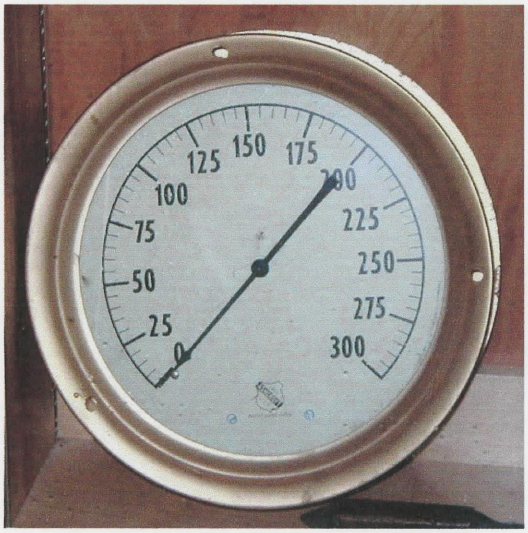
Jim LeCain's Stories about Railway Objects in the Museum.

2002

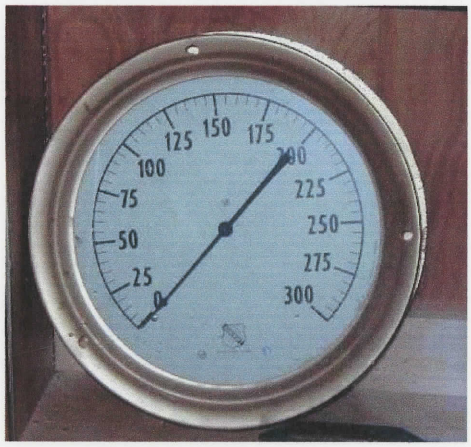
CAR MOVER & STEAM GAUGE

This long handled stick is a "Car Mover". A building alongside a loading track may have several doors for moving material in or out. The efficiency of the operation can be improved by having the railway car serviced at several doors. A locomotive is rarely immediately available and can be expensive for such a move. The solution is to have a "Car Mover." The mechanical mechanism on the end of the stick is positioned on the rail and pushed against the flat of the railway car wheel. Someone rides the car controlling the hand break. The long handle is then pushed down toward the rail and the car is moved. The Car Mover is again positioned against the wheel and the action is repeated until the car is located where required. The leverage is such that little effort is required to move the car. When moved as required the car hand break is applied. The belting on the handle was to protect the fingers from being pinched against the rail should the lever mechanism slip. This was applied by the user.
Notice the gauge in the case.

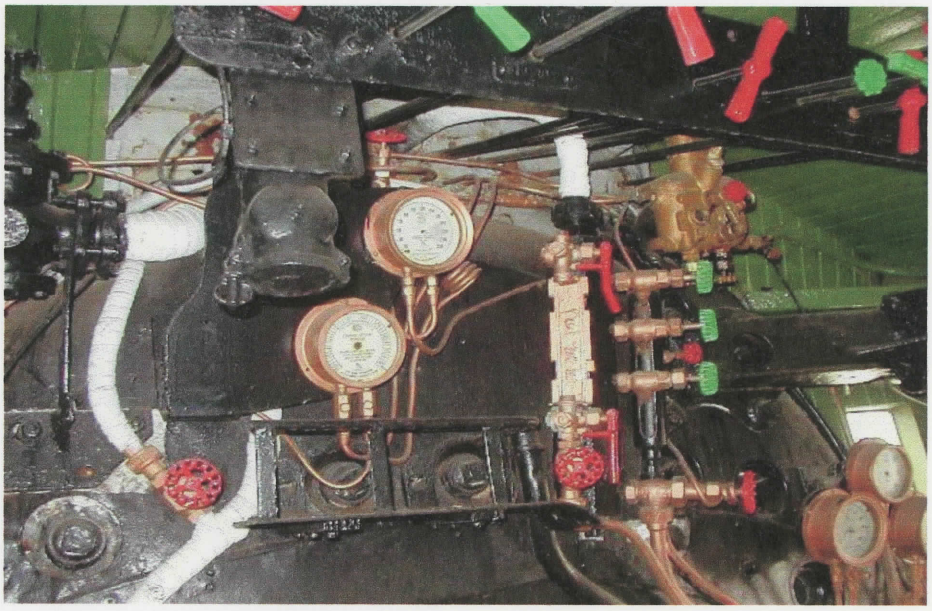


This is a "Steam Pressure Gauge." This gauge is typical of those located in all steam engines. Were this gauge installed in Locomotive CN 6077 and she was preparing to depart the terminal, the pressure gauge would be recording 250 PSI. (pounds per square inch) This is the pressure necessary to efficiently operate this engine. Should the pressure exceed a safe limit, a relief valve would open and drain off the excess steam pressure. Without this safety device the huge boiler could explode.

STEAM PRESSURE GAUGE

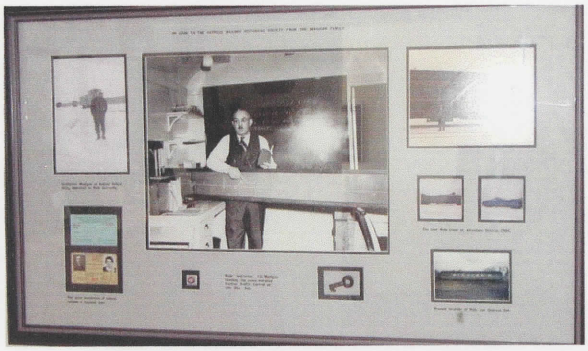


This is a steam pressure gauge able to indicate up to 300 PSI.



These are gauges inside Locomotive CN.6077 located in the compound.

If the above "Steam Gauge" was installed with the gauges of CN. 6077, it would indicate a working pressure of 250 PSI.



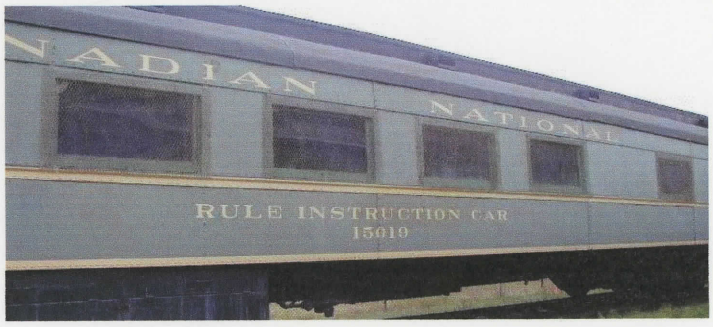
JOE MADIGAN RULE INSTRUCTOR

The Federal Government introduced a "Uniform Code of Operating Rules" to be used by all employees involved with the operation of trains for all Canadian Railways. These rules were issued to all operating personnel in book form to be studied and understood as a condition of employment.

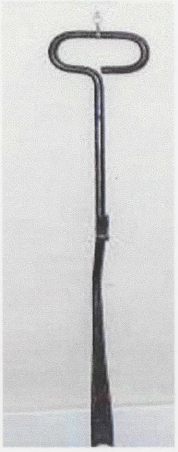
The regulation also required that the operating employees be periodically tested as to their knowledge and understanding of these rules. In addition every employee was to be issued a card dated and stating that the employee had successfully passed the examination. This card was to be carried by the employee when working. Government inspectors were created to travel the railways and check the employees for compliance of the regulations. Failure to have a current card resulted in the employee being pulled from service. Remote areas of employees, waiting to be called to work with no regular working schedule, experienced a problem in obtaining the required testing. To make the compulsory testing available to all operating employees the railway introduced "Traveling Rule Inspection Cars." These were older type passenger cars. The cars were rebuilt with full living quarters in one half of the car while the remainder became a fully equipped classroom.
Employees with the experience and qualifications were chosen to be Rule Instructors. Joe Madigan was one such rule instructor. The "Rule Car" was moved from location to location spending several days in each location to provide ample opportunity for the employees to obtain the required testing. Should the employee "miss" the rule car and his card expires then it is the responsibility of the employee to take the time off work if necessary, to travel to the location of the "Rule Car" and have the examination and obtain an updated card.

The travelling "Rule Inspection Car" CN.15019 has been retired and is on display in the compound.

There is still however a "Travelling Rule Instructor" as the Federal Regulations still apply but the current instructor travels from terminal to terminal in an automotive vehicle. The terminals now have classrooms and the instructor obtains his lodging and meals where he chooses.



PACKING IRON



These pictures are of a Journal Box Packing Iron and a Railway Car Wheel Truck Frame
The "Packing Iron" was the tool the Railway Carmen used to inspect and service Journal Box's on all types of rail cars. They serviced every journal of every car on every train every day and night, prior to the car leaving the terminal. This was repeated at all terminals approximately every 250 miles.

This "Truck Frame" is one of two wheel assemblies found on all regular freight cars. Passenger coaches and special rail cars have more wheels thus more journals. . One side of the frame is shown with the cover of the Journal Box open exposing the round wheel axle with a brass bushing resting on the top of the axle. There are 4 of these Journal boxes with axles and brass bushings on each wheel truck. There are two trucks per rail car totaling 8 bushings. Passenger cars had 12 such bushings per car. An oil soaked material is packed into each Journal. The axle is turning through the oily material and caring oil to the brass bushing for lubrication. The construction of the rail cars is such that the weight of the rail car and its contents, which are specifically loaded in each car are distributed evenly on all the brass bushings. These bushings ware and get hot from the contact with the axle. The oil in the packing is an absolute necessity for lubrication. Should the bushing not receive oiling , the heat generated from the friction would literally burn the end of the axle off resulting in a derailment of the train and possibly injury or death to the train crew. An over heating "Journal" is referred to as a Hot Box. A term most people are aware of. This overheating, causes a distinctive burning smell, visible smoke and open flames. These flames have been known to set fire to the old wooden box cars. The Train Crew was constantly inspecting each side of the train. The tail end crew were watching but were also in a position to smell an overheating journal, the first indication of a problem. An alert crew would stop the train and repair the "Hot Box" or carefully move the train and defective car to the next location where the car would be removed from the train.

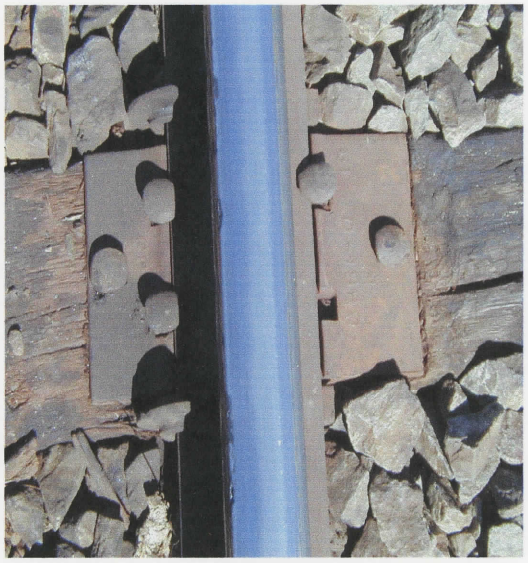
Roller bearings have replaced the brass bushings and the "Packing Iron".

Portable Telephone
and Hook-up Poles

The 24 hour day Train Dispatchers were solely responsible for the directing of all trains movements, in both directions, on a specific section of track, usually a subdivision with a single track. They maintained a running record of each train and issued the orders for opposing trains instructing where they will meet and pass. This is arranged through conversing with Train Operators stationed along the subdivision. This continuous exchange of information was conducted through the Dispatchers telephone. The Dispatchers telephone was the only direct communication from person to person in the operating department. The phone line was 2 wires strung along telephone poles which paralleled the track across the country. The two telephone wires were strung the lowest and closest to the track. Fixed telephones were installed in every station, in track maintenance buildings and at sidings. Trains between these locations were isolated but did carry a portable phone. Should a train be forced to stop in any of these isolated areas the train crew would connect the wires to the telephone and specially designed clips on one of the phone poles. Sufficient poles were then pushed together to be able to reach the overhead telephone wires from the ground. The phone hooks were placed over the wires and the connection was made. In this manner the Dispatcher was informed of the problem and would arrange for the proper assistance. The Dispatchers and their 24 hr. telephone were the lifeline of the entire subdivision. The many railway and non railway people living, working or vacationing along the subdivision with no other means of communication, frequently made requests of the Dispatchers who, to their credit, and against company policy, always applied common sense to the situations. This system worked for many years but like in all things, there were changes. Radio was introduced into the system and in a short time the lifeline of the subdivision was no longer operating. Radios everywhere now allow all the operating functions of the railway to inter-communicate, regardless of distance.

SPIKE PULLER

This is a Spike Puller used to pull-out the spikes that secure the rails in tie plates on wooden ties. The picture on the right is showing a rail on a steel tie plate secured to a wooden tie. There is provision for 6 spikes but you will note one was never installed. The spikes next to the rail secure the rail in the tie plate and also to the tie. The 2 outer spikes secure the tie plate to the wooden tie.



The present system of securing the rail to wooden ties is changing. Pictured on the left is the newer steel tie plate, newly installed as noted by the wood chips made from drilling the holes for the lag screws. The 4 lag screws secure the tie plate to the wooden tie. There are two lag screws yet to install. A "Pandrol Clip" is used to secure the rail to the tie plate. The Pandrol Clip is a spring steel rod, coiled like a pig's tail. The end is hammered into a hole in a block on the tie plate which had been formed when the tie plate was manufactured. When installed the tension of the spring steel clip is sufficient to hold the rail in place in the tie plate. The lower picture is showing the transformation in progress. One rail is secured with the old method and material while the new tie plates, lag screws and Pandrol Clips are being applied to the second rail.

COAL SHOVEL

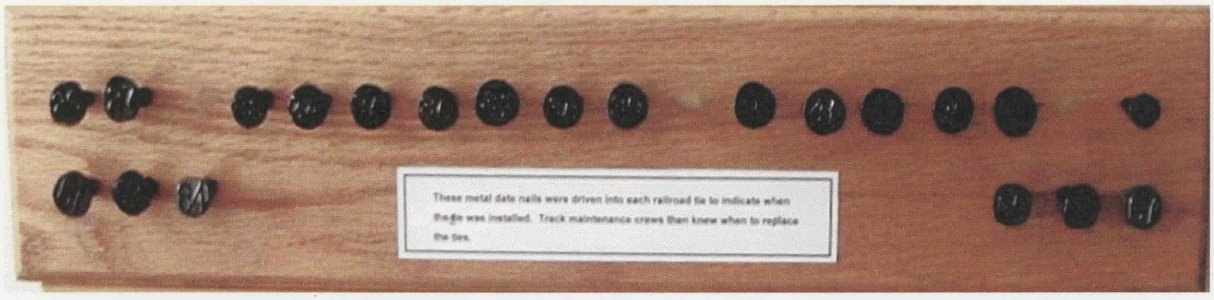
This is just not an ordinary shovel to be used for moving earth or snow. It is designed to move coal in a Locomotive. Note the short length of the handle, the size of the scoop and the angle at which the scoop is attached to the handle. This configuration was intended to be used to shovel coal from a storage tender, into the fire box of a steam Locomotive.

Early manufactured Locomotives did not have a mechanical operated mechanism for transferring the coal from the storage tender into the fire box. This operation however was considered in the design of the engine.

The oval door to the fire box was made in two halves which were installed to swing one half of the door up to the left and the other half swung up to the right, providing a clear opening into the fire box. This was called a butterfly door. A floor mounted foot pedal activated an air cylinder which opened the two halves of the fire box door. A full tender of coal placed the coal only a few feet behind the fire box door. The room to load the shovel and turn around to face the fire box was restricted, thus the short handle of the shovel. The 6 to 8 tons of coal shoveled into the fire on a regular trip made the large scoop necessary although heavy . The Fireman positioned himself between the fire box door and the piled coal. The shovel was slid into the coal pile and with one movement was lifted and swung around. At the same time the Fireman was stepping on the valve to open the fire box door. The moving shovel never hesitated as it was inserted into the fire to deposit the shovel full of coal in a specific spot on the burning fire. The shovel was removed, the door control released, as the Fireman was turning and again sliding the shovel into the coal pile to repeat the action. An action of fluid motion. Three to six full shovels would be fed the fire every 10 minutes or so.

In the hands of a master Fireman this was no ordinary shovel.

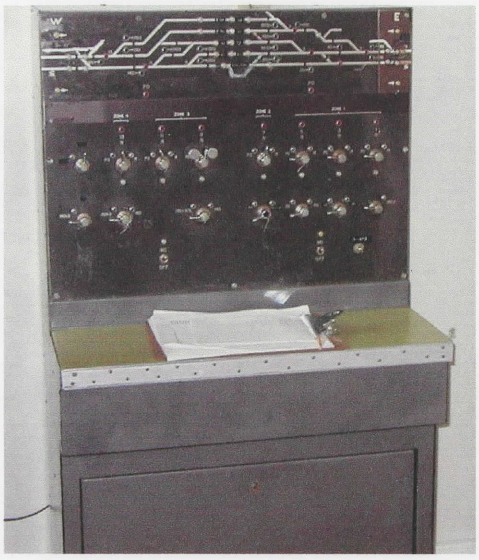
TIE DATE NAILS & TIES



For many years the railways had these nails hammered into selected wooden ties to indicate the year the tie was installed. This carried on for some 50 years. The nail heads on the left of the board are 1926,1927,1961,1962 and 1964. The program was intended to identify the most cost saving durable tie. Someone must have thought concrete ties would be the answer as many were installed in selected locations to support welded rail. CN is now operating on both wood and concrete ties supporting bolted and welded rail respectively.

Wooden Ties

Concrete Ties



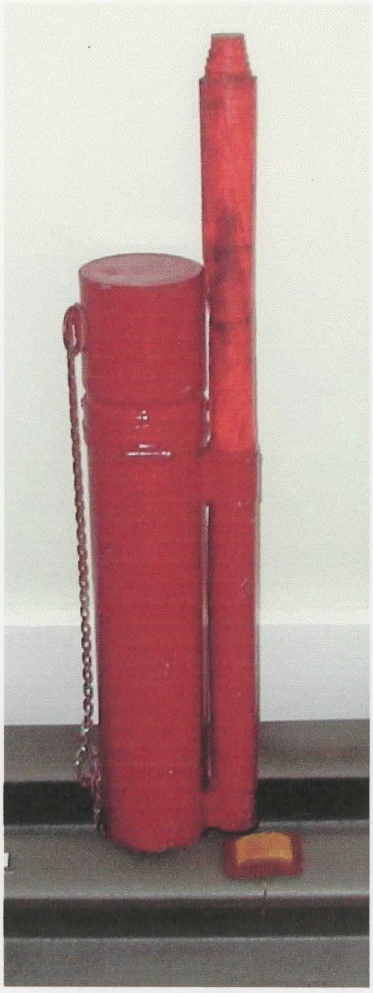
TRAIN CONTROL PANEL

This electronic box represents a Train Yard. It was used to direct trains to different tracks in the yard. The white lines represent the tracks. The bottom white line represents the main track. All the other tracks are branches off the main track and each is shorter than the previous track. This is referred to as ladder track There is a track switch, used to route traffic from one track to another, located at each point where one track joins to another. The tracks lines are not continuos on the panel but are split into blocks. Naturally the real track is not. split. There is a small light bubble on each block of track. These are miniature lights and when lit indicate there is a train or railway car located on this section of track. On the bottom portion of the panel are two rows of switches and buttons. These control each of the track switches located at every junction where one track is joined to another.

A train would enter the yard from the main track. The Yardmaster or person in control of the panel, would decide on which of the yard tracks the train should be parked. Having decided which track to use he selects the switch control on the panel for that specific track switch, turns the direction handle and pushes the button. The switch automatically turns to direct the train to the desired location. Reverse the handle and again push the button and the switch is returned to it's former position. The train proceeds and as it moves on to the first block of yard track, the little light on that block is lit. As the train continues on to the next block of track again the related light is lit. As the train moves ahead each block light is automatically turned on. When the train moves off a block of track the light automatically goes out. Finally when the train is parked all the lights are off, with the exception of the track on which the train is parked. This light remains lit as long as this track is occupied. .

This control panel is a miniature mirror image of a present day CTC, Centralized Traffic Control panel. The CTC signal and control system allows one person, the Train Dispatcher, to completely control the movement of all rail traffic, trains, motor vehicles and track maintenance equipment at the same time over several hundred miles of rail line. The entire track area being controlled from one panel has the same series of white lines on the board, cut into sections, referred to as blocks, with each block having it's own little indication light. The passing tracks and all switches are shown on the board and are subject to the control of the Dispatcher. This track control also controls the red, yellow and green signal system. The complete system is automated. When the block is clear the signals are green and the track unit can proceed. When a unit enters a block the block signal system is shorted and the red protection lights are automatically displayed at both ends of the block, nothing can enter. Clear blocks, clear signals. Occupied blocks, stop signals.

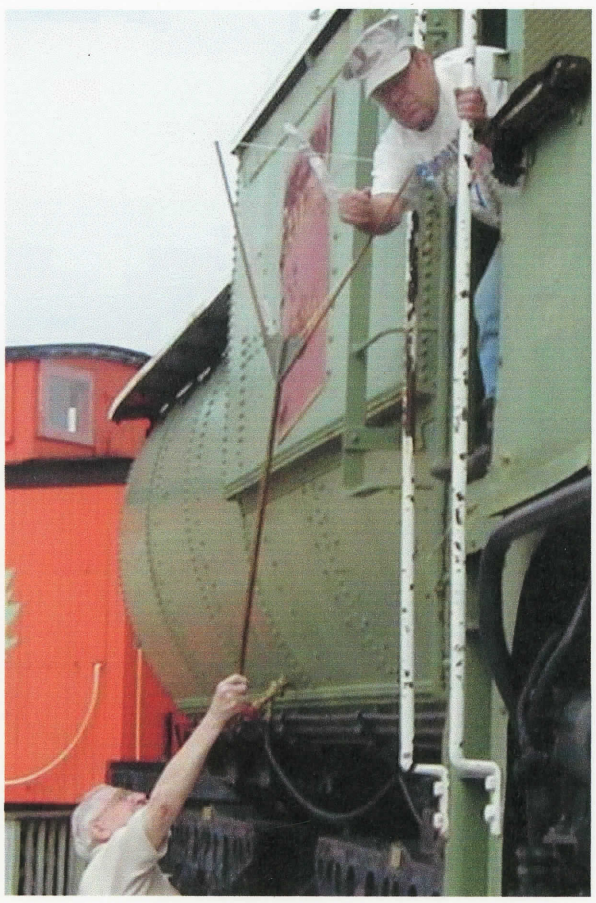
All track units operating in Northern Ontario are controlled by a Dispatcher in Toronto

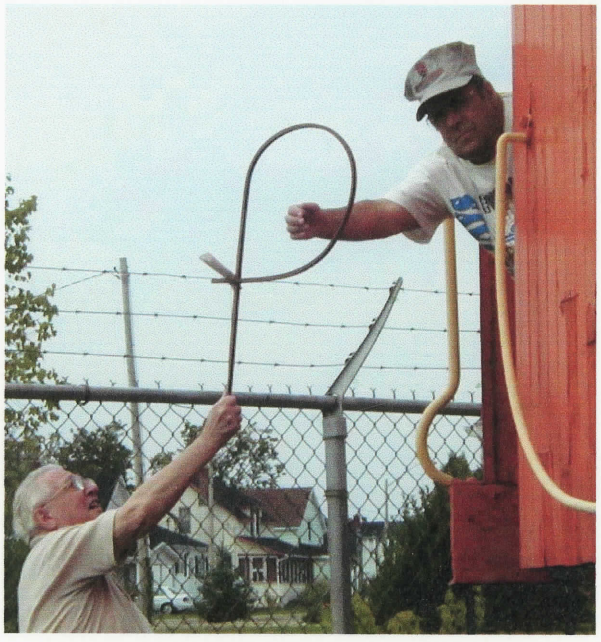


TRAINMAN'S FLAGGING KIT

These flagging kits were carried on the engine and in the caboose. The use was to be able to stop trains from colliding with the train on which the kits were being carried. This was self protection. The metal container was weatherproof with a flip-open cap. In this cap were stored several torpedoes. A safe torpedo is attached to the rail. These are explosive devices which are detonated by impact. When detonated they discharge with a very loud BANG. Inside the case are carried several red fuses. A fuse looks like a red broom handle about 10 inches long with a 2 inch spike protruding from one end and a twist-off cap taped on the other end. Inside the fuse is a red burning powder. The powder is ignited by twisting the cap off and striking the exposed end of the fuse with the rough end of the cap. This device has a 10 minute burn and will burn in any position or even under water. The spike is used to stick the fuse in a wooden tie. A tube attached to the container holds a red flag. The chain is to sling the case over one's shoulder.

There were scheduled passenger and freight trains that operated on time schedules. Other than speed, the only restriction they had was that they could never run ahead of the times in the timetable. Having a timetable, knowing what day it was and knowing the time of day was sufficient to know how close these trains were to your train.
Non scheduled trains operate at anytime ordered. This type of train operates, not on a time schedule but rather on train orders issued by the Train Dispatcher. The dispatcher follows the movement of these trains and issues the necessary orders to prevent these non scheduled trains from colliding. However consider your train is running ahead of a crack passenger train travelling a mile a minute. You check the timetable, your time and your speed and estimate you have sufficient time to run to the next passing track to pull in the clear and allow the passenger train to go past. You go and after a few miles your train suddenly stops. What's wrong, no communication, time is running out, that passenger is coming at you a mile a minute. Just then your engine whistles a signal to send out the flag. Grab the flagging kit and run like hell, must stop that passenger train before. Over the pounding of your heart you hear the passenger train. A curve in the track ahead. If you get around the curve in time, a straight stretch will allow you to set the torpedoes on the track, crack a couple of red fuses and then wave that red flag like mad...and pray.



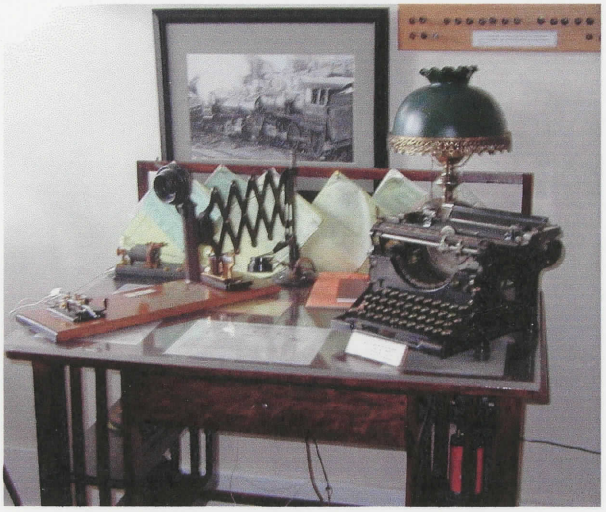


TRAIN ORDER HOOPS

The Train Operator is contacted by the Dispatcher on the Dispatchers phone to take an order. He moves the signal board to yellow (slow down). He then places the blank order paper, with carbon paper, in the typewriter and lets the Dispatcher know he is ready. The order is typed, repeated, acknowledged, timed, dated and approved. The Operator then prepares the hoops to transfer the orders to the moving train.
One set of orders is tied with a string and fitted to a long handled frame looking like a large letter Y, as can be seen in Photo 1.
A second set of the same order has been secured in a spring loaded clamp on the handle of a wooden hoop, looking like a figure 9. As seen in Photo 2.

The expected train crew has seen the yellow signal board and is reducing speed expecting they might be receiving orders. The Operator is seen standing alongside the track holding the long handled Y shaped order hoop. The long handle is necessary to raise the string loop high enough for a member of the crew in the high engine to run the string loop over his arm and secure the order. The crew in the caboose perform a similar retrieval however as the crew member can stand on the step of the caboose only the small hoop, looking like the figure 9, is required. Should either party miss the pick-up the train is stopped and reversed to be handed the order by the laughing Operator.
Receiving is Dick Menard.
Handing is Maurice Primeau.

TRAIN OPERATORS DESK



A Train Operator is an assistant to the Train Dispatcher who has complete authority over and is responsible for the movement of all trains on a subdivision. A subdivision is a section of track stretching from one terminal to another. It could be a single track perhaps 150 miles long. About every 20 miles or so there is a passing track approximately a mile long, attached to the main track. At this point a train travelling in one direction can switch to the passing track and allow a second train travelling in the opposite direction to pass by. Hence a passing track.

At every second or third passing track is a small operators' office equipped with a desk similar to what you see. Dispatchers' phone, telegraph key, typewriter and some train orders hanging on the back of the desk. As many of these locations are in remote areas the lamp would be kerosene and the heat a coal stove. This is the working office for 3 Train Operators covering three shifts. A tool of the trade not seen is the order board. A two armed semaphore signal which is controlled from in the office to signal oncoming trains. One arm for west bound trains the other for east bound trains. These arms will lock in any of 3 positions. Pointing straight up for go. (green board) Pointing out at a right angle for stop, (red board) and an in-between position for slow down. (yellow Board) The duties of the Operator are to record and report to the dispatcher the direction and identification of all trains with departure and arrival times at that location. Any information the Dispatcher wishes to pass on to a train crew is given to the operator over the dispatcher's phone. The operator types out the information with copies and repeats it to the dispatcher for confirmation. The Dispatcher confirms the repeat and OK's it with initials and the time. The operator locks on a yellow signal board for the oncoming train. The Dispatchers message and copy are attached to two hoops. One copy for the engine crew and a copy for the tail end crew. The train approaches seeing a yellow board slows down to receive the order or message. The Operator standing alongside the track holds the hoop in the air where the engine crew member catches the hoop on his arm. He removes the message. The procedure is repeated for the tail end crew who receive the information and throws the hoop back. The train resumes normal track speed with the head end and the tail end each receiving the same information on the fly. The operator reports the train and time etc. to the Dispatcher who records the information on a master sheet. There could be 5 or 6 of these Train Operator Offices on a subdivision working 24 hours a day passing information from the Dispatcher to the trains and reporting all the train information to the Dispatcher. With the assistance of the Train Operators the Dispatcher was able to control the movement of all trains in both directions.

TRAINMAN'S LANTERN

This is a Trainman's Hand Lantern.
The base is filled with kerosene with a wick extending into the base. Turning a small wheel will raise or lower the wick to increase or decrease the amount of light. An adjustment is made for maximum light with the least amount of smoke, necessary to keep the glass from being coated. The light was sufficient for walking and the physical work the Trainmen were required to do in coupling cars and air hoses. Note the design. The lantern can be set on the ground, hung up or most importantly carried over an arm, leaving the Trainman's hands free for getting on or off moving trains. This small light was the only method the Trainman had of communicating with the crew operating the locomotive This little lantern provided the light for the Trainman to see, **but also a light to be seen.**

To move an engine, a single freight car or an 80 car train required the Trainman to advise the engine crew in which direction to move, and when to stop. This information was communicated to the engine crew by the hand and arm movements of the Trainman, go ahead, backup, stop, go fast or slow. There were hand signals for everything. If the Trainman tilted his head back and motioned to his mouth he was telling the head end crew it was time to eat. Trainmen worked between cars, out of sight of the engine crew. The head-end crew had to be vigilant in watching and understanding the signals of the Trainman but they also had to know where that Trainman was located at all times and have an understand what he was doing, before moving the engine. The Engineman "talked" to the Trainmen with the engine whistle. There were whistle signals for all movements and to ensure a safe operation, a Trainman's signal was repeated with the corresponding whistle. A Trainman's backup hand signal would be answered by 3 toots of the engine whistle. A go ahead would receive 2 toots. This confirmation would acknowledge the Trainman's signal. The Trainman's movement was towards the rear of the train and further away from the engine crew. The dangers of the operation were increased with the longer distance of recognition and understanding. This same operation was also conducted in darkness but the hand and arm signals were replaced with a flicker of light from the Trainman's Lantern. Signals to go or stop etc. were transmitted to the engine crew by the light of that Lantern, but that light was also saying "here I am guys, I'm ok". When that little light swung up on to the step of the caboose and waved across the sky, the engine whistle would reply with 2 long blasts and soon they were "high-balling" down the track. The Trainman's old kerosene Lantern was retired for a brighter battery powered light. Communications were further improved using portable radios to the extent that the Trainmen were also retired.