



Federal Aviation Administration

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Memorandum

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From: John S. Duncan, Director, Flight Standards Service, AFS-1 [REDACTED]

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Subject: NTSB Accident/Incident Investigation Support Request 15-232;
AVP-100 memo dated June 24, 2015

This memorandum is in response to the NTSB's request for FAA policy that addresses protecting lives and property on the ground during a loss of engine power. This request arises from an accident involving a loss of power in a Lancair IV-P in Hilton Head Island, SC on March 15, 2010, and a similar accident involving a Piper PA-28 on July 27, 2014 in Venice, FL.

NTSB Inquiry 15-232: "Official FAA policy toward pilots' safeguarding lives and property on the ground during an emergency (loss of engine power in this case); the pilot elected the forced landing to a beach instead of water ditching; fixed gear airplane. A similar accident occurred when an airplane lost a propeller and also landed on a beach instead of ditching, killing a jogger."

FAA Response: In the Pilot/Controller Glossary (P/CG), an aircraft emergency is described as "a distress or urgency condition". The P/CG further defines distress as "a condition of being threatened by serious and or/imminent danger and requiring immediate assistance". Urgency is defined as "a condition of being concerned about safety and of requiring timely but not immediate assistance; a potential distress condition".

Title 14 of the Code of Federal Regulations includes several requirements intended, in whole or in part, to protect lives and property other than the occupants of the aircraft. Section 91.119 describes minimum safe altitudes for operations under part 91; those regulations principally require all operations to be at an altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface. That regulation further specifies operational restrictions in congested areas. Section 91.13 prohibits any person from operating an aircraft in a way that endangers the life or property of another. While not specifically regulatory, Chapter 16 of the FAA's *Airplane Flying Handbook* (FAA-H-8083-

3A) describes the human factors elements associated with pilots selecting between forced landing sites, including forced landings on water (ditching).

The accidents described in the NTSB's request appear to be the result of a PIC decision to land on a hard surface rather than in the water. In these cases, the only available surfaces may have been the body of water and the beach. Most pilots will instinctively look for the largest available flat and open area for an emergency landing. While ditching an aircraft is not necessarily more unsafe than a beach landing, when other options exist, pilots may tend to avoid ditching an aircraft. Ditching generally involves total loss of the aircraft, and the sudden deceleration, likelihood the aircraft overturning on touchdown, and subsequent cockpit egress difficulties can further influence this decision. A beach can also appear deceptively attractive to a pilot who is forced to make an instantaneous emergency landing decision. A beach surface is somewhat level, usually with no fixed obstacles, and can be assumed to be safe for the aircraft occupants and preservation of the aircraft. These conditions can cause a pilot to overlook the density of people on such a surface.

Because of the variety of possible emergency situations, it is impractical to apply a specific policy addressing risks involved between beach landings and ditching. The FAA relies on its requirements for pilot training on aeronautical decision making to compel pilots to pursue courses of action in an emergency which appear to be the safest and most appropriate under the circumstances.