

From the April 2014 Edition of The Twin Cessna Flyer magazine.

Which Twin Cessnas are Eligible for FIKI?

NOTE: The following aircraft are certificated for FIKI.

310 Series: 310R/T310R serial numbers 310R-0801 through 310R-2140 (end of production.)

335 Series: All serial numbers.

T303 Series: All serial numbers.

340 Series: 340A serial numbers 340A-0201 through 340A-1817 (end of production.)

402 Series: 402B serial numbers 402B-0801 through 402B1384; 402C, All serial numbers.

414 Series: 414 (tip tanked) serial number 414-0601 through 414-0965 (end of production);
414A All serial numbers.

421 Series: 421B serial number 421B-0801 through 421B0970; 421C, all serial numbers.

425 Series: All serial numbers.

If the aircraft falls in these model/serial number groups then the biggest hurdle of “Certification” is already completed.

Now, lets talk “Properly Equipped.”

FIKI Equipment

Any of the above aircraft could have been FIKI equipped by Cessna at the time of production with the installed optional equipment, yet many were not. In 1981, Cessna realized that a number of people who were buying used FIKI-certified aircraft wanted to retroactively install the FIKI equipment on those that did not have it done at original manufacture. Cessna released service Bulletin ME81-23 for all the models except the T303, which was addressed in the equipment list of the TCDS. MEB81-23 defined specifically what equipment must be installed and listed various Accessory Kits for the field installation of all or a portion of the not-installed equipment.

What equipment does it take to make a FIKI-equipped Twin Cessna (again, it must be in the serial number range listed above)?

The list is actually rather short and was always referred to by Cessna customer service as the “Big 5.”

1. Heated static source
2. Heated windshield (or in the 310,340,335 a heated window strip)
3. Propeller Anti-ice (hot prop)
4. Surface Deice (deice boots)
5. 100 Amp alternator system

In addition to this equipment, the FAR requirement of heated pitot tube and heated stall vane are already required for IFR flight and assumed to be installed for FIKI as well.

Let's look at this equipment individually.

Heated Static Source: These are the silver dollar size static outlets on both sides of the empennage that supply static reference to the airspeed, altimeter, VSI, autopilot, encoders, as well as various other instruments and equipment. These must be heated to avoid ice blockage, which is done so electrically. The pilot needs to investigate the POH to find which switch actually activates this system in the various models. Most Twin Cessnas had this installed at the factory but a few did not. It's worth checking at the next annual and, further, this equipment should be checked for operation at each annual as well as prior to any flight into possible icing conditions.

Heated Windshield: In the 310, 340, 335, and T303 this consists of a 7" wide, full length heated strip that sits on top of the regular window. This strip is replaceable without removal of the underlying window.

In the 402, 414, 404, 421, 425 the heated windshield is the entire left side window. This window was originally installed as an AC electric acrylic unit but was later replaced with a DC operated glass system. Either style is approved for FIKI.

There are several companies with various replacement and repair options for heated windshield components and it would be of primary importance for the aircraft owner to have FAA-approved paperwork (typically STC) that verifies retention of FIKI when exploring any of these options.

Propeller Anti-ice: Propeller anti-ice consists of electrically heated boots on a portion of the prop blades. If the installed props are an STC'd different design then the installed de-ice equipment on the props must be addressed by the prop manufacture. This is accomplished by the fact that to gain the STC they must meet the original certification level of the aircraft. If this is not so, it will be noted as NOT meeting this certification in the provided Flight Manual Supplement.

100 Amp Alternators: This is straightforward and simply states that a 100 amp electrical system is to be installed in the aircraft to be eligible for FIKI.

Surface Deice Boots: Inflatable de-ice boots are the only acceptable option at this time. In all cases the boot installation must consist of outboard wings, inboard wings, horizontal stabilizers and vertical fin boots. That said, there are several nuances.

Cessna specified in the factory kit, and then again in service bulletin ME81-23, that these boots must be of a specific type which is defined by the boot manufacturers. Both BF Goodrich and SMR define them as 27S- style boots. This system operates on an 18 psi system. Earlier style non FIKI boots were of a 23S- series and operate on a much higher psi system.

In the past we have seen instances where these style boots have been installed intermixed. This is not legal and does not constitute retaining or equipping the aircraft for FIKI.

Additionally, BF Goodrich offered an STC boot installation kit which were 23S series boots and although eligible for installation on many of the FIKI-certified airframes DO NOT qualify as meeting the FIKI-approved equipment (this is noted in BFG's Flight manual supplement for this installation.)

Important Note:

One item to remember is that the FIKI is predicated on an approved serial number plus the installation of certain equipment. If any of this equipment becomes inoperative or is removed, then the individual aircraft would not be eligible for known ice flight.