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 ILMAILUHALLITUKSEN TIEDOTUKSIA
 INFORMATION FROM THE NATIONAL BOARD OF AVIATION

MUUTOSMÄÄRÄYS
AIRWORTHINESS
DIRECTIVE

M 1520/88

25.4.1988



M-määräyksen noudattaminen on ilma-aluksen jatkuvan lentokelpoisuuden edellytyksenä. Määräyksen mukaisen toimenpiteen saa tehdä ja kuitata, ellei määräyksessä toisin mainita, ilmailuvälinekorjaamo tai lupakirjamekaanikko kelpuutuksensa mukaisesti, purjelentokoneiden ja harrasteilma-alusten osalta huollosta vastaava henkilö. Tehty toimenpide on merkittävä ilma-aluksen teknilliseen päiväkirjaan tai purjelentokoneen matkapäiväkirjaan.

1520. PZL. Purjekoneen tarkastus

Koskee: Purjelentokoneita SZD-30 Pirat, sarjanumeroita W-314:stä W-328:aan, W-389:stä W-418:aan ja B-294:stä B-596:een.

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Voimaantulo: 15.5.1988

Toimenpiteet:

- A. Kun purjekone saavuttaa 1800 tunnin kokonaislentoajan, on sille tehtävä liitteenä olevan luettelon mukainen erityistarkastus. Kun tarkastuksessa havaitut viat on korjattu ja kaikki purjekonetta koskevat bulletinit on tehty, voidaan purjekoneen suurinta sallittua kokonaislentoaikaa jatkaa 200 tunnilla. Tarkastus on toistettava 200 lentotunnin välien, kunnes saavutetaan 2600 tunnin kokonaislentoaika, jota ei toistaiseksi saa ylittää. Tarkastuksen saa tehdä ilmailumääräyksen AIR M6-3 muutos 3 kohdan 3.5.2. mukainen korjaamo tai tarkastaja.
- B. Lisää ennen seuraavaa lentoa purjekoneen huolto-ohjekirjan "Technical Service Manual with the Schedule of Maintenance Works" kappaleen 3.5 (sivu 3-7) perään seuraava teksti. "After completing 1800 flying-hours and after the technical inspection performed acc. to item 4.1 of Bulletin No. BE-027/87 "Pirat" the glider is allowed for further 800 flying hours life-time with the inspections after each 200 flying hours up to the total life-time of 2600 flying-hours."

Toimistopäällikön po.
 jaostopäällikkö


 J. Vanhatalo

M35.LJV/AKo

- 7.1.13. Condition of control column /stick, fittings/, condition of push-rods /with ends/ in aileron control circuit in the fuselage and levers on frame No 11 /check for damages or corrosion and play/.
Result
- 7.1.14. Condition of rudder control circuit cables /pay attention to the condition of pulleys especially of duraluminium and turnbuckles/. If the cables have been not replaced in last 6 years the replacement is required.
Result
- 7.1.15. Condition of pedals and adjusting mechanism /pay attention for wear especially pulleys, damage, plays and corrosion/.
Result
- 7.1.16. Condition of push-rods for gliders of Part No from B-334 /or push-rods and wire tension members for gliders of Part. No up to B-333 incl./ in the elevator control circuit.
Result
- 7.1.17. Trimming-tab control circuit condition in fuselage /push-rods, wire tension members and levers/. In case of corrosion or wear the elements should be replaced.
Result
- 7.1.18. Condition of wheel brake control circuit /fixing of lever on control stick, condition of tension member, Bowden, adjusting end and lever/.
Result
- 7.1.19. Condition and fixing of carrying-handle on rear fuselage part.
Result
- 7.1.20. Condition and fixing of rudder fittings as well as T-fitting and nest for stabilizer.
Result
- 7.1.21. Condition and fixing of elevator actuating lever and fittings on the rear wall of the fin. Measure the plays on rudder hinges /max. allowed 0,1 mm/.
Result

4. General visual inspection - check for : -----

- 4.1. Canopy condition and its fitting to the fuselage opening outline /check the canopy for damages or cracks, condition of the window, guides and "Mofaza" lock/.
Result
- 4.2. Condition of fuselage front part /pay attention to the lacquer condition as a sign of eventual structure damages/.
Result
- 4.3. Condition and fixing of front towing hook cover.
Result
- 4.4. Condition and fixing of front skid /general/.
Result
- 4.5. Condition and fixing of all external inspection holes /clamped and special ones/.
Result
- 4.6. Condition of leading edge of rectangular and trapez wing portions /pay attention to the eventual damage of loading edge and the condition of wing box covering/.
Result
- 4.7. Condition of wing trailing portion, canvas covering and trailing edge /pay attention to the time period in respect to the last canvas replacement/.
Result
- 4.8. Aileron condition /for damages of wooden structure and canvas covering/ and the play on hinges /qualitatively/.
Result
- 4.9. Condition of fuselage rear part with fin /pay attention whether the glider got wet/.
Result
- 4.10. Rear skid condition /shock absorber incl./ and its fitting /generally/.
Result
- 4.11. Horizontal tailplane condition /for structure damages and canvas covering of the elevator/ and the plays of stabilizer fittings and elevator hinges /qualitatively/.
Result

4.12. Condition and hinges of trimming-tab.

Result

4.13. Elevator condition /structure and canvas covering/ and hinge plays /qualitatively/.

Result

4.14. The value of slots between the rectangular and trapez portions of the wing and their variation under the loading of trapez portions in up-down and forwards-backwards directions. /Pay attention for play value in these connections - qualitatively/.

Result

Open the canopy and check:

4.15. Friction forces in control circuits /using the dynamometer/ or: control stick handle, control levers handles and pedal feet.

4.15.1. Elevator - neutral daN /allowed 0,7 daN/
- max.deflection daN /allowed 1,2 daN/

4.15.2. Aileron - neutral daN /allowed 0,8 daN/
- max.deflection daN /allowed 1,6 daN/

4.15.3. Rudder - daN /allowed up to 4 da N/

4.15.4. Air brake - extending daN /allowed 12 daN/

- retracting ... daN /allowed 16 daN/

NOTE: When retracting the airbrake the temporary force can range up to 20 daN.

4.15.5. Trimming-tab - forwardsdaN /allowed 3,5 daN/

- backwardsdaN /allowed 0,5 daN/

4.15.6. Hooks /SZD-III, A-56/ for locking /the front and c.g.

hooks/ daN /allowed 2,5 daN/

for releasing daN /allowed 6 daN/

NOTE: For TOST hook - releasing 15 daN.

4.16. Measure the control surfaces deflections.

4.16.1. Right aileron-up⁰ /required 30⁰ ± 2⁰/

-down ...⁰ /required 16⁰ ± 1⁰/

7.1.5. Condition and fixing of instrument panel. Condition of panel cover and its fixing.

Result

7.1.6. Condition of instruments /check the actuality acc. to the certificates/.

Result

7.1.7. Condition of pressure ducts, heads and drainage units /check the perviousness and tightness of air installation for instruments/.

Result

7.1.8. Pilot's back rest and mechanism of its locking.

Result

7.1.9. Air conditioning operation - condition of control system, air intake cap and its deflection /correct fitting in closed position/.

Result

7.1.10. Condition and actuality of safety belts /pay attention for the correct pressing of lock spring acc. to Bulletin No BE-005/83/J5.00.00/. Pay attention to the belts to be clean, free of damages and strip wear.

Result

7.1.11. Condition of main fuselage fittings /front and rear/ their fixing into the main frames /dislocation/ and plays against the bolts /max. allowable play 0,15 mm/.

Check for cracks or other damages /using the 10 x magnifying glass/. Measure the fitting holes diameter /pay attention to the surface condition.

Right front fitting ϕ 14 mm, rear fitting ϕ 12 ... mm

Left front fitting ϕ 14 mm, rear fitting ϕ 12 ... mm

Basing on the results of item 5.1.5. calculate the plays.

Result

7.1.12. Condition and fixing of lever on frame No 9, condition of push-rods and pulleys under the seat pan.

Result

5.1.16. Condition of aileron slot fairings /aprons/ and fitting
lath /possibility of fixing the screws/.
Result

6.1. Aileron

Check for :

6.1.1. Condition of aileron wooden structure, canvas covering
/pervious drainage holes/ fixing of balancing weight.
Result
6.1.2. Condition of fittings in aileron, their fixing in the
structure, condition of joining elements, screws and
bolts /hinge play allowed max., 0,1 mm/.
Result
6.1.3. Aileron mass - balance condition.
Result

7.1. Fuselage

7.1.1. Remove the canopy. Check the emergency jettisoning
operation.
Result
Check for:
7.1.2. Canopy frame condition /fixing of perspex, transparency,
condition of window guides, condition of "Mefaza" lock,
condition of the cable securing the opened position,
condition of the sealing, operation of locks.
Result
7.1.3. The readability of placards, pictographs, colour marking
of hand-grips.
Result
7.1.4. Condition of head rest, sacks, pockets, cushion or other
upholstery elements, internal lacker layers and coverings,
sanitary installation condition.
Result

4.16.2. Left aileron - up° /required 30° ± 2°/
- down° /required 16° ± 1°/
4.16.3. Elevator
- Up° /required 18° ± 1°/
- down° /required 17° ± 1°/
4.16.4. Trimming-tab - up° /required 10° ± 2°/
- down° /required 25° ± 2°/
4.16.5. Rudder-to right° /required 32° + 3° to
-to left° right and left/
4.16.6. Extending of air brake plates
upwards right mm upwards required
upwards left mm 160 ± 5 mm
downwards right mm downwards required
downwards left mm 170 ± 5 mm
4.17. Measure the plays on control stick for the elevator
and ailerons fixed :

4.17.1. Play in "aileron" direction mm /max.allowed ± 3 mm/
4.17.2. Play in "elevator" direction mm /max.allowed ± 3 mm/
NOTE : Measure on stick end in respect to the neutral
position.
4.17.3. Play on the trimming-tab slider mm /max. allowed
± 2,5 mm/.
4.18. Condition of static electricity discharging installation
/the discharging brushes on wing tips and elevator/.
Check the conductivity.
Result

5. Particular verification

NOTE : The glider disassembled /disconnected: trapez wing
portions, central wing portion, aileron, horizontal
tailplane, control surfaces/.

5.1. Wing.

Check for :

5.1.1. Condition of fittings connecting the trapez with
rectangular wing portions /pay attention for ovalization/
checks /using the 10 x magnifying glass/, seizings,

6. flashes, play in fittings. Measure the bolts and holes diametres in fittings /allowed play max. 0,15mm/.

Result of inspection
Result of measurement-play in right connection

for ϕ 14 mm
for ϕ 16 mm

play in left connection for ϕ 14 mm
for ϕ 16 mm

5.1.2. Condition of bolts connecting the trapez with rectangular wing portions /surface condition, linearity, cracks, condition of anticorrosive protection, securing/.
Result

5.1.3. Condition of fork and stone fittings /condition of stones of rectangular with trapez wing portions connection/, measure the plays /max. allowed play 0,15 mm/ and check the fixing of fittings in the wooden structure of glider.
Result

5.1.4. Condition of fittings of wing rectangular portion to fuselage connection. Remove the lacquer and check /using the 10 x magnifying glass/ for cracks, seizings of holes, flashes or ovalization, plays of fitting in wood.

Measure the hole diametres :

- front fitting right/left 14 mm/14 mm
- rear fitting right/left 12 mm/12 mm

Result

5.1.5. Condition of bolts joining the rectangular wing portion with fuselage. Measure the bolt diameter

- right bolt ϕ 14 mm, ϕ 12 mm
- left bolt ϕ 14 mm, ϕ 12 mm

Calculate the play mm /allowed max. 0,15 mm/.

Result

5.1.6. Condition of push-rod end of aileron control circuit in wing rectangular portion, condition of push-rod and turnbuckle of tension member of aileron control circuit /when the tension members have not been replaced in last 6 years, the replacement is required/.

Result

5.1.7. Condition of levers, push-rods /ends included/ in air brake control circuit of wing rectangular portion.

Result

5.1.8. Condition of air brake arms and plates /deformation/ and caps /fitting/, radial and axial play on arm axes, movement drag.

Result

5.1.9. Condition of wing rectangular portion plywood covering /pay attention for condition of covering and ribs behind the air brake box/ its glueing with the skeleton, plywood condition. Knock the glue joints on the leading edges longerons and near the air brake box. In case of doubt make the inspection cuttings.

Result

5.1.10. Condition of wing rectangular portion canvas covering.

Condition of trailing edge and its linearity, fixing of inspection hole caps pervious drainage holes.

Result

5.1.11. Condition of root ribs of wing rectangular portion and their glue joints with the covering. Condition of sealings in the contact plane. Check through the inspection holes. In case of doubt, when the glued up inspection holes are found to be unsatis - factory, make the extra inspection holes.

Result

5.1.12. Condition of plywood and canvas covering of wing trapez portions, inspection holes caps and root ribs.

Right portion - result

Left portion - result

5.1.13. Condition of aileron fittings, hinges and their fixing /pay attention for corrosion and plays/.

Result

5.1.14. Condition of levers and push-rods of aileron control system in trapez wing portion.

Result

5.1.15. Condition of wing trapez portion tip-caps, tip-skids and tip discharging brushes.

Result

8.1. Horizontal tailplane

Check for

8.1.1. Condition of stabilizer wooden structure /skeloton, covering, conservation/. The waves of covering should not exceed 2,5 mm.

Result

8.1.2. Condition and fixing of fittings /of stabilizer and elevator hinges/. Condition of fitting screw thread. Condition of inspection hole securing cap. Measure the plays on fitting /max. allowable 0,1 mm/.

Result

8.1.3. Elevator condition /structure, fittings and their fixing, canvas covering, discharging brush/.

Result

8.1.4. Condition of trimming-tab and its hinge.

Result

2.1. Rudder

Check for :

9.1.1. Condition of rudder /structure, fittings and their fixing, canvas covering/.

Result

9.1.2. Rudder mass and c.g. location. Check for the complying with directives of Bulletin No BK-019/75 "PIRAT".

Result

VERIFYING COMMITTEE :

- 1.
- 2.
- 3.
- 4.
- 5.

APPRECIATION SHEET OF TECHNICAL CONDITION OF SZD-30

"PIRAT" GLIDER AFTER COMPLETING OF 1700 - 1900 FLYING-HOURS

1. Initial statements and obligatory glider documents

1.1. The inspections can be made by:

producer, authorized workshop of aircraft repair and technical staff members of the Aeroclubs having the acceptance of the Authority.

1.2. All the measurements should be made /basically/ at the temperature of +20°C /293 K/.

1.3. For the inspection the following glider documents are obligatory:

1.3.1. Glider Log Book

1.3.2. Technical Description, Technical Service Manual and Schedule of Maintenance Works

1.3.3. Airworthiness Certificate

1.3.4. Production Certificate

1.3.5. Test flight Protocol

1.3.6. Weighing Protocol

1.3.7. Equipment Certificates

1.4. Supplementary documents /helpful for inspection and repair/ :

1.4.1. Repair Manual for Wooden Gliders, Part General.

1.4.2. Repair Bulletins /as listed in Bulletin BI-024/82

"Pirat" and additionally the Bulletin BR-025/82 "Pirat"/.

1.4.3. The Manuals of operation, maintenance and

inspection of SZD-III, A-56, A-56a type towing hooks.

2. Information data on the glider.

2.1. Pacing on the documents listed in items 1.3 and 1.4 write down :

Glider Fact. No Reg. No
Year of production Producer
Amount of flying-hours completed
Amount of landings
Amount of overhaul repairs

Amount of after accidents repairs
/what has been damaged - the kind of failure ?/
.....
.....
The introduced Bulletins
.....
.....
Notes /the kind of used glue ?/
.....
.....

3. Initial procedures

NOTE: Before the inspection the glider should be cleaned, dried, the grease surplus removed /wash the control circuits with the extraction gasoline and grease slightly/.

3.1. Check the completion of glider /pay attention that the sets have the same Factory No, check the canvas covers to be complete and in good condition, check the presence of tools, board instruments, seat cushion etc./

Result
.....
3.2. Assemble the glider /pay attention that the glider allows for correct assembling/.

Result
.....
3.3. Check the control circuits functioning in general sense /correct direction of deflections, lack of drag or constraint of movements/.

Result
.....
3.4. Perform the nivelation /the result should be confronted with the data in glider documents/.

Result
.....
3.5. Check the mass of glider with standard equipment and c.g. location /confront with the documents data/.

Result

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7.1.22. Condition of hooks /disassemble for checking/, their fittings and standard elements, tension members.
Result

7.1.23. Condition of glue joints of under wing floor to the structure. Through the openings and inspection holes perform the particular inspection of glue joints of the fuselage skeleton elements and covering to skeleton. Inspect by eye using the moderate pressing on the covering /near the support, frame or longeron/, knocking. Make, if necessary, the cuttings on:

- connections of frames with keel board
- near rear skid
- in places of frame to longeron glueing

Check for splitting of plywood veneer on coverings, decay, condition of conservation and check that the frame condition allows for nailing during the glueing of the coverings.

NOTE: The inspection holes cut in a way allowing to check the condition of glue joints and to have an access for the inspection of fittings. Pay attention to the quality and condition of the repairs performed before.
Result

Put the fuselage into inverted position and check :
7.1.24. Condition and fixing of the front skid /especially the sliding surface/.

Result
.....
7.1.25. Main wheel condition /hubs and tyre with tube/ wheel fitting. Condition of brake strip.

NOTE: For inspection the main wheel should be disassembled.
Result

7.1.26. Condition and fixing of rear skid and its upholstery.
Result

7.1.27. Condition of rear fuselage part coverings and drainage holes.
Result