

Black Box Retrieval

Our July/August issue carried a news feature in the direct aftermath of the Air France Flight AF 447 crash. It seems this article was highly appreciated and, given the many comments on our website, provided food for thought.

Cdr Olugbode, for example, emphasises the very critical role of hydrographic surveying once more accentuated by this incident and subsequent recovery efforts, expressing the hope that the labours of these SSS and photographic surveys yield fruit. Lusk, who happens to give his view on the *Rocknes* grounding in this issue, fears modern recovery techniques will be severely challenged and wishes good fortune to the experts involved.

Some of our web commentators offer tips for the recovery of the black-box recorders and aircraft parts. Bertino tenders the reminder that several ocean-forecasting centres carry out routine analyses of 3D ocean currents. Holmes remarks that sea-surface currents close to the search area were logged in a hydro survey for a Brazil-Canary Islands telephone system; he notes that this link has been passed to the UK Air Accidents Investigation Branch (AAIB) which is assisting the French Bureau of Enquiry and Analysis for Civil Aviation Safety (BEA). Kumar thinks geophysical surveys could greatly help. Awofeko mentions how detailed sonar and photographic surveys might lead to recovery of the black box, and in response Jenkins points to a sonar and side-scan sonar course. Martin wonders if the tail of the plane might have fallen miles from where the rest of the aircraft came down, as happened with the American Airlines plane that crashed on takeoff from JFK airport in 2001; here stress caused the composite tail to snap off.

Dupuy, of the French Navy Hydrographic and Oceanographic Service (SHOM), which, among other marine and atmospheric-environment institutions, supports BEA, adds further information that I would like to share with you. Existing environmental information (metrology, oceanography and hydrography) played a key role in initial post-disaster decision making. The priority was of course recovery of human bodies. The search for bodies and debris presented a huge challenge: the location of the accident is not precisely known, so that the area of exploration is vast. Recovery of the black boxes has also, and for the same reason, proved very challenging indeed. And even the use of advanced French, Brazilian and American models has not enabled precise calculation of the drift of human remains and debris, and thus the point of impact. None of which has been helped by a sea bed topology that in this area is bumpy and poorly understood.

Employing acoustic signals from pingers to locate the AF447 black boxes has also unfortunately failed, since such pingers have a claimed battery life of thirty days and since mid-July have ceased emitting. Dupuy has a share in the "*Pourquoi pas?*", a brand-new research vessel funded by both the French Ministry of Research and French Ministry of Defence for military and civilian campaigns, and is currently conducting side-scan sonar surveys and explorations using an AUV, or submarine, with preliminary bathymetric surveys: a painfully slow and fastidious process. The ship has had SHOM hydrographic surveyors onboard ever since this deployment, decided on by the French Government, for AF 447 search operations.

In this issue we zoom in further on deep-water black-box retrieval, see page 14. If you have any further comments, do feel free to post them on our website!