



## SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN NO. 0062

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DATE: November 2, 1982

SUBJECT: Belt Tensioning and Idler System Modifications

MODELS: F-28A, 280, F-28C and 280C

EFFECTIVITY: All Serial Numbers manufactured prior to January 1981

COMPLIANCE: At the owner's earliest convenience or within 50 hours time in service after the effective date of this Service Directive Bulletin

To improve the service life of the belt tensioning and idler system, design improvements have been incorporated on production ships and must be retrofitted to previously manufactured helicopters.

The modifications include the following:

- (a) A redesigned P/N 28-13318 actuator arm (1) (ref. Figure 1) made of laminated steel to provide a structure that will resist damage that may occur from a misrigged belt or idler roller.
- (b) An improved rod end and shaft assembly (ref. Figure 1) connecting the belt engaging bellcrank to the yoke end.
- (c) A stabilizer strut which provides rigidity between the existing idler stabilizer (ref. Service Information Letter No. 0064) and the lower pylon tube, which improves drive belt pulley tracking and belt track maintenance. (Ref. Figure 2)

NOTE: Incorporation of the P/N 28-13316-1 stabilizer strut (1) requires installation of the P/N 28-13313-1 idler stabilizer as offered in Service Information Letter No. 0064.

NOTE: Some early model F-28A's may have an idler support assembly, P/N 28-13292-1 (Item 9, Figure 2) installed that may require an additional modification to accept the new actuator arms (1). See Figure 3 for dimensional check prior to assembly. If dimension is found to be .93 inch it should be machined locally to .81 inch for proper actuator arm (1) clearance. (Reference Maintenance Manual Section 8, page 4 for idler assembly removal procedure.)

Idler Assembly Modification

## A. Disassembly

1. Disengage clutch.
2. Remove cowling and baggage box.
3. Disconnect idler actuator arms (1) from the idler support assembly 28-13292.
4. Loosen actuator arm hardware at attachment to 28-13299 yoke (6) and remove the 28-13245 roller assembly (2).
5. Disconnect idler pulley assembly actuating shaft (19) (P/N 28—13217) from clutch engagement assembly bellcrank (28) 28-13260-3, and remove.
6. Remove idler stabilizer strut (1) (Fig. 2) (P/N 28-13313), if installed, between pylon and idler support arm at bottom end.
7. Remove 28-13217 shaft (19) from 28-13299 yoke end, and discard shaft. (Ref. Figure 1)
8. Disconnect the actuator arms (1) from the 28-13299 yoke end and discard arms.
9. Clean and inspect all parts to be re-used for airworthy condition.

## B. Assembly (Ref. Figure 1)

1. Place spacers (11) into bushings (12) of the actuator arms (1) with the flange of the bushing facing outward, and attach to the idler support assembly (17) with hardware (13), (14) and (15).

NOTE: Bolts (14) are installed from the inside of the actuator arms, torqued and safetied with cotter pin (16).

2. Install nut and locking device on rod end (18).
3. Turn rod end (18) into shaft (19) until a measurement from end of shaft to centerline of rod end ball is 6.75 inches.
4. Secure rod end (18) to shaft (19) as follows:
  - a. Lock washer type – Torque jam nut against shaft (19) and secure by bending washer over flats of nut and shaft.
  - b. Locking key type – Align key to slot in shaft (19) and torque jam nut. Safety wire jam nut to locking key.

5. Install nut (20) and washer (21) on shaft (19).
6. Apply Lubriplate or similar lubricant to threads of shaft (19) and turn shaft into yoke (6) until approximately 3/4 inch of threads are exposed when jam nut (20) is secured finger tight.
7. Place spacer (22) in rod end (18).
8. Install rod end and chamfered washers (23) into bellcrank (28) with hardware (24), (25) and (26). Install hardware only finger tight until clutch engagement rigging is checked per SIL 0080A.

NOTE: Washers (23) must be installed with chamfered side facing against rod end uniball.

9. Attach yoke end (6) to inside or forward actuator arm (1) with hardware (7), (8), (9) and (10). Torque and safety (7) and (8) in pairs.
10. Install roller assembly (2) on the inside of belt with grease fitting facing aft, by using hardware (3), (4) and (5). Leave loose.
11. Attach aft actuator arm (1) to aft side of roller assembly (2) with hardware (3), (4) and (5). Leave loose. Then install hardware, attaching aft actuator arm (1) to the yoke assembly (6) with hardware (7), (8), (9) and (10). Torque end, safety (7) and (8) in pairs.
12. Install P/N 28-13316-1 stabilizer strut (1) as detailed in this Service Directive Bulletin on Figure 2, and re-attach idler stabilizer arm, 28-13313-1 (8).
13. Check clutch engagement rigging, per Enstrom Service Information Letter 0080A. With clutch engaged and rigged, position roller assembly (2) (Figure 1) parallel, with 1/4 to 3/8 inch clearance from belt inner surface, and secure hardware. (Ref. Enstrom Maintenance Manual page MM-8-12.)
14. Lubricate roller assembly with Aeroshell 16 grease (MIL-G-25760A).
15. Secure rod end (18) to bellcrank (28) and install pin (27). Recheck all hardware security. (Ref. Figure 1)
16. Check drive belt track under power and adjust if required. Ref. Enstrom Maintenance Manual page MM-8-12.)

NOTE: Idler stabilizer 28-13313-1 (Item 8, Figure 2) should be loosened prior to tracking idler pulley, and retorqued after idler track has been established. Aircraft must be running with belt engaged when idler strut is secured.

## PARTS LIST - FIGURE 1

<u>Item</u>	<u>Part Number</u>	<u>Part Name</u>	<u>Quantity</u>
*1	28-13318-1	Actuator Arm	2
2	28-13245	Roller Assembly	1
3	28-13278	Spacer	2
4	3/8" Harper	Washer	4
5	AN364-624A	Nut	2
6	28-13299	Yoke End	1
7	AN3-H6A	Bolt	4
8	AN960-10L	Washer	6
9	AN364-1032A	Nut	4
10	AN73A3	Bolt	2
11	28-132008-11	Spacer	2
12	28-16311	Bushing	2
13	AN960-416L	Washer	4
14	AN4-11	Bolt	2
15	F12NE4753-043	Nut	2
16	AN381-2-8	Pin	2
17	28-13292-1	Idler Support Assembly	1
*18	01-691-08	Rod End	1
	AN316-8R	Nut	1
	28-14248-1	Washer	1
*18	MXKJR-8R	Rod End (Alternate)	1
	NAS-559-3, Type A	Lock	1
	NAS-509-8	Nut	1
*19	28-132005-11	Shaft	1
20	AN316-12R	Nut	1
21	AN960C1216L	Washer	1
*22	28-132006-11	Spacer	1
*23	28-132009-11	Washer	2
24	AN4-14	Bolt	1
25	AN960-416	Washer	3
26	F12NE4753-048	Nut	1
27	AN381-2-8	Pin	1
28	28-13260-3	Bellcrank	1

\*Indicates new parts required to complete modification.

STABILIZER STRUT MODIFICATION

## A. Installation (Ref. Figure 2)

1. Install stabilizer strut (1) in position as shown.
2. Secure with hardware (2), (3), (4), (5), (6) and (7).

PARTS LIST - FIGURE 2

<u>Item</u>	<u>Part Number</u>	<u>Part Name</u>	<u>Quantity</u>
*1	28-13316-1	Stabilizer Strut	1
*2	1/4 HARPER	Washer	1
3	AN4H-5A	Bolt	1
*4	AN3-11A	Bolt	4
*5	AN960-10L	Washer	4
*6	AN960-10	Washer	4
*7	AN365-1032A	Nut	4
8	28-13313-1	Idler Stabilizer	1
9	28-13292-1	Idler Support Assembly	1

\* Indicates new parts required to complete stabilizer strut installation.

If the P/N 28-13313 strut has not been incorporated (offered in Service Information Letter No. 0064), it is necessary to order the following components and install them per that Service Information Letter.

<u>Part Number</u>	<u>Part Name</u>	<u>Quantity</u>
28-13313-1	Strut	1
AN364-820A	Nut	1
AN960-C816	Washer	1

Components as required for this installation can be purchased through your nearest Enstrom Service Center or Enstrom Helicopter Service Department.

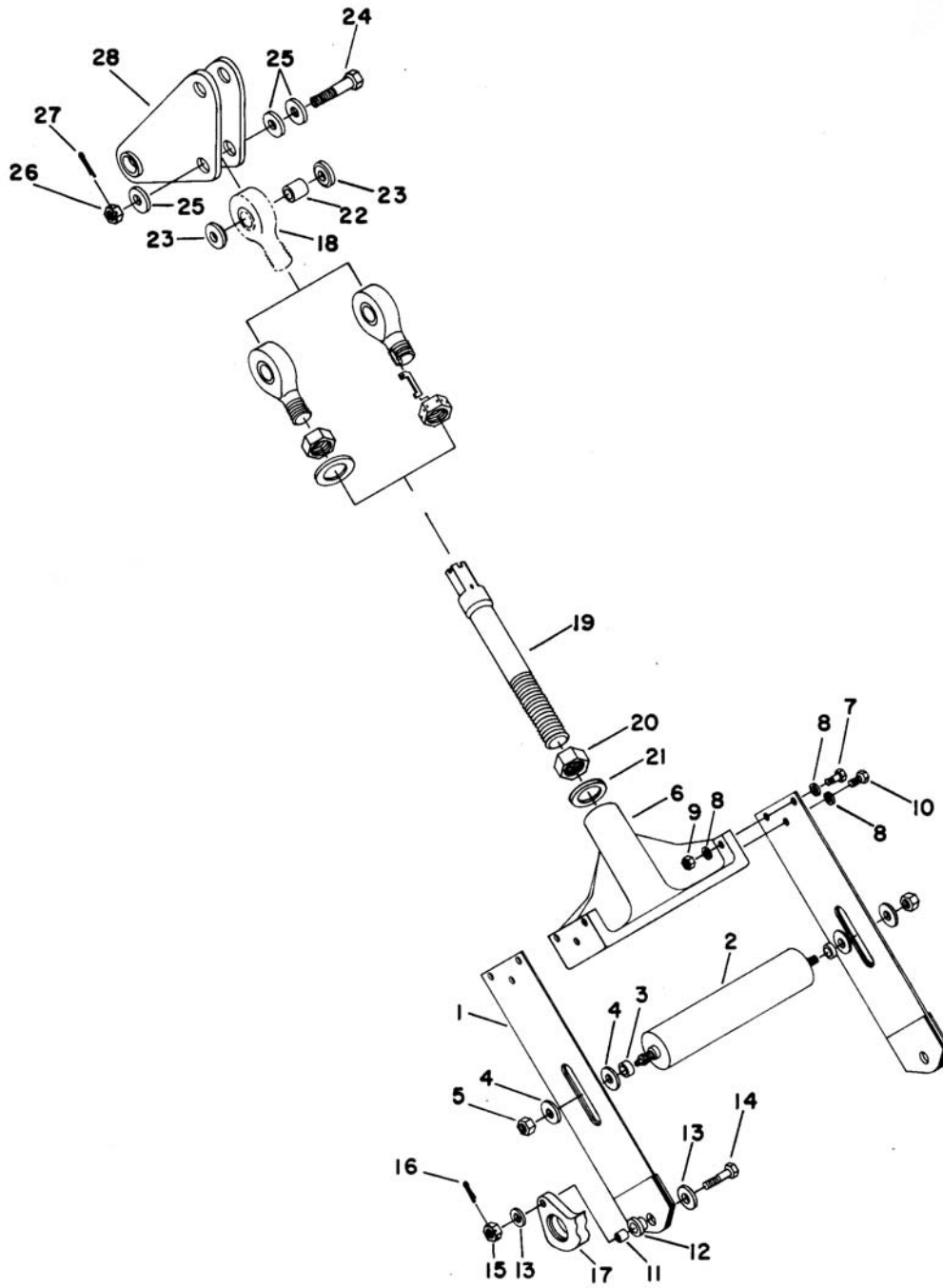


FIGURE 1

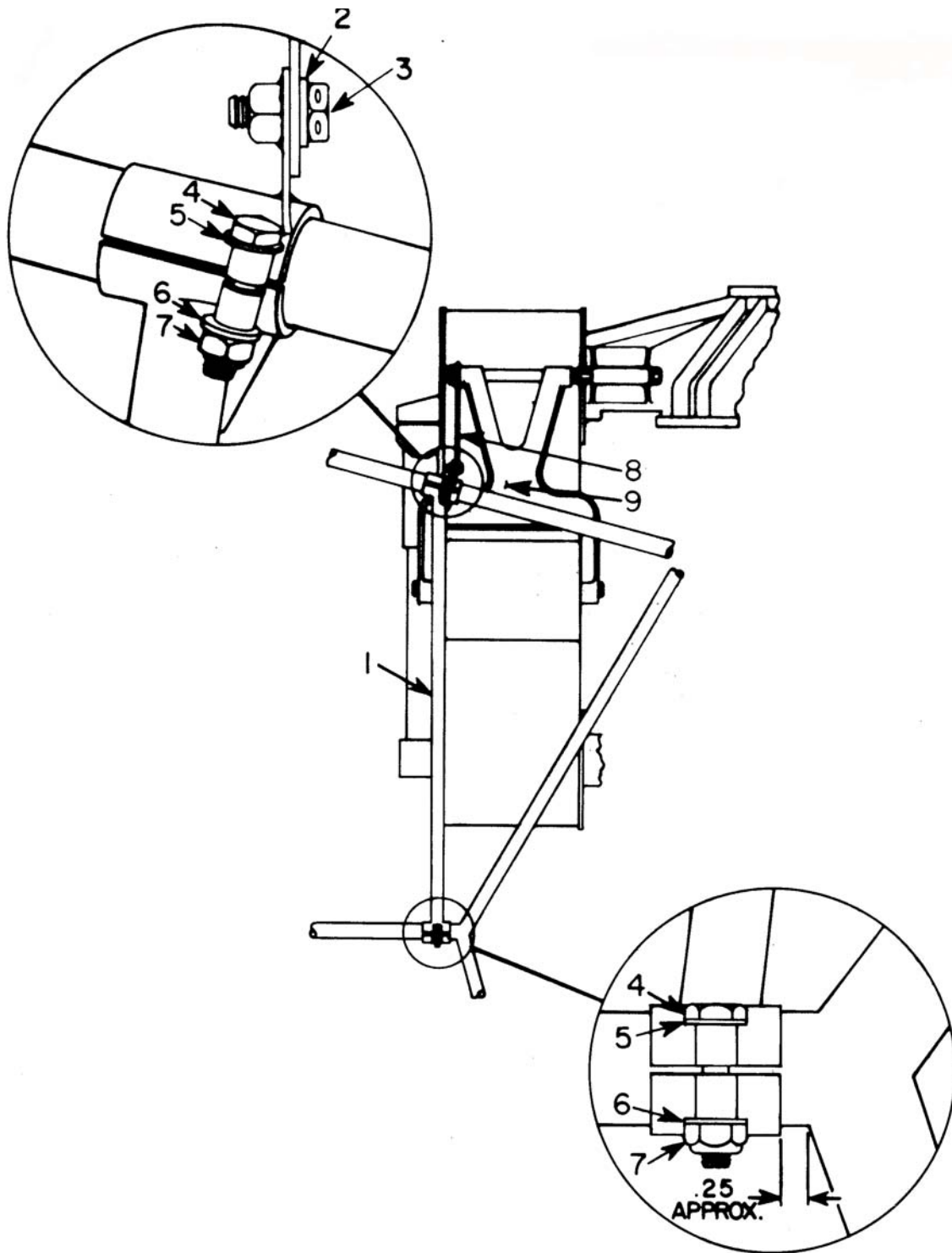


FIGURE 2

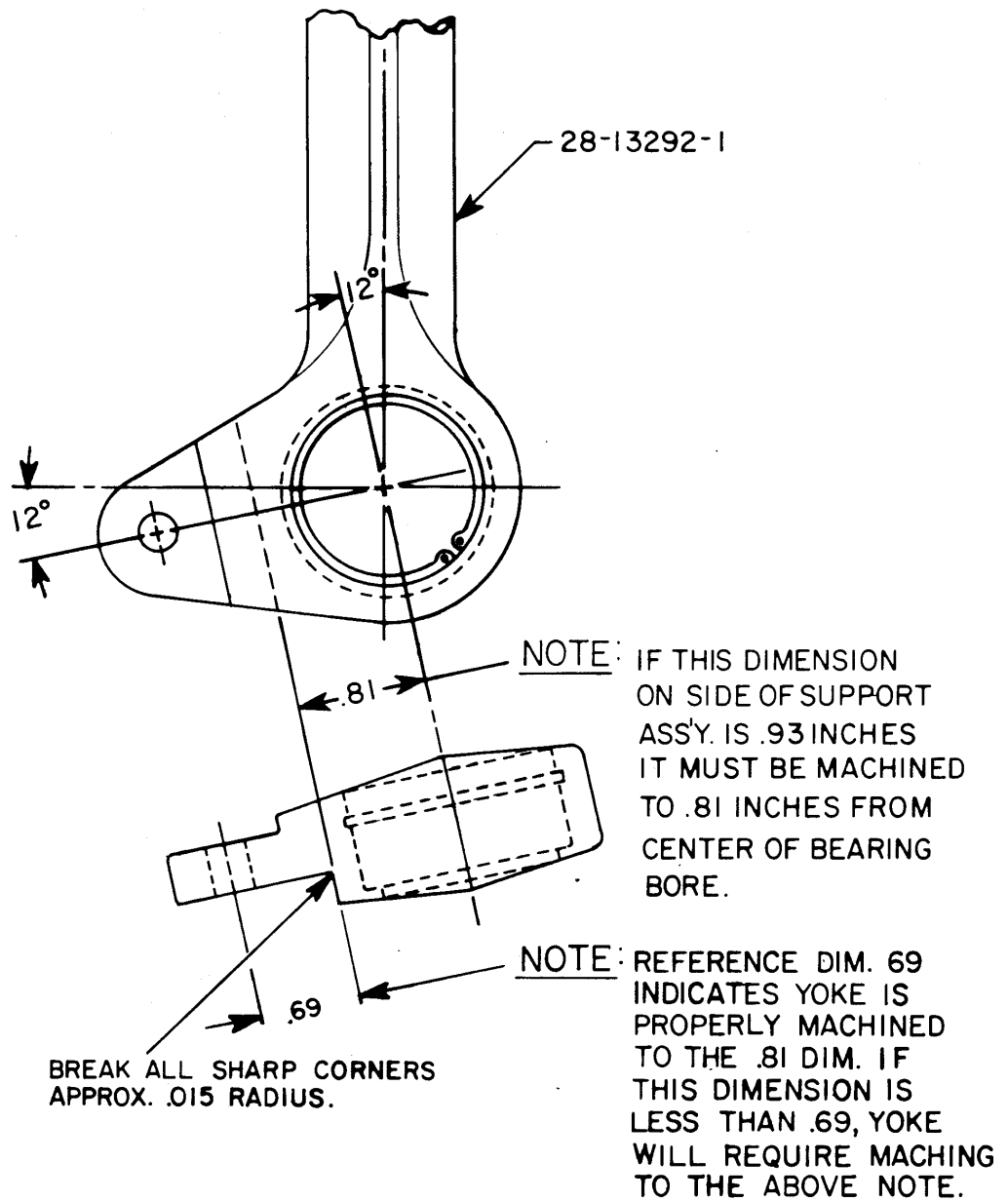


FIGURE 3