



19, rue de l'Aviation 21121 DAROIS FRANCE ☎: (33) 03 80 35 60 62 Fax: (33) 03 80 35 60 63

Operation

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FLIGHT MANUAL 100 HP MCR SPORTSTER

Serial number	
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43	11/10/02	N. BOUCHOUT		C. BELIN	

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0. WARNING

THIS DOCUMENT IS PROVIDED FOR INFORMATION ONLY. IT IS THE OWNER'S RESPONSIBILITY TO CHECK THE EXACTNESS OF THE PRESENT MATERIAL WITH RESPECT TO HIS/HER ACTUAL AIRCRAFT.

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1. FLIGHT MANUAL

Model: *100 HP MCR SPORTSTER Version*

Serial Number:

Registration:

Document Number:

Date of publication:

The pages identified by "Appr." are approved by:

Signature:

Authority:

Stamp:

Date of the approval:

Certain details must be added by the builder to reflect the exact configuration and installation of motor, propeller and instrumentation.

**THIS PLANE MUST ALWAYS BE USED IN ACCORDANCE WITH THE INFORMATION AND LIMITATIONS
CONTAINED IN THIS DOCUMENT**

**THIS PLANE WAS BUILT FROM A KIT.
IT MUST NOT BE USED FOR HIRE OR REWARD**

**THE USER IS RESPONSIBLE FOR THE USE OF THE AIRCRAFT, ENSURING THAT IT COMPLIES WITH
REGULATIONS AND INFORMING ANY PASSENGERS OF THE LIMITATIONS OF THE AIRCRAFT IN RESPECT OF
ITS AIRWORTHINESS.**

1.1. REGISTRATION OF THE OVERHAULS

All amendments to the document must be entered in the table below, except weighing data, and all cases of Approved Sections, aimed and approved by the Authority responsible for Airworthiness.

The new text or amendment in the revised pages will be indicated by a dark vertical line in the left margin and the N° of the amendment and the date will be indicated on the left at the bottom of the page.

Revision N°	Affected section	Affected pages	Date	Approval	Date	Date of insertion	Signed

1.2. LIST OF PAGES

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2. GENERAL

2.1. INTRODUCTION

The flight manual for the aircraft was designed to provide pilots and instructors with the information necessary to efficiently and safely fly this very light aircraft.

This manual contains information which it is imperative to give to pilots of the aircraft. It also contains supplementary information given by the builder.

The builder should complete the information appropriate to the particular configuration and selection of options.

A special place must be reserved on the luggage compartment floor in order to store this flight manual.

2.2. BASIS OF CERTIFICATION

This type of aircraft was approved by conforming to the regulations applicable to kit aircraft, comprising the amendment and the Certificate of Restricted Airworthiness N°..... , which was delivered on the

Category of Airworthiness: Restricted (Kit)

Basis of Certification and/ or acceptance:

2.3. WARNINGS, ALARMS AND NOTES

The following definitions apply to **Warnings, Alarms & Notes** used in the flight manual.

ALARM:

Signifies that a failure to observe the corresponding procedures will lead to an immediate or important deterioration of the safety of flight.

WARNING:

Signifies that a failure to observe the corresponding procedures will lead to a minor or major deterioration of the long term safety of flight.

NOTE:

Attract the attention to a condition which although not particularly related to the security of flight is important or unusual.

2.4. SPECIFICATION

Kit aircraft of the type: Dyn'Aéro 100 HP MCR SPORTSTER

Cantilever low-mounted wing

Carbon structure with control surface skins of light alloy.

Engine and Propeller

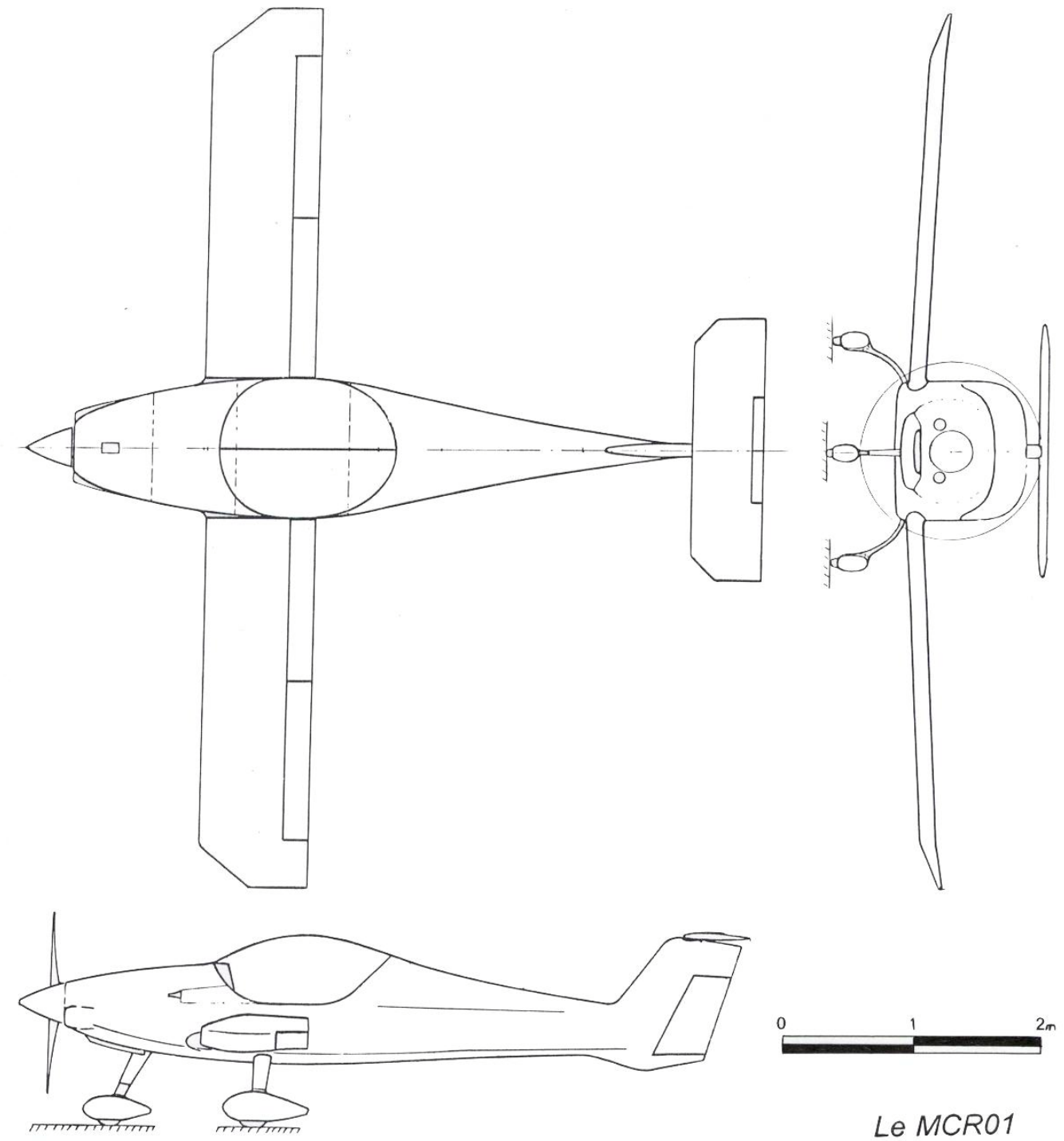
(Completed by the builder dependant on configuration and options)

Span	6.63	m
Wing surface	5.2	[m ²]
Aspect ratio	8.45	
Cabin width	1.12	m
Fuel capacity	80	l
Length	5.48	m
Height	1.43	m

2.5. CONTROL SURFACE DEFLECTIONS

Ailerons	- 5° (^{±1}) trailing edge upwards +3° (^{±1}) trailing edge downwards
Flaps	0-25° (⁺⁰⁻¹)
Rudder	20° (⁻⁰⁺⁵) in both directions (left and right)
Tailplane	-10° (⁺⁰⁻²) trailing edge upwards +3.5° (⁻⁰⁺¹) trailing edge downwards

2.6. 3 VIEW DIAGRAM



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3. LIMITATIONS

3.1. INTRODUCTION

This section includes operating limitations, reference marks of instruments and placards necessary for the safe use of the aircraft, its engine, standard systems and equipment.

The limitations included in this section and in section 9 were approved by

The builder must respect these limitations.

3.2. AIR SPEED

Air speed limits and operational significance.

	Air Speed	(IAS) kts	Remarks
VNE	Never exceed speed	173	<u>V</u> elocity you <u>N</u> ever <u>E</u> xceed, in any case
VNO	Maximum structural cruising speed	143	Do not exceed this <u>V</u> elocity in <u>N</u> ormal <u>O</u> perations, except in calm air, and then, only with great cautions
VA	Manoeuvring speed	127	Do not apply abrupt or full-range control deflections beyond this speed, because under certain conditions, the Aircraft might be exposed to excessive loads.
VFE	Flap extended speed	92	Do not exceed this <u>V</u> elocity with <u>F</u> laps <u>E</u> xtended for a corresponding given flap deflexion.

ALARM : Vne of all Aircraft equipped with BRS-5 1050 parachute is limited to 162 knots (refer to BRS user's manual).

3.3. INDICATED AIRSPEEDS INSTRUMENTATION MARKINGS

Air speed indicator reference marks and colour coding.

Marking	IAS kts	Significance
White segment	49 – 92	Speed range with flaps extended
Green segment	65 – 143	Speed range for normal operational flight
Yellow segment	143 – 173	Manoeuvres must be carried out with caution and Only in conditions of calm air
Red segment	173	Maximal speed for all operation

3.4. ENGINE INSTALLATION

Only following engine-propeller configurations described in this manual are authorised :

3.4.1. Rotax 912 S

Engine manufacturer	Rotax
Engine model	912 S
Maximum power	
Take off	100 HP
Continuous	92 HP
Maximum manifold pressure	
Take off	27.5" Hg / 930 mbar
!	27 Hg / 920 mbar
Maximum engine RPM	
Take off	5800 RPM
Continuous	5500 RPM
Maximum cylinder head temperature	135 °C / 275 °F
Maximum oil temperature	130 °C / 266 °F
Oil pressure	
minimum:	0.8 Bar
maximum:	7 Bar
Fuel pressure	
minimum:	0.15 Bar
maximum:	0.40 Bar
Octane grade of fuel	Refer to Rotax manual
Oil quality	Refer to Rotax manual

3.4.2. Rotax 914

Engine manufacturer	Rotax
Engine model	914
Maximum power	
Take off	110 HP
Continuous	100 HP
Maximum manifold pressure	
Take off	38.4" Hg / 1300 mbar
Continuous	34 Hg / 1150 mbar
Maximum engine RPM	
Take off	5800 RPM
Continuous	5500 RPM
Maximum cylinder head temperature	135 °C / 275 °F
Maximum oil temperature	130 °C / 266 °F
Oil pressure	
minimum:	1.5 Bar
maximum:	7 Bar
Fuel pressure	
minimum:	manifold pressure + 0.15 Bar
maximum:	manifold pressure + 0.40 Bar
Octane grade of fuel	Refer to Rotax manual
Oil quality	Refer to Rotax manual

3.4.3. Variable pitch MT Propeller

Propeller manufacturer :	MT Propeller
Model of propeller:	MTV-7-A/156-122
Type:	Electrical variable pitch
Propeller diameter	1.56 m
Reference pitch setting normal:	Variable pitch
Maximum allowed Propeller rotation speed	2400 rpm
Torque	4.6 daN.m

Propeller manufacturer :	MT Propeller
Model of propeller:	MTV-6-A/156-122
Type:	Hydraulic variable pitch
Propeller diameter	1.56 m
Reference pitch setting normal:	Variable pitch
Maximum allowed Propeller rotation speed	2400 rpm
Torque	4.6 daN.m

3.4.4. Fixed pitch MT Propeller to be used with Rotax 912 S only !!!!

Propeller manufacturer :	MT Propeller
Model of propeller:	MT 156-220-2M
Type:	Two blade fixed pitch
Propeller diameter	1.56 m
Reference pitch setting normal:	at 75% of radius 220 mm
Maximum allowed Propeller rotation speed	2400 rpm
Torque	1.6 daN.m

3.5. ENGINE INSTALLATION INSTRUMENTATION AND LIMITS

3.5.1. Rotax 912 S engine

ROTAX 912 S

Instrument	Units	Red Line Minium Limit	Orange arc Warning Range	Green arc Normal Range	Orange arc Warning Range	Red Line Maximum Limit
Tachometer	Tr/Min		1400 à 3500	3500 à 5500	5500 à 5800	5800
Oil temperature	°C	50 °C	50 à 90 °C	90 à 100 °C	110 à 130 °C	130 °C
	°F	122 °F	122 à 194 °F	194 à 212 °F	230 à 266 °F	266 °F
Cylinder head Temperature	°C	50 °C	50 à 80 °C	80 à 120 °C	120 à 135 °C	135 °C
	°F	122 °F	122 à 176 °F	176 à 248 °F	248 à 275 °F	275 °F
Fuel pressure	Bar	0.15 Bar		0.15 à 0.40 Bar		0.40 Bar
	PSI	2.2 PSI		2.2 à 5.8 PSI		5.8 PSI
Oil pressure	Bar	0.8 Bars		2 à 5 Bars	5 à 7 Bars	7 Bars
Fuel capacity	Litre	1 litre				88 Litres

NOTE CAREFULLY :

DO NOT SWITCH OFF THE MAIN SWITCH BEFORE TURNING OFF THE ENGINE.

NEVER RUN THE ENGINE HIGHER THAN 5500 RPM LONGER DURING MORE THAN 5 CONTINUOUS MINUTES.

3.5.2. Rotax 914

ROTAX 914

Instrument	Units	Red Line Minium Limit	Orange arc Warning Range	Green arc Normal Range	Orange arc Warning Range	Red Line Maximum Limit
Tachometer	Tr/Min		1400 à 3500	3500 à 5500	5500 à 5800	5800
Oil temperature	°C	50 °C	50 à 90 °C	90 à 110 °C	110 à 130 °C	130 °C
	°F	122 °F	122 à 194 °F	194 à 230 °F	230 à 266 °F	266 °F
Cylinder head Temperature	°C	50 °C	50 à 80 °C	80 à 120 °C	120 à 135 °C	135 °C
	°F	122 °F	122 à 176 °F	176 à 248 °F	248 à 275 °F	275 °F
Fuel pressure	Bar	Pression adm. + 0.15 Bar		pression adm. + 0.15 à 0.35 Bar		Pression adm. + 0.35 Bar
	PSI	2.2 PSI		2.2 à 5.08 PSI		5.08 PSI
Oil pressure	Bar	1.5 Bars		1.5 à 5 Bars	5 à 7 Bars	7 Bars
Fuel capacity	Litre	1 litre				88 Litres

3.6. INSTRUMENT MARKINGS

To be completed by the builder according to his particular installation

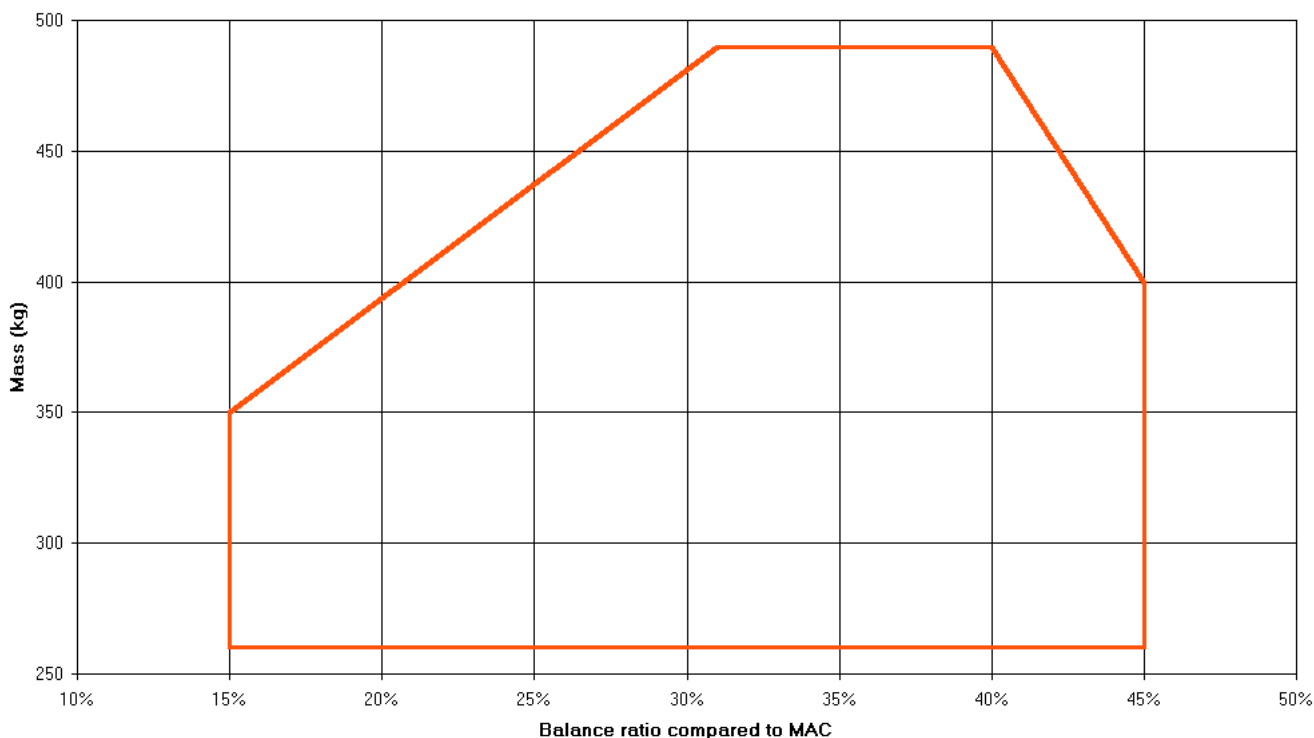
3.7. WEIGHTS

Maximum take-off weight:	490 kg
Maximum landing weight:	490 kg
Maximum weight without fuel:	426 kg

3.8. WEIGHT AND BALANCE

Range of centre of gravity 15 to 45% M.A.C.

Given reference M.A.C.



M.A.C. = 800 mm; reference datum :13.5 mm ahead of left wing leading-edge

3.9. APPROVED MANOEUVRES

THIS AIRCRAFT IS CERTIFIED IN THE NORMAL CATEGORY.

AEROBATIC FLIGHT IS PROHIBITED.

SPINS ARE PROHIBITED.

3.10. MANOEUVRING LOAD FACTORS

+3.8/-1.5g

3.11. MINIMUM FLIGHT CREW

Minimum flight crew is one pilot.

Two people (1 pilot + 1 passenger) maximum.

3.12. TYPES OF FLIGHT

VFR / DAY.

3.13. FUEL

Total Fuel:	88 l
Useable Fuel:	87 l
Unusable Fuel:	1 l

Fuel Octane approved refer to engine manufacturer manuals

3.14. MAXIMUM NUMBER OF SEATS

Two

3.15. TYRE PRESSURE

Front wheel :	280 mm diameter	2.2 bar
	210 mm diameter	3 bar
Main wheels	280 mm diameter	2.2 bar

3.16. INSTRUMENT PANEL WEIGHT LIMITATION

Maximum weight of instrument panel when equipped and wired = 15 kg

3.17. SOLO FLIGHT

For each solo flight, the unused harness must be locked.

3.18. OTHER LIMITATIONS

USE FOR HIRE OR REWARD - PROHIBITED.

THIS AIRCRAFT MUST BE USED STRICTLY IN ACCORDANCE WITH THE LEGISLATION APPROPRIATE FOR KIT AIRCRAFT.

3.19. PLACARDS

3.19.1. During initial experimentation period

Minimum 5 cm high placard "EXPERIMENTAL" must be placed next to each cabin openings.

3.19.2. In front of pilot view

Written in minimum 6 mm high letters and so that both pilots can easily read it, the following placard :

**THE COMPLIANCE OF THIS AIRCRAFT WITH A
CERTIFICATE OF AIRWORTHINESS HAS NOT BEEN
DEMONSTRATED.**

USE FOR HIRE OR REWARD PROHIBITED.

**AEROBATIC FLIGHT AND INTENTIONAL SPINS ARE
PROHIBITED.**

MANOEUVRING SPEED 127 KTS.

3.19.3. Air speed indicator

Each air speed indicator must be marked as indicated in paragraph 3.3

3.19.4. Engine installation instruments

Each engine installation instrument must be marked as indicated in paragraph 3.5.

3.19.5. Control system markings

Each control system other than main flight control systems must be marked in order to explain its function and operation mode : brake control system, parachute control system must be marked in red if installed...

3.19.6. Miscellaneous placards and markings

In luggage compartment : "Maximum luggage weight = 15 kg"

Fuel tank filler : "Fuel tank : 88 l
Mini fuel grade : RON 90"

Oil tank filler "Oil tank : 3.5 l
10 W 40"

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4. EMERGENCY PROCEDURES

4.1. INTRODUCTION

This section provides a list of the appropriate actions to undertake in the event of certain emergencies. Providing the aircraft is well maintained and proper pre-flight inspections are made emergencies due to failure of the aircraft, aircraft engine or other systems is very rare.

However if an emergency should occur the procedures described in this section of the manual should be adopted.

4.2. LOSS OF ENGINE POWER (DUE TO CARBURETTOR ICING)

4.2.1. LOSS OF POWER DURING BUT BEFORE ACTUAL TAKE OFF (TAXING)

If there is sufficient runway :

- Fully reduce power and brake.

If there is insufficient runway :

- Fully reduce power
- Brake hard
- Fuel tap **closed**
- Magnetos **off**
- Battery **off**

4.2.2. LOSS OF ENGINE POWER IMMEDIATELY AFTER TAKE-OFF

- Air Speed **76 knots**
- Fuel Tap **closed**
- Magnetos **off**
- Flaps **as required**
- Battery **off**

Never attempt to make a U turn to return to the runway.

4.3. STARTING IN THE AIR

4.3.1. Air starting (with electric starter)

If the altitude is sufficient to attempt to restart the engine:

- Speed **81 knots**
- Fuel tap **open**
- Electric fuel pump **on**
- Fuel throttle **1/2**
- Magnetos **"BOTH"**
- Starter **on**

If the motor does not start prepare to make a forced landing.

4.3.2. Air starting (without electric starter)

If the altitude is sufficient to attempt to restart the engine (minimum altitude difference : 1500 feet) :

- Speed **> 135 knots**
- Fuel tap **open**
- Electric pump **on**
- Fuel throttle **1/2**
- Magnetos **"BOTH"**

If the motor does not start prepare to make a forced landing.

4.4. SMOKE AND FIRE

4.4.1. Fire whilst starting

Continue starting the engine (or leave it running if it has already started)

- Fuel throttle **fully open**
- Electric Fuel pump **off**
- Fuel tap **closed**

If the fire persists

- Magnetos **off**
- Battery **off**

EVACUATE THE AIRCRAFT

4.4.2. Engine fire in flight

- Fuel tap **Closed**
- Full throttle until the engine stops
- Electric fuel pump **off**
- Cabin heating and ventilation **closed**
- Speed **81 knots**

Prepare for an engine off forced landing.

4.4.3. Fire in the cabin

Extinguish the fire
Open ventilation to eliminate fumes.

In the case of an electrical fire (recognised by the smell of burning insulation) :

- Reduce cabin ventilation
- Battery **off**

LAND QUICKLY

4.5. GLIDING

- Recommended air speed, **81 knots**
- Flaps **0°**
- Glide ratio **13.4**

4.6. FORCED LANDING

4.6.1. Precautionary Landing without engine

Choose a suitable site

- Best glide angle speed **81 knots**
- Flaps **neutral**
- Safety harness **tight**
- Electric fuel pump **off**
- Throttle **closed**
- Magnetos **off**
- Fuel tap **closed**
- Battery **off**

4.6.2. Precautionary Landing with engine

- Proceed as for a normal landing
- Best glide angle speed **81 knots**
- During final approach unlock the canopy
- Final approach speed **70 knots**

- Before touching down
- Magnetos **off**
- Battery **off**

4.7. RECOVERY FROM AN UNINTENTIONAL SPIN

- Throttle **reduce**
- Flaps **retract**
- Rudder **opposite direction**
- Elevator **to neutral**
- Aileron **to neutral**

4.8. OTHER EMERGENCIES

4.8.1. VIBRATIONS and POOR ENGINE RUNNING: POSSIBLE REASONS.

- Contaminated fuel **switch on the electric fuel pump**
- Ignition : Magnetos switch **"L", then "R",
then return to «BOTH»**

Select the position that gives smoothest running and land as soon as is practicable.

4.8.2. Loss of oil pressure

If the oil pressure is low look at the oil temperature.

If the oil temperature rises (into the red) do not touch the throttle but fly to the closest airfield and prepare to make a forced landing.

4.8.3. CARBURETTOR ICING

Attempt to avoid icing by flying back to a non-icing meteorological zone and by changing altitude
Apply carb heat if equipped

4.8.4. Electric Alternator Failure

- Low battery warning light **lit**
- Low voltage on the voltmeter

Switch off all non-essential electrical equipment and fly to the nearest airfield and land.

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5. NORMAL PROCEDURES

5.1. INTRODUCTION

This section provides a list of standard controls and procedures to be used in normal flight conditions. Procedures applicable to the use and control of optional equipment should be found in section "Performances".

5.2. DAILY INSPECTION

1 CABIN

- Seats adjusted, locked
- Safety Harness attachments.....checked
- Elastic (left and right side)..... in place
- Flap control belt in place, tight
- Primary wing location pins in place, safety pinned
- Front wing fixings in place, secure
- Rear wing fixings..... in place, secure
- Left and right aileron control links in place, locked
- Pitot tubeconnected
- Controls..... free
- Magneto contacts.....off / cut
- Master (battery) switch.....On
- Fuel level..... checked
- Fuel tankcheck actual level
- Fuel filler cap..... in place, locked
- Master (battery) switch..... off
- Documentation all present and correct
- Weight and balance (including luggage) checked
- Canopy condition (clean) checked

2 FUSELAGE, LEFT SIDE

- Static vent correct, unobstructed
- Antenna mounting.....checked

Watch out not to hurt yourself with antennas

3 TAIL

- Smooth, non-blemished surfaces checked
- Rudder mounting / fixing / movement / cables / absence of play
- Tailplane..... mounting / fixing / movement / absence of play
- Control rod In place, secure
- Anti servo tab in place, secure

4 FUSELAGE, RIGHT SIDE

- Static vent correct, unobstructed
 - Antenna mounting..... checked
- Watch out not to hurt yourself with antennas

5 RIGHT WING

- Condition and flap hinges checked
- Tightness to fuselage..... checked
- Tightness & Security of front wheel and main undercarriage fairings and spats checked
- Wing tip condition and security, navigation lights (where fitted)..... checked
- Main under carriage (right hand) brakes / tyre inflation checked

6 ENGINE COWLS

- Cowl fixing screws checked
- Air vents correct, unobstructed
- Propeller spinner..... screws checked, no play or looseness
- Propeller..... correct, good condition
- Oil level checked
- Fuel drain : Check for absence of water and impurities complete
- Exhaust pipe and silencer..... fixing checked
- Fuel tank Air vent (beneath fuselage)..... correct unobstructed

* To correctly determine the oil level it is necessary to remove and clean the dip stick before dipping and reading the level.

7 LEFT WING

- Main undercarriage (left)..... mounting, brakes , tyre inflation checked
- Pitot correct, unobstructed
- Wing tip condition and security, navigation lights (where fitted)..... checked
- Condition and flap hinges checked
- Tightness to fuselage..... checked
- Tightness & Security of front wheel and main undercarriage fairings and spats checked

5.3. PRE-FLIGHT INSPECTION

Repeat the daily inspection

5.4. NORMAL PROCEDURES AND LIST OF CONTROLS

5.4.1. Cabin check prior to engine start

- Parking brake **on**
- Flaps..... **retracted**
- Seats **adjusted**
- Rudders pedals **adjusted**
- Safety harness..... **tightened**
- Flight controls **full and free**
- Pitch trim operation..... **full fwd /aft range checked / take-off position**
- Canopy **closed not locked**

5.4.2. Cold engine start (ROTAX)

- Battery **on**
- Fuel tap..... **check function / open**
- Fuel quantity **noted**
- Electric fuel pump **on**
- Propeller **set minimum pitch**
- Throttle **1/4 open**
- Choke **pull**
- Propeller areas **clear**
- Magneto contacts **BOTH**
- Starter..... **operate when ready**

As soon as the motor starts:

- Choke **push**
- Engine speed..... **1 600 rpm**
- Oil pressure **in yellow sector in 10 sec. (4 bar for Rotax 912)**
- Charge..... **checked**
- Canopy **locked / checked**

5.4.3. Hot engine start (ROTAX)

- Battery **on**
- Fuel tap..... **open**
- Fuel quantity **noted**
- Propeller **full fine pitch**
- Throttle **reduced**
- Propeller area **clear**
- Magneto contacts **BOTH**
- Starter..... **operate when ready**

Then follow the procedure for starting when cold

5.4.4. Taxiing

- Parking Brake **off**
- Brakes **test**

5.4.5. Power-off

- Parking Brake **on**
- Oil temperature and pressure **green**
- RPM set to **3 850 rpm**
- Magneto contacts **"L", BOTH, "R", BOTH**
max. drop 300 rpm max. difference 100 rpm checked
- Reduce throttle settings **1 600 rpm**

5.4.6. Before take-off

- Magneto Contacts **BOTH**
- Controls **full and free**
- Cabin (canopy, harness)..... **checked**
- Oil temperature and pressure **green**
- Charge..... **checked**
- Trim **set**
- Altimeter **checked**
- Fuel tap..... **open**
- Fuel quantity **checked**
- Electric fuel pump **on**
- Warning light panel..... **unlit**
- Flaps..... **Check full extension, and set to take-off position**
- Compass **checked**

5.4.7. Take-off

- Minimum rpm at full throttle (VP prop) **5 500 rpm checked**
- Take off airspeed..... **54 kts**
- Initial climb air speed **Vx : 70 kts**
- Climb air speed when clear of obstacles **Vy : 90 kts**
- Electric fuel pump at 300 ft agl **off**
- Motor instrumentation **checked**
- Warning light panel **unlit**
- Flaps **Retract**

5.4.8. Climb

Full throttle, maintain 90 kts I.A.S. until 4000 ft

5.4.9. Cruise

See "Performances" section for performances and settings.

5.4.10.Descent

- Fuel tap..... **open**
- Engine speed minimum **2 400 rpm**

5.4.11.Approach

- Cabin (harness) **tight**
- Electric fuel pump **on**
- Flaps under 92 kts **extended**
- Warning light panel **unlit**
- Altimeter **set**
- Brakes **free**

5.4.12.Final

- Speed **70 knots**

5.4.13.Go around

- Speed **>70 knots**
- Flaps **retract**
- Climb air speed **89 knots**

5.4.14.After landing

- Flaps..... **retracted**
- Electric fuel pump **off**

5.4.15.Engine stop

- Parking brake **on**
- Radio , navigation instruments **off**
- Magneto contacts **test cutting at 2000 rpm**
- Strobe lights **off**
- Magneto contacts **cut**
- Master (battery) switch **off**

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6. PERFORMANCE

6.1. INTRODUCTION

This section provides approved information relating to standardised air speeds, stall speeds, performance for take off and supplementary non approved information.

The information given in the diagrams was obtained from flight tests with an aircraft and an engine in good condition and in the hands of an average pilot.

6.2. APPROVED DATA

6.2.1. Standardisation of air speed indicator installation

$$V=V_i +1 / -2 \text{ knots}$$

6.2.2. Stalling speeds (knots)

m = 490 kg

	Flaps	0 °	10 °	25 °
Inclinaison				
0 °		64	56	49
30 °		68	59	52
60 °		90	79	69

m = 400 kg

0	Volets	0 °	10 °	25 °
Inclinaison				
0 °		58	51	44
30 °		62	53	47
60 °		81	72	62

6.2.3. Take off performance (ROTAX 912 80 hp)

6.2.3.1. Propeller at coarse pitch 490 kg

Take off run = 230 m

Climb angle at 81 knots = 14.52 %

Distance to 15 m = 330 m

6.2.3.2. Propeller fine pitch VP

Take off run = 155 m

Climb angle at 81 knots = 20.40 %

Distance to 15 m = 230 m

6.2.4. Landing distance

Approach 64 knots = 1.3 VS

The distance to land on a hard runway in standard conditions is 270m

6.2.5. Take-off distance calculation :

Take-off distances must be increased by

20% on grass field

40% on wet runway (take-off only)

They must be reduced by :

10% for each 10kts front wind step.

They can be computed for intermediary masses by considering a 2.5% change for each 10kg step.

6.2.6. Rain and insect accumulation effects on performances and flight behaviour

Decrease the performances by 4%

6.2.7. Maximum cross-wind demonstrated performances

20 kts

6.2.8. Noise data

No required for this aircraft type.

7. WEIGHT AND BALANCE

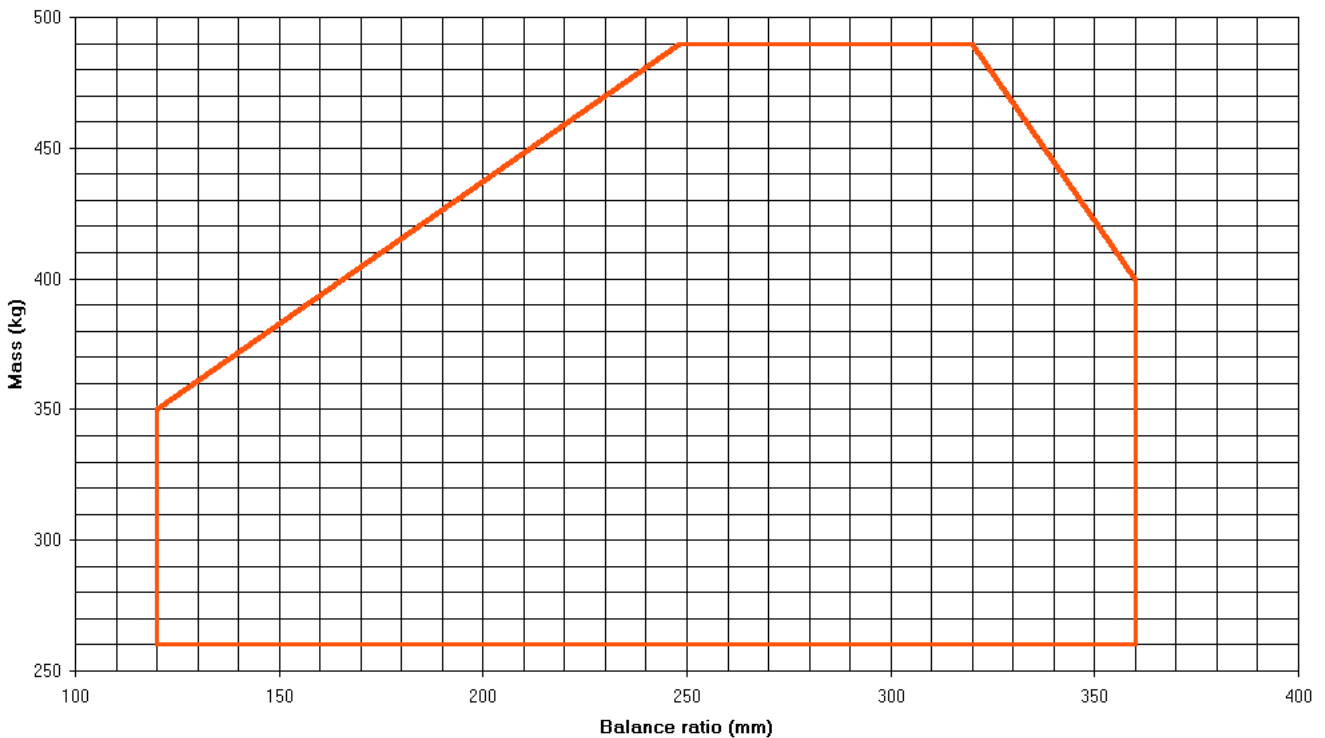
7.1. INTRODUCTION

This part presents loading cases where the aircraft can be safely operated.

Weighing and balance calculation procedures and a complete list of the equipment available (especially those mounted for weighing) on the aircraft are included in the maintenance manual.

7.2. WEIGHT AND BALANCE REGISTRATION AND LOADING ENVELOPE

7.2.1. Diagram



M.A.C. = 800 mm. Reference datum : 13.5 mm ahead of left wing leading-edge.

7.2.2. Weight & balance procedure

	Weight	Moment arm			Moment
	kg		m		m.Kg
Empty weight		x		=	
Pilot		x	0.700	=	
Co-pilot		x	0.700	=	
Luggage		x	1.150	=	
Front fuel tank		x	0.020	=	

Total Weight

Moment sum

Note :

The above chart shows MCR mean moment arms. It must be completed with the actual empty weight and moment arm of the Aircraft. Also update if possible the actual moment arms of movable weight by weighing your Aircraft (refer to MBENOPP Weighing procedure).

Calculation method

- Note movable weights in fill above chart (shaded boxes).
- Compute total mass
- Multiply weights and corresponding moment arms and note the results in "Moment" column.
- Compute the moment sum.
- Divide the moment sum by the total weight. The result gives the location in meter of the actual Aircraft center of gravity.
- Check the computed moment arm is within the weight and balance envelope shown on previous page.

8. OPERATION AND MAINTENANCE

8.1. INTRODUCTION

This section provides the procedures required by the manufacturer for the handling and the maintenance of the aircraft. It also shows a few maintenance and inspection requirements that must be fulfilled in order to ensure performances and reliability of a new aircraft. According to the environment and flight conditions, a lubrication and maintenance schedule must be applied.

As far as regulation is concerned, the assembler is responsible of the maintenance of his aircraft. Nevertheless it is more than advised to conform to the rigorous maintenance scheduled required by the manufacturer.

The manufacturer must be informed by letter of all modification made to the initial design of the aircraft.

8.2. AIRCRAFT MAINTENANCE SCHEDULE :

Advised inspection :

50 hours / 6 months

100 hours / 1 year

1 000 hours / 2 years

2 000 hours / 6 years

RESPECT THE MAINTENANCE MANUAL SCHEDULE M EX NO 03

8.3. MODIFICATIONS AND REPAIRS OF THE AIRCRAFT

The Airworthiness authorities and the manufacturer must be informed before all modification or repair which can change the aircraft Airworthiness.

8.4. PARKING

Parking brake off,
Canopy locked,
Canopy cover advised,
Main landing gear wheels chocked.

8.5. MOORING

The aircraft is secured to the ground from the wheels.
Wing attach fittings using 6 mm diameter captive nut can also be installed.

8.6. CLEANING AND TREATMENT

Clean regularly all control surfaces and the inside of the aircraft.

Cleaning products must be suitable for surfaces to be cleaned. Check product before each canopy cleaning.

8.7. DE-RIGGING / RIGGING THE AEROPLANE

The wings and tailplane may have to be disassembled, to store the aeroplane, start a maintenance check, or to put the aeroplane in its trailer.
In that case, refer to the document MEXNO11 – MCR SPORTSTER DE-RIGGING / RIGGING PROCEDURE.

9. SUPPLEMENTARY SYSTEMS AND EQUIPMENTS

9.1. INTRODUCTION

This section presents the appropriate supplementary elements to safely and properly use the aircraft with the following optional systems and equipment that are not delivered with the standard aircraft (list to be completed by the assembler).

9.2. MINIMUM EQUIPMENT LIST

Flight instruments	Air speed indicator
	Altimeter
	Magnetic compass
	Ball bank indicator
Engine instruments	Tachometer
	Oil temperature
	Oil pressure
	Cylinder head temperature
	Fuel level indicator

9.3. LIST OF THE SUPPLEMENTARY SYSTEMS AND EQUIPMENTS

Date	Document N°	Title of the supplementary element

9.4. SUPPLEMENTARY ELEMENT DESCRIPTIONS