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# SERVICE INFORMATION LETTER

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SERVICE INFORMATION LETTER NO. 0179

Revision 1

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DATE:            December 20, 2017

1.    SUBJECT:    Copilot Flight Controls Removal

2.    MODEL:      F-28A, 280, F-28C, F-28C-2, 280C, F-28F, 280F, and 280FX Helicopters  
(does not apply to F-28C-2R and F-28F-R models unless the aircraft has been  
modified to a left-hand pilot in command configuration)

3.    EFFECTIVITY:   All

4.    BACKGROUND:

Enstrom helicopters are equipped with dual flight controls for pilot and copilot with the pilot-in-command seated on the left-hand side. To accommodate additional space for passengers or equipment, the copilot's flight controls can be easily removed.

This Service Information Letter (SIL) grants owners/operators the authorization to remove and re-install any or all the copilot controls at their option. The operator should be familiar with basic tools, such as a torque wrench, and it is recommended they review these procedures with a mechanic.

Revision 1 adds the removal and installation steps for removing the complete pedal leg assembly and adds accompanying figures.

5.    COMPLIANCE:

If removing or re-installing the copilot flight controls, use the procedure in paragraph 6.

6.    REMOVAL/INSTALLATION:

6.1    The copilot flight controls that may be removed include the following three items:  
collective stick, cyclic stick, and foot pedals.

6.1.1    On some aircraft, foot pedal removal may include removing the pedal support  
leg assemblies with the foot pedals, or removing only the foot pedals.

6.2    Cyclic stick removal (*Figure 1*):

6.2.1    If engine is running, turn OFF.

6.2.2    Disconnect the electrical plug.

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- 6.2.3 Remove bolts and attaching hardware near the base. Remove the cyclic stick.
- 6.2.4 Remove the cyclic and the hardware from the aircraft or stow in the baggage box.

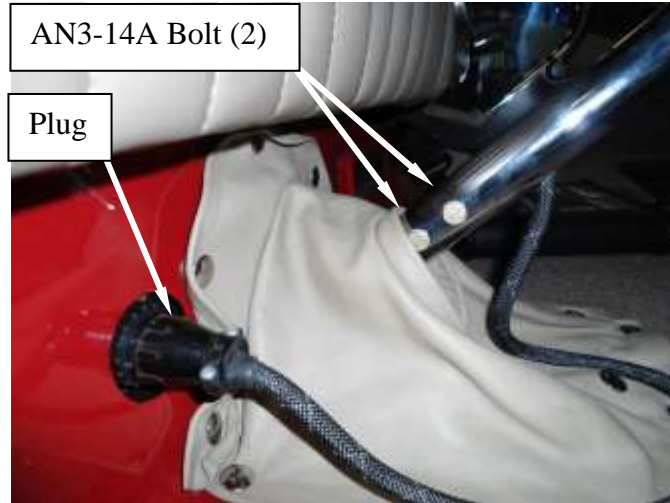


Figure 1. Cyclic stick installation

6.3 Collective stick removal (*Figure 2*):

- 6.3.1 If engine is running, turn OFF.
- 6.3.2 Raise the pin lever and remove the pin. Pull out the collective.

**NOTE: Aircraft manufactured after August 2017 or that have incorporated SDB 0128 have the pin lanyard attached to the collective stick.**

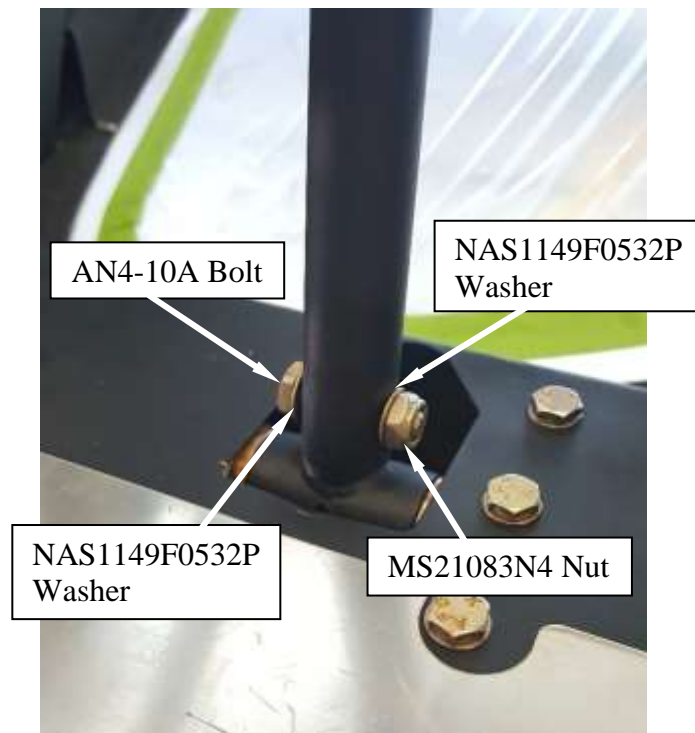
- 6.3.3 If the lanyard is attached to the aircraft (instead of the collective stick), re-install the pin in the collective stick fitting and lower the lever to lock the pin in place.



Figure 2. Collective stick installation

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- 6.3.4 Ensure the pin is secure and the lanyard does not interfere with any controls or structure.
- 6.3.5 Remove the collective from the aircraft or stow in the baggage box.
- 6.3.6 Install center seat cushion.
- 6.4 Foot pedal removal:
- 6.4.1 Pedal Support Leg and Foot Pedal Assembly (for aircraft equipped with the removable support leg) (*Figure 3*)
- 6.4.1.1 If engine is running, turn OFF.
- 6.4.1.2 Remove the nut, bolt and washers from the base of each pedal support leg.
- 6.4.1.3 Remove the pedal support legs.

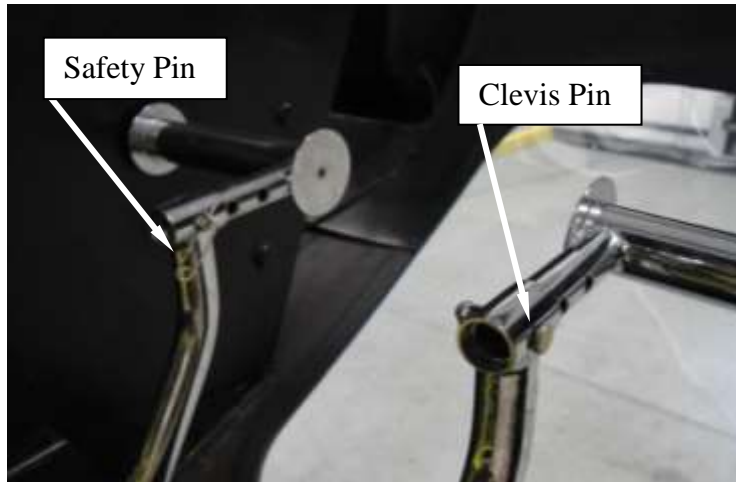


*Figure 3.* Pedal support leg hardware

- 6.4.2 Remove the pedal support leg with foot pedals, bolts, nuts and washers from the aircraft or stow in the baggage box.
- 6.4.3 Foot Pedals (*Figure 4*):
- 6.4.3.1 If engine is running, turn OFF.

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- 6.4.3.2 Disassemble the safety pins and clevis pins from the foot pedals. Remove the foot pedals from the pedal support legs.
- 6.4.4 Remove the clevis pins, safety pins, and foot pedals from the aircraft or stow in the baggage box.



*Figure 4. Foot pedal installation*

- 6.5 Update the weight and balance per paragraph 11.
- 6.5.1 The operator can either carry a second form F-165A showing the controls removed, or the pilot can deduct them from the individual weight and balance for that flight as he/she would for any other loose equipment.
- 6.5.2 If the controls are stowed in the baggage box, the weight should be deducted from the cabin per paragraph 11 and added as baggage at STA 135.
- 6.6 Reinstallation – Foot Pedals:
- 6.6.1 Pedal Support Leg and Foot Pedal Assembly:
- 6.6.1.1 If engine is running, turn OFF.
- 6.6.1.2 Install pedal support leg onto support assembly mount on cabin floor.
- NOTE: Ensure support leg is reinstalled facing the correct direction as shown in Figure 5.**
- 6.6.1.3 At the base of the support leg, install the AN4-10A bolt with head facing instrument console (same for both legs), NAS1149F0532P washers (2), and MS21083N4 nut. If nut has been used more than once previously, or if the locking feature is worn, replace it with a new nut.
- 6.6.1.4 Torque the nut 30-40 in-lbs/3.4-4.5 Nm.
- 6.6.1.5 Repeat steps 6.6.1.2 to 6.6.1.4 for the other pedal support leg.

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Figure 5. Pedal support leg installation

#### 6.6.2 Foot Pedals:

6.6.2.1 If engine is running, turn OFF.

6.6.2.2 Install foot pedal with the foot rest on the outside of the pedal support leg (*Figure 4*). The pedal can be forward or aft of the support leg depending on pilot preference.

6.6.2.3 Install clevis pin with head toward the pedal and install safety pin. Ensure the pin is latched.

6.6.2.4 Repeat 6.6.2.2 and 6.6.2.3 for the other foot pedal.

6.6.3 Move the pedals full travel and ensure there is no interference.

#### 6.7 Reinstallation – Collective Stick:

6.7.1 If engine is running, turn OFF.

6.7.2 Remove center seat cushion if installed.

6.7.3 Remove pin.

- 6.7.4 Insert the collective stick into the fitting with the placard facing up.
- 6.7.5 Twist the throttle grip so the slot in the throttle aligns with the pin in the throttle socket and slide collective all the way into the fitting.
- 6.7.6 Line up the hole in the collective stick with the hole in the fitting, insert the pin with lever aligned with the collective, and fold the lever down (*Figure 2*).

**NOTE: The pin lever is correctly installed when the cam locking feature is engaged. If the lever folds down with no resistance felt, insert the pin 180° the other way, and fold down. A resistance should be felt as the cam engages. If no resistance is felt, contact a mechanic for assistance.**

- 6.7.7 To ensure the pin is fully engaged in the hole in the collective stick, try to pull the collective stick out of the socket. If the collective stick does not pull out of the socket, it is properly secured.

**WARNING: The pin must engage the hole in the collective stick. After installing the pin, verify the security of the collective stick by trying to pull the collective stick out of the socket.**

- 6.7.8 Twist the throttle full travel and verify the pilot's and copilot's throttles move together.
- 6.7.9 Move the collective full travel and move throttle full travel with the collective fully up and full down. Verify there is no binding or interference in the throttle or collective. **NOTE:** At high collective angles, the throttle may be limited by the stop on the fuel servo or the correlator; this is acceptable.
- 6.7.10 Lower the collective and apply friction. Set the throttle to IDLE STOP.

#### 6.8 Reinstallation – Cyclic Stick:

- 6.8.1 If engine is running, turn OFF.
- 6.8.2 Slide cyclic over fitting ensuring it is properly aligned fore and aft.
- 6.8.3 Align holes in the cyclic and fitting and insert two AN3-14A bolts with one (1) AN960-10L washer under the head of each bolt.
- 6.8.4 Install one AN960-10L washer and one AN364-1032 nut on each bolt. If the nut has been used more than once previously, or if the locking feature is worn, replace it with a new nut.
- 6.8.5 Torque the nuts 12-15 in-lbs/1.4-1.7 Nm.
- 6.8.6 Install electrical plug and tighten collar.
- 6.8.7 Move the cyclic throughout its full range of travel and check for binding interference. Check that the pilot's cyclic moves with it.

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 6.8.8 Turn master switch ON and verify trim switch and mic switch operation.

## 6.9 Final Checks

6.9.1 Ensure seat belts, shoulder harness, and cushions cannot interfere with the controls.

6.9.2 If any binding or interference is noted in any of the controls, consult a qualified mechanic before operating the aircraft.

6.9.3 Update the weight and balance, as applicable.

7. PARTS: N/A

8. SPECIAL TOOLS: Torque wrench

9. MAN-HOURS: Removal, 5 minutes; Installation, 10 minutes

10. WARRANTY: N/A

11. WEIGHT CHANGE:

Item	Weight (lbs)	Station (in)
Cyclic Stick	2.0	51
Collective Stick	1.4	64
Foot Support	0.6 (Qty 2)	30
Pedal Support Leg	0.5 (Qty 2)	31.5
Center Seat Cushion	1.2 (fabric)	64
	3.0 (leather)	64

12. LOG BOOK ENTRY: Record equipment removal/reinstallation in the log book.

13. REPETITIVE ACTION: N/A