



**Relatives of the victims of
Flight 111 coped with their loss
as the investigation continued**

tress signal less urgent than mayday). Zimmermann requested diversion to Boston, fully 555 km away. And even after accepting the air controller's suggestion of the much closer Halifax airport, the pilot clearly felt he had enough time to execute a 180-degree turn and head out to sea, away from the airport, in order to dump fuel and lighten his load for landing.

But a scant 10 minutes later, the situation had become desperate. At 10:24, in the final radio communication between the plane and the control tower, Zimmermann declared an emergency and said, "We have to land immediate"—not "immediately," as the initial and incomplete transcript released by investigators on Sept. 5 indicated.

Investigators had hoped that the plane's flight data recorder, retrieved from the ocean's depths on Sept. 6, would shed light on the last chilling moments of Flight 111. But the instrument—which provides information on more than 100 aspects of the flight, including the state of the electrical system—stopped recording as the plane descended below 3,000 m altitude, roughly the point of the last radio communication. Vic Gerden, the Transportation Safety Board's lead investigator, told reporters that this raised "a strong possibility" the aircraft had suffered an electrical shutdown that would have left the pilots flying—if they could fly at all—literally in the dark, using only manual controls. If that scenario proves true, even the cockpit recorder's information may reveal little, if anything, about the plane's final seaward trajectory.

Other details disclosed by investigators appeared consistent with the theory of a rapidly deteriorating series of electrical problems that ultimately confronted Flight 111's pilots with crippling smoke and heat conditions. Examination of the few fragments of the airplane recovered by week's end revealed visible signs of heat stress in the cockpit, including parts of overhead panels that were so hot that material melted and dripped onto one pilot's lambskin seat covering.

Evidence of electrical failure on Flight 111 immediately led to a flurry of speculation about its source. Much of this centred on the possible role played by the wiring aboard the MD-11, which was laden with an insulation known as Kapton—a widely used aviation product the U.S. military banned 11 years ago because it was prone to cracking that caused fires. (Another MD-11, flown by China Eastern Airlines, crashed at week's end in Shanghai after the front landing gear reportedly jammed, resulting in several injuries.) And while some aviation analysts concentrated on possible mechanical failures, others were already blaming the tragedy on human error.

Former American Airlines pilot Don Tynan told reporters Zimmermann wasted precious moments after acknowledging the presence of smoke by veering out to sea to dump fuel—a standard procedure when contemplating an early landing. "He shouldn't have screwed around," declared Tynan, who in 1979 safely landed a passenger jet without clearance at an