



Aviation Technical Bulletin

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Bringing Power to Flight

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How long should an Igniter last?

There is no easy answer that fits all operators. Igniter wear is a function of ignition "on" time and little else. The more sparks an igniter produces, the faster it will wear out.

As an example:

- Airline "A" operates B737-300's and flies no route longer than 20 minutes. Consider the ignition system on during initial engine start, take off and initial climb through 3000 ft., back on for the occasional flight through icing, visible moisture, or turbulence and finally back on for final approach and landing. This airline uses the long life Champion CH31900 igniter for the CFM56 engine but with ignition on time exceeding 50% of the total flight time, igniter wear is considerable. Scheduled maintenance checks must be considered also. The igniter is most conveniently replaced at the B check just before the maximum igniter wear is reached. With only 20 minutes per cycle, it is no wonder this airline replaces igniters at 750 hours.
- Airline "N" operates A320's and flies an average of 2.5 hours per cycle. The A320 has the CFM56-5 engine which is FADEC equipped. FADEC black boxes are generally more frugal with ignition on time than a pilot would be. This airline replaces the Champion CH31900 at 3400 hours, four and a half times more service life than airline "A" using the same igniter with a similar engine.

Other factors affecting igniter life are lead condition and interference "rub" or chaffing of the combustor on the lower igniter shell. A worn out or dirty lead contact can wreak havoc with the igniter terminal contact. A worn out seal or one incorrectly installed can allow contaminants into the terminal well making the conditions right for connector well Flashover. Over use of a graphite based thread lubricant or anti-seize on the terminal threads can result in contamination in the terminal area by a highly conductive material, resulting in another case of Flashover. Flashover occurs when the electrical energy tracks to ground at the shell instead of traveling through the plug to the tip and making a spark. The igniter becomes effectively shorted.

There are Component Maintenance Manuals, Technical Bulletins, igniter erosion gauges and experience to help you decide on the best time to replace your igniters. Your Champion representative is also an excellent source for technical assistance so we urge you to take advantage of his experience.

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