

# DUNCAN INTELLIGENCE

## Gulfstream Vertical Stabilizer Unscheduled Removals—Part Two

• *James Overheul*

In the last edition of this publication, we shared a few examples of vertical stabilizer unscheduled removals and repairs. In this edition, we give a few more examples we have encountered recently.

On almost all of our recent inspections of the center vertical attach fitting, some level of drill starts were noted. We have noted damage that varies from light surface starts to holes all the way through the fittings. The damage is always located at the upper outboard area of the outer face of the center attach fitting. The damage follows the fastener profile of the vertical skin installation. The damage may have occurred during production and/or the installation of ASC 431 GII/GIIB, ASC235 GIII and ASC230 GIV. In either case, the damage could have been avoided with the use of drill stops. In most cases, the fitting can be blended and returned to service. In one case, it was noted the outboard flange of the outer and inner fitting had several holes drilled through the total thickness, requiring the replacement of the attach fittings.

All of the recent F.S. 793 cap angles we've checked in the last three months revealed cracking. The models affected were GIIIs and GIVs, with a few of the GIVs well below the initial threshold of 5000 landings. In all cases where the cap angle was checked out of inspection schedule, the crack was easily visually identified. All cracks are located around the periphery of the bolt holes where the vertical fin attach bolts pass through the cap angle on the aft side of the 793 bulkhead. When the cap angles require replacement, it is very important to prevent any pre-load between the -25/-27 cap angles and interfacing structure. The current production cap angles are formed aluminum. However, a one-piece CRES cap angle will soon be available for installation and will be installed in current production G450s. There will be additional man hours and material cost associated with the one-piece cap angle installation. Whether the chapter 5 initial and reoccurring

inspection will still apply after the installation of the one piece cap angle is still under review.

If you think you may encounter any issues like the examples noted here during your next inspection, we encourage you to work with a shop with some experience with unscheduled removals of the vertical stabilizer.

If you have any questions about this or any other Gulfstream issue, please contact me at [James.Overheul@DuncanAviation.com](mailto:James.Overheul@DuncanAviation.com) or 269.969.8477.

## Flap Track Corrosion

• *James Overheul*

Gulfstream Flap tracks continue to be one of those corrosion items we see on a regular basis. We have primarily noted light to moderate surface corrosion at the flap track/flap roller contact surfaces. We also have seen corrosion at the flap track main attach bolts and bushings. In either case, early detection and correction will usually eliminate the need for extensive and expensive repairs.

The flap track/flap roller contact surface is the main area of concern because the protective finish is removed through normal use. We have seen aircraft that have had the flap tracks replaced and only a year later require extensive repair. Since there is not a scheduled requirement to reapply the flap track protective finish, we recommend monitoring these conditions to determine the intervals necessary to maintain the corrosion prevention effectiveness. We recommend finishing the flap track roller contact surfaces with Lubri-Bond 220 if the Cadmium plating is still present with no corrosion noted and/or following any flap track repair. Always follow the manufacturer's instructions when applying Lubri-Bond. Again, monitoring the condition of the Lubri-Bond 220 will be necessary to determine the intervals necessary to maintain its effectiveness. Just like any other corrosion, if left unattended it could lead to corrosion levels that would prevent any chance of reclaiming the part.

