By Terry Hardy

On July 10, 2007, a Cessna 310R corporate jet crashed while performing an emergency diversion to Orlando Sanford International Airport in Orlando, Florida. The two pilots onboard the aircraft and three people on the ground were killed in the crash. Four others on the ground sustained serious injuries. The airplane was part of the National Association for Stock Car Auto Racing (NASCAR) corporate fleet. The National Transportation Safety Board (NTSB) determined that the probable causes of the crash were actions and decisions made by NASCAR management to allow the airplane to fly with a known, unsolved discrepancy and the pilots’ decision to fly with that discrepancy.

On the day before the accident, another company pilot had noticed a burning smell in the airplane while in flight. The pilot pulled a circuit breaker to the weather radar system and the burning smell went away. Upon landing, the pilot left the circuit breaker pulled and reported the discrepancy, providing both written and verbal descriptions of the problem to the director of maintenance and a maintenance technician. NASCAR’s aviation director, director of maintenance and chief pilot discussed the report, but did not inspect the airplane, according to the NTSB. The airline transport pilots were informed of the discrepancy and could have stopped the flight, but chose to fly anyway. It is believed that the problem was with the electrical wiring in the weather radar system, and, in flight, the pilots re-set the radar circuit breaker, thus restoring the electrical power to the weather radar system and causing the fire that led to the crash of the airplane. In this case, by pulling the circuit breaker, the symptom, or proximate cause, of the accident was eliminated, but the root cause remained (the electrical wiring problem). The NTSB also faulted the safety management system at NASCAR that would allow an airplane with a known problem to be released for flight.

Lesson Learned:
Analyses after accidents often show that clues existed before the mishap occurred. Such clues frequently take the form of anomalies observed during the lifecycle of a project. An anomaly is an apparent problem or failure that occurs during verification or operation, and affects a system, subsystem, process, support equipment or facilities. Anomaly reporting and corrective action, therefore, can play an important role in system safety. However, it is not enough to just report a problem — the issue must be investigated, and actions must be taken to prevent an accident. An effective anomaly report and corrective action process not only allows for the reporting of problems, but also implements a closed-loop process for finding and fixing the root cause.

Readers are encouraged to review the full accident and mishap investigation reports referenced here to understand the often-complex conditions and chain of events that led to each accident discussed. Additional lessons learned are available at www.systemsafetyskeptic.com.

References: