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# SERVICE LETTER

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To: Aircraft Manufacturers, Aircraft Engine Manufacturers, Distributors, Dealers, Engine Overhaul Facilities, Owners and Operators of Champion Spark Plugs.

Subject: **Official Champion Aerospace Position on "*Spark Plug Resistance Values*"**

**CHAMPION AEROSPACE** has been made aware of a marketing company who has contracted with a manufacturer to make spark plugs for reciprocating engines used in aviation. The core assemblies of these spark plugs are manufactured in Mexico and are then shipped to an assembly facility in the U.S.A. where the plugs are packaged. The marketing company has published literature stating that the maximum resistance value of any aviation spark plug is 5,000 ohms. This maximum value is based on the tested values of the plugs that the marketing company sells, and is in no way indicative of the spark plug market in general. This value was simply published by the marketing company to suit their marketing and advertising needs.

It is our opinion that the 5,000 ohm service limit for aviation spark plugs, currently being published in marketing literature by our competitor, is an erroneous and unsubstantiated limit. It is our opinion that this supposed limit was not selected as a result of any actual testing, but somewhat arbitrarily based upon the inherent characteristics of the resistor design and the manufacturing tolerances provided to them by their foreign supplier for spark plug core assemblies.

Champion has purposefully never published a maximum allowable limit for spark plug resistance because no such all-encompassing limit exists. Aviation spark plugs are installed in a variety of different engines and applications with different compression ratios, combustion chamber geometries, ignition systems, fuel delivery mechanisms and operating regimes. The number of variables makes establishing a data-driven, finite limit virtually impossible.

A rough running engine can be a symptom of one of any number of problems including spark plug related issues. Speaking specifically about spark plugs, this could include fouled plugs and/or high internal resistance. A rough running engine should be diagnosed, as has been common practice since the early days of flight. It is important that the spark plugs be maintained. Spark plugs should be serviced routinely as per Champion's AV6-R to ensure optimum service.