

## **RECOMMENDATIONS**

As a result of the investigation of this accident, the National Transportation Safety Board makes the following recommendations to the Federal Aviation Administration:

Require all 14 Code of Federal Regulations Part 121 air carriers to provide flightcrews with instruction on mistrim cues that might be available during taxi and initial rotation, and require air carriers using full flight simulators in their training programs to provide flightcrews with Special Purpose Operational Training that includes an unanticipated pitch mistrim condition encountered on takeoff. (A-98-44)

Conduct an audit of all Code of Federal Regulations Part 121 supplemental cargo operators to ensure that proper weight and balance documents are being used, that the forms are based on manufacturer's data or other approved data applicable to the airplane being operated, and that FAA principal inspectors confirm that the data are entered correctly on the forms. (A-98-45)

Require carriers operating under 14 Code of Federal Regulations Part 121 to develop and use loading checklists to positively verify that all loading steps have been accomplished for each loaded position on the airplane and that the condition, weight, and sequencing of each pallet is correct. (A-98-46)

Require training for cargo handling personnel and develop advisory material for carriers operating under 14 Code of Federal Regulations Part 121 and principal operations inspectors that addresses curriculum content that includes but is not limited to, weight and balance, cargo handling, cargo restraint, and hazards of misloading and require all operators to provide initial and recurrent training for cargo handling personnel consistent with this guidance. (A-98-47)

Review the cargo loading procedures of carriers operating under 14 Code of Federal Regulations Part 121 to ensure that flightcrew requirements for loading oversight are consistent with the loading procedures in use. (A-98-48)

Evaluate the benefit of the STAN (Sum Total Aft and Nose) and similar systems and require, if warranted, the installation of a system that displays airplane weight and balance and gross weight in the cockpit of transport category cargo airplanes. (A-98-49)

Require all principal inspectors assigned to 14 Code of Federal Regulations Part 121 cargo air carriers to observe, as part of their annual work program requirements, the complete loading operation including cargo weighing, weight and balance compliance, flight following, and

dispatch of an airplane. (A-98-50)

Review its national aviation safety inspection program and regional aviation safety inspection program inspection procedures to determine why inspections preceding these accidents failed to identify systemic safety problems at ValuJet and Fine Air and, based on the findings of this review, modify these inspection procedures to ensure that such systemic indicators are identified and corrected before they result in an accident. (A-98-51)

Evaluate the surveillance programs to ensure that budget and personnel resources are sufficient and used effectively to maintain adequate oversight of the operation and maintenance of both passenger and cargo carriers, irrespective of size. (A-98-52)

Require an immediate readout of all 11-parameter retrofitted flight data recorders (FDRs) to ensure that all mandatory parameters are being recorded properly; that the FDR system documentation is in compliance with the range, accuracy, resolution, and recording interval specified in 14 Code of Federal Regulations Part 121, Appendix B; and require that the readout be retained with each airplane's records. (A-98-53)

Require maintenance checks for all flight data recorders (FDRs) of aircraft operated under 14 Code of Federal Regulations Parts 121, 129, 125, and 135 every 12 months or after any maintenance affecting the performance of the FDR system, until the effectiveness of the proposed advisory circular and new FAA inspector guidance on continuing FDR airworthiness (maintenance and inspections) is proven; further, these checks should require air carriers to attach to the maintenance job card records a computer printout, or equivalent document, showing recorded data, verifying that the parameters were functioning properly during the FDR maintenance check and require that this document be part of the permanent reporting and recordkeeping maintenance system. (A-98-54)

Provide FAA principal avionics inspectors with training that addresses the unique and complex characteristics of flight data recorder systems. (A-98-55)

Create a national certification team of flight data recorder (FDR) system specialists to approve all supplemental type certificate changes to FDR systems. (A-98-56)

Direct the principal maintenance inspector assigned to Fine Air to reexamine the airline's continuing analysis and surveillance program and take action, if necessary, to ensure that repetitive maintenance discrepancies are being identified and corrected. (A-98-57)

Amend 14 Code of Federal Regulations Part 121.563 to specifically require that all discrepancies be logged when they occur and be resolved before departure through repair or deferral in consultation with (the certificate holder's or contracted) maintenance personnel. (A-98-58)