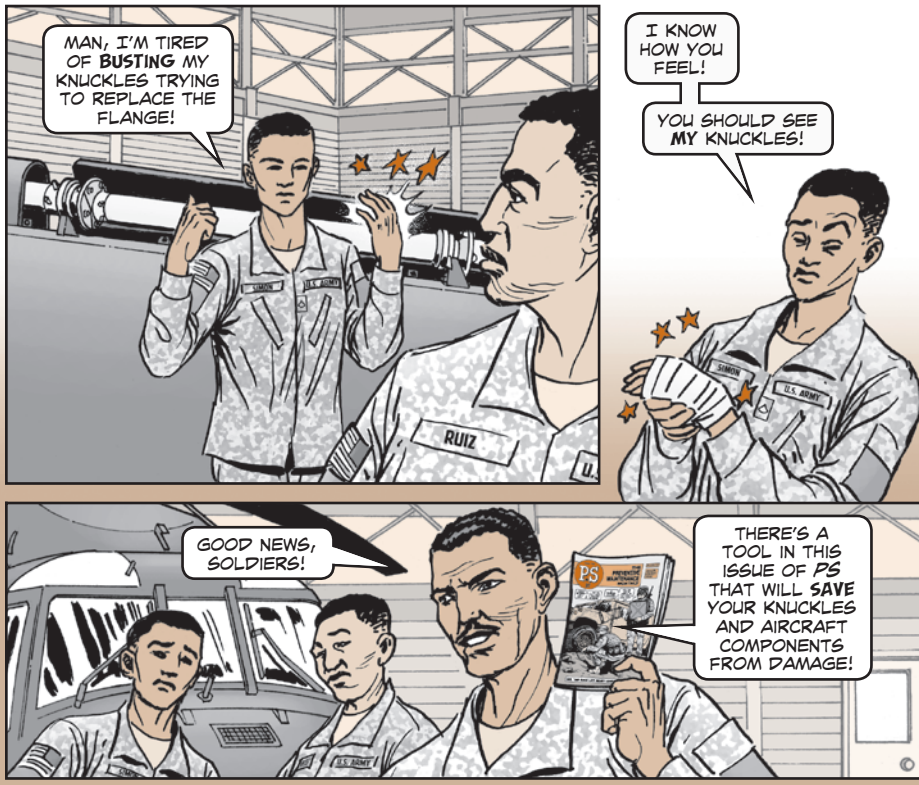
AVOID BUSTED KNUCKLES AND COMPONENT DAMAGE!



Dear Editor,

When we remove or install the Black Hawk's tail rotor drive shaft, gear box flange or the seal, our knuckles and components take a beating.

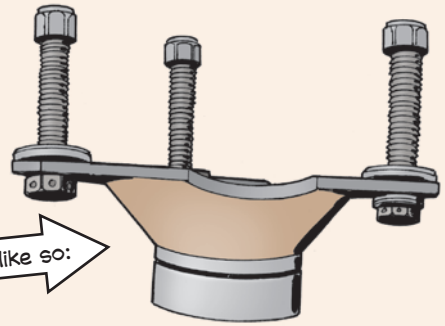
The TM procedure *Tail Gear Box Input Seal, Plug Seal and Flange* requires us to use a torque reactor and a special socket. That's it! The problem is, it doesn't work very well. When performing the task, we end up damaging multiple components and busting our knuckles. That's because the socket slips off the nut and damages the gear box and drive shaft. This procedure applies along the entire tail rotor driveline, including the oil cooler, the intermediate gearbox and the tail rotor drive shaft.

We've come up with a smart new procedure using a tool that doesn't require special fabrication or unusual parts. It also saves our knuckles and prevents damage to drive shafts, gear boxes and flanges. It's primarily an on-aircraft task, but can be done off the aircraft, too.

The tool consists of the following:

1. **An old flange, NSN 1615-01-078-5710**
2. **Three bolts, NSN 5306-01-098-6116**
3. **Three nuts, NSN 5310-00-950-0039**
4. **Washers, NSN 5310-01-097-9937**

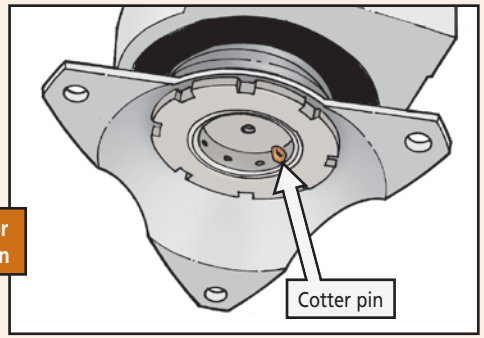
The tool looks like so:



Make sure you paint all the parts ***red*** so they don't get confused as good parts.

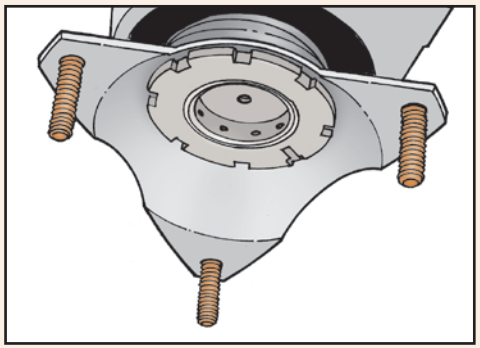
We follow the procedures all the way through to Step 5 of the removal portion for the cotter pin in IETM WP 0648 00 of TM 1 1520-280-23&P.

Start procedure after removal of cotter pin

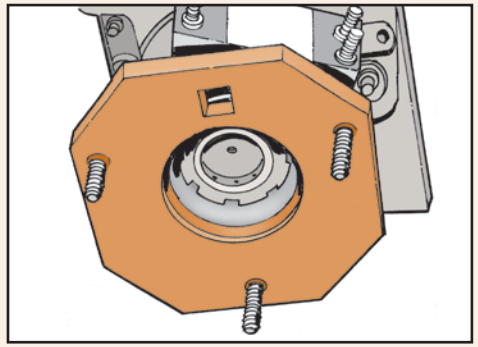


Then we add these steps:

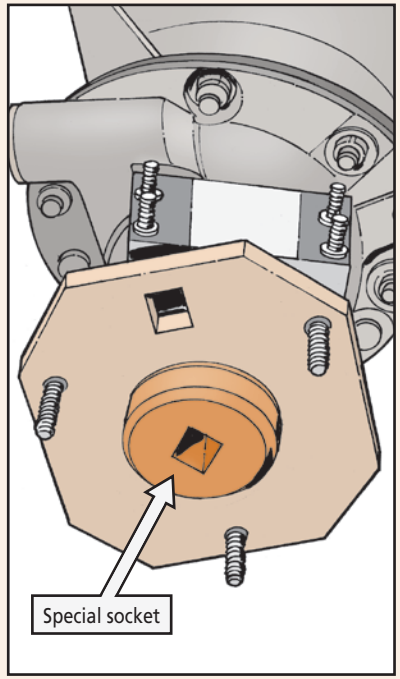
1. Install the bolts one at a time into the flange being removed. The bolt head must point towards the gear box and you may have to rotate the flange a little to get them in.

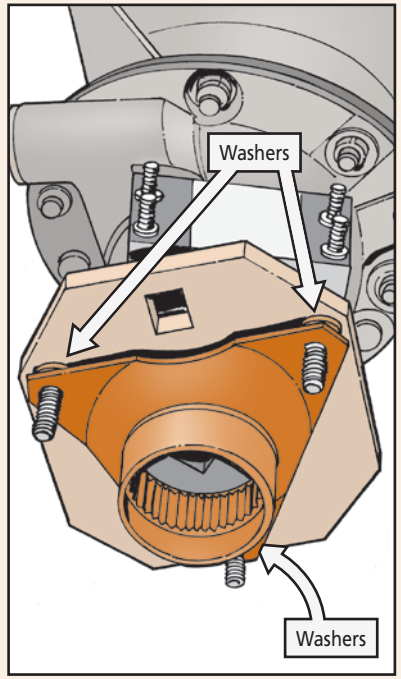


2. Install the torque reactor plate, NSN 1680-01-105-1496, PN 70700-20688-041, by slipping it over the three bolts installed on the flange in Step 1.



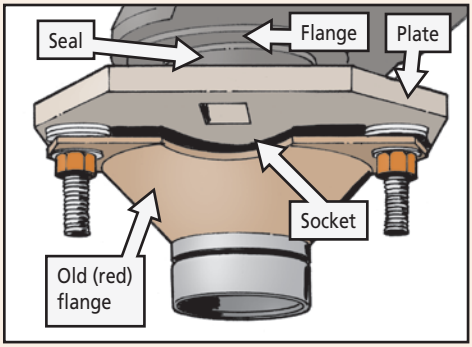
3. Install the special socket from the power train tool kit with the teeth on the nut. Then place the red-painted flange over the three bolts installed in the flange being removed.



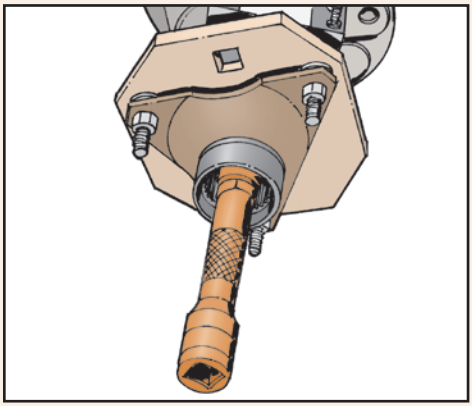


You'll need to place washers between the red flange and the torque reactor to ensure there is enough space between the red flange and the special socket.

4. Install the nuts and tighten. As you tighten the nuts, watch the old flange. When it contacts the special socket, stop tightening.



5. Insert your socket wrench extension through the opening in the red flange and then continue with the TM procedure. As you loosen the nut, the flange will pull off with it. Presto!



By following these simple steps, the red flange traps the socket in place so it will not pop off and cause damage to the aircraft or your knuckles.

When we install a new flange, we just follow the procedure in reverse order and we're good to go.

SGT Andrew Smith
Ft. Campbell, KY

Editor's note:
Thanks for the great idea. I'm sure mechanics will appreciate this tool that helps them avoid knuckle and aircraft damage.