



SE Aviation Aircraft

Aérodrome de Pontarlier, Route de Salins 25300 PONTARLIER FRANCE ☎: (33) 03 81 89 70 84

Operation

REF: M EX NO 03 07E

MCR MAINTENANCE MANUAL

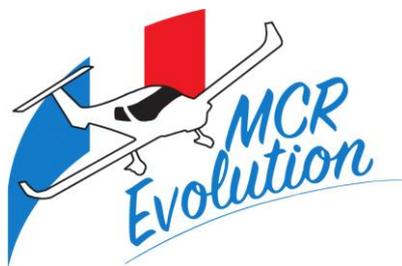
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	<input type="checkbox"/> MiniCruiser	<input type="checkbox"/> MiCRovolt					
ENGINE				S/N ENGINE			
PROPELLER				S/N PROPELLER			
INSPECTION PROGRAM DELIVERED	/ /			OWNER's SIGNATURE			
AUTHORITY SIGNATURE							

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The maintenance manual of your MCR is divided into 3parts :

- The master servicing manual (MSM) which clarifies elements with time limits and defines the actions of maintenance (scheduled or unscheduled) to do on your plane.
- The aircraft manual maintenance (AMM) which details the procedures to be followed to do the maintenance operations which are given in the maintenance program.
- The appendix (APX) that provides some ready to use forms for the scheduled maintenance operation reports, postponed operation form, greasing plan.

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1 **MASTER SERVICING MANUAL**

MSM

1.1 **General**

1.1.1 **Introduction**

The maintenance program is available only for the MCR below:

- MCR Sportster
- MCR Club
- MCR M
- MCR UL / ULC
- MCR 4S
- MCR Pick-up
- MiniCRuiser

and equipped with engines :

- ROTAX 912 (all versions)
- ROTAX 912 S (all versions)
- ROTAX 914 (all versions)
- ROTAX 915 (all versions)

This document defines the maintenance operations and frequencies necessary to preserve the airworthiness of your MCR. It was established thanks to the experience feedback and the recommendations of the engine and various equipment manufacturers.

The present manual, made by SE Aviation, is based on the French CNSK regulation.

In France, it is directly applicable for all MCR with a CNSK registration and for ultra-lights (ULM). Concerning CNSK aircraft: The owners have to make a maintenance declaration to the OSAC (form AC159a), approving an "inspection program". The present document could be the owner's inspection program on condition that it is personalized to your aircraft (refer to cover page).

French OSAC RP 42-50 §9.6 booklet: Maintenance or inspection program.

[...] The CNSK owners have to use the program of inspection of the kit manufacturer, by personalizing it with their name or with the registration of the aircraft.

For other countries, it is the owner's responsibility to ensure that this present program is sufficient to cover the requirements of the local regulations. If applicable, this program must be completed by the owner to fulfil local requirements. However, this program is a minimum base to be followed : No 'lightening' or 'shortening' concerning the aircraft maintenance is allowed by SE Aviation.

Although it is statutorily possible to postpone some maintenance operations if necessary, we strongly advise strict adherence to this handbook.

In case of doubt (of either an administrative or technical nature), it is strongly recommended to contact SE Aviation as soon as possible for advice and instructions.

If any anomaly is discovered during the maintenance of your MCR, fill in a technical event form appropriate to the model, provided in appendix 3 and contact SE Aviation for advice and instructions.

Only the French version of this manual is reliable

1.1.2 Terminology

(Routine) Inspection

Consists of a simple visual insitu examination, or an operational test, of a sub-group or component of the aircraft, provided that no disassembly is required.

Detailed Inspection

Consists of a close examination of an aircraft component, with the necessary dismantling operations, in order to detect defects and to predict those which would have catastrophic consequences.

The simple inspections are performed for the 50h and 100h/1y maintenance inspections and the detailed inspections only for the 1000h and 2000h/5y maintenance inspections.

Visual Check

This is one of the features of the routine inspection defined above. The aim of this examination is to verify satisfactory condition of a system, visually, "in situ".

Example : Corrosion investigation.

Thorough examination

This is one of features of the detailed inspection defined above. It consists of a thorough examination of a component, either visually, after disassembling, or with the help of a magnifying lens or by using other means of investigation (dye penetrant inspection, magnetoscopy, Foucault currents, ...).

Verification

This can be part both of the routine and detailed inspections. This operation ensures the conformity or correct state of a component, either by measuring or by use of a control instrument.

Example : checking the tension of control surface operating cables.

(Functional) Test

This can be also part of a routine or detailed inspection. This operation aims to check that a component or equipment is functioning correctly, possibly with a performance check, with or without control instruments.

1.1.2.1.1

Example : altimeter bench test

Flight test

For French operated aircraft, flight tests must be made according to annex 4 of the "Arrêté du 24 juillet 1991 relatif aux conditions générales des aéronefs civils en aviation générale".

Use the last issue of SE Aviation's flight test program (document ref xEXNO04) and the inspection procedure before first flight (document xEXNO05).

Removal/Refitting

Removal / refitting means that one sub part of the aircraft must be disassembled to perform a detailed inspection on it, and then reinstalled on the aircraft.

Example : Removal/refitting of the landing gear leg.

1.1.3 Abbreviations

List of abbreviations and acronyms used in this handbook.

Items written in Italic letters refer to useful French terms, that might help English speaking operators of French registered airplanes to deal with the French authorities.

AC	A dvisory C ircular (reference procedures published by the FAA)
AD	A irworthiness D irective : Terme générique employé pour désigner une directive de navigabilité émise par une autorité étrangère ou par l'EASA (The CN are french AD). Generic name used to indicate a directive of seaworthiness(airworthiness) emitted(uttered) by a foreign authority or by an EASA
IND	(air) I NDuction (system)
AMM	A ircraft M aintenance M anual
APX	A Ppendi X
APRS	<i>Approbation Pour Remise en Service</i> = C ertificate of R elease to S ervice, to be logged (in French language for French registered aircraft) in the aircraft documents after a maintenance operation, before next flight.
SB	S ervice B ulletin
DGAC	<i>Direction Générale de l'Aviation Civile</i>
CoA	C ertificate of A irworthiness
CoG	C entre of G ravity
CMD	C o M mand
CN	<i>Consigne de Navigabilité</i> (emitted by the French DGAC and published by the French OSAC), see also AD. A <i>CN</i> is a French AD.
CNSK	<i>Certificat de Navigabilité Spéciale d'aéronef en Kit</i> (Special Kit Certificate of Airworthiness)
MIR	M aintenance I nspection R eport
EASA	E uropean A viation S afety A gency
EFIS	E lectronic F light I nstrument S ystem
FAA	F ederal A viation A dministration (Authority of regulation and supervision of the civil aviation of United states of America)
GSAC	G roupement pour la S écurité de l' A viation C ivile – French civil aviation authority of monitoring.
OSAC	O rganisme pour la S écurité de l' A viation C ivile – French civil aviation authority of monitoring. (supersedes GSAC)
h	hour of operation
IRB = ARNI	<i>Installation Radioélectrique de Bord</i> = A irborne R adio- N avigation I nstallations
LSA = ASL	<i>Licence de Station d'Aéronef</i> = A ircraft S tation L icense
OTL	O perating T ime L imit :
MSM = PRE	M aster S ervicing M anual = <i>PR</i> ogramme d' <i>Entretien</i>
SIL	S ervice I nformation L etter
TBO	T ime B etween O verhaul
IPC = TCI	I llustrated P arts C atalogue = (<i>TCI in French</i>)
OT	O verall T est
VFR	V isual F light R ules
VHF	V HF T ransceivers (V ery H igh F requency)

1.1.4 Bulletins Service (BS)

A Service Bulletin (SB) is a document issued by the aircraft TC holder or part manufacturer to notify to operators and recommend modification, part replacement, particular inspection, existing operating time limit reduction or new time limit definition, and also any transformation of an engine type to another type.

The “maintenance” service bulletins, issued by the aircraft TC holder, are considered as an evolution of the maintenance manual (MSM + AMM) and therefore, they are applicable as well as the present leaflet.

The “Maintenance” SB issued by the aircraft manufacturer, the engine and the propeller manufacturers, after the date of issue of the recommended maintenance program are applicable within the time limits prescribed in the SB.

Those SBs may be incorporated into the owner’s personalized maintenance program.

The SBs are classified into 3 categories: mandatory, recommended or optional.

The complete list of applicable Service Bulletins is available on SE Aviation’s Website:

www.se-aviation.fr
(*Service Bulletins* section)

Note: The **only** service bulletin **official** publication media is **SE Aviation Website**

→ The Service Bulletins of the different equipment manufacturers may be found on their websites:

Equipment	Manufacturer	Address	Web site
ENGINE	ROTAX	Welserstraße 32 A-4623 Gunskirchen ÖSTERREICH	www.flyrotax.com
		France Dealer: Avirex Aérodrome F-28500 VERNUILLET FRANCE	www.avirex.fr
PROPELLER	E-PROPS	The E-PROPS PROPELLERS Company ZI aérodrome Sisteron 04200 VAUMEILH - France	www.e-props.fr
	MT PROPELLER	Airport Straubing-Wallmuehle D-94348 Atting DEUTSCHLAND	www.mt-propeller.com
	EVRA	Avenue de la Forêt d'Halatte F-60100 CREIL FRANCE	www.helices-evra.com

PARACHUTE	BRS	300 Airport Road S. St. Paul, MN 55075 USA	www.brsparachutes.com
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Moreover, it is strongly recommended to subscribe to the aircraft and equipment manufacturer's mailing lists, in order to receive directly the last issued service bulletins.

Procedure to subscribe to the BS broadcasting list of Rotax :

1. *Contact the local Rotax reseller.*

1.1.5 Directives de navigabilité (AD) / Consignes de navigabilité (CN)

The AD (Airworthiness Directives), the generic name used to indicate a directive of airworthiness emitted by an aviation authority (in France these are known as “Consigne de Navigabilité” (CN), published by the OSAC), aimed at indicating a dangerous state, an absence of correspondence with regard to the requirements constituting the base of certification of an aircraft or an element of aircraft, as well as any state likely to compromise the airworthiness of an aircraft. They stipulate mandatory measures to be taken to insure that an aircraft can continue to be used safely, they sometimes forbid any flight before the prescribed corrective measures are taken.

The AD's must be applied in due time, according to the delay of application prescribed on the AD (hours of flight, cycles, landings, and/or calendar limit). The delay given for the execution of an AD must be strictly respected. Extending the delay may jeopardize the safety of the aircraft and its occupants and constitutes a case of inaptitude to fly and is punishable by law.

Failing to apply an AD on an aircraft concerned by this AD, leads to the loss of validity of its CNSK, which is therefore in situation “R”. Failing to apply AD's repeatedly can lead the local monitoring authority (OSAC in France) to apply penalties: reduction of the duration of validity of the CNSK, refusal of renewal of CNSK, etc...

The AD is also applied to Ultralight or microlight, although the airworthiness regulations of these types are different in each NAA (National Aviation Authority).

AD's concerning engine, propeller and equipment

For French registered aircraft, registered in the Ultralight or CNSK categories, ADs concerning the engines, propellers and equipment are not mandatory. Therefore, the owners are responsible to collect the AD's concerning their aircraft and to decide to apply them or not. The monitoring authority (the OSAC in France), will not check their application during the renewal procedure of the restricted certificate of airworthiness.

However, when the aviation authority (DGAC in France), decides that the level of safety is below the minimum acceptable level for a ULM or a restricted Certificate of Airworthiness, it will issue a specific AD for the type of aircraft concerned (ULM,CNSK,...). This AD will include a mention declaring that the application of the AD is imperative for the preservation of the validity of the restricted certificate of airworthiness of the aircraft, or the airworthiness of the concerned ULM. In France, for CNSK's, this CN will be sent personally to any French registered aircraft owner. The monitoring authority (the OSAC in France), will check their application during the renewal procedure of the restricted certificate of airworthiness.

For the ultralights (ULM), the DGAC will send this CN to any French registered ULM owner personally, providing that they are known by the local DAC (Directions de l'Aviation Civile) (this means that it is strongly recommended to declare yourself to the local DAC), and it will be sent also to the representative organizations of ULM operators (such as the French Ultralight Federation FFPLUM).

A list of the non-specific ADs will be made by the owner, showing if they have been applied or not, under his entire responsibility.

A list of the specific ADs will be made by the owner, showing when the ADs were applied, this list will be checked during the renewal of the restricted certificate of airworthiness.

The applicable airworthiness directives list is available on the French OSAC website :

www.osac.aero

PROCEDURE :

1. Click on the UK flag (to consult the website in English)
2. click on “consignes de navigabilité” (on the menu on the left, at the top).
3. click on the big blue button “Consignes de Navigabilité triées par date et référence”
4. Click on « **recherche** » in the top left menu
4. In the field « Type de matériel », write: **MCR** .
5. In the field « Responsable de Navigabilité », write : **DYN** .
6. Click on « **Rechercher** » button... (*search*).

The ADs list relating to the MCR is now displayed.

ADs must be registered in the aircraft logbook and/or the engine logbook according to the component concerned by the AD.

1.2 Time limits

1.2.1 Introduction

This section clarifies the list of elements concerned by time limits, and indicates the corresponding deadlines.

1.2.2 Type of time limits

There are two types of time limits :

- **OTL : Operating Time Limit**

When the time limit of the component is reached, this component must be removed and replaced by a new one. The OTL is the limit life of the component.

- **TBO : Time Between Overhaul**

When the TBO of a component is reached, it must be removed from the aircraft to be overhauled, and replaced by an overhauled or a new component.

These limits are not airworthiness limits, therefore, they can be postponed to a later date. In that case, you must make a list of postponed operations according to the template given in the appendix.

In France : Booklet OSAC RP 42-50 §9.6.1.1 CNSK

When the kit aircraft manufacturer's (TC holder) maintenance manual defines time limited components, those time limits are applicable and must be taken into account.

1.2.3 Time Limits

For the Time Limits having two type of terms (operation hours or calendar), the component shall be revised/replaced once the first one occurs.

MCR							Designation	Reference	Type of limit	Deadline	IPC
Sportster	Club	ULC	M	4S	Pick-up	MiniCruiser					
ATA 25 - EQUIPMENT AND FITTINGS											
●	●	●	●			●	Parachute canopy (option)	BRS	TBO (Repacks)	6 years ⁽²⁾	PS
				●	●						PBN
●	●	●	●			●	Parachute rocket (option)		OTL	12 years ⁽²⁾	PS
				●	●						PBN

BS 12 F 0043
BS 13 D 0044
BS 19 G 0048

MCR							Designation	Reference	Type of limit	Deadline	IPC
Sportster	Club	ULC	M	4S	Pick-up	MiniCRuiser					
ATA 27 – FLIGHT CONTROLS											
●	●	●	●			●	Flap drive-belt	xFURR4301	OTL	5 years	28
				●	●			xFURR6701			
●							Flap control lead screw and bronze nut	08-27-0002 + 08-27-0003	OTL	1000 landings	28
	●	●	●	●	●	●	Flap control bronze nut	NVLAL2W01	OTL	300 hours 3 years ^(a)	28
	●	●	●	●	●	●	Flap control gimbals	OFUAC2302 QFUAC2M01	OTL	50h/1year	28
●	●	●	●			●	Artificial force rubber bands (of flight controls)	xFUWC2P01	OTL	50h 3 months	10
			●	●							10, 27
	● ⁽¹⁾		●	●			Flap Belt Tensioning Bungee	xFUEQX801	OTL	2 years	28
ATA 31 – INSTRUMENT PANEL											
●	●	●	●			●	Instrument panel Silentbloccs	xFURR5201 <i>And</i> xFURR0901	OTL	1000h 10 years	54
			●	●							55
ATA 32 – LANDING GEAR											
●	●	●	●	●	●	●	Nose gear bungees	xTREQ5601	OTL	1000h 5years	9
●	●	●				●	Silentbloc of the main landing gear leg	xTREQS601	OTL	1000h 5 years	47
●	●	●	●	●	●	●	Tyres	On condition, depending on the type of aircraft and the tyre diameters	OTL	“On condition”	22, 24
●	●	●	●		●		O rings and scraper ring set (oleo-pneumatic gear option)	xGENO2100	OTL	1000h 5 years	PBP
			●					QGENO0100			64
ATA 61 - PROPELLER											
●	●	●	●	●	●	●	Propeller	MT Propeller MTV-6...	TBO	6 years ⁽²⁾	H6
●	●	●	●	●	●	●		MT Propeller MTV-7...			H3
●	●	●	●	●	●	●		MT Propeller MTV-21...			H5
●	●	●	●	●	●	●					H8
	●						ArplastECOprop	None	/	/	
							Arplast PV50				
ATA 71 – POWER PLANT											
●	●	●	●	●	●	●	Engine Silent blocks ⁽³⁾	MMORR2901 ET MMORR6900 (ROTAX 912 UL/ULS)	OTL	800 h 5 years	M0
●	●	●	●	●	●			MMOEQZ602 (ROTAX 912 UL/ULS : montage façon 914)			M60
●	●	●	●	●	●			MMOEQZ603 (ROTAX 914 UL)			M40
			●					ZMAEQZ600 (ROTAX 915iS)			M4015

BS 12 F 0043
BS 13 D 0044

(a) In case of regular use in conditions favoring the contamination of the grease by abrasive elements (sand, dust, etc...) the operator has to decrease the life cycle of these parts accordingly ; and take a particular care in the cleaning, the greasing, and in the periodic control of these part.

MCR								Designation	Reference	Type of limit	Deadline	IPC
Sportster	Club	ULC	M	4S	Pick-up	MiniCruiser						
ATA 72 - ENGINE												
●	●	●	●	●	●	●	Engine	ROTAX 912 UL/ULS	TBO	2000H ⁽²⁾	-	
●	●	●	●	●	●	●		ROTAX 914 UL	TBO	2000H ⁽²⁾		
				●				ROTAX 915 iS	TBO	1200H ⁽²⁾		
●	●	●	●	●	●	●	Engine rubber parts ⁽³⁾	MMOKIRG . . ⁽³⁾	OTL	5 years		
●	●	●	●	●	●	●	Gear box	-	TBO	½ ENGINE TBO ⁽⁴⁾		
ATA 73 - FUEL ENGINE LINE												
				●	●	●	Cabin fuel filter	QCCEM0101	OTL	100h	14	
ATA 75 – IND & COOLING SYSTEM												
●	●	●	●	●	●	●	Coolant	Recommended : 50-50% water – glycol ZMAWC5S00	OTL	2 years ⁽²⁾	M8, M48 ou M68 ⁽⁵⁾	
ATA 80 – ENGINE START												
●	●	●	●	●	●	●	Spark Plugs	For Rotax 912	OTL	200h ⁽²⁾	-	
								For Rotax 912 S / 914		100h ⁽²⁾		
				●				For Rotax 915		100h ⁽²⁾		

(1) Only the aircraft equipped with the new flaps control assembly (since march 2004 and IPC board 28 rev. 1).

(2) Equipment manufacturer's data, only for "last generation" engines : These time limits are not mandatory for CNSK and ULM aircraft (except if a specific AD stipulates it, refer to section 1.4). Moreover, these TBO and OTL are not the same for "older" engines, and may be updated, refer to the last issue of the equipment manufacturer's maintenance manuals.

(3) SE Aviation offers a kit for the replacement of the engine rubber parts, reference:

- Rotax 912/912S : MMOKIRG10
- Rotax 912 assembly like Rotax914 : MMOKIRG20
- Rotax914 : MMOKIRG30
- Rotax 914 W : MMOKIRG50
- Rotax 915 : MMOKIRG40

(4) If the aircraft is operated mostly on AVGAS 100LL (more than 30% of operation), It is strongly recommended by the engine manufacturer to remove the propeller gear box and to clean entirely the mechanism at half TBO of the engine. This maintenance operation is performed only by ROTAX or its local agents.

(5) According to the power plant.

MCR	LETTER
Sportster	M

Note :

« x » in the beginning of the reference :

According to your MCR, replace the « x » by the corresponding letter:

MiniCRuiser	C
Club	O
ULC	P
M	T
4S	Q
Pick' up	K

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1.3 **Scheduled maintenance**

1.3.1 **Periodic inspections**

1.3.1.1 **Introduction**

This section details every periodic maintenance inspection to carry out on your MCR and indicates the corresponding period and operations.

Chapter 3.1.3 of this section details the inspection program of your MCR.

1.3.1.2 **Maintenance operation board**

For inspections with two types of deadline (operating hours or calendar), the inspection must be done at the deadline coming first.

Inspection	Hours	Margin	Calendar	Margin
50h	50 h	+/- 5h	-	-
100h or Annual	100 h	+/- 10 h	1 year	1 month
1000h	1000 h	+/- 50 h	-	-
5 years *	-	-	5 years	3 months

- * **When you perform a 5 years inspection, you must also perform :**
- **- either a 100h inspection,**
- **- or a 1000 h inspection**

Refer to paragraph 5.2 and 5.3 of this manual for more information regarding operating hours and margins.

During 50h, 100h and annual maintenance inspections, routine inspections must be performed.
During 1000h and 5 years maintenance inspections, detailed inspections must be performed.

1.3.1.3 Inspection program

The inspection program below itemizes the maintenance operations to be performed during the periodic inspections of 50 h, 100h or annual, 1000h and 5 years.

Sportster	MCR						OPERATIONS	Inspection				
	Club	ULC	M	4S	Pick-up	MniCRuiser		50h	100h or Annual	1000h	5 years	
PRELIMINARY INSPECTION												
●	●	●	●	●	●	●	0000	Update documentation	●	●	●	
●	●	●	●	●	●	●	0001	Run-up and engine stop	●	●	●	
●	●	●	●	●	●	●	0002	Vital check	●	●	●	
●	●	●	●	●	●	●	0003	Beginning of inspection procedure	●	●	●	
ATA 12 – SERVICING												
●	●	●	●	●	●	●	1201	Lubricating points	●	●	●	
ATA 21 – VENTILATION AND HEATING												
●	●	●	●	●	●	●	2101	« Naca » vents check		●	●	
●	●	●	●	●	●	●	2102	Cabin heating check		●	●	
ATA 23 – COMMUNICATION												
●	●	●	●	●	●	●	2301	Radio equipment inspection		●		
●	●	●	●	●	●	●	2302	Radio equipment detailed inspection			●	
●	●	●	●	●	●	●	2303	Antenna inspection		●	●	
ATA 24 - ELECTRICAL POWER												
●	●	●	●	●	●	●	2401	Operational test of electrical circuits	●	●	●	
●	●	●	●	●	●	●	2402	Detailed inspection of the electrical circuits and the engine connections			●	
●	●	●	●	●	●	●	2403	Battery check		●	●	
●	●	●	●	●	●	●	2404	Generator check			●	
ATA 25 - EQUIPMENT AND FITTINGS												
●	●	●	●	●	●	●	2501	Composite seats and floor checks		●	●	
●	●	●	●	●	●	●	2502	Harnesses check		●	●	
				●	●	●	2503	Baggage compartment check		●	●	
●	●	●	●	●	●	●	2504	Check of the trap door and strap covers of the safety parachute		●	●	
●	●	●	●	●	●	●	2505	Check of the safety pin of the parachute handle	●	●	●	
Safety parachute maintenance : Refer to the last edition of the parachute maintenance manual												
ATA 27 – FLIGHT CONTROLS												
●	●	●	●	●	●	●	2701	Rudder pedals check	●	●	●	
●	●	●	●	●	●	●	2702	Flight controls check (rough friction point or excess play)	●	●	●	
●	●	●	●	●	●	●	2703	Flight controls removal/refitting, adjustments and tests			●	
●							2704	Cleaning, visual check and greasing of lead screw and brass nut in the flap carriage (in situ)	●		2	
●							2704	Removal / refitting of the flap carriage lead screw and bronze nut		See §1.2.3	●	●
	●	●	●	●	●	●	2705	Cleaning, inspection, control the play of leading screw in bronze nut and lubrication of flap control	●	●	●	
	●	●	●	●	●	●	2705	Cleaning, inspection, control the play and the absence of seizure in the gimbals and lubrication of flap control	●	●	●	●
●	●	●	●	●	●	●	2706	Tab control rod detailed inspection	●	●	●	
●	●	●	●	●	●	●	2707	Check of rod ends of flight controls				●
	●	●	●				2708	MEVO Flap control detailed inspection	●	●		●

Sportster	MCR						OPERATIONS	Inspection					
	Club	ULC	M	4S	Pick-up	MniCRuiser		50h	100h or Annual	1000h	5 years		
ATA 28 – FUEL LINE													
●	●	●	●	●	●	●	2801	Fuel hoses check	●	●	●		
●	●	●	●	●	●	●	2802	Fuel filters examination	●	●	●		
●	●	●	●				2803	Tank removal/refitting			●	●	
				●	●	●	2804	Wing tank covers removal/refitting			●	●	
●	●	●	●	●	●	●	2805	Fuel line check	●	●	●		
ATA 31 – INSTRUMENT PANEL													
●	●	●	●	●	●	●	3101	Instrument Panel rubber pads		●	●		
●	●	●	●	●	●	●	3102	Instrumentation and warning light installation check		●	●		
ATA 32 – LANDING GEAR													
●	●	●	●	●	●	●	3201	Wheels removal/refitting		●	●		
●	●	●	●	●	●	●	3202	Wheel fairings inspection	●	●	●		
●	●	●	●	●	●	●	3203	Undercarriage mounting bolts torque check (check torque)		●	●		
●	●	●	●	●	●	●	3204	Brake lining or brake pad check and replacement if necessary	●	●	●		
●	●	●				●	3205	Removal/refitting of the landing leg			●		
	●	●	●	●	●	●	3206	Oleo-pneumatic gear removal/refitting			●	●	
●	●	●	●	●	●	●	3207	Nose/Tail wheel support and fork check		●	●		
●	●	●	●	●	●	●	3208	Brake circuit check	●	●	●		
ATA 33 – LIGHTING													
●	●	●	●	●	●	●	3301	Strobes, Nav-lights and landing lights check	●	●	●		
ATA 34 – NAVIGATION													
●	●	●	●	●	●	●	3401	Static and dynamic line check		●			
●	●	●	●	●	●	●	3402	Static and dynamic line detailed inspection (sealing test)			●		
●	●	●	●	●	●	●	3403	EFIS calibration			●	●	
●	●	●	●	●	●	●	3404	Magnetic compensating compass adjustment				●	
ATA 52 – CANOPY													
●	●	●	●	●	●	●	5201	Canopy removal/refitting			●		
●	●	●	●	●	●	●	5202	Canopy check		●	●		
ATA 53 – FUSELAGE													
●	●	●	●	●	●	●	5301	Fuselage skin inspection	●	●	●		
●	●	●	●	●	●	●	5302	Rudder ribs inspection		●	●		
ATA 55 – FLIGHT CONTROL SURFACES													
●	●	●	●	●	●	●	5501	Control surfaces skin inspection	●	●	●		
●	●	●	●	●	●	●	5502	Tab inspection		●	●		
●	●	●	●	●	●	●	5503	Elevator removal/refitting			●		
●	●	●	●	●	●	●	5504	Rudder removal/refitting			●		
●	●	●	●	●	●	●	5505	Inspection of elevator fixation lug fixation screws			●	●	
ATA 57 - WINGS													
●	●	●	●	●	●	●	5701	Wings skin inspection	●	●	●		
●							5702	Flaperons removal/refitting			●		
	●	●	●	●	●	●	5703	Ailerons removal/refitting			●		
	●	●	●	●	●	●	5704	Flaps removal/refitting			●		
●	●	●	●	●	●	●	5705	Wing attachments examination		●			
●	●	●	●	●	●	●	5706	Wing removal/refitting			●		
ATA 61 – PROPELLER													
●	●	●	●	●	●	●	6101	Propeller inspection (blade impact damage inspection)	●	●	●		
●	●	●	●	●	●	●	6102	Spinner inspection	●	●	●		

MCR							SPORTSTER		OPERATIONS					Inspection				
Sportster	Club	ULC	M	4S	Pick-up	MniCRuiser								50h	100h or Annual	1000h	5 years	
●	●	●	●	●	●	●	6103	Propeller mounting check		●	●							
●	●	●	●	●	●	●	6104	Propeller bolt torque (wooden propeller) (Apply also at each season change)	●	●	●							
Propeller maintenance: Refer to the last edition of the propeller maintenance manual.																		

MCR							SPORTSTER		OPERATIONS					VISITES				
Sportster	Club	ULC	M	4S	Pickup	Minicruiser								50h	100h 1an	1000h	5years	
ATA 71 – POWER PLANT																		
●	●	●	●	●	●	●	7101	Cylinders and baffles check		●	●							
●	●	●	●	●	●	●	7102	Engine mount and silentblocs check	●	●	●							
●	●	●	●	●	●	●	7103	Control of engine mount bolts (tightening)			●							
●	●	●	●	●	●	●	7104	Engine cowls check	●	●	●							
●	●	●	●	●	●	●	7105	Cowl flap check		●	●							
ATA 72 – ENGINE																		
Engine maintenance : Refer to the last edition of the engine maintenance manual.																		
ATA 73 – ENGINE FUEL LINE																		
●	●	●	●	●	●	●	7301	Carburettor check : Refer to the engine maintenance manual						See Engine Maint. Man.				
ATA 74 – IGNITION																		
●	●	●	●	●	●	●	7401	Ignition check (spark plug)		●	●							
ATA 75 – IND / COOLING SYSTEM																		
●	●	●	●	●	●	●	7501	Air induction circuit check	●	●	●							
●	●	●	●	●	●	●	7502	Cooling system check	●	●	●							
ATA 76 – ENGINE CONTROLS																		
●	●	●	●	●	●	●	7601	Engine control check	●	●	●							
●	●	●	●	●	●	●	7602	Throttle check	●	●	●							
ATA 78 – EXHAUST																		
●	●	●	●	●	●	●	7801	Exhaust system examination	●	●	●							
●	●	●	●	●	●	●	7802	Silencer removal/refitting			●							
ATA 79 – OIL LINE																		
●	●	●	●	●	●	●	7901	Oil change						Consult engine manual Note : Depends on the type of operating fuel				
●	●	●	●	●	●	●	7902	Magnetic plug check		●	●							
●	●	●	●	●	●	●	7903	Oil hoses check	●	●	●							
●	●	●	●	●	●	●	7904	Oil tank cleaning			●							
ATA 80 – ENGINE START																		
●	●	●	●	●	●	●	8001	Starter examination		●	●							
FINISHINGS / POST - INSPECTION PROCEDURES																		
●	●	●	●	●	●	●	0004	Post - Inspection run-up	●	●	●							
●	●	●	●	●	●	●	0005	Vital check	●	●	●							
●	●	●	●	●	●	●	0006	End of inspection procedure	●	●	●							
●	●	●	●	●	●	●	0007	Check Flight			●							

Note :

SE Aviation can provide complete kits of parts that are required to be exchanged during the 5-year maintenance. These kits include the parts with a 5 year OTL mentioned in the “time limits” section of this manual. These kits have the following references :

<i>MCR Sportster :</i>	MFUKIGV01	<i>MCR M :</i>	TFUKIGV01
<i>MCR Club :</i>	OFUKIGV01	<i>MCR 4S :</i>	QFUKIGV01
<i>MCR ULC et MiniCRuiser :</i>	PFUKIGV01	<i>MCR Pick'Up :</i>	KFUKIGV01
<i>MCR ULC Train Oléo. :</i>	PFUKIGV02		

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1.3.2 Overall test of the airborne radio-navigation installation (OT ARNI)

SE Aviation do not ask any particular maintenance of the airborne radio navigation installation (ARNI), **only the national requirements apply.**

These ARNI maintenance requirement depend on :

- The specific statutory requirements from the country where the aircraft is registered
- In France, on the classification of the aircraft (CNSK or Ultralight)
- In France, on the date of certification of the equipment installed ("old" or "new" generation of equipment)

It is the aircraft maintenance manager's responsibility to check the ARNI statutory requirements and their evolutions.

Therefore, the following information are only indicative, and is subject to the evolution of these statutory requirements, and are only valid for French registered aircraft.

- Any aircraft registered in France must have a valid *Licence de Station d'Aéronef (LSA)*
- Roughly summarized; the renewal conditions of the LSA are the following

1.3.2.1 For CNSK registered aircraft

The rules have changed in 2011.

For CNSK aircraft used in general aviation, VFR, equipped with "new generation" (the most common MCR in service) :

- No ground test bench check required
- No global test required
- If a transponder is installed, ground test of the global ATC installation is due every 5 year and .fly test between the 2nd and the 3rd year.

For more information :

For CNSK registered aircraft :

The French rules related to aircraft radio navigation installation maintenance are given in the document OSAC/NO P-41-15. At the date of issue of this manual , the latest update is edition 2, rev. 4, March 2019

www.regles-osac.com/OSAC/fascicules.nsf

1.3.2.2 For ultralight (ULM) registered aircraft

In the most common case where the aircraft is equipped with one or several "new" generation equipment, the LSA expires 6 years after the date of issue of the compliance certificate (ex: EASA Form one of the equipment).

- If the aircraft is equipped with only one VHF transceiver : the new certificate of conformity of the installation can be written by the owner
- If the aircraft is equipped with several equipment (ex : VHF + ATC) the ground test control and the corresponding certificate of conformity must be done by a licensed maintenance workshop.

For more information, or if your aircraft doesn't correspond to these cases :

For ULM's :

Refer the DGAC document referenced :

NOTE TECHNIQUE N°02/ULM

« **Note relative aux conditions de délivrance et de renouvellement de la licence de station d'aéronef pour les ULM** »

At the date of issue of this manual , the latest update is edition 4 dated 27/06/2019

www.ecologique-solidaire.gouv.fr/ulm-demarches-particuliers

1.3.3 Weighing

A new weight and balance must be performed as soon as a modification may affect significantly the weight and/or CoG position of the aircraft.

- Important modification
- Major repair
- Significant cockpit refurbishing
- Painting on a significant surface of the aircraft
- Any modification of the aircraft which cannot be evaluated precisely enough to be able to update the weight and balance data sheet by a simple calculation.

**→Contact SE Aviation to get the latest update of weighing procedure
xEXNOPP corresponding to your aircraft**

After weighing, it is mandatory to fill in a weight and balance data sheet, with inventory sheet, according to Dyn'Aéro's procedure, and forward the results to SE Aviation.

1.3.4 Magnetic compass swinging

To swing the magnetic compass is required:

- At the 1000h inspection.
- At the 5years inspection.
- As soon as a new radio or electrical device is installed or removed.
- When a sizeable metallic equipment is removed or added to the aircraft.

Procedure for magnetic compass swinging: Refer to AMM operation n°3404.

1.3.5 Maintenance of Equipment

1.3.5.1 Engine

Periodic inspections:

Non-periodic inspection:

Time limits:

} Refer to the Rotax latest Maintenance Manuals updates, and service bulletins, to find the periodic inspection program, the details of the operations to be done during these inspections, and the time limits.

Note : On removal of the engine (for overhaul, preparing to send it for overhaul). It is recommended to clean the oil tank (operation 7904) and the water and oil coolers with fuel and to dry them correctly. Check and straighten out (if necessary) the air baffles (operation 7101).

1.3.5.2 Propeller

Time limits : Refer to the section '*Time limits*' of this manual.

Refer to the last edition of the propeller maintenance manual for the detail of the maintenance operation to perform.

Note :

A thorough examination of the propeller mounting bolts must be carried out each time you exchange or send the propeller for overhaul.

1.3.5.3 Parachute

Time limits : Refer to the section '*Time limits*' of this manual.

Refer to the last edition of the BRS parachute maintenance manual for the detail of the maintenance operation to perform.

1.3.5.4 Glider towing devices

Refer to the last edition of the equipment manufacturer maintenance instructions, SB/TN (Tost) :

- *Tow cable retractor winch with guillotine*
- *Tow releases (hooks)*

1.3.5.5 Other equipment

Refer to the last edition of the equipment maintenance manual for the detail of the maintenance operation to perform.

1.3.6 Non-repeating inspections

1.3.6.1 Introduction

These are maintenance operations or group of operations , planned, but without given intervals.

1.3.6.2 25H Inspection

This inspection must be performed after 25h of operation:

- of a new plane or new engine.
- or of an overhauled engine.
- or after a 1000h inspection.

Operations to perform during this inspection:

MCR						Pick-up	OPERATIONS
Sportster	Club	ULC	M	4S			
ATA 73 – ENGINE FUEL LINE							
●	●	●	●	●	●	7304	Replacement of the fuel filters after new or after any operation on the tank.
ATA 76 - ENGINE							
Reminder : First engine inspection : Refer to chapter 3.5.1 of this manual							

1.4 **Unscheduled maintenance checks**

1.4.1 **Introduction**

This section details the specific maintenance operations to perform after a particular use or misuse of the aircraft.

1.4.2 **Specific maintenance operation**

➔ **Period of storage**

- Wood propeller : Position the propeller horizontally.

Monthly :

- Start the engine and run it for few minutes (let the oil temperature increase to 80°C in order to eliminate internal condensation).

Every 3 months :

- Re-inflate tires.
- Lubricate if necessary.

Remark :

Before a long period of storage (greater than 1 year), it is necessary to :

- Protect or remove and store in an suitable room equipment which can become damaged, in particular with moisture (instruments, ...).
- Disconnect the battery.
- Fill the fuel tank.
- Refer to engine manual, for possible additional operations (engine preservation).
- Remove and store 2 blade wooden propellers flat in a dry place and protect the propeller hub against corrosion.

➔ **After a period of storage (greater or equal to 3 months) :**

- Check equipment (specifically static and dynamic pressure ports).
- Check the battery (recharge it, replace it if necessary).
- Lubricate if necessary.
- Perform a fuel line test : Put the fuel circuit under pressure then check for leaks.
- In case of long duration storage :
- Change oil.
- Drain the fuel tank completely, rinse and fill with new fuel. (Do NOT use old fuel in your aircraft !).
- Perform an engine run-up.
- Check correct operation of all instrumentation.

→ After an important change of climatic conditions (season changing) :

- Wooden propeller : Torque the propeller bolts (refer to AMM procedure n°6104)

→ After a hard landing :

- Landing gear detailed inspection, perform a close examination of the mounts wheels and tires.
- Check for play in the wheel axle mounting.
- Check for damage to the propeller. Look for impact marks near the tip and carry out a more detailed inspection of the entire propeller if any are found.
- Engine suspension examination. (engine mount, diagonal brace, silentblocs...)
- Anchor nut security check.
- Check the fuselage frames for delaminating, (especially the main frames holding the landing gear, the wings and the control surfaces).
- Check the Keel. If it is damaged: perform a detailed examination of the rudder and of the tail structure.
- Wing and tail mounting check (operation n°5705) .

→ After a flight in turbulent air or after exceeding the limit load factors :

- Verification of the bonding of ribs and frames (using a tapping method, refer to operation n°5707) Ribs and hoop frames bonding check, by performing a tapping operation (refer to operation n°5707).
- Verification of the structure condition (no cracks on the fuselage).
- Wing and Tail mounting check (operation n°5705) .
- Engine suspension examination.

→ Salty (Saline) and tropical atmosphere :

- Every 6 months: Perform a detailed inspection of every metallic component in order to detect corrosion. If you find corrosion, carry out an anti-corrosive treatment immediately.
- Refer to chapter 6 of the AC 43-13-B.

→ Use in dusty conditions (dry grass or ground airstrip, sand, desert...) :

- Single case: as soon as possible, clean and re-grease every assembly subject to abrasion, **particularly the bronze nuts and lead screws in the flap control system.**
- Regular use in these conditions :
 - **Remove and inspect the bronze nuts and lead screws, at least every 100h/annual inspection (see operation 2704b for the Sportster and 2705 for the other MCRs), and replace them as soon as required.**
 - Clean the plane regularly (outside / inside)
 - Clean / replace the engine air filter more often
 - Avoid dust accumulation on the sliding parts of the landing gear

→ After propeller strike :

- Refer to the propeller and engine manufacturer's documentations

→ After a flight in hail (or aircraft exposed to hail on the ground) :

- Contact SE Aviation immediately.

→ After a lightning strike :

- Contact SE Aviation immediately.

In all these situations, please complete a technical event sheet according to the template supplied in the appendix. And contact SE Aviation for recommendations and instructions

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1.5 Remarks

1.5.1 Repetition of operations

When an operation repeats on several types of inspection, we shall consider that the operation is to be made, in every visit, in an identical way.

If a similar but more comprehensive inspection is required it will be written and identified differently.

1.5.2 Counting of hours

Times are counted since new, or since the last 1000h visit. Flight hours used to calculate component service lives and time intervals must be counted "block-block" (between the moment when the aircraft taxis by itself to fly, to the final stop).

1.5.3 Margins

The margins cannot be cumulated:

The 50h inspection must be done between 45 and 55 h after a 100h/1year inspection.

The 100h or annual inspection must be done at the deadline coming first :

- Either 100h, 200h, 300h, etc. ...(+ /- margin) since the last 1000h inspection.
- or 1 year (+ /-margin) since new or last 100h or annual inspection

The 1000h inspection must be done between 950 and 1050h since new or the last 1000h inspection.

The 5 years inspection must be done (+ /- margin) since new or last 5 years inspection. **It is necessarily accompanied by a visit of 100h or a visit of 1000h** (according to the operating hours of the aircraft).

One could try to match the maintenance inspections related to the operating hours with the maintenance inspections related to a calendar deadline, in order to avoid two distinct groundings.

Therefore, it is possible to postpone, within reasonable limits, one of two deadlines:

- Either 50 hours with the deadline related to the operating hours (1 000 h),
- or 3 months with the calendar deadline (5 years),

but in no case, both simultaneously

1.5.4 Maintenance report sheets

In order to facilitate the maintenance of your MCR, we have produced some maintenance report sheets for the 50h, 100h/1year, 1000h and 5years inspections. These reports contain check lists which allow easy verification that each item has been performed.

1.5.5 Documents

Documents to be used in addition to this handbook:

❖ Essential documents :

SE Aviation documents :

- Mounting instructions ref. xEXNO02.
- IPC ref. MGENO13 (MCR Sportster) or xGENO09 (other MCRs).
- Flight test program ref. xEXNO04.
- Control inspection procedure before the first flight ref. xEXNO05.
- SE Aviation weighing procedure, ref. xEXNOPP.
- Flight Manual ref. xEXNO01.
- SE Aviation Service Bulletins.

Equipment manufacturer documents :

- Operating and maintenance manuals of the engine, of the propeller and of the safety parachute (if fitted to your A/C).
- Operating and maintenance manual(s) specific to particular equipment and/or specific modification(s).
- Equipment manufacturers' Service Bulletins.

Regulation and control authorities' documents :

- CN/AD published by the DGAC/EASA. (for French registered aircraft)

❖ Additional documents :

SE Aviation documents :

- Eligibility sheet (CNSK).
- Identification sheet (ULM).
- SE Aviation SIL.

Equipment manufacturers' documents :

- SIL of the equipment manufacturers.

Regulation and control authorities' documents :

- OSAC Fascicules:
 - RP-41-15
 - RP-42-50
- French "Arrêté du 24 Juillet 1991" related to general conditions of general aviation civil aircraft.
- Further information: Advisory Circular AC 43.13-1B of the FAA.

2 AIRCRAFT MAINTENANCE MANUAL**AMM****2.1 Introduction**

The aircraft maintenance manual clarifies the procedures to be followed for the realisation of the maintenance operations called for in the Master Servicing Manual. For some of these operations, the procedure refers to the IPC and the building instructions to clarify and illustrate them. The procedures to be employed for the execution of these operations are the ones described in the building manuals or, if not available, the "rules of the art" of the AC 43-13-1B.

2.2 Technical procedures

OPERATIONS	PROCEDURES
PRELIMINARY INSPECTION	
0000 Update documentation	→ <u>Procedure</u> : Obtain the latest update Maintenance Manual (contact@se-aviation.fr)
0001 Run-up	→ <u>Procedure</u> : 1. Perform an engine run as described in the flight manual. 2. Check correct operation of the engine instrumentation. 3. Check the idle and full RPM.
0002 Vital check	→ <u>Procedure</u> : 1. Refer to the flight manual of your aircraft.
0003 Before Inspection	→ <u>Procedure</u> : 1. Consult the documents on board : 1.1. Check the flight manual presence. 1.2. Check the A.S.L. (Aircraft Station License). 1.3. Check the possible remarks mentioned in the aircraft logbook, airframe and engine logbook and the propeller sheet. 2. Consult the CN/AD and SB of the aircraft and of the <u>equipment</u> (engine, propeller, optional equipment) ⇒ Section 1.3 et 1.4 of the maintenance program (PRE). 3. Consult the time limits ⇒ Section 2 of the maintenance program (PRE). 4. Consult the PRE sections from 3.2 to 3.5. 5. Consult the postponed operation list . 6. Check that the aircraft does not have unapproved modifications. 7. Clean the aircraft entirely (outside and cabin). 8. Check the presence of the mandatory marking plate. 9. Carry out an after-flight check ⇒ Flight manual. 10. If the maintenance inspection is not done just after a flight, perform a run-up ⇒ OPERATION 0001. 11. Removal the engine cowlings (unscrew). 11. Start inspection → <u>Tooling</u> : 1. Airframe : Sponge, soapy water (car body cleaner) and rinse with clear water. 2. Canopy : Soft cloth and specific cleaning product such as ALTUNET. Micro-scratches can be removed or reduced with special polish type ALTUPOL 1 and 2. 3. 8mm flat blade screwdriver

OPERATIONS	PROCEDURES
ATA 07 - LIFTING	
<p>0701 Lifting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Lift the MCR by the tail with a hoist, use wide straps and foam. Avoid putting trestles under the wings. 2. <u>MCR Sportster, M, Club and ULC</u> : Put trestles (covered with foam) under the fuselage at the wing root. <u>MCR 4S and Pick-up</u> : Put the trestles (and foam) under the skids under the fuselage on the level of the slice plates. Avoid lifting an airplane with a full fuel tank.
ATA 12 - SERVICING	
<p>1201 Lubrication plan</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the keel ⇨ OPERATION 5303. 2. Lubricate all the parts mentioned in the lubrication plan which you can find in the appendix 4 of this manual. <p style="text-align: center;">CAUTION : DO NOT LUBRICATE CONTROL CABLES</p>
ATA 21 – VENTILATION AND HEATING	
<p>2101 « Naca » vents check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check that the « naca » vents are not blocked by referring to : <ul style="list-style-type: none"> • The IPC, section 53 and P5 (two-seater) or 61 (4S and Pick-up). • The mounting instruction MMONO08 and MFUNO19 (two-seater). 2. Perform an operational test of the cabin ventilation system.
<p>2102 Cabin heating check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Perform a test of the cabin heater operation.
ATA 23 – COMMUNICATION	
<p>2301 Radio equipment inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check that the radio installation is correctly fixed to the instrument panel. 2. Perform a functional test.
<p>2302 Radio equipment detailed inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Radio removal. 2. Inspection of the coaxial wires. 3. Checking the security of the mounting racks. 4. Check there are no cracks in the rack. 5. Radio refitting. 6. Perform a test. <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. Phillips screwdriver
<p>2303 Antenna inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the antenna condition (VHF, VOR, Transponder, GPS,...) and verify the absence of corrosion 1. Check the mounting security of antennas on the fuselage.
ATA 24 – ELECTRICAL POWER	
<p>2401 Operational test of electrical circuits</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Switch on the main power switch. 2. Perform a functional test of the electrical circuit by switching one of the electric components (test them one after each other). 3. Start up the engine in order to test the starter and to check the electrical generating circuit (test voltage with a multi-meter in the cigar lighter plug).
<p>2402 Detailed inspection of the electrical circuits and the engine connexions</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Switch off the electrical circuit. 2. Check the electrical circuits and engine connections condition by referring to : <ul style="list-style-type: none"> • The electrical diagrams provided by SE Aviation. • The IPC, board M11 (Rotax 912), M51 (Rotax 914), M5115 (Rotax 915) or M71 (Rotax 912, assembly like 914). • The mounting instruction MMONO01. 3. Check the conductivity of the circuits if required (in case of doubt). <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. Electrical multimeter.

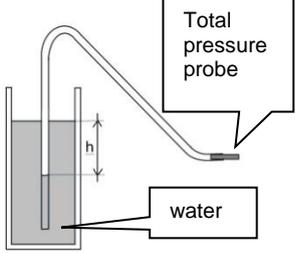
OPERATIONS	PROCEDURES
ATA 24 – ELECTRICAL POWER (Continued)	
<p align="center">2403 Battery check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Switch off the electric circuit. 2. Recharge the battery. 3. Measure the voltage on the battery terminals. <p>A fully charged battery has a voltage between 12,8 and 13 Volts.</p> <p>If the battery voltage is lower than 11,5 Volts, the battery is at the end of its life : <u>Therefore, replace it.</u></p> <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. Voltmeter.
<p align="center">2404 Generator check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Run the engine at 4000 rpm minimum (for at least 10 minutes). 2. Measure the voltage (cigar-lighter plug). 3. Verify that the voltage is between 13,5 and 14 Volts. <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. Voltmeter.
ATA 25 - EQUIPMENT AND FITTINGS	
<p align="center">2501 Composite seats and floor check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the seat mountings referring to section 31 of the IPC and to the mounting instruction xFUNO14. 2. Check the molded seats (check the locking, height setting system). 3. Check the floor condition referring to section 5 of the IPC (check the absence of delaminating in particular).
<p align="center">2502 Harness check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Verify the harnesses mounts are in good condition. 2. Check the condition of the frame close to the harness fixings and, in particular, the absence of cracks. 3. Check seat belt fasteners (test the locking and release mechanism).
<p align="center">2503 Baggage compartment check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the baggage compartment, and in particular the absence of delaminating.
<p align="center">2504 Check of the trap door and strap covers of the safety parachute</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check visually that the adhesive holding the trap door of the safety parachute and the strap covers are correctly stuck and in good condition (no traces of moisture, separation or tears). 2. Check the state of the parachute trap door, absence of shock, etc.
<p align="center">2505 Check of the safety pin of the parachute handle</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check that the safety pin of the safety parachute handle is in place.
ATA 27 – FLIGHT CONTROLS	
<p align="center">2701 Rudder pedals check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the state and functioning of the rudder pedals referring to : <ul style="list-style-type: none"> • The IPC, section 30 (and sections P2, PW, PAD or PAS according to the fitted option). • The mounting instruction xGENO05. Check the absence of sticking and axial play during the pedal floor motion. If necessary, clean the slide bar and apply grease on it: Operate the rudder pedals several times. 2. If the A/C is equipped with it, test the rudder board adjustment knob and its position adjustment bracket. 3. Check the cable mounting on the firewall. 4. Replace the artificial strength rubber bands, if necessary. 5. Check the rudder cables are in good condition, in particular at the level of the "S" of pedals. A 25 % wear on the outside strands is tolerated (do not grease cables).

OPERATIONS	PROCEDURES
ATA 27 - FLIGHT CONTROLS (continued)	
<p style="text-align: center;">2702</p> <p style="text-align: center;">Flight controls check (hard spot and clearance)</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the absence of hard friction points by operating <u>slowly</u> the different flight controls (pitch, roll and yaw). 2. Check play, looseness and deflections and perform adjustments if necessary ⇒ Refer to the FLIGHT MANUAL of your MCR for the maximum tolerated play and deflections. For the flaps, switch on the battery and operate the flap control in all possible positions and check that the operation is correct (by listening, verify normal operation). <ul style="list-style-type: none"> • <u>Flaperon control</u> : (MCR SPORTSTER) : Refer to the IPC, section 28 and to the mounting instructions MGENO16. • <u>Aileron control</u>: Refer to the IPC, section 48 and to the mounting instructions xAINO02 . • <u>Flap control</u> : Refer to the IPC I, section 28 and to the mounting instructions xVLNO02. • <u>Elevator control</u> : Refer to the IPC, board 26 and to the mounting instructions xGENO06. • <u>Rudder control</u> : Refer to IPC, section 10 (or section PX for Swiss-registered MCR) and to the mounting instructions xGENO05.
<p style="text-align: center;">2703</p> <p style="text-align: center;">Flight controls removal/refitting, adjustments and tests</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the flight controls. 2. Inspect the bell-cranks and the rods of the different flight controls in order to detect possible abnormalities : <ol style="list-style-type: none"> 2.1. Check clearances and hinges. 2.2. Control rods, bolts and rod end bearings, check the fittings are riveted as well as bonded to the rods. 3. Lubricate hinges, and bearings of the flight control systems. Refer to the Lubrication plan in appendix 4 of this handbook. 4. Refit the flight controls. 5. Check the cinematic functioning of the hinges is correct. 6. Adjust. 7. Perform a test of the cinematic linkage of the different flight controls. <p style="text-align: center;"><i>Referring, IPC and mounting instructions : Refer to Operation 2702.</i></p>
<p style="text-align: center;">2704a</p> <p style="text-align: center;">Cleaning, visual check , greasing of the flap control bronze nuts and lead screws</p>	<p>→ <u>Procedure</u> :</p> <p>On the aircraft, without disassembly :</p> <ul style="list-style-type: none"> - Check the correct condition of the grease (clean, no dust or sand..) - Clean very thoroughly the grease (fuel, WD40) while actuating the system to remove any residues inside the nut - Visual check of the part condition and absence of axial play. In case of doubt, perform following operation (2704b) - Grease with Aeroshell Grease 33.

OPERATIONS	PROCEDURES
<p>2704b Removal/refitting of flap control lead screws and bronze nuts</p>	<p>→ <u>Procedure</u> : (see detailed procedure in service Bulletin BS 12 F 0043)</p> <ul style="list-style-type: none"> - Remove the flap carriages - Clean the parts carefully - Inspect with a magnifying lens the lead screw and nut threads to detect any trace of damage (wear scratches, foreign matter inclusion...) - On a bench, assemble the parts <u>without grease</u> and check <ul style="list-style-type: none"> o the axial play (it must be lower than 0.1 mm) o and the “angular” play than must be lower than 1.2 mm (radial movement of the screw tip, cf method in BS 20 F 0010 R1) - Refit the parts - Grease with Aeroshell Grease 33 - NEVER SWITCH LEFT AND RIGHT PARTS - If required, always replace BOTH SCREWS AND BOTH NUTS together - IN ALL CASES THE OPERATING TIME LIMIT IS 1000 LANDINGS
<p>2705 Cleaning, inspection, control the play of leading screw in bronze nut and lubrication of flap control</p>	<p>→ <u>Procedure</u> : On the plane, after remove of fairings or bucket seat,</p> <ul style="list-style-type: none"> - Check the condition of the grease (cleanliness, contamination by dust, sand...) - Clean carefully grease (gasoline, WD-40) by operating the system to remove residues inside the nut. - Check leading screws and nuts with a magnifying lens to look for trace of damage (corrosion, scratches, blows, strains, particle inclusions...). In case of damage or deformation of the screw, it must be replaced. Always replace 2 BOLTS AND 2 SCREWS AT THE SAME TIME. - Check the axial nut/screw, by measuring the different distance between the nut and the mechanical stop of the screw, when one exerts a force on flap up or down. The play must not exceed 0.2 mm. If the clearance is greater than this value, then replace the bronze nut (and screw – on condition). - Check the general condition of the control system. - Lubricate the screw and bronze nut with Aeroshell Grease 33. <p>IN ALL CASES THE OPERATING TIME LIMIT OF NUTS LIMITED TO 300 HOURS OR 3 YEARS</p>
<p>2705 b</p>	<p>→ <u>Procedure</u> : On the plane, after remove of fairings or bucket seat,</p> <ul style="list-style-type: none"> - Check the condition of the grease (cleanliness, contamination by dust, sand...) - Clean carefully grease (gasoline, WD-40) by operating the system to remove residues inside the gimbals - Check the gimbals to look for trace of damage (corrosion, scratches, blows, strains, particle inclusions...). In case of damage or deformation of the gimbals, it must be replaced. - Check the axial play, by measuring the different distance between the gimbals and the frame, when one exerts a force on flap up or down. The play must not exceed 0.3 mm. If the clearance is greater than this value, then replace the gimbals. - Check the radial play by using the 17mm locking nuts (ref NFUEQ6K01) to turn the leading screw. If the play is greater than 2°, then replace the gimbals - lubricate the gimbals with Aeroshell Grease 33
<p>2706 Tab control rod detailed inspection</p>	<p>→ <u>Procedure</u> : 1. Carry out a detailed inspection of the tab control rod with reference to the mounting instructions xGENO06.</p>
<p>2707 Check of rod ends of flight controls</p>	<p>→ <u>Procedure</u> : 1. Check the condition of the rod ends (hinges) of flight controls (riveting, corrosion, general state, ...)</p>
<p>2708 MEVO Flap control detailed inspection</p>	<p>→ <u>Procedure</u> :</p> <ul style="list-style-type: none"> - Check the flaps control screws (IPC 2802) - Grease the ball joints, the hinges and the bearings - Check for the absence of hit and crack - Check corrosion points in aluminum parts

OPERATIONS	PROCEDURES
ATA 28 – FUEL LINE	
<p align="center">2801 Fuel hose check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect fuel lines, hoses and fittings of the fuel system by referring to the IPC, section 14, 41 and : <ul style="list-style-type: none"> • <i>for ROTAX 912</i> : section M6 • <i>for ROTAX 914</i> : section M46 • <i>for ROTAX 912 (assembly like ROTAX 914)</i> : section M66 • <i>for ROTAX 915</i> : section M4615 <p>And also mounting instructions MMONO01, QCCNO01 (for 4S and Pick-up) and MCCNO05.</p>
<p align="center">2802 Fuel filters examination</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. <u>ROTAX 912/912S</u> : Clean the fuel filter inside the electrical pump by referring to the mounting instructions MMONO01 (Firewall installation section).
<p align="center">2803 Tank removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Drain the tank entirely. 2. Remove the tank by removing the casing (refer to section 8 of the IPC). CAUTION : Hold the instrument panel vertically. 3. Clean and rinse with fuel 4. Check there are no leaks. 5. Perform a detailed inspection of the fuel tank. 6. Refit the tank. <p>Note : After cleaning the tank, check or replace filters very frequently for about 50h (check for small particles).</p>
<p align="center">2804 Wing tank access covers removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the access covers by referring to section 8 of the IPC. 2. Clean and rinse with fuel the inside of the tank. 3. Inspect the inside of the wings with a mirror. Be careful of fuel fumes and suitability of light source ! 4. Clean traces of silicone compound from the covers and cover recesses on the wings. 5. Check the condition of the threads of the captive nuts. 6. Check the absence of peeling, delamination and rips in the fuel sealing layer. 7. Replace the O rings ref. : QCCEQBY01 (6 per cover) and QCCEQBZ01 (one per cover). 8. Refit the traps with a bead of silicone sealant type ORAPI 145 ref QCCWC7P01. <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. White vinegar or acetone (for cleaning of the silicone joint)
<p align="center">2805 Fuel line check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Put the fuel circuit under pressure (switch on the fuel pump) and ensure there are no leaks. <p align="center"><i>Refer to the IPC and the mounting instructions : Refer to Operation 2801.</i></p>
ATA 31 – INSTRUMENT PANEL	
<p align="center">3101 Instrument Panel Rubber mount check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the condition of the anti-vibration mounts of the instrument panel by referring to section 54 of the IPC and the mounting instruction xGENO13. 2. If they are in poor condition, replace them.
<p align="center">3102 Instrumentation and warning light check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Ensure all of the instruments and warning lights are securely mounted to the instrument panel.
ATA 32 – LANDING GEAR	

OPERATIONS	PROCEDURES
<p align="center">3201 Wheels removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Perform the lifting operation n°0701. 2. Remove the main and nose wheels by referring to section 22 and 24 of the IPC and to the mounting instruction MTRNO01 or QTRNO02 (for the MCR 4S and Pick-up). 3. Check the general state of the wheels and in particular the bearings, disks, drums and tyres. 4. Check correct torque of the wheel rim assembly bolts (0.9 Nm for M6 bolts) 5. Replace defective parts as necessary. 6. Refit the wheels.
<p align="center">3202 Wheel fairings inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the condition of the wheel fairings and fixings by referring to the IPC, section PA and PB (for the MCR Sportster, M, Club and ULC) or 52 and 53 (for the MCR 4S and Pick-up) and also the mounting instructions MTRNO01 or QTRNO02 (for the MCR 4S and Pick-up).
<p align="center">3203 Undercarriage mounting bolts torque check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the torque of the mounting bolts for the main undercarriage and nose leg referring to the IPC, section 9, 21 et 47 and to the mounting instruction MTRNO01 or MTRNO02 (for the MCR 4S and Pick-up).
<p align="center">3204 Brake lining or brake pad check and replacement if necessary</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the brake linings/pads by referring to the IPC, section 12 and 22 and to the mounting instructions MTRNO01 and MTRNO03 (for the MCR Sportster, M, Club and ULC) or QTRNO02 (only for MCR 4S and Pick-up). 2. Replace the brake linings/pads if necessary.
<p align="center">3205 Removal/refitting of the landing leg</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Perform the lifting operation n°0701. 2. Remove the landing leg by referring to the IPC, section 21 and to the mounting instructions MTRNO01. 3. Perform a detailed examination of the landing leg → Check the absence of cracks and play in the mounting of the stub axle. 4. Refit the landing leg.
<p align="center">3206 Oleo-pneumatic gear removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Lift the MCR : Put it on trestles. 2. Remove the oleo-pneumatic gear by referring to section 21 of the IPC and to the mounting instructions QTRNO02. 3. Check the condition. 4. Refit the gear.
<p align="center">3207 Nose/Tail wheel support and fork check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the condition of the support and of the fork of the nose wheel (or tail wheel if tail-dragger) by referring to the IPC, sections 9 and 24 and to the mounting instructions MTRNO01. 2. Re-torque or replace fixation screws if required
<p align="center">3208 Brake circuit test</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the level of brake fluid (hydraulic brakes). 2. Check the absence of leaks (hydraulic brakes). 3. Inspect the condition of the brake fluid tank (hydraulic brakes). 4. Check the condition of the cables or lines. 5. Test the brakes → Verify that braking is efficient. <p><i>Refer to IPC, sections 12 and 22 and also to the mounting instructions MTRNO01, MTRNO03 and MGENO05 (Sportster, M, Club and ULC) or QTRNO02 and QGENO04(4S and Pick-up).</i></p>
ATA 33 – LIGHTING	
<p align="center">3301 Strobes, nav-lights and landing lights check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check correct operation of strobes, nav-lights and landing lights by referring to the IPC, sections PF, PG, PH, PL, PM and/or PAN (according MCR version and fitted options) and also the mounting instructions MVONO07.
ATA 34 - INSTRUMENTATION / NAVIGATION	

OPERATIONS	PROCEDURES
<p style="text-align: center;">3401 Static and dynamic line check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the condition of static ports and of the Pitot tube by referring to section 45 of the IPC and to the mounting instructions (Check in particular that these components are not blocked or soiled). 2. Check the static and dynamic lines (element connection) : Carefully suck in a static port (close the other one), to increase the altimeter and carefully blow in the Pitot tube to increase the speed read on the ASI. 3. Check the return to zero of the instruments.
 <p style="text-align: center;">3402 Static and dynamic line detailed inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Perform operation n°3401. 2. Check the anemometer calibration : Perform the test below : <ol style="list-style-type: none"> 1.1 Carry out an anemometer sealing test : Check that the height <i>h</i> does not decrease (a reduction up to 5 mm/min is tolerated). 1.2 Check this : $v \text{ [km/h]} = 14,4 \times \sqrt{h \text{ [mm]}}$, <i>v</i> being the speed read on the anemometer and <i>h</i> the height between the water surface and the meniscus. Vary <i>h</i> by inserting the pipe more or less in the container. If the circuit is leak-proof but that the relation above is not checked, then send the anemometer to a specialised lab or to the manufacturer, for a bench test . 3. Perform a static line sealing test : Block a static port up (using adhesive tape) and create SLOWLY a depression in the second with a syringe or a column of water for example. Check that the value read on the altimeter is stable. (you can also check that the speed raises, theoretically you should read 87 km/h for 100 ft height) 4. Calibrate the altimeter : During the flight, compare with the transponder (1013hpa setting) AND with the QNH/QFE on ground (AFIS/ATIS data). Send it for a bench test if it is significantly false.
<p style="text-align: center;">3403 EFIS Calibration</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Calibrate the altimeter of the EFIS : During the flight, compare with the transponder data (1013hpa setting) AND on the ground, with the QNH/QFE (AFIS/ATIS data). 2. Compare the anemometer of the EFIS with the pneumatic (back-up) anemometer, in flight.

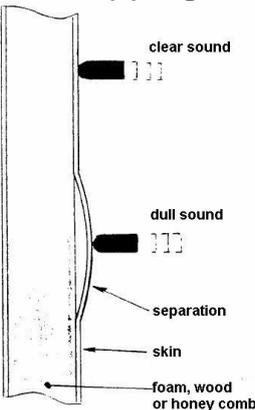
OPERATIONS	PROCEDURES																											
<p style="text-align: center;">3404 Magnetic compass swinging</p>	<p>→ <u>Procedure</u> : The various phases will be carried out engine running or not (if specified), canopy closed and control stick in the neutral position. The adjustment of the 2 compensating screws of North/South and East/West will be made <u>using non-magnetic plastic or brass screwdrivers</u>. The A/C will be positioned on a compensating surface, clear of any significant metal mass (hangar) with the Magnetic North/South reference marks, East/West and the intermediate points NW, NE, SW and SE traced on the ground. Such a compensating surface is available at some airfields.</p> <p>Operation N° 1 : Magnetic North.</p> <ol style="list-style-type: none"> 1. Position the A/C with its axis according to heading zero using a portable compass with line of sight by the back of the A/C between the rudder (in neutral position) and the propeller positioned vertically. 2. Start the engine, the alternator, the strobes and the radio. 3. Correct the compass drift with the screw marked N/S (usually on the left side) to bring back the North (0°) on the central marked line. 4. Stop everything. <p>Operation N° 2 : East.</p> <ol style="list-style-type: none"> 5. Position the A/C at heading 90° (East) using a portable compass as previously and correct the drift if necessary with the 2nd screw marked E/W to bring back the East (90°) on the central marked line. 6. Start the engine, the alternator and the radio. If there is no deviation compared to the preceding adjustment, it will not be necessary to continue the procedure with the engine running. <p>Operation N° 3 : South.</p> <ol style="list-style-type: none"> 7. Position the A/C at heading 180° (South) using the portable compass. 8. Run the engine and start electric device (if necessary), and read the compass value and the corresponding error → X°. 9. Using the compensating screw N/S, correct to obtain an error of only X/2°. <p>Operation N° 4 : West.</p> <ol style="list-style-type: none"> 10. Position the A/C manually at heading 270° (West) with the portable compass. Perform similar operation N°3 with the screw E/W to eliminate half of the error at this heading. <p style="text-align: center;"><i>At this stage, the compensating adjustment is complete.</i></p> <p>Regulation : Position the A/C at the intermediate headings : 45°, 135°, 225° and 315° (with engine and the electric device ON), and write down, on the compensating table, the values read with these intermediate headings. An example of compensating table is shown below :</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 10px;">Route</td> <td style="padding-right: 10px;">N</td> <td style="padding-right: 10px;">45°</td> <td style="padding-right: 10px;">E</td> <td style="padding-right: 10px;">135°</td> <td style="padding-right: 10px;">S</td> <td style="padding-right: 10px;">225°</td> <td style="padding-right: 10px;">W</td> <td style="padding-right: 10px;">315°</td> </tr> <tr> <td>COMPAS</td> <td>358°</td> <td>43°</td> <td>90°</td> <td>135°</td> <td>176°</td> <td>220°</td> <td>270°</td> <td>316°</td> </tr> <tr> <td>MCR : Sportster</td> <td colspan="8">IMMATRICULATION : F - PKIT</td> </tr> </table>	Route	N	45°	E	135°	S	225°	W	315°	COMPAS	358°	43°	90°	135°	176°	220°	270°	316°	MCR : Sportster	IMMATRICULATION : F - PKIT							
Route	N	45°	E	135°	S	225°	W	315°																				
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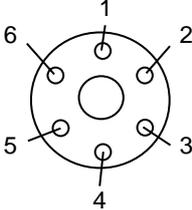
OPERATIONS	PROCEDURES
ATA 52 - CANOPY	
<p style="text-align: center;">5201 Canopy removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the canopy by referring to section 6 of the IPC and to the mounting instructions xVRNO02. 2. Check the canopy Plexiglas : General condition, cleanliness, absence of cracks and crazing. 3. Inspect the condition of the frame and the bonding. 4. Check correct operation of the locking system (refer to IPC, section 32). 5. Check the condition of seals by referring to section 49 of IPC. 6. Check the attachment points and the gas struts. 7. Refit the canopy. <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. Refer to operation n°0003.
<p style="text-align: center;">5202 Canopy check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check that the locking system works correctly (refer to section 32 of IPC). 2. Check the canopy Plexiglas : General condition, cleanliness, absence of cracks and crazing, refer to section 6 of the IPC.
ATA 53 - FUSELAGE	
<p style="text-align: center;">5301 Fuselage skin inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the fuselage skin (section 5 of the IPC), cf. pre-flight check. 2. Perform the operation 5707 (tapping) if a glue failure is suspected.
<p style="text-align: center;">5302 Rudder ribs inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the keel ⇨ OPERATION 5303. 2. examine the ribs in the rudder. 3. Refit the keel ⇨ OPERATION 5303.
<p style="text-align: center;">5303 Keel removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <p><u>Removal</u> (Refer to IPC board 29).</p> <ol style="list-style-type: none"> 1. Remove the fixing screws of the keel on the empennage. 2. Pull down the keel, unscrew the mounting system of the antenna if it is fitted. 3. Remove the keel. 4. Examine the condition of the mounting holes (excess play, deformation, cracks). <p><u>Refitting</u> :</p> <ol style="list-style-type: none"> 5. Align the keel. 6. Replace and tighten the screws. <p>→ <u>Tooling</u> :</p> <ol style="list-style-type: none"> 1. 8mm flat-head screwdriver.
ATA 55 - EMPENNAGE	
<p style="text-align: center;">5501 Control surfaces skin inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Retorque the tailplane fixation screws to 10 N.m 2. Inspect the skin of the elevator (section 3 of the IPC) and of the tab ; and the trailing edge bonding (and riveting if light alloy skin). 3. Inspect the tailplane fixation lug : visual check (100 h inspection) or removal-refitting and detailed inspection (1000h/5year inspection) 4. Inspect the rudder skin (section 4 of the IPC) and the trailing edge bonding (and riveting if light alloy skin). 5. Perform the operation n°5707 (tapping) if a glue failure is suspected.
<p style="text-align: center;">5502 Tab inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the skin, the play in the hinge and the riveting (if light alloy version) of the tab.
<p style="text-align: center;">5503 Elevator Removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the elevator by referring to the section 3 of the IPC : <ol style="list-style-type: none"> 1.1. Disconnect the control horn of the tab (4mm screw and nut). 1.2. Disconnect the elevator control rod. (6mm screw and nut). 1.3. Ask another person to help you to hold the elevator. 1.4. Unscrew the two 6mm screws of the rotation axis. 1.5. Remove the elevator, mind the tab rod !. 2. Perform a detailed inspection of the elevator (skin condition, absence of cracks, etc...) 3. Check the elevator fixation lugs (removal and detailed inspection) 4. Refit the elevator (opposite order).

OPERATIONS	PROCEDURES
ATA 52 - EMPENNAGE (continued)	
<p style="text-align: center;">5504 Rudder Removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the rudder by referring to sections 4 and 10 of the IPC : <ol style="list-style-type: none"> 1.1. Remove cotter pins, spacers, bolts, washers and nuts fixing the control cables to the rudder horn connecting plates. 1.2. Remove the keel (5303) 1.3. Unscrew and remove the lower articulation of the rudder. 1.4. Pull out and drop the rudder. 2. Perform a detailed inspection of the rudder (skin condition, absence of cracks, etc...) 3. Refit the rudder (opposite order)
<p style="text-align: center;">5505 Elevator lug fixation screws inspection</p>	<ol style="list-style-type: none"> 1. Remove M5 screws that hold the elevator lugs and replace them by temporary M5 threaded rods. 2. Inspect the screws (galvanic corrosion) 3. Detailed inspection of the lugs (corrosion, cracks) 4. Reinstall and safety wire (see mounting manual)
ATA 57 – WINGS	
<p style="text-align: center;">5701 Wings skin inspection</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Inspect the skin of the wings. 2. Perform the operation n°5707 (tapping) if a glue failure is suspected.
<p style="text-align: center;">5702 Flaperons Removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the flaperons by referring to sections 2 and 11 of the IPC. 2. Disconnect the controls. 3. Check the flaperons skin and condition, support bracket bonding and the riveting. 4. Refit the flaperons.
<p style="text-align: center;">5703 Ailerons Removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the ailerons by referring to sections 2 and 11 of the IPC. <ol style="list-style-type: none"> 1.1. If installed, cut the RILSAN collar clamp which maintains the electric wires of the aileron trim servo on the support bracket. 1.2. Disconnect (cut) the power wires of the trim servo(motor). 1.3. Remove the bolts (section 48 of the IPC) securing the bell-crank link rods.. 1.4. Remove the aileron rotation bolts. 1.5. Remove the ailerons. 2. Check each aileron skin and condition. 3. Refit the ailerons.
<p style="text-align: center;">5704 Flaps removal/refitting</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Remove the flaps by referring to the sections 2, 11 and 28 of the IPC, and applicable mounting instructions (VLNO02) : <ol style="list-style-type: none"> 1.1. Cut the lock-wire between the M6 screw heads and the brass nut support. 1.2. Position trestles under each end of the flaps. 1.3. Remove the M6 screws and separate the brass nut and its support. 1.4. Unscrew the brass nut support from the flap shaft. 1.5. Remove the connecting screw between the internal and external flaps (not on Club). 1.6. Remove the bolts of the flap articulations. 1.7. Remove the flaps. 2. Check each flap, skin and condition. 3. Refit the flaps. 4. Check the connecting screw between the internal and external flaps. (not on Club)
<p style="text-align: center;">5705 Wings attachment control</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Control the total absence of play in the mounting of the wings. 2. Check that the β pins of main attachments are correctly in place and in good condition. <p><u>Two-seaters</u> :</p> <ol style="list-style-type: none"> 3. Check the tightening of screw holding the front/back attachments. 4. Visual check of the bonding of the attachment fittings. <p style="text-align: right;"><i>Refer to the IPC board 42.</i></p>

OPERATIONS	PROCEDURES
ATA 57 - WINGS (continued)	
5706 Wings removal/refitting	<p>→ Procedure : De-rigging of the wings (SPORTSTER)</p> <ol style="list-style-type: none"> 1. Cut with a Stanley knife the silicon joint at the wing root. Be very careful with the spar (do not cut the joint between 300 to 350 mm from LE, the joint will crack when pulling the wing out). 2. Tape the flaperons on the wing, to prevent them from falling down on the TE). 3. Disconnect the flaperon rod ends (M6 screw, or "l'Hôtelier" rod ends if equipped). 4. Disconnect the air tubes from the total pressure probe (left wing). 5. If equipped, unplug electrical devices (wing tip strobes, aileron trim...). Depending on the case plugs may be accessible after having pulled the wing out by about 10 cm. 6. Remove the left wing first : <ol style="list-style-type: none"> 6.1. Unscrew the 6 mm bolts inside the aft and front pins. 6.2. With the special tool ref. ZMAEQP900, pull these pins out. 6.3. Ask other people to lift the wing tips to reduce the force on the main wing pins and make them easier to remove. 6.4. Remove the β locks from the main pins. 6.5. With a non-metallic pin extractor and a rubber hammer, pull out the mains pins, but half way only (to keep the right wing held). Start with the right one (on the spar tip). 6.6. Carefully pull the wing out. 6.7. Check nothing is jamming (electric wire). 7. Then remove the right wing <ol style="list-style-type: none"> 7.1. Front and rear small pins, 7.2. Then main pins, starting with the left one. <p>Rigging : In reverse order</p> <ul style="list-style-type: none"> - DO NOT grease the main pins : the grease may make the wood warp in the frames and spars. Wax can be used, however the pins should fit without forcing. - Fit the spars exactly in their position before trying to insert the pins. - Insert the pins preferably by hand, or with a rubber hammer, DO NOT FORCE. <p>De-rigging of the wings (Club and ULC)</p> <ol style="list-style-type: none"> 1. Cut with a Stanley knife the silicon joint at the wing root. Be very careful with the spar (do not cut the joint between 300 to 350 mm from LE, the joint will crack when pulling the wing out). 2. Disconnect the aileron control rods (M6 bolts at the control stick root). 3. Disconnect the flap control system : <ol style="list-style-type: none"> 3.1. Deploy the flaps to the 2nd notch, then turn off the main power switch and pull the flap breaker. 3.2. Fix the flaps on the wing with adhesive tape, to prevent them from falling down on the TE. 3.3. Cut the lock-wire, and unscrew the M6 screws on the brass nuts. 3.4. Separate the brass nut and the forks, rotating the lead-screw towards the middle of the A/C. 3.5. Fix the brass nuts onto the lead-screws (with lock-wire or adhesive tape), preventing rotation to avoid disturbing the flap setting. 3.6. Unscrew the forks from the flap drive axis. 4. Disconnect the air tubes from the total pressure probe (left wing) 5. If equipped, unplug any electrical device (wing tip strobes, aileron trim...). Depending on the case those plugs may be accessible after having pulled the wing out by about 10 cm.

OPERATIONS	PROCEDURES
ATA 57 - WINGS (continued)	
<p style="text-align: center;">5706 Wings removal/refitting</p>	<ol style="list-style-type: none"> 6. Remove the left wing first : <ol style="list-style-type: none"> 6.1. Unscrew the 6 mm bolts inside the aft and front pins. 6.2. With the special tool ref. ZMAEQP900, pull these pins out. 6.3. Ask other people to lift the wing tips to reduce the force on the main wing pins and make them easier to remove. 6.4. Remove the β locks from the main pins. 6.5. With a non-metallic pin extractor and a rubber hammer, pull out the mains pins, but half way only (to keep the right wing held). Start with the right one (on the spar tip). 6.6. Carefully pull the wing out. 6.7. Check nothing is jamming (electric wire) 7. Then remove the right wing <ol style="list-style-type: none"> 7.1. Front and rear small pins. 7.2. Then main pins, starting with the left one. <p>Rigging : In reverse order</p> <ul style="list-style-type: none"> - DO NOT grease the main pins: the grease may make the wood warp in the frames and spars. Wax can be used, however the pins should fit without forcing. - Fit the spars exactly in their position before trying to insert the pins. - Insert the pins preferably by hand, or with a rubber hammer, DO NOT FORCE. - When assembling the flap controls : be careful : leave at least $\frac{1}{2}$ turn free rotation when you screw the forks into the drive axis on the flap roots. <p>De-rigging of the wings (MCR 4S and Pick-up)</p> <p>Preparation :</p> <ol style="list-style-type: none"> 1. Drain the wing tanks. 2. Cut with a Stanley knife the silicon joint at the wing root. Be very careful with the spar (do not cut the joint between 65 to 115 mm and 490 to 540 mm from Leading edge, the joint will crack when pulling the wing out). 3. Disassemble the aileron control rods (M5 bolts at the bottom arm of the reversing lever in the fuselage, and on the bell-crank in the leading edge behind the access door). 4. Push the rods inside the wing leading edge, outside the fuselage. 5. Disassemble the flap controls : <ol style="list-style-type: none"> 5.1. Deploy the flaps to the 2nd notch, then turn off the main power switch and pull the flaps breaker. 5.2. To avoid to have to re do the flap setting, measure precisely the position of the brass nuts from the universal joints. 5.3. Disassemble the electric motors and the belt tensioning system to have an access to the rear wing pins (see mounting instruction manual, § QVLNO02). 5.4. It is recommended to remove the flaps. 6. Disconnect the air tubes from the total pressure probe (left wing). 7. Disconnect the fuel level sensor and the low level warning sensor, and put the electric wires along the wing root rib. 8. Once empty, disconnect the fuel hoses (feed and return lines). 9. If equipped, unplug any electrical device (wing tip strobes, aileron trim...). 10. Unscrew the union fitting on the brake fluid hose, plug them, and push the wing side of the hose outside the fuselage. Carefully wipe the hydraulic fluid drops (corrosive).

OPERATIONS	PROCEDURES
ATA 57 - WINGS (continued)	
<p style="text-align: center;">5706 Wings removal/refitting</p>	<p>Disassembly</p> <ol style="list-style-type: none"> 11. Put a trestle under each wing (with foam protection), just in front of the flap brackets #2 or #3 (there is a structural rib in the wing facing each bracket). Mind the total pressure probe on the left bracket #2. 12. Put two trestles under the fuselage, under the « skids », to lift the fuselage just enough to cancel the force on the main wing pins, to make them easier to remove. 13. Remove the aluminium covers under the spar holes under the fuselage. 14. Remove the 4 brackets (48 M6 stainless steel bolts). 15. Remove the β pins. 16. Push out the main pins with a rubber hammer and a non-metallic pin extractor. These pins should come out without forcing, if necessary move the trestles under the fuselage to relieve each pin to remove it. 17. Lift the fuselage along the spar direction. Use a hoist to lift the engine (attach the engine with ropes around the manifold pipes on the Rotax engines), lift the tail by hand or with a hoist (about 50 kg). Make sure the fuselage can not fall over (do not fix the hoist on the propeller hub). Put the hoist that holds the fuselage in the direction of the fuselage, otherwise it can fall over. <p>Rigging : In reverse order</p> <ul style="list-style-type: none"> - DO NOT grease the main pins : the grease may make the wood warp in the frames and spars. Wax can be used, however the pins should fit without forcing. - Fit the spars exactly in their position before trying to insert the pins. - Insert the pins preferably by hand, or with a rubber hammer, DO NOT FORCE. <p>When assembling the flap controls :be careful : leave at least ½ turn free rotation when you screw the forks into the drive axis on the flap roots. Set the flaps exactly in the same position.</p>
<p style="text-align: center;">5707 Tapping</p> 	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Tap the surrounding surface with a coin edge, a metal rod with rounded tip, etc... 2. Analyse the sound emitted by the shock. If it is clear, the bond is good. If the sound is dull or smothered, the bond has failed (vibrations are not transmitted to the whole surface).
ATA 61 – PROPELLER	
<p style="text-align: center;">6101 Propeller inspection</p>	<p>→ <u>Procedure</u> : 1. Check the propeller blade condition, look for impact damage. If one or several instances are found, refer to propeller manufacturer maintenance manuals, to GSAC P-66-10, and contact SE Aviation for advice and instructions. Refer to IPC section H1 H2 or H3 depending on the type of propeller installed.</p>
<p style="text-align: center;">6102 Spinner inspection</p>	<p>→ <u>Procedure</u> : 1. Check the spinner (cleanliness, free of impact, and absence of play in mounting). Refer to IPC section H1, H2, or H3 depending on the type of propeller installed.</p>
<p style="text-align: center;">6103 Propeller mounting check</p>	<p>→ <u>Procedure</u> : 1. Check propeller mounting, according to the manufacturer manuals, and to IPC section H1, H2 or H3 depending on the type of propeller installed.</p>

OPERATIONS	PROCEDURES
<p style="text-align: center;">6104 Propeller torque</p>	<p>→ <u>Procedure</u> :</p> <p style="text-align: center;"><u>THIS OPERATION IS ONLY FOR WOOD PROPELLERS</u></p> <p>1. Torque the propeller in the following order : 1 - 4 - 2 - 5 - 3 and 6.</p> <div style="text-align: center;">  </div> <p>The torque on the mounting bolts must be applied in 3 successive steps, gradually.</p> <p>Each type of propeller has its own nominal torque. Please check in the aircraft flight manual and/or in the manufacturer's documentation.</p> <p>Examples :</p> <ul style="list-style-type: none"> - Propeller Evra 156/178/106 : torque to 2.2 daN.m - Propeller MT 156/220/2M : torque to 1.8 daN.m <p>When you tighten the bolts, a compression of the wood around the hub and backplate is normal. It may cause some minor cracks in the paint and GFRP coating around the hub. Refer to manufacturer's documentation for tolerated damage.</p> <p style="text-align: right;"><u>Refer to manufacturer's documentation and to SE Aviation's SIL n° SIL 07 F 0005</u></p>
ATA 71 – POWER PLANT	
<p style="text-align: center;">7101 Cylinders and baffles</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check engine cylinder condition, specifically for oil leaks (refer to Rotax documentation and SBs, particularly SB 912 029 and 914 018 last revision). 2. Check the condition of the engine air baffles, for details refer to : <ul style="list-style-type: none"> • <u>for ROTAX 912</u> : The IPC, section M2 and to the mounting instructions MONO01. • <u>for ROTAX 914</u> : The IPC, section M42 and to the mounting instructions MONO07. • <u>for ROTAX 912 (assembly like 914)</u> : The IPC, board M62 and to the mounting instruction MMONO01. • <u>for ROTAX 915</u> : The IPC, section M4215 and to the mounting instructions. 3. Verify the absence of deterioration (wear, cracks, deformation), and that the cables, wires and hoses are not rubbing against the baffle holes. 4. Check the fixings and the correct condition of the rubber seals.
<p style="text-align: center;">7102 Engine frame and silentblocs check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Check the absence of cracks on the engine mount by performing a dye penetrant inspection. 2. Verify the condition of the engine silentblocks: They should neither be cracked, nor excessively crushed: Replace as necessary. <p><i>Refer to:</i></p> <ul style="list-style-type: none"> • <u>for ROTAX 912</u> : the IPC, section M0 and the mounting instructions MONO01. • <u>for ROTAX 914</u> : the IPC, section M40 and to the mounting instructions MONO07. • <u>for ROTAX 912 (assembly like 914)</u> : the IPC, section M60 and to the mounting instructions MMONO01. • <u>for ROTAX 915</u> : The IPC, section M4015 and to the mounting instructions.

<p>7103 Mounting bolt tightness Engine Frame Check</p>	<p>→ <u>Procedure</u> : 1. Check all of the mounting bolts, for security and tightness: Refer to Operation 7102.</p>
<p>7104 Engine cowls examination</p>	<p>→ <u>Procedure</u> : 1. Examine the engine cowlings by referring :</p> <ul style="list-style-type: none"> • for ROTAX 912 : To the IPC, section M3 and to the mounting instructions MMONO08. • for ROTAX 914 : To the IPC, section M43 and to the mounting instructions MMONO07. • for ROTAX 912 (using 914 mount) : To the IPC, section M63 and the mounting instructions MMONO08. • for ROTAX 915 : The IPC, section M4315 and to the mounting instructions. <p>2. Check for cracks, delaminating, excess wear in screw holes, damage from heat, and condition of the alu/glass fiber heat protection (replace if required).</p>
<p>7105 Louver check</p>	<p>→ <u>Procedure</u> : 1. Check the state and the functioning of the cowl flap by referring to the IPC, section M14 (Rotax 912) or M55 (Rotax 914).</p>
<p>ATA 73 – ENGINE FUEL FEED</p>	
<p>7301 Carburetors check</p>	<p>→ <u>Procedure</u> : 1. Refer to the last edition of the engine maintenance manual for the control of the carburetors.</p>
<p>ATA 74 - IGNITION</p>	
<p>7401 Ignition check</p>	<p>→ <u>Procedure</u> : 1. Check the spark plug, ignition harness and connectors (cracked wires, insufficient securing of the connectors) <i>Refer to Rotax maintenance manuals.</i></p>
<p>ATA 75 – AIR</p>	
<p>7501 Air Induction circuit check</p>	<p>→ <u>Procedure</u> : 1. Rotax 912 : Clean the air filter with a vacuum cleaner, replace it if required, Rotax 914 : Refer to specific instructions for K&N filters</p> <p>2. Check the hoses (air induction, manifold pressure, manifold balance pipe).</p> <p>3. Check the air-box (Rotax 912 : See IPC section M12 and SE Aviation SB 06 C 0028)</p>
<p>7502 Cooling system check</p>	<p>1. Check the radiators</p> <p>2. Check all the hoses and their heat protection sleeves</p> <p>3. Check the coolant level (expansion tank full and overflow bottle 2/3 full – cold engine)</p>
<p>ATA 76 – ENGINE CONTROLS</p>	
<p>7601 Engine control check</p>	<p>→ <u>Procedure</u> : 1. Test the operation : Check the absence of rough friction points and complete travel, for :</p> <ul style="list-style-type: none"> • Choke • Propeller pitch control (if fitted) • Carb-heat (if fitted)
<p>7602 Throttle check</p>	<p>→ <u>Procedure</u> : 1. Test the operation: Check the absence of rough friction points, and complete travel.</p> <p>2. In case of engine vibration: Check synchronization.</p>
<p>ATA 78 - EXHAUST</p>	
<p>7801 Exhaust system examination</p>	<p>→ <u>Procedure</u> : 1. Examine the exhaust system : Fixings, corrosion, cracks. Remark : On the Rotax 912, The M5 stainless steel screw that assembles the manifold to the 4-into-1 must remain a little loose.</p> <p>2. Rotax912 : Check the condition of the silentblocs of the silencer and suspension and of the exhaust pipe.</p>
<p>7802 Silencer removal/refitting</p>	<p>→ <u>Procedure</u> : 1. Remove the silencer.</p> <p>2. Shake slightly the silencer to detect (by sound) any possible abnormality.</p> <p>3. Inspect the general state of the silencer.</p> <p>4. Remount the silencer.</p>

OPERATIONS	PROCEDURES
ATA 79 - LUBRIFICATION	
<p style="text-align: center;">7901 Oil change</p>	<p>→ <u>Procedure</u> : Refer to the last edition of the engine manufacturer maintenance manual and SB / SIL. Some changes are possible, depending on the type of fuel used.</p> <ol style="list-style-type: none"> 1. Cut the safety wires and drain, the tank and the oil radiator by unscrewing the drain plugs, preferably on a warm engine. 2. Allow complete drainage before replacing the plugs with new seals. 3. Put new lock-wire on the plugs. 4. Remove the oil filter, let drip and wipe the seal surface. 5. Cut the filter open and examine the filter screen for metal particles, scraps or chips. 6. Install a new oil filter (ref. ZMAEQ2W00) , don't forget to oil the filter seal (with a finger) 7. Tighten the filter by hand, firmly 8. Fill the tank with 3,5 L of oil. 9. Disconnect the hose « IN » on the oil tank and let the hose lay over a bowl. 10. Disconnect the 8 spark plugs. 11. Remove the 4 bottom spark plugs. 12. « clear prop ! » Make sure that there is nothing in the propeller arc. 13. Block with the finger the IN hole on the oil tank. 14. Gently blow (with a compressor and a blow gun) inside the breather hose. 15. Ask a second person to activate the engine starter until the oil pressure warning light goes out and the oil pressure gauge raises (not more than a few seconds) 16. Re-connect and secure the hose to the oil tank. 17. Re-install the spark plugs and connect them. 18. Check the oil level and refill if required. <p>Refer to the latest edition of the maintenance manual and the SB/SIL of the engine manufacturer. Variants may appear depending on the type of fuel used.</p> <p>→ Tooling : 1. Specific tools to remove and to cut open the filter.</p>
<p style="text-align: center;">7902 Magnetic plug check</p>	<p>→ <u>Procedure</u> : 1. Verify the absence on the magnetic plug of metal traces or metal particles, chips.</p>
<p style="text-align: center;">7903 Oil hose check</p>	<p>→ Procedure : 1. Check the oil hoses. Verify that they are not cracked, and they are properly fitted.</p>
<p style="text-align: center;">7904 Oil tank cleaning</p>	<p>→ Procedure : 1. With time, some deposits can accumulate inside the oil tank 2. Empty then rinse the oil tank with fuel 3. Dry carefully.</p>
ATA 80 – ENGINE START	
<p style="text-align: center;">8001 Starter examination</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Verify the electrical connections to the starter motor terminals are in good condition. 2. Verify the electrical terminal nipples on the starter relay are in good condition.

OPERATIONS	PROCEDURES
FINISHINGS / POST INSPECTION PROCEDURES	
<p style="text-align: center;">0004</p> <p>End of Inspection run-up</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Take usual precautions. 2. Check oil and coolant levels. 3. Switch on the electrical pump and check the absence of fuel leaks. 4. Start the engine and monitor the oil pressure which must be established in less than 5s. 5. Run the engine at 2000 RPM for 1 minute then 2500 RPM until the oil temperature reaches approximately 50°C. 6. Stop the engine. 7. Check the absence of coolant and oil leaks. 8. Check oil and coolant levels (take care while removing the cap !), top-up if required. 9. Refit the engine cowls. 10. Restart the engine. 11. Perform magneto selection tests at 3800 RPM. 12. Perform propeller RPM regulation test at 4000 RPM. 13. Check the engine temperatures are high enough, and perform a full throttle test and write down the max RPM. 14. Perform a 45s full throttle run test and check RPM stability and smooth operation, in order to detect any problem in the fuel supply system <i>CAUTION : During this test, monitor the engine temperatures, the engine cowls must be installed.</i> 15. Reduce to 2500 RPM and let the engine temperatures stabilise. 16. Test the idle speed. 17. <u>Rotax914</u> : After a high power run, allow the turbo to cool down for at least 1 minute before stopping the engine.
<p style="text-align: center;">0005</p> <p>Vital check</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. See your MCR Flight Manual xEXNO01
<p style="text-align: center;">0006</p> <p>Inspection completion</p>	<p>→ <u>Procedure</u> :</p> <p>At the end of the inspection, fill in the aircraft, airframe, and engine log books : write down the type of inspection performed. Write down an inspection report (see appendix), on which you will mention the details of the jobs done, the parts replaced and draw up a postponed operation list.</p> <ol style="list-style-type: none"> 1. Sign the APRS (Certificate of Release to Service)
<p style="text-align: center;">0007</p> <p>Check flight</p>	<p>→ <u>Procedure</u> :</p> <ol style="list-style-type: none"> 1. Complete an aircraft inspection before first flight procedure (see xEXNO05) 2. Follow the flight test program xEXNO04.

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2.3 Remarks

2.3.1 Bolt tightening torque values

The tightening torque (applicable for all of the A/C except particular applications noted separately, for screws and bolts of grade 8.8), are :

- M4 : 0.3 daN.m
- M5 : 0.6 daN.m
- M6 : 1.0 daN.m
- M8 : 2.4 daN.m

2.3.2 3.2 Units and conversions

Torque :

1 daN.m = 10 N.m = 7,23ft.lbs = 86,79 In.lbs
1 ft.lbs = 12 In.lbs = 1,38N.m = 0,14 daN.m

Force:

1 daN = 10 N (\approx 1kg)

Mass :

1 lbs = 0,45 kg, 1 kg = 2,2 lbs

Length :

1 ft = 12 inch = 304,80 mm (1 inch = 25,40 mm)

Pressure :

1 bar = 14,50 psi = 1000 Hpa = 0,1 Mpa = 29,53 in.hg = 75,01 cm.hg

2.3.3 Paint work

All paint work on the aircraft must be white

Refer to the technical note Dyn'Aéro « about colors » issued on April 15, 2003. This note explains the reasons why it is mandatory to paint in white any surface of the aircraft exposed to direct sunlight.

2.3.4 Fuel

You can use two types of fuel for your MCR: avgas 100LL, UL91 and automotive unleaded fuels (MOGAS) with an octane rating equal to 98 or higher (min ROZ 98 unleaded).

However, with " MOGAS 98 Unleaded ", the only parameter controlled at the end of refining is the octane rating. The exact chemical composition of this fuel is then unknown and varies in a significant way, depending on the brand, the country of refining, the season and storage conditions. MOGAS 98 is more and more blended with alcohols. Alcohols, attract water and could cause significant damage to the engine (corrosion, carburettor icing,...). Furthermore, the long-term reaction with materials used for the

construction of fuel tanks is unknown. SE Aviation cannot guarantee correct long-term operation of the engine if it is mainly operated on this type of fuel (used equal to or greater than 30 % of the time).

The exact chemical composition of avgas 100LL is perfectly known and controlled. However, it contains quite a high level of lead, and therefore, additional maintenance operations are required (cleaning the gearbox at the middle-potential of the engine, more frequent oil changes, etc.). This fuel has a very high octane rating and is formulated to be less volatile than the MOGAS, especially for high altitude flights. Avgas 100LL is colored blue. SE Aviation recommends this type of fuel, especially as soon as vapor lock or carburetor icing risks arise.

2.3.5 Hydraulic fluid (brakes, oil-pneumatic landing gear)

SE Aviation insists on the use of hydraulic fluid type AIR 3520/B (or equivalent :MIL-H-5606A or OTAN/NATO H-520). Any other type of fluid would irreparably damage all the O ring seals in all the hydraulic systems.

3 APPENDIX**APX****3.1 50h Inspection Report**

50H INSPECTION REPORT			Inspection start date		/	/
MCR	<input type="checkbox"/> Sportster	<input type="checkbox"/> ULC	<input type="checkbox"/> 4S	S/N	REGIST.	
	<input type="checkbox"/> MiniCRuiser	<input type="checkbox"/> Club	<input type="checkbox"/> Pick-up			
	<input type="checkbox"/> M			Owner		

Airframe	Date : new or last 1000h inspection	/	/
	Operating hours since new or last 1000h inspection		
Engine	Operating hours since new or last overhaul		
Propeller	Operating hours since new or last overhaul		

CODE	OPERATION	SIGN.
PRELIMINARY INSPECTION		
0000	Update documentation	
0001	Run-up and engine stop	
0002	Vital check	
0003	Beginning of inspection procedure	
ATA 12 – ENTRETIEN COURANT		
1201	Lubrication plan	
ATA 24 – ELECTRICAL POWER		
2401	Operational test of electrical circuits	
ATA 25 – EQUIPEMENT AND FITTINGS		
2505	Check of the safety pin of the parachute handle	
Safety parachute maintenance : Refer to the last edition of the parachute maintenance manual		
ATA 27 – FLIGHT CONTROLS		
2701	Rudder pedals check	
2702	Flight controls check (rough friction or excess play)	
2704a	Cleaning, visual inspection and greasing the flap control lead screws and bronze nuts, in situ (MCR sportster)	
2705	Cleaning, inspection, control the play of leading screw in bronze nut and lubrication of flap control (others MCR)	
2706	Tab control rod detailed inspection	
2708	MEVO flaps control detailed inspection (MCR Club, ULC, M)	
ATA 28 – FUEL LINE		
2801	Fuel hose check	
2802	Fuel filters examination	
2805	Fuel line check	
ATA 32 – LANDING GEAR		
3202	Wheel fairings inspection	
3204	Brake lining or brake pad check and replacement if necessary	
3208	Brake circuit check	
ATA 33 - LIGHTING		

3301	Strobes, Nav-lights and landing lights check	
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ATA 53 - FUSELAGE		
5301	Fuselage skin inspection	
ATA 55 – FLIGHT CONTROL SURFACES		
5501	Control surfaces skin inspection	
ATA 57 - WINGS		
5701	Wings skin inspection	
ATA 61 - PROPELLER		
6101	Propeller inspection (blade impact damage inspection)	
6102	Spinner inspection	
6104	Propeller bolt torque (wooden propeller)	
Propeller maintenance : Refer to the last edition of the propeller maintenance manual.		
ATA 71 – POWER PLANT		
7102	Engine mount and silentblocs check	
7104	Engine cowlings check	
ATA 72 - ENGINE		
Engine maintenance : Refer to the last edition of the engine maintenance manual.		
ATA 73 – ENGINE FUEL LINE		
7301	Carburettor check : Refer to the engine maintenance manual	
ATA 75 – IND / COOLING SYSTEM		
7501	Air induction circuit check	
7502	Cooling system check	
ATA 76 – ENGINE CONTROLS		
7601	Engine control check	
7602	Throttle check	
ATA 78 - EXHAUST		
7801	Exhaust system examination	
ATA 79 – OIL LINE		
7901	Oil change, consult engine manual (depends on the type of operating fuel)	
7903	Oil hose check	
COMPLETION / POST-INSPECTION PROCEDURES		
0004	Post-inspection run-up	
0005	Vital check	
0006	End of inspection procedure	

NOTE : Write « **N/C** » in the column **SIGN.** when your **MCR** is not concerned with the operation.

Performed SB('s) :

Performed CN/AD('s) :

Performed additional operation(s), replaced part(s) :

Postponed operation(s) :

CRS (APRS) the / / at h
 NAME : SIGNATURE :

NEXT SCHEDULED INSPECTION		
TYPE		DEADLINE
<input type="checkbox"/> 50h	<input type="checkbox"/> 5 years	<input type="checkbox"/> Calendar : / /
<input type="checkbox"/> 100h or Annual	<input type="checkbox"/> Other :	<input type="checkbox"/> Operating hours : h
<input type="checkbox"/> 1000h		

3.2 100h or Annual Inspection Report

100H or Annual INSPECTION REPORT				Inspection start date		/ /	
MCR	<input type="checkbox"/> Sportster	<input type="checkbox"/> ULC	<input type="checkbox"/> 4S	S/N		REGIST.	
	<input type="checkbox"/> MiniCRuiser	<input type="checkbox"/> Club	<input type="checkbox"/> Pick-up				
	<input type="checkbox"/> M	Owner					

Airframe	Date : new or last 1000h inspection	/ /
	Operating hours since new or last 1000h inspection	
Engine	Operating hours since new or last overhaul	
Propeller	Operating hours since new or last overhaul	

CODE	OPERATION	SIGN.
PRELIMINARY INSPECTION		
0000	Update documentation	
0001	Run-up and engine stop	
0002	Vital check	
0003	Beginning of inspection procedure	
ATA 12 - SERVICING		
1201	Lubricating points	
ATA 21 – VENTILATION AND HEATING		
2101	“Naca” vents check	
2102	Cabin heating check	
ATA 23 – COMMUNICATION		
2301	Radio equipment inspection	
2303	Antenna inspection	
ATA 24 – ELECTRICAL POWER		
2401	Operation test of electrical circuits	
2403	Battery check	
ATA 25 - EQUIPEMENT AND FITTINGS		
2501	Composite seats and floor checks	
2502	Harnesses check	
2503	Baggage compartment check	
2504	Check of the trap door and strap covers of the safety parachute	
2505	Check of the safety pin of the parachute handle	
Safety parachute maintenance : Refer to the last edition of the parachute maintenance manual		
ATA 27 – FLIGHT CONTROLS		
2701	Rudder pedals check	
2702	Flight controls check (rough friction or excess play)	
2704b	Removal/refitting of flap control lead carriage and inspection of lead screws and bonze nuts (MCR Sportster, in dusty conditions, otherwise perform operation 2704a)	
2705	Cleaning, inspection, control the play of leading screw in bronze nut and lubrication of flap control	
2706	Tab control rod detailed inspection	
2708	MEVO flap control detailed inspection (MCR Club, ULC, M)	

ATA 28 – FUEL LINE	
2801	Fuel hose check
2802	Fuel filters examination
2805	Fuel line check
ATA 31 – INSTRUMENT PANEL	
3101	Instrument Panel (rubber mount check)
3102	Instrumentation and warning light installation check (instrument panel)
ATA 32 – LANDING GEAR	
3201	Wheels removal/refitting
3202	Wheel fairings inspection
3203	Undercarriage mounting bolts torque check (torque settings)
3204	Brake lining or brake pad check and replacement if necessary
3207	Nose/Tailwheel support and fork check
3208	Brake circuit check
ATA 33 - LIGHTING	
3301	Strobes, Nav-lights and landing lights check
ATA 34 - NAVIGATION	
3401	Static and dynamic line check
ATA 52 - CANOPY	
5202	Canopy check
ATA 53 - FUSELAGE	
5301	Fuselage skin inspection
5302	Rudder ribs inspection
ATA 55 – FLIGHT CONTROL SURFACES	
5501	Control surfaces skin inspection
5502	Tab inspection
ATA 57 - WINGS	
5701	Wing skin inspection
5705	Wing attachment examination
ATA 61 - PROPELLER	
6101	Propeller inspection (blade impact damage inspection)
6102	Spinner inspection
6103	Propeller mounting check
6104	Propeller torque (wooden propeller)
<i>Propeller maintenance : Refer to the last edition of the propeller maintenance manual</i>	
ATA 71 – POWER PLANT	
7101	Cylinders and baffles check
7102	Engine mount and silentblocs check
7104	Engine cowls check
7105	Cowl flap check
ATA 72 - ENGINE	
<i>Engine maintenance : Refer to the last edition of the engine maintenance manual</i>	

ATA 73 – ENGINE FUEL LINE		
7301	Carburetor check : Refer to the engine maintenance manual	
ATA 74 - IGNITION		
7401	Ignition check	
ATA 75 – IND / COOLING SYSTEM		
7501	Air induction circuit check	
7502	Cooling system check	
ATA 76 – ENGINE CONTROLS		
7601	Engine control check	
7602	Throttle check	
ATA 78 - EXHAUST		
7801	Exhaust system examination	
ATA 79 – OIL LINE		
7901	Oil drainage, consult engine manual (depends on the type of operating fuel)	
7902	Magnetic plug check	
7903	Oil hose check	
ATA 80 – ENGINE START		
8001	Starter examination	
COMPLETION / POST-INSPECTION PROCEDURES		
0004	Post-inspection run-up	
0005	Vital check	
0006	End of inspection procedure	

NOTE : Write « *N/C* » in the column *SIGN*. when your *MCR* is not concerned with the operation.

Performed SB('s) :

Performed CN/AD('s) :

Performed additional operation(s), replaced part(s) :

Postponed operation(s) :

CRS (APRS) the / / at h
 NAME : SIGNATURE :

NEXT SCHEDULED INSPECTION		
TYPE		DEADLINE
<input type="checkbox"/> 50h	<input type="checkbox"/> 5 years	<input type="checkbox"/> Calendar : / /
<input type="checkbox"/> 100h or Annual	<input type="checkbox"/> Other :	<input type="checkbox"/> Operating hours : h
<input type="checkbox"/> 1000h		

3.3 1000h inspection report

1000H INSPECTION REPORT				Inspection start date		/ /	
MCR	<input type="checkbox"/> Sportster	<input type="checkbox"/> ULC	<input type="checkbox"/> 4S	S/N		REGIST.	
	<input type="checkbox"/> MiniCRuiser	<input type="checkbox"/> Club	<input type="checkbox"/> Pick-up				
	<input type="checkbox"/> M	Owner					

Airframe	Date : new or last 1000h inspection	/ /
	Operating hours since new or last 1000h inspection	
Engine	Operating hours since new or last overhaul	
Propeller	Operating hours since new or last overhaul	

CODE	OPERATION	SIGN.
PRELIMINARY INSPECTION		
0000	Update documentation	
0001	Run-up and engine stop	
0002	Vital check	
0003	Beginning of inspection procedure	
ATA 12 – SERVICING		
1201	Lubricating plans	
ATA 21 – VENTILATION AND HEATING		
2101	“NACA” vents check	
2102	Cabin heating check	
ATA 23 - COMMUNICATION		
2302	Radio equipment detailed inspection	
2303	Antenna inspection	
ATA 24 – ELECTRICAL POWER		
2401	Operational test of electrical circuits	
2402	Detailed inspection of the electrical circuits and the engine connexions	
2403	Battery check	
2404	Generator check	
ATA 25 – EQUIPEMENT AND FITTINGS		
2501	Composite seats and floor checks	
2502	Harnesses check	
2503	Baggage compartment check	
2504	Check of the trap door and strap covers of the safety parachute	
2505	Check of the safety pin of the parachute handle	
Safety parachute maintenance : Refer to the last edition of the parachute maintenance manual		
ATA 27 – FLIGHT CONTROLS		
2701	Rudder pedals check	
2702	Flight controls check (rough friction point or excess play)	
2703	Flight controls removal/refitting, adjustments and tests	

2704b	Removal/refitting of flap control lead carriage and inspection of lead screws and bonze nuts (sportster)	
2705	Cleaning, inspection, control the play of leading screw in bronze nut and lubrication of flap control (others MCR)	
ATA 27 – FLIGHT CONTROLS (continuation)		
2706	Tab control rod detailed inspection	
ATA 28 – FUEL LINE		
2801	Fuel hose check	
2802	Fuel filters examination	
2803	Tank removal/refitting (MCR Sportster, Club, ULC and M)	
2804	Wing tank covers removal/refitting (MCR 4S et Pick-up)	
2805	Fuel line check	
ATA 31 – INSTRUMENT PANEL		
3101	Instrument Panel (rubber mount check)	
3102	Instrumentation and warning light installation check (instrument panel)	
ATA 32 – LANDING GEAR		
3201	Wheel removal/refitting	
3202	Wheel fairings inspection	
3203	Undercarriage mounting bolts torque check	
3204	Brake lining or brake pad check and replacement if necessary	
3205	Removal/refitting of the landing leg	
3206	Oleopneumatic gears removal/refitting	
3207	Nose/Tailwheel support and fork check	
3208	Brake circuit check	
ATA 33 – LIGHTING		
3301	Strobes, Nav-lights and landing lights check	
ATA 34 - NAVIGATION		
3402	Static and dynamic line detailed inspection (sealing test)	
3403	EFIS Calibration	
ATA 52 – CANOPY		
5201	Canopy removal/refitting	
5202	Canopy check	
ATA 53 - FUSELAGE		
5301	Fuselage skin inspection	
5302	Rudder ribs inspection	
ATA 55 – FLIGHT CONTROL SURFACES		
5501	Control surfaces skin inspection	
5502	Tab inspection	
5503	Elevator removal/refitting	
5504	Rudder removal/refitting	
5505	Inspection of elevator fixation lugs and screws	
ATA 57 – WINGS		
5701	Wings skin inspection	
5702	Flaperons removal/refitting (MCR SPORTSER)	
5703	Ailerons removal/refitting (MCR Club, M, ULC, 4S and Pick-up)	
5704	Flaps removal/refitting (MCR Club, M, ULC, 4S and Pick-up)	
5706	Wings removal/refitting	

ATA 61 – PROPELLER		
6101	Propeller inspection (blade impact damage inspection)	
6102	Spinner inspection	
6103	Propeller mounting check	
6104	Propeller bolt torque (wooden propeller)	
Propeller maintenance : Refer to the last edition of the propeller maintenance manual		
ATA 71 – POWER PLANT		
7101	Cylinders and baffles check	
7102	Engine mount and silentblocs check	
7103	Control of engine mount bolts (tightening)	
7104	Engine cowls check	
7105	Cowl flap check	
ATA 72 – ENGINE		
Engine maintenance : Refer to the last edition of the engine maintenance manual		
ATA 73 – ENGINE FUEL LINE		
7301	Carburettor check: Refer to the engine maintenance manual	
ATA 74 - IGNITION		
7401	Ignition check	
ATA 75 – IND / COOLING SYSTEM		
7501	Air induction circuit check	
7502	Cooling system check	
ATA 76 – ENGINE CONTROLS		
7601	Engine control check	
7602	Throttle check	
ATA 78 – EXHAUST		
7801	Exhaust system examination	
7802	Silencer removal/refitting	
ATA 79 – OIL LINE		
7901	Oil drainage, consult engine manual (depends on the type of operating fuel)	
7902	Magnetic plug check	
7903	Oil hose check	
7904	Oil tank cleaning	
ATA 80 – ENGINE START		
8001	Starter examination	
FINISHINGS / POST-INSPECTION PROCEDURES		
0004	Post-inspection run-up	
0005	Vital check	
0006	End of inspection procedure	
0007	Check flight	

NOTE : Write « *N/C* » in the column SIGNATURE when your MCR is not concerned with the operation.

Performed SB('s) :

Performed CN/AD('s) :

Performed additional operation(s), replaced part(s) :

Postponed operation(s) :

CRS (APRS) the / / at h
 NAME : SIGNATURE :

NEXT SCHEDULED INSPECTION

TYPE		DEADLINE
<input type="checkbox"/> 50h	<input type="checkbox"/> 5 years	<input type="checkbox"/> Calendar : / /
<input type="checkbox"/> 100h or Annual	<input type="checkbox"/> Other :	<input type="checkbox"/> Operating hours : h
<input type="checkbox"/> 1000h		

3.4 5 years inspection report

5 YEARS INSPECTION REPORT			Inspection start date		/	/
MCR	<input type="checkbox"/> Sportster	<input type="checkbox"/> ULC	<input type="checkbox"/> 4S	S/N	REGIST.	
	<input type="checkbox"/> MiniCRuiser	<input type="checkbox"/> Club	<input type="checkbox"/> Pick-up	Owner		
<input type="checkbox"/> M						

Airframe	Date since new or last 5 years inspection :	/	/
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CODE	OPERATION	VISA
VISITE ASSOCIEE		
100h Inspection	(refer to 100h report inspection, date : / /)	
1000h Inspection	(refer to 1000h report inspection, date : / /)	
ATA 27 – FLIGHTS CONTROLS		
2707	Check of rod ends of flights controls	
2708	MEVO flaps control detailed inspection (MCR Club, ULC, M)	
ATA 28 – FUEL LINE		
2803	Tank removal/refitting	
2804	Wing tank covers removal/refitting	
ATA 31 – INSTRUMENT PANEL		
3101	Instrument panel (rubber mount check)	
3102	Instrumentation and warning light installation check	
ATA 32 – LANDING GEAR		
3206	Oleo-pneumatic gear removal/refitting	
ATA 34 - NAVIGATION		
3403	EFIS calibration	
3404	Magnetic compensating compass adjustment	
ATA 55 - EMPENNAGE / GOUVERNES		
5505	Inspection des vis de fixation de ferrure de l'empennage horizontal	

NOTE : Write « *N/C* » in the column *SIGNATURE* when your MCR is not concerned with the operation.

**REMINDER : REFER TO THE TIME LIMITS SECTION OF THIS HANDBOOK:
SEVERAL ELEMENTS OF THE AIRCRAFT HAVE A 5 YEARS OTL.**

Performed additional operation(s), replaced part(s) :

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Postponed operation(s) :

CRS (APRS) the / / at h
 NAME : SIGNATURE :

NEXT SCHEDULED INSPECTION		
TYPE		DEADLINE
<input type="checkbox"/> 50h	<input type="checkbox"/> 5 years	<input type="checkbox"/> Calendar : / /
<input type="checkbox"/> 100h or Annual	<input type="checkbox"/> Other :	<input type="checkbox"/> Operating hours : h
<input type="checkbox"/> 1000h		

3.6 Technical event form

TECHNICAL EVENT FORM	
Fill in and send to : SE Aviation Aircraft, Aérodrome de Pontarlier, Route de Salins 25300 PONTARLIER, FRANCE Phone : (33) 3 81 89 70 84 Email : contact@se-aviation.fr	
AIRCRAFT TYPE	
SERIAL NUMBER	
REGISTRATION MARKS	
TOTAL FLIGHT HOURS	
TOTAL LANDINGS	
DATE AND REASON OF THE LAST MAINTENANCE OPERATION	
FLIGHT HOURS SINCE LAST MAINTENANCE OPERATION	
LANDINGS SINCE LAST MAINTENANCE OPERATION	
TECHNICAL EVENT LOCATION (OACI airfield if possible)	
TECHNICAL EVENT DATE	
TECHNICAL EVENT DESCRIPTION	WEIGHT
	BALANCE
NAME : DATE AND SIGNATURE :	
Frame reserved to SE Aviation / Cadre réservé à SE Aviation	
Date de réception :	
Référence de la fiche :	Caractère individuel <input type="checkbox"/>
Commentaires :	Caractère collectif <input type="checkbox"/>
	Réf. rapport <input type="checkbox"/>
	Réf. BS/SIL <input type="checkbox"/>

3.7 Lubrication points

Points to lubricate	AeroShell Grease 33 or multipurpose grease	Grease in spray	WD 40	High-temperature Grease	Teflon grease for plastics	Remarks
Do not apply new grease on used (old) grease. SE Aviation advises to clean with WD40 before applying the new grease.						
FLIGHT CONTROL SURFACES						
Elevator hinge ball joints		X				(2) Before replacing grease, clean by spraying liberally with WD-40. Dry with a rag. KEEP CLEAN to decrease the wear.
Eye-bearing of the elevator control		X				
Rudder hinge ball joint		X				
Cable end fittings of the rudder control	X					
Flap hinge ball joints		X				
Ailerons hinge ball joint		X				
Eye-bearings of the aileron control						(3)DO Not contaminate the potentiometer
FLIGHT CONTROLS						
Control stick : End-bearings (Metallic) Control stick : central bearings (dismount the central tunnel)	X	X (by the Small holes) X X				(4)Keep clean.
Bearing and ball joints on the lever behind the frame 7						(5) Clean to avoid the accumulation of dirt and abrasive dusts above the fork. SE Aviation advises the scraper option for dusty environment.
Bearing and ball joints on the bell-crank on frame 12 (remove the keel)						
Lead-screw of the elevator trim (remove the central tunnel)						
Control stick articulations : spacers and ball joints		X				
Ailerons bell-crank : eye-bearings (remove the cover)		X				
Rudder cables						
Rudder pedals sliding tubes						
Rudder pedals sliding tubes						
Lead-screw of the flap control system						
Gymbal joint of the lead-screw of the flap control	X					
Lead-screw of the position index of the flaps						
Bearings of the pulleys in the flap system		X				
Flap control belt						
MEVO Flaps control : Ball joints and bearings						
LANDING GEAR						
Nose landing gear tube : lower part						X (5)
Upper part	X (after removal)	X				
ENGINE						
Refer to the engine maintenance manual						
Spark plugs						X
Exhaust pipe couplings						X
Piano wires / cables, engine side (throttle, Propeller controls, choke)						X
Piano wires/ cables, cockpit side	X					