

# 水中技術の現状

## － H-II ロケット 8号機のエンジンの搜索と回収－

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### Abstract

Search and recovery operations for the failed H-II Rocket Flight No.8 engine were carried out in 1999 at the request of the National Space Development Agency of Japan (NASDA). The rocket was launched in November 15, 1999 and the first stage engine stopped in 4 minutes. The engine fell in the northwestern Pacific Ocean region at a water depth of about 3,000m. The predicted search area was limited to 3.3km width and 26km length of box by orbital calculation of the NASDA. The size of the main engine was about 3.4m in height, with a diameter about 1.8m.

The Japan Marine Science & Technology Center (JAMSTEC) employed the latest equipment for the three search cruises and the following procedures: (1) wide area survey for the submarine topography using multi-narrow-beam echo sounder (Seabeam 2112) which was equipped on R/V "Kairei", (2) narrow area survey for the unique sonar contacts by side scan sonar on a 10,000m class ROV "Kaiko" and the deep tow sonar towed at a speed of 0.5 knots and a swath width of 1,000m for each side, and (3) detailed visual observation of the engine by the super-HARP camera (an ultra-sensitive color TV camera) or the 3CCD TV camera which was equipped on the deep tow camera and a 3,000m class ROV "Dolphin-3K".

As a result, the JAMSTEC was able to locate the engine in approximately 5 weeks. Then, NASDA employed an U.S. salvage company for recovery operation that was carried out by a 6,000m class ROV "Remora6000" and succeeded in recovering the engine from the deep seafloor within only two months after the launch.

The success of the mission demonstrated the high of level technical expertise and underwater technology that JAMSTEC has cultivated over the last 30 years.