Collision of Missouri Pacific Railroad Company Freight Train Extra 615 South with a Standing Locomotive

Executive Summary
At 8:30 a.m., on Saturday, December 1, 1973, Missouri Pacific Railroad Company freight train Extra 615 South (train DMX) entered Cotulla, Texas. Train DMX was traveling on a nonsignalized main track at a speed of 35 to 40 mph. Just after it passed over a grade crossing, the train was diverted through a switch onto an adjacent track where an unmanned locomotive, a caboose, and 11 cars were standing. Train DMX collided with the standing locomotive before any appreciable braking. The collision derailed all of the locomotive units and 29 railroad cars. Three crew members who were riding in the lead locomotive unit of train DMX were killed.

Probable Cause
The National Transportation Safety Board determines that the probable cause of this accident was the establishment of a collision route for train DMX by the un-authorized operation of a switch by persons unknown. Contributing to the collision were railroad operating practices which authorize engineers to operate trains at speeds at which they could not stop short of a switch target which indicates the switch is improperly aligned. Contributing to the severity of the collision was the fact that the crewmembers of the locomotive of train DMX did not identify the open switch and apply the train's brakes soon enough to slow the train.

Recommendation: THE NTSB RECOMMENDS THAT THE MISSOURI PACIFIC RAILROAD COMPANY: REVIEW ITS OPERATIONS ON MAIN TRACKS THAT ARE NOT EQUIPPED WITH AUTOMATIC BLOCK SIGNALS AND TAKE APPROPRIATE ACTION TO ENSURE THE CAPABILITY OF ENGINEERS TO STOP TRAINS IN ADVANCE OF MISALIGNED SWITCHES. THIS ACTION COULD INCLUDE REDUCING THE SIZE OR SPEED OF TRAINS, INSTALLING AUTOMATIC BLOCK SIGNALS OR ADVANCE-POSITION INDICATORS, OR IMPROVING THE VISIBILITY OF SWITCH-STAND TARGETS.

Recommendation: THE NTSB RECOMMENDS THAT THE MISSOURI PACIFIC RAILROAD COMPANY: REVIEW THE PROBLEMS DEMONSTRATED IN THE APPLICATION OF RULE 27 AND RULE 34 IN THIS ACCIDENT AND MAKE ANY CHANGES NECESSARY TO ENSURE THAT THE LANGUAGE AND INTERPRETATION OF THE RULES ARE CONSISTENT WITH THE INTENDED OPERATING PRACTICES.


Recommendation: THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: DETERMINE AND ASSESS THE CURRENT RISKS OF TRAIN ACCIDENTS INVOLVING MISALIGNED SWITCHES, COLLISIONS, BROKEN RAILS, AND OTHER ROUTE OBSTRUCTIONS ON MAIN TRACKS WHERE AUTOMATIC BLOCK SIGNAL SYSTEMS DO NOT EXIST. THE FRA SHOULD THEN PROMULGATE REGULATIONS TO REPLACE INTERSTATE COMMERCE COMMISSION ORDER NO. 29543. THESE REGULATIONS SHOULD DETAIL THE MAJOR RISKS AND CONTROLS ASSUMED, SHOULD SET GUIDELINES FOR SAFE OPERATIONS.
BELOW THE MAXIMUM OPERATING SPEED, AND ASSIGN RESPONSIBILITY TO THE CARRIER FOR SAFE OPERATIONS.

Recommendation: THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: REQUIRE POSITIVE INDICATIONS OF BOTH NORMAL AND REVERSED SWITCH POSITIONS ON MAIN TRACKS NOT EQUIPPED WITH AUTOMATIC BLOCK SIGNALS.

Recommendation: THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: SPONSOR A PROGRAM TO DEVELOP AND TEST DEVICES FOR THE SECUREMENT OF MANUALLY OPERATED SWITCH STANDS SO THAT THEY ARE MORE RESISTANT TO OPERATION BY UNAUTHORIZED PERSONS.