

Don't Give Up the Ship!

Gear-Down Ditchings at Sea are Survivable

For a total non-swimmer Toby Alvis had flown over a lot of ocean—many thousands of miles of Pacific Ocean, in fact. He had experienced a few spots of trouble in route, but never anything serious enough to get his feet wet. On this occasion, however, he was outbound from California and a good 500 miles short of the beach at Waikiki when he realized that a ditching was inevitable. The electrical pump that boosted fuel from the reserve tank in the cabin to mains had broken down. All efforts to repair the pump were futile. There was no help for it but to radio for help, keep flying normally meanwhile, and review the ditching procedures.

Toby had ample experience to reflect upon. An ex-farm boy from near Bloomington, Ill., he had logged some 500 combat flight hours with the Marines in Vietnam. After four years of service he had settled down in southern California, up-graded his flying ratings and taken up ferrying aircraft across the Pacific. During four years with Southern Cross Aviation, which specialized in ferrying singles and twins to Australia, Toby had heard and told his share of stories about survival at sea in a light plane. Now, for the first time, he was facing a real-life situation.

In his favor was the presence of the S.S. Manulani, a Honolulu-bound freighter, which had been alerted to his situation by the Coast Guard and which had steamed to his reported position. On sighting Toby's 185, the captain stopped his ship dead in the water and put over a lifeboat. Rescue was at hand, provided that the ocean depths or sharks did not get him first.

Toby was well aware of the prevailing belief that his best chance for survival was in a low-wing airplane with retracted gear. Gear-up gave you an opportunity to slide into the water with a belly landing, and the low wing gave you better buoyancy than the high wing. His Cessna 185 had fixed gear and a high wing and, of course, he could not swim a stroke.

After some worrisome hesitation, Toby made up his mind to "follow the book" and take his chances while he still had power. Following a mental checklist he donned his life jacket, tightened his restraint harness, opened the cabin door, and locked the latch so that it could not become jammed shut if the fuselage were damaged on impact. He padded the instrument panel with his suit jacket to protect his face, in case his harness tore loose, signaled to the lifeboat, and began his descent.

The ocean surface showed him a ten-foot swell, and he estimated the winds at 10–15 knots—appropriate conditions for a landing parallel to the water movement, according to the book. He lined up with the swells and aimed his nose at a point halfway between the lifeboat and the freighter. He made his approach with full flaps and at minimum above-stall speed, cut his power and eased back on the wheel. The airplane plopped down on the next crest. He never recalled the actual splash-down; he only knew that suddenly "there was green water all over the windshield." The nose tipped down, but only momentarily and then the aircraft righted itself. Over his headset he could hear the Coast Guard pilot's voice asking the ship, "Is he still alive?"

That he was, but with the cockpit rapidly filling with water his anxiety about drowning took hold, and instinctively he inflated his life jacket. This departure from recommended procedures cost him an agonizing few seconds of struggle to get out the door. When he finally worked himself free, the airplane had already sunk so low in the water that he had to pull himself around from under the wing before he could rise to the surface. The waves looked enormous and he was reluctant to paddle away from the airplane. He was hit by the wing at least three times before the lifeboat crew plucked him out of the sea. He still had his boots on.



His plane sank out of sight within 15 minutes of impact. With it went his suitcase and all his good clothes, a brand new camera and his ancient weatherbeaten straw hat. He felt bad about the hat, but all in all pretty lucky. The comforting sight of the freighter standing by gave him the impression, "God must be saving me for something big."

Uninjured, Toby emerged from the experience with a cheery optimism about ditching survivability with fixed gear. In fact, he concluded that if he had it to do again and was in a retractable, he would probably put the gear down, particularly in rough water. He theorized,

"The extended gear will help drag you to a smooth, quick stop. With a tri-gear, I'd certainly put the gear down, because the main wheels are far enough aft of the center of gravity so that you'd be fairly well slowed down before the nose gear dug in. With the gear up, if you bounce off a wave and back up into the air, there's a very good chance that when you hit again the nose will be so far down you'll go right under and never stop.

"As for the high wings, well, the plane may settle lower, but at least you can slow down your approach with full flaps without worrying about slewing around in the water."



Interestingly enough, statistics on ditching give some credence to Toby's theories. A review of ditching accidents reported by the National Transportation Safety Board for the three-year period 1976-1978 shows 104 light plane ditchings. About half (54) of these were made with retracted gear, but retractables accounted for 65 percent (15 out of 23) of the fatal accidents. Factors other than gear position would have to be studied carefully before any conclusions could be drawn from this brief review, but there is enough evidence on hand to dispell any notion that fixed gear and high wings will necessarily drag you down to Davy Jones' locker.

Someone may have something big in mind for you. *Don't give up the ship!* ■

Ditching Sequence: Toby brings the 185 down with full flaps (1) and (2) the nose tips over on impact. The airplane stays afloat (3) until Toby can exit, carrying a life preserver as well as wearing a life jacket (4). SS manulani life boat crew pulls him safely on board (5) after 10 minutes in the water.

(The Coast Guard in its publication, "Aircraft Emergency Procedures over Water," recommends that retractable gear be left up, because if down it can result in a "violent and rapid deceleration" and subsequent loss of control—which can flip the aircraft over or cause it to dive into the water. The Coast Guard also notes that "low-wing aircraft, due to the flotation support derived from the wings, are safer for ditching than high-wing types. The high-wing aircraft tends to sink rapidly after impact until the wings settle in the water.")

