

## Cessna 140 Flap Spring and Bell Crank Repair

This article is to describe how to repair the damaged flap springs and the mounting holes in the bell crank and bulkhead. The problem is that over time the two flap springs elongate the mounting holes in the airframe bulk head and the flap bell crank. Since both the bell crank and the springs are made of steel, the bell crank cuts into the springs. The repair consists of installing cable shackles in the elongated holes and forming a new hook on the end of the springs. The following photos and illustration details the process.

Parts that are needed:

Four cable shackles AN115-8

Four AN3-7 (10-32) bolts

Four AN960-10 flat washers

Four AN365-1032A lock nuts

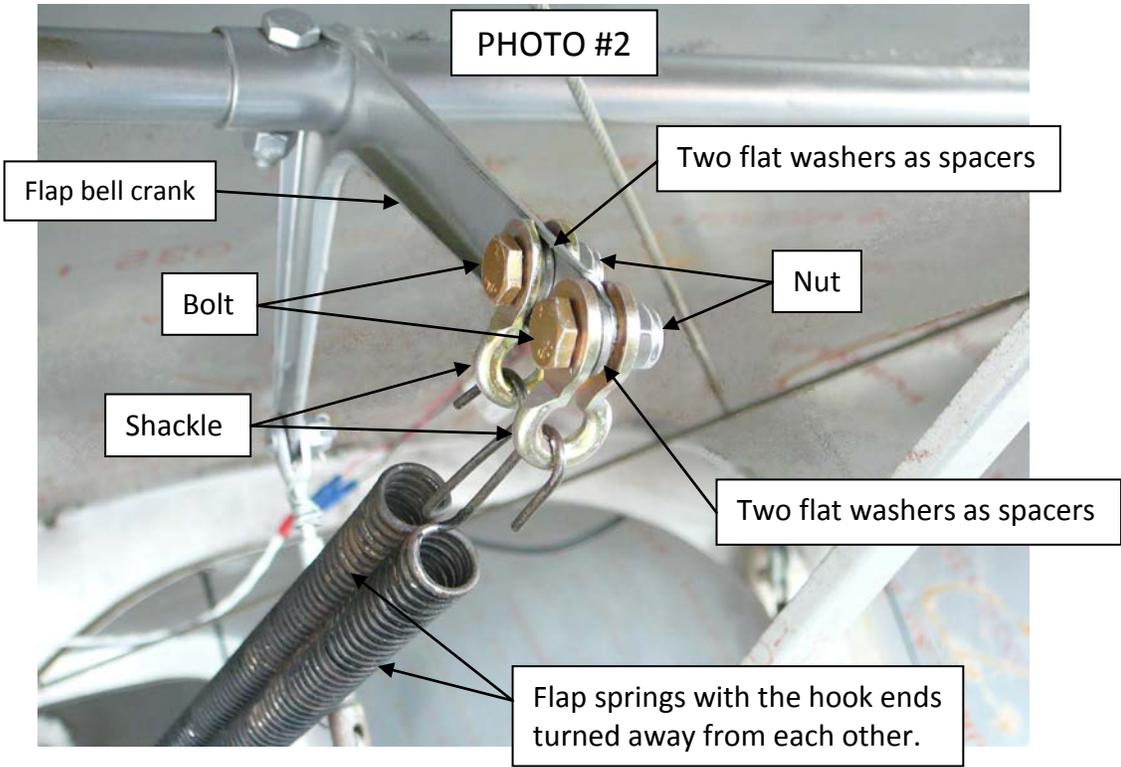
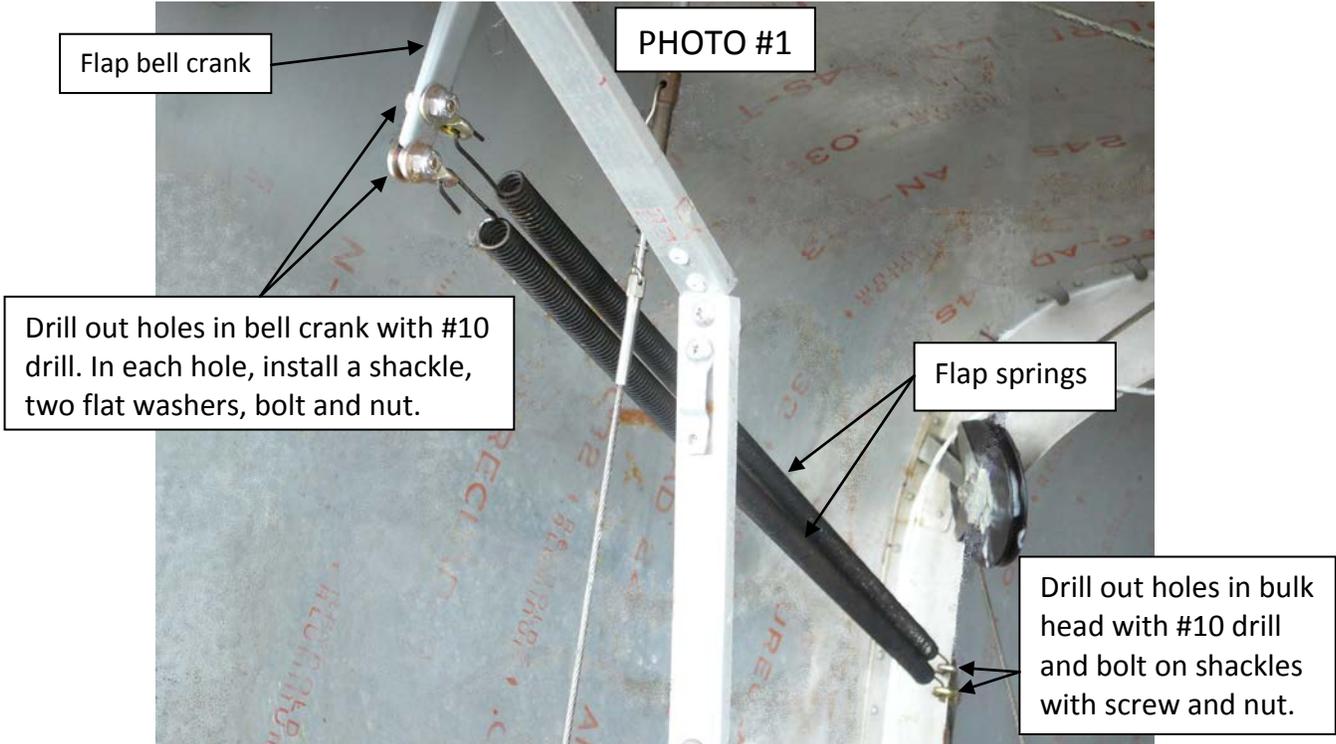
You will have to either slide under the head liner or unhook the back portion to gain access to the work area. Hold the bell crank while you remove the flap springs. While holding the bell crank, extend the flaps slowly while pulling the flap handle. This will keep tension on the flap cables and prevent them from jumping off the pulleys.

After removing the flap springs, drill out holes in bulk head with #10 drill and bolt on shackles with screw and nut (see photo 1).

Second drill out holes in bell crank with #10 drill. To keep from bending the bell crank, support it with a block of wood. In each hole, install a shackle, two flat washers, bolt and nut. Because the bell crank is shaped like a channel, the washers are used as spacers to keep the shackle from crushing the crank. Note the ears on the two shackles must be spread apart in order to fit around the bell crank (see photo 1 & 2).

Next repair the flap springs as shown in the illustration (see page 3).

Finally, clean and spray the springs with silicon. Then hook the repaired springs in the cable shackles with the hook ends turned away from each other (see photos).

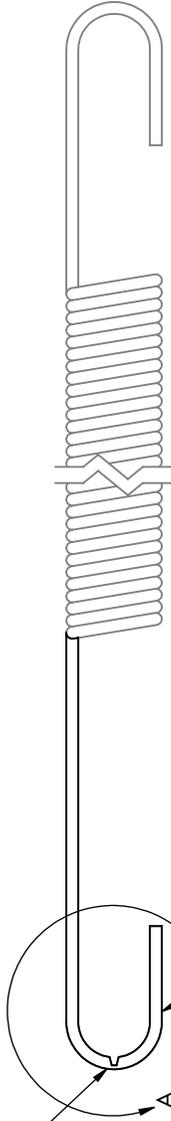


# CESSNA 140 FLAP SPRING REPAIR

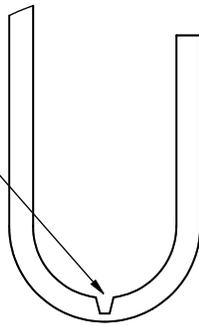
ORIGINAL CESSNA 140 FLAP SPRING 2 REQUIRED



DAMAGE CAUSED BY SPRING RUBBING AGAINST FLAP BELL CRANK (SEE DETAIL "A")

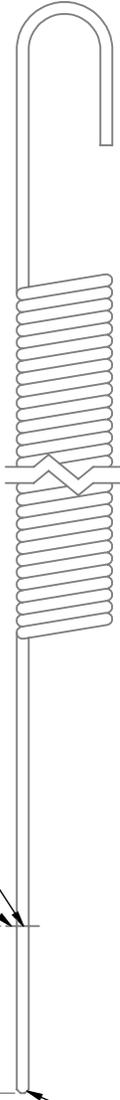


BREAK OFF THIS PART OF SPRING



DETAIL A  
SCALE 2:1

7/8" — CENTER OF NEW HOOK  
— CAREFULLY BEND NEW HOOK (SEE INSTRUCTIONS BELOW)



DEBURR AND FLATTEN END OF WIRE WITH PLIERS OR VISE  
(DO NOT SCAR THE WIRE)

REPAIRED FLAP SPRINGS ARE 7/8" SHORTER THAN ORIGINAL LENGTH



NEW HOOK IS THE SAME RADIUS AS THE OTHER END

CAREFULLY BEND NEW HOOK WITH NEEDLE NOSE PLIERS WRAPPED WITH TAPE.  
TAKE YOUR TIME AND DO NOT KINK THE WIRE!  
THE WIRE IS HARD TO BEND SO YOU HAVE TO BEND IT A LITTLE AT A TIME. KEEP WORKING THE PLIERS AROUND THE BEND UNTIL YOU GET THE CORRECT DIAMETER.

TITLE: CESSNA 140 FLAP SPRING REPAIR

DRAWN: D.C.O. DATE: 08-27-13 SCALE: 1:1

SHEET 1 OF 1

C1401-SPRING-01