

# How Low

By LCdr. Larry Young, HSL-51

It was an ugly night, the flight deck on the frigate was pitching, and the rain was beating down on my guys as I sat in the cockpit going through the FCF checklist. This was not the way I wanted to conduct maintenance ground turns, but my options were limited because we were supposed to fly off the ship the next morning.

Warlord 707 was spotted on the flight deck of USS *Vandegrift* (FFG-48). Mechs just had completed a No. 2 engine change, removal and replacement of the HMU, LDS, LDS cable, LDS cable-support bracket, and collective-boost servo assembly. The plan was to do ground turns the night before to expedite the following morning's in-flight requirements. I was the FCP, and

another HAC was in the aircraft reading off the FCF checklist while I executed the procedures.

My lead AD2 and junior AD3 were inside the cabin setting up to run the VATS ground turns. We started the No. 2 engine, but, as we engaged rotors, we experienced distinct droop-stop pounding. Startled and somewhat humiliated, I started to search for the “sweet spot” with the cyclic to stop the pummeling of the rotor head. In doing so, I must have placed the cyclic slightly forward of neutral.

The plane captain under instruction (PCUI) and the PC on the flight deck stated that, over a period of about 20 minutes, they witnessed the rotor-tip-path plane gradually lower in front of them—to not more than

Photo by PH3 Gary B. Granger



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# Can You Go?

three feet above the flight deck. My copilot and I were completely unaware of the motion of the tip-path plane due to the darkness and rain; visual cues from the cockpit were a challenge. Also, the prevailing conditions did not allow the LSO to notice that the tip-path plane was lowering in front of the aircraft.

As near as I can tell, my placement of the cyclic must have caused the tip-path plane to descend. Concurrently, the tail strut must have lengthened—eventually to its fully extended position. Once this occurred, my copilot and I experienced abnormal vibrations in the cockpit. In retrospect, my suspicion is that the helicopter was pulling forward against the RSD on the flight deck, possibly causing the abnormal vibrations. Still

unaware of the overall situation, we decided something was not right. Shutting down seemed like a good idea.

As we disengaged rotors, we again experienced droop-stop pounding—only much more pronounced this time. My PC signaled to re-engage rotors, which we did. At this point, we suspected a “hung droop stop” and started the NATOPS emergency procedure. However, adding to our confusion was the PC (actually, the PCUI because the PC had repositioned to get a view of the tail strut) was not signaling a hung-droop stop. We still were unaware at this point that the tip-path plane was low, and we didn’t know why we were experiencing the abnormal vibrations.

In my frustration with the circumstances and thinking that my PCUI was not calling the hung-droop stops appropriately, we contacted the LSO and asked him to have maintenance send a more experienced PC to the flight deck.

As if to add to our confusion, my copilot and I then witnessed a more experienced plane captain twice stick his head outside the hangar door, only to go back inside. We later learned the experienced PC was notifying the LSO about our tip-path plane.

I will remember what happened next for a long time. I had begun to lose patience with

the ensuing confusion and directed my lead AD2 in the cabin of the aircraft to step out and call the hung-droop stops for us (to proceed with the shutdown). He stepped out of the aircraft and was trying to get permission from the PCUI to leave the rotor arc. All he got, though, was a very firm stop signal—thank God!

About that time, maintenance was able contact the LSO and inform him that the rotor-tip-path plane was extremely low. Upon receiving this information, we pulled our AD2 back into the cabin, reset the struts, and completed the shutdown without further incident.

We probably can glean many lessons from this story, but a review of events that evening led me to a few I’d like to share:

First, nothing on the flight deck is ever “routine,” especially when you’ve got a rotor head spinning at 258 rpm in the tight confines aboard an FFG. Events that can develop into a mishap never seem to follow a set script. Confusion is the mother of mishaps, and there certainly was enough confusion on the flight deck that night for a mishap to occur.

Second, my own impatience with the course of events only added to the confusion and tension level and could have resulted in a fatal mishap had enough safeguards not been in place. Our helicopter had experienced an inordinate number of problems over a two-month span underway, resulting in less than 40 non-FCF hours being flown in 50 days at sea and two exercises. To give you an idea of the issues we’d been having with our helicopter, this was the 10th FCF we had done in that same time frame.

Third, thank God for an observant PCUI. If not for his assertiveness, I don’t want to think what the outcome could have been. The critical nature of observation during maintenance ground turns on a flight deck at night and in a driving rainstorm cannot be overstated. I’m thankful he had the presence of mind to stop the AD2 from exiting the rotor arc. And I’m also thankful my mech was well trained to pay close attention to directions from the PC/LSE before trying to exit the rotor arc.

We ended up changing out three of four droop stops before flying off pierside the next day. Considering what could have happened, I’d gladly pay the \$1,250 bill. ✨