00-04	1.7	0.31	A
1	Seat LH tall-man	REMOS	G3-8_FU-15-00-03	1.7	0.31	A
1	Seat RH deluxe	REMOS	G3-8_SE-00-00-01	2.1	0.28	A
1	Seat LH deluxe	REMOS	G3-8_SE-00-00-02	2.1	0.28	A

(*) R = required, O = optional, A = alternative

(1*) One seat plus belonging seat belt is required, either LH or RH; 2nd one is optional

6 Weight and Balance

Cockpit cont'd.

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	Seat RH tall-man deluxe	REMOS	G3-8_FU-15-00-04	2.1	0.31	A
1	Seat LH tall-man deluxe	REMOS	G3-8_FU-15-00-03	2.1	0.31	A
1	Door pocket LH	REMOS	102754	0.2	0.20	O
1	Door pocket RH	REMOS	102755	0.2	0.20	O
1	Sidewall fairing LH	REMOS	102756	0.1	0.00	O
1	Sidewall fairing RH	REMOS	102757	0.1	0.00	O
1	Baggage compartment	REMOS	700181 & 700173	2.3	0.96	O
2	Baggage nets	REMOS	101092	0.2	0.70	O
2	Sun visors	REMOS	G3-8_FU-19-00-00	0.7	0.05	O
1	Baggage carpet std. LH	REMOS	102762	0.1	0.70	O
1	Baggage carpet std. RH	REMOS	102763	0.1	0.70	O
1	Baggage carpet del. LH	REMOS	102768	0.1	0.70	O
1	Baggage carpet del. RH	REMOS	102769	0.1	0.70	O
1	Floor carpet std. LH	REMOS	102787	0.6	- 0.35	O
1	Floor carpet std. RH	REMOS	102788	0.6	- 0.35	O
1	Floor carpet del. LH	REMOS	102766	0.6	- 0.35	O
1	Floor carpet del. RH	REMOS	102767	0.6	- 0.35	O
1	Interior Pad ctr. LH	REMOS	102770	0.15	- 0.30	O
1	Interior Pad ctr. RH	REMOS	102771	0.15	- 0.30	O
1	Interior Pad leg area LH	REMOS	102772	0.1	- 0.30	O
1	Interior Pad leg area RH	REMOS	102773	0.1	- 0.30	O
1	Interior Pad armrest	REMOS	102774	0.2	0.30	O
1	Interior Pad spar	REMOS	102775	0.3	0.30	O
1	Interior pad rear wall	REMOS	102776	0.4	1.25	O
1	First-aid kit	various	DIN 13164	0.50	0.15	O
1	Fire extinguisher	AirTotal (o.e.)	Halon	2.20	0.15	O

(*) R = required, O = optional, A = alternative

6 Weight and Balance

Electrics

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
2	battery, min. 8.3Ah	not specified	lead battery	4.20	- 0.66	R
2	battery, min. 8.3Ah	not specified	LiFePO4 battery	1.60	- 0.66	A
1	Electrical System GXiS	REMOS	G3-8_CP-30-06-24	8.50	-0,45	R

Emergency Equipment

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	ELT	Kannad	406AF Compact	1.40	0.90	O
1	Antenna ELT	RAMI	AV-300	0.15	1.41	O
1	Traffic Alerting System	Garrecht	TRX-1500A	0.15	- 0.25	O
1	ADS-B-in Antenna for TRX1500A	Air-Store	comes in bundle	0.15	-0.35	O
1	FLARM Antenna for TRX1500A	Air-Store	GAV-868	0.15	0.00	O

Flight Control System

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
2	stick grip w/ cooley-hat	Ray Allen	G303	0.20	0.00	R
1	Flap Actuator	LINAK	LA 12	0.45	0.90	R
1	Elevator Trim Actuator	Ray Allen	T2-10A-TS	0.15	4.70	R
1	Throttle	REMOS	G3-8_FU-21-00-00	0.30	0.05	R

(*) R = required, O = optional, A = alternative

6 Weight and Balance

Fuel System

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	Fuel Tank	REMOS	G3-8_FU-22-04-05	4.90	0.96	R
1	Fuel System	REMOS	G3-8_EN-22-05-00	2.60	0.96	R

Landing Gear

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
2	Main Gear Tires	diverse	4.00-6/8PR	2.90	0.65	R
2	Main Wheel Tubes	diverse	4.00-6	0.35	0.65	R
2	Brake Assy	REMOS	G3-8_MG-30-00-00	0.60	0.65	R
2	Brake Disk	REMOS	G3-8_MG-10-01-00	0.35	0.65	R
1	Master Brake Cylinder	REMOS	G3-8_FU-21-03-00	0.60	0.35	R
6	Brake Adaptor Kit	REMOS	G3-8_MG-10-30-00	0.02	0.65	R
1	Main Wheel Assy	REMOS	G3-8_MG-10-10-00	1.15	0.65	R
1	Nose Wheel Assy	REMOS	G3-8_NG-50-10-00	0.45	- 0.75	R
1	Maingear bellyfairing LH	REMOS	G3-8_MG-40-02-29	0.30	0.65	O
1	Maingear bellyfairing RH	REMOS	G3-8_MG-40-02-28	0.30	0.65	O
1	Maingear legfairing LH	REMOS	G3-8_MG-40-02-25	0.25	0.65	O
1	Maingear legfairing RH	REMOS	G3-8_MG-40-02-24	0.25	0.65	O
1	Maingear Edgefairing LH	REMOS	G3-8_MG-40-02-23	0.15	0.65	O
1	Maingear Edgefairing RH	REMOS	G3-8_MG-40-02-21	0.15	0.65	O
1	Main Gear Fairing LH	REMOS	G3-8_MG-40-02-22	0.55	0.65	O
1	Main Gear Fairing RH	REMOS	G3-8_MG-40-02-20	0.55	0.65	O
1	Nose Gear Fairing	REMOS	G3-8_NG-02-00-00	0.60	- 0.75	O

(*) R = required, O = optional, A = alternative

6 Weight and Balance

Lights

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	ACL/NAV Light LH	AeroLEDs	PULSAR-NS180	0.12	0.10	O
1	ACL/NAV Light RH	AeroLEDs	PULSAR-NS 180	0.12	0.10	O
1	ACL/Taillight	AeroLEDs	Suntail	0.09	4.70	O
1	Landing Light	AeroLEDs	AeroSUN	0.35	0.05	O
5	Cockpit Illumination	various	LED-5000MCD	0.01	- 0.23	O

Flight Instruments and Engine Indication

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	SkyView Screen LH 10”	DYNON	SV-D1000/T	1.50	-0,25	R / O (2*)
1	SkyView Screen RH 10”	DYNON	SV-D1000/T	1.50	-0,25	O / R (2*)
1	SkyView ADAHRS	DYNON	SV-ADAHRS-200	0.20	- 0.25	R
1	SkyView EMS	DYNON	SV-EMS-221	0.29	- 0.25	R
1	SkyView Battery LH	DYNON	SV-BAT-320	0.40	- 0.25	R / O (3*)
1	SkyView Battery RH	DYNON	SV-BAT-320	0.40	- 0.25	O / R (3*)
1	SkyView pitot tube	DYNON	100532-000	0.10	-0.05	R
1	SkyView GPS	DYNON	SV-GPS-250	0.20	- 0.25	O
2	SkyView ARINC Adapter	DYNON	SV-ARINC-429	0.18	-0.25	O
1	OAT Sensor	DYNON	100433-000	0.05	0.65	O
1	Airspeed Indicator 2-$^{1}/_{4}$”	Winter (o.e.)	7 FMS 2	0.15	- 0.25	O / R (4*)
1	Altimeter 2-$^{1}/_{4}$”	Winter (o.e.)	4 FGH 40	0.20	- 0.25	O / R (4*)
1	Compass	Airpath (o.e.)	C-2400	0.15	- 0.25	O
1	Compass	Hamilton (o.e.)	PAI-700	0.15	- 0.25	O

(*) R = required, O = optional, A = alternative

(2*) Either one of the 2 screens needs to be operational, the 2nd one is optional

(3*) directly linked to the SkyView-screen

(4*) analogue back-up instruments, required when both screens are inop.

6 Weight and Balance

Avionics and Navigation

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	XPDR	Garmin	GTX33x series	1.295	-0.25	O
1	Blind Encoder	TCI	SSD120-RS232	0.15	-0.25	O
1	WAAS GPS/NAV/COM	Garmin	GTN750	4.24	-0.25	O
1	Audio / Intercom	Garmin	GMA35 / GMA35c	1.10	-0.25	O
1	Antenna COM	Comant	CI122	0.30	0.29	O
1	Antenna COM	RAMI	AV-17	0.30	0.29	A
1	Antenna NAV	Comant	CI157P	0.35	4.10	O
1	Antenna NAV	RAMI	AV-525	0.35	4.10	A
1	Antenna XPDR	RAMI	AV-22	0.10	1.41	O
1	Antenna XPDR	Comant	CI-101	0.10	1.41	A
1	Antenna MKR	Comant	CI-102	0.35	-0.23	O
1	Antenna MKR	RAMI	AV-64	0.35	-0.23	A
1	Antenna GPS Garmin	Garmin	GA35	0.10	- 0.40	O

Engine and Propeller

Qty.	Item	Manufacturer	Model	Weight	Arm	R/O/A (*)
[-]	[-]	[-]	[-]	[kg]	[m]	[-]
1	Engine (5*)	ROTAX	912 iSc Sport	70.07	- 1.01	R
4	Shock Mounts	LORD	J 3608	0.10	-0.79	R
1	Propeller incl. Spinner	Duc Hélices	FLASH-R H-FSH_3-D-R-I	6.10	- 1.35	R
1	Cooling System	REMOS	G3-8_EN-23-00-09	4.50	-1.10	R
1	Exhaust System	CKT	87-2231	5.20	- 0.86	R

(*) R = required, O = optional, A = alternative

(5*) engine including overload clutch, starter relay, starter engine, cooling hoses, expansion tank and coolant overflow bottle, oil bottle, oil hoses, firewall-forward fuel hoses, fire protection hoses, ECU, fuse box, fuel pump unit, wiring, cylinder cooling hood, exhaust system incl. muffler & downwind pipes and engine support frame

6 Weight and Balance

6.10 Aircraft Specific Weights

Below are noted the aircraft specific data. Pilots must use this information to ensure a correct weight and balance calculation prior to every flight. This is essential for safe flight. For detailed information of the weight and balance data and the equipment installed on the aircraft refer to the individual aircraft weight and balance report, which includes the equipment list.

sign						
date of list of equipment						
date of weighing						
C.G.						
payload						
empty weight						

6 Weight and Balance

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7 Airplane and Systems Description

Table of Contents

7 Airplane and Systems Description

7.1 General

This section of the POH shall give a brief introduction into the systems installed in the REMOS ***GXiS***. For further information, maintenance and repair instructions see maintenance manual, latest revision.

7.2 Airframe

Type: Full composite carbon fiber aircraft with two seats.

Design: High wing design with struts, front mounted engine and propeller, traditional stabilizer concept, differential ailerons. Electrically operated flaps (0°, 15°, 35°), electric elevator trim, three-wheel landing gear with steerable nose wheel. Main gear with hydraulic disc brakes. The cabin is equipped with two seats side by side and can be entered and exited by doors on the left and right side of the fuselage.

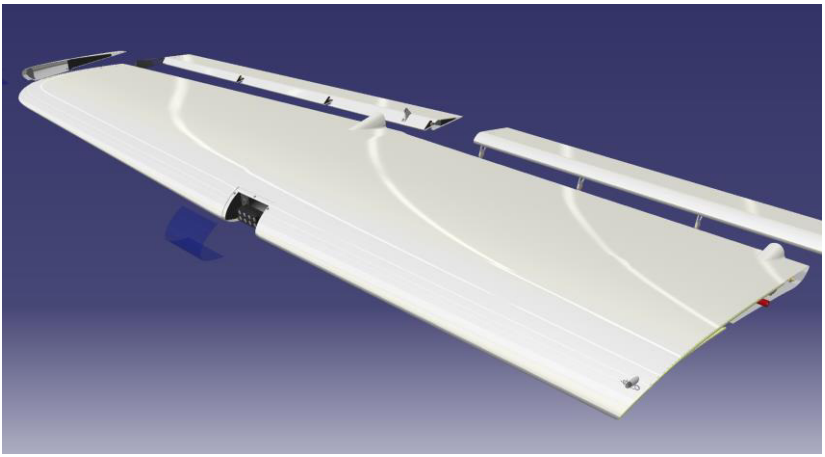
Layout: Main components are built in half shells from composite fiber material, which are bonded together (carbon fiber, Kevlar and glass fiber).

7 Airplane and Systems Description

assembly of the wing

The wing consists of four main pars: wingbox, flap, aileron and wingtip. The wingtip is bolted to the wingbox, aileron and flap are hinged to allow control movements.

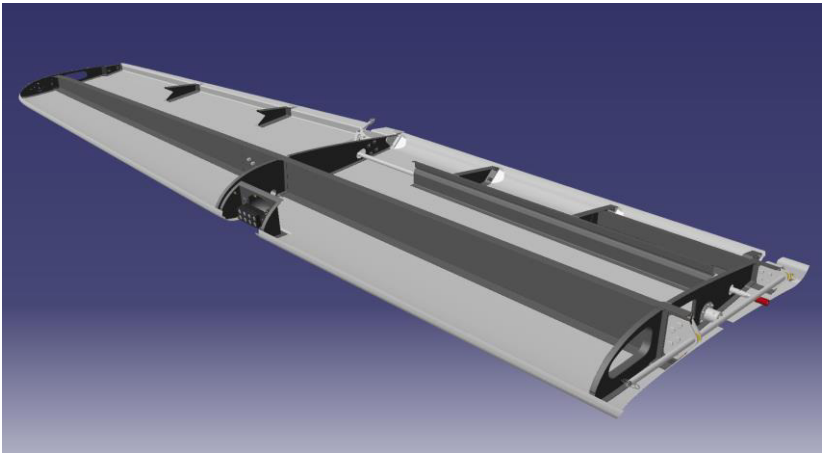
The wing is completed by the cover glass of the landing light and the main wingbolt which attaches the wing to the fuselage. All loads are supported by the wingbolt and the strut.



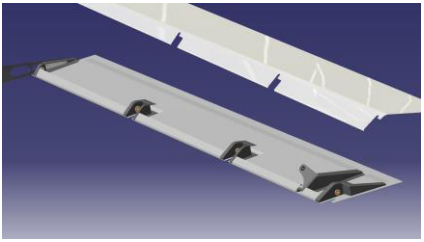
7 Airplane and Systems Description

structure of the wing

The wingbox is built up by the upper and lower wing skin consisting of CFRP sandwich (foam). Loads are transferred into the main and rear wing spar. The structure is completed by the landing light bay and ribs reinforcing hinge areas, closing the wing to the wingtip and the fuselage.



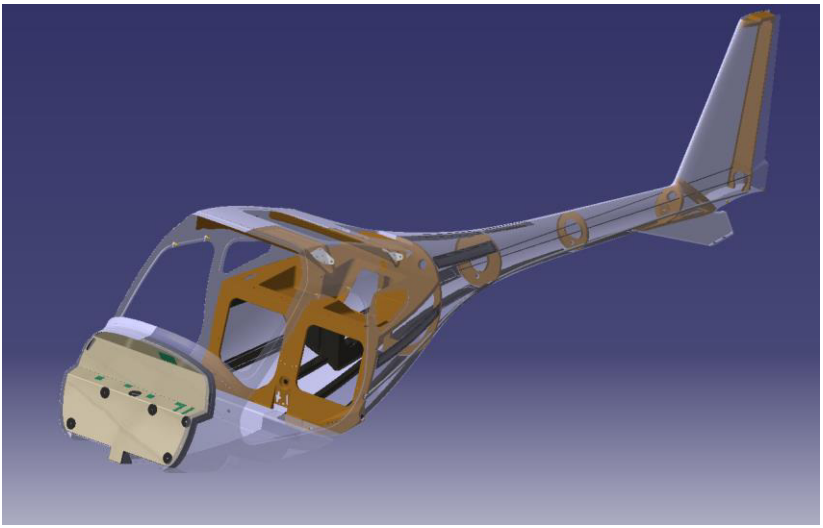
Ailerons and flaps are built up similarly, consisting of ribs and skins.



7 Airplane and Systems Description

structure of the fuselage

The skins of the fuselage are build of a monolithic layup of glass, carbon and Kevlar, reinforced by carbon tapes. Sandwich material (foam) is found in the fixed surface of the vertical tail only, which is an integral part of the fuselage. The fuselage skin is stiffened by stringers and frames.

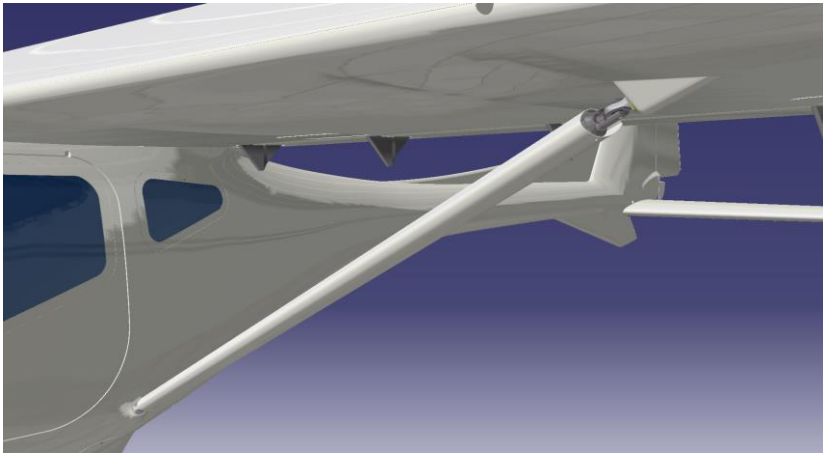


7 Airplane and Systems Description

attachment of struts

The wing strut is attached towards the wing and fuselage by a high tensile bolt, which is a genuine REMOS part. The wing strut can pivot about its axis some degree in order to allow the wing to be folded.

The strut consists of a stainless steel tube with fork ends, covered with a fairing made from GFRP.



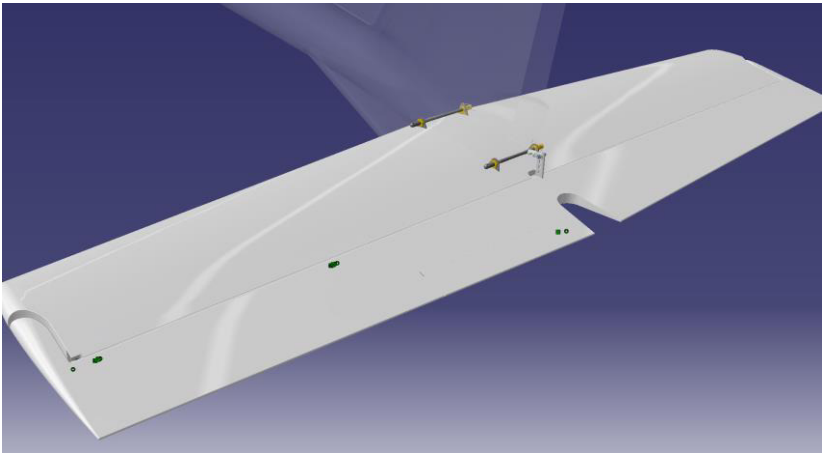
7 Airplane and Systems Description

installation of horizontal tail

The horizontal tail is made from GFRP. It is built up similar as the wing structure, consisting of ribs and spars.

The elevator included a trim tab, which is operated electrically. The trim tab does not have a dedicated hinge, but uses the elastic flap technology; the upper skin is used as hinge.

Two horns are integral parts of the elevator containing counterweights in order to balance the moving surface.



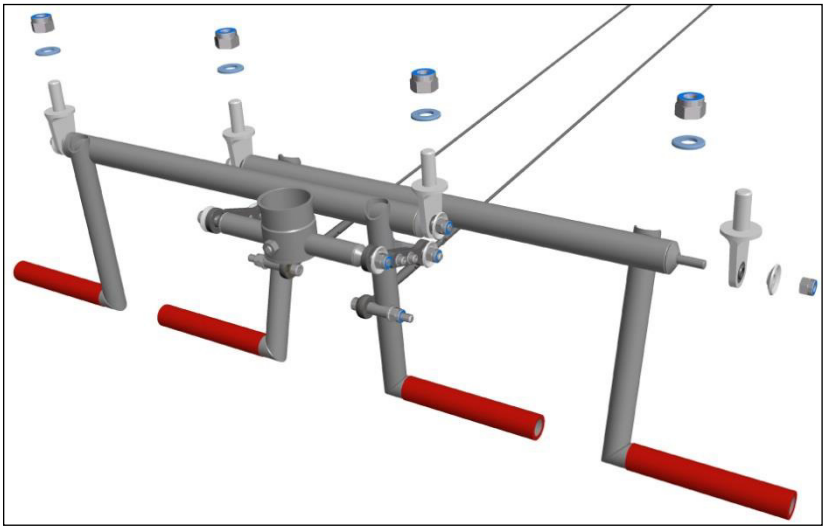
7 Airplane and Systems Description

7.3 Control System

The control system is made of aluminum pushrods and crank bells for the elevator and aileron controls. The rudder is operated by steel cables. The trim system is an electrically driven trim tab on the elevator; aileron and rudder have ground adjustable tabs.

rudder control system

Rudder control is maintained through use of conventional rudder pedals which also control nose wheel steering. The system is comprised of rudder pedals, a steering rod (sliding translator) towards the nose wheel dip tube, cables and pulleys, all of which link the pedals to the rudder and nose wheel steering.



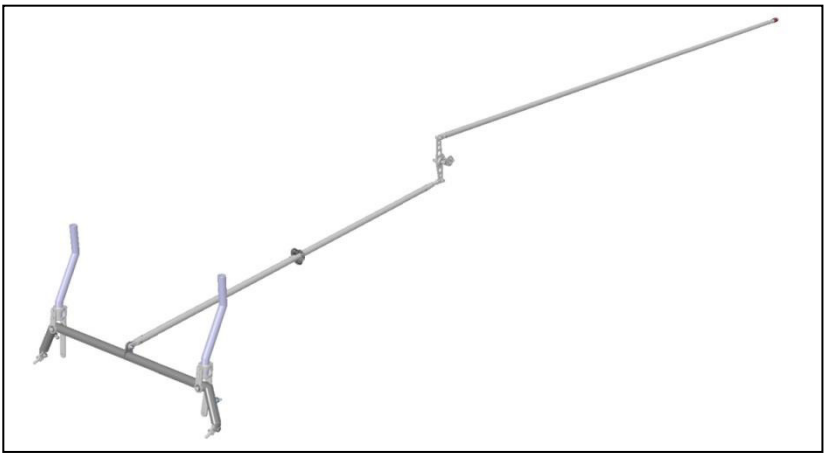
7 Airplane and Systems Description

elevator control system

The control sticks are installed to a pivoting connection element (stick bridge). Thereby a push/pull input stick is transferred from the control stick through a bell crank and a push-pull tube towards the elevator. An electrical operated elevator trim tab is installed on the elevator.

The elevator control system is connected to the elevator by a quick connector to allow the tailplane to be detached from the aircraft. Checking this quick connector is part of the preflight check!

Insecurely connected, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!!



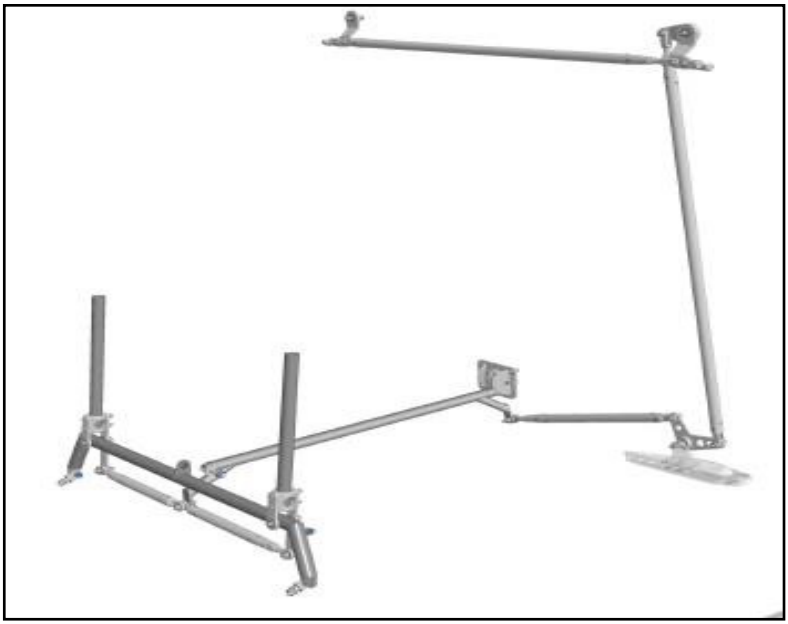
7 Airplane and Systems Description

aileron control system

Both control sticks are linked together by a control rod system to ensure synchronous movement. The linkage is located beneath two fiberglass-panels on the floor of the cabin right in front of the seats. A translator connects the control stick linkage to the aileron linkage, which uses several bell cranks to establish the connection to the control surfaces.

The aileron control system is split between the elements installed in the fuselage and in the wing. Both parts are connected by a connector. This connector is a quick connector to allow the wings to be folded. Checking these quick connectors is part of the preflight check!

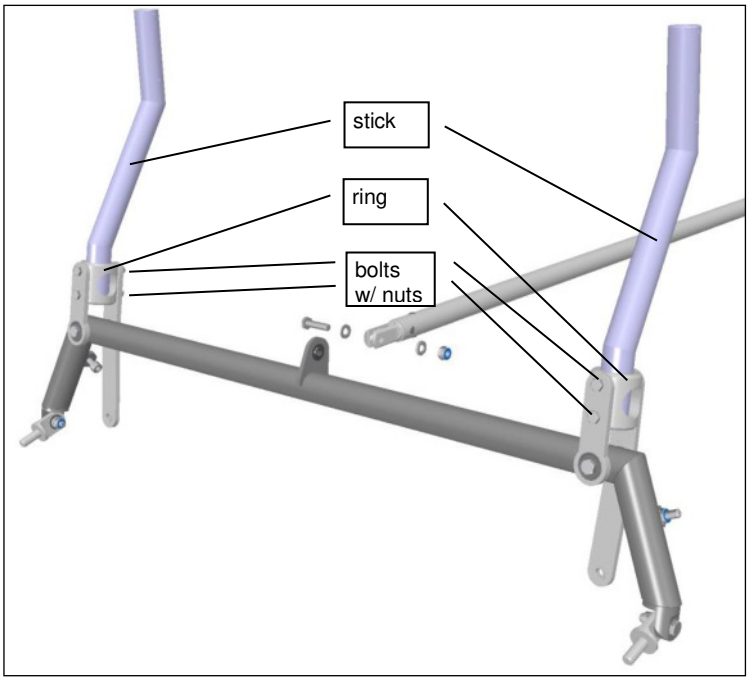
Insecurely connected, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!!



7 Airplane and Systems Description

flying with only one control stick installed

Under certain conditions it might be favorable to have only one control stick installed. It is permissible to take out the control stick on the passenger side. See section 2 for the definition of the seat of the pilot in command.



Take out the bolts on the side where the stick shall be uninstalled. Take out the stick. Newer aircraft have the trim and PTT buttons wired with a connector so the stick can be left outside the aircraft. In elder aircraft the stick must be stowed safely. Re-install the mounting ring by means of the bolts.

It is not required to prepare a separate weight and balance report and/or equipment list for operation without the control stick on the passenger side. A logbook entry is not required after the door(s) have been taken out or installed again. Effect on C.G. and weight is neglectable and need not be taken into account.

7 Airplane and Systems Description

7.4 Cockpit Overview

general

The REMOS ***GXiS*** is available with several avionic suites. Standard equipment is one DYNON D600 SkyView SE with 7” screen size and a PS Engineering PAR200A radio with integrated intercom.

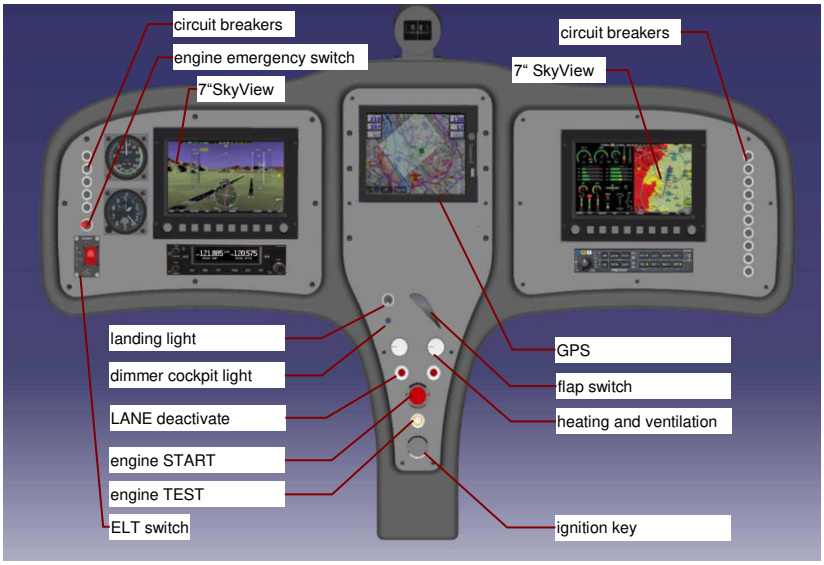
Optional equipment is a D700 or HDX800 instead of the D600 screen as well as a second one on the right side of the cockpit. The 10” series consisting of D900 (SkyView SE), D1000/T with optional touchscreen functionality and the HDX1100 are available as well.

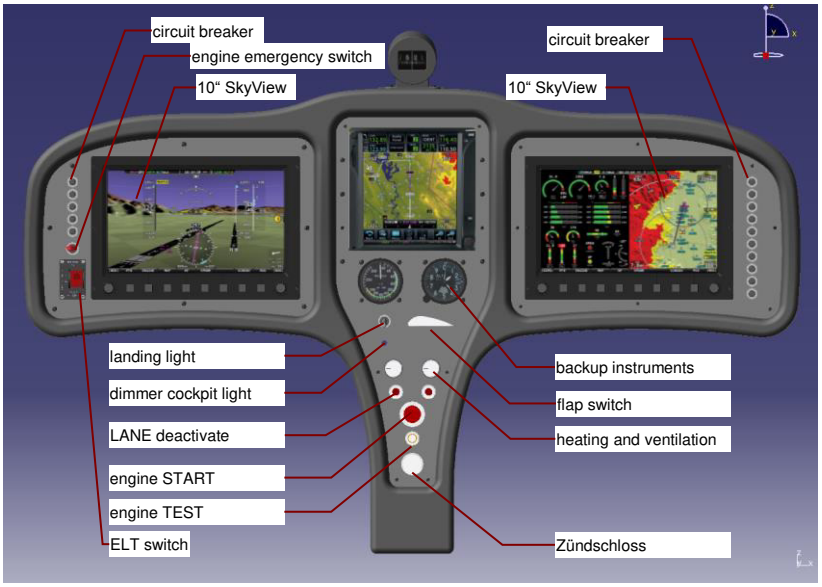
The aircraft may also be equipped with a COM or NAV/COM and separate intercom or audio panel instead of the PAR200A. A choice of GPS is available.

Depending on customer’s order or certification regulations, mechanical backup may also be installed.

7 Airplane and Systems Description

cockpit examples





7 Airplane and Systems Description

7.5 DYNON SkyView

Versions

The DYNON SkyView Family is available in three versions of two different screen sizes each. The size of the screen has no effect on functionality.

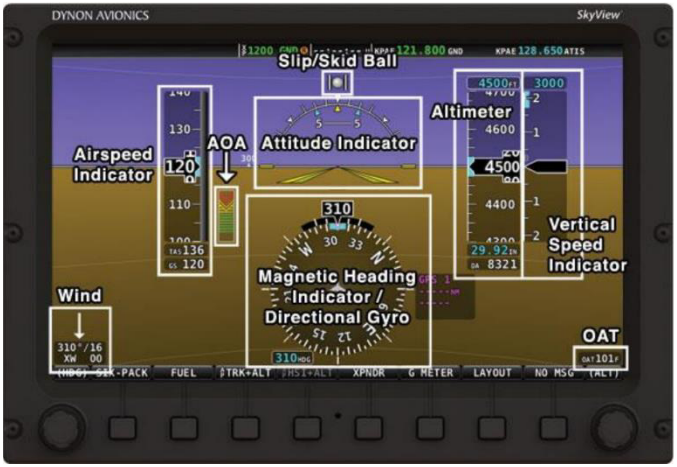
funktionality	D600/D900	D700/D1000	HDX800/ HDX1100
HD screen	-	-	●
touch screen	-	○ (*)	●
primary flight instrumentation	●	●	●
„six pack“ instrumentation	●	●	●
engine instrumentation	●	●	●
sectional and approach charts	-	●	●
synthetic vision	-	●	●
AoA- and stall-warning	●	●	●
G-meter	●	●	●
ADSB-out transponder	●	●	●
ADSB-in receiver	-	○	○
IFR navigation	-	○	○
timers	-	●	●

● standard
○ optional
- not available

(*) available for D1000 only

7 Airplane and Systems Description

screen of DYNON D600/D700/D900/D1000



Figures show elements. Display may vary in flight

7 Airplane and Systems Description

screen of DYNON HDX800/HDX1100

Figure shows elements. Display may vary in flight

primary instrumentation

The primary flight instrumentation and engine indication are realized by the DYNON SkyView glass cockpit system. This is an integrated system, it includes the “Electronic Flight information Display” and the „Multinational Function Display“. Any primary and secondary flight instruments as well as navigation and engine instruments are shown on the screen. This does not include the fuel tank indication. Although such an instrument is integrated into the SkyView, the primary fuel indication is the fuel sight tube behind the right seat.

standby instrumentation

A dedicated airspeed indicator and altimeter may be installed in the left panel, but the primary instrumentation is the DYNON system.

7 Airplane and Systems Description

operation

This POH can only introduce into the very basic operation of the DYNON SkyView System. The avionic system has a very huge functionality and a detailed description will for sure be beyond the scope of this POH.

For further information please refer to the manufacturer's operating instructions that have been handed over together with the aircraft. The website of DYNON www.dynonavinics.com offers a download link for all manuals and their updates.

The offered functionality of the DYNON SkyView is more than offered and used in the ***GXiS***. Therefore, it is possible that the DYNON manual references to functionalities that are not implemented into the ***GXiS***.

The guaranteed functionality of the DYNON SkyView system is: airspeed indicator, altimeter, vertical speed indicator, turn- and slip indicator, artificial horizon, trim indication, OAT, HIS incl. CDI and glideslope for ILS approaches. Engine speed, oil pressure, oil temperature, fuel flow, fuel pressure, fuel amount in fuel tank and voltmeter.

NOTE	Although the REMOS ***GXiS*** equipped with the DYNON SkyView system, which is a very capable and reliable avionic suite, please keep in mind that IFR flights in actual IMC is not permitted as per regulations.

color code	In aviation it is common to have the HSI pointer displayed green when a VOR or ILS is selected as navigation source. The pointer is magenta when a GPS is selected as navigation source.
joystick	Push, tilt and rotate to select functionality and adjust values, On HDX800/HDX1100, the joystick needs only be rotated and pushed, not tilted.

7 Airplane and Systems Description

QNH	Push joystick, tilt up or down to select BARO, then rotate to adjust QNH
layout	The screen split and content can be selected by pressing LAYOUT, then the items to be displayed can be selected, e.g. EMS or PFD. SCREEN changes ratio of split screen, BACK gets you back to main menu.
HSI operation	Select PFD in main menu and the HIS SRC to select navigation source: SKYVIEW is the internal GPS, external GPS is named explicitly, NAV/COM may be selected as well. BACK gets you back to main menu.
adjusting OBS	Select CRS on the joystick, then rotate to select OBS.
selecting bearing	Select PFD in main menu and then pick bearing source(s) with BRG 1 and/or BRG 2: SKYVIEW is the internal GPS, external GPS is named explicitly, NAV/COM may be selected as well. BACK gets you back to main menu. The yellow or orange pointer in the HSI shows bearing to the selected VOR or to the next GPS waypoint.

7 Airplane and Systems Description

7.6 COM and NAV/COM

GARMIN GTR225A

The GARMIN GTR225A is a VHF COM transceiver with 8.33kHz frequency channel spacing. It incorporates a number of functions that save time and effort. Provide the GTR 225 with an airport identifier and it will automatically find its frequency (and vice versa) thanks to a built-in, updateable database. The database technology also allows to store and recall commonly used or recently used frequencies by an assigned name. All information is displayed prominently on the device's large sunlight-readable LCD display.

This POH only provides basic introduction and instructions. For details refer to the manufacturer's instruction manual that comes with your airplane. The website of GARMIN www.garmin.com offers the possibility to download the manuals.

on/off, volume	The radio is switched on and off by rotating the VOL knob. This knob also adjusts volume.
frequency	Frequency is selected with the outer ring and inner selector of the TUNE knob. Frequency selected is displayed in the right of the display. Pressing the flip-flop button ↔ flips standby STB and ACT frequency.
monitoring	Pressing MON enables monitoring of the STB frequency at the same time as the ACT frequency. The radio will only transmit on the ACT frequency. The audio quality is reduced.

7 Airplane and Systems Description

GARMIN GNC255A

The GARMIN GNC255A is a VHF COM transceiver with 8.33kHz frequency channel spacing and a 200-channel VOR/LOC/GS NAV receiver in one combined housing. The GNC255A also incorporates workload-reducing functions such as automatic decoding of the Morse code station identifier for VOR/LOC/ILS, most-used frequency storage in unit memory, built-in course deviation indicator and more.

The GNC255A incorporates a number of functions that save time and effort. Provide the GNC255 with an airport or navaid identifier and it will automatically find all available frequencies (and vice versa) thanks to a built-in, updateable database. The database technology also allows to quickly pull up most frequently or most recently used frequencies. The device even automatically decodes a station's Morse code to provide a positive identification – no aural decoding required.

It offers standby frequency monitoring of NAV and COM providing the capability of two NAV/COMS in one. Standby COM frequency monitoring lets the pilot listen to transmissions like ATIS or the emergency channel without leaving the active frequency.

With the primary VOR/LOC frequency selected as NAV source on the DYNON SkyView, the standby frequency can be tuned to a second VOR to display the current radial on which your aircraft is flying and be displayed as BEARING source on the SkyView. This allows to cross check position fixes with just one receiver, the standby-VOR tuned in serves as an NDB in this case.

on/off, volume	The radio is switched on and off by rotating the VOL knob. This knob also adjusts volume.

7 Airplane and Systems Description

COM/NAV display	Pressing the C/N button changes display of NAV and COM frequencies.
COM frequency	Hit C/N first to select COM frequency band. Frequency is selected with the outer ring and inner selector of the TUNE knob. Frequency selected is displayed in the right of the display. Pressing the flip-flop button ↔ flips standby STB and ACT frequency.
NAV frequency	Hit C/N first to select NAV frequency band. Frequency is selected with the outer ring and inner selector of the TUNE knob. Frequency selected is displayed in the right of the display. Pressing the flip-flop button ↔ flips standby STB and ACT frequency. When GNC225A is selected as navigation source on the SkyView, the NAV STB frequency can be tuned into a second VOR and displayed as bearing on the HSI. In this case the VOR serves as NDB.
listen to NAV ID	By pressing NAV knob the ID of the VOR station or ATIS on NAV frequency can be monitored. Volume can be adjusted by turning the NAV knob.
monitoring	Pressing MON enables monitoring of the STB frequency at the same time as the ACT frequency. The radio will only transmit on the ACT frequency. The audio quality is reduced.

For detailed data refer to the manufacturer's instruction manual that comes with your plane. The website of GARMIN www.garmin.com offers the possibility to download the manuals.

7 Airplane and Systems Description

PS-Engineering PAR200A

The PS-Engineering PAR200A is a VHF radio with 8.33kHz spacing with integrated intercom. It can manage another radio or NAV/COM (no MKR functionality).

This POH only provides basic introduction and instructions. For detailed data refer to the manufacturer's instruction manual that comes with your plane. The website of PS-Engineering www.ps-engineering.com offers the possibility to download the manuals.

WARNING	Listening to music during flight may lead to inattention. Take care that you are always aware of the situation of the flight and stay ahead of the aircraft. If in doubt, switch off the audio entertainment, especially during take-off, landing and while talking with ATC.

WARNING	National regulations may apply or using cell phones on board of aircraft.

7 Airplane and Systems Description

on/off, volume	The radio is switched on and off by pushing the VOL knob. This knob also adjusts volume.
frequency	Frequency is selected with the outer ring and inner selector of the TUNE knob. Frequency selected is displayed in the right of the display. Pressing the TUNE flips standby and active frequency.
monitoring	Pressing N1 for a least 5 seconds enables monitoring of the STB frequency at the same time as the active frequency. The radio will only transmit on the active frequency. The audio quality is reduced.
selecting NAV/COM	The PAR200A can manage a second radio or NAV/COM. Selecting a radio from the RCV line allows monitoring to that radio. The intercom will only transmit on radio selected with XMT.
VOX squelch	VOX squelch need not be adjusted as the PAR200A is equipped with IntelliVox technology.
intercom VOX	Intercom VOX volume is adjusted by turning the outer ring of the VOL knob.
BLUETOOTH	Select BLUETOOTH coupling on your phone. The device is named PAR200A, access code is 0000.

7 Airplane and Systems Description

7.7 Intercom and Audio Panel

PS-Engineering PMA8000BTi

This is an audio panel with marker beacon receiver. It incorporates audio-in capability with several muting modes. The audio panel may be used with mono or stereo headsets.

A common volume knob is provided for left and right seat. Setting squelch is not required as the audio panels incorporate INTELLI-VOX that adjusts squelch automatically.

In addition to that the PMA8000BTi audio panel incorporates BLUETOOTH ® interface to link your cellphone or iPhone® without additional cables.

WARNING	Listening to music during flight may lead to inattention. Take care that you are always aware of the situation of the flight and stay ahead of the aircraft. If in doubt, switch off the audio entertainment, especially during take-off, landing and while talking with ATC.

WARNING	National regulations may apply or using cell phones on board of aircraft.

This POH only provides basic introduction and instructions. For detailed data refer to the manufacturer's instruction manual that comes with your plane. The website of PS-Engineering www.ps-engineering.com offers the possibility to download the manuals.

7 Airplane and Systems Description

on/off, volume	The audio panel is switched on and off by pushing the VOL knob. This knob also adjusts volume.
selecting NAV/COM	The PMA8000BTi can manage two radios or NAV/COM. Selecting a radio from the RCV line allows monitoring to that radio. The audio panel will only transmit on radio selected with XMT.
VOX squelch	VOX squelch need not be adjusted as the PAR200A is equipped with IntelliVox technology.
intercom VOX	Intercom VOX volume is adjusted by turning the outer ring of the VOL knob.
BLUETOOTH	Select BLUETOOTH coupling on your phone. The device is named PAR200A, access code is 0000.

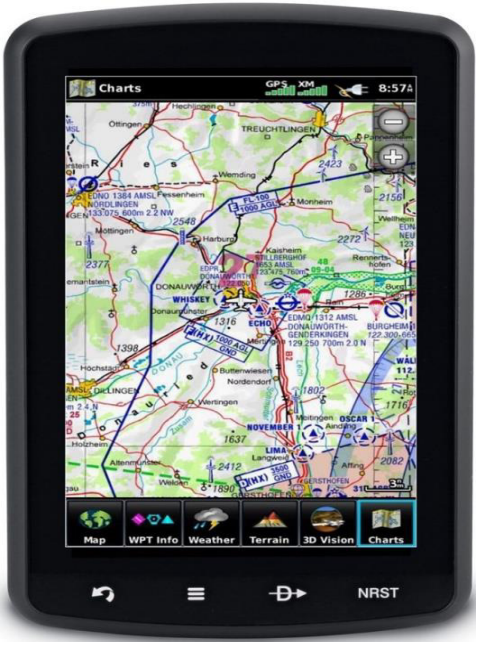
7 Airplane and Systems Description

7.8 GPS Equipment

Garmin aera660 und aera 796

The GPS by Garmin are prime class navigation aids with brilliant color screen and touch operation. The GPS is switched on automatically once the ignition key is set to AVIONIC.

aera660



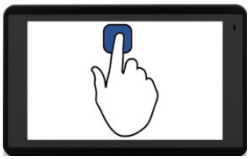
aera 796

7 Airplane and Systems Description

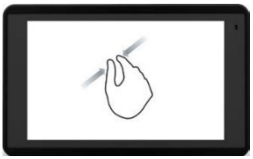
This POH only provides basic introduction and instructions. For details refer to the manufacturer's instruction manual that comes with your airplane. The website of GARMIN www.garmin.com offers the possibility to download the manuals.

Following gestures operate the GPS:

select

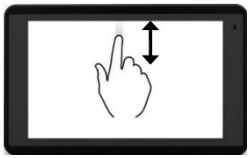


zoom



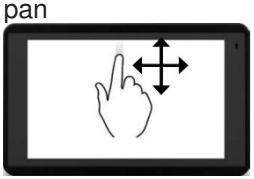
zoom in

scroll



zoom out

pan



Basic operation is done by following icons:

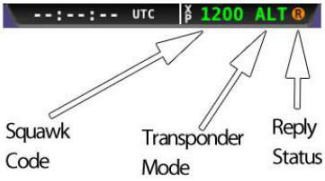
MAP	shows sectional map
NEAREST	shows nearest airfields
DIRECT TO	enabled direct navigation to airfield selected
FPL List	shows active flightplan and allows programming
ZOOM	allows zooming

7 Airplane and Systems Description

7.9 Transponder

DYNON D600/D700 and D900/D1000

The top bar displays the transponder status as shown below:



To set the transponder hit the softkey XPNDR from the main menu. The XPDR menu will now show up as follows:

GND	turns on ground mode, pressing the softkey again will put the transponder into standby mode
ON	activates Mode A, pressing the softkey again will put the transponder into standby mode
ALT	activates Mode A/C/S incl. ADS-B out, pressing the softkey again will put the transponder into standby mode
CODE	allows to enter a squawk
VFR	squawks VFR
IDENT	squawks ident
BACK	steps back to main menu

NOTE	With a GPS antenna DYNON SkyView SV-GPS-2020 and the transponder SV-XPNDR-261 installed, the transponder fulfils the FAA ADS-B 2020 mandate.

7 Airplane and Systems Description

DYNON HDX800 and HDX1100

The top bar displays the transponder status as shown below. To set the transponder touch into the top bar in the area that displays the transponder status. The XPDR control page will appear as follows:

IDENT	squawks ident
VFR	squawks VFR
BACKSPACE	erases the last input (ued for correcting squawk)
0…7	enter squawk
SBY	puts the transponder into standby mode
GND	turns on ground mode
ON	activates Mode A
ALT	activates Mode A/C/S incl. ADS-B out
X	closes the menu

NOTE	With a GPS antenna DYNON SkyView SV-GPS-2020 and the transponder SV-XPNDR-261 installed, the transponder fulfils the FAA ADS-B 2020 mandate.

7 Airplane and Systems Description

7.10 GTN750 GPS/NAV/COM/XPDR/Audio

The GTN750 is an IFR navigator which integrates the functionality of a WAAS GPS with moving map, NAV/COM, transponder and audio panel. This system replaces the transponder integrated into the DY-NON SkyView system.

The systems made by Garmin is a prime class navigation aid with brilliant color screen and touch operation. The system is switched on automatically once the ignition key is set to AVIONIC.

This POH only provides basic introduction and instructions. For details refer to the manufacturer's instruction manual that comes with your airplane. The website of GARMIN www.garmin.com offers the possibility to download the manuals.

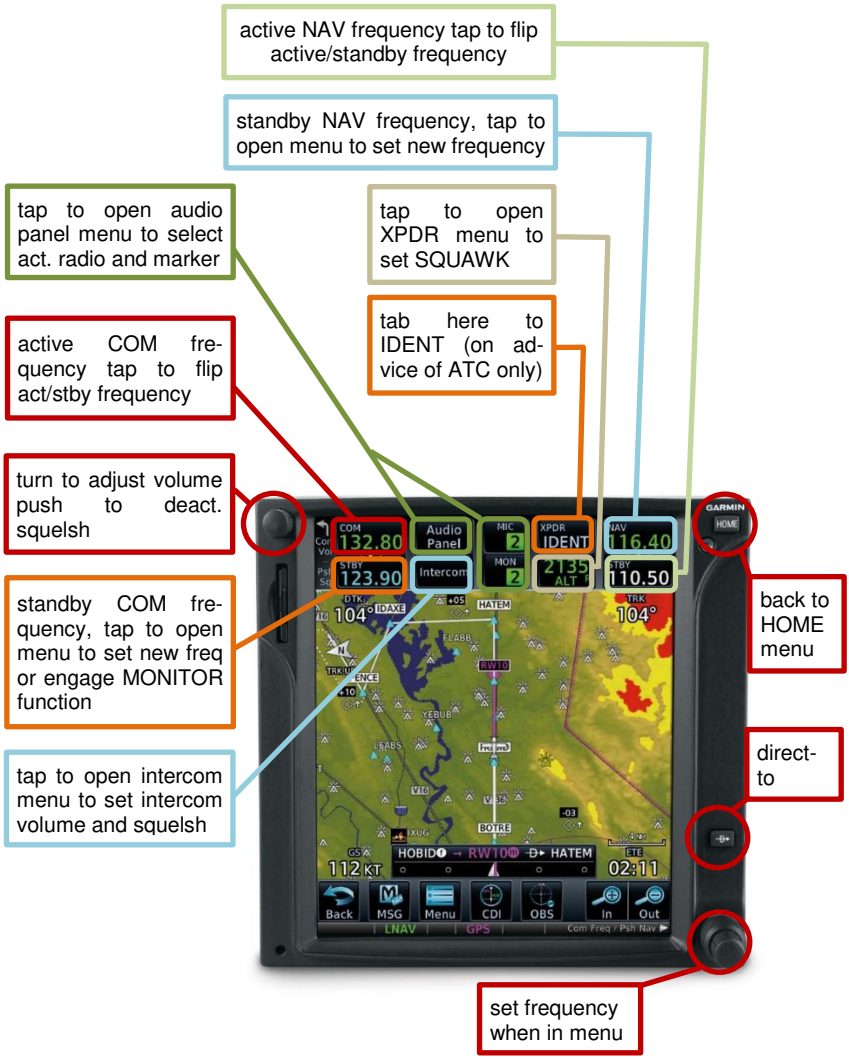
7 Airplane and Systems Description

After start-up of the system the home screen appears:

MAP	activated sectional map
TARFFIC	displays surrounding traffic (if installed)
FLIGHT PLAN	shows active flightplan and allows programming
PROC	activates IFR procedures (if database installed)
NEAREST	shows nearest airfields
DIRECT TO	enabled direct navigation to airfield selected
XPNDR	allows tuning of a COM station
NAV	allows tuning of a VOR or ILS station
XPDR	sets XPDR mode and squawk
HOME	switches back to the home screen

Volume is set by rotating the upper left knob.

7 Airplane and Systems Description



For details and complete instructions refer to the GARMIN manual.

7 Airplane and Systems Description

7.11 Autopilot

The autopilot of the DYNON system allows holding and changing altitude, and RNAV, i.e. flying along GPS track, GPS waypoint flightplan or along a radial of a VOR (ILS is a special version of a VOR with just one radial).

In the version as offered by REMOS, the autopilot does not offer VNAV, it can only hold or change a selected altitude. The autopilot does not provide vertical guidance on an ILS or GPS-based LPV approaches.

NOTE	Be responsible when flying with autopilot. The aircraft is not approved for flying in actual IMC.

NOTE	The autopilot does not look on a map or looks out of the window. The pilot in command is responsible for correct navigation (airspaces, obstacles, terrain!!!)

Engaging the autopilot always follows the procedure below:

1. decide for an autopilot mode
2. select navigation source
3. set up navigation source
4. select autopilot mode
5. engage autopilot

7 Airplane and Systems Description

autopilot modes

The DYNON autopilot has two modes:

1. track and altitude (TRK+ALT)

   The autopilot keeps your selected altitude, climbs or descents to it and follows a given ground track. Setting up or even select a navigation source is not required.

   Track hold keeps the aircraft flying in a particular direction, as determined by GPS's ground track, or direction of travel over ground. This target is reflected by the track (TRK) bug in the HSI. When the autopilot is engaged, the TRK bug will automatically be synchronized to the current ground track of the aircraft. Effectively, this means that the autopilot will keep flying in the same direction that the aircraft was flying in the moment before the autopilot was engaged. After the autopilot is engaged, change the track you want the autopilot to fly by adjusting the TRK bug.

   Altitude hold mode keeps the aircraft flying at a particular altitude. The altitude that that autopilot holds is governed by the altitude (ALT) bug. When the autopilot is initially engaged, the ALT bug will automatically by synchronized to the current altitude. Effectively, this means that the autopilot will maintain the altitude that the aircraft was at the moment before the autopilot was engaged. Altitude that the autopilot holds may be adjusted with the ALT bug.

2. HSI and altitude (HSI+ALT)

   The autopilot keeps your selected altitude, climbs or descents to it and follows a given ground track. A navigation source must be set up, i.e. either a VOR/ILS needs to be tuned in and a radial need to be selected, or a GPS waypoint flightplan must be set up. In case no navigation source is selected AND set up, this mode cannot be selected.

   In HSI mode, the autopilot will fly the lateral course guidance

7 Airplane and Systems Description

that is displayed on the HSI from the provided source. For example, is the selected HIS source is the SkyView GPS, and there is an active flightplan, the autopilot will fly that flightplan. Or if the source is a VOR, the autopilot will seek to capture and hold se set radial to or from the VOR.

Altitude hold mode keeps the aircraft flying at a particular altitude. The altitude that that autopilot holds is governed by the altitude (ALT) bug. When the autopilot is initially engaged, the ALT bug will automatically by synchronized to the current altitude. Effectively, this means that the autopilot will maintain the altitude that the aircraft was at the moment before the autopilot was engaged. Altitude that the autopilot holds may be adjusted with the ALT bug.

navigation sources

A navigation source is the means of lateral (read: left and right steering) navigation for the autopilot. The following navigation sources are available:

1. internal DYNON SkyView GPS
   This is always available, no matter what COM, NAV/COM or external GPS is installed. With a waypoint flightplan set up (even direct-to is a flightplan), the autopilot can follow this planned flight.

2. external GPS
   In case an external GPS is installed in the center stack, this GPS can be used as navigation source. With a waypoint flightplan set up (even direct-to is a flightplan), the autopilot can follow this planned flight.

3. navigation radio
   In case a NAV/COM is installed, this can be used as navigation source. The autopilot can navigate along a radial of a tuned VOR (remember: an ILS is a special version of a VOR with one single radial only).

7 Airplane and Systems Description

control wheel steering

When the autopilot is engaged, press and hold the AP/DISC button on the control stick to put the autopilot into control wheel steering mode.

While control wheel steering mode is active, the autopilot servos are temporarily disengaged. This lets you fly the aircraft by hand for short periods to make an adjustment to the autopilot's targets without completely disengaging the autopilot.

When the disconnect switch is released, the autopilot's targets are adjusted as follows:

TRK+ALT mode

- pitch axis
  The ALT bug and therefore the autopilot's altitude target is synchronized with the aircraft's current altitude.

- roll axis
  The TRK bug and therefore the autopilot's track target is synchronized with the current GPS track.

HIS+ALT mode

- pitch axis
  The ALT bug and therefore the autopilot's altitude target is synchronized with the aircraft's current altitude.

- roll axis
  No change, the roll axis resumes tracking its HSI source.

hold to engage

When the autopilot is not already engaged, press and hold the AP/DISC button on the control stick will place the autopilot into hold to engage mode. The top bar annunciates REL TO ENG (release to engage) while the AP/DISC button is held.

Then the AP/DISC button is released, the autopilot engages in TRK+ALT mode. TRK and ALT are synchronized to the aircraft's current GPS ground track and altitude.

7 Airplane and Systems Description

selecting a navigation source (D600/D700 and D900/D1000)

From the main menu select PFD to open the PFD menu, then hit HSI SCR to cycle the HSI through the different navigation data sources that are connected to the SkyView system. Other than SKYVIEW, which is the system's internal GPS, these are all external navigation devices: external GPS or NAVCOM. The name of the selected navigation source is displayed right of the HSI.

PFD	ENGINE	MAP	AUTOPILOT	XPNDR		SCREEN	NO MSG

main menu

BACK	G METER	MODE	BRG 1	HSI SRC	BRG 2	BUGS	NO MSG

PFD menu

selecting a navigation source (HDX800 and HDX1100)

From the main menu select MENU, then select the PFD TOOLS icon.

main menu (screen content not representative, menu bar only)

7 Airplane and Systems Description

menu page

Now touch HSI SRC to cycle the HSI through the different navigation data sources that are connected to the SkyView system.

Other than SKYVIEW, which is the system's internal GPS, these are all external navigation devices: external GPS or NAVCOM. The name of the selected navigation source is displayed right of the HSI. Select X or EXIT to leave this menu.

PFD menu page

7 Airplane and Systems Description

selecting autopilot mode (D600/D700 and D900/D1000)

Open the autopilot menu from the main menu by pressing the button AUTOPILOT. Now the different modes of the autopilot may be selected.

main menu

autopilot menu

BACK	gets you back into the main menu
OFF	disengages autopilot
TRK+ALT	Engages autopilot in track and altitude mode. Subsequent presses of this button disengages the autopilot again. To disengage the autopilot you may also hit the AP/DISC button on the control stick.
HSI+ALT	Engages autopilot in HSI and altitude mode, this requires to select and set up a navigation source first, otherwise this softkey is greyed out. Subsequent presses of this button disengages the autopilot again. To disengage the autopilot you may also hit the AP/DISC button on the control stick.
LEVEL	Press the LEVEL button to engage the autopilot in level mode. For safety in emergency situations, subsequent presses of this button do not disengage the autopilot. To disengage the autopilot, press the OFF butoon or hit the AP/DISC button on the control stick, or switch to the autopilot modes TRK+ALT or HSI+ALT.

7 Airplane and Systems Description

180° Pressing the 180° to initiate an autopilot controlled 180 degree turn from the current track while maintaining the current altitude. After the turn the autopilot is in TRK+ALT mode. To disengage the autopilot, hit TRK+ALT, OFF or you may also hit the AP/DISC button on the control stick.

NOTE	The 180° mode will always initiate a LEFT turn.

selecting autopilot mode (HDX800 and HDX1100)

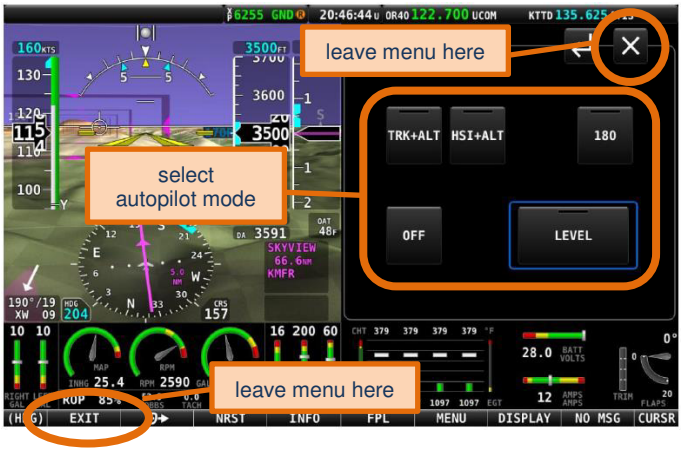
From the main menu select MENU, then select the AUTOPILOT icon. Select X or EXIT to leave any menu.

main menu (screen content not representative, menu bar only)

7 Airplane and Systems Description

menu page

Now the different modes of the autopilot may be selected.



7 Airplane and Systems Description

EXIT or X	gets you back into the main menu
OFF	disengages autopilot
TRK+ALT	Engages autopilot in track and altitude mode. Subsequent presses of this button disengages the autopilot again. To disengage the autopilot you may also hit the AP/DISC button on the control stick.
HSI+ALT	Engages autopilot in HSI and altitude mode, this requires to select and set up a navigation source first, otherwise this softkey is greyed out. Subsequent presses of this button disengages the autopilot again. To disengage the autopilot you may also hit the AP/DISC button on the control stick.
LEVEL	Press the LEVEL button to engage the autopilot in level mode. For safety in emergency situations, subsequent presses of this button do not disengage the autopilot. To disengage the autopilot, press the OFF butoon or hit the AP/DISC button on the control stick, or switch to the autopilot modes TRK+ALT or HSI+ALT.
180°	Pressing the 180° to initiate an autopilot controlled 180 degree turn from the current track while maintaining the current altitude. After the turn the autopilot is in TRK+ALT mode. To disengage the autopilot, hit TRK+ALT, OFF or you may also hit the AP/DISC button on the control stick.

NOTE	The 180° mode will always initiate a LEFT turn.

7 Airplane and Systems Description

adjusting altitude

Click on one of the joysticks or kick it up or down and then select the ALT bug by either rotating the joystick or clicking up or down. Once the ALT bug is selected, adjust the bug and therefore altitude by rotating the joystick. On the SkyView HDX800/HDX1100 only a push-and-rotate action is required.

In case these is not sufficient power set for a climb, the autopilot will not pull on the elevator until stall. Furthermore, below a preset speed the autopilot gives up the climb command in favor of airspeed.

In case these is too much power set for a descent, the autopilot will not push on the elevator until airspeed exceeds VNE. Furthermore, beyond a preset speed the autopilot gives up the descent command in favor of airspeed.

adjusting GPS track over ground

Click on one of the joysticks or kick it up or down and then select the TRK bug by either rotating the joystick or clicking up or down. On the SkyView HDX800/HDX1100 only a push-and-rotate action is required. Once the TRK bug is selected, adjust the bug and therefore course over ground by rotating the joystick.

selecting radial (OBS)

Click on one of the joysticks or kick it up or down and then select the CRS by either rotating the joystick or clicking up or down. On the SkyView HDX800/HDX1100 only a push-and-rotate action is required. In case a VOR station is tuned in, the radial can be selected.

NOTE	An ILS is a special version of a VOR with one radial only, that cannot be selected.

NOTE	CRS is available only in HSI+ALT mode with a VOR station tuned in.

7 Airplane and Systems Description

7.12 Electric System

general

The REMOS ***GXiS*** has quite a complex electric system for reliable support of all electric engine and aircraft systems. It is designed for maximum reliability and user-friendliness, as there are a lot of vital electric subsystems installed on the aircraft.

The engine in particular is reliant on electric energy. Following vital engine subsystems are electrically powered: dual channel injection and engine management, ignition, fuel pumps, engine instrumentation.

As the engine imperatively relies on electric power, two generators are installed. One of them (generator A, nominal power output 220W, rated current 16A at 14.2V) is responsible for engine subsystems only, the other one (generator B, nominal power output 420W, rated current 30A at 14.2V) is for the aircraft systems.

After engine start-up, electric power is supplied by generator B, aircraft systems are powered by the batteries. Once engine speed is set above 2,500 rpm for at least 5 seconds, the engine switches to generator A and the aircraft systems are now powered by generator B.

In the unlikely event of a failure of one of the generators, electric power supply for the engine is ensured. In such an event, the engine is powered by the intact generator and the aircraft systems run on batteries only. By activating the “emergency mode” with the emergency switch, the aircraft systems are powered with excess power of the remaining generator and the aircraft batteries.

The aircraft is equipped with two batteries. In case of emergency, both batteries supply energy exclusively; in normal operation, they provide surplus energy for peak power consumption. During engine start-up, one battery supplies power to the engine incl. starter engine and fuel pumps, the other battery is for the aircraft systems and the avionics.

During start-up, the avionic bus is completely separated from the engine bus. By this, the REMOS ***GXiS*** has does not have a dedicated avionic bus switch, bus selection is completely automatic.

7 Airplane and Systems Description

normal operation

To start up the REMOS ***GXiS*** the ignition key needs to be inserted and set into position AVIONIC. Now the following systems are active:

- SkyView system
- ATC radio(s)
- intercom or audio panel
- GPS
- flaps
- trim

Following systems are still inactive:

- engine control
- landing light
- NAV lights
- anti-collistion lights

This key position is intended to set-up the avionics, program the GPS, request start-up clearance, etc. Flight schools will prefer this position to introduce the student pilot into the aircraft, the avionics and systems.

Next step is to set the ignition key into position ENGINE. All systems that have been offline until now are switched on. To fire up the engine the central ENGINE START button needs to be hit, the REMOS SMARTstart system takes over control during the start-up process. In cold weather, throttle should be cracked open.

Following procedure is performed in the background during engine start:

- engine start mode is activated
- avionic bus is separated from main bus
- starter engine is engaged
- both electric busses are unified again

7 Airplane and Systems Description

The engine is running now and can be warmed up. For quickest possible warming up it is recommended to keep engine speed below 2,500 rpm. Even at this low engine speed the engine is producing waste-heat, but the cooling system is hardly supplied with fresh air. Higher engine speeds improve cooling and therefore elongate the warm-up phase.

In situations with high traffic on ground, e.g. taxiing for take-off at a fly-in, coolant and oil temperatures can rise significantly. In such a situation either increase engine speed above 3,000 rpm to cool down the engine or timely shut down engine. There is no danger the engine could not fire-up again just because it is hot.

A magneto check in the common sense does not exist in the REMOS ***GXiS***; the REMOS SMARTstart takes over the check procedure. Once the aircraft is arrested with the parking brake, engine speed is set to 4,000 rpm and the ENGINE TEST button is hit. Following procedure is executed in the background:

- LANE A will be switched off and on again
- LANE B will be switched off and on again
- MAIN fuel pump is shut off
  AUX fuel pump kicks in automatically
- fuel system is reset so that MAIN fuel pump is active

The pilot only needs to monitor the engine parameter. A drop in engine speed of not more than 180 rpm is acceptable, though in most cases a slight increase of engine speed up to app. 4,200 rpm will be monitored.

During the test of the engine parameters the MAIN fuel pump will be switched off and the AUX pump will kick in immediately. The EMS page of the SkyView system will generate an aural warning and the “MAIN fuel pump INOP” warning light will come up. The warning will expire after a couple of seconds. The engine will quit during test routine in case the AUX fuel pump is defective. Any malfunction on the fuel system poses a certain risk on safe operation. Therefore, avoid take-off with one fuel pump inoperative.

7 Airplane and Systems Description

In cruise with engine speeds of 4,200 … 5,800 rpm the fuel pressure will be 43.5 psi +/- 3 psi (3.0 bar +/- 0.2 bar). Lower pressure is acceptable at lower engine speed. During switching of the fuel pumps, the fuel pressure may drop momentarily, but will recover immediately.

Once all tests have been performed satisfactory, the airplane is ready for departure.

NOTE	All warnings must have expired after the engine test. The orange status light of the TEST button and the red background light of the ENGINE START button must turn off. Should this not be the case, the planned flight must be cancelled. A ferry flight might be possible with special permission, ask REMOS for advice.

The engine lanes LANE A and LANE B are always active as soon as the ignition switch is set to ENGINE. Status of the lanes is shown by the red LANE A/B ALARM lights in the lane switches in the center panel. During normal operation, these warning lights are off. Flashing or permanently lighting status light(s) indicate a lane malfunction, see section 3 – emergency procedures.

Should a malfunction occur on one or both lanes, it should be tried to resolve this problem by resetting the lane in question. To reset a lane, press the corresponding pushbutton LANE A/B RESET (warning light at the same time). The switch comes out now app. 1/8 inch and lights up permanently now. After a couple of seconds the switch is pushed in again, causing the lane to reboot. Rebooting takes about 3 seconds.

Should one lane cause problems permanently, e.g. rough engine running, it may be switched off until landing. The two lane switches are electronically protected against each other in order to prevent inadvertent shut-down of the engine by deactivating both lanes at the same time. Only the one lane whose button has been pressed first will be deactivated. Even with both switches pressed the second lane will only be deactivated when the first lane is switched on.

7 Airplane and Systems Description

emergency operation – single generator failure

The engine needs electric power supply to be able to operate. Without sufficient electric power the engine will quit. Following vital engine subsystems are electrically powered: dual channel injection and engine management, ignition, fuel pumps, engine instrumentation.

Except of the engine instrumentation, all electric engine systems are vital, read: the engine will quit. By this the electric power supply is designed redundantly. Electric power supply is realized by two generators. Should one of the two generators fail, the remaining generator takes over electric power supply for the engine.

failure of generator A (engine generator)

- engine switches to generator B automatically
- aircraft systems are powered by aircraft batteries only
- indicated by both LANE lights flashing and sloping voltage (into the red marking)

failure of generator B (aircraft systems generator)

- engine stays on generator A
- aircraft systems are powered by aircraft batteries only
- indicated by sloping voltage (into the red marking)

For the pilot the result is identical in both scenarios: the aircraft systems are powered by the aircraft batteries only. To minimize battery discharge, the EMERGENCY MODE shall be activated immediately by flipping the EMERGANCY SWITCH (lift to engage), also to ensure sufficient battery power for the engine systems in case the second generator fails, too.

The EMERGENCY SWITCH is located on the left side of the panel; it is locked for normal operation. To activate the EMERGENCY MODE, lift the switch slightly and put it in its center position. Further tilting to the right would engage the starter engine, which should be avoided while engine is running in order to avoid damages to the starter engine.

Non-essential consumers will be switched off now, these are: position and anticollision lights, 12V receptacle, the SkyView system (has in-

7 Airplane and Systems Description

ternal backup batteries), autopilot and second ATC radio. All other aircraft systems are powered by the aircraft batteries and the excess power of the remaining generator. ATC radio and transponder are also online. By this, the aircraft systems may still be used for an extended time.

The SkyView system has internal backup batteries. Once these are completely discharged, the SkyView system finally fails. Should this be avoided, e.g. when safe landing is ensured, the EMERGENCY MODE can be switched off, so that the remaining battery power can feed all aircraft systems now.

The landing light must be switched off manually in case of a generator failure, but it can still be used for landing.

emergency operation – double generator failure

The engine will definitely quit in case both generator fail. In this case the EMERGENCY SWITCH needs to be activated immediately.

The EMERGENCY SWITCH is located on the left side of the panel; it is locked for normal operation. To activate the EMERGENCY MODE lift the switch slightly and put it in its center position. Further tilting to the right engages the starter engine. The engine should fire up again now.

Non-essential consumers will be switched off now, these are: position and anticollision lights, 12V receptacle, the SkyView system, autopilot and second ATC radio. The SkyView system may be operated on its internal backup batteries, ATC radio and transponder are also online.

The next available airfield shall now be used for landing without any further diverts. The remaining flight time until final engine failure due to lack of electric power is now not more than 30min. After that time the batteries are fully discharged and the engine will definitely and inevitably quit.

NOTE	After a double generator failure, the remaining safe flight time until engine failure is 30min. After that time the batteries are fully discharged and the engine will definitely and inevitably quit.

7 Airplane and Systems Description

circuit breakers

The fuses installed are of the circuit breaker type, which automatically release after short-circuit or overload. A released circuit breaker stands out approximately 1/4 inch and exhibits a white ring.

The circuit breaker can be reset by pushing it in again.

All circuit breakers can be released manually. To do so, press on the circuit breaker until it releases and stands out.

aircraft batteries

The aircraft batteries on the REMOS ***GXiS*** have a high responsibility regarding safe flight as can be seen from the preceding descriptions. Only batteries with following specification qualify for installation:

lead battery specification	
nominal capacity	min. 9 Ah
cold cranking amps	min. 150 A
battery type	starter lead gel battery
example	Hawker Odyssey PC545 Hawker Genesis 12EP13

lithium battery specification	
nominal capacity	min. 8.5 Ah
cold cranking amps	min. 150 A
battery type	LiFePO4
minimum battery equipment	overload protection overvoltage protection overtemperature protection under voltage protection cell balancing self-contained housing with vent
example	EarthX ETX900VNT

7 Airplane and Systems Description

The recommended battery EarthX ETX900VNT features a battery warning system that is connected to the DYNON SkyView system. Other batteries may also be installed, but in these cases the battery warning feature is not active.

In normal operation, the battery warning light is off (dark cockpit concept); it only comes up in one of the following events:

warning light permanently on

voltage	*possible cause*	*Recommended action*
any	battery management system electronic issue	Not an immediate issue unless it is in conjunction with a charging system failure. In this case: Both the aircraft voltage regulator and aircraft overvoltage protection have failed. Land on appropriate airfield, soon. Consider precautionary landing.
any	short circuit protection was activated	Solid light will turn off without further action, noting needs to be done.

warning light flashing

voltage	*possible cause*	*action*
< 13.2 V	battery over-discharged	Charge battery on ground. Once charged, the light will stop flashing.
< 13.2 V	weak or failing cell	Charge battery on ground. If voltage drops below 13.2V within a few days, discontinue use.
13.2 V … 14.6 V	weak or failing cell	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.

7 Airplane and Systems Description

13.2 V … 14.6 V	cell to cell charge levels are not balanced	May come on briefly during periods of high current charging until the cells are automatically balanced. Try charging with a plugin charger.
> 15.2 V	over-charging	Both the aircraft voltage regulator and aircraft overvoltage protection have failed. Land on appropriate airfield, soon. Consider precautionary landing.

NOTE	When the SkyView display is not set to 100% engine page, the battery warning light is not visible. In this case, battery warning is limited to the master warning light (bottom right in the DYNON system) and a general audio warning (“engine monitor”).

7 Airplane and Systems Description

overvoltage protection

The aircraft is equipped with an overvoltage protection. This subsystem protects the aircraft systems and the avionics in case of an overvoltage event.

The overvoltage protection is integrated into the PSU (power supply unit) and needs neither maintenance not operation. In case the overvoltage protection releases due to a voltage regulator failure, it isolates the electric system from the engine charging system

In such an event, the overvoltage warning light in the DYNON system lights up, followed by a low voltage warning. For the pilot, this has the identical effect as a generator failure: charging power of the generators is not available anymore and the aircraft batteries will discharge.

As soon as the electric system is shut down, the overvoltage protection automatically resets. No additional action items are required.

A thorough maintenance event is required to determine the reason for the overvoltage event. The most likely reason is found in a regulator failure of generator B.

7 Airplane and Systems Description

7.13 Engine

general

The ROTAX 912 iS Sport is a horizontally opposed 4-cylinder 4-stroke spark ignition engine with electronically controlled fuel injection. The engine features one central camshaft, driving two overhead valves per cylinder by push rods and hydraulic tappets.

Displacement is 1,352 cm with a compression ratio of 10.8:1.

Max. rated power for 5 minutes is 73.8 kW (100 HP) at 5,800 rpm, max. cont. power is 75 kW (95 HP) at 5,500 rpm

The engine is rotating clockwise, seen from the back.

engine control

The engine features a fully redundant digital engine management and control system (EMS), it includes fuel injection and characteristic ignition.

fuel system

The engine is designed to be operated with no-lead fuel min. AKI 91 (min. MOZ87, min. ROZ 95). Only fuel acc. to ROTAX Service Instruction SI-912i-001 in its latest revision may be used. Best are fuels without water and/or ethanol. AVGAS may be used, but prevailing use reduces the oil change interval.

Fuel is fed to the engine by an electric fuel pump unit located underneath the fuel tank. Nominal fuel pressure is 43.5 psi (3 bar). The fuel pump unit consists of two separate fuel pumps, one alone is sufficient for safe engine operation. In normal operation, fuel is fed to the engine by the main fuel pump. The auxiliary fuel pump serves as backup pump. In case the main pump fails or does not deliver sufficient fuel pressure, the aux pump will be automatically activated and the main pump is switched off.

7 Airplane and Systems Description

NOTE	Both fuel pumps will deliver identical fuel flow. Technical wise engine operation on aux fuel pump is possible without any restrictions. However, in this case there is no redundancy anymore for a vital engine system. The next suitable airfield should be used for landing and a flight should never be started with one INOP fuel pump.

The fuel system features a self-actuating fuel shut-off valve. As soon as the fuel pumps to not delver any fuel flow, the fuel line is shut-off automatically. As there are only the electric fuel pumps that deliver fuel to the engine, the engine is shut-down reliable with the ignition key that as well shuts off the fuel pumps.

Two fuel filters are installed in the fuel system: one coarse filter installed inside the fuel tank, and a fine filter with 8…12 microns in the engine compartment that filters fuel just before it is fed into the engine.

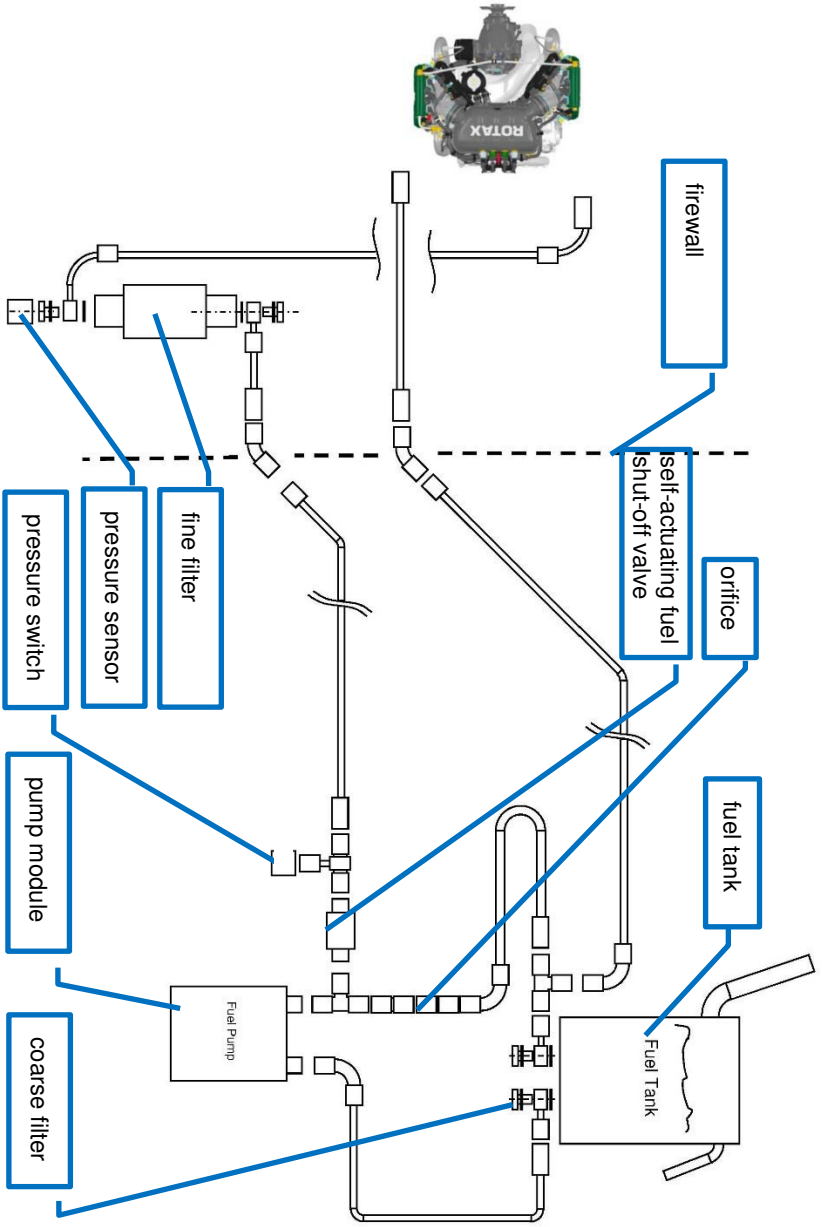
A pressure switch for the automatic fuel pump selection is installed behind the self-actuating fuel shut-off valve. The pressure sensor for sensing fuel pressure to be indicated in the DYNON SkyView is installed at the fuel fine filter.

Fuel on board is sensed by a floating sensor inside the fuel tank and is indicated in the DYNON SkyView. This indication is comparable exact. However, different flight attitude changes fuel level sensing and therefore indication, especially with little fuel on board. The fuel tank is equipped with a sight hose behind the right seat to detect fuel level.

The sight hose at the fuel tank behind the right seat is the relevant fuel indication on the REMOS ***GXiS***.

There is a draining valve installed at on the fuel tank accessible from the outside belly of the fuselage behind the main landing gear. This valve is used for draining and dumping fuel. Only a white plastic tube is visible of that valve. Press on that hose to drain, press and rotate to lock the valve for dumping fuel. The fuel system vent line is routed to the fuselage belly as well.

7 Airplane and Systems Description



7 Airplane and Systems Description

combustion air

The engine is aspirated with combustion air by a NACA inlet on the right lower side of the cowling. Using a flexible hose, air is routed to the air filter.

The AAPTS sensor for sensing intake air temperature and static pressure is installed into the NACA inlet.

An intake silencer is installed into the air hose. It reduces intake noise and separated coarse particles like snow, rain or ice from the airstream.

The air filter is installed on the manifold adaptor. This adaptor is installed to the engine throttle body and allows attachment of the air hose named before.

Between air filter and throttle body an automatic alternate air valve is installed onto the manifold adaptor- This is an integral element, which two elastic flaps open automatically at a certain suction pressure. This suction pressure is only reached when the air filter is blocked, e.g. when flying in icing rain. In this case the engine is aspirated with clean, but unfiltered air from inside the cowling. The intake cross section is reduced; therefore engine power is reduced by approximately 25%. Nevertheless, safe flight to a suitable airfield is ensured.

cooling

The engine features cylinder cooling by RAM air, liquid cooled cylinder heads and an oil cooler.

Cylinders are cooled with RAM air, which is guided from the right side of the bisected intake underneath the spinner to a cooling hood on the cylinders.

Oil and water coolers are installed underneath the engine and are provided with air by one common air scoop. Two cooling systems are available:

7 Airplane and Systems Description

- LSA cooling system
  recommended for standard operation even in higher ambient temperatures of up to app. 100°F (40°C)

- tropic cooling system
  for operation under tropic conditions

The cooling system is designed for clean oncoming airflow. This is hardly given during ground operations. Therefore, the engine is heating up quickly and is ready for departure really soon. For warming up the engine it is recommended to keep engine speed below 2,500 rpm. Higher engine speeds improve cooling and therefore elongate the warm-up phase.

In situations with high traffic on ground, e.g. taxiing for take-off at a fly-in, coolant and oil temperatures can rise significantly. In such a situation either increase engine speed above 3,000 rpm to cool down the engine or timely shut down engine. There is no danger the engine could not fire-up again just because it is hot.

The water cooling system includes a thermostat that regulates water temperature to app. 190…210°F (90…100°C).

The cooling system is serviced with a mixture of conventional coolant and water. Under all normal operation conditions this cooling system and coolant should be sufficient. Upon delivery the aircraft is serviced with BASF Glysantin G48, mixing ratio is 1 part G48 and 1.5 parts water.

Should cooling temperature be in the critical range, the amount of water may be increased. This reduced coolant temperatures. Pure water shall never be used as the coolant is not only protection against freezing, but also against corrosion and delays boiling.

The content of Glysanting G48 shall never be less than 33% and never more than 60%. Following mixing ratios shall be kept:

7 Airplane and Systems Description

frost-proof up to	for ambient temperatures up to	share Glysantin G48	share water
-4°F (-20°C)	+100°F (+40°C)	1	2
-17°F (-27°C)	+95°F (+35°C)	1	1,5
-36°F (-38°C)	+86°F (+30°C)	1	1

cabin heating system

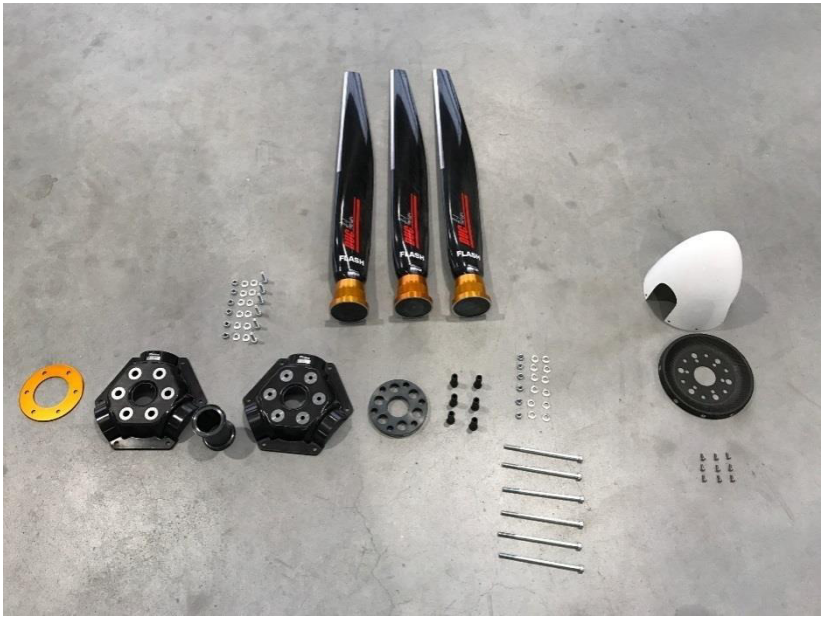
The cabin heating system of the REMOS ***GXiS*** is powered by the water cooling system. A certain share of the coolant is fed to the cabin heat exchanger by a separate water pump. The current of water varies with heating demand and is controlled with the temperature knob in the cockpit. Cabin heating air is fed from the left side of the bisected in let underneath the spinner to the cabin heat exchanger and from there into the cabin.

Conventional aircraft heating systems guide fresh air to a shroud around the silencer and from there into the cabin. The cabin heating system of the REMOS ***GXiS*** is based on hot coolant, hence carbon monoxide cannot enter the cabin through the cabin heating system.

7 Airplane and Systems Description

7.14 Propeller

The aircraft is equipped with the DUC Hélices FLASH propeller. This is a three-blade carbon fiber, ground adjustable propeller, equipped with a plastic spinner.



NOTE	Although the propeller is technically spoken a ground adjustable propeller, the owner/operator may not change prop pitch. The correct pitch is defined in the aircraft TCDS and in the maintenance manual.

7 Airplane and Systems Description

7.15 Throttle and Brakes

Throttle and brakes are operated by one single lever in the center console. The parking brake valve is located adjacent the combined throttle/brake lever on the center console. The combined functionality of the throttle/brakes lever is as follows:

- Power is advanced by pushing the power/brake-lever forward from idle position.
- Pulling the lever backwards beyond the idle stop activated braking whilst the engine keeps idling. Brake pressure is built up and fed simultaneously through the bake lines to the left and right brake cylinders.

Applying brakes while the engine is not in idle position is not possible on the REMOS ***GXiS***. This increases comfort and minimizes wear on the brakes.

A parking brake valve is installed on the center con sole just behind the power/brake lever. Close this valve and apply some, but no excessive brake pressure (this is also the proposed procedure for engine test). Should it reveal that not enough brake pressure has been applied, apply brakes again with the parking brake kept closed.

NOTE	Change brake pads early enough, otherwise the brake cylinder my slide out of its housing and the brake is damaged.

7.16 Flaps

Flaps on the REMOS ***GXiS*** can be set in three positions: up, 15° for take-off and approach and 35° maximum deflection for landing.

Flaps are set with the flap-shaped switch in the center of the instrument panel. The flap setting can be verified with a look outside on the flaps.

Maximum speed is limited depending on flap setting, see section 2.

7 Airplane and Systems Description

7.17 Heating and Ventilation

The upper corners of the windscreen feature fresh air nozzles. These can be adjusted in outlet direction. Airstream is adjusted by rotating the front ring.

Small vents are installed in the door windows. Pulling back the small handle allows opening the vents in two steps.

The center panel features heating and fresh air control. The left knob allows adjusting the airstream whether the right adjusts temperature.

7.18 Seats

The seats can be installed in three different positions. The more forward the seat is installed, the higher is the seating position.

To take out the seat, press in the release knob underneath the seat close to the door about 1…2 inches. Now the seat can be lifted on its outboard side and pulled out to the door.

Installation of the seat is done in reverse order. Slide in the two arresting pins of the seat into the desired position in the center console, push the release knob and push the seat down into its rail at the door. The seat taches once the release knob is released.

NOTE	Always check that the seats are safely locked.

7 Airplane and Systems Description

7.19 Baggage and Luggage

Place light luggage below the luggage nets behind the seats. The max. weight for luggage is 4.4 lbs per side. Make sure the recovery system is not blocked.

Larger baggage must be stowed in the baggage compartment behind the pilot seat. It is accessible with the pilot seat taken out. Baggage is limited to 66lb in this compartment.

Even if volume permits, the max. baggage is defined by weight!

7.20 Cockpit Lighting

The REMOS ***GXiS*** cockpit features an effective LED panel lighting system, which can be dimmed independently from the instrument lights. It is a dazzle-free system designed for Night-VFR use.

The system is activated and dimmed by means of the control knob located on the center stack left of the flap switch.

7.21 External Lights

The external lighting system consists of nav-lights, anti-collision lights (strobes) and a landing light. All lights are using LED technology, conventional light bulbs are not used on the REMOS ***GXiS***.

Nav- and anti-collision lights switch on automatically as long as the ignition key is set into ENGINE position. In case these lights shall intentionally switched off, the circuit breakers need to be released.

The landing light is switched on and off with the toggle switch in the center of the instrument panel, adjacent to the flap selector switch.

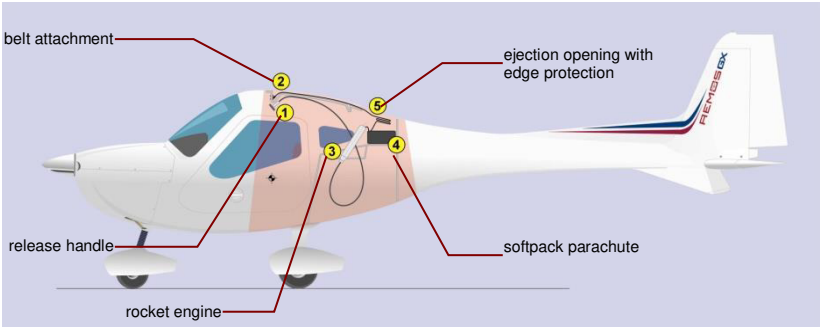
7 Airplane and Systems Description

7.22 Recovery System

The recovery system must be installed according to the approved procedures. The belts of the system are attached to the wing's main spar attachment fittings. They are protected against environmental conditions and are maintenance free. A check is neither required nor possible, as the belts are hidden within the airplane's structure.

The main belt is hanging inside the cabin. In case of an installed recovery system the parachute is connected to this belt by means of a snap hook.

NOTES	Any modification of the installation of the recovery system and any of its components is not authorized and will immediately lead into loss of certification of the airplane. Maintenance during the annual condition inspection must be performed according to the recovery system manufacturer's handbook.



7 Airplane and Systems Description

7.23 Special Equipment and Customizing

The aircraft may be equipped with special or additional equipment on customer's demand. The installation of this equipment must be approved by REMOS and listed in the equipment list.

Avionics other than those mentioned in this manual may be installed on customer's demand. These avionics systems may replace the equipment mentioned in this manual in part or whole. The installation of this equipment must be approved by REMOS and listed in the equipment list.

For operating instructions please refer to the manuals belonging to the equipment installed.

NOTE	The owner of the aircraft is responsible to keep the aircraft airworthy and comply with all applicable regulations.

7 Airplane and Systems Description

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8 Aircraft Ground Handling and Servicing

Table of Content

8 Aircraft Ground Handling and Servicing

8.1 Introduction

This section gives guidance how to service the aircraft and how to handle it on ground. This section does not provide maintenance instructions.

Maintenance procedures are defined in the maintenance manual that is specific to the individual aircraft. All maintenance shall be performed according to the REMOS Service and Maintenance Checklist, available directly at REMOS or on the website www.remos.com

8.2 Checking and Servicing Coolant

The REMOS ***GXiS*** is designed to be easily serviceable. A flap in the upper cowling allows checking the coolant level in the overflow bottle without removing the cowling. Make sure there is app. 3 inch of coolant liquid visible in the overflow bottle.

In case coolant must be added, remove upper cowling and add coolant into the overflow bottle. This can be done with a cold or hot engine.

Approved coolant grade and specification can be obtained from section 8.5 of this manual.

8.3 Checking and Servicing Oil

The REMOS ***GXiS*** is designed to be easily serviceable. Access to all components which have to be lubricated or checked regularly is possible without detaching any panels. A flap in the upper cowling allows access to the oil bottle in order to check and add oil without removing the cowling.

For checking the oil remove the oil tank cap. Prior to oil check turn the propeller by hand in the direction of engine rotation several times to pump oil from the engine into the oil tank. It is essential to build up compression in the combustion chamber. Maintain the pressure for a few seconds to allow the pressure flow around the piston rings into the

8 Aircraft Ground Handling and Servicing

crankcase. The speed of rotation is not important for the pressure transfer into the crankcase. This process is finished when air is returning back to the oil tank and can be noticed by a murmur from the open oil tank.

The oil level should be between the minimum and maximum marking on the oil dipstick. Avoid oil levels exceeding the maximum mark as excess oil will be poured through the venting line.

Difference between “min” and “max” marking is app. 0.5 quarts.

Approved oil grade and specification can be obtained from section 8.6 of this manual.

8.4 Servicing with Fuel

fueling the aircraft

The fuel system is grounded to the aircraft engine and its subsystems. Before fueling have the aircraft grounded on the exhaust pipe underneath the front belly.

The filler cap is not locked. To open the filler cap (on fuselage shoulder behind right wing root) open lid and rotate about 1/8 turn, then pull filler neck out of fuel tank inlet. The filler cap is not connected with the aircraft, stow it separately while fueling the aircraft. The filler neck is sufficient in size to accommodate an AVGAS gas pump nozzle and the venting of the fuel tank allows quick filling.

When fueling the airplane, fuel will spill out of the venting line on the belly of the fuselage once the fuel tank is full. To avoid or minimize environmental pollution, put a vat underneath the venting line. Alternatively, fill up fuel until the sight gauge indicates full and do not add more than two US gallons beyond this point.

8 Aircraft Ground Handling and Servicing

shifting of CG

The fuel tank is located behind the CG, which in return travels aft when filling the tank. Due to the CG shift during fueling it is possible that the aircraft settles on its tail. This might happen especially with the baggage compartment loaded up to its limit and without an occupant. This does not indicate a CG out of range. Nevertheless, always have your weight and balance checked before take-off.

drainining

Since auto fuel contains a significant amount of ethanol nowadays, draining of the fuel system is more and more important. Draining of the aircraft must be performed before moving the aircraft at all. After re-fueling the aircraft, draining is also required. Give the fuel several minutes to rest after filling it up and do not move the aircraft prior to draining.

The drainer is located underneath the belly, just behind the main landing gear. From the outside, only a plastic hose with 0.5 in diameter is visible. To drain the fuel tank, press on the plastic hose. Capture the released fuel and analyze it for water.

If AVGAS or MOGAS is used, water will clearly deposit underneath the fuel. Continue draining until no more water can be detected.

In the case of auto fuel containing ethanol, water can be absorbed by the fuel up to a certain amount, so no water will be detected during draining. If the fuel looks like a milky dispersion, the fuel is saturated with water. In this case, dump all of the fuel, do not use this fuel for flying! After dumping fuel, fill up the fuel tank completely with fuel without ethanol.

To dump fuel, press in the plastic drainer hose and turn it counter-clockwise (as seen from bottom) about ¼ of a turn. To close the drainer, turn the plastic hose back. Be sure the drainer is properly closed. If dust or dirt particles get inside the drainer, the drainer will not close properly. In this case, open the drainer again to clean the drainer.

8 Aircraft Ground Handling and Servicing

When draining, the aircraft take care that no fuel contaminates the environment. Dispose of drained or dumped fuel in an environmental correct manner.

further information

For further information about fuel containing ethanol please refer to the REMOS Notification NOT-001-ethanol-fuel and the ROTAX Service Instruction SI-912i-001.

8 Aircraft Ground Handling and Servicing

8.5 Approved Coolant Grade and Specification

Coolant liquid consists of a mixture of water and Glysantin Protect Plus/G48. There are several coolant fluids on the market and some of them have been released by ROTAX as being suitable. However, REMOS has tested and therefore released only one specific coolant:

specification		conventional coolant with silicate-based corrosion inhibitor mixed with plain water
coolant quantity	**min.**	2.4 qts (2.3 ltr)
	max.	2.9 qts (2.7 ltr)
approved coolant		BASF Glysantin Protect Plus/G48

Keep following mixing ratios (for further information see section 7):

frost-proof up to	for ambient temperatures up to	share Glysantin G48	share water
-4°F (-20°C)	+100°F (+40°C)	1	2
-17°F (-27°C)	+95°F (+35°C)	1	1,5
-36°F (-38°C)	+86°F (+30°C)	1	1

NOTE	The use of waterless coolant is not approved!

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 latest revision for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

8 Aircraft Ground Handling and Servicing

8.6 Approved Oil Grade and Specification

Due to high stresses in the reduction gears, oils with gear additives such as AeroShell Oil Sport Plus 4 are highly recommended. Because of the incorporated friction clutch, oils with friction modifier additives are unsuitable because this could result in clutch slipping during standard operation.

Avoid oils strictly specified for use in Diesel engines. These may not be suitable due to insufficient high temperature properties and additives that may affect the operation of the slipper clutch in the gear box.

There are several oils on the market and some of them have been released by ROTAX as being suitable. However, REMOS has tested and therefore released only one specific oil:

specification		RON 424
viscosity		10W-40
oil quantity	**min.**	3.2 qts (3,0 ltr)
	max.	3.7 qts (3.5 ltr)
approved oil		AeroShell Sport PLUS 4

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 latest revision for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

8 Aircraft Ground Handling and Servicing

8.7 Approved Fuel Grade and Specification

The use of automotive fuel, including such with up to 10% ethanol, is approved for the REMOS ***GXiS***. Premium automotive fuel without ethanol is recommended, though. Such fuel is often referred as MOGAS.

The use of AVGAS, with or without lead, is approved on the REMOS ***GXiS***, though fuel without lead shall be preferred as prevailing use of 100LL reduces oil change interval from 100h to 50h.

Fuel additives under the names of Decalin® and Alcor TCP®, which aid the scavenging of lead deposits, have not been tested by ROTAX or REMOS. Field experience shows that these products have no detrimental effect on the engine, when used in the recommended manner. Always follow the additive's manufacturer instructions especially with regard to health and safety precautions. ROTAX only has field experience with Decalin Runup® and Alcor TCP® brands. Other similar additives are not recommended as ROTAX cannot comment on their suitability.

fuel quantity	**usable**	22 US gal (84 litres)
	total	21 US gal (80 liters)
fuel qualities		Fuel released by actual revision of ROTAX service instruction SI-912i-001, preferably free of ethanol.

NOTE	Please refer to REMOS notification NOT-001 and ROTAX SI-912i-001 latest revision for further information on suitable engine fluids (fuel, oil, cooling liquid, additives, etc). Have a frequent look on www.flyrotax.com and on www.remos.com for the latest information.

8 Aircraft Ground Handling and Servicing

At the time of releasing this POH, following fuels have been found suitable by ROTAX and have been approved by REMOS. This list may be revised by a REMOS NOTIFICATION.

minimum fuel grade		RON 95 (research octane number) MON 87 (motor octane number) AKI 91 (anti knock index)
MOGAS	**European standard**	EN 228 Super EN 228 Super plus
	Canadian standard	none released
	Russian standard	none released
	South African standard	SANS 1598:2006 Clean Fuels (CF2)
	US standard	none released
	Ukrainian standard	DSTU 4839-2007 A-95 Euro A-98 Euro
	Indian standard	IS 2796:2008 MG95
	unleaded brand (*)	GAZPROM B-92 GAZPROM B-92/115
AVGAS	**leaded**	ASTM D910 (AVGAS 100LL)
	unleaded	none released
	unleaded brand (*)	TOTAL AVGAS UL91

(*) Fuels were verified as good by ROTAX at the time of release of this handbook. REMOS and ROTAX reject any liability if the fuel manufacturer changes the composition of the fuel.

8 Aircraft Ground Handling and Servicing

8.8 Towing

Due to the low weight of the REMOS ***GXiS***, it is very easy to move the aircraft by hand on the ground. That's why there is no special equipment for towing provided. Do not attempt under any circumstances to tow the aircraft by attaching any kind of towing equipment to the nose wheel!

Grab the aircraft at the propeller roots just outside the spinner to pull it forward. For pushing the aircraft backward, it is recommended to push at the root of the horizontal tail. Bushing backward is also permitted at the strut. If this is done with open doors, one can grab the rudder pedal to steer backward.

8.9 Tie-Down

To tie down the aircraft it is recommended to use of at least three ropes (left wing, right wing, and tail).

The aircraft is equipped with a metric M8 thread on the lower side of the wing near the wingtips, bolt-in lugs and are provided. If required, bolt in the lugs and tie down the aircraft there. Do not fly with the tie-down lugs installed! The aircraft can also be tied down on the upper strut attachments.

Another rope connection point is provided on the tail skid of the aircraft.

Secure the control stick by use of the safety belt to prevent the control surfaces from being slammed from stop to stop by the wind.

NOTE	The maximum wind velocity to leave a tied down aircraft in the open is 38 kts.

8 Aircraft Ground Handling and Servicing

8.10 Rigging a Folded Aircraft

The REMOS ***GXiS*** is manufactured to the highest quality standards. All components are very precise and provide the maximum aerodynamic quality. It is therefore strongly recommended that you be very careful when assembling or disassembling components such as the wings, stabilizer and other parts. The following instructions will provide you with all the necessary information.

NOTE	Folding or unfolding the wings and attaching or detaching the horizontal tail is a two-person procedure. Do not to try this alone. Severe damage to the aircraft may result.

tools, equipment and preparation

- bolt release tool (provided with the aircraft)
- screwdriver (Philips head)
- grease for bolts

ringing folded wings

1. Withdraw the main wing bolt from the wing and place it nearby. Ensure that the bolt stays clean until remounted.
2. Remove the wing support aid bracket while a second person supports the wing at the wing tip.
3. Now the second person at the wing tip moves the wing slowly forward while ensuring that the wing does not spin around its axis. The weight of the wing is supported by its strut, therefore, the wing must never be lifted or pushed down from the top.
4. When the wing has reached its maximum forward position, the person at the fuselage position must rotate the wing to align both connection latches. Care must be taken that the surface of the wing is not damaged by the fuselage connecting latches.
5. When the connecting latches between the fuselage and wing are aligned, the wing must be lifted by the person at the wing tip. The person at the fuselage must ensure that the flap drive connection fits correctly into the bushing on the fuselage.

8 Aircraft Ground Handling and Servicing

6. If all latches have engaged and the wing fits properly to the fuselage, the main bolt can be pushed into its support tube. To install the main bolt correctly, please use the special installation tool which comes with the aircraft. Now secure the bolt with the securing pin. The person at the wing tip can now release the pressure supporting the wing tip.

7. Inside the cabin, the pushrod quick fasteners MUST properly be connected and secured.

8. **Insecure connection, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!! When in doubt contact your local REMOS dealer or service center.**

Repeat steps 1 thru 8 with second wing.

8 Aircraft Ground Handling and Servicing

installing the horizontal tail

1. Hold the horizontal tail in place so that the bushings in the fuselage match up with those in the horizontal tail.
2. Apply the attachment bolts from left to right into their bushings. The forward bolt is marked by a "V", the rearward bolt by "H".
3. Align the hole of the attachment bolt with the one in the right bushing and secure the bolts with Fokker needles.
4. Connect the cable plug for the electric trim actuator
5. The pushrod quick fasteners MUST be connected properly and secured.

Insecure connection, improper operation of control surfaces or insecurely locked fasteners will lead to loss of control of the aircraft!! When in doubt contact your local REMOS dealer or service center.

6. Attach the tail cover and secure it with the screws provided. Connect the electric jack for the taillight.

After rigging the aircraft perform a preflight check.

8.11 Folding a Rigged Aircraft

To disassemble the aircraft, perform the above described procedures in reverse order.

8 Aircraft Ground Handling and Servicing

8.12 Transportation of the Aircraft

If you intend to store the aircraft with the wings folded, we recommend using REMOS folding wing supports (ask your local dealer). With these supports mounted, the wings are secured properly and handling of the aircraft will be much easier.

When the aircraft has to be moved by trailer, please ask your authorized REMOS dealer for advice. When placed on a trailer in a wrong way, serious damage could result.

In any case, make sure the aircraft is properly fixed and cannot move under any circumstances. The wingtips must be supported, so that the weight of the wing is on the support and not on the strut.

8.13 Cleaning and Care

After every day of flight, it is recommended that you clean the surface of the aircraft using pure water and a soft cotton towel only. Take special care when cleaning the windows to use lots of water to loosen and rinse away bugs and dirt and use with only a soft cotton towel, or otherwise you will create scratches. If cleaned regularly, you may not need to use any special cleaning products. If for any reason special cleaning products need to be used, please contact your dealer for advice. For polishing you can use almost any car polish but be sure that no silicone is used in that product.

8 Aircraft Ground Handling and Servicing

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Pilot Operating Handbook REMOS *GXiS*

ASTM Edition

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REMOS GXiS

POH Supplement – Flight Training

Supplement Flight Training

Table of Content

1 Introduction

This chapter should enable you to familiarize yourself with the flight performance and flight characteristics of the REMOS ***GXiS***. To complete these instructions, please refer to the appropriate sections in the POH.

The following pages describe flight characteristics experienced during various flight configurations and weather conditions:

- Take-off
- Climb
- Cruise
- Stall
- Slip
- Glide
- Descent
- Approach
- Touch down

NOTE	This chapter was introduced as an additional guide to experience the capabilities of the aircraft, It is not a substitute for flight school training! If you are not yet familiar with the aircraft, we strongly recommend that you follow these instructions only when accompanied by a skilled flight instructor.

2 Take-Off

Take-off under normal conditions (comfort take-off)

1. After the pre-flight check has been completed, taxi into position. Standard take-off is with flaps up, on grass select flaps 15°.
2. Elevator trim in take-off position, i.e. 2/3 up.
3. Whenever possible, take-off directly into the wind. The maximum demonstrated crosswind component is 15 kts.
4. Smoothly apply full throttle (fully forward) and maintain runway heading.
5. As the aircraft accelerates, gently pull back on the control stick to raise the nose slightly until the aircraft becomes airborne at about V_{LO} = 45…55 kIAS.
6. Once airborne, slowly release the back pressure on the control stick to allow the airspeed to increase to V_Y = 60 kIAS. Maintain this speed and avoid making any climbing turns until a sufficiently safe altitude has been reached.
7. When at safe altitude, retract the flaps (if they were deployed).

Take-off under tailwind conditions

Similar to normal take-off except that the take-off distance will be extended. Ensure that you determine the take-off distance required to ensure you have sufficient runway length prior to take-off.

Take-Off in rain or with a dirty aircraft

Surface conditions, high density altitude and temperatures, raindrops and bugs affect the performance of the aircraft. Be aware that in these conditions the performance figures will not meet the published figures, as they apply to a clean aircraft under standard atmospheric conditions. Expect a significant drop in performance.

3 Climb

Climb with Best Angle of Climb

With engine set to full power, establish V_X = 50 kIAS for any flap setting. At this airspeed, the aircraft will achieve the steepest angle of climb. During climb it is essential to monitor oil and water (CHT) temperatures.

Climb with Best Rate of Climb

With engine set to full power, establish V_Y = 60 kIAS with flaps up. At this airspeed, the aircraft will achieve the best rate of climb. During climb it is essential to monitor oil and water (CHT) temperatures.

Climb while in cruise

If you wish to climb in cruise, select an airspeed between 70 to 80 kIAS. At these speeds, the aircraft will climb between slower than best rate of climb due to the higher airspeed.

NOTE	It is strongly recommended that you monitor oil and water (CHT) temperatures. Under no circumstances should any of the engine temperature limits be exceeded, otherwise, an engine failure may result.

Climb in rain or with a dirty aircraft

Raindrops and bugs affect the performance of the aircraft. Be aware that in these conditions the performance figures will not meet the published figures, as they apply for a clean aircraft under standard atmospheric conditions. Expect a performance loss of 10% to15%.

4 Cruise

Normal cruise

An economical cruise is flown at engine speeds of 4,400 RPM to 4,800 RPM. High speed cruise is done with engine speeds between 5,000 RPM and 5,400 RPM.

If required, the aircraft is capable of achieving an airspeed up to 119kTAS at full power settings. If doing so, always monitor the engine speed. The maximum continuous engine speed is 5,500 RPM and may only be sustained for 5 minutes. Do not exceed the maximum engine speed of 5,800 RPM.

Cruise in gusty conditions

When flying in gusty weather conditions, the normal operating airspeed V_{NO} = 107 kIAS should not be exceeded for safety reasons. The REMOS ***GXiS*** offers very stable flight characteristics even in heavy weather conditions.

Cruise in rain or with dirty aircraft

Raindrops and bugs affect the performance of the aircraft. Be aware that in these conditions the performance figures will not meet the published figures, as they apply for a clean aircraft under standard atmospheric conditions. Expect a performance loss of 10% to15%. When flying in rain always activate the carburetor heat.

5 Stall

The REMOS ***GXiS*** is fully controllable when flying at a wide range of airspeeds. At airspeeds below the lower speed limit, the aircraft will display very stable stall characteristics. If the airspeed is reduced by the pilot gradually pulling back on the control stick, aerodynamic buffet will occur, indicating that the aircraft is approaching the stall speed. Should the aircraft then be allowed to stall, the aircraft still will remain controllable. The aircraft can be stalled with flaps both extended or retracted.

Stall without power is very gentle. Depending on actual c.g. no stall occurs, although the elevator is pulled fully back. Stall with power may be a little more abrupt. If the aircraft is allowed to fully stall with full power, one wing may drop.

Conducting a stall maneuver does not require special skills. However, if you are not yet familiar with the aircraft, we recommend you do this exercise only when accompanied by an experienced flight instructor.

6 Slip

The slip is a very stable flight condition and is also very easy to perform. This maneuver is used to increase aerodynamic drag to enable a high rate of descent.

Before establishing a slip, you have to ensure that the airspeed is within the required limits. The operating maneuvering speed may not be exceeded. For 1,320lb AUW this airspeed is V_O = 88 kIAS and when flying at 880lb it is just V_O = 59 kIAS, for any weight in between, the operating maneuvering speed may be interpolated linearly. If performing a slip with flaps extended, a maximum indicated airspeed of V_{FE}= 78 kIAS may not be exceeded.

You will achieve the maximum rate of descent when slipping with flaps fully extended and flying at V_{FE}. Steepest decent, however is achieved with reduced airspeed. Do not fly airspeeds lower than recommended for approach (see section 4).

Conducting a slip does not require special skills. However, if you are not yet familiar with the aircraft, we recommend to do this exercise only when accompanied by an experienced flight instructor.

7 Gliding

The aircraft can glide well with the engine off. Best glide ratios are achieved within an indicated airspeed of 60 kIAS. These speeds will establish a glide ratio of about 1:11 with the flaps retracted (0° position).

8 Descent

When descending from level flight it is important to monitor engine temperatures. During descent, the temperatures will decrease. The water cooling system has a thermostat installed, hence the water temperature will not drop too much. However, the oil system does not has a thermostat installed, therefore some power may be needed to maintain safe oil temperatures.

9 Approach

Approach under normal conditions

Always land on the most suitable runway, taking into consideration wind direction, length of runway, obstacles on the approach, etc. It is recommended to fly the approach at 60 kIAS. The recommended target airspeed (airspeed on short final in app. 50ft altitude) for approach at MTOW (1,320 lb) is 60 kIAS and decreases down to 50 kIAS with an aircraft weight of only 1,000 lb.

Approach under tailwind conditions

When on final approach with a tailwind component, the REMOS ***GXiS*** does not require different approach or flare procedures than those used in calm or headwind conditions. However, you do have to keep in mind that the landing distance will increase significantly.

Approach in crosswind conditions

Crosswinds do not have a big effect on the flight characteristics of the REMOS ***GXiS***, as long as the cross-wind component stays within the maximum demonstrated speed of up to 15 kts. Performing a crosswind landing does not require above-average piloting skills. Nevertheless, if not yet familiar with the aircraft, we recommend that you perform crosswind landings only when accompanied by an experienced flight instructor until sufficient experience has been gained.

Approach in turbulent weather conditions

It is recommended to fly the approach at 60 kIAS. The recommended target airspeed (airspeed on short final in app. 50ft altitude) for approach at MTOW (1,320 lb) is 52 kIAS and decreases down to 45 kIAS with an aircraft weight of only 1,000 lb.

9 Approach

Approach in rain showers

Raindrops on the wing surfaces influence the aerodynamic characteristics of the airfoil; drag will increase while lift decreases. The airfoil used on the REMOS ***GXiS*** features stable flight characteristics in rainy conditions. Therefore, there are no special advisories for flights within rain. we recommend that you operate the aircraft as you would in turbulent weather conditions (see "Approach in turbulent weather conditions). When flying in rain always activate the carburetor heat.

Approach in the slip configuration

If a high descent rate is required on final, we recommend that you conduct a slip maneuver. Conducting an approach in the slip configuration does not require special skills, however, if you are not yet familiar with the aircraft we recommend that you do this exercise only when accompanied by an experienced flight instructor.

Advise

In landing configuration, the airplane is very draggy and the propeller provides additional braking. Therefore, airspeed bleeds off quickly during flare.

It is easy to misjudge altitude during flare. When flare is initiated too high and airspeed bleeds away the airplane may stall or bounce.

In doubt or without an urge to achieve shortest landing distance as possible, or when not yet familiar with the REMOS ***GXiS***, it is recommended to keep a higher target airspeed. This will give you a reserve airspeed to balance any unexpected deviations in altitude and heading.

Rule of thumb: Keep it at sixty knots, or use all your guts.

In more gusty conditions it may be beneficial to stabilize the glide slope by keeping the flap setting to the 15° position.

10 Touchdown

The aircraft has very good low speed characteristics and so is very controllable all the way through the landing phase. After a good approach has been conducted, the REMOS ***GXiS*** does not require much action to land with a perfect touch down. It is important to establish a safe and stable airspeed during the approach.

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REMOS GXiS

POH Supplement – Continued Airworthiness

Continued Airworthiness

Table of Content

1 Purpose

Continued Airworthiness is everything that is required to keep an aircraft in a safe condition to fly. This does not only include the technical part like maintenance and annual condition inspection. It also includes update of documentation, e.g. Pilot Operating Handbook, issuing repair instructions and repair approvals, change on equipment and feedback of the customer to the manufacturer. Especially the latter one is really important as this is the only way that the manufacturer gets to know of potential issues of safety of flight.

In some areas the procedures of the continued airworthiness system of an LSA differ significantly from the ones of a standard category aircraft. This POH supplement shall give guidance to the customer how to act correctly in the continued airworthiness system and how to keep his aircraft airworthy and legal to fly.

2 Continued Airworthiness System

REMOS AG shall be informed about potential issues of safety of flight or service difficulties by means of the Customer Feedback Form G3-8 MA CA 0050. This document is attached to the maintenance manual and is also available on the website www.remos.com. If a customer does not inform the manufacturer by means of this form, REMOS AG also accepts any way of information as long as it contains at least following information:

- aircraft make and model
- serial number and callsign
- propeller make and model
- total time of aircraft and engine
- use of aircraft: private or commercial
- name and contact data of reporting person
- description of potential issue of safety or service difficulty

Once the customer has notified REMOS AG, the information will be forwarded immediately to the Head of Design by means of the customer feedback form.

Shall the customer opt for e-mail notification via service@remos.com then this e-mail will immediately forwarded to the Head of Design.

Based on the information given in the customer feedback form, the Head of Design will perform a risk assessment. In most cases, the Head of Design will contact the customer to collect more and precise information. This includes eventual cooperation with authorities, e.g. in case of an accident.

2 Continued Airworthiness System

A risk assessment consists of:

- cause of accident/incident by pilot error or technical background
- safety effect determination
- risk assessment evaluation
- decision of required alerting of the public
- decision of corrective action

The continued airworthiness system of REMOS AG does not only cover events that have occurred during operation of the aircraft. Proposals for improvements or corrections, service difficulties, findings during maintenance events or annual condition inspections are also covered by the continued airworthiness system. In case that service staff identifies a potential safety of flight issue or a real service/maintenance problem, a customer feedback form must be filled out and handed forward to the Head of Design.

The customer shall not be afraid of consequences like revoking licenses. This is not the intention and not the job of an aircraft manufacturer. If there is no immediate danger for other customers or the flying public, REMOS AG will never notify authorities.

3 Owner/Operator Responsibilities

During handover of the aircraft the owner/operator is introduced into the continued airworthiness system of REMOS AG. The customer is informed about the following:

- The maintenance handbook provides all information that the customer needs to comply with the regulations, especially with continued airworthiness and maintenance.
- It is the owner/operator's responsibility to provide the manufacturer with current contact information. Only with current contact information the manufacturer is able to contact the customer in case service bulletins or safety alerts need to be sent out.
- In case a safety of flight issue or significant service difficulty reveals, it is the responsibility of the owner/operator to inform the manufacturer. The owner/operator shall not seek for solutions on his own and modify the aircraft I a way that is not covered by the maintenance manual.
- Shall the manufacturer release a notice of corrective action it is the responsibility of the owner/operator to comply with it. Furthermore the owner/operator has the responsibility to comply with all applicable aviation authority regulations in regard to maintaining the airworthiness of the LSA airplane.
- In case the manufacturer has released a notice of corrective action the owner complete it within the timeframe defined in the notice. If there is no timeframe defined, than the latest time to comply with it is the next annual condition inspection.
- In case the owner/operator does not comply with the maintenance manual and/or releases of corrective action, the LSA is not in compliance with the accepted ASTM consensus standards. This means that the aircraft is not airworthy and operating this aircraft is not legal. In case the responsible aviation authority (in case of the USA this is FAA) gets to know about this the owner/operator may be subject to regulatory action by the authority.

3 Owner/Operator Responsibilities

This information is provided by means of the customer commitment form, which is part of the maintenance manual. The owner/operator shall sign this form and send it to REMOS AG. On this form the owner/operator shall also provide the manufacturer with current contact data.

If the aircraft is sold to another customer a new customer commitment form needs to be signed. This form will have the identical document number added by a dash and a counting number starting with 1 to make clear that this new form is a new revision.

4 Releases of Notices to the Public

There are three different levels of notices to the public, each representing a different level of importance:

- SAFETY ALERT
  will be issued in case of an urgent safety of flight situations. Potentially an emergency safety of flight action is required in this case. All safety alerts will be published on the website www.remos.com which is the central means of communication of REMOS AG to its customers.

- SERVICE BULLETIN
  will be issued in case a corrective action, a mandatory inspection or a modification of the aircraft is required. An immediate action is not required but a future action is required or recommended. All service bulletins will be published on the website www.remos.com which is the central means of communication of REMOS AG to its customers.

- NOTIFICATION
  will be issued in case service information is required. The public is notified via the website www.remos.com which is the central means of communication of REMOS AG to its customers.

5 Documentation Update

Any documentation update will be released on the website www.remos.com Owner/operators will not be informed by postal mail, unless such a documentation update is mandatory for safety of flight and is released by a safety alert or a service bulletin. Examples for documentation updates are new revisions of:

- Pilot Operating Handbook
- Service and Maintenance Checklist
- Annual Condition Inspection Checklist
- Type Design Datasheet

For copyright reasons a new revision of the maintenance handbook is not available on the website, but only on request as hardcopy.

6 Maintenance and Annual Cond. Inspection

Maintenance intervals of all REMOS aircraft are 25h for the first maintenance event, followed by 100h inspections. In case that AVGAS 100LL is used for more than 30% of the time, oil change interval is reduced to 50h.
REMOS AG hereby defines the following persons that may perform maintenance and repair as defined in the Maintenance Manual including 25h and 100h inspection:

- Owner/operator: with Sport Pilot Certificate or higher: preventative maintenance, or line maintenance.
- LSA Repairman Maintenance: preventative maintenance, line maintenance, or heavy maintenance.
- A&P Mechanic: preventative, maintenance, line maintenance, or heavy maintenance.
- Part 145 Repair Station with appropriate ratings: preventative maintenance, line maintenance, or heavy maintenance

REMOS AG hereby defines the following persons that may perform the annual condition inspection:

- LSA Repairman Maintenance
- A&P Mechanic
- Part 145 Repair Station with appropriate ratings

Always use REMOS documents for your maintenance events and the annual condition inspection. These documents are available on the website www.remos.com

7 Modifications or Change of Equipment

Certified equipment is listed in the maintenance manual. Only listed equipment may be installed on the aircraft without notifying REMOS AG. In case equipment that is described in the maintenance manual shall be exchanged on the aircraft, it is required to:

- update equipment list
- weight and balance

Modifying the aircraft or changing equipment may be performed by any competent person. Updating the equipment list and the weight and balance report may only be performed by

- LSA Repairman Maintenance
- A&P Mechanic
- Part 145 Repair Station with appropriate ratings

Any change that is not documented may not be performed on the aircraft without having it certified by REMOS AG. Nevertheless, it is possible to do so. Notify REMOS AG prior to the intended change of the aircraft. Engineering department will then decide which kind of documentation is required and will either prepare them or will ask the customer to have this documentation prepared. Followed by this a Letter of Approval (LOA) will be prepared that needs to be signed by either an A&P Mechanic or a Part 145 Repair Station with appropriate ratings after the work is accomplished. Then this LOA will be signed by the Head of Design of REMOS AG and handed out to the customer. This procedure will be performed by e-mail.

The extent of work cannot generally be defined; it is always an individual project. Working hours of the engineering department will be charged by the hour according to actual pricelists.

This procedure is not intended and built up for the manufacturer to make money of it. In contrary, due to running projects within engineering department it usually costs more to prepare the documentation than it is charged for. This procedure is defined in the regulations, in this case ASTM F2483.

7 Modifications or Change of Equipment

Without having updated the equipment list and weight and balance or not having changes approved by the manufacturer that are not part of the maintenance manual, the aircraft is considered not airworthy and unsafe to fly. It is not legal to operate an aircraft without a current equipment list and weight and balance and required approvals by the manufacturer. Make sure the change of equipment is signed off in the aircraft's logbook and is entered in the aircraft's permanent record.

8 Repairs

Repairs are handled similarly as change of equipment. Any repair that is performed with standard tools by replacing damaged parts may be performed by any competent person. To release the aircraft back to service the repair must be signed off by

- Owner/Operator with at least a Sport Pilot Licence
- LSA Repairman Maintenance
- A&P Mechanic
- Part 145 Repair Station with appropriate ratings

It is recommended to perform a standard maintenance event and an annual condition inspection once a repair has been performed that could affect safety of flight.
Structural repairs that are described in the maintenance manual are handled identically. In case the damage exceeds the described ones, an individual repair instruction is required. In this case notify REMOS AG by means of the customer feedback form. Engineering will then prepare individual and precise repair instructions. Repairing a composite aircraft is completely different from repairing a metal aircraft or a composite boat. Therefore only competent persons may perform the work. REMOS AG hereby defines the following persons that may perform the repair:

- LSA Repairman Maintenance with composite knowledge
- A&P Mechanic with composite knowledge
- Part 145 Repair Station with appropriate ratings

Notify REMOS AG prior to the intended repair. Engineering department will then decide which kind of repair and documentation is required and will either prepare them or will ask the customer to have this documentation prepared. Followed by this a Repair Approval (LOA) will be prepared that needs to be signed by either an A&P Mechanic or a Part 145 Repair Station with appropriate ratings after the work is accomplished. Then this Repair Approval will be signed by the Head of Design of REMOS AG and handed out to the customer. This procedure will be performed by e-mail.

8 Repairs

The extent of work cannot generally be defined; it is always an individual project. Working hours of the engineering department will be charged by the hour according to actual pricelists.
This procedure is not intended and built up for the manufacturer to make money of it. In contrary, due to running projects within engineering department it usually costs more to prepare the documentation than it is charged for. This procedure is defined in the regulations, in this case ASTM F2483.

Without having the repair performed and approved according to the manufacturer's instruction the aircraft is considered not airworthy and unsafe to fly. It is not legal to operate an aircraft without current documentation and required approvals by the manufacturer. Make sure the repair is signed off in the aircraft's logbook and is entered in the aircraft's permanent record.

9 Contact Data

The manufacturer of the REMOS aircraft and the only reliable and legal source for continued airworthiness is

REMOS AG

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D-17309 Pasewalk

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Fax: +49-3973-225519-99

Email: service@remos.com
Web: www.remos.com

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REMOS GXiS

POH Supplement – Abbreviated Checklists

Supplement Abbreviated Checklists

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Supplement Abbreviated Checklists

Purpose

No matter if the airplane is operated according to non-commercial or commercial operating regulations, the pilot is obliged to use cockpit checklists.

The checklists provided in the POH sections 3 (emergency procedures) and 4 (normal procedures) are very comprehensive and therefore sometimes a bit inconvenient to use. Therefore, third parties often offer abbreviated checklists that are often used in the cockpit. These checklists are neither approved nor controlled by the airplane manufacturer and therefore not necessarily complete or correct.

NOTE	REMOS encourages the pilot NOT to use third party abbreviated checklists, but checklists released by REMOS only.

This POH supplement section 10 offers abbreviated checklists released by REMOS. By using these abbreviated checklist, the pilot in command acknowledges that the content is abbreviated and might be incomplete. Always refer to sections 3 and 4 for full version of these checklists.

NOTE	Always refer to POH sections 3 and 4 for full version of these checklists.

Supplement Abbreviated Checklists

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Supplement Abbreviated Checklists

CHECK BEFORE ENGINE START
preflight check.....OK
seat belts .....FASTENED
brake.....SET

ENGINE START
ignition key..... AVIONIC
avionic.....SET UP
ignition key..... ENGINE
engine start ..... START
oil pressure .....min. 2.0 bar

ENGINE RUN-UP
oil temperature.....min. 50°C
engine speed .....4.000 rpm
engine TEST.....TEST
rpm drop.....max. 180 rpm
main fuel pump .....OK

TAKE-OFF
departure ..... BRIEFED
flaps .....CLEAN
engine ..... FULL POWER
lift-off ..... 45 kIAS
climb..... 60 kIAS

CLIMB
flaps .....CLEAN
engine ..... FULL POWER
best climb..... 60 kIAS

CRUISE
power setting .....AS R'QRD
engine parameters.....OK

DESCENT
flaps .....CLEAN
power setting .....AS R'QRD

LANDING
approach..... BRIEFED
flaps .....DOWN
approach speed.....60 KIAS

SHUTDOWN
brake..... SET
ignition key.....OFF

AIRSPEED LIMITATIONS for MTOW
demonstrated x-wind ..... 15 kts
stallspeed flaps 35° ..... 40 kIAS
stallspeed flaps clean .... 44 kIAS
best angle of climb..... 50 kIAS
best rate of climb ..... 60 kIAS
max. flap extended ..... 78 kIAS
max. maneuvering ..... 88 kIAS
max. turbulence ..... 107 kIAS
never exceed speed ... 135 kTAS

FUEL
total ..... 84 ltr
usable ..... 80 ltr
grade.....AVGAS, MOGAS, E10

ENGINE PARAMETERS
RPM warmup.....2.000 rpm
max. cont. speed. .....5.500 rpm
max. speed .....5.800 rpm
max. cooling temp.....120°C
min oil temp. .....50°C
max. oil temp. .....130°C
max. EGT.....950°C
oil pressure .....2.0 … 5.0 bar
fuel pressure .....2.8 … 3.2 bar

THIS IS AN ABBREVIATED CHECKLIST. REFER TO PILOT OPERATING HANDBOOK SECTION 4 FOR FULL VERSION.

Supplement Abbreviated Checklists

ABBREVIATED EMERGENCY CHECKLIST

AVIATE – NAVIGATE - COMMUNICATE

DECLARE EMERGENCY

SPIN RECOVERY
engine ..... IDLE
aileron ..... NEUTRAL
rudder..... OPPOSITE SPIN
elevator ..... PUSH

EMERGENCY DESCENT
engine ..... IDLE
flaps ..... CLEAN
max. turbulence ..... 107 kIAS
never exceed speed ... 135 kTAS

ENGINE STOPPAGE ON TAKE-OFF
brakes .....AS R'QRD
ignition key .....OFF

ENGINE STOPPAGE ON CLIMB-OUT
ignition key .....OFF
landing ..... STRAIGHT AHEAD

ENGINE STOPPAGE IN FLIGHT
emergency switch ..... START
SkyView ..... STAY ON
landing ..... SUITABLE AIRFIELD

GENERATOR FAILURE
emergency switch .....ON
SkyView ..... STAY ON
landing light.....OFF
system ..... TROUBLESHOOT

ENGINE FIRE ON GROUND
ignition key .....OFF
brakes .....AS R'QRD
vacate aircraft .... IMMEDIATELY

ENGINE FIRE IN FLIGHT
ignition key .....OFF
sideslip .....AS R'QRD
landing EMERGENCY LANDING

EMERGENCY LANDING
landing site..... IDENTIFY
direction of wind..... IDENTIFY
flaps .....DOWN
ignition key .....OFF
approach speed .....60 KIAS
vacate aircraft .... IMMEDIATELY

THIS IS AN ABBREVIATED CHECKLIST. REFER TO PILOT OPERATING HANDBOOK SECTION 3 FOR FULL VERSION.

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