CAPS™ Repack FAQ's

With the recent changes to the CAPS system, many owners have a large amount of questions regarding the new electronic ignition. These are the FAQ's released from Cirrus.

Why is Cirrus making this change?
As part of the G5 development, our rocket designer/manufacturer decided to switch the ignition system to the most current technology, which is electronic ignition. While Cirrus has had good experience with the existing design, the new system is improved by having a top-down ignition and increased thrust. Our rocket manufacturer has discontinued the original rocket and Cirrus can only use an electronic ignition rocket for new production and service (repacks).

Why is the new ignition system preferred?
The igniter is moved to the top (nose) of the rocket. When it is fired, the flame front (ignition source) is moving in the same direction as the rocket blast. This makes the rocket ignition more efficient.

What is different about the new system?
All Airplanes will have a new rocket, launch tube, shelf, shield, and associated harnesses to connect it electrically. There is also new pickup collar, cable, incremental bridle and thermal protection to connect the rocket to the parachute. There are also some structural modifications to the bulkhead and the CAPS bucket to allow for the new shelf to be attached and for the wire harnesses to pass through. There are slight changes in the electrical system depending on the vintage of airplane such as different harness lengths, different pass through locations etc.
G1 Airplanes have a unique shelf and shield while G2 and G3 airplanes will use the same shelf and shield as the G5 version.

What is the increased labour required for this change?
This system change will require approximately 12 incremental labour hours to install at the Service Center during the repack interval. Approximate total times are 35 shop hours on a G1 and 24 hours for G2 and subsequent models.
(Note: labour times and rates are determined by the local shop, so this is an estimate)

How has Cirrus tried to control the impact to owners?
As noted, Cirrus is sensitive to cost of ownership. For example, the original repack parts cost was $9,900 based on projected condition of the parachute cores. After completing many repacks, we found the rework was less extensive than expected. Cirrus reduced the price to $8682 (where it has remained since 2010), plus issued a credit to owners that had completed the work at the higher rate. With this design change and current pricing announcement, Cirrus and our ASC network will not see additional profit.

Note that about half of the cost increase is a one-time expense for airframe changes and will not be incurred on subsequent repacks.

Why is there a life limit on the system and will it be extended in the future?
The parachute 10 year limit is based on industry standards for mandatory inspection. The removed parachutes are completely disassembled and carefully inspected. We do see parts that need to be replaced to meet overhaul and rebuild standards. There hasn't been anything that would reduce the 10 year limit, but the occasionally observed chafing and mildew on packs coming in from the field do support that the 10 years repack cycle is appropriate.

The rocket propellant is the consistency of a hard rubber and begins to slowly degrade after being cast. The life limit is set to guarantee that it meets the thrust requirements plus does not crack which could cause a rocket failure. Rockets are being returned to the manufacturer for on-going testing. While all rockets have passed testing, we do not expect the life-limit to be increased.
Cirrus will continue to evaluate possible paths to increase the life limit of this system.

I just did a repack. Do I need to replace my rocket?
No. The original and new style rocket has a 10-year life limit.

What has Cirrus done to show that lightning or p-static won't trigger the rocket?
Consistent with meeting stringent FAA FAR23 regulations, significant testing was done on the entire installed system to demonstrate and confirm regulatory compliance and proper system functionality in many different environmental conditions. Laboratory testing was done for temperatures, shock, vibration, humidity, and indirect lightning, which is the critical electrical condition for this system.

Which Service Centers can handle the new system?
CAPS is unique to Cirrus and a typical A&P has not had any training on proper handling of rockets or parachutes. Cirrus has set a requirement in our Maintenance Manual that only Cirrus trained and authorized mechanics can work on the system. All Cirrus Authorized Service Centers (ASCs) have had introductory training that would allow inspection and line-cutter replacement. CAPS replacement is a more in-depth training and requires ATF licensing (Bureau of Alcohol, Tobacco, Firearms and Explosives). All ASCs that were trained in the original system are being trained in the differences for the new system.