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Hey, Sparky!

“One of the jobs frequently assigned to the inexperienced airplane mechanic is the cleaning and overhaul of spark plugs. While this job may appear to be unimportant, such is by no

means the case. The spark plug is truly the heart of the engine and if it fails to function properly, the engine will likewise fail.”

—*Aircraft Engine Maintenance for the Engine Mechanic*, 1939, Daniel J. Brimm and H. Edward Boggess

It's a tough job

Spark plugs are the great equalizer. It doesn't matter whether a pilot flies a 65-horsepower Aeronca Champ or a 760-horsepower twin-engine Beech Duke, spark plugs cost the same. If aviation spark plugs seem expensive, consider the conditions each plug must endure between normal service intervals. Plugs must provide a dependable spark under outside air temperatures that vary from 20 degrees Fahrenheit below zero to plus 120 above, at combustion chamber gas pressures of up to 2,000 pounds per square inch and combustion temperatures as high as 3,000 degrees F.

Voltage at the terminals can range up to 18,000 volts and, between 100-hour inspections, each plug will fire approximately 6 million times.

Typical massive-electrode-style aircraft spark plugs—which can be likened to the Chevrolet or Ford of

performance engines and up to 500 hours when used in low-stress, low-compression engines. Fine-wire plugs have an effective life of at least 1,200 hours in high-performance engines and can provide good service up to 2,000 hours and beyond when used in low-compression engines.

It's pretty well known that fine-wire spark plugs are superior because they require less frequent service, have a better resistance to fouling, and provide a better economic value than massive-electrode plugs. RAM Aircraft, of Waco, Texas, has published flight-test data proving that fine-wire plugs also reduce fuel consumption by being “around 2.2 percent more efficient” than massive-electrode plugs. RAM attributes this to the fact that the size of the electrodes in massive-electrode-style plugs shields some of the spark energy from the surrounding fuel/air mixture. Because of the long life, in-

Don't forget your plugs

BY STEVEN W. ELLS

plugs—can be purchased on the street for between \$16 and \$20 each. The Cadillac of plugs is the iridium spark plug, also known as the *fine-wire spark plug*, which is available from aviation parts warehouses for between \$45 and \$65. The effective life of a massive-electrode plug ranges from 200 to 250 hours when used in high-