



Timothy W. Monville
Sr. Air Safety Investigator
Office of Aviation Safety-Eastern Region

Date: March 26, 2024

Subject: ERA22FA126, BeechTalk Forum

Contact: Federal Aviation Administration Inspector Sarah Allen

As part of the investigation, Federal Aviation Administration inspector Sarah Allen provided to National Transportation Safety Board on February 24, 2022, access to BeechTalk Forum which yielded information below from the owner of the accident airplane describing the internal engine failure from October 18, 2021, and subsequent issues to return the airplane to service.

From a posting October 21, 2021 at 1255-

"Post subject: IO-520 #1 cylinder failure

I knew there was a reason I fly twins! Two engine failures now in 235 hours of flight time. I was on the short ferry flight to annual inspection when I glanced down and notice #1 [cylinder of the right engine] was at 540+ degrees and blinking red. Not good.. pulled power and mixture to stop combustion, and temp came down. In hindsight I should have just feathered, but who wants to do things the right way when you can just troubleshoot in the air, right? I was thinking "maybe it's just a bad temperature probe" as there was no vibration, no oil on the cowling, etc etc. Pushed in just a tad bit of mixture and throttle and saw the EGT come alive on 2-6 and not #1 and then immediately feathered. I took a moment to open the POH in flight, go through checklists, one engine landing, etc (which was helpful by the way). The landing was a bit more interesting than I care to admit, but nothing too bad.

Engine SMOH: ~1560, 21 years <-- **not actually what failed though...**

Cylinders: **~100 hrs**, 3 years since NEW. Previous owner had replaced ECI cylinders with new superior millenniums due to ECI AD. (cue MIF theories here).

Debating if I want to overhaul or flush everything out and put a cylinder on.. The easy answer of course is "overhaul", but it would be nice to have that 40k+ in "real" investments doing work and making money and not in an engine which sits around being lazy and doing nothing most days."

The images below were copied from the Forum post in the order posted.



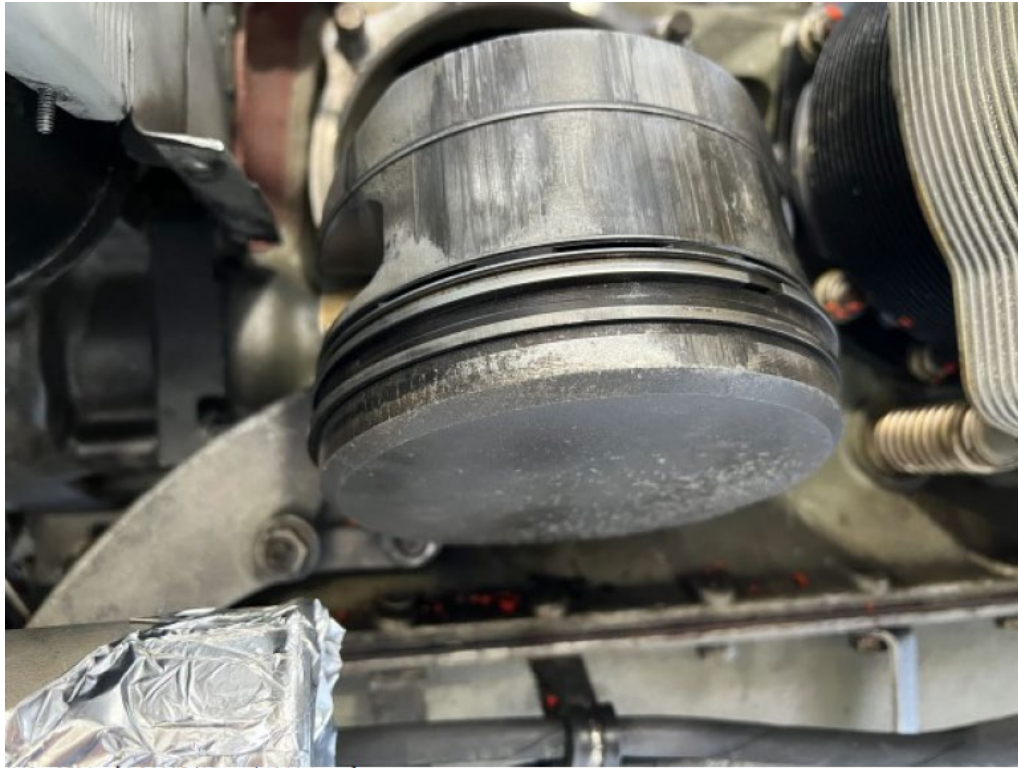
IMG_1253.jpg. View of the Damaged #1 Piston.



IMG_1255.jpg. View of the Damaged #1 Cylinder. Note the damage to the heads of the intake and exhaust valve and the same damage to the upper portion of the cylinder.



IMG_1251.jpg. Another View of the #1 Piston.



IMG_1250.jpg. View of the damage to the skirt of the No. 1 Piston.



IMG_1263.jpg. "What was in the oil filter"

From a posting November 17, 2021 at 1717-

"Post subject: Rough cost to relocate a plane?

Long story short, a shop and I are having a disagreement on a failed cylinder situation (detonation). They want me to overhaul the engine, but I have spoken with 4 different IAs, the head of a premier engine rebuild shop, and even Mike Busch himself. All indicated it makes no sense to overhaul the engine for this, and it should be addressed by replacing the cylinder/piston, flushing oil and pan and inspecting the affected rod. I have suggested alternatives such as signing a liability waiver, having them replace the cylinder but sign it off as unairworthy, then getting a ferry permit to another shop, etc. However, they are now dodging my calls. The failure took place on the way to annual inspection, so it is down for annual as well. The shop owner offered to let another mechanic put the engine together and sign it off, but none I have spoken with will go into another shop and put together an engine (it's also under the Greensboro FSDO, not Charlotte, which complicates things). A couple offered that the shop should KNOW nobody would want to go into that situation and it was basically a hollow offer. So unless they have a sudden change of heart, the airplane will be stuck there.. hence the "last resort" question of trying to transport it out."

From a posting November 18, 2021 at 1117-

"Post subject: Rough cost to relocate a plane?

Thanks for all the input on this everyone. By some miracle of Beechcraft karma, they called me back this AM and outlined a plan...which sounded exactly like Mike Busch's plan (which I had sent to them). Flush, inspect rod, replace cylinder, ground run, check filter, fly for an hour, check filter, done. Worst case scenarios (politically at least) successfully avoided!"