## What Really Happened to Malaysia's Missing Airplane

Five years ago, the flight vanished into the Indian Ocean. Officials on land know more about why than they dare to say.



## 5. The Possibilities

IN TRUTH, A LOT can now be known with certainty about the fate of MH370. First, the disappearance was an intentional act. It is inconceivable that the known flight path,

accompanied by radio and electronic silence, was caused by any combination of system failure and human error. Computer glitch, control-system collapse, squall lines, ice, lightning strike, bird strike, meteorite, volcanic ash, mechanical failure, sensor failure, instrument failure, radio failure, electrical failure, fire, smoke, explosive decompression, cargo explosion, pilot confusion, medical emergency, bomb, war, or act of God—none of these can explain the flight path.

Second, despite theories to the contrary, control of the plane was not seized remotely from within the electrical-equipment bay, a space under the forward galley. Pages could be spent explaining why. Control was seized from within the cockpit. This happened in the 20-minute period from 1:01 a.m., when the airplane leveled at 35,000 feet, to 1:21 a.m., when it disappeared from secondary radar. During that same period, the airplane's automatic condition-reporting system transmitted its regular 30-minute update via satellite to the airline's maintenance department. It reported fuel level, altitude, speed, and geographic position, and indicated no anomalies. Its transmission meant that the airplane's satellitecommunication system was functioning at that moment.

By the time the airplane dropped from the view of secondary—transponderenhanced—radar, it is likely, given the implausibility of two pilots acting in concert, that one of them was incapacitated or dead, or had been locked out of the cockpit. Primary-radar records—both military and civilian—later indicated that whoever was flying MH370 must have switched off the autopilot, because the turn the airplane then made to the southwest was so tight that it had to have been flown by hand. Circumstances suggest that whoever was at the controls deliberately depressurized the airplane. At about the same time, much if not all of the electrical system was deliberately shut down. The reasons for that shutdown are not known. But one of its effects was to temporarily sever the satellite link.

An electrical engineer in Boulder, Colorado, named Mike Exner, who is a prominent member of the Independent Group, has studied the radar data extensively. He believes that during the turn, the airplane climbed up to 40,000 feet, which was close to its limit. During the maneuver the passengers would have experienced some g-forces—that feeling of being suddenly pressed back into the seat. Exner believes the reason for the climb was to accelerate the effects of depressurizing the airplane, causing the rapid incapacitation and death of everyone in the cabin.

## The cabin occupants would have become incapacitated within a couple of minutes, lost consciousness, and gently died without any choking or gasping for air.

An intentional depressurization would have been an obvious way—and probably the only way—to subdue a potentially unruly cabin in an airplane that was going to remain in flight for hours to come. In the cabin, the effect would have gone unnoticed but for the sudden appearance of the drop-down oxygen masks and perhaps the cabin crew's use of the few portable units of similar design. None of those cabin masks was intended for more than about 15 minutes of use during emergency descents to altitudes below 13,000 feet; they would have been of no value at all cruising at 40,000 feet. The cabin occupants would have become incapacitated within a couple of minutes, lost consciousness, and gently died without any choking or gasping for air. The scene would have been dimly lit by the emergency lights, with the dead belted into their seats, their faces nestled in the worthless oxygen masks dangling on tubes from the ceiling.

The cockpit, by contrast, was equipped with four pressurized-oxygen masks linked to hours of supply. Whoever depressurized the airplane would have simply had to slap one on. The airplane was moving fast. On primary radar it appeared as an unidentified blip approaching the island of Penang at nearly 600 miles an hour. The mainland nearby is home to Butterworth Air Base, where a squadron of Malaysian F-18 interceptors is stationed, along with an air-defense radar—not that anyone was paying attention. According to a former official, before the accident report was released last summer, Malaysian air-force officers demanded to review and edit it. In a section called "Malaysian Military Radar," the report provides a timeline suggesting that the air-defense radar had been actively monitored, that the military was well aware of the identity of the aircraft, and that it purposefully "did not pursue to intercept the aircraft since it was 'friendly' and did not pose any threat to national airspace security, integrity and sovereignty." The question of course is why, if the military knew the airplane had turned around and was flying west, it then allowed the search to continue for days in the wrong body of water, to the east.

For all its expensive equipment, the air force had failed at its job and could not bring itself to admit the fact. In an Australian television interview, the former Malaysian defense minister said, "If you're not going to shoot it down, what's the point in sending [an interceptor] up?" Well, for one thing, you could positively identify the airplane, which at this point was just a blip on primary radar. You could also look through the windows into the cockpit and see who was at the controls.

At 1:37 a.m., MH370's regularly scheduled 30-minute automatic conditionreporting system failed to transmit. We now know that the system had been isolated from any satellite transmission—something easily done from within the cockpit and therefore could not send out any of its scheduled reports.

At 1:52 a.m., half an hour into the diversion, MH370 passed just south of Penang Island, made a wide right turn, and headed northwest up the Strait of Malacca. As the airplane turned, the first officer's cellphone registered with a tower below. It was a single brief connection, during which no content was transmitted. Eleven minutes later, on the assumption that MH370 was still over the South China Sea, a Malaysia Airlines dispatcher sent a text message instructing the pilots to contact Ho Chi Minh's air-traffic-control center. The message went unanswered. All through the Strait of Malacca, the airplane continued to be hand-flown. It is presumed that everyone in the cabin was dead by this point. At 2:22 a.m., the Malaysian air-force radar picked up the last blip. The airplane was 230 miles northwest of Penang, heading northwest into the Andaman Sea and flying fast.

Three minutes later, at 2:25, the airplane's satellite box suddenly returned to life. It is likely that this occurred when the full electrical system was brought back up, and that the airplane was repressurized at the same time. When the satellite box came back on, it sent a log-on request to Inmarsat; the ground station responded, and the

first linkup was accomplished. Unbeknownst to anyone in the cockpit, the relevant distance and Doppler values were recorded at the ground station, later allowing the first arc to be established. A few minutes later a dispatcher put in a phone call to the airplane. The satellite box accepted the link, but the call went unanswered. An associated Doppler value showed that the airplane had just made a wide turn to the south. To investigators, the place where this happened became known as the "final major turn." Its location is crucial to all the efforts that have followed, but it has never quite been pinned down. Indonesian air-defense radar should have shown it, but the radar seems to have been turned off for the night.

MH370 was now most likely flying on autopilot, cruising south into the night. Whoever was occupying the cockpit was active and alive. Was this a hijacking? A hijacking is the "third party" solution favored in the official report. It is the least painful explanation for anyone in authority that night. It has immense problems, however. The main one is that the cockpit door was fortified, electrically bolted, and surveilled by a video feed that the pilots could see. Also, less than two minutes passed between Zaharie's casual "good night" to the Kuala Lumpur controller and the start of the diversion, with the attendant loss of the transponder signal. How would hijackers have known to make their move precisely during the handoff to Vietnamese air traffic control, and then gained access so quickly and smoothly that neither of the pilots had a chance to transmit a distress call? It is possible of course that the hijackers were known to the pilots-that they were invited into the cockpitbut even that does not explain the lack of a radio transmission, particularly during the hand-flown turn away from Beijing. Both of the control yokes had transmitter switches, within the merest finger reach, and some signal could have been sent in the moments before an attempted takeover. Furthermore, every one of the passengers and cabin-crew members has been investigated and cleared of suspicion by teams of Malaysian and Chinese investigators aided by the FBI. The quality of that police work is open to question, but it was thorough enough to have uncovered the identities of two Iranians who were traveling under false names with stolen passports-seeking, however, nothing more nefarious than political asylum in Germany. It is possible that stowaways—by definition unrecorded on the airplane's manifest-had hidden in the equipment bay. If so, they would have had access to

two circuit breakers that, if pulled, would have unbolted the cockpit door. But that scenario has problems, too. The bolts click loudly when they open—an unambiguous sound that would have been familiar to the pilots. The hijackers would then have had to open a galley-floor hatch from below, climb a short ladder, evade notice by the cabin crew, evade the surveillance video, and enter the cockpit before either of the pilots transmitted a distress call. It is unlikely that this could have happened, just as it is unlikely that a flight attendant held hostage could have used the door keypad to allow sudden entry without firing off a warning. Furthermore, what would the purpose be of a hijacking? Money? Politics? Publicity? An act of war? A terrorist attack? The intricate seven-hour profile of MH370's deviation into oblivion fits none of these scenarios. And no one has claimed responsibility for the act. Anonymity is not consistent with any of these motives.