However, we have successfully reduced the cost of replacement cords by having field maintenance personnel accumulate cords that are bad order due to broken conductors. These are shipped periodically to a central maintenance point, where they are cut back and new terminals placed on a mass production basis. The cut-back cords are found to be as substantial as new handset cords.

On diesel locomotives the radio handset cord is in the proximity of the speed recorder drive chain housing, which emits lubricating oil. This eventually saturates and ruins the handset cord. When trouble appears in cords that have been oil saturated, the cord must be replaced and the old cord discarded.

Tape Cord for 2.5 in.

By A. E. DeMattei
Superintendent of Communications
Southern Pacific
San Francisco, Calif.

We have found that most defects in radio handset cords appear where the cord emerges from the control head plug. We have found that taping the cord for a distance of about 2.5 in. back from the place where it enters the plug minimizes this type of trouble.

Switch Heater

Have you had any experience with propane gas leaking from switch heaters into the switch machines during stormy weather, causing an explosion when the switch machine is operated? If so, what measures are taken to prevent this type of accident?

Relocate Inlet

By J. F. Stanford
Signal Engineer
Maine Central
Portland, Maine

We had an explosion of propane gas in an electric switch machine installed in CTC territory, which demolished the frame of the machine, including the heavy bed frame.

Gas leaked from a neoprene flexible connector between the pipe and the switch heater through a pin hole in this hose. The hose was at the controller end of the switch machine and made a connection to the center of the first section of the switch heater. There was considerable snow in the vicinity of the switch machine which created a pocket. The propane gas being heavier than air, settled in this pocket and accumulated in the switch machine. An attempt was made to operate it, which undoubtedly ignited the gas, causing the explosion.

To prevent recurrence, the inlet to the first heater section was relocated to the extreme end furthest from the switch machine. Instructions have been issued that snow will be kept cleaned from the inlet area, so as to provide gravity drainage of the propane gas away from the switch machine, insofar as practicable. Switch heaters are disassembled and cleaned annually at the end of the snow season, at which time the hoses are tested under pressure and those showing weakness are replaced.

Packset Batteries

For walkie-talkies, what are the advantages of dry batteries as compared to storage cells for their operation? What are the disadvantages, if any?

Dry Cells on SP

By Adolph E. DeMattei
Superintendent of Communications
Southern Pacific
San Francisco, Calif.

We use dry cell operated walkie-talkies instead of storage cell types for the following reasons:

1) The sets are lighter in weight.

2) The replacement of dry cell batteries in walkie-talkie radios is performed with less time, and eliminates the problem of acid damage to clothing of personnel who carry radios.

3) We were never able to find a realistic answer to the problem of over and under-charging wet cell batteries, which was performed by no technical personnel in the field. The use of dry cell batteries has eliminated this problem.

Made Tests on GN

By Allen H. Fox
Engineer Communications
Great Northern
St. Paul, Minn.

Before we settled on either battery we made a couple of test installations. The storage battery proved to be a messy deal where the charger was kept, and considerable trouble to keep things clear of the battery acid. Then there was only one spot where fresh batteries could be obtained unless the storage batteries were constantly shipped around to supply points.

With dry cell operation there is a cleaner situation, batteries can be kept at strategic points and easily replaced when exhausted.

While the dry cell, over a long period of time will be more expensive, it is felt the advantage of the dry cell overcomes the extra cost, particularly when the walkie-talkie is in use at a location where fresh storage batteries are not available and spare dry cells can be carried and held for ready replacement.

Interlocking Check

What is the best and quickest method to use when testing the operation, and checking the locking between the signals of both roads at an automatic interlocking at a simple railroad crossing?

Suggested Procedure

By D. L. Johnson
General Signal Inspector
Chicago, Rock Island & Pacific
Chicago, Ill.

Basically, an automatic interlocking can be treated the same as a free-lever, relay-type interlocking using pushbutton releases, or mechanical time releases and directional sticks to bypass the approach clearing track circuit.

In testing the operation and locking, the following procedure may be used:

1) Shunt one of the approach clearing track circuits and check that the signal clears.

2) Test the indication locking for each conflicting signal.

3) Attempt to approach clear each conflicting signal. When making this check, endeavor to change the route by operation of the time releases, checking that the specified time elapses from the time that the cleared signal goes to stop until the conflicting signal clears.

4) Shunt all track circuits between home signals and check that each complies with loss of shunt protection for automatic interlockings.

A complete check on all the locking for each signal is made before progressing to the next signal to be checked. The important thing is to follow a methodical procedure in testing the locking for each signal.

If the testing is being made to place the interlocking in service, then additional checks must be made on the directional stick circuits, approach signals, and any block signaling involved.