DAI OSB 42-123 DAI OSB 42NG-060 Page 1 of 3 27-Jun-2016

OPTIONAL SERVICE BULLETIN OSB 42-123 OSB 42NG-060

I TECHNICAL DETAILS

I.1 Category

Optional.

I.2 Airplanes affected

Type: DA 42, DA 42 M, DA 42 NG, DA 42 M-NG

Serial numbers: 42.004 through 42.427,

42.AC001 through 42.AC151,

42.M001 through 42.M026,

42.N001 through 42.N185, 42.N218.

42.NC001 through 42.NC004, 42.NC006 through 42.NC008,

42.MN001 through 42.MN038.

Only airplanes with GFC 700 are affected.

I.3 Date of effectivity

27-Jun-2016

I.4 <u>Time of Compliance</u>

At owner's discretion

I.5 Subject

Installation of an improved yaw damper system for the Garmin GFC 700 autopilot system.

ATA-Code: 22-10

I.6 Reason

A yaw damper installation with improved alignment and quick links for the servo cables has been approved. This Service Bulletin describes the retrofit installation for airplanes in service.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information or instructions contained in this document relate to the Design Change Advisories No. OÄM 42-102/j, MÄM 42-904 and OÄM 42-210/d, which have been approved under the authority of EASA Design Organization Approval ref. EASA.21J.052.



DAI OSB 42-123 DAI OSB 42NG-060 Page 2 of 3 27-Jun-2016

The technical content of this document has been approved under the authority of DOA ref. EASA.21J.052.

I.9 Accomplishments / Instructions

See WI-OSB 42-123 / WI-OSB 42NG-060, latest effective issue.

I.10 Mass (Weight) and CG

Mass (Weight) and CG not affected.

II PLANNING INFORMATION

II.1 Material and Availability

See WI-OSB 42-123 / WI-OSB 42NG-060, latest effective issue.

II.2 Special Tools

See WI-OSB 42-123 / WI-OSB 42NG-060, latest effective issue.

II.3 Labour Effort

Approx. 10 hours.

II.4 Credit

None.

II.5 Reference Documents

DA 42 Airplane Maintenance Manual, Doc. No. 7.02.01, latest effective issue.

DA 42 NG Airplane Maintenance Manual, Doc. No. 7.02.15, latest effective issue.

III REMARKS

- All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
- 2. All work, particular that which is not especially described in this Service Bulletin, must be done in accordance with the referenced Maintenance Manual.
- 3. Completion of all work must be recorded in the log book.
- 4. In case of doubt contact Diamond Aircraft Industries GmbH.



DAI OSB 42-123 DAI OSB 42NG-060 Page 3 of 3 27-Jun-2016

EXECUTION REPORT TO SERVICE BULLETIN OSB 42-123 OSB 42NG-060

AIRPLANE INFORMATION			
Airplane Serial Number			-
Airplane Registration			-
Airplane Operator			-
Hours of operation of airplane			-
No. of landings			-
Hours of operation-engine LH			-
Hours of operation-engine RH			-
Typical operation of airplane	private,	club, training, other	
Date, Name, Sign			

Please fax the completed form to Fax No. +43-2622-26700-1369 or e-mail to airworthiness@diamond-air.at

WI-OSB 42-123 WI-OSB 42NG-060 Revision 0 Page 1 of 5 27-Jun-2016

WORK INSTRUCTION WI-OSB 42-123 WI-OSB 42NG-060

I GENERAL INFORMATION

I.1 Subject

Retrofit installation of GFC 700 yaw damper frame assy D60-2217-21-00_03.

I.2 Reference Documents

DA 42 Airplane Maintenance Manual, Doc. No. 7.02.01, latest effective issue. DA 42 NG Airplane Maintenance Manual, Doc. No. 7.02.15, latest effective issue.

I.3 Remarks

- a) All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
- b) All work, in particular if not described in this work instruction, must be done in accordance with the referenced maintenance manual.
- c) For conversion factors between SI units and US/Imperial units refer to AMM Chapter 02.
- d) In case of doubt, contact Diamond Aircraft Industries GmbH.

II DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1 <u>Drawings</u>

D60-2217-00-00X02, Rev. H D60-2217-20-00_02, Rev. B D64-2217-20-00, Rev. B

II.2 Special Tools

Spring scale up to 10 kg.



WI-OSB 42-123 WI-OSB 42NG-060 Revision 0 Page 2 of 5 27-Jun-2016

II.3 Material

Quantity	Part Number	Description
2	D60-2217-20-08_2	YAW DAMPER, SHIM
1	D60-2217-20-09_1	YAW DAMPER - TENSION PLATE
2	D60-2217-20-10_1	YAW DAMPER PULLEY BAIL
1	D60-2217-20-70	RING
1	D60-2217-21-00_03MOD	YAW DAMPER FRAME ASSY GFC 700
2	DS BU2-08-4,9-0084-C1	SPACER BUSH
2	AN3-11A	SCREW
2	DIN 125A-4,3-A2	WASHER
9	DIN 125A-5,3-A2	WASHER
1	DIN 125B-6,4-A2	WASHER
2	DIN 7337 B - 3,2 x 4,3 - Al	BLIND RIVET
4	DIN7337-B2.4x8,5 ZP	COUNTER SUNK - BLIND RIVET
1	DIN 9021B-6,4-A2	WASHER
1	DIN 933 M6x45-8.8-BZP	HEXAGON HEAD, WITHOUT SHANK
2	DIN 933-M4x12-8.8-ZP	HEXAGON SCREW
10	DIN 933-M5x12-verzinkt	HEXAGON SCREW
1	DIN 933-M5x16	HEXAGON SCREW
1	DIN 933-M6X14-ZP	HEXAGON HEAD SCREW
2	LN 29677-M4	ANCHOR NUT
1	LN 29985-M6	RIVET NUT
4	LN 9025-0510K	WASHER
4	MS16996-11	ALLEN HEAD SCREW
2	MS21044N3	NUT
4	NAS 1149F0332P	WASHER
4	NAS 1801-3-10	HEXAGON HEAD SCREW
1	011-01028-09	GSM SPIRAL CAPSTAN STANDOFF KI
1	011-01336-00	CABLE GUARD KIT
1	054218_15_005	CLAMP



WI-OSB 42-123 WI-OSB 42NG-060 Revision 0 Page 3 of 5 27-Jun-2016

2	MS24566-1B	PULLEY	
1	RSGU1	CLAMP	
2	RSGU18_10	CLAMP	
1	D60-2217-10-70x02	AP YAW DAMPER CABLE	
2	AN100-4	THIMBLE	
0.1m	KT-0116354127	HEATSHRINK	
2	MS51844-22	SLEEVE	
2	D60-9022-17-01	CARABINER	
10	PLT1MM30	CABLE TIE	
10	PLT2SM30	CABLE TIE	

Material is available from Diamond Aircraft Industries.

III INSTRUCTIONS

1	Remove the yaw servo according to AMM section 22-10.
2	Adjust/Check the servo clutch according to AMM section 22-10.
3	Install the GSM 85/86 servo mount and GSA 80 servo into the D60-2217-21-00_03 yaw damper frame assy in accordance with drawing D60-2217-20-00_02 (for GSM 85) or D64-2217-20-00 (for GSM 86).
4	Install the D60-2217-10-70X02 AP yaw damper cable onto the capstan according to figure below.
5	Temporarily fix the cable with tape on the servo frame.



WI-OSB 42-123 WI-OSB 42NG-060 Revision 0 Page 4 of 5 27-Jun-2016

- 6 Install the 011-01336-00 cable guard kit (GSM 85 only) and 011-01028-09 capstan standoff kit (GSM 85 and GSM 86) onto the servo mount and secure with Loctite 243 or equivalent. 7 Assemble the D60-2217-20-09_1 yaw damper tension plate. Install LN29677-M4 anchor nut to yaw damper tension plate with DIN7337-B2.4x8,5 ZP rivet. 8 Install the D60-2217-20-09_1 yaw damper tension plate on the yaw damper frame. 9 Pre fit the yaw damper frame assy into the aircraft. Install but do not tighten the mounting screws to allow for axial movement. Install the tensioning screw located on the front of the yaw damper. Check before crimping that the rudder is in neutral position and the ball cut out from the capstan is in center up position. Crimping of thimble eye on the cables according to AC 43.13-1B and drawing D60-2217-00-00x02. Check tension of rudder cables via the following procedure: Pull on turnbuckle using a spring scale applying a force of 10 kg. Deflection of turnbuckle should be 20±5 mm. If necessary, adjust rudder tension accordingly via turnbuckle. 11 Connect the yaw damper thimble eye to the rudder cable turnbuckle with the D60-9022-17-01 carabiner and secure screwed connection on carabiner using Loctite 243 or equivalent. Remove the tape the cable was fixed with.
 - 12 Check and adjust the yaw damper cable tension:

Pull on the yaw damper cable centrally between the Pulley and the cable eye with the spring scale with a force of 3 kg and adjust cable tension to obtain a deflection between 5 mm and 10 mm.





WI-OSB 42-123 WI-OSB 42NG-060 Revision 0 Page 5 of 5 27-Jun-2016

	Caution: Do not use the yaw servo adjustment screw to adjust cable tension, instead move the servo unit with gentle strokes and secure position via the adjustment screw. Caution: Do not bend the frame assy during adjustment.
13	Tighten the 6 screws mounting the yaw damper frame to the aircraft.
14	Fix carabiners to thimble eyes according to drawing D60-2217-00-00X02.
15	Connect the electrical connection of the yaw servo. Fix the harness with cable ties.
16	Install all clamps and fix the hydraulic lines to the yaw damper frame and if necessary fix the TKS lines with cable ties.
17	Check all flight controls in working area for minimum 3 mm clearance.
18	Check that the rudder is in neutral position and the ball cut out from the capstan is in center up position.
19	Do an inspection of all the controls that you have adjusted. If necessary for your Airworthiness Authority do a duplicate inspection of the controls.
20	Clean working areas, check for foreign objects.
21	Check all altered, replaced, repaired parts for proper function.
22	Test all systems in working area for function.
23	Make all necessary entries in the airplane logs.













