

CN LINES

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CNR Rolling Stock Monograms ● The Bodo Sub. ● Number Plate Mystery
GTW and CNR U-4 Streamlined Northerns ● CNR's Railiners, Part 2

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Cover

RDC D-352 basked under the Spadina Ave. overpass in April 1961, awaiting its next trip out of Toronto Union Station.—Don Gard photo, Don McQueen Collection

CN Lines SIG Events

The CN Lines SIG will be participating in these upcoming events

Event	Location	Dates
CNet in the West Meet	Jasper, AB	June 25–26, 2004

For more information contact Glen Brosinsky at gmbro@telusplanet.net

CN Lines SIG Convention	Winnipeg, MB	May 20–22, 2005
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This event will be held in conjunction with the Winnipeg Model Railroad Club, celebrating their 50th anniversary. Watch for details and registration information in the next issue of *CN LINES*.

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The focus of the CN Lines SIG will be on all the constituent parts of the system during periods of CN ownership. Except as background, it normally will not include coverage of lines prior to amalgamation into Canadian National, nor components after they have been sold or leased to other operators.

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WHAT'S HAPPENING

The next CN Lines SIG convention will be held in Winnipeg on May 20-22, 2005, as part of a joint effort with the Winnipeg Model Railroad Club, the Canadian Association of Railway Modellers, and the CP SIG. If you would like to offer a clinic please contact Stafford Swain at the address on the masthead.



Courtesy and Service

We are marketing our “Courtesy and Service” bridge decals in two sizes designed to fit HO-scale bridges and buildings. Last fall, **Shaun Arthur** and **Al Lill** found a bridge in Calgary with the old lettering (as photographed by **Glen Brosinsky**, above). There are others across the country. **Les Kozma** is planning an article on the “Courtesy and Service” signage on bridges and buildings and would welcome additional photographic contributions.

CNR RS-18 Restoration Project

The restoration of this locomotive was done as part of the Canadian Railway Museum's planned participation at the 2003 Fair of the Iron Horse in Baltimore. While this fair did not occur due to the unfortunate events at the B&O Museum, CNR No. 3684 (along with CPR M630 No. 4563, also scheduled to participate) received a much-deserved restoration.

As part of its restoration, No. 3684 lost its storm window and received a sun visor. All lettering on the unit was done with the masking method and thus no decals were used. A high quality urethane-based paint was used. Interior of the cab was redone and involved removing many coats of flaking paint. The locomotive is currently serviceable and sees occasional limited service around the museum site. It is currently on display inside the new “Exporail” pavilion at the museum along with such other preserved CNR units such as FPA-4 No. 6765, FA-1 No. 9400 and switcher No. 77.

Errata CN LINES Vol. 12 No. 2

We are including a photo of **Andy Malette's** very nice model of a K-class Pacific on this page as follow-up to his S scale article in the last issue.

We also didn't receive word soon enough from **Charls Gendron** that he has several HO versions of SW1200RS models in resin made by Kaslo that can be fitted to the Proto2000 chassis.

There are several corrections related to Part One of the Railiner piece. The wrong

caption slipped in with respect to the photo of RDC-5 No. 6004 from the **George Carpenter** collection. George did submit a slide of No. 6004 with the caption provided, but it was a later picture in VIA colours at Halifax. The correct caption should read, “RDC-5 No. 6004 in fresh paint was photographed at Montreal on March 29, 1976, parked in the service area.—**R. J. Visockis** photo, George Carpenter collection.” Also note the lead unit on the back cover is No. 6352, and *not* 6354.



The Canadian Railway Museum's ex-CNR RS-18 No. 3684 has been restored to its original Canadian National paint scheme.—Len Thibeault photo

Andy Malette's S-scale model of CNR Pacific No. 5575.—Andy Malette photo





Canadian National RDC-3 No. D-350, ex-D-101(i), operated out of Edmonton for many years and is pictured circa 1956. Note the original built-up pilot and triangular number boards, large end windows, black “bug board” illuminated number boards on the letterboard ends, roof exhaust stacks, dual-bell horn, green-and-yellow ends with the round monogram, and black lettering on the letterboard. This represents well the as-delivered look of Phase One RDCs on the CNR, but by the time of this picture the RPO section was being used for express.

—George Bergson photo



CNR No. D-354 is seen going north out of Vernon, B.C., in a going-away shot on July 30, 1963. It has been retrofitted with full pilots at both ends, but still had the single-bell horn and no triangular number board on the “B” end. It appears that many CN Phase One RDCs were retrofitted with full pilots at both ends as the original built-up ones did not give much protection when rocks or other larger obstacles were encountered on the track.— Roger Burrows photo

Wendell Lemon advises that in *Extra 2200 South* (Issue 49), a short article notes that the “flutes” of air horns are correctly termed “bells.” He also suggests that we should draw attention to some additional details found in photos in Part One as follows: “Note the grills on the D-101 (over the headlights and end windows). The Newcastle–Fredericton RDC has just arrived at Fredericton and has bellied up behind a CPR passenger train. There was (initially) no pilot on the rear of the D-100(i) as the other end always led. However note the single flute (bell) horn for reverse movements for the conductor over to South Devon shop. I also see a steam line hanging to one side. This car and others had through steam lines for mixing in with steam-heated trains, whether diesel- or steam-hauled. The B&M RDCs also had steam lines when they came to CN in 1965 and 1966. No. 6302 on page 35 must have been going out as an extra (west from Spadina shops) as per the white flags. Also note on No. 6004 the add-on tail light for reverse movements plus the one-bell horn. This car had steam lines that were cut off at Moncton. The rear headlight over the

diaphragm on No. 6004 was a permanent CN add-on for back up movements. It was controlled from another RDC for leading when MU’ed. The photo on page 39 of No. 6356 is not at Moncton, but probably at Calder in Edmonton.”

“There was a pile of diaphragms around the Moncton shop in the Seventies and then none. They probably went to scrap when VIA took over the RDCs. The diaphragms were completely removed from “A” ends (baggage end) of the 6200s so the driver could see better. Other diaphragms were cut down and narrowed as shown on page 40 of *CN LINES* V12N2 with No. 6121. We cut off many here at Moncton before they went to VIA. The door chains are on ends of all RDCs, but many hang in out of sight.”

David Othen adds, “RDC-1 No. 6100 initially had the white CN logo on both the right and left sides of the cab front above the end sill and the logos were slightly smaller than those on other units. Later it was repainted with the conventional logo on the right.”

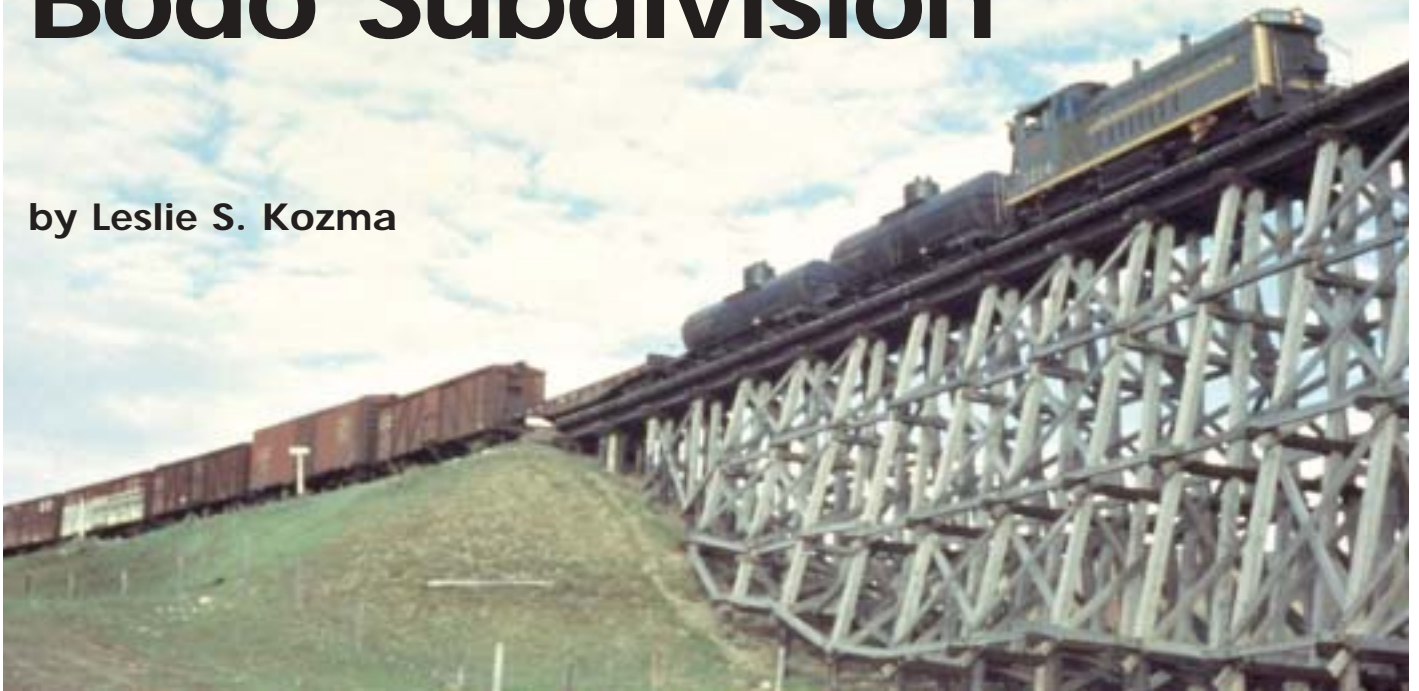
At the Shops

The CNSIG’s decal set **300-3de** is now available to letter CNR 1959-60 era piggyback trailers (aluminum bodies, see diagram below) in HO, with or without the CANADIAN NATIONAL lettering. The set includes tractor cab-door monograms and numbers for the 1965 renumbering, along with detailed instructions. This set is produced exclusively for the SIG by **Ed Barry** of **Down East Decals**. ♣



A Bridge on the Bodo Subdivision

by Leslie S. Kozma



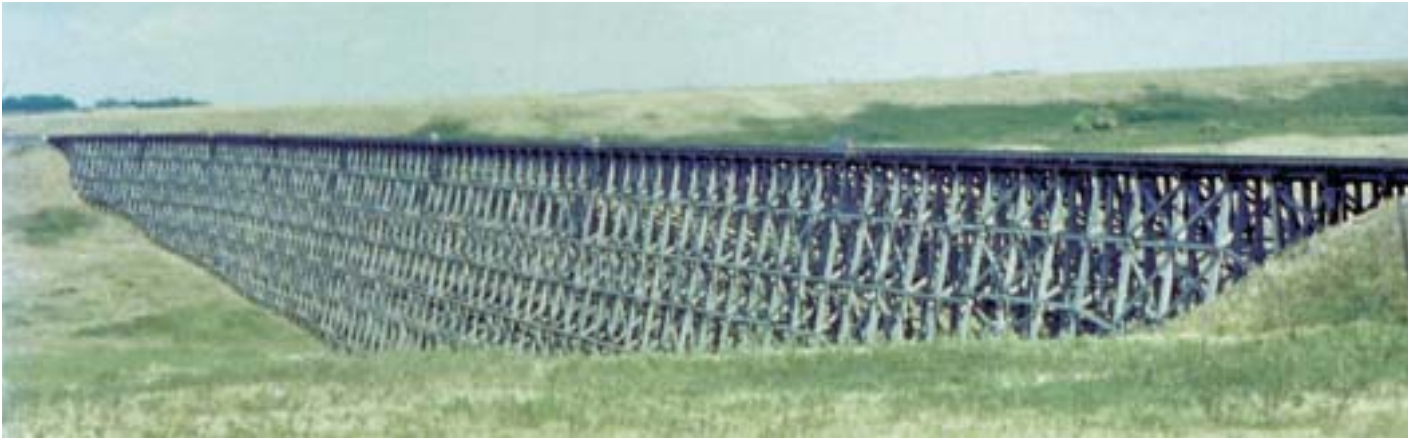
A few years ago my good friend Shawn Smith showed me three slides of a bridge and a train on the Bodo Subdivision. Bill Johnston had lent these to the Canadian Northern Society archives. I requested copies and recently came across them again while catching up with my filing. I couldn't put them down. Having had the opportunity to follow and photograph trains on this subdivision, I knew the line well. These images had a story to tell and it became imperative that these images be shared. Mr. Johnston kindly agreed. Indeed, he then revealed that when he took these images, he was working for the CNR as a student civil engineer on the local line diversion and related fill project that replaced this bridge.

A Capsule History of the Bodo Subdivision

The Bodo Subdivision in west-central Saskatchewan was an obscure prairie branch line. Nevertheless, lines such as this were essential when they were constructed. It is perhaps difficult to understand in today's context, but most prairie branch lines were built to serve the agricultural

above: By the mid-1950s, trucks, busses and private automobiles using publicly funded roadways had eroded the railway's traffic base on most prairie branch lines. This was certainly reflected in the latter-day passenger services on the Bodo Subdivision; but they were never great to begin with. Since the spring of 1940, the Bodo Sub was blessed with but a single Mixed train per week! Train No. 311 left Unity at 14:30 on Fridays, scheduled to complete the 51.5-mile trip to Bodo at 18:55. No. 312 returned from Bodo on Saturday morning, arriving at Unity at 09:15. Presumably, the train ran as an Extra in both directions between Unity and Biggar. Mixed train service on the Bodo Subdivision was abolished with the issuance of the 30 September 1956 time card. Regardless, this service continued on an unscheduled basis. Here, the Mixed Extra is being pulled at Mileage 1.7 of the Bodo Sub by newly minted SW1200RS No. 1214, delivered early in 1956 as No. 1585. The carbody-mounted handrails are evident in this August 1957 view, but the CNR's distinctive spark arrestors have yet to be installed. The CNR, still in the throes of dieselization, was allocating single units to branchline runs, much the same way as steam engines had been assigned.—Bill Johnston photo





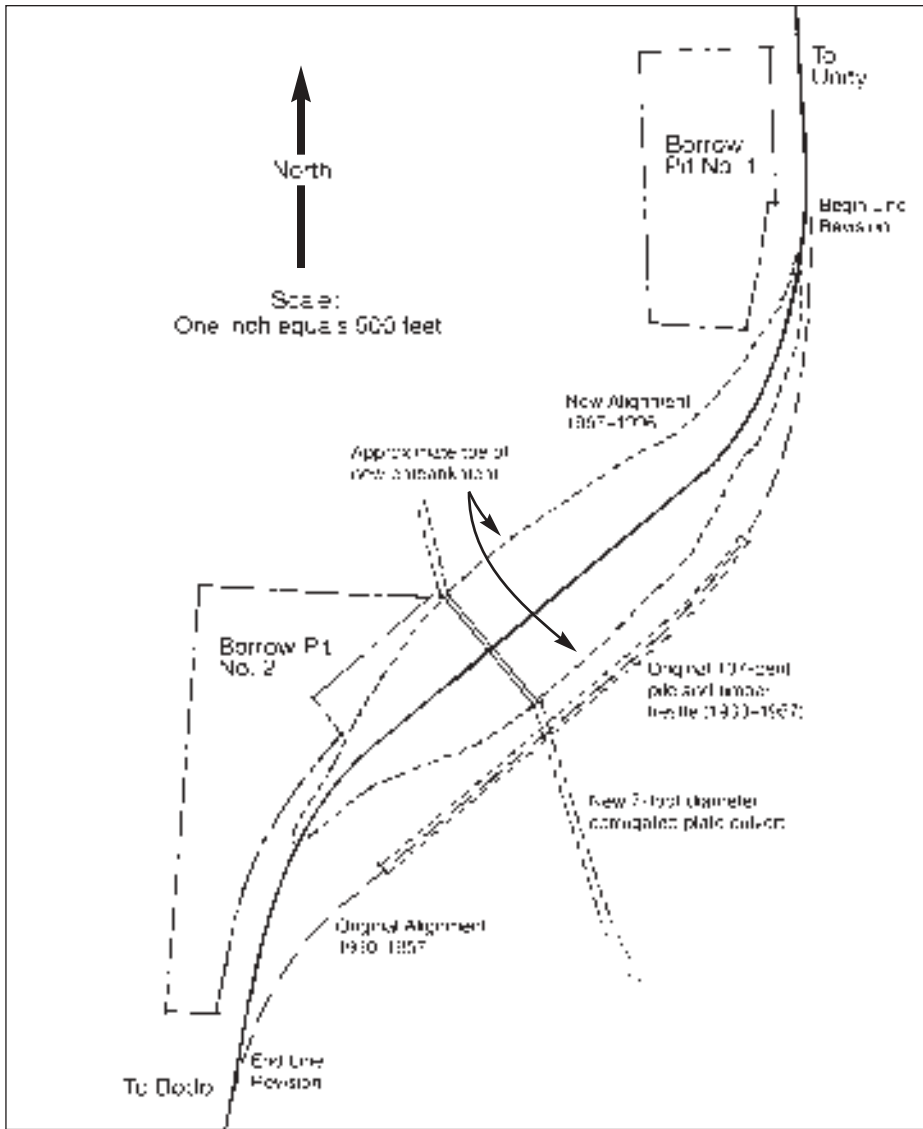
above: The impressive 107-bent pile-and-frame trestle 1.7 miles southwest of Unity Jct. was the largest bridge on the line. The structure was 1247.8 feet long and rose 85 feet above the coulee floor. Construction commenced in October 1929 and was completed in early 1930. A total of 19,275 lineal feet of cedar piling, 1,093,332 board-feet of timber and 76,408 pounds of iron (drift bolts, screw bolts, washers and nails) were used in its construction. The caps, sills and ties were pressure-treated with preservative. After over a quarter-century of service, the timber bridge was up for renewal. Rather than replacing the trestle in kind or using the conventional train fill method, a new culvert and embankment was built on a local line diversion just north of the existing bridge. In the spring of 1957 a seven-foot diameter corrugated metal pipe culvert 322' long was placed at the base of what would be the new fill. Heavy equipment, such as scrapers and graders, was used to build up the embankment with material from nearby borrow pits. The resident engineer for the project was Hans Idlund. His assistant, Bill Johnston reported, "heavy August rains led to serious slides in the fill and it took weeks to rectify the situation and complete the grade." But once the embankment was restored, the track was laid on the diversion, connected to the existing line at each end and opened in September. The timber trestle was later dismantled.—Bill Johnston photo



below: By the early 1960s the Bodo Subdivision had become grain dependent. As with other prairie branches the Canadian Wheat Board implemented the grain block system in the 1969 crop year. At the time the Bodo Subdivision was on the Alberta District. Locomotives and crews for train operating on the line were based in Calder Yard-Edmonton. By the mid-1980s the line was operated an average of once every two weeks. Due to deferred maintenance, the line was restricted to lightweight GMD1 units in the 1000-series, rebuilt in 1988-89 into the 1600-series. Typically, the three units used in this wayfreight service were moved in an eastbound train from Calder to Biggar. Over the next couple of days these units would make Turns from Biggar peddling empties and grain loads up and down the Porter and the Dodsland Subdivisions. The following day these same units would pick up grain empties at Biggar, spot them at the elevators on the way down the Bodo Subdivision and lift the loads on the return leg. Once back at Biggar, the units and grain loads would be cut into a westbound train and return to Calder Yard. In January 1990 jurisdiction over the Bodo Subdivision was transferred to the Prairie Region Saskatchewan District. In the final years of operation on the Bodo Subdivision, two units were usually sufficient to handle the local traffic. Here GMD1u's 1612 and 1614 leave the elevator track at Reward after spotting 13 empties at the 1930s-vintage elevators on 19 September 1989.—L. S. Kozma photo



left: The trailing shot looking southwesterly shows the Extra Mixed stretched out across the trestle and the coulee in August 1957. The 23 cars in this train were likely all this single SW1200RS could handle, even with the moderate grades (westbound maximum 0.4%, compensated) on the Bodo Subdivision. Two tank cars (likely lubricating oil and/or gasoline bound for the bulk oil plants at Reward—Imperial Oil and B-A—and at Cactus Lake—Imperial Oil—but their location in the train suggests both were for Reward) were marshalled right behind the locomotive (now a “no-no,” for safety reasons). Following the tank cars were an empty flat car, two stock cars, a mixed bag of seven single-sheathed wood and eight steel boxcars, a wooden express reefer, an ancient mail-express car (possibly of CNoR heritage) and, finally, the caboose. The loaded boxcars likely carried merchandise and domestic coal. The empty boxcars were likely for grain loading at some of the 13 country elevators or the numerous grain loading platforms along the branch. Clearly, stock was also to be loaded. The reefer and the mail-express car were for less-than-carload lot (l.c.l.) freight for distribution to the local stations along the line. Passengers desperate enough to catch this train presumably rode in the caboose. This unscheduled Mixed likely met its demise by 1960. Freight service continued on an as-required basis.—Bill Johnston photo



This map, redrawn from CNR Plan E-4047-3 of 7 March 1957, shows the relative position of the bridge and the new embankment at M.P. 1.7 of the Bodo Sub.—L. S. Kozma Collection

districts through which they ran. Most of these areas were settled long before the rail lines were built. But railway transportation was an economic lifeline, reducing the road haul of grain, cattle and other agricultural products. Further, domestic heating coal, lumber and all manner of manufactured goods were brought in by rail.

The Unity Southwesterly Branch was one of only a handful of lines not originally surveyed in the great pre-World War I railway boom. Reconnaissance and location surveys for the first 100 miles were started in March 1929. Tenders for clearing, grading, and installation of culverts were advertised and contracts for the work were signed with the Brooks Construction and Transportation Co. on 19 June 1929. Work commenced on 10

July. Construction on the huge timber trestle at Mileage 1.7 started in late October 1929. Settlers adjoining the line were hoping to have the line completed in time to deal with the 1930 crop, but steel laying was delayed until 20 October 1930. Then tracklaying was halted east of Salvador awaiting completion of the steel and concrete grade separation over the CPR's Macklin Subdivision and another large timber trestle near Cactus Lake. Despite an early, heavy snowfall the grain elevators constructed at Sunnyglen, Reward and Donegal and the grain loading platforms erected at each station handled hundreds of carloads of grain, which was moved over the skeleton track to the mainline at Unity.

Work on the branch continued through the winter to help alleviate the

unemployment crisis. Indeed, at one point during tracklaying up to 140 locals were hired. Despite their inexperience the gang averaged laying a mile-and-a-half of track per day. Some of these men later helped with the construction of station and section buildings along the line.

With completion of the flyover at Salvador in mid-January 1931, tracklaying resumed and it was completed to Rosenheim (later renamed Bodo), Alberta, on 17 February 1931.

Ballasting proceeded immediately after the tracklaying. The line officially opened for service to Mileage 27.0 on 25 February 1931, and on to Rosenheim (Bodo) on 3 March 1931.

Plans to join with the proposed Bulwark Northeastly Branch, which in 1930 was being graded easterly from the joint CPR-CNR Alliance-Coronation line in Alberta, never materialized.

Economic depression, a World War and technological change finally caught up with most of these branch lines, so that by the 1950s and 1960s they were functionally redundant, and the CNR's operating losses mounted.

As with many other grain-dependent branch lines in 1964 the CNR applied to abandon the Bodo Subdivision. But with implementation of the recommendations of the MacPherson Commission the line was kept open by provision of an operating subsidy. Later, the Hall Commission recommended that the line be retained until the year 2000.

The western 11.2 miles of the subdivision—from Cactus Lake to Bodo—was abandoned effective 31 December 1983. In 1988 the remaining bridges were upgraded under the Grain Branchline Rehabilitation Programme. Even so, track-operating speeds fell to ten miles per hour over virtually the entire subdivision. With the blessing of the NTA, commencing in 1994, Bodo Subdivision grain was trucked to alternate loading points. Subsequently, rail operations dwindled into nothing. Finally, on 11 July 1996 the Bodo Subdivision was abandoned. The next summer a salvage contractor tore up the tracks. The embankment at Mile 1.7 is still very much in evidence. Other vestiges of the railway linger, including grain elevators at Hearts Hill (a classic) and Cactus Lake, and the virtually new 18-bent trestle (197 feet long, 40 feet high) just east of Cactus Lake. ■

Almost 50 years have passed since the CNR found it necessary to renumber several different groups of steam locomotives in order to make room for newly arriving diesel-electrics being added to its roster.

A group of 0-8-0 switchers in series 8200–8226 is of special interest. The renumbering of these locomotives was authorized in June 1956. Eight of this group (8200, 8202, 8203, 8214, 8217, 8223, 8224 and 8225) had been scrapped during 1955. The remaining 19 locomotives were renumbered to 8430–8448 as follows (from *Canadian National Steam Power*, Clegg and Corley, 1969):

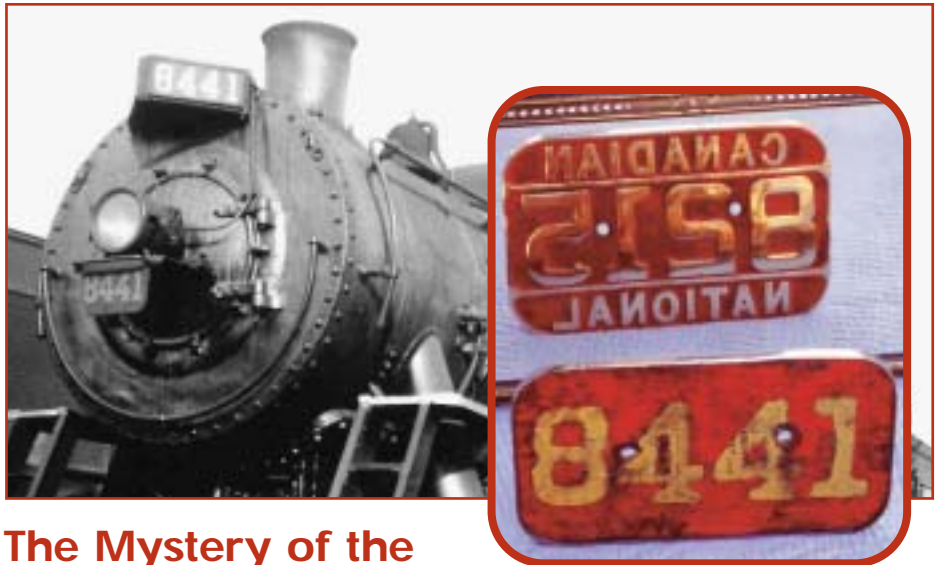
Old Number	New Number	CNR Class	Renumbering Completed
8201	8430	P-4-a	11-1956
8204	8431	P-4-a	11-1956
8205	8432	P-4-a	2-1957
8206	8433	P-4-a	1-1957
8207	8434	P-4-a	1-1957
8208	8435	P-4-a	1-1957
8209	8436	P-4-a	1-1957
8210	8437	P-4-b	1-1957
8211	8438	P-4-b	1-1957
8212	8439	P-4-b	1-1957
8213	8440	P-4-b	1-1957
8215	8441	P-4-c	1-1957
8216	8442	P-4-c	1-1957
8218	8443	P-4-c	1-1957
8219	8444	P-4-c	1-1957
8220	8445	P-4-c	1-1957
8221	8446	P-4-c	1-1957
8222	8447	P-4-d	not recorded
8226	8448	P-4-d	1-1957

The renumbering process involved changing the numbers on the cab sides, the numberboard on the rear of the tender, the backlit triangular numberboard on the smokebox, and the front number plate mounted under the headlight.

According to 1957 CNR locomotive assignment sheets, these 0-8-0s were well distributed across the system. It is assumed that each engine terminal where these locomotives were assigned had the responsibility of carrying out the renumberings locally rather than sending them to one of the big shops such as Stratford, Point St. Charles, or Transcona.

When it came to changing the front cast number plates it is thought that each respective terminal placed an order with one of the major shops to have the appropriate new plates cast for mounting on each locomotive being renumbered.

Herein lies the mystery of the “double” number plates.



The Mystery of the Double Number Plates by Fred B. Furminger

CNR P-4-c No. 8441, ex-8215, at Spadina in August 1957, and the “double” number plate acquired by the author in 2003 (photographed against a mirror).—Fred Furminger photos

In early 2003 a brass CNR number plate from 0-8-0 No. 8215 was put up for auction on eBay. Described as a “Rare Double-Sided Number Plate,” the offering showed that the number 8441 was painted on the reverse side of the plate in yellow on a red background. I checked my CNR negative files to see if I had photographed No. 8215 back in the 1950s when I was a teenager—unfortunately not, but I *did* have a view of No. 8441 from August 13, 1957. It was under steam at the Spadina roundhouse in Toronto and clearly showed the hand-painted number plate. My photo confirmed that this was indeed a legitimate “double” number plate. At the time I took the picture I never realized that No. 8441 carried such a rare plate. I also discovered another oddity while examining my photo of No. 8441—it plainly showed a round 1954 passenger monogram on the tender. In Mike Barone’s “Wisps of Steam” article in *CN LINES* Volume 11, Number 3 (page 12), 0-8-0 No. 8352 was thought to be the only switcher to have received this monogram.

I was fortunate enough to have placed the winning bid on eBay, and acquired the 8215/8441 “double” number plate. After taking delivery, I matched it up with my photo and was satisfied that it was the same plate that was on the engine in my photo. In the process of acquiring the plate, I was put in touch with another individual who had seen the 8215/8441

on eBay—he had a similar “double” plate from sister engine 8216/8442. Shortly thereafter we got together and compared both plates. It was obvious that they had both been handpainted by the same individual; an effort was made to paint the numbers in the same squared style as the cast numbers on the front, except that they were six inches high rather than the five-inch-high cast numbers. The words “CANADIAN” and “NATIONAL” were not painted on either plate.

In researching the 8215/8441 and the 8216/8442, I found that both locomotives had two important things in common: both were assigned to Spadina in January 1957, and both were renumbered that same month. Just about all of the other renumbered 0-8-0s received new cast-iron number plates—in one or two instances the new plates were brass.

Why didn’t 8215 and 8216 receive new cast number plates?

Although no records have been found regarding these “double” plates, I believe the most logical and reasonable explanation is that someone at Spadina roundhouse was assigned the job of renumbering both of these locomotives. He was probably told to “Just turn the number plates around and paint them red with the new numbers in yellow. These engines won’t be in service much longer so we’re not going to bother having new plates cast.” The exact reason will probably never be known. ♣



The Streamlined 6400's

by Kevin J. Holland © 2004

Streamlined steam locomotives proved to be both products *and* victims of their time—harbingers of the future and, at the same time, a pruned branch on steam's evolutionary tree. Although not the first streamlined steam locomotives in North American service, the CNR's U-4 Northern nonetheless laid much groundwork for the breed.

The emergence of industrial streamlining during the early 1930s coincided, in large measure, with an awakening desire of North American railroads to replace steam locomotives with more efficient, more economical, and—particularly where passenger trains were involved—more attractive forms of motive power.

Streamlining became the next logical step in the evolution of passenger train

Far from the limelight of the 1939 Royal Train and New York World's Fair, CNR U-4-a No. 6400 passes Bayview Junction, Ontario, with westbound Train 101 on June 10, 1956.

—Dave Shaw (Railway Memories) Collection

motive power—nascent diesel-electric technology decreed that many of these locomotives happened to be steam.

The history of North American railroading records that the steam locomotive, as a dominant force deemed worthy of continued development, was in decline in the early 1930s as America's railroads embraced lightweight, streamlined passenger trains and the sleek, colorful diesel-electric locomotives built to pull them.

Times were changing, mechanically as well as esthetically, with the streamlined steam locomotive perhaps best regarded not as a faddish aberration, but as an inevitable step in the “natural” evolution of the locomotive form, whether it be electric, steam, or diesel. Some of the earliest American streamlined steam locomotives—including the first in service, New York Central's *Commodore Vanderbilt*—were noted for their broad, sloping “shovel” noses, an aerodynamic styling trait shared with such internal-combustion

contemporaries as the Budd-built Burlington Route *Zephyrs* and Boston & Maine-Maine Central *Flying Yankee*, and the Gulf, Mobile & Northern's *Rebel*. The pioneering EA-model passenger locomotive built by Electro-Motive for the Baltimore & Ohio—along with the smaller TA's built for the Rock Island—took the shovel nose to the next evolutionary step, creating the “covered wagon” cab and nose architecture that would rule American railroading for close to two decades. Different packages, indeed, the *Commodore* and the cab-unit, but clearly sharing a common wrapping.

Styled by some of the leading industrial designers of the day—and their emulators—the “steamliners” were caught in an unfortunate limbo, often derided by steam stalwarts as an affront to traditional tastes, yet just as readily dismissed by proponents of the dawning diesel age as tawdry dowagers out for one last self-conscious fling.

Winds of Change

Canada's two largest railways were bitten early by the streamlining bug. The proximity of their Montreal headquarters to the populous U.S. Northeast gave both CNR and CPR what amounted to ring-side seats for the streamlined parade put on by New York Central, Pennsylvania, and Baltimore & Ohio, among other pioneers, in the mid-1930s. More than a mere observer, however, Canadian National had already put in motion the substantial research, engineering, and design resources at its disposal to assess the merits of streamlining steam power as early as 1931. (The CPR's Henry Bowen, meanwhile, drew inspiration from the U.K.'s *Royal Scot* and the Milwaukee Road's *Hiawatha* of 1935 to create his streamlined 4-4-4 Jubilees and matching lightweight passenger cars of 1936.)

During June and July 1936, the CNR took delivery of five class U-4-a 4-8-4s from the Montreal Locomotive Works (MLW). Described by the railway as "partially streamlined," the quintet was intended for heavy passenger service on the CNR's busy trunk route between Montreal, Toronto, and the international border at Windsor and Sarnia.

The CNR owned 203 Northerners in all—North America's largest fleet—along with 83 Mountains (4-8-2). This affinity for eight-coupled locomotives



As futuristic as the 6400's were when they were new, they still relied on an antiquated infrastructure for sustenance. Here, No. 6402 is serviced at Windsor circa 1940.

—Dave Shaw (Railway Memories) Collection; 1941 CNR brochure, Kevin J. Holland Collection

No. 6404 leads Train 94, the *Maple Leaf* (a joint PRR/LV/CNR New York–Toronto schedule), through Oakville, Ontario, on March 22, 1958.—Al Paterson Collection



stemmed, largely, from the status of the Canadian National as a post-First World War amalgam of a number of failing or undermaintained railways. Eight drivers spread a locomotive's weight enough that the seemingly endless miles of less-than-perfect hinterland trackage could be navigated with a minimum of peril. Canadian Pacific, on the other hand, with its comparatively better infrastructure, embraced the 4-6-4 as its latter-day heavy passenger wheel arrangement of choice (the CNR, by contrast, rostered only five Hudsons).

CNR+NRC=6400

Design work on the streamlining for Canadian National's U-4 locomotives had begun in 1931—well before the New York Central's *Commodore Vanderbilt* made its widely publicized debut as North America's first streamlined steam locomotive—with a series of wind-tunnel tests conducted on models at the National Research Council (NRC) in Ottawa.

The Assistant Director of the NRC's Department of Physics, John H. Parkin, assigned the task to physicist and aerody-

namacist Dr. John J. Green. Both men were at the fore of the emerging discipline of aerodynamics. Parkin, a University of Toronto graduate in mechanical and electrical engineering, had taught at the University between 1912 and 1929, during which time he gave Canada's first aeronautics courses and also supervised the UofT wind tunnel. Upon joining the NRC in 1929, Parkin oversaw the aeronautical research undertaken by the Council. Dr. Green joined the NRC staff in 1930 after receiving a PhD in aeronautics from London University. Both men went on to particularly distinguished, yet often intertwined, careers. Parkin was instrumental in the founding of what became Canada's National Aviation Museum, with Dr. Green a strong advocate as well. During the Second World War, Dr. Green became the Royal Canadian Air Force's chief research engineer and a test pilot, contributing, along with Parkin, to such ground-breaking aeronautical efforts as the NRC/RCAF "Tailless" flying wing of 1945-48.

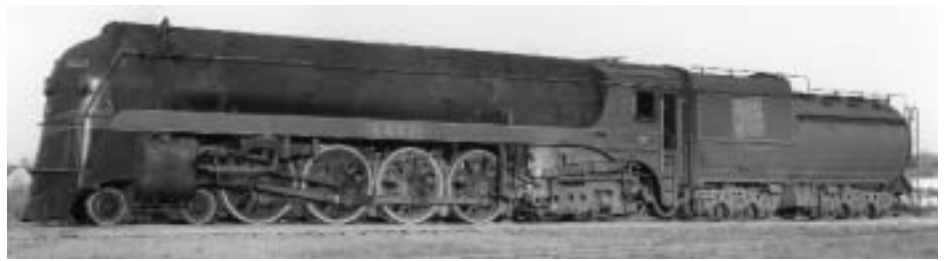
It was perhaps ironic, then, that a locomotive, and not an aircraft, would be one of the earliest examples—and most enduring legacies—of Parkin and Green's NRC work. Using a pair of 1:12 scale models of the CNR's most recent 6100-series U-2-c Northern—*one a detailed model made of steel and the other a simpler wooden affair*—Dr. Green developed several potential shroud configurations in conjunction with CNR motive power officials. The railway, and the government, had imposed a number of restrictions on the NRC's streamlining freedom, ranging from the placement of safety appliances and a desire to keep running gear uncovered to the goal of achieving the greatest aerodynamic benefit with the minimum possible cost and complexity.

The objective was more practical than esthetic: to reduce or eliminate the tendency of smoke to obscure vision from the cab while the locomotive was "drifting," when low speed and ambient air currents could combine to blow exhaust smoke down over the boiler and across the cab.

In a progression of modifications to the wind-tunnel models, Dr. Green added a hemispherical nose, then a "skyline" casing to conceal the various domes and turrets atop the boiler, then altered the skyline and the angle of the cab front, and added a teardrop fairing around the stack. The next



Retained after retirement as part of CN's historical collection, U-4-a No. 6400 was cosmetically refurbished in 1967 before it was conveyed to the National Museum of Science & Technology in Ottawa. It remains a static showpiece at the renamed Canada Science & Technology Museum.—CN photo



major change was the downward extension of the smokebox cover to merge with a smoothed pilot, all the while with Dr. Green computing improved resistance and observing air flow over the models at various wind speeds. The final U-4-a design was emerging, along with a decision to leave the Vanderbilt tenders unshrouded—the object of the exercise being, after all, the improvement of air flow over the boiler and cab.

The CNR acted on Dr. Green's data, which had received trade exposure in a May 1933 *Railway Age* article, by placing two orders for a total of eleven streamlined Northern's. Five were built by MLW in 1936 as CNR class U-4-a (Nos. 6400-6404), and six nearly identical engines were built by Ohio's Lima Locomotive Works in 1938 for the Grand Trunk Western. GTW Nos. 6405-6410 were classed as U-4-b, and differed from their elder cousins most obviously in the design of the skyline casings' grilled forward end. The CNR engines' blunt, horizontally grilled opening contrasted with a concave, vertically slotted arrangement on the GTW engines. With its hint of a centred fin sweeping up from the headlight into the grille (which itself resembled experimental smoke-lifting stack shrouds on several other GTW engines), the GTW engine's front-end styling was arguably the more rakish of the two U-4 subclasses.

The CNR promoted its newly arrived U-4-a's as "indicative of the progress made by the Canadian National Railways" during the 100 years since July 21, 1836—the first run of the locomotive *Dorchester* on Canada's first railway, the 16-mile Cham-

above left: As delivered, and visible here on brand-new No. 6400 during public display at St. Catharines, Ont., on June 20, 1936, the green nose stripes originally terminated in a flourish just ahead of the running board steps.—Al Paterson Collection

above: Subtle differences abounded between the CNR U-4-a's and GTW U-4-b's. Compare skyline casing grilles, spoked vs. solid pilot-truck wheels, nose handrail and horizontal pilot foothold position, class-light mounts, pilot-to-cylinder-skirt fairings, headlight bezels, and number plate position.—CNR 6400 (1936), CNR photo; Shaun Arthur Collection. GTW No. 6407 (October 1956), Al Paterson Collection

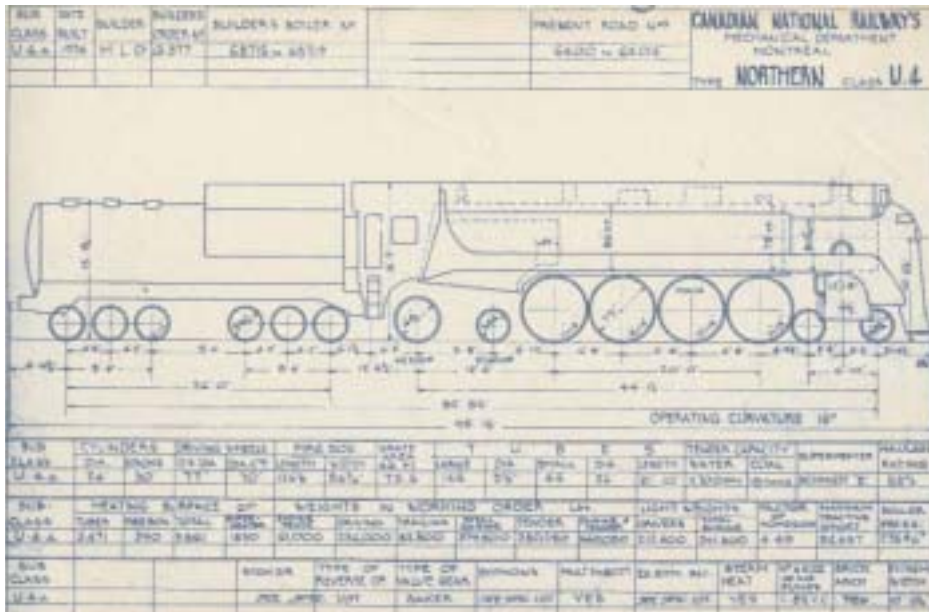
below: Note the opening in the top of the skyline casing behind GTW No. 6405's stack, through which air ingested by the front-end grille was vented to lift exhaust. This was the last GTW U-4-b to see service, in the autumn of 1959.—Al Paterson Collection



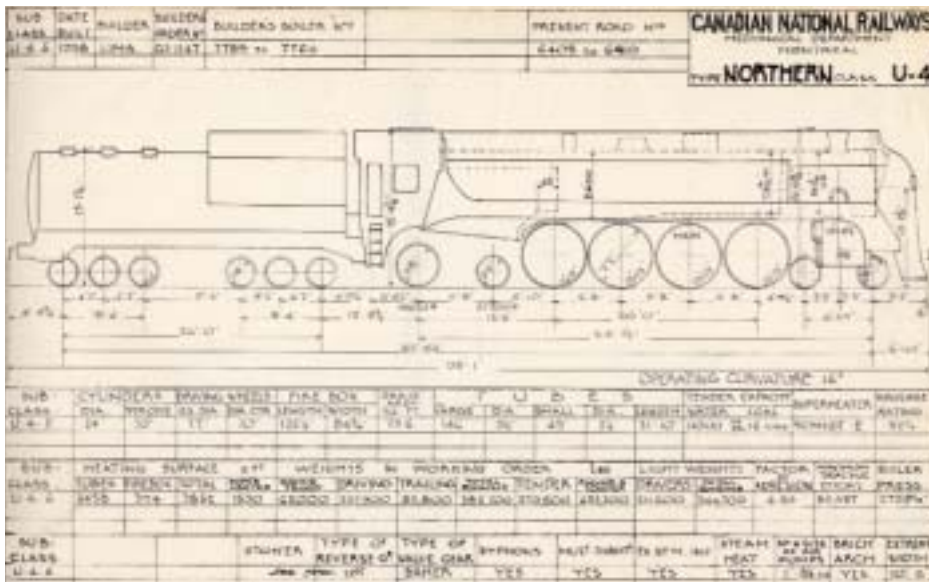
plain & St. Lawrence in Quebec. During "a century of service," the C&StL had become part of the CNR system, and railway publicists of 1936 thrilled readers with comparisons between the two locomotives. The 330-ton, 95-foot-long No. 6400 was contrasted with "its remote parent," the 16-ton *Dorchester* and its 85-foot train: "Thus, this mammoth of the steel highway was in itself longer than the entire pioneer train of 100 years ago."

Almost invisible amid the debut of the U-4-a's were five unstreamlined U-2-d Northern's, Nos. 6160-6164, delivered by MLW in April 1936. Apart from the eleven U-4-a and U-4-b engines, and five S-4-b Mikados (Nos. 3801-3805) built at Kingston in 1936, these would be the only eight-coupled road power built for the CNR system between 1930 and 1940.

The U-4-a's weighed 236,000 pounds on their 77-inch drivers, with a total



CNR Mechanical Department diagram sheets for U-4-a (above) and GTW U-4-b (below) streamlined Northerns. Slight specification differences are evident.—Al Lill Collection



engine weight of 379,800 pounds. Boiler pressure was 275 PSI, cylinders measured 24x30 inches, and 52,457 pounds of tractive force (a 52% haulage rating) was exerted. Vanderbilt tenders held 11,700 Imperial gallons of water and 20 tons of coal, and rode on six-wheel trucks.

The well-insulated vestibule-type cabs were equipped with a spinning-disk front window on the engineer's side. The centrifugal force of the rotating glass threw off rain and snow to maintain clear vision. A curved gusset filled the angle between front cab wall and running board, and was one of the measures specified by Dr. Green to improve air flow. The skyline casing roof was carried back onto the cab roof.

The green paint of the tender and cab continued forward along the wide running

board skirting, edged in gold, before tapering to a shallow "V" on the lower nose (this "V" treatment would become a staple of pre-1960 CNR diesel liveries). The nose itself was black, as was the portion of the skyline casing and jacket corresponding to the smokebox. The balance of the boiler jacket was planished steel, and the running gear was black. Identification was provided by a pair of illuminated numberboards partially recessed into the upper nose, and the CNR's trademark red-filled brass number plate below the headlight (curved to match the nose contour). Cast brass numerals were applied over a red patch on the running board skirts, and a CANADIAN NATIONAL "tilted wafer" monogram (GRAND TRUNK WESTERN on the U-4-b's) initially appeared on the flat sides of the tender coal bunker.

Esthetic Orphans

As striking as the U-4s were, the CNR system's only truly streamlined steam locomotives were not duplicated. Despite their publicity value—which was considerable, particularly at their debut in the midst of the Depression, and with No. 6400's 1939 Royal Train and World's Fair exposure—the CNR simply was not in a position to acquire additional passenger power in the late 1930s. Viewed solely as an advertising expense—with benefits accruing to the CNR, the NRC, and the Canadian government—the cost of shrouding the U-4 class appears to have been justified. The 135 unstreamlined 4-8-2s and 4-8-4s that followed the U-4s onto CNR system rails between 1940 and 1944, however, tell the rest of the story. The Second World War was raging and, with steel in demand elsewhere, streamlined shrouding was a frill to be eliminated without debate.

Contemporaries of the U-4-a's, the five S-4-b Mikados (Nos. 3801-3805) built by CLC in the spring of 1936 were given rudimentary skyline casings—not to improve air flow, but rather to conceal an external drip pipe arrangement that replaced the usual steam dome in an effort to avoid foam and sludge from poor Prairie water.

Bullet noses, flanged stacks, and green-striped running-board skirts—but no other attempts at streamlined styling—placed CNR Class U-1-f 4-8-2s Nos. 6060-6079 firmly in the "bandwagon" league of semi-streamlined steam locomotives (with the likes of the NC&StL's 4-8-4 "Dixies"), as did the running-board skirts applied as an afterthought to CNR K-5-a Hudsons 5700-5704 of 1930. The U-1-f's were built by MLW in late 1944, with the war's end in sight, and proved to be the final new steam locomotives acquired by Canadian National. Prior to retirement from active service (as late as April 1960 for some), the U-1-f's lost their only real claim to fame—their conical "bullet" noses were removed at Winnipeg in favor of a more conventional smokebox door arrangement.

Thanks in large measure to its use in all manner of CNR advertising—out of all proportion to their actual number—the distinctive U-4 silhouette remained an icon of modernity even after the war. When Pt. St. Charles' shop forces built a 1:5 scale locomotive model for a Christmas 1945 department store promotion, they delivered a likeness of U-4-a No. 6400.



The Royal Treatment

History was made in the spring of 1939 when a reigning British monarch set foot on North American soil for the first time. With war clouds looming over Europe, the visit of King George VI and Queen Elizabeth was seen as a means of encouraging, and cementing, solidarity in the face of the approaching crisis—as events unfolded, Britain and Canada were both at war with Germany barely two months after the King and Queen had returned to England.

The Canadian government, led by Prime Minister William Lyon Mackenzie King, was determined to put on the country's best face for the royal visitors, and entrusted Canada's two transcontinental railways with the task of transporting the royal entourage and members of the press from East to West and back. Every one of the country's nine provinces was visited (Newfoundland, of course, remained a

above: About to begin its Royal Train career, CNR U-4-a No. 6400 simmers at Ottawa on May 21, 1939. Note the relocated (and reduced) CNR "wafer" monogram on the cab side, replaced on the tender by the Royal Coat of Arms. The CNR number plate has been similarly displaced on the nose, and a small painted crown decorates the forward running-board skirt.—S. C. Lowe photo; Dave Shaw (Railway Memories) Collection

below: Its duties on the Royal Train at an end, No. 6400 spent the summer of 1939 on display in its special blue, black, and aluminum livery at the New York World's Fair, in the company of similarly decorated CPR H-1-d Hudson No. 2850.—Al Paterson Collection

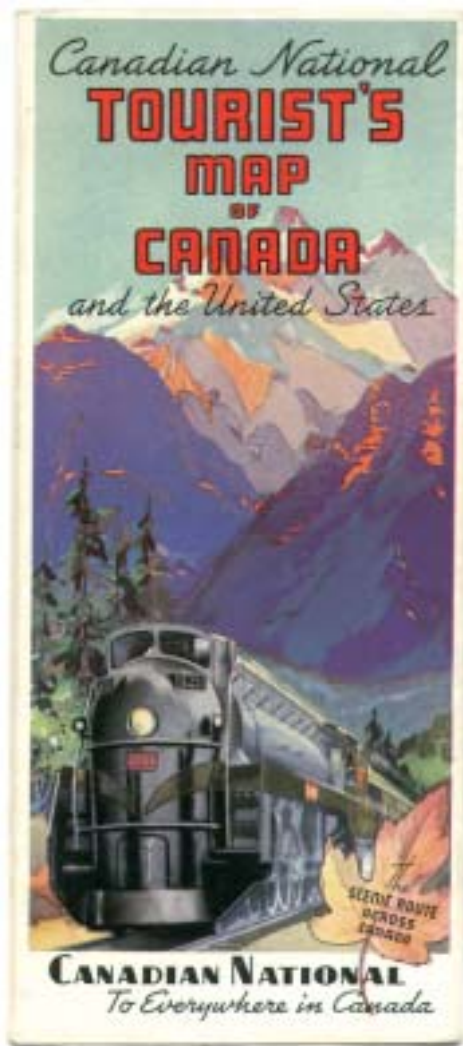
British colony until 1949), as were the federal and provincial capitals and major population and industrial centres.

Assembled by the CNR, CPR, and Canadian government, the 12-car Royal Train conveyed and accommodated the King and Queen on their precedent-setting 30-day tour (including a four-day side trip to the United States encompassing Washington, DC, and the New York World's Fair). The Royal Train consisted of CNR and CPR cars, along with two cars owned by the Canadian government

and normally used by the Governor General. For their special duty, the 12 cars were given a royal blue livery, with gold-outlined window bands of aluminum leaf and gun-metal roofs.

U-4-a No. 6400 was selected to lead the Royal Train over some of its eastern CNR mileage. A total of nine other CNR locomotives—none streamlined—also led the Royal Train in the course of its journey. Unlike Canadian Pacific, which employed H-1-d Hudson No. 2850 throughout, the CNR assigned engines





The 6400's were CNR advertising icons well into the 1940s. This 1941 map art was somewhat fanciful, as the U-4s were at home on the CNR's Central Region.—Kevin J. Holland Collection

U-4-a No. 6402 paused at the Spadina Ave. engine terminal in Toronto circa 1959. Note the open access door on the side of the nose, and the paired slots cut into the pilot. U-4-a coupler doors slid upward behind the pilot, while those on the GTW U-4-b's swung forward then up to clear the engines' retractable front couplers.—Shaun Arthur Collection



from the territory through which the Royal Train would pass. Streamlined No. 6400 pulled the train from Ottawa to Toronto on May 21, and from Toronto to Niagara Falls (via London, Ont.) on June 7. Sister No. 6401 was assigned to the pilot train for the same June 7 itinerary.

The CNR engines—and Canadian Pacific counterpart No. 2850—were also given predominantly blue paint schemes adorned by royal coats of arms, running-board crowns, and a gold-edged aluminum band on the after portion of their tenders corresponding with the trailing cars' window band.

The pilot train accommodated the press and others not directly connected with the royal party, and normally preceded the Royal Train by 30 minutes.

From May 18, the day after their arrival at Quebec City aboard the Canadian Pacific liner *Empress of Australia*, until their June 15 departure from Halifax aboard the ill-fated *Empress of Britain*, the King and Queen traveled 9,150 miles by rail. (A short portion of that was behind another notable streamlined steam locomotive—one of New York Central's Dreyfuss-styled J-3a Hudsons led the Royal Train north from New York City to a Delaware & Hudson connection on June 11, en route back to eastern Canada.)

Following their active Royal Train duty, CNR No. 6400 and CPR No. 2850 were dispatched to the New York World's Fair for display and performing roles in the "Railroads on Parade" pageant. Fittingly, they debuted on Dominion Day, July 1. CNR No. 6400 traveled to the Fair under its own steam, with great fanfare, over CNR subsidiary Central Vermont as far as Springfield, Mass., south of which weight and clearance restrictions required the tender to be emptied and the engine hauled dead to the Flushing Meadow (Long Island) fairgrounds. Upon their return to Canada, both engines resumed regular service and, fittingly, both were preserved as museum pieces.

Twilight

By the late 1950s, with diesels making steady inroads into CNR and GTW passenger train assignments, demotion of the U-4s to commuter and even freight assignments became commonplace.

Grand Trunk Western U-4b No. 6405 lasted in revenue service until autumn 1959—as did Norfolk & Western Class J No. 611—to bring down the curtain on streamlined steam operation in the United States. The U-4-b was not as lucky as its N&W counterpart, however, as all six of the GTW streamliners were scrapped.

The last GTW U-4-b to be officially retired (in September 1961), No. 6405 was sold for scrap to Hyman-Michaels. The other U-4-b's, having been stricken from the GTW roster in March and April 1960, met their end at the Luria scrapyard in Chicago.

With one fortunate exception, the CNR U-4-a's met similar fates, running many of their last miles at the head of Toronto-Hamilton commuter runs. Nos. 6402 and 6404 were officially retired in April 1960, with Nos. 6403 and 6401 following in September and November 1961, respectively. All four locomotives were scrapped by CN.

The sole survivor of the CNR/GTW U-4 class, CNR No. 6400 was held for preservation as part of the railway's historical collection, and remained (inactive) under CN ownership until June 1967. Since then, it has resided at the National Museum of Science & Technology (now the Canada Science & Technology Museum) in Ottawa, along with one of the wind-tunnel models that paved its way. ♣



Grand Trunk Western 6400s in Action

By Charles H. Geletzke, Jr.

The GTW's six class U-4-b streamlined Northern's were designed to operate all the way through from Chicago to Port Huron, a distance of 334 miles, be serviced, and make the return trip. How well did they do in this service? I'll let you be the judge.

In his book, *Evening Before the Diesel*, author Charles Foss states, "Class U-3-b and U-4-b 4-8-4s and U-1-c 4-8-2s could and did make runs with passenger trains between Port Huron and Chicago with only one stop for coal and water and an additional stop for water only. Engine crews had the option of taking on coal at Lansing or Olivers (South Bend, Ind.), and water at Durand, Lansing, Cassopolis, Olivers, and Valparaiso."

Let's take a look at one of these locomotives, No. 6408, and through the use of actual dispatcher's train sheets, see if we can get an idea as to how well they performed in daily service.

On November 27, 1949, streamlined Northern 6408 was slated to handle the "business-end" of GTW passenger train



top: GTW U-4-b No. 6410 departs Chicago's Dearborn Station with the *Maple Leaf* in May 1948.— W. H. N. Rossiter photo; George Carpenter Collection

above: No. 6409 pauses at Battle Creek, Michigan, in 1953 with Train 17, the *Intercity Limited*.— J. Shaw photo; George Carpenter Collection

No. 14, the *International Limited*. The engine crew, both Battle Creek men, consisted of engineer Dodge and fireman Lavoie who went on duty at the Elsdon, Illinois, roundhouse at 6:30 p.m. (Central Standard Time). After making sure that

their engine was fit for service, this able engine crew backed the locomotive "light" the 8.79 miles to Dearborn Station (which included 4.9 miles of running over the Chicago & Western Indiana Railroad from C&WI Jct. to Dearborn Station).



above: The U-4-b's were not strangers to freight service. Here, No. 6407 lifts tonnage at Pontiac, Mich., on November 6, 1958.

—Al Phelps photo; George Carpenter Collection

below: GTW No. 6409 in the early 1950s.

—Richard J. Cook photo; George Carpenter Collection

The train crew (who actually originated in Port Huron) reported for duty at Dearborn Station at 7:00 p.m.

Upon arriving at the depot, the engine crew tied their locomotive on 12-car Train No. 14 which consisted of: GTW 9684 and CNR 8636 (baggage-express); CNR

5322, CNR 5324, CNR 5172, CNR 5318, and CNR 5321 (coaches); Pullmans *Clover Summit*, *Sarena*, *Toronto University* (a CNR 12-2 sleeper leased back to Pullman), *Centasca* (a CNR 8-1-2 sleeper leased back to Pullman), and *Alexandria Bay* (a CNR 2Cpt./3SBr/1DR/Buffer/



Lounge/Solarium leased back to Pullman).

The train was shown as departing precisely on time, and following are the times that the various telegraph operators reported the train passing their stations ("OS").

Milepost	Station	Time	Avg. Speed
0.00	Chicago	8:00 p.m.	
8.79	Elsdon	8:17 p.m.	31.02 mph
19.51	Blue Island	8:35 p.m.	35.73 mph
25.20	Thornton Jct.	8:41 p.m.	56.90 mph
36.08	Griffith, IN	8:49 p.m.	81.60 mph
50.34	Sedley	9:02 p.m.	65.82 mph
55.80	Valparaiso	9:09-9:13 p.m.	46.80 mph
63.89	Haskells	9:29 p.m.	30.33 mph
71.08	Wellsboro	9:37 p.m.	53.92 mph
80.17	Stillwell	9:43 p.m.	90.90 mph
97.27	JK	10:03-10:08 p.m.	51.30 mph
99.16	Olivers	10:11 p.m.	37.80 mph
100.19	South Bend	?	?
122.96	Cassopolis, MI	10:43-10:46 p.m.	44.51 mph
152.23	Vicksburg	11:13 p.m.	65.17 mph
176.64	Battle Creek	11:38 p.m.	58.58 mph

Delays:

Valparaiso	4 minutes	Water and mail
JK	5 minutes	Target
Cassopolis	3 minutes	Passengers and water
Battle Creek	?	Passengers, mail, water, and change engine crews. The engine crew went off duty at 11:40 p.m. (C.S.T.)

Note: All road engine crews on the "Main Line" (South Bend and Flint Subdivisions) worked out of Battle Creek. In passenger service, train crews originated at Port Huron, worked all the way through to Chicago, laid over, and returned to Port Huron; however, train crews were made up of crews from both the South Bend Sub. (home terminal, Battle Creek) and Flint Sub. (home terminal, Port Huron).

No. 6408 would now continue through to Port Huron on Train No. 14.

Even though I do not have the dispatcher's train sheet for the Flint Subdivision for November 27, 1949, we can get an idea of how the 6400s performed on the Flint Sub., or "East End," by looking at another Sheet dated June 20, 1947.

On this date, GTW No. 6408 operated through from Chicago to Battle Creek on the headend of Train No. 6, the *Inter City Limited*. Once again, the train crew would operate all the way through from Chicago to Port Huron. The engine crew on the "East End" consisted of engineer Trump and fireman C. Roach, who reported for duty at 3:35 a.m. (E.S.T.) at the Battle

Creek depot. On this date, Train No. 6 consisted of: head-end cars NYC 8264 (picked up at Flint), REX 68 (p/u at Durand), GTW 11485 (set out at Lansing), GTW 11496 (s/o at Flint), GTW 8528 (s/o at Durand for Detroit), NYC 8658, GTW 8804, GTW 9699, CNR 8813 and CNR 8624; coaches CNR 5196, GTW 4872, and GTW 5329 (s/o at Durand for Detroit); and sleepers *John Jacob Aster* (a CNR 8-1-2 leased back to Pullman), *Sharpeville*, and *Restraud* (s/o at Lansing).

After loading and unloading passengers and mail, taking water and shooting alemite into a lot of fittings, Train No. 6 departed for Port Huron as follows:

Milepost	Station	Time	Avg. Speed
176.64	Battle Creek	3:53-4:07 a.m.	
202.41	Charlotte	4:46 a.m.	39.65 mph
220.94	Lansing	5:12-5:23 a.m.	47.40 mph
222.50	Lansing Coal Dock	5:30 a.m.	12.51 mph
253.29	Durand	6:00-6:35 a.m.	61.78 mph
266.46	Swartz Creek	6:45-6:48 a.m.	49.02 mph
270.10	Flint	Not Reported	?
273.72	Belsay	7:22 a.m.	22.98 mph
279.24	Davison	7:28-7:32 a.m.	26.67 mph
290.02	Lapeer	7:49-7:56 a.m.	38.04 mph
301.96	Imlay City	8:09-8:18 a.m.	55.10 mph
309.34	Capac	8:30-8:33 a.m.	36.90 mph
317.88	Emmett	8:43-8:45 a.m.	51.24 mph
322.93	Goodells	8:53-8:55 a.m.	37.88 mph
332.11	Tappan	9:01 a.m.	91.80 mph
332.92	Port Huron	9:05-9:40 a.m.	12.15 mph

Delays:

Battle Creek	10 minutes	Passengers, mail, and water
Lansing	6 minutes	No. 15 at station,
	10 minutes	S/o and air
Durand	34 minutes	Mail
Flint	15 minutes	S/o, p/u, and air
Davison	5 minutes	Mail
Lapeer	7 minutes	Mail
Imlay City	10 minutes	Mail

Upon arriving at Port Huron, the engine was cut off and backed to the roundhouse for servicing. The engine crew tied up at 9:15 a.m., after having been on duty five hours and 40 minutes. At this time, a pair of the St. Clair Tunnel Company's electricians would be tied on the train to pull it through the tunnel to Sarnia, Ontario.

Note: Times and delays at some stations did not coincide. This would be due to the fact that operators were OS'ing the trains and conductors were recording delays. Delays of less than five minutes were apparently not reported.

As previously stated, No. 6408 was taken to the roundhouse at Port Huron for servicing. Approximately four hours and thirty minutes later, the engine was ready and ordered for an "Extra West" with the engine crew called out of the Pool, consisting of Battle Creek engineer A. Harmon and fireman Thomson, on duty at 1:45 p.m.

The Port Huron train crew was also called out of the Pool and were uniquely told to "bring your passenger uniforms in addition to your overalls as you will be working in freight service from Port Huron to Durand and passenger service from Durand to Battle Creek." This was a common event in this era.

Extra 6408 West consisted of five loads and 15 empties (stated "5x15") and 843 gross tons with a wooden GTW caboose, number unknown. After completing their air test, the Extra departed Port Huron's Tunnel Yard as follows:

Milepost	Station	Time	Avg. Speed
332.42	Tunnel Yard	2:30 p.m.	
332.11	Tappan	2:35 p.m.	3.72 mph
322.93	Goodells	2:49 p.m.	39.34 mph
317.88	Emmett	2:57 p.m.	37.88 mph
309.34	Capac	3:06 p.m.	56.93 mph
301.96	Imlay City	3:14 p.m.	55.35 mph
290.02	Lapeer	3:28 p.m.	51.17 mph
274.23-273.72	Belsay	3:56-4:05 p.m.	33.84 mph
270.10	Flint	4:20 p.m.	14.48 mph
253.29	Durand	4:40 p.m.	50.43 mph

Delays:

Belsay	10 minutes	S/o 1x2 and Coal (not stated; but probably took water also); Crew handled 4x13 763 tons Belsay to Durand.
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Note: Train crew would now leave their "assigned pool cab" (caboose) at Durand, change into their passenger uniforms and operate in passenger service from Durand to Battle Creek. Their "pool cab" would be added to the next westbound freight train and be deadheaded to Battle Creek just ahead of the "working caboose." They would need their caboose in Battle Creek as this would be their home away from home in this era before the company provided lodging in hotels.

Shortly, a Passenger Extra would arrive in Durand from Detroit. The Detroit Division or "Side-Line" crew would take their engine to the Durand roundhouse and turn the Extra over to the Mainline "Pool Crew."

After tying No. 6408 onto the train and completing the required air test, Passenger Extra 6408 West—which was identified as a “South Bend Scottish Rite Tour”—would be ready to leave for Battle Creek with the following coaches: GTW 5330, CNR 5316, and CNR 5314, plus GTW diner 1278. They proceeded as follows:

Milepost	Station	Time	Avg. Speed
253.29	Durand	5:52 p.m.	
220.94	Lansing (Cedar Street)	6:26 p.m.	57.09 mph
202.41	Charlotte	6:45 p.m.	58.52 mph
177.30	Battle Creek (Nichols Yd.)	7:07 p.m.	68.48 mph

Delays:

Durand	1 hr. 24 min.	S/o, to train, train and air (probably also took water)
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Notes: The engine crew went off duty in Battle Creek at 7:15 p.m. after being on duty a total of 5-1/2 hours. I cannot tell whether the engine was taken to the roundhouse at Battle Creek. Making an educated guess, I would state that since they yarded in Nichols Yard rather than at the passenger depot the engine probably

Not long after its 1938 delivery, pristine U-4-b No. 6405 has a varied consist in tow at Chicago.—George Carpenter Collection

went to the house. It is also possible that the train was turned over to the NYC at Battle Creek for the run into South Bend; but this is probably unlikely. I would guess that another GTW locomotive was added to the train with a fresh GTW Battle Creek pool crew and the train was probably operated over the South Bend Subdivision to South Bend.

Other Factors

There were, of course, many other factors which affected the speed of a locomotive and its train. In reality, in spots, these trains were probably being operated in excess of the maximum speed listed in the timetable.

Selected Speed Restrictions

Maximum Speed (Passenger)	79 mph
Maximum Speed (All other trains)	50 mph
Chicago: on both tracks over bridges	
Union St. to Western Ave.	40 mph
Elsdon: on both tracks	
around ice-house curve	40 mph
Hayford: between home signals	50 mph
Ashburn: over diamond crossing	60 mph
Thornton Jct.: over diamond crossing	60 mph
Maynard: over diamond crossings (Monon & PRR railroads)	60 mph
CI&S Crossing: over diamond crossing	60 mph
Griffith: through city limits	40 mph
Fort Wayne Crossing: between PRR and NKP diamonds	60 mph

Valparaiso: M.P. 55.8, eastward trains	45 mph
Olivers: on both tracks between eastward home interlocking signal and Arnold St.	30 mph
South Bend: around curves when entering or leaving joint tracks at Arnold and High Streets	30 mph
Vicksburg: M.P. 152.1 (curve)	30 mph
Battle Creek: eastward trains over Upton Avenue bridge	20 mph
Battle Creek: McCamly St. diamond	30 mph
Battle Creek: McAllister Road	
M.P. 180.7-181.2 (eastward)	30 mph
Charlotte: M.P. 201.9 (curve)	30 mph
Lansing: Mileage 220.9 over Washington Ave.	25 mph
Flint: between Clifford St. Mileage 270.3 and East Court St. Mileage 272.1	45 mph

Trains were restricted to 30 mph while receiving and discharging mail at catch posts. There were 26 other speed restrictions on curves, which restricted all trains to speeds between 50 and 65 mph.

These typical trips illustrate that the GTW U-4-b's performed very well in the service for which they were designed. Day in and day out, they were able to operate through from Port Huron to Chicago or *vice-versa* and turn back and repeat the procedure after less than four hours servicing. They were well-liked by GTW engine and train crews—to sum up, they were an outstanding class of locomotive! ♣





CNR Rolling Stock Monograms

by Stafford Swain

CNR U-2-a No. 6100, at the Fair of the Iron Horse, Halethorpe, Maryland, in September 1927, illustrates the first application of the “Tilted Wafer” monogram.—Al Paterson Collection; Colour monogram graphics by George Walker

While CNR fans and modelers can be assumed to be fairly familiar with the various monograms that have been applied over the years to the railway’s rolling stock, it is time to drill a bit deeper on the topic.

The first question to get out of the way is why do I insist upon calling them “monograms” or “crests”, as opposed to “heralds”, “symbols”, or “logos”? The reason is simple: that is what the CNR consistently called these graphic elements in the specification drawings that we have been able to locate. It is these specification drawings which were a part of the CNR Mechanical Department’s H-series (Headquarters) of drawings, which, when available, allow us to determine the introduction dates of a specific monogram, its purpose(s), size, colors, dates of alterations, as well as anything else that seems to be critical to know.

Viewed broadly, there were three distinct groups of monograms: (1) those based in the locomotive wafer monogram of 1932; (2) the various freight service maple leaf crests or monograms from 1943; and (3) the round diesel locomotive

and passenger-service, including passenger service-assigned steam locomotive, monograms from 1949 onwards.

While I will try to mention the existence of any similar/parallel monograms of the U.S. subsidiaries (GTW, CV, GT-NE Lines, and DW&P), a similar chronological review of each of these individual railway’s monograms is a discrete topic worthy of true expert authorship for each railway.

All of these various graphics were supplanted by the CN symbol, which was unveiled in the final days of 1960.

This presentation will address each of these three groups in their respective chronological order and close with a few comments on the symbol.

Locomotive Wafer Monogram Group

Tilted (and later Horizontal) Wafer—Locomotive

The first monogram to appear on CNR rolling stock was the tilted rectangular wafer on steam locomotive tenders. It seems to have first appeared in builder photographs of the very first CNR Northern-Type (4-8-4) locomotive, U-2-a subclass No. 6100. This locomotive was turned out by the Canadian Locomotive Company (Kingston) in early June 1927 and was displayed at a convention of the

Mechanical Division of the American Railway Association from June 7–10, 1927, in Montreal.

This initial version of the tilted-wafer monogram seems to have been rendered in a White paint on the Black coal bunker with no outline pinstriping visible in the photos. This version of the monogram apparently was done without the creation of formal drawing by the CNR’s Mechanical Department. Of interest, the boiler jackets of these earliest Northern’s were painted a dark gray, per a *Railway Mechanical Engineer* article of August 1927 (pp. 536-540).

During the depths of the Depression (May 10, 1932), the CNR issued drawing 3H-17470 for the “Standard Monogram Used on Locomotive Tenders, Electric Locomotives and Oil-Electric Switchers.” Drawing 7H-14148 “Lettering & Numbering—Steam Locomotives” of March 27, 1919, (a CNR “Standard”) was revised (essentially redrawn and re-issued) on May 13, 1932, to incorporate the placement of the wafer monogram on various tender styles. No. 3H-17470 thus noted that 7H-14148 was to be referred to for placement/location of lettering and numbering.

The monogram was to be placed so that the lower right-hand corner was located 5-1/2 inches higher than the lower left-

hand corner. Measurement (or mathematics) will confirm that this results in a seven-degree tilt as opposed to the erroneously published nine degrees. On November 11,

1954, drawing 7H-14148 (the locomotive stencilling arrangement drawing described earlier) required the wafer monogram to be placed horizontally.



above: Central Vermont 2-8-0 No. 402 is seen switching at Brattleboro, Vt., in August 1949 wearing a standard CV tilted wafer monogram. The red-and-yellow monograms really stood out.—John Wallace photo, courtesy Central Vermont Railway Historical Society (W-15)

right: Transcona shops coach painter Bud Marcus stands next to a passenger car wearing a tilted wafer monogram and imitation gold pinstripes. Bud says "The picture was taken around 1946/47. The car had been repaired in the Coach Repair Shop and was waiting for a car spot in the Coach Paint Shop. The window openings were blocked off with 1/4"-thick pressed board to protect the interior from the weather. We also used the same blocking to protect the interior when spray painting.—George Walker photo



below: CNR coach No. 5284 was delivered in June 1942. This paint scheme was introduced circa December 1937 and discontinued in July 1945.—CC&F photo; Kevin J. Holland Collection



It would appear that this monogram was intended to be a consistent rendering, rather than one which was permitted to be interpreted by sign painters. That is, it was specified to be a printed "Decalcomania" which was to be available in two sizes. The shop forces would apply this transfer much like a modeler applies a wet decal transfer. Canadian Decalcomania Company Transfer No. 58 was the larger 39-inch high by 45-inch wide "Monogram I" which was intended for the majority of applications. Transfer No. 62 was the smaller 34-inch high by 45-inch wide "Monogram II" that was intended for smaller tenders.

The as-issued version of this drawing (i.e. 3H-17470-A) describes the monogram's colors as "Gold" for the letters and border, "Vermilion" for the background, and "Black" for the (out)lining. I believe we can be reasonably confident that these colors were (right from the 1932 outset) what the color study in *CN LINES* Vol. 6 No. 1 describes as "Imitation Gold" or "Yellow No. 11" and "Signal Red" or "Red No. 10."

This specification drawing (and the two Decalcomanias) remained unaltered for many years until it was revised on October 2, 1951 (hence it was now 3H-17470-B) to remove Oil-Electric Switchers (see section on Tilted Wafer—Passenger Cars, on the next page).

The title of drawing 7H-14148 was revised on May 17, 1955, to "Lettering & Numbering—Steam Locos Freight & Switchers" to accommodate the implementation of the 36-inch diameter passenger steam locomotive round maple leaf monogram the following day (drawing 4H-28834-D covered the creation of the 36-inch diameter monogram, and 7H-29819 of May 18, 1955, covered stencilling of passenger-service steam locos).

Each of the U.S.-based subsidiaries had locomotive wafer monograms of similar design, color, size, and placement.

Tilted Wafer—Passenger Cars and Diesel Switchers

The next monogram to appear was essentially a half-size variant (24 inches wide and 20 inches tall) of the tilted locomotive wafer. This monogram was initially used for passenger service equipment. The CNR issued drawing 3H-20126 as the “Standard Monogram—Passenger Cars” on December 10, 1937. Again system-wide consistency of artwork and color was required. This drawing therefore called for the use of Canadian Decalcomania Company Transfer No. 125 with the notation that this transfer was “to be applied at an angle of seven degrees.” Unlike the steam locomotive tender monogram drawing, this drawing did not bother to specify any colors. Nonetheless, the colors used were entirely consistent with the locomotive wafer monogram.

On July 6, 1945, revision “B” (i.e. 3H-20126-B) limited the CNR monogram’s use to wood-sheathed passenger cars, eliminating its use on steel sheathed cars.

Revision “C” of September 26, 1951, added diesel switcher locomotives (and revised the drawing’s title block to “Standard Monogram—Passenger Cars & Diesel Switcher Locomotives”). This effectively eliminated the use of the horizontal wafer on as-delivered postwar NW2 orders (as described below).

The GTW and CV certainly had fairly similar passenger-service wafers. On June 13, 1938, the Central Vermont Railway Co.’s Mechanical Department drafting office in St. Albans issued drawing “4-C-5363” to address that subsidiary’s passenger-service monogram requirements. This drawing describes the 21-inch square monogram’s colors as “Red” for the background, “Gold Paint” for the letters and the border, and “Black” for the outlining. I would surmise these colors respectively were CNR “Red No. 10” and “Yellow No. 11.”

This CVR drawing also stated that work equipment bearing this monogram would have White letters and stripes on the underlying body color. This monogram was also applied to smoke deflectors on steam locomotives in Green until May 12, 1943, and then in Red. It was also applied in Red to the cab sides of diesels and gas-electrics.



CNR NW2 No. 7959 at EMD in 1947. The CANADIAN NATIONAL RAILWAYS square wafer monograms on the cab sides and Morency Orange hood “flames” accented the black carbody.—EMD photo; Kevin J. Holland Collection

Horizontal Wafer—As-Delivered Postwar NW2 Diesel Switcher Orders

The CNR took two additional deliveries of EMD NW2s in 1946 (7936 to 7945) and 1947 (7956 to 7965), which featured large Morency Orange “flames” on the sides of the long hood. These two deliveries also featured what was clearly a graphical variant of the tilted wafer locomotive and passenger wafer monograms. This wafer variant was located on the cab sides of these two switcher orders, and added a third text line for the word “Railways.” It was thus close to being a true square in shape. For once in this era, this wafer was *not* tilted when applied.

No CNR drawing exists for this wafer so the author’s measurements from the published color CNR photo of 7944 result in a width of 32 inches and a height of 30 inches. Curiously, the 1947 order of Alco S-2s numbered in the space between the two NW2 orders (i.e. 7946 to 7955) did not receive this monogram. This leads me to think that this monogram variant was primarily an EMD idea.

Freight-Service Maple Leaf Monogram Group

Tilted Maple Leaf—Freight All-White (or All-Red)

The CNR’s distinctive tilted maple leaf monogram is a tougher puzzle to crack than the other monograms as the official drawings are no longer extant. Thus, there is no concrete information as to when changes were made both as to graphics and application. So, in chronological order, here are the “facts” as I know them.

The All-White version of the tilted maple leaf monogram or “crest” was introduced in early 1943, in the depths of the Second World War. This initial application was to steel boxcar No. 480715, which was built in February 1943. This is known because of a May 1943 *Canadian Transportation* article which stated that the accompanying illustration of No. 480715 was the first car delivered of a 1,100-car order from Canadian Car & Foundry (CC&F) that had been assigned the 480715-481814 number series. (perhaps due to wartime scarcities, only 1,050 cars of this order were actually built leaving 481765-481814 vacant). When No. 480715 was delivered in February 1943 it was inspected by a number of CNR officers at Montreal’s Bonaventure station.

The article went on to state the “slogan” . . . “will be placed on approximately 100 cars, and that very probably, similar slogans will be used on other cars.” Presumably the “slogan” reference was to the “Serves All Canada” phrase within the tilted wafer as as opposed to the application of the entire monogram as the “Canada’s Largest Railway” variant of late 1944 was similarly described to be a “slogan” per National Steel Car (NSC) drawing 31-486 of November 17, 1944).

Notwithstanding the apparent intention to change slogans, photographs indicate that the 1943- and 1944-built steel boxcars (some 7,000 cars in all) were delivered with the tilted All-White maple leaf monogram with the “Serves All Canada” slogan.

Another interesting “fact” in the May 1943 *Canadian Transportation* article is the statement that “the red in which the car body is finished has been extended to the

trucks, wheels and all underslung equipment, previously painted in Black.” This ties in nicely with the observation that open-top cars such as gondolas, flat cars, etc., began to be painted in “Mineral Brown” instead of Black at about this time.

While I lack the actual drawings, the CNR’s Headquarters drawings list does reflect the issue of two versions on this new freight monogram. Drawing 2H-22861 of May 26, 1943, was described as “Maple Leaf Crest—Overhead Ice Bunker

Reefers” and drawing 2H-22874 of June 11, 1943, was described as “Maple Leaf Crest—Steel-Sheathed Box Cars”. An educated guess is that the distinguishing feature between these two drawings was the use of CNR Red No. 10 for the steel-sheathed refrigerator cars, which by then were being painted in CNR Grey No. 11 with Red No. 10 lettering.

The All-Red monogram is shown in August 1943 builder’s photo of CNR steel refrigerator car No. 209729 from Series 3 (209700-209799) built at Transcona Shops from August through October 1943. Its use persisted at least until June 1945 when it was applied to the then-rebuilt No. 209598.

Based on the 1954 revised freight-service monogram drawing (4H-29129 and numerous photos of the earlier freight-service monogram variations, it can be assumed the large “C N R” lettering was consistently a 12-inch size. Thus, it is quite feasible to reverse-engineer artwork for these earlier monograms.

Cabooses were the other major car group that began to have the All-White maple leaf freight monogram applied around this time. The earliest known caboose application of the All-White monogram was that to newly converted cabooses 78565 and 78566 which were outshopped at Point St. Charles on December 9, 1943 in the then-new Morency Orange color scheme. While the All-White maple leaf monogram essentially ceased to be used on revenue service freight cars within two years of its

February 1943 introduction, it continued to be applied to cabooses until the 1954 change to the non-tilted (or horizontal) maple leaf monogram.

Tilted Maple Leaf—Freight Green Leaf

Less than two years after the introduction of the All-White freight-service maple leaf-monogram, it was modified so that the maple leaf graphic was rendered in a light Green (roughly described as a somewhat grayed-out lime green) with the wafer outline and lettering continuing to be painted in White. The Green chosen was the locomotive interior cab color which later became described as Green No. 12. The introduction of Green required some minor tinkering to the maple leaf’s graphics so that the large “N” was no longer the underlying car body color (i.e. in “reverse”) but separately rendered in White.

The earliest record I know of respecting this Green leaf variant is found on NSC stencil arrangement drawing No. 31-486 dated November 17, 1944. This drawing actually called for two different wafer “slogans.” This drawing featured a rendering of “Style No. 2” of the leaf monogram which featured an alternate wafer slogan “Canada’s Largest Railway” as opposed the Style No. 1 “Serves All Canada” featured on the majority of maple leaf freight monograms. The drawing stated that 500 cars within the 1,500-car 520000-521499 series were to receive Style No. 2. Photos indicate that this occurred with the last 500 cars, Nos. 521000-521499 (including



The All-White tilted-wafer freight monogram was introduced in early 1943.

CNR caboose No. 76421, at Vancouver on May 29, 1946, had been recently repainted with the white tilted “Serves All Canada” maple leaf monogram.—W. C. Whittaker photo; Dave Shaw (Railway Memories) Collection





the three experimental aluminum boxcars, Nos. 521497 to 521499).

It is also known that the Style No. 2 “Canada’s Largest Railway” slogan was applied to two Eastern Car Company (ECC)-built series. These were the 521500-521999 series (built from October 1945 through January 1946) and the 522000-522499 series (built from January through March 1946).

The experimenting apparently extended to the paint applied to the three aluminum boxcars (521497 to 521499) with one side of the car having Red No. 10 lettering (including the monogram’s wafer and lettering) and the other side’s lettering in Black.

A Green leaf with Red No. 10 lettering and wafer outline version of this revised tilted wafer freight-service monogram also became the standard for steel-sheathed reefers. The earliest application date known with certainty are the respective builder’s photos of Nos. 210030 and 210067. Both of these cars were outshopped with a Green No. 12 version of the maple leaf with Red lettering and leaf veins (still Red No. 10) by CNR’s Transcona Shops during March 1947 as part of Series 5 (210000 to 210299). All of this series (which was delivered from November 1946 to August 1947) likely received this version of the maple leaf monogram. Photos indicate this version of the monogram was also utilized for the next four orders (Series 6 to 9).

While Green No. 12 was that standard for most freight car maple leaf monograms, in-service color photographs confirm that a considerably darker, somewhat bluish green was applied by NSC to some but not all of the Series 8 (1952-built 210900-211399) and Series 9 (1953-built

above: Series 5 refrigerator No. 210036 was outshopped by CNR’s Transcona Shops during March 1947 with a Green No. 12 version of the maple leaf with Red lettering and leaf veins (still Red No. 10). Photographed at Prince George, B.C., in July 1954.

—W.C. Whittaker photo; Dave Shaw (Railway Memories) Collection

below: At San Jose, California, in December 1953, nearly new CNR boxcar No. 535784 wears the green tilted-wafer version of the maple leaf monogram that was applied for almost a decade to freight cars.—W.C. Whittaker photo; Dave Shaw (Railway Memories) Collection



211400-211599) steel reefers (the builder’s photographs for these two series show Green No. 12 monograms). Available CN color specification chips indicate this darker color was Green No. 10, which was the standard color for baggage wagons. As well, NSC may also have applied this darker color to some of the Series 12, 13, and 14 cars although no photos have surfaced.

The Green leaf tilted wafer freight-service monogram (White lettering and wafer outline) was also applied to CNR’s steel-frame wood-sheathed refrigerator cars commencing in October 1948. This revised system standard started with the repainting of CN 209344, an event which was noted by an official photo.

The final car type to receive the Green

leaf tilted wafer freight-service monogram were steel-sheathed “automobile” cars which cars were basically distinguishable from steel-sheathed boxcars by their double side doors. The fourth series ordered of this car type (589500-590499) was delivered by NSC from March through May of 1949 with the maple leaf monogram in place of the word AUTOMOBILE in 9-inch lettering which had adorned the 1948 CC&F built order of the 589000-589499 (third) series.

This Green tilted wafer version of the maple leaf monogram ultimately was applied for almost a decade to freight cars (November 1944 through May 1954). Heavily weathered examples could still be found in service in the late 1980s.

During the 1943 to 1954 period of the CNR tilted maple leaf freight monogram, the U.S. subsidiary roads often used variations of their passenger-service tilted wafer monograms on freight cars and cabooses. These appear to have been stencilled on car sides rather than using decalcomanias.

Transitional Maple Leaf Freight—Green Leaf

During the 1954 transition period to the “non-tilted” or “horizontal” wafer maple leaf (described below), one complete car builder’s order (CC&F-built Series 39, 537560-538759, built from May though July of 1954) received a transitional version of the original maple leaf monogram’s graphics which had the stencil altered so that the wafer was “non-tilted” or horizontal but which otherwise preserved the original maple leaf monogram’s features/artwork.

Based on the photo of steel boxcar No. 470004 on page 12 of John Riddell’s *Canadian National Guide to Freight and Passenger Equipment—Volume 2* (Morning Sun Books) it is also surmised that this hybrid transition leaf monogram was applied in repaints at company shops for a limited period of time. No. 470004 seemingly had been repainted at the Central Vermont’s St. Albans shops in April 1955.

Horizontal Maple Leaf—All-White (Caboose) and Green Leaf (Freight)

Unlike the 1943-to-1954-era tilted wafer maple leaf monogram, the survival of the primary stencil cutting drawing (4H-29129 “Revised Maple Leaf Monogram C.N.R. Freight Equipment” dated May 18, 1954) provides a solid reference as to its history, graphics, and four significant revisions.

It should be noted that this monogram was to be painted on the car side. This required a stencil to be cut at each CNR shop where it was to be applied. To facilitate this work, the drawing was issued with a grid overlay, designed to be drawn at two-inch squares to achieve the correct size of monogram. The curves of the maple leaf, wafer borders, and letters were then to be plotted by hand as called for in the grid drawing, resulting in a consistent graphic rendering across the Canadian National system.

Graphically, some of the visual elements of the recent issue (December 21, 1953)

20-inch round passenger maple leaf monogram seem to have been adopted. This resulted in a maple leaf which is actually quite different than the original maple leaf freight crest from 1943 (even the stem of the leaf bends in the opposite direction from the original crest).

On June 23, 1954, (five weeks after issue) the first (“B”) revision added both a color scheme for the overhead iced freight refrigerator cars and CNR color standards references. These were White for lettering and wafer border (or Red No. 10 for the steel reefers), and Green No. 11 for the maple leaf. The astute reader will recognize this latter color was actually the passenger car olive. However, this reference seems to have been in error as by September 15, 1954, it was corrected back to Green No. 12 by the third (“D”) revision. As well, I have never seen Green No. 11 used as the leaf color.

July 19, 1954, saw the addition in the second (“C”) revision of color scheme information for wood-sheathed reefers and cabooses. The maple leaf color for the cabooses was to be White, resulting in an All-White graphic on the specified Morency Orange. November 14, 1955, saw (in the fourth “E” revision to the drawing) the maple leaf monogram for cabooses revised from White to Green No. 12.

This monogram persisted in use until the “CN” symbol began to be applied to freight equipment in 1961. Perhaps as a precursor to this change, many photos indicate that cabooses repainted around 1960 emerged *without* the Green maple leaf but *with* the White horizontal “Serves All Canada” wafer and the 12-inch “C N R” letters of the basic monogram.

The GTW version of this monogram was issued on May 19, 1954, as drawing 4H-29139. The CV issued its caboose version on December 13, 1954, (CV drawing 4-C-7120). I have not found a record of the issuance a drawing for the GT-NE Lines version of this monogram.

Round Diesel Locomotive and Passenger-Service Monogram Group

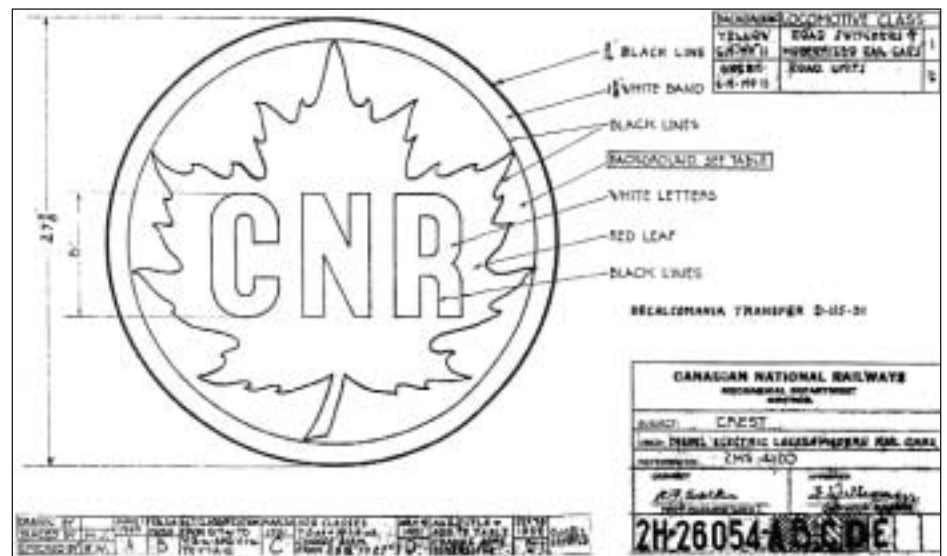
Round Maple Leaf Crest 27-inch Diameter—Diesel

Drawing 2H-26054, issued June 1, 1949, covered the diesel locomotive nose monogram applied to cab units and the earlier road switchers. As originally configured for the F3A order of 1948 from EMD, this monogram started out with a 28-1/2-inch outer diameter. On March



above: This round “CNR” monogram was introduced on the 1948 F3A order.

below: CNR 27-inch round diesel locomotive monogram drawing 2H-26054, Revision “E.”—Stafford Swain Collection



20, 1951, the diameter of the monogram was reduced slightly to a nominal 27-inch diameter (actually 27-3/8 inches to accommodate the 3/16-inch Black outline).

For ease of application, this monogram was produced as decalomania transfer No. D-115-31. The colors specified included White for the 8-inch "C N R" letters and the 1-3/8-inch outer band, Red (seemingly Red No. 10) for the leaf, and Black for the outlines. The background colors varied with Yellow No. 11 specified for "road switchers" and "modernized rail cars" and Green No. 11 for "road units." While there were four revisions to the drawing, most were related to the constant additions of newer diesel sub-classes.

Round Maple Leaf Monogram 20-inch Diameter— Diesel and Passenger

December 21, 1953, brought the major change and expanded use of a round maple leaf monogram with the issue of 4H-28834 for the "Maple Leaf Monogram" which was to be used for the "New Color Scheme." Over time, there were seven revisions to this drawing, bringing the final drawing number to 4H-28834-H. Most of these revisions were minor. Again a decalomania transfer was created for this monogram (Transfer No. 214-54). The color specifications called for Black for the 10-3/8-inch square and the background, Red No. 10 for the maple

leaf, and Yellow No. 11 for the lettering and the outer circle.

The outer diameter of the Yellow circle was 20 inches, with a 3/16-inch Black outline which resulted in an overall 20-3/8-inch-diameter monogram. It would seem some of the decalomania transfers lacked the Black outline as there is a note to the effect that "it will be necessary to paint one when monogram is applied to a Yellow or Green background."

The drawing also included some passenger service placement guidelines quoted as follows.

"Vestibule end—center line of monogram to be located 22 inches from end post"

"Blind end—center line of monogram to be located same relation to center line of truck as on vestibule end"

"Monogram to be located equidistant between the two lower horizontal Imitation Gold lines"

"On Dinette cars in Series 425-435 center-line of monogram to be located 4'-6" from end of car (both ends)"

Revision D of February 7, 1955, to the drawing (thus 4H-28834-D) added five lines to describe the use of this 20-inch monogram and a sixth line to deal with the addition of a 36-inch version for steam locomotives (see below).

1. Passenger equipment, all steel and steel-plated, all RDC cars
2. Road passenger diesels
3. Road freight diesels
4. Road switcher diesels
5. Standard switcher diesels
6. (see below)

The U. S. subsidiary railways' needs for a parallel monogram were addressed by the following drawings:

4H-28836: December 23, 1953, GTW

4H-29624: January 24, 1955, CVR (this drawing had been issued on January 5, 1955, as CVR St. Albans drawing No. 4-C-7126)

4H-30530: June 7, 1956, DW&P (likely created for its RDC unit but apparently never used).

Round Maple Leaf Monogram 36-inch Diameter—Passenger- Service Steam Locomotive

On February 7, 1955, revision "D" to the above 20-inch monogram drawing (then 4H-28834-D) also added a "Line 6" (see above) to specify a 36-inch diameter version of this monogram style for "Road passenger steam locos." A separate 36-inch



above: The round "CNR" monogram was applied to the noses of F-units and both ends of road switchers as per drawing 2H-26054. CNR F7A No. 9042 and a B-unit were at Turcot West in September 1952. No. 9042 was delivered from GMD in 1951 and was rebuilt as F7Au No. 9169 in October 1973. The unit is currently being restored by the Central B.C. Railway and Forest Museum in Prince George, B.C.—Al Paterson Collection

below: Wearing the 20-inch-diameter round monogram that was introduced in December 1953 and subsequently employed on switchers, road switchers, cab units, and passenger cars, CNR S-3 No. 8474 works the waterfront at Windsor, Ont., on March 17, 1962.

—Kevin J. Holland Collection





above: CNR coach No. 5228 models the 20-inch round monogram at Dearborn Station, Chicago, on May 31, 1965.—Owen Leander photo; Kevin J. Holland Collection

left: The round monogram used on diesel locomotives, passenger cars, and passenger-service steam locomotives after Jan. 1954.

below: Allan Fleming's CN symbol—visible in this 1971 gathering at Toronto—has endured for almost 45 years. Its development will be the subject of a future *CN LINES* article.—G. H. Landau photo; Kevin J. Holland Collection

diameter decalcomania transfer was created for this monogram (Transfer No. 217-55 suggesting that the “-55” subscript referred to 1955).

Drawing 7H-29819, “Lettering & Numbering Steam Locomotives in Passenger Service,” issued May 18, 1955, specified the use and placement of this monogram on passenger-service steam locomotive tenders.

CN Symbol—End of 1960

On December 14, 1960, Toronto-based Allan Fleming's brilliant “symbol” was introduced to the world. One of the key features of the CN symbol was its scalability.—it could be applied on the head of a cuff link or a writ large on a freight car side and maintain its legibility.

While the symbol had its detractors early on, it has certainly endured. In fact, if you do the mathematics, more time has passed since its 1960 introduction than was experienced from the date Canadian National name was approved by parliament (December 20, 1918) to the symbol's introduction nearly 42 years later.

During 1961, CNR drawing of the symbol (4H-33972) shows up in many cross-references as the drawing, which superseded the variety of rolling monograms used in the steam era.

The larger story of the symbol is a worthy topic unto itself, and is planned for a future issue of *CN LINES*.

Concluding Comments

The key to preparing this information has been my good fortune to have accumulated both copies of the drawings described here and the Headquarters numerical listing of drawings which



allowed gaps to be filled in. These items came into my hands piece-meal over many years through numerous pals. To avoid forgetting to give credit to anyone, I'll just say thanks to each of you!

Another by-product of this process is that the CN Lines SIG (through the

efforts of Allen Ferguson and other artists) has nearly completed the process of creating scalable digital artwork, which is owned by the CN Lines SIG, for these monograms. Thus, we can assist commercial users by letting them use these digital files at a nominal fee. ●



This view was taken from the cab window of CN RDC-2 No. 6204 as it approached Ethelton, Sask., on its tri-weekly run from The Pas to Hudson Bay, Sask., on October 10, 1975.

—Gordon Jomini photo

The Railiners *by Al Lill, Gordon Jomini, and Gordon Wilson*

Part Two: CNR Budd RDC Assignments and Modelling Notes

From remote communities in Northern Canada served by a single car, to heavy mainline action with several RDCs making up a train, CN Railiners ran at one time in all provinces except Prince Edward Island and Newfoundland.



RDC-4 No. 6401 leads three RDC-1s through Bayview Junction, Ont., on December 14, 1974. Note the white letterboard on the trailing RDC-1.

—F. D. Shaw photo



RDC-3 No. D100(i)—here at South Devon, N.B. on August 25, 1956—inaugurated RDC service on the CNR.—Kenneth S. MacDonald photo

As discussed in Part One (*CN LINES* Vol. 12 No. 2), the CNR bought seven Phase One Budd RDCs and placed them in service between 1954 and 1955 in New Brunswick, Quebec, and Alberta.

These initial seven RDCs served on runs which we have arbitrarily numbered as 8, 15, 18, 20, 26 and 76 in Figure 1 on pages 32-33. This chart was prepared by Gordon Jomini and shows all runs on which the CNR/CN used RDCs. We will be referring to it frequently throughout this article. Please note that the run numbers are not anything that CN had, but are a convenient way for us to cross-reference Figure 1 to the text and photo captions.

The initial order of seven cars was apparently sufficient to handle these services with D-100(i)/D300 covering Run 8 in New Brunswick, D-150 plus D-200(i) and D-151 plus D-201(i) covering Runs 15, 18 and 20 in Quebec, D-250/D-200(ii) covering Run 26 before being transferred in 1956 to join D-101(i) on Run 76 between Calgary and Edmonton in Alberta.

The CNR must have been impressed with how the RDCs speeded up services and increased patronage, so ordered another 21 Phase Two units which were delivered between 1957 and 1960. As seen in Figure 1, these new CNR Railiners brought RDC service to Nova Scotia, Ontario, Minnesota (on the DW&P), Manitoba, and Saskatchewan as well as expanding coverage in the provinces initially served. As late as Timetable A172 for December 1958,

however, RDC service had not yet started in Ontario and only did so once some routes in Quebec were converted back to conventional trains and the final RDCs were completed and delivered from CC&F.

Gordon Jomini thinks that after the CNR figured out how to operate RDCs on the Newcastle–Fredericton and Riviere-du-Loup–Levis routes, it chose to add more RDCs first to several Quebec routes plus some additional runs in the Maritimes and Western Canada. Folder “B” Table 172 for December 1958 shows RDCs on eight runs in Quebec: Riviere-du-Loup–Levis, Lyster–Richmond, Quebec–Charny–Lyster–Richmond, Quebec–Chicoutimi, Montreal–Sorel–Victoriaville, Montreal–Richmond–Sherbrooke, Montreal–Richmond–Sherbrooke–Island Pond, Vt., and Montreal–Garneau–La Tuque!

There was obviously some reconsideration of where RDCs should be assigned during the winter of 1958-1959, as the end of steam-hauled trains was rapidly approaching and most of the pioneering 1920s-era motor trains were becoming quite unreliable. A number of RDCs were moved from Quebec to Ontario routes effective with the 1959 timetables. The Railiners may have been less-than-desirable to unsatisfactory on some of the Quebec routes and/or they were more needed to take over from steam-hauled and motor trains which had been serving on Ontario branch lines. RDCs were never assigned to some Ontario routes which would appear to have been good candidates. Perhaps the CNR drew some lessons from its experience in Quebec or there simply were insufficient Railiners to go around. During the first half of the 1960s, Saskatchewan had the most Railiners of any province, with

**Table 1:
CN Railiner Assignments:
December 31, 1960**

Source: *Self-Propelled Cars of the CNR*
by Anthony Clegg

D-100(ii)	Riviere-du-Loup–Levis, Quebec
D-101(ii)	Quebec–Chicoutimi, Quebec
D-102	Edmonton–Calgary, Alberta
D-103	Regina–Saskatoon–Prince Albert, Saskatchewan
D-104	Regina–Saskatoon–Prince Albert
D-105	Halifax–Truro–Sydney, Nova Scotia
D-106	Campbellton–Gaspé, Quebec
D-107	Sydney–Truro–Halifax, Nova Scotia
D-108	Stratford–Kincardine, Ontario
D-200	Stratford–Kincardine, Ontario
D-201	Edmonton–Grand Centre, Alberta
D-202	Regina–Saskatoon–Prince Albert
D-203	Edmonton–North Battleford, Sask.
D-204	Richmond–Lyster–Quebec, Quebec
D-205	The Pas–Flin Flon, Manitoba
D-301	Duluth, Minn.–Fort Frances, Ontario (DW&P)
D-302	Moncton–Campbellton, N. B.
D-350	Edmonton–Drumheller, Alberta
D-351	Stratford–Southampton–Kincardine–Southampton, Ontario
D-352	Stratford–Southampton–Kincardine–Southampton, Ontario
D-353	Ottawa–Barry’s Bay, Ontario
D-354	Newcastle–Fredericton, N. B.
D-400	Levis–Riviere du Loup, Quebec
D-401	Calgary–Edmonton Alberta
D-402	Truro–Sydney (Mail Only), N.S.
D-450	Quebec–Chicoutimi–Edmundston, New Brunswick
D-451	Regina–Saskatoon–Prince Albert
D-452	Regina–Saskatoon–Prince Albert

seven of the 28 CN units assigned there for maintenance.

CN RDC service was not extended to British Columbia until the early 1960s when Mountain Region secondary trains were converted to RDCs. However, service was relatively short-lived in B.C. as we will discuss later.

After a batch of RDCs was bought used in 1965-66, CN had a total of 47 Railiners available to cover the remaining more-isolated runs and to add to coverage in the “Corridor” and the Maritimes. By 1968, all RDC-1, RDC-2 and RDC-9 equipment had received modernized interiors with reclining seats to equal the best deluxe coaches. Snack bar food service has also been added to many cars.

Alas, the 1970s were to bring a gradual reduction in rail travel on CN and services began to shrink throughout the 1970s until the formation of VIA Rail effective with the April 1977 timetable. During the latter years, CN assigned its fleet of RDC

Table 2:

**CN Railiner Terminal
Assignments: Aug. 20, 1963**

Source: *The Budd RDC in Canada*
by Raymond F. Corley

Sydney	D-106, 107, 302
Halifax	D-105
Moncton	D-100
Limoilou	D-101, 450
Richmond	D-204
Toronto	D-108, 200, 351, 352, 353
Nutana (Saskatoon)	D-103, 104, 205, 354, 451, 452, 475
Calgary	D-102
Calder (Edmonton)	D-201, 203, 350
Prince George	D-202, 355, 401, 453



**Table 3:
CN Railiner Assignments:
Fall 1968**

Source: "All about the RDC"
Trains Magazine, December 1968

Halifax–Truro 64 miles:	D-100(ii)
Sydney–Halifax 294.1 miles:	D-105, D-200(ii), D-503
Moncton–Saint John 89.3 miles:	D-102, D-450
Campbellton–Charny 311.7 miles:	D-106, D-452, D-453, D-501, D-302, D-500
Richmond–Quebec 102.8 miles:	D-104, D-108, D-113, D-115, D-116, D-355, D-401, D-505
Montreal–Belleville 222.2 miles:	D-109, D-118, D-506
Kincardine–Stratford–Goderich 131.6 miles:	D-351
Toronto–Southampton 151.8 miles:	D-352, D-353
Brockville–London 327.2 miles:	D-117, D-206, D-504
Toronto–Stratford 88.6 miles:	D-205, 350
Toronto–North Bay 228 miles:	D-112, D-354, D-107
Prince Albert–Regina 249.2 miles:	D-114, D-201
Saskatoon–The Pas 336 miles:	D-451, D-475, D-502, D-203
Edmonton–N. Battleford 254 miles:	D-110
Edmonton–Calgary 232.1 miles:	D-103
Edmonton–Drumheller 180.8 miles:	D-356 (D-103 and D-356 coupled Edmonton–Camrose)
Edmonton–Grand Centre 170.2 miles:	D-202
Cars in shop:	D-101(ii), D-111, D-204

cars to routes ranging from Alberta to Nova Scotia. Only three of them were retired due to wrecks before the balance were transferred to VIA Rail in March 1978. With increased concentration on the Quebec–Ontario “Corridor” and in the Maritimes coupled with the loss of mail and express business to trucks, three RDC-3 and one RDC-2 were converted to RDC-1 configuration by CN.



top: Four Saskatchewan-based RDCs assigned to Run 67 (Nos. D-202, D-104, D-451 and D-452) were at North Regina on July 26, 1961.—Roger Burrows Collection

above: Phase Two RDC-3 No. D-353 was at Clinton, Ont., in March 1965. It served on many of the Bruce Peninsula runs.—Roger Burrows Collection

below: The modernized interior of a CN RDC-1 circa 1965.—CN photo A-7 courtesy of Brian West



Figure 1:

Canadian National / Trains Per Week				Apr 54	May 54	Jun 54	Apr 55	May 55	Apr 56	May 56	Apr 57	Oct 57	Apr 58	Oct 58	Dec 58	Apr 59	Oct 59	Apr 60	Oct 60	Apr 61		
RDC	Runs	Route	Timetable Date & Number	Notes	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969		
1	Sydney	Truro		*								12								12		
2	Sydney	Truro	Halifax										14	14	14	14	14	14	14	14		
3	Halifax	Truro																				
4	Halifax	Truro	Moncton	1																		
5		Truro	Moncton	1																		
6	Moncton	Saint John		*																		
7	Moncton	Campbellton										12	12	12	12	12	12	12	12	12		
8	Newcastle	McGowen	Fredericton	2, X	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12		
9	Moncton	McGowen	Edmundston	2, *																6		
10	Edmundston	Chamby	Quebec City	*								6	6	6	6	6	6	6	6	6		
11	Edmundston	Chamby	Montreal	3																		
12	Campbellton	Matapedia	Gaspé										14	14	14	14	14	14	14	14		
13	Campbellton	Chamby		4																		
14	Mont-Joli	Chamby																				
15	Beauport-Loxley	Lans			14	14	26	14	26	26	26	26	26	26	26	26	26	26	26	26		
16	Clarendon	La Malbaie	Quebec City	*																		
17		La Malbaie	Quebec City																			
18	Quebec City	Chicoutimi					6	6	6	6	6	6	6	6	6	6	6	6	6	6		
19	Quebec City	Chamby	Montreal	3, 4																		
20	Richmond	Lyster		5			14	14	14	14	14		14	14	14	14	14	14	14	14		
21	Richmond	Lyster	Chamby																			
22	Richmond	Chamby	Quebec City	5									12	12	12	12	12	12	12	12		
23	Inland Pass, VT	Shedbrooke	Montreal	6, X									12	12	12	12						
24	Catbrook	Shedbrooke		*																		
25	Catbrook	Shedbrooke	Montreal	*																		
26	Shedbrooke	Richmond					12	12	12	12	12											
27		Richmond	Montreal																			
28	Shedbrooke	Richmond	Montreal									18	18	18	18	18	18					
29	Victoriaville	Sorel	Montreal	5										12	12	12						
30	Montreal	Cuteo	Boston, Springfield (B&M)	4, B&M											14	14	14	14	14	14		
31	Fitzpatrick	La Tuque	Montreal										12									
32	La Tuque	Henry	Montreal											12	12	12	12					
33		Ganias	Montreal										2	2	2	2	2					
34	Ottawa	Barns Bay		3														12	12	14	14	14
35	Montreal	Deschêles																				
36	Montreal	Belleville																				
37	Brockville	Toronto		7																		
38	Kingston	Toronto		7																		
39	Toronto	Hamilton																				
40	Toronto	Hamilton	Nagara Falls																			
41		Hamilton	Nagara Falls																			
42	Dundas	Hamilton	Nagara Falls																			
43	Toronto	Bradford	London	7																		
44	Toronto	London	Windsor	8																		
45	Toronto	Guelph	London																			
46	Toronto	Bradford	Sarnia																			
47	Toronto	Guelph		9																		
48	Toronto	Guelph	Sarnia																			
49	Guelph	Palmerston	Owen Sound	X																		
50	Guelph	Palmerston	Southampton	X																		
51		Palmerston	Southampton	X																		
52	Toronto	Stratford																				
53	Stratford	Godolph		X																		
54	Stratford	Palmerston		X																		
55	Stratford	Palmerston	Kincardine																			
56	Stratford	Listowel	Kincardine	X																		
57	Toronto	North Bay																				
58	Toronto	Stouffville																				
59	Capitol	Nakina																				
60	Thunder Bay N.	Winnipeg		4, 5, *																		
61	Duluth, Minn. (DWSP)	Fort Frances		6, X								12	12	12	12	12	12	12	12	12		
62	St. Paul, Minn. (NP)	Emerson	Winnipeg	6, 10																		
63	The Pico	Finlay																				
64	The Pico	Hudson Bay	Saskatoon																			
65	The Pico	Hudson Bay	Saskatoon	*																		
66	Regina	Saskatoon										14	20	18	18	7	14	18	14	18		
67	Regina	Saskatoon	Prince Albert									14	14	14	14	14	14	14	14	14		
68		Saskatoon	Prince Albert	*																		
69	Regina	Saskatoon	North Battleford												14							
70		Saskatoon	North Battleford																			
71	North Battleford	Edmonton		*											18	18	18	18	18	12	18	18
72	St. Paul	Alders	Edmonton	*											12	12	12	14	14	14	14	
73	Grand Central	Alders	St. Paul	*											12	12	12	14	14	14	14	
74	Burnsville	Carleton	Edmonton	*																		
75	Burnsville	Carleton		11											12	12	12	7	14	14	14	
76	Calgary	Carleton	Edmonton	11, X								14	18	18	18	14	14	14	14	14	14	
77	Parsons	Hamilton	Hamilton Jct	X																		
78	Prince George	Prince Rupert		12																		

Notes: Colour coding is to differentiate runs by provinces.
 Interprovincial runs are shaded light yellow.
 Run numbers do not correspond to anything used by CN.
 Timetables are "A" numbers unless shown as "B".
 VIA operated RDCs over CN lines in addition to the ones listed.
 CP operated RDCs over short segments of CN lines not shown.
 B&M No CN RDCs operated on CV or GTW. B&M RDCs ran Montreal-Boston/Springfield or the Ambassador Jan. 1959 - Apr. 1961.
 X Withdrawal of RDCs ended all passenger service on this route.
 * VIA ended passenger service on these routes with RDCs.
 1 The Truro-Moncton RDC route ended 29 December 1962.
 The Halifax-Truro-Moncton route began 31 December 1962.
 2 Runs 8 and 9 never connected at McGowen because Run 8 was discontinued before RDCs were assigned to ex Run 9.
 3 RDCs were towed Chamby-Montreal in trains 123 & 122.
 4 Some 600-series trains not identified as Railcar in timetables.
 "Motor Trains" were all out of service by the relevant dates.
 5 RDCs replaced by conventional trains for the final season(s).
 6 CN RDCs operated in the U.S.A. for part of the run.
 7 These runs named The Ontario.
 At least in Oct. 1967 same equipment ran Brockville-London.
 8 Non-stop routing Toronto - London not specified in timetable.
 9 At times, RDCs towed Toronto-Guelph in trains 39 & 26, 136 going through car service Toronto - Bruce Peninsula points.
 10 Northern Pacific single RDC-2 in the December 1968 Trains.
 11 Ran coupled Carleton-Edmonton.
 12 Converted back to conventional trains Prince Rupert-Jasper.

Table 4:
CN Shop Assignments:
November 1, 1975

Source: CN records
 courtesy of Wendell Lemon

Halifax	6100, 6102, 6107
Moncton	6105, 6112, 6200, 6202, 6205, 6206
Point	
St. Charles	6207-6210
Spadina	6000-6006, 6106, 6108-6111, 6113-6120, 6203, 6302, 6351, 6355, 6401
Neebing	6121, 6475
Saskatoon	6204, 6350
Calder	6104, 6201, 6356

As you will note from the assignment tables and the regional discussions to follow, many CN Railiners wandered over a considerable area during their service lives on the CNR.

Atlantic Region (Runs 1 to 13)

The Maritimes had the first CNR Railiner in service and RDCs served there continuously through the CN and VIA eras until the major cutbacks by VIA in 1990. The first RDC service in New Brunswick began between Newcastle and Fredericton on Run 8 (Figure 1) in January 1954 with RDC-3 D-100(i). It was based at South Devon and provided reliable service, but busses took this run over in January 1961. This RDC was renumbered to D-300 in late 1956, and often had a coach attached. A 1956 book-in register Wendell Lemon has from South Devon shows that terminal had steam, the Railiner, and diesel electrics all sharing the same seven-stall engine facility. Steam (a 4-6-2) filled in on occasion on Newcastle to Fredericton trains in the mid-1950s.

The Maritimes had several routes covered by motor trains before the arrival of RDCs so they were a natural progression on secondary runs. As the number of branch lines served with passenger trains shrank, so did the number of RDC runs. However the number of cars in service actually increased as multi-car consists became commonplace on the busier routes.

By January 1972, there were ten CN RDCs in service in the Maritimes and these were assigned to either Halifax or Moncton for service. These Railiners covered “corridor-like” services between Sydney–Truro–Halifax and Moncton and Saint John.



top: RDC-3 No. 6302, at Niagara Falls, Ont., in 1977, wears the transitional paint scheme that signalled the end of CN service and start of the VIA era.—George Carpenter Collection

above: The same Phase Two unit, in its original number and paint scheme at Truro, N.S., in August 1962.—Roger Burrows Collection

below: Phase Two RDC-1 No. 6102, with two more RDC-1s, westbound at Stellarton, N.S., on March 23, 1975.—Gary Hadfield photo, courtesy of Matt Kai



Wendell Lemon says, “The RDCs in Nova Scotia were assigned to Halifax, as runs originated there to Truro and Sydney and return. Over the years they served on train numbers 601 through 608. CN also had Moncton-based RDC runs off and on between 1961 and 1978 to Saint John, Truro, Campbellton, and Edmundston.

At busy times, or a shortage of RDCs, the runs were filled in with conventional passenger equipment. Conventional trains were often run and drove up the costs of a train or a subdivision.

RDC trains originating from Moncton before 1960 were ordered from the CNR’s Lower Yard. After 1960, they were ordered from Moncton Yard (Hump Yard) where the driver and conductor picked up their consist. They proceeded three miles east to the Lower Yard station to pick up passengers. After the trip was done, the RDC returned to Moncton Yard for “tripping.” This took in wheel and brake inspection, fuel, water, oil, cleaning, and brake tests. This was all done outside in good weather. If two cars were together in the winter and

**Table 5:
Maritimes and Quebec RDC Assignments, October 1967**

Source: *Consists & Marshalling Instructions, CN Passenger Trains, as of 29 October 1967.*

Note: "SB" = Snack Bar.

Halifax-Truro	Nos. 601 & 602, RDC-1
Sydney-Truro-Halifax	Nos. 605-606 & 603-604: and
Sydney-Truro	No. 605, RDC-1 - RDC-5 (SB) - RDC-1 (up to 3 cars as req'd.)
Truro-Halifax	No. 606, RDC-1
Halifax-Truro	No. 603, RDC-1 ex-No. 602.
Truro-Sydney	No. 604, RDC-1 (SB) + [RDC-5 (SB) - RDC-1] ex- No. 605 at Truro.
Moncton-Saint John	Nos. 611 & 612, 613 & 614, RDC-1 - RDC-4.
Campbellton-Charny	No. 619, RDC-1 (SB) - RDC-5 - RDC-4 - RDC-4 (RPO)
Charny-Campbellton	No. 618, RDC-4 - RDC-4 (RPO) - RDC-1 (SB) - RDC-5
Montreal-Richmond-Sherbrooke-Coaticook	No. 620, RDC-1 for Richmond trains Nos. 628-629-630-632-627 RDC-1 (SB) - RDC-2 - RDC-4 (RPO) Montreal-Sherbrooke ex. Sun. for 625
Coaticook-Sherbrooke-Richmond-Montreal	No. 623, RDC-2 - RDC-1 (SB) (RDC-2 and RDC-3 operated interchangeably)
Montreal-Richmond-Sherbrooke	Nos. 621-622-624-625-626, No. 621 RDC-3 - RDC-1 (SB) - RDC-5 - RDC-1 ex-No. 627
Richmond-Montreal	No. 622 RDC-3 - RDC-1 (SB) - RDC-5 No. 624-626 RDC-2 - RDC-1 (SB) No. 625 RDC-1 (SB) - RDC-2 - RDC-4 (RPO) ex-Sunday. (RDC-2 and RDC-3 operated interchangeably)
Richmond-Charny-Quebec	Nos. 627-628-629-630-632, RDC-1
Montreal-Belleville	Nos. 649 & 650, RDC-1 (SB) - RDC-5 - RDC-1

Quebec (Runs 14-33)

As discussed earlier, Railiner service began in Quebec in 1954, with five of the first seven CNR RDCs assigned there by 1955. On at least one CNR route the Railiner was cut into a "regular" passenger train from the point of origin in Montreal to a junction, where it would be cut out and then proceed under its own power along its designated branchline route. The reverse procedure was of course used on the westbound return trip. Another fascinating operation in later years was the hauling of Railiners through the Mount Royal Tunnel by electric locomotives.

Gordon Jomini says that in the 1960s, "Campbellton-Matapedia-Gaspe is advertised in Folder "A" Tables 193, 195 and 197 as conventional equipment in the peak summer season (dates vary), and in Folder "A" Table 196 as conventional equipment over Christmas (17 December-8 January). Subtract 600 to get the train numbers for the conventional trains."

"The Campbellton-Matapedia-Gaspe train numbers were rather interesting. Campbellton-Matapedia was westbound. Matapedia-Gaspe was eastbound. Yet the trains operated westbound Campbellton-

needed de-icing, they were put in the shop and left running. This turned the shop air blue in just a few minutes. The exhaust was three hours clearing from the shop!"

**Table 6:
Atlantic Region RDCs:
January 1972**

Source: CN records
courtesy of Wendell Lemon

Number	Assigned	Monthly Miles	Miles Since New
6100	Moncton	8,960	2,088,253
6102	Halifax	8,550	2,103,991
6105	Moncton	8,925	1,743,529
6107	Halifax	8,321	1,872,830
6112	Halifax	9,598	1,346,725
6200	Moncton	6,100	1,598,163
6202	Moncton	8,852	1,829,986
6203	Moncton	10,052	1,834,576
6205	Moncton	6,080	1,157,965
6450	Moncton	5,193	1,577,988

(No. 6450 had not yet had classified repairs.)

below left: RDC-3 No. D-303 is under catenary north of the Mount Royal Tunnel and is being hauled by an electric locomotive.—Universal Slide Company, courtesy of George Carpenter

below right: It is believed that Phase 1 RDC-1 No. D-100(ii) and RDC-4 No. D-400 are pictured near the west end of Riviere-du-Loup on a run to and from Levis. These Phase 1 units originally had triangular number boards (and, likely, built-up pilots) on one end only, and operated as a pair. This was their initial assignment on the CNR, beginning in July 1954 when the cars were numbered D-200(i) and D-150. No. D-100(ii) was renumbered from D-200(i), and D-400 from D-150, at Riviere-du-Loup in November 1956. Car D-100(ii) had its pilot changed by May 10, 1961. Riviere-du-Loup-Levis RDC service became double-daily each way. Add in the *Ocean*, the *Scotian*, and the *Maritime Express* and that was five trains a day, each way!—CN photo X48483: Coo-West Collection



Matapedia under the eastbound number of the Matapedia–Gaspé schedule, and *vice-versa* coming home. Operating timetables confirm the practice.

“Montreal–Garneau–La Tuque–Fitzpatrick was assigned RDC-2 No. D-204 and RDC-3 No. D-303. Fitzpatrick was an NTR division point; there is no settlement. The town is La Tuque (hydroelectricity, paper mill, aluminum smelter), 3.2 miles short. There was no point running the Budd cars empty the last 3.2 miles to and from Fitzpatrick.

“Montreal–Cantic was a remnant of the Central Vermont passenger service. My guess is that CN was caught unprepared when U.S. federal and state authorities allowed the discontinuance of the B&M–CV segments of the Montreal–New York/Washington, D.C. trains. The RDC left Montreal an hour sooner than the time of the night train, No. 20, the *Washingtonian*, waited in Cantic 17 minutes and returned that night to Montreal 1 hour 17 minutes later than the time of the day train, No. 27, the *Ambassador*. I guess the CN had to run the nominal RDC service until the lawyers could abandon the ‘service’ in Canada. They were a year at it!

“CN could have purchased more used RDCs. Moncton–Saint John, Moncton–McGivney–Edmundston, Edmundston–Quebec, Richmond–Charney–Quebec, and Sherbrooke–Richmond–Montreal were, in my experience, as likely as not to be operated with conventional equipment.”

Ontario (Runs 34 to 59)

Peter Bowers says, “as of December 31, 1960, four RDC units were in service in Southwestern Ontario. RDC-2 No. D-200 and RDC-1 No. D-108 were assigned Stratford to Kincardine and two RDC-3 units (Nos. D-352 and D-351) were assigned Stratford to Southampton/Kincardine. These cars were assigned to the “Bruce Branches” as of June 29, 1959. They also served Owen Sound and Goderich. While there were four cars available, most information shows only one car was used on each run. Originally, one car operated from Owen Sound in the morning to Guelph and then returned to Southampton. In the mid-day it returned to Guelph and then provided service to Owen Sound in the evening. The other car operated from Kincardine in the morning to Stratford via Palmerston then proceeded to Goderich in the mid-day, returned to



above: RDC-2 No. 6206 is being added to a train of conventional equipment at Moncton. This was the only RDC-2 bought used by CN; it spent most of its service life in the Atlantic Region often coupled back-to-back with No. 6200 (ex-D-200 [ij]). The triangular numberboard on the “B” end was replaced with a combination headlight/numberboard when a diaphragm was installed. Note the Phase Two end windows and pilot.—George Carpenter Collection

below: RDC-2 No. D-200(ii) and an RDC-3 were at Oakville, Ont., on July 12, 1963. It would soon be repainted and have its built-up pilot replaced with a full one. D-200 (ii) was the only CN RDC to have a parlour section, after modernization in the mid-1960s.

— Bill Linley photo



Table 7:
Comparative CNR Steam–RDC–Diesel Performances

by Gordon Jomini

Montreal–Garneau, Quebec, 106.4 miles

	Ex-Montreal	To Montreal
Steam-powered	15 stops	11 stops
Nos. 110 and 109	6 flag stops	10 flag stops
28 April 1957 timetable		
5100-series 4-6-2 typical		
3 to 5 heavyweight cars typical	3:55	3:52
RDC equipment	21 stops	15 stops
Nos. 610 and 609	7 flag stops	13 flag stops
27 October 1957 timetable		
RDC-2 No. D-204 + RDC-3 No. D-303	2:58	2:54
Diesel-powered	19 stops	17 stops
Nos. 110 and 109	8 flag stops	10 flag stops
29 April 1962 timetable		
RS-3 + steam generator typical		
3 lightweight cars typical	3:15	3:07

Stratford and then returned to Kincardine via Palmerston in the evening. This schedule was still in effect in June 1960.

"In 1961, D-353 was reassigned to Toronto from the discontinued Barry's Bay service. By June of 1962 (and I believe the change was in 1961) there were three Hamilton-to-Niagara Falls RDC runs, one of which ran out to Dundas. The Kincardine and Goderich services had reverted back to conventional trains, and the Owen Sound and Southampton RDCs now operated out of Toronto, being hauled between Guelph and Toronto on the rear of conventional trains. The train was split at Palmerston, with one car going to Owen Sound and one car to Southampton."

With more RDCs available by 1965, RDC service was increased in Ontario by restoring some services and introducing others, including longer consists in the "Corridor" to supplement locomotive-hauled trains. The Brockville-Toronto RDC, later cut back to the more familiar Kingston-Toronto RDC schedule, was named the *Ontarian*. Another Railiner service on the west side of Toronto, to and from London, was also called the *Ontarian*. Eastbound connections were excellent.

right: Three modernized RDC-1s led by No. D-112, at Brockville, Ont., on December 15, 1965, making the first run of a new RDC train to Toronto and London. The lead unit had been recently purchased from the Boston & Maine.—W. H. Coe photo, courtesy of Brian West

Table 8: Southern Ontario Assignments: October 1967

Source: *Consists and Marshalling Instructions, CN Passenger Trains, at 29 October 1967*.
Note: "SB" = Snack Bar.

Brockville-Toronto Nos. 647-648, Toronto-London Nos. 647-648
RDC-1 (SB) - RDC-5 - RDC-1

Note: the Brockville-Toronto train ran through Toronto Union Station to London, and vice-versa.

Kincardine-Palmerston-Stratford-Goderich Nos. 662-663, 666-667, 661-660-664-665:
One RDC-3

Toronto-Guelph-Palmerston-Owen Sound-Southampton:

No. 671 RDC-3 Guelph-Owen Sound - RDC-3 Guelph-Palmerston (in No. 158 Toronto-Guelph).

No. 669 RDC-3 Palmerston-Southampton (ex-No. 671 at Palmerston)

Nos. 668-656 RDC-3 Southampton-Palmerston (to No. 672-670 at Palmerston)

Nos. 672-670 RDC-3 Owen Sound-Toronto - RDC-3 Palmerston-Toronto RDC-3 (668-656 Southampton-Palmerston):

Two RDC-3s in total (Tues. to Sat. two RDC-3s off Train 672 in Train 658 Guelph-Toronto).

Toronto-Stratford Nos. 657-658

RDC-1 - RDC-3

Toronto-North Bay Nos. 673-676

RDC-3 (30' RPO) - RDC-1 (SB)



Phase One RDC-1 No. 6109 (ex-B&M), still with its triangular numberboard, leads a train eastbound at Bayview Jct., Ont., on October 31, 1971.—Don McQueen photo



DW&P No. D-301 loading mail at Duluth in May 1958. It ran 8,675 miles in November 1958 between Duluth and Fort Frances.

—Whittaker photo, via George Carpenter



Northwestern Ontario, Minnesota, Manitoba, and Saskatchewan (Runs 60-71)

DW&P RDC-3 No. D-301 replaced Trains 19 and 20 between Duluth and Fort Frances in 1957 and ran until passenger service ended on that route in 1961. According to Roger Burrows, the RDC made a very poor connection at Fort Frances so connecting passengers were rare on Trains 33 and 34 between Port Arthur (Thunder Bay North) and Winnipeg. These trains were replaced later by a combination RDC-1/RDC-4 set (Run 60) beginning in October 1971 and continuing to the VIA era.

A Northern Pacific RDC-2 also provided an international daylight service between St. Paul, Minn., and Winnipeg and used CN tracks in Canada (Run 62).

RDCs first substituted for a conventional train from October 1959 until April 1963 between The Pas and Flin Flon. Clark Gray remembers the first RDC at The Pas was the D-205 (which is still running on VIA as No. 6205). The following winter, service began between Hudson Bay, Sask., and Saskatoon and was extended to The Pas a year later. Railiners connected with transcontinental trains at Saskatoon, with service to Regina, Prince Albert, and North Battleford.

The RDCs racked up high monthly mileages. In November 1958, Nos. D-103 and D-452 (Regina) ran 9,960 and 9,870 miles, and D-104 and D-451 out of Prince Albert ran 14,848 and 14,106 miles, respectively. Nos. D-202 and D-402, assigned to North Battleford, ran 15,304 and 14,314 miles that month, respectively, in daily service to Edmonton.

Gordon Wilson says, "My own interest in CN RDCs dates back to when I was a youngster. I often travelled with my parents from Regina to Saskatoon for the weekend. We would go there on Train 621 on Saturday morning and return on Train 622 Sunday evening. On one memorable return trip the conductor asked my folks if the "young fella" would like to "go up front to the cab." Train 622 was made up on this

left: RDC-2 No. 6204 spent several years in northern Manitoba. In this October 10, 1975, view note the brazing where repairs had been made, probably following a grade crossing "incident." No. 6204's air compressor was moved from the underframe into the baggage compartment. Apparently the air compressor froze up in the underslung position! —Gordon D. Jomini photo



middle: CN Nos. 6108 and 6475 at Atikokan, Ontario, on October 26, 1974. The RDC-4 ahead is leading tri-weekly Train 686. The protective grills over two of the RDC-1 cab windows are absent from the engineer's window where, arguably, the protection was most needed. Note the roof-mounted warning light applied to make fast-moving RDCs more visible at grade crossings.—Gordon D. Jomini photo



occasion, if memory serves, of an RDC-4 and an RDC-1. There were typically two- and three-car sets assigned to this run at this time. The view from the front of that RDC-4 will always stay with me. It was night, and in those days there was not the proliferation of farm lights you see now. It was pitch black and snowing. The image of the snowflakes seeming to form a funnel of white pinpoints of light, through which we raced with the two silver rails streaming back under our feet was an incredibly powerful experience. “

Alberta and British Columbia (Runs 72 to 78)

Edmonton and Calgary were the largest Canadian cities to receive Railiner service when the original Phase One units were delivered by 1955. CN RDCs operated out of Edmonton until the VIA takeover in 1978. The first route was south to Drumheller and Calgary in 1955 so as to provide some competition for the CPR. Service northward was added in the late 1950s to St. Paul and Grand Centre. In November 1958, cars D-201, D-203 and D-401 were assigned to Calder and ran 14,790, 10,161, and 9,400 miles, respectively, north out of Edmonton on Runs 72 and 73.

Of all the provinces in which they operated, CN Railiners were the least successful in British Columbia. We have been able to gain some understanding of the short-lived CN RDC service in B.C. from the files of the late Mr. C. C. Collins, former CN Passenger Service Manager in Vancouver. The Railiners came to two B.C. runs in the early 1960s because of a plan to introduce RDCs on all secondary routes in the Mountain Region. However, Run 77 from Kelowna to Kamloops Jct. had seen falling patronage using conventional equipment on account of improved highways and the very inconvenient roundabout route to Vancouver via Kamloops. The two-year Railiner service mainly forestalled the loss of complete rail passenger service.

On the B.C. North Line, the conventional trains were not being well utilized between Prince Rupert and Jasper. There was an overnight run and heavy head-end loads between Prince George and Jasper so this portion remained with a conventional train. The connecting service from Prince George to Prince Rupert was certainly more economical for CN to run with RDC cars, but they had considerable



above: CN 6114 (ex-B&M) is waiting at Saskatoon for connecting passengers on July 28, 1969. Note the black pilot, white letterboard, new headlight housing and frame for diaphragm (which has been removed to improve visibility for the engineer.)—Al Lill photo

below: No. D-102 from Calgary and No. D-350 from Drumheller were at Edmonton in August 1959. The cars were coupled together Camrose–Edmonton.—F. D. Shaw photo

bottom: CNR D-354 heads north out of Vernon, B.C., on July 30, 1963. It had been reassigned from Run 8 in New Brunswick and later went to Saskatchewan and Ontario before being rebuilt into an RDC-1m. Note the removable ditchlights used in B.C.—Roger Burrows photo



mechanical problems on rough track and the RDCs were frequently stuck in the wet, heavy snow. There were complaints from on-line communities about the loss of sleeping and dining car service. RDCs did not have sufficient capacity in the summer months to meet demand. The service reverted to a conventional train for one summer before going back to RDCs for one last winter, before conventional trains were restored again. It appears that CN did consider going back to RDCs again in the 1970s to stem the heavy losses on the conventional trains, but this didn't happen despite at least some CN folks believing the mechanical problems had been overcome.

Mechanical Details

by Wendell Lemon

RDCs were always powered by six-cylinder diesel engines. The RDC-9 had one engine, which drove the inboard axle of the lead truck. The remaining models of RDCs were powered by two engines. Each turbocharged engine drove an Allison Twin Disc torque converter connected by a short drive shaft to a Spicer rear end. These two engines powered the two center sets of axles. Number 1 and 4 axles were unpowered. The first engines were mostly Detroit Diesel and were gradually replaced by CN and VIA with a Cummins model. These were 400 h.p., derated to 340 h.p. each, with 855 cubic-inch displacement. There were two identical speeds in both directions and auto shifting up and down. Throttles had four engine speeds.

There was an "A" end and a "B" end to RDCs. The "A" end had the No. 2 engine and the "B" end had the No. 1 engine. The "A" end had one square air intake opening at the roof side and the "B" end had two openings. Axles were numbered 1, 2, 3, and 4, starting from the "B" end. The "A" end usually led.

Each engine compartment was slung under the body in a sectional stainless steel box. It lay on its side and was slid out sideways for replacement. This compartment could cause overheating in the summer, a haven for leaves in the fall, and filled with snow in the winter. It hung just inches over the rail and ice buildup on crossings could tear off the bottom. Derailments took it for sure. The RDC's twin-I-beam frame was mild steel.

These self-propelled machines were not noted for power, but could run over 100



above: The DW&P D-301 with four windows in the passenger compartment was rebuilt as a conventional RDC-3 and renumbered D-355 in 1961. Note the white letter board with the block CANADIAN NATIONAL lettering and orange CN in this June 29, 1964, view at North Regina (after reassignment from Run 78 Prince George–Prince Rupert, B.C.).—Roger Burrows photo

below: Single-engine cabless RDC-9 No. 6006 (ex-B&M) in its usual mid-train position in "Corridor Service" in Southern Ontario.—Don McQueen photo



mph if pushed. Heavy braking could cause the wheels to skid. A feature applied to these RDCs by Budd was Rolokron. This appliance kept the wheels from skidding during braking. However, there was nothing to stop the wheel from spinning on slippery rail except sanding. Sanders were controlled by the driver, but came on automatically in emergency braking. The sand boxes were in the sides and not noticeable except for the square fill covers just over each powered truck.

Seven single-engine suburban commuter RDC-9s were purchased from the Boston & Maine (where they were called "Highliners") in mid-1965. CN designated these as RDC-5 (an identification not used by Budd), upgraded their Spartan interiors, cut off the two-inch copper through steam lines and renumbered them D-500

through D-506. Nos. D-500, D-501, D-503 and D-506 stayed a short time in the Maritimes before being reassigned to Spadina. No. D-503, (later CN 6003) was the only one with a snack bar.

Single engine RDC-9s lacked cabs but could be operated by a hostler at the shops. Retired CN hostler George Parks says they usually moved the 6000s around the shops with a locomotive as it was easier than setting up the hostler controls and then putting them back as a trailing unit. A small single-bell horn was mounted on each end of the RDC-9 for short reverse movements and operated by the conductor.

I have been trying to figure out if Nos. 6000-6006 had bells for the backup movements. The bell would be beside the roof exhaust stack. Nos. 6000-6006 had "Watchman" heaters according to CN data

sheets, although none of the other Railiners did. This would have permitted shutting down the car on layover in cold weather. It was probably a propane heater of some form that circulated engine water which also heats the car.

A much-needed removable electrical heater, on the inside of the front door, was added about 1970 for the driver.

Budd twin-disc brakes were inside-mounted on all axles with the exception of CN 6110 (the former Budd demonstrator), which had outside-mounted disc brakes. It worked a short time out of Moncton having arrived there on the tail end of CN Train 14 on July 17, 1975. It filled in to Edmundston that same day. Summer brake discs differed from winter brake discs. There was a hand brake on each end in the vestibule. The electrical system was 74-volt DC and the drive shafts had to be disconnected if the car was being towed dead any distance.

Engine coolant was antifreeze-treated. Four radiators, two fans and two expansion tanks were in the large blister on the roof. Each exhaust stack went up through the inside of the car. The two stainless steel stacks exited straight up and the single bell was between them, out of sight.

Two propane cylinders were mounted under the floor and were for the on-board coffee pot, hot water, and the refrigerator. A single air compressor was under the floor and was always overtaxed, especially when horn blowing, bell ringing, and brake applications were all at the same time. All RDCs were air conditioned and pulled air through the second top side opening on the "B" end of the car.

The CPR was MU'ing as many as ten RDCs on Montreal suburban runs in the early 1970s. With this set up, you did not need all engines running unless it was for car heating. Five RDCs are the most I have seen running together on the CN in New Brunswick and this was on a detouring CN *Ocean* (Train. 14) on April 2, 1977. This consist was 6206, 6112, 6202, 6119, and 6200. Other times an RDC might be in the middle of a conventional passenger local for extra seating capacity. In the winter, it would be on the end of the conventional and running for passenger heat. Passenger compartment heating came from engine coolant. On-board drinking and toilet water was stored in ceiling tanks.

There were two brake hoses, one signal hose and one main reservoir hose hanging



above: Snack-bar equipped RDC-1m No. 6119, shown at Moncton on August 27, 1977, was converted from Phase Two RDC-3 No. 6353 (ex D-353, D-303) when the need for express and mail space diminished.—George Carpenter Collection

out each end. A small thirteen-pin jumper connected the circuits for MU operation.

End diaphragms were removed on many CN RDCs by the mid-1970s, especially on the 'A' ends. A few were cut off at Moncton. Other diaphragms had the top half narrowed on the 'A' end to give the driver better side visibility. Safety chains on each end hung to one side when not connected.

Major work and wreck repair was usually done at Point St. Charles in Montreal.

End paint on RDCs was not always the same shade red. For example, if a car had a minor accident in the Atlantic Region, it could be repaired at Moncton or Halifax. The painter took the first red he had in stock for touch-up. This explains the many

different shades of colors over the years on motive power and rolling stock.

Many of these mechanical facts come from an *RDC Running Repair Manual* put out by Gordon Yard Diesel Shop in June 1982. (We were still servicing RDCs after VIA took them over.) Gordon Jomini adds that CN liked to run RDCs in pairs in areas where there were problems of single cars properly activating grade crossing circuits.

After VIA took over the CN RDCs, a portable headlight was added. CP RDCs already had this door-hung Pyle Gyalite and apparently VIA liked the idea. Now when the driver changed ends, he had to take the headlight with him, along with his



left: CP 9195 at Calgary on August 25, 1965, was one of four RDC-2s acquired by CN from CP.—Roger Burrows Collection



below: CN painted the vestibule doors to cover the CP paint, and retained the bracket for the removable headlight on the end door. CN 6207 at London.—Don McQueen photo



top: Phase Two RDC-1 No. 6105, at Stellarton, N.S., exhibits the full pilot, roof-mounted headlight, smaller end windows and small illuminated numberboards moved to the ends from the car side. A diaphragm retrofitted at this end has been removed. Custom Finishing makes a Phase Two headlight assembly in HO that would help in conversion of a Proto1000 Phase One model. An Athearn shell could be robbed to get the full pilots.—Gary Hatfield photo, courtesy of Matt Kai



middle: RDC-4s are the most difficult to model in HO. Bob Boudreau described converting an Athearn model many years ago in *RMC*. Note the original pilots and triangular number boards, and odd-ball paint, on Phase One No. 6450 at Moncton in May 1976.—Annett photo, via George Carpenter

bottom: CNR Railiners had twin exhaust stacks in the roof blister as shown in this 1971 view at Spadina. HO Proto units have a grating here which would have to be removed, and a well and stacks installed. N-scale Kato units have the well and stacks but they are too short and two large in diameter to simulate the CN arrangement. The centre-section grating on the sloping sides has been removed, temporarily, to facilitate radiator maintenance.—Al Lill photo

brake lever, reverser, and throttle lever. Ex-CP RDCs CN 6207-6210 always had the Gyalite bracket mounted on their end doors.

Here is an approximate chronology of visible modifications to CNR RDCs, compiled by Al Lill:

Mid- to late 1950s: Replace single bell horns on "A" ends, Replace built-up pilots (or no pilots on "B" ends) with full pilots on Phase One units.

Early to mid-1960s: Repaint in the new CN red-orange and black scheme (with variations).

Mid-1960s: Refurbish and modernize interiors, add snack bars to some units. Add diaphragms to "A" ends of some RDCs and "B" ends, except RDC-4s.

Mid- to late 1960s: Replace triangular numberboards on ends of Phase One units (when diaphragms fitted) with combination roof-mounted headlight and number boards. Add roof-mounted warning lights on the "A" ends of D-107/6107 and D-108/6108, and possibly others.

Late 1960s to 1970s: Remove or modify diaphragms on some RDC "A" ends.

Early 1970s: Convert three RDC-3 and one RDC-2 units to RDC-1m.

Circa 1977: Transitional VIA paint.



Modelling CN Railiners

Over the years there have been brass and plastic models of RDCs produced in most of the major scales. We hope the photos and information provided in Parts One and Two will assist readers in making their CNR models more prototypical. We have tried to describe the fundamental differences between Phase One and Phase Two units. It is obvious that it is considerably easier to model a CN RDC of the same phase as the untouched model. The plastic models from Kato in N and Proto1000 in HO are Phase One units, as were the fairly common brass ones from Custom Brass in HO, but other brass makers have done Phase Two models.

For HO scalers, Custom Finishing has a few parts available that could be used, including triangular number boards, later combination headlight number boards for Phase One units, Phase Two headlight assemblies, and door-mounted headlights for ex-CP units. We haven't checked how close to scale these parts are but they will help get you closer to a CNR look.

One major thing that is lacking on all plastic models is an accurate rendition of the exhaust stacks and/or see-through gratings and plumbing. Some may want to tackle these challenging areas.

Acknowledgments

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All-time Roster of CNR/CN Budd RDC "Railiners"

RDC-1

Road No.	Built/To CN	Serial	Notes
D-200(i)	7-1953/7-1954	5923 (Phase 1)	Re: D-100(ii) 1956; 6100 1969; to VIA 1978; Sold Dallas Rail Transit 11/93 rebuilt Alstom-AMF Transport DART 2004, in service
D-201(i)	8-1955	6218 (Phase 1)	Re: D-101(ii) 1956; 6101 1969; to VIA 1978; Sold QNS&L 1993; sold Train du Haut St. Francis 2001, in storage
D-102	2-1957	6618 (Phase 2)	Re: 6102 1969; to VIA 1978; Sold to BCR Re BC-15 5-1990; Sold 11-2002 to Milford & Bennington Railroad, Wilton NH
D-103	6-1957	6805 (Phase 2)	Re: 6103 1969; Wrecked Mirror, Alberta, 8-1969; retired 10-1977
D-104	6-1957	6806 (Phase 2)	Re: 6104 1969; to VIA 1978; Sold to Dallas Rail Transit 11-1993 Rebuilt Alstom-AMF Transport DART 2012, in service
D-105	6-1957	6807 (Phase 2)	Re: 6105 1969; to VIA 1978; Retired 1-1990; Sold Industrial Rail Services, Moncton (IRS) 2000, stored
D-106	6-1957	6808 (Phase 2)	Re: 6106 1969; to VIA 1978; Sold to Dallas Rail Transit 11-1993 Rebuilt Alstom-AMF Transport DART 2011, in service
D-107	4-1958	6901 (Phase 2 CC&F)	Re: 6107 1969; to VIA 1978; Retired 1-1990; Sold to IRS 2000, stored
D-108	4-1958	6902 (Phase 2 CC&F)	Re: 6108 1969, to VIA 1978, Retired 8-1990, in storage
D-109	10-1955/1964	6222 (Phase 1)	Ex-C&E 1; Re: 6109 1969; to VIA 1978; Retired 8-1990; Sold to Regor Cuba 2-1998, in service as FdeC 2302
D-110	7-1949/1965	2960 (Phase 1)	Ex-Budd 2960; Re: 6110 1969; to VIA 1978; Stored 1-1990, Sold Farmrail System Clinton Oklahoma 1999
D-111	4-1955/1965	6106 (Phase 1)	Ex-B&M 6111; Re: 6111 1969; to VIA 1978; Stored 1-1990; Sold Farmrail System Clinton Oklahoma 1999
D-112	4-1955/1965	6105 (Phase 1)	Ex-B&M 6110; Re: 6112 1969; to VIA 1978; Sold to Dallas Rail Transit 11-1993 rebuilt Alstom-AMF Transport DART 2005, in service
D-113	4-1955/1965	6114 (Phase 1)	Ex-B&M 6119; Re: 6113 1969; to VIA 1978; Stored 1-1990; Sold Farmrail System Clinton Oklahoma 1999
D-114	5-1955/1965	6116 (Phase 1)	Ex-B&M 6121; Re: 6114 1969; to VIA 1978; Stored 1-1990; Sold to IRS 2000, in storage
D-115	4-1955/1965	6111 (Phase 1)	Ex B&M 6116; Re: 6115 1969; to VIA 1978; Stored 1-1990; Sold to QSNL 11-1993; Sold Train du Haut St. Francis 2001, in storage
D-116	3-1955/1965	6102 (Phase 1)	Ex-B&M 6107; Re: 6116 1969; to VIA 1978; Stored 1-1990; Sold to AMF 10-1995 and torn apart for DART project
D-117	4-1955/1965	6103 (Phase 1)	Ex-B&M 6108; Re: 6117 1969; to VIA 1978; Burned by 3/1984
D-118	3-1955/1966	6101 (Phase 1)	Ex-B&M 6106; Re: 6118 1969; to VIA 1978; Stored 1/1990; Sold Farmrail System Clinton Oklahoma 1999

RDC-1m

Road No.	Built	Built as	Rebuilt to RDC-1m	Notes
6119	D-303, 1957	RDC-3	1974	To VIA 1978; Retired 1-1990; Sold to IRS 2000, stored
6120	D-352, 1957	RDC-3	1975	To VIA 1978; Retired 1-1990; Sold to Regor Cuba 2/98, in service as FdeC 2303.
6121	D-100(i), 1953	RDC-3	1975	To VIA 1978; Sold to QNSL 11-1993; Sold Train du Haut St. Francis 2001, in service
6122	D-201(ii), 1958	RDC-2	1976	To VIA 1978; Retired 1-1990; Sold to IRS 2000, stored

RDC-2

Road No.	Built/To CN	Serial	Notes
D-250(i)	1-1955	6002 (Phase 1)	Re: D-200(ii) 1956; 6200 1969; to VIA 1978; Sold to IRS 2000, stored
D-201(ii)	10-1957*/5-1958	6912 (Phase 2 CC&F)	Re: 6201 1969; Rebuilt to RDC-1m 6122 in 1976; to VIA 1978 as 6122.
D-202	11-1957*/5-1958	6915 (Phase 2 CC&F)	Re: 6202 in 1969; to VIA 1978; In storage 1-1990; Sold to IRS 2000, prototype for rebuilt units being offered by IRS
D-203	11-1957*/5-1958	6916 (Phase 2 CC&F)	Re: 6203 in 1969; to VIA 1978; In storage 1-1990; Sold QNSL 11-1993 as 6203 Sold Train du Haut St. Francis 2001, stored
D-204	7-1957	6814 (Phase 2)	Re: 6204 in 1969; to VIA 1977; In storage 1-1990; Sold to IRS 2000, stored
D-205	10-1957*/5-1959	6914 (Phase 2 CC&F)	Re: 6205 in 1969; to VIA 1978, in service 2003
D-206	1-1955/1966	6003 (Phase 1)	Ex-B&M 6200; Re: 6206 in 1969; to VIA 1978; Retired 1-1990; Sold IRS 2000, stored
6207	6-1956/1974	6309 (Phase 2)	Ex-CP 9104; to VIA 1978; Retired 1-1990; Sold IRS 2000, stored
6208	2-1958/1974	6907 (Ph. 2*10-57, CC&F)	Ex-CP 9195; to VIA 1978; Retired 1-1990; Sold IRS 2000, stored
6209	2-1958/1974	6908 (Ph. 2*10-57, CC&F)	Ex-CP 9196; to VIA 1978; Retired
6210	2-1958/1974	6909 (Ph. 2*10-57, CC&F)	Ex-CP 9197; to VIA 1978; Retired, fire damage

Note * Budd build date, shells completed by CC&F at later date shown

RDC-3

Road No.	Built/To CN	Serial	Notes
D-100(i)	7-1953*/12-1953	5910 (Phase 1)	Re: D-300 in 1956; D-354 in 1960; 6354 in 1969; Converted to RDC-1m 6121 in 1974
D-101(i)	10-1955	6022 (Phase 1)	Re: D-350 in 1956, 6350 in 1969, to VIA 1978 Converted to RDC-1m 6144 by VIA, retired
D-301 (DW&P)	12-1956	6602 (Phase 2)	Extended express compartment, originally had 4 windows, rebuilt to standard RDC-3 Re: D-355 in 1961; 6355 in 1969; to VIA 1978; Rebuilt to RDC-2m 6218; Sold 11-1993 re QNSL 6218, Sold Train du Haut St. Francis 2001, in service
D-302	6-1957	6702 (Phase 2)	Re: 6302 in 1969; to VIA 1978; VIA converted to RDC-2m 6220 1/1982; In storage 1-1990; Sold IRS 2000, stored
D-303	7-1957	6704 (Phase 2)	Re: D-353 in 1959; 6353 in 1969; Converted to RDC-1m 6119 in 1974
D-351	3-1957	6701 (Phase 2)	Re: 6351 in 1969; to VIA 3-1978; Rebuilt VIA RDC-2 6225, 4/1984; In storage 1-1990; sold CAD Railway Services Lachine 2000.
D-352	6-1957	6703 (Phase 2)	Re: 6352 in 1969; Converted to RDC-1m 6120 1974
D-356	7-1956/1965	6301 (Phase 2)	Ex-C&O 9082; nee-MKT 20 (End Fluting); Re: 6356 in 1969; to VIA 3-1978; Converted RDC-2 VIA 6221 3-1983, in storage 1-1990; Sold to IRS 2000

RDC-4

Road No.	Built	Serial	Notes
D-150	7-1954	5904 (Phase 1)	Re: D-400 in 1956; D-453 in 1961; 6453 in 1969; to VIA 1978, Retired
D-151	9-1955	6230 (Phase 1)	Re: D-450 in 1956; 6450 in 1969; to VIA 1978; Re: 6250, in service
D-401	5-1957	6803 (Phase 2)	Re: 6401 in 1969; to VIA 1978; Retired 1984; Sold to Diesel-Cummins 9-1986; Scrap Les Cedres Quebec 6-1995
D-402	6-1957	6804 (Phase 2)	Re: D-475 in 1961; 6475 in 1969; to VIA 1978; Retired 1985; Sold to Diesel-Cummins 9/1986, Scrap Les Cedres Quebec 1995
D-451	5-1957	6801 (Phase 2)	Re: 6451 in 1969, Wrecked Saskatoon 9-1969; Retired 10-1971
D-452	5/1957	6802 (Phase 2)	Re: 6452 in 1969, Wrecked The Pas, Man., 10-1969

RDC-9 (designated "RDC-5" by CN)

Road No.	Built	Serial	Notes
D-500	8-1956	6401 (Phase 2)	Ex-B&M 6900, Re: 6000 in 1969, to VIA 1978, in storage 2-1986, Sold for scrap 4-1998
D-501	8-1956	6402 (Phase 2)	Ex-B&M 6901, Re: 6001 in 1969, to VIA 1978, in storage 6-1987, To AMF for parts 11-1993
D-502	8-1956	6403 (Phase 2)	Ex-B&M 6902, Re: 6002 in 1969, to VIA 1978, in storage 6-1987, Sold D. Walmsley 4-1998
D-503	9/1956	6416 (Phase 2)	Ex-B&M 6915, Re: 6003 in 1969, to VIA 1978, stored 7-1987, Sold to D. Walmsley 4-1998, Operational on LNA&C in Indiana
D-504	10-1956	6420 (Phase 2)	Ex-B&M 6919, Re: 6004 in 1969, to VIA 1978, stored 6-1987, Sold to D. Walmsley 4-1998, parts car on ILNA&C in Indiana
D-505	10-1956	6421 (Phase 2)	Ex-B&M 6920, Re: 6005 in 1969, to VIA 1978, stored 6-1987, Sold D. Walmsley 4-1998
D-506	12-1956	6426 (Phase 2)	Ex-B&M 6925, Re: 6006 in 1969, to VIA 1978, stored 6-1987, Sold D. Walmsley

Sources: *Canadian Trackside Guide* 2003, BRS; *Canadian National Railways Passenger Equipment 1867-1992*, Lepkey & West, BRS; *Canadian Rail*, CRHA; *The Budd RDC in Canada*, Corley; Self-Propelled Cars of the CNR, Clegg & Corley; *Rail Canada Vol. 5*, Lewis; Matt Kai.



We are all aware of famous U-1-f class 4-8-2 "Bullet Nose Betty" No. 6060, but there was another 6060 on CN. Caboose No. 6060 was built for the Newfoundland narrow-gauge lines by National Steel Car in Hamilton, Ontario, and finished by CN in 1962 after tu-1-f No. 6060 had been retired. The caboose became Terra Transport No. 6060 and is now on display at Bonavista, Nfld. The car was part of CN Mixed Train 203 arriving at Corner Brook from Bishops Falls, Nfld., in the summer of 1980.—David Hoadley photo



CNR caboose No. 77701 trails a McBride, B.C. to Jasper, Alta., freight at MP 23.3 of the Albreda Subdivision west of Lucerne, B.C., circa 1957, and will soon pass over the summit in the Yellowhead Pass. No. 77701 wears the CNR green leaf monogram which came into use in 1956. Stafford Swain explains the development of CNR monograms and their various applications beginning on page 20.—CN photo courtesy of Lorne Perry