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MEMO

DATE: June 23, 1971

TO: All Pilots

1. During the course of the recent investigation concerning the ditching of N-703A, certain malfunctions of the airplane fuel system were discussed.

   a. It is possible for a fuel equalization in the tanks over a long period of ground time.

   b. Fuel transfer in flight is impossible. This is the engineering diagnosis.

   c. Faulty installation of the fuel selector valve is impossible because of the design of the unit.

2. A most important item has been brought to light because of our present procedure. It is that a fuel malfunction could develop and too easily go unnoticed by the pilot and maintenance crew. With the fuel crossfeed valve in the ON position for subsequent flights after the initial morning run-up, you could have an undetected failure of the left engine driven fuel pump. This is due to the fact that we always start the right engine first. This starting procedure would conceal a failure of the left fuel pump because of fuel pressurization from the right fuel pump being maintained by the crossfeed system.

3. It has been suggested that alternative starting of the engines with the fuel crossfeed in the ON position would show up a failure of the engine driven fuel pump. This procedure needs beefing up because it checks the same fuel pump only on every other flight.

4. The only positive procedure is to make each start with the fuel crossfeed valve in the OFF position and then turn it to the ON position at some time prior to takeoff.

5. However, it is not necessary to wait until you are in the water and ready for takeoff before turning the crossfeed ON. Also, this is not even a good idea because you do not have the time to monitor the fuel pressure gauges while taxiing. So you could possibly have an engine failure while taxiing in close proximity to a ramp or seawall. For this reason the crossfeed should be ON before taxiing. This procedure will not take any extra time. If you have an inoperative fuel pump, it will show up immediately when you start the engine (the fuel pressure will not come up, but the engine will continue to run until it has used up the fuel that you have "wobbled" into the carburetor).

6. In addition, an alternate engine starting procedure would make a check of the same fuel pump at least every other flight in the event that the fuel crossfeed valve was inadvertently left ON for the engine starts.

7. Any doubt about the operation of your fuel pumps can also be checked en route by shutting off the crossfeed valve and carefully observing fuel pressure, being on the alert to turn the crossfeed valve back on at the moment of detecting a drop in fuel pressure.

8. The above procedure will be outlined in Pilot Bulletin No. 5.

Don Schell

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