

**SERVICE BULLETIN**

IT IS NECESSARY TO CARRY OUT!

No. M 137A/4  
M 337/68

**CONCERNS :** Inspections and operation of the LUN 2221.13 starting magneto.

**REASON :** At a periodical test of the M 137 A aircraft engine on a test stand was found a damage of the ignition distributor arm. In connection with this matter, later it was investigated with some commercial users that there was not taken a sufficient care of the starting magnetos involved.

**PRECAUTION:** In order to prevent the LUN 2221.13 starting magnetos used in service on the M 137 A and M 337 aeroengines from occurring any defects or failures it is obligatory to carry out the below stated routine maintenance operations and inspections.

- On the M 137 A aeroengines fitted in the Z 526 F aircraft after every 50 oper. hours;
- On the M 137 A aeroengines fitted in the Z 42 aircraft after the first 50 oper. hours and later on after every 100 hours of operation;
- On the M 337 aeroengines fitted in the Z 43 and L 200 D aircraft after the first 50 oper. hours and later on after every 100 oper. hours

are to be carried out the following periodical operations:

- 1) Check duly fixed fitting of the ignition distributor arm on the slit carrier pin of the distributor cam. This check is to be performed by trying to deflect radially the ignition distributor arm, however, in fact the arm is to be sufficiently fixed, not deflectable and not anyhow rocking. If the arm is found rocking, it is to be taken off and the carrier pin slit of the cam is to be slightly opened (it is recommended to use for this operation a mandrel illustrated in Fig.1)

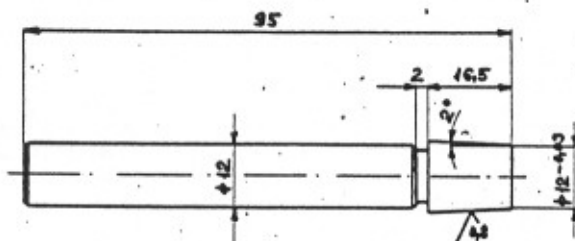
Then check the extend of pitting (burning) of the ignition distributor arm electrode in accordance with the attached Fig.2. The actual size is to be kept up within  $69^{+0,02}_{-0,45}$  mm. If the actual size is less than the specified one, the spark ignition distributing arm is to be replaced with a new one and recheck the size (see Fig.2) again.

- 2) Just at the same time, after having taken down the ignition distributor cover, check also the mechanical condition of the centrifugal regulator in the way as follows:

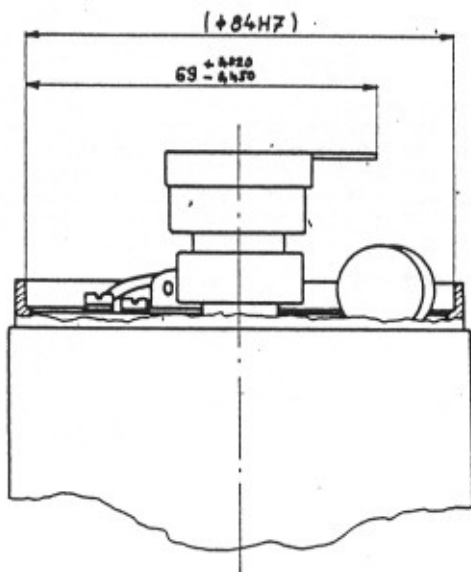
By hand turning the engine crankshaft set up the magneto cam to the proper position at which no of the cam peaks can open the contacts of the circuit breaker. Turn a little by hand the ignition distributor arm in the magneto rotating sense as far as just to the stop. Then after having released the ignition distributor arm, it should return itself back to its primary position. If the ignition distributor arm does not return back itself to its own initial position (if it is dragging or sticking in return motion) or, would it get sticking after the engine run just in the position of maximum ignition advance and would not be able to return back to its primary position, it would be necessary to detach the whole magneto from the engine and to get it skilfully inspected and repaired at a special repair shop.

Further, the circuit breaker contacts should be also inspected and duly cleaned and, maximum opening (0.25 to 0.35mm) of the contacts are to be tested. At this testing operation is, however, the specified operating pressure of 0.60 to 0.70 kp. to be kept up.

- 3) Duly inspect the condition of the cam working surface and of the cam lubricating felt pad and, if necessary, lubricate it slightly with a thin low-setting oil. But it must not be overlubricated in order to avoid thus any possible oil penetration to the contacts of the circuit (ignition) breaker.
- 4) The inspect the condition of the ignition distributor cover whether it is clean enough or, whether there are not any cracks or fissures. Pay also due attention to a sufficient tightening of the screws which actually are active operating parts of the primary electric circuit. When fitting the high-voltage cable connectors into the ignition distributor cover, be careful enough to keep up their due conducting connection with the electrodes of the ignition distributor cover. The shielding parts and high-voltage cables, as well as the ceramic insulators of the cable terminals put in the spark plugs have also to be continuously kept up in proper operating condition and sufficiently clean.
- 5) After every 500 oper. hours it is recommended to test the serviceability of the capacitor. If there is no possibility of testing it and if its ignition operation-ability is not sufficient, replace it with a new one.



Obr. 1  
Fig.1 - Øxr.1



Obr. 2  
Fig.2 - Øxr.2

- 6) After carrying out those periodical inspection and maintenance operations on the magnetos as stated above, it is still necessary to test the operationability of magnetos fitted on the engine. During a testing run of engine with both the magnetos fitted on, increase slowly the engine speed within the range of 1000 to 1500 r.p.m. and inspect cautiously the engine speed indication whether it is not anyhow suddenly or violently getting increased. And afterwards, on the contrary, the engine speed should be in a testing way slowly decreased from 1500 down to 1000 r.p.m. and the engine speed indication should be carefully watched whether it is not anyhow suddenly getting dropped down. In case of such a defect has to be immediately investigated its reason. If there is found out no certain defect of magnetos fitted and being just tested on the engine, the magnetos should be removed from the engine and tested again on a test stand. If no test stand is there at disposal for this testing purpose, the defective magnetos are to be replaced with new ones.
- 7) When replacing the magnetos with new ones, the axial clearance and backlash of the magneto drive bevel gearing has to be tested and properly adjusted. This clearance is to be checked by measuring the axial clearance of the magneto drive LH and RH gear countershafts (see the annexed illustration No.3. ref. item 4 in the service manual "Technical Description, Servicing and Maintenance of the M 337 and 137 A Aircraft Engines") after having dismounted the generator and speedometer drive gears. The axial clearance between the gear countershafts and the bushing face fitted in the engine crankcase vertical wall has to be kept up within the range of  $0.6 \pm 0.1$  mm with duly retightened flange of the magneto drive shaft bushing. If necessary, the axial clearance can be properly enlarged by inserting an additional rubber sealing between the engine crankcase and the magneto drive shaft bushing flange.

TO BE CARRIED OUT : By the commercial user.

COST TO BE CHARGED ON ACCOUNT OF: No costs thereby arise.

MATERIAL TO BE DELIVERED: By the manufacturers on a special order of the commercial user.

VALIDITY OF THIS BULLETIN: It comes into force immediately after having received it and to be carried out at specified periodical inspections.

21.5.1971

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