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Fuel Systems

UNDERSTANDING THE FUEL SYSTEM OF THE AIRCRAFT YOU ARE going to fly is probably one of the most critical aspects of safe flight. Accident statistics have fairly consistently shown that approximately 25% of all accidents are fuel mismanagement related. When it comes to fuel management, assumptions can be deadly, and that starts with the all-too-common assumption that the performance charts are accurate.

Manufacturers don't lie in the development of performance charts, but they do stack the deck in their favor. The aircraft they use in the development of those charts is in absolutely perfect condition in every aspect, but they don't stop there. The vents are sealed shut on the outside because airflow diverted through air intakes causes drag. Only the antennae required by aircraft certification are sticking out of the airframe to create their own special brand of drag. There are no steps to help the pilot get in the airplane, and the CG is as far aft as legally permitted. You get the idea; there's no way you can possibly duplicate the performance displayed on those charts.

Beyond performance, however, comes a host of system-related issues that can cause an abrupt termination of a flight. It is impossible to overstate the importance of not only studying the POH's information about how the fuel system works, but also any options that may have been added, such as extended-range wing tip tanks. To illustrate the problem, some tip tanks feed fuel to the main tank when you activate an