M.I.C.M. - C.N.I.A.R.
INTREPRINDEREA DE CONSTRUCTII AERONAUTICE
2200 B R A S O V

MANDATORY SERVICE BULLETIN

IS-28M2/EO-8

APPROVED BY : Civil Aviation Department, No. 15793 / 22.10.1981

PRODUCT : IS-28M2; IS-28M2A Motorglider

OBJECT : Time between two major overhauls increase.

BASE OF ISSUE : Technical complaint in order to increase the time untill the first major overhaul and also the time between major overhauls of the motorglider IS-28M2.

DATE OF ISSUE : 09.10.1981

1. PLANNING INFORMATION

A. Applicability

This modification shall be applied to all the motorgliders IS-28M2 and IS-28M2A :

- to the motorgliders in service, the modification shall be applied by the beneficiary untill 01.01.1982 ;
- to the motorgliders in the manufacturer's stock up to S/N 43, and for those under construction stating with S/N 44 the modification is to be applied by the factory at delivery.

B. Reason

The increase of the time untill the first major overhaul and also between two major overhauls.

C. Description

The bulletin modifies the time untill the first major overhaul and between two major overhauls of airframe from 500 hours till 750 hours or 5 years and also as follows for the landing gear :

- from 2000 landings to 3000 landings for the motorgliders to which the Service Bulletin IS-28M2/CR-6 wasn't applied.
- from 2000 landings to 4000 landings for the motorgliders to which the Service Bulletin IS-28M2/CR-6 was applied.

The amended pages of the servicing documents are annexed.

D. Compliance

Technical complaint in order to increase the time untill the first major overhaul and also the time between two major overhauls of the motorglider IS-28M2.

E. Accomplishment

The bulletin is applied as follows :

(a) to the motorgliders in service by the beneficiary ;

(b) to the motorgliders in the manufacturer's stock and for those under construction starting with S/N 44, the modification is to be applied by the factory.

F. Materials, Costs and Availability

None.

G. Tools

None.

H. Weight and Ballances

Not affected.

I. References

Technical complaint in order to increase the time untill the first major overhaul and the time between the two major overhauls of the motorglider IS-28M2.

This Service Bulletin amends the Flight and Maintenance Manuals. The other servicing documents (Technical Specification, Spare Parts Catalogue) will be modified by the new issues.

J. Affected documents

The annexed pages of the Flight and Maintenance Manual 2nd issue (amend.24) and 3rd issue (amend.2) are amended.

2. ACCOMPLISHMENT INSTRUCTIONS

A. Preparation of work

None.

B. Mode of action

The Flight and Maintenance Manual for IS-28M2 motorglider second issue and third issue are amended.

C. Service instructions

All periodical works shown in the Flight and Maintenance Manual for IS-28M2 motorglider, third issue, chapter 4.5. for 50, 100 and 400 hours and annex 15 for the second issue provide the hunting out of possible deteriorations and wedres for all the parts of the motorglider. For the motorglider already livered with the Flight and Maintenance Manual Second issue, it will be introduced an annexe of periodical works provided for 50, 100, 400 and 750 hours (annexe 15).

3. MATERIAL INFORMATION

A. Material list

None.

B. Tools list

None.

C. Supply indication

None.

4. IDENTIFICATION

The application of this bulletin shall be mentioned in the motorglider log book.

5. ANNEX

Pages to the Flight and Maintenance Manual :

- Second issue : (amend.24): 07H, 411C, 4.11.1.B; 4.11.2.B ; annex 15 (pages 5.56, 5.57, 5.58 and 5.59) ;

- Third issue : (amend.2) : FV.I.B, 4.18.A, 4.42.A; 4.43.A, 4.44.A amd 4.45.A).

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REVISION RECORD CONTINUATION SHEET

All Revisions in the text are indicated by a marginal vertical line and the revision number.

Rev. No.	No. of Pages	Description of Revision	Revision Date	Date Incorporated	Signature
Am. SEL No.1	PV1.A; PV1.A*A 1.2.A; 1.3.A; 2.2.A; 2.6.A; 2.11.A; 2.12.A; A.7.1.A; 4.31.A; 4.38.A.	Modifications available only for serial numbers 04,07,09,23 and 33	04.81.		
1.	PV.1 4.14.A 4.38.B	Fuel tank purging cock (for the serial no.44 and subs.)	14.09.81.		
2.	PV.1.B; 4.18.A; 4.42.A; 4.43.A; 4.44.A; 4.45.A;	Time between two major overhaul increase	23.10.81		

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VALID PAGES LIST

PAGE	ISSUE
0.1 - 0.2	3rd Issue : APRIL 1981
1.1 - 1.13	3rd Issue : APRIL 1981
2.1 - 2.16	3rd Issue : APRIL 1981
3.1 - 3.25	3rd Issue : APRIL 1981
4.1 - 4.13	3rd Issue : APRIL 1981
4.14.A*	3rd A Issue : MAY 1981
4.14	3rd Issue : APRIL 1981
4.15 - 4.17	3rd Issue : APRIL 1981
4.18.A	3rd A Issue : OCTOBER 1981
4.19 - 4.37	3rd Issue : APRIL 1981
4.38.B*	3rd B Issue : MAY 1981
4.38.A	3rd A Issue : APRIL 1981
4.39 - 4.41	3rd Issue : APRIL 1981
4.42.A - 4.45.A	3rd A Issue : OCTOBER 1981
A.1.1 - A.1.2	3rd Issue : APRIL 1981
A.2.1 - A.2.4	3rd Issue : APRIL 1981
A.3.1 - A.3.2	3rd Issue : APRIL 1981
A.4.1	3rd Issue : APRIL 1981
A.5.1 - A.5.3	3rd Issue : APRIL 1981
A.6.1	3rd Issue : APRIL 1981
A.7.1	3rd Issue : APRIL 1981
A.8.1	3rd Issue : APRIL 1981

* This refers to the motor gliders serial no.44 and subs.

4.3.2. Overhaul

4.3.2.1. General

The time until the first overhaul and between the first and the second revision was established to be at 750 flight hours and 4000 landings for the landing gear.

The time between the following overhauls and the total service life shall be established later on the basis of the manufacturer's special indications.

2

4.3.2.2. Overhaul inspection at 750 hours

When performing the 750 hours inspection carry out the operations mentioned below. When carrying out these operations follow the indications given in the repair manual.

Engine In accordance with the operating manual of Sportavia Limbach SL 1700 EI engine 500 hours inspections.

Propeller In accordance with the Hoffmann HO-V-62-R propeller operating and maintenance manual.

Landing Gear Dismantle and inspect in accordance with manufacturer's repair manual, all worn parts are to be replaced.

Fuselage Inspect fuselage stressed structure and fittings to wing and tailplane in accordance with the manufacturer's repair manual.
Replace instruments panel shock absorber mounts.

Rigging Pins Check all rigging pins and bores for excessive wear, see manufacturer's repair manual "Appendix 1".

Wing Inspect main spar and wing fittings in accordance with manufacturer's repair manual.

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After 750 hours
After 400 hours
After every 100 hours
After every 50 hours

- Instruments check - if showing operation anomalies replace or send them to a specialized work-shop
- Electrical system
  - alternator, adjusting relay and starter shall be checked to a specialized work-shop
  - check the whole wiring
  - check the electrical connections and clean all the shoes and instruments contact pluge
  - check the magneto-magneto contact circuit and the magneto contact operation
  - engine control instruments - if showing operation anomalies replace them (transmitters of instruments) (Their repair and check shall be carried out to a specialized work-shop).
  - the wiring connection points especially those to "ground" shall be greased with silvered vaseline and protected with a lacquer.

If any defect is noticed during overhaulit shall be remedied according to the repair manual instructions.

The compass shall be trimmed when new instruments have been mounted on the instrument panel, especially those creating electro-magnetic fields.

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	After 750 hours	After 400 hours	After every 100 hours	After every 50 hours
CELL				
- Aircraft outside cleaning (washing)				*
- Minute external inspection - insisting on the protective coat, especially in the attachment area of plates and elements.				*
- Attachment fittings clearance, condition and lock				*
- All controls clearance, condition and lock				*
- Pipes, pneumatical instruments condition (visual inspection).				*
- Electrical cables and their couplings condition				*
- Canopy inspection (greasing-bearing race), eventual cracks stopped by holes of 2 to 3 mm dia.).				*
- Controls clearances check				*
- Pilot belts check				*
- Tension check within the control cables(adjustment)			*	*
- Controls adjustment check (deflections)			*	*
- Controls greasing according to the diagram			*	*
- Check of tailplane-fin junction (tailplane tilting), control lever and elevator coupling			*	*
- Main junction wear check (measurement), after 750 hours boring possibly	*	*	*	*
- Check of tailplane - fin junction wear, after 750 hours boring possibly	*	*	*	*
- Controls dismounting and parts check (worn parts shall be replaced)	*	*	*	*
- Control surfaces dismounting and hinges wear check	*	*	*	*
- Painting check (touch-up)	*	*	*	*
- Replacement of the rubber shock-absorbers of movable instrument panel	*	*	*	*
- Control surfaces fabric check (eventually replacement)	*	*	*	*
- Rubber pipes check (eventually replacement)	*	*	*	*
- Check of pneumatic instruments installations sealing	*	*	*	*

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	After 400 hours	After every 100 hours	After every 50 hours
ENGINE			
- For a correct maintenance of engine comply with the engine book instructions.			
- Valve clearances			*
- Greasing system inspection			*
- Oil and fuel filters cleaning			*
- Oil change			*
- Spark plug inspection *			*
- Connections inspection			*
- Compresion check			*
- Engine speed check			*
- Carburettor diaphragms check		*	
- Ignition check (eventually adjustment)		*	
- Check of Bendix magneto contacts (replacement if required)			*
- Replacement of floating needle valve (carburettor)			*
- Check of throttle shaft clearance (it shall not exceed 0.5mm)			*
- Carefully inspect the engine bed (cracks, clearances, etc)		*	
- Inspect the engine and engine mount attachment screws.			*
- Rubber elements (if aged, replace them)		*	
- Exhaust inspection (cracks, penetration areas, loose screws, etc)		*	
- Baffles inspection (cracks, loosening)			*
- Full emptying of gasoline tank			*
PROPELLER			
Comply with the propeller book instructions			
- Check of control mechanism, propeller pitch, greasing			*
- Bearings check for changing the propeller pitch eventually replacement)			*

*It is recommended to replace the spark plage after every 250 hours of operation.

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4.5. MAINTENANCE WORKS PERIODICITY

The list of works enumerated below is in fact an inventory of the main operations carried out during the periodical maintenance works of the motor glider.

The way in which these works are executed is described in the Flight and Maintenance Manual (chapter 4.2.3. - 4.4.9.) and in the engine and propeller manual supplied by the manufacturers.

After the first 25 hours of operation carry out the works provided in the Flight and Maintenance Manual (chapter 4.2.3.1).

In normal servicing the works periodicity is that mentioned below.

2

	After 750 hours	After 400 hours	After every 100 hours	After every 50 hours
LANDING GEAR				
- Visual inspection to landing gear holders and structure riveting (spare condition).			*	
- Visual inspection to forks, wheels (distortions, cracks, corrosion)			*	
- Visual inspection to shock-absorbers condition (greasing)			*	
- Inspection to main wheels and tail skid (dismounting, washing, greasing)			*	
- Inspection to brake shoes (adjust if required)			*	
- Check of retracting and warning systems (with suspended aircraft)			*	
- Check of tyres condition (breaks, etc)				*
- Check of landing gear position warning system (eventually re-adjusting according to the Flight and Maintenance Manual chapter 4.4.7).				*
- Check of braking system cables (eventually adjustment, greasing)				*
- Landing gear and retracting control dismounting check of all parts.				*
- Inspection to shock-absorber rubber discs and replacement if required				
- Inspection to braking surface on the wheel hub.				

Ref. No.	Revised pages	Description of revision	Date of approval	Date of insertion	Sign.
19.	Appendix 12	Anticollision Lamps Installation (ACL900-DITTEL) OPTIONAL	11.11.1980.		
20.	Appendix 13	Position Lights Installation (OPTIONAL)			
21.	0.7.F; 4.13.2.B	Landing gear warning system microswitch mounting (for serial no.40 and subs.)			
22.	07.G; 3.17.A; 4.7.C	Additional inspection for the landing gear.	15.04.81.		
23.	Appendix 14	Landing gear microswitches mounting (optional)	14.09.1981.		
24.	07H, 4.11.C.; 4.11.1.B; 4.11.2.B; Appendix 15	Time between two major overhaul increase.	22.10.81.		
25.	Appendix 16	TRIM. TABS FITTING ON AILERONS (OPTIONAL)			
26.	**3.15.A 4.4.A**	**Flying controls inspection**			
SEL 1	2.9.E	Correction of English version (the Romanian version is not modified)			
27.	4.11.2.C	Safe life increasing			
28.	2.7B	Adding pther types of engine oil			

4.2.3.5. Inspection after 750 hours

24 - Appendix 15 summarizes the works and their periodicity.

Engine :

Inspection shall be carried out according to Sportavia -Limbach SL 1700 EI servicing manual (Appendix 1).

Propeller :

Propeller check must be performed according to the manufacturer's 11 indications.

Landing gear :

The works shall be carried out at least at the same level as those provided for the yearly inspections.

In addtion, perform the following :

- Dismount the wheel fork and inspect all the joints ;
- Dismount the legs and inspect all the joints ;
- Inspect the braking surfaces on the wheels hubs.

Cell + wing

The works shall be carried out at least at the same level as those provided for the yearly inspections. In addition, perform the following :

- visually inspect the skins attachment areas ;
- check the wing - fuselage junction bolts for wear ;
- check the bolts fixing the horizontal tails for wear ;
- dismount the control surfaces and inspect the hinges clearances ;
- replace the shock-absorbers from the movable instrument panel ;
- check the rubber or plastic pipes and if necessary, replace them ;
- dismount the controls, replace the elements showing wear, grease and inspect them ;
- check the control surfaces fabric and if necessary replace it.

ELECTRICAL SYSTEM

- dismount the alternator, controlling relay and starter, and check them at a specialized work-shop ;
- check the entire wiring ;
- check the electrical connections and clean all the shoes and contact plugs of the instruments ;
- check the continuity of the magneto-magneto contact circuit and the magneto contact operation ;
- replace the transmitters or damaged instruments of the engine controlling instruments if operation abnomalies are noticed (they shall be repaired and checked only at a specialized workshop) ;
- replace the instruments showing operation abnomalies (they shall be repaired and checked only at a specialized work-shop);
- it is recommended to grease the wiring connecting points especially the ground ones, with silver-plated vaseline SG.E.50855 and to protect them with Duroux 1316 lacquer or an equivalent one.

24.

24.1. MAINTENANCE WORKS PERIODICITY

The list of works enumerated below is in fact an inventory of the main operations carried out during the periodical maintenance works of the motor glider.

The way in which these works are executed is described in the Flight and Maintenance Manual (chapter 4.2.3. - 4.4.9) and in the engine and propeller manual supplied by the manufacturers.

After the first 25 hours of operation carry out the works provided in the Flight and Maintenance Manual (chapter 4.2.3.1).

In normal servicing the works periodicity is that mentioned below.

	After 750 hours	After 400 hours	After every 100 hours	After every 50 hours
LANDING GEAR				
- Visual inspection to landing gear holders and structure riveting (spare condition).			*	
- Visual inspection to forks, wheels (distortions, cracks, corrosion)			*	
- Visual inspection to shock-absorbers condition (greasing)			*	
- Inspection to main wheels and tail skid (dismounting, washing, greasing)			*	
- Inspection to brake shoes (adjust if required)			*	
- Check of retracting and warning systems (with suspended aircraft)			*	
- Check of tyres condition (breaks, etc)				*
- Check of landing gear position warning system (eventually re-adjusting according to the Flight and Maintenance Manual chapter 4.4.7).				*
- Check of braking system cables (eventually adjustment, greasing)				*
- Landing gear and retracting control dismounting check of all parts.				*
- Inspection to shock-absorber rubber discs and replacement if required				*
- Inspection to braking surface on the wheel hub.				*

	After 500 hours	After every 100 hours	After every 50 hours
ENGINE			
- For a correct maintenance of engine comply with the engine book instructions.			
- Valve clearances			*
- Greasing system inspection			*
- Oil and fuel filters cleaning			*
- Oil change			*
- Spark plug inspection *			*
- Connections inspection			*
- Compresion check			*
- Engine speed check			*
- Carburettor diaphragms check		*	
- Ignition check (eventually adjustment)		*	
- Check of Bendix magneto contacts (replacement if required)			*
- Replacement of floating needle valve (carburettor)			*
- Check of throttle shaft clearance (it shall not exceed 0.5mm)			*
- Carefully inspect the engine bed (cracks, clearances, etc)		*	
- Inspect the engine and engine mount attachment screws.			*
- Rubber elements (if aged, replace them)		*	
- Exhaust inspection (cracks, penetration areas, loose screws, etc)		*	
- Baffles inspection (cracks, loosening)			*
- Full emptying of gasoline tank			*
PROPELLER			
Comply with the propeller book instructions			
- Check of control mechanism, propeller pitch, greasing			*
- Bearings check for changing the propeller pitch eventually replacement)			*

*It is recommended to replace the spark plage after every 250 hours of operation.

	After 750 hours	After 400 hours	After every 100 hours	After every 50 hours
CELL				
- Aircraft outside cleaning (washing)				*
- Minute external inspection - insisting on the protective coat, especially in the attachment area of plates and elements.				*
- Attachment fittings clearance, condition and lock				*
- All controls clearance, condition and lock				*
- Pipes, pneumatical instruments condition (visual inspection).				*
- Electrical cables and their couplings condition				*
- Canopy inspection (greasing-bearing race), eventual cracks stopped by holes of 2 to 3 mm dia.).				*
- Controls clearances check				*
- Pilot belts check				*
- Tension check within the control cables(adjustment)			*	
- Controls adjustment check (deflections)			*	
- Controls greasing according to the diagram			*	
- Check of tailplane-fin junction (tailplane tilting), control lever and elevator coupling			*	
- Main junction wear check (measurement), - Check of tailplane - fin junction wear } after 750 hours boring possibly	*	*		
- Controls dismounting and parts check (worn parts shall be replaced)	*	*		
- Control surfaces dismounting and hinges wear check	*	*		
- Painting check (touch-up)	*	*		
- Replacement of the rubber shock-absorbers of movable instrument panel	*	*		
- Control surfaces fabric check (eventually replacement)	*	*		
- Rubber pipes check (eventually replacement)	*	*		
- Check of pneumatic instruments installations sealing	*	*		

After 750 hours
After 400 hours
After every 100 hours
After every 50 hours

- *Instruments check - if showing operation anomalies replace or send them to a specialized work-shop
- Electrical system
  - alternator, adjusting relay and starter shall be checked to a specialized work-shop
  - check the whole wiring
  - check the electrical connections and clean all the shoes and instruments contact pluge
  - check the magneto-magneto contact circuit and the magneto contact operation
  - engine control instruments - if showing operation anomalies replace them (transmitters of instruments) (Their repair and check shall be carried out to a specialized work-shop).
  - the wiring connection points especially those to "ground" shall be greased with silvered vaseline and protected with a lacquer.

If any defect is noticed during overhaulit shall be remedied according to the repair manual instructions.

* The compass shall be trimmed when new instruments have been mounted on the instrument panel, especially those creating electro-magnetic fields.