

SINK *or* SWIM

Martin Bass

It's like being dumped by a twenty-foot wave. Down becomes up and up becomes impossible to find. In a ditched helicopter you have less than a minute to escape. Specialised training courses can maximise your chance of survival.

Shortly after take-off from an oil tanker in November 1991, this Bell 214ST ditched in the Timor Sea. The two crew members and 15 passengers evacuated safely.

IT'S A PERFECT WINTER'S DAY ON THE harbour. Blue skies above and a steady 15kt breeze blowing onshore to clear the smog from the city. From 1,000ft the view is endless. The Bell LongRanger is tracking east towards the heads, holding 100kt airspeed. In the front, the pilot in command talks through his running commentary on the sights below. Next to him is a newly recruited company pilot, riding along to familiarise himself with the route.

In the rear, a tour group of five passengers are marvelling at the panorama below, talking as they point out landmarks along the way. At the heads the pilot banks the helicopter to turn north, rounding the cliffs and commencing his descent to 500ft. He scans the panel routinely before focusing his gaze outside again.

Something draws him back inside – the fuel pressure indicator needle is on the low edge of the green and flickering slightly. For a few seconds he thinks ... can he make it to dry land? No – too far. And a 15kt tail wind will put them into the cliff face given their current position and altitude.

His thoughts are interrupted by the fuel pressure warning light – it's glowing red. As he turns into wind, leaving the coast behind, the muffled whine of the turbine winds down. No choice now. He barks some urgent orders at his passengers and puts out a mayday call. Within seconds he has entered

autorotation, and is judging his height ready to flare the helicopter for ditching. Moments later the belly of the aircraft hits the swell with a thud and in his panic he rolls the fuselage to the left. A main rotor blade hits the water, and stops almost instantly. The other shears off at the root, spearing into the water. The transmission is torn from its mounts, smashing into the rear bulkhead. **Frenzy:** The fuselage rolls inverted and water consumes the cabin. People yelling, hands grappling at door handles and seat belts, headsets ripped off in the frenzy, maps

and charts falling around the cockpit. The noise gives way to swirling water and bubbles as the wreckage sinks. The bright sunlight gives way to darkness, vision becomes blurry... and it's cold – very cold...

The foregoing is a fictional example, but similar harrowing emergencies have occurred in reality – and may occur again. How do pilots and crew prepare for such an event?

This kind of scenario, and certainly the question of survival after ditching, has been the basis for development of the Helicopter



Most HUET courses offer a balance between theoretical and practical components.

Underwater Escape Training (HUET) course. In a controlled environment, and under close supervision, HUET course participants are given the opportunity to experience the horrors of helicopter ditching and roll over. The purpose is to give them a theoretical understanding of underwater escape procedures and sea survival, along with practical experience in the escape phase. The equipment used in such courses is purpose-built to emulate the ditching and rollover event.

In a country like Australia the issue of over-water operations using helicopters raise some vexed questions for operators in terms of passenger and crew safety. Most helicopter activity around the country occurs on or near the coast and many operations are conducted partially or wholly over water. In the last ten years, there has been a number of helicopter ditchings, many involving twin engine aircraft. Two Bell 214 STs have ditched off the West Australian coast, two Aerospatiale Pumas have gone into the sea near Mermaid Sound in WA, an AS 355 and a Hughes 500 off the Queensland coast, an R22 off the NSW Central Coast, and a Bell LongRanger off southern Victoria. The list goes on. It stands to reason therefore, that the HUET course might be regarded as essential for helicopter pilots and crew who involve themselves in over-water flight.

The typical course will include a theoretical component, observing topics such as helicopter emergency drills, survival at sea – in a life raft and in the water – and rescue and recovery techniques. There is also a healthy amount of time spent in the water. The venue for this practical component is usually a swimming pool. Some courses use heated pools to “cushion the blow” a little. Others use cold water to make the experience as realistic as possible.

The dunker: The centrepiece of the water-based training is the “dunker”, a mock up cockpit and/or passenger cabin. Participants strap themselves in before the whole contraption is rolled over and submerged. This routine is repeated many times, emulating different escape scenarios such as doors open and closed, multiple crew escape through one door and escape with blackout goggles to emulate night ditching. Along with the dunker training, courses may also provide experience in raftsmanship and demonstration of where cooperation between survivors is critical.

CASA flying operations inspector and helicopter specialist, Mal Walker, believes HUET courses are invaluable for helicopter pilots and crew, be they private or commercial operators. “Ditching and subsequent rollover in a helicopter is not a benign event. It is quick and very violent – more so than most people realise”, Walker says. “The

aircraft can hack itself apart in the process, adding to the adversity for those on-board. HUET courses give people involved in over-water operations a taste of just how life-threatening helicopter ditching can be, and how important it is to become familiar with proper escape techniques.”

Walker’s concerns focus on more than just underwater escape after ditching. His research has highlighted issues surrounding use of life jackets, rafts and other survival paraphernalia. “The ‘bum bag’ style of life jacket is problematic, particularly for infrequent passengers”, Walker describes. “Amid all the confusion of ditching and submersion, not to mention being inverted, getting out of the cabin and finding your way to the surface is a difficult task. If you’re injured the odds are even more against you. If, in the midst of all this, you have to open the bag, put on the jacket and inflate it – inevitably this will be too much for many passengers to cope with.”

Passenger briefing: Walker also highlights problems with the quality of the briefings that many passengers get. “Most passenger briefings are probably inadequate. I’ve seen many operators conducting their briefings outside, in the wind, even under spinning rotors – passengers aren’t going to get the information they need. Even simple things like opening doors need demonstration and practice.” He adds that there is a good case for some operators to employ staff purely to conduct passenger briefings and to oversee all safety aspects.

“The positive flow-on effects of HUET courses are worth considering”, Walker concludes. “When you understand how dangerous helicopter ditching can be, you’ll be more likely to think about whether you need to fly over water before you actually do it. When you know the proper escape and

HUET COURSES

New South Wales

Sydney Helicopters.
Contact Rob Haylock,
ph 02 9637 4455.

Victoria

National Safety Council of Australia (NSCA).
Contact Frank Anderson,
ph 03 9822 8111.

Western Australia

Industrial Foundation for Accident Prevention. Contact Chris Ryrie,
ph 08 9430 6611.

Northern Territory

National Safety Council of Australia (NSCA).
Contact Neil Molloy,
ph 08 8947 0404

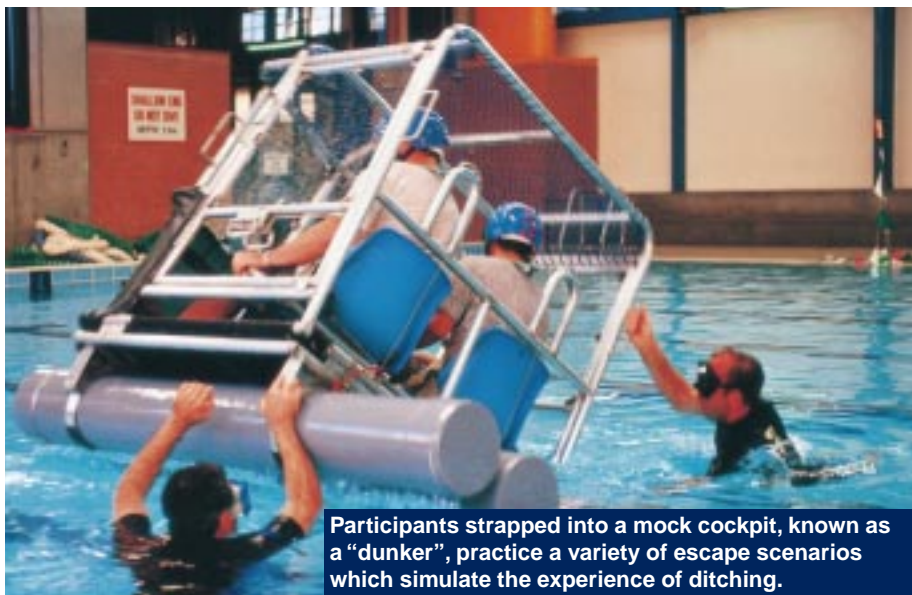
Queensland

RACQ CareFlight.
Contact Greg Bushnell,
ph 0417 622 976.

survival techniques, you’ll be better able to brief your passengers and give them the best chance of living through such an event.”

Mal Walker is spot on. For your own sake, if not for your passengers’, a HUET course is worth doing. It’s a small investment of time and money when you consider the potential returns.

Martin Bass is a helicopter pilot and freelance aviation journalist.



Participants strapped into a mock cockpit, known as a “dunker”, practice a variety of escape scenarios which simulate the experience of ditching.

PICTURE COURTESY OF SYDNEY HELICOPTERS