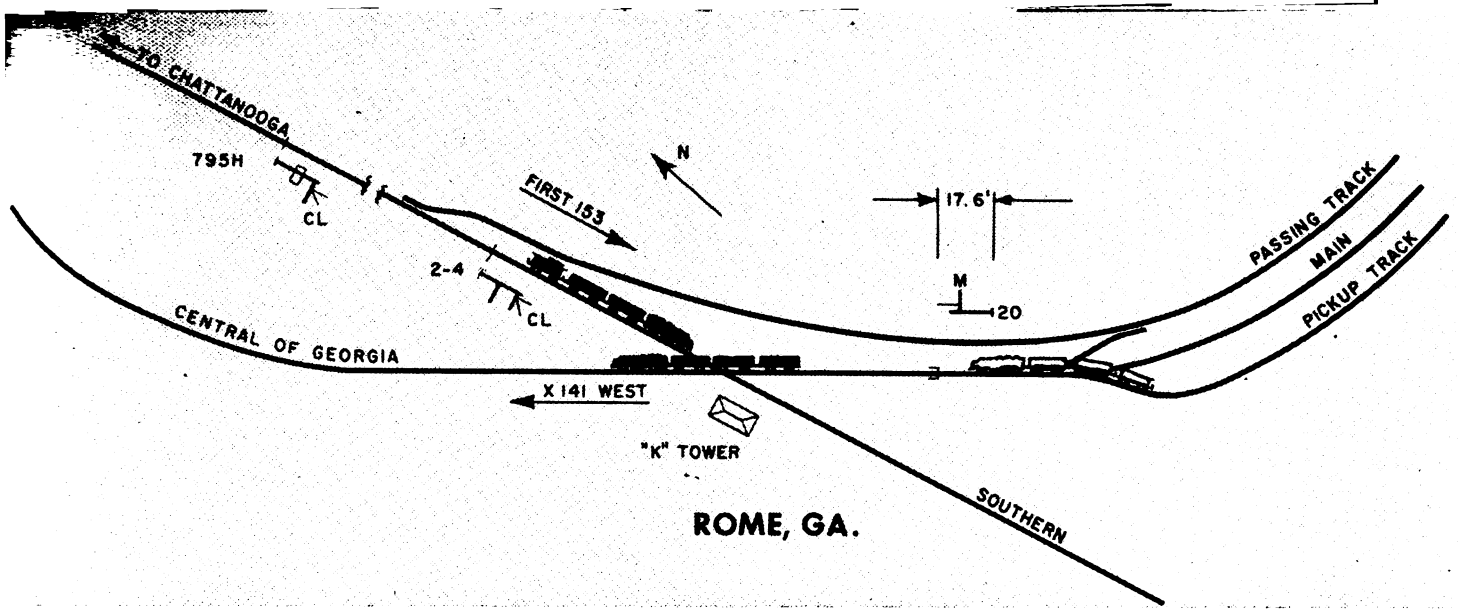

After setting off cars on the pickup track, the CofGa train moved onto the crossing, where it was struck by the SOU train.

Short Track Circuit Causes Accident

"This accident was caused by failure to operate [a train] movement in accordance with rules governing movements within interlocking limits, and an improper installation of interlocking track circuits."—ICC Report.

● On March 8, 1960, a Southern freight train struck the first car behind the locomotive of a Central of Georgia switching movement at Rome, Ga. This abstract of the Interstate Commerce Commission's report No. 3878 relates the sequence of events which led to this accident.

Mechanical signal 20, governing westbound movements on the CofG is a single-arm, two-position, pipe connected, upper quadrant, mechanical semaphore signal and is continuously lighted. Signal 2-4, governing southbound movements on the Southern is a continuously lighted color-light signal and is supplemented with inductive train stop. Track circuits and route locking are provided on both lines at the interlocking. The east end of the track circuit of the CofG is located 17.6 ft west of signal 20. The track circuits are so arranged that when a CofG movement occupies the interlocking at any point west of a point 17.6 ft west of signal 20, signal 2-4 indicates Stop.

The interlocking machine at K tower is of the mechanical type. Mechanical and electric locking are provided and are so arranged that the lever controlling signal 2-4 cannot be placed in the position which causes that signal to indicate Proceed unless the track circuits of the interlocking are unoccupied and the lever controlling signal 20 has been placed in the position which causes that signal to indicate Stop.

Extra 141 West, a westbound CofG freight train arrived at the interlocking signal 20 at 6:10 a.m. During the course of switching operations the towerman caused signal 20 to assume the vertical position, Proceed, and the engineer moved the locomotive and a cut of cars part way through the interlocking, then reversed, backing into the pickup track. The movement stopped with the locomotive still partly within interlocking limits, but clear of the track circuit.

During this operation, the towerman had heard the annunciator sound indicating the approach of First 153, a southbound first-class Southern freight train. When the track model board indicated that the CofG movement was clear of the interlocking, the towerman set signal 20 to Stop and cleared signal 2-4. The towerman was not aware that the CofG track circuit did not extend entirely through interlocking limits.

The Southern freight train received a Proceed indication at automatic signal 795H which is 5,142 ft in approach to the interlocking. The speed of the train was being controlled to 25–30 mph because of a speed restriction over street crossings in Rome.

When the air brake system of the cut of cars on the CofG had charged, the engineer moved this cut westward further into the interlocking. The engineer said that he did not look at signal 20 again prior to this westward movement as the locomotive had remained within the limits of the interlocking and he thought the authority for the locomotive to occupy the interlocking could not be removed until the locomotive with the cut of cars had cleared the interlocking by moving eastward beyond signal 20. As the movement proceeded westward to clear the switch of the pick-up track, it moved over the crossing and stopped with the first car to the rear of the locomotive on the crossing.

When the Southern train was about 2,500 ft in approach to signal 2-4, the enginemen said they observed the signal indicating Proceed. As they reached a point about 1,000 ft in approach to the signal they observed it change from Proceed to Stop. The engineer initiated a heavy service followed closely by an emergency application of the brakes. Both enginemen said that after the locomotive passed the signal, they observed the CofG movement on the crossing. Both enginemen alighted from their locomotive immediately before the collision occurred, and they said that the speed of their train was reduced to about 10 or 12 mph at the time of the accident.

Of the CofG movement, one car was destroyed and two were damaged. All five of the Southern's locomotive units left the track with heavy damage to the first unit. The interlocking tower was struck by derailed equipment and was heavily damaged. The two South-

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The design of entirely compatible units, that is, units that could be connected together indiscriminately would be the next step. At present, the amplifier unit is the only one that is entirely compatible, that is, it can have any other unit as input or output. Finally, to facilitate wiring and reduce wiring costs, the design of the basic circuits as "plug in" units seems to be indicated.

The present investigation has been carried out in close collaboration with the British Transport Commission who placed a contract with the Electrical Engineering Department of the Imperial College for the equipment required.

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ern enginemen were injured.

Under the rules of both carriers a reverse movement within the limits of an interlocking, or a forward movement after making a reverse movement, must not be made without the proper interlocking signal indication or permission from the operator. In the instant case, the forward movement to the crossing, after a reverse movement, was made without permission of the interlocking operator.

The investigation also disclosed that the interlocking was maintained and operated by the Southern, and that the CofG track circuit extended eastward in the interlocking to a point 17.6 ft west of signal 20, instead of to this home signal as required under the Commission's rules, standards and instructions governing interlockings. If the CofG track circuit had extended throughout the interlocking as required, the locomotive of Extra 141 West would have occupied this track circuit when it stopped after the coupling was made to the cars on the pick-up track. The interlocking operator would thereby have been unable to cause signal 2-4 to indicate Proceed for the movement of First 153 through the interlocking, and the accident would probably have been averted. In this case, the Commission has taken appropriate action to obtain compliance with its rule requiring track circuits and route locking to be provided throughout interlocking limits.