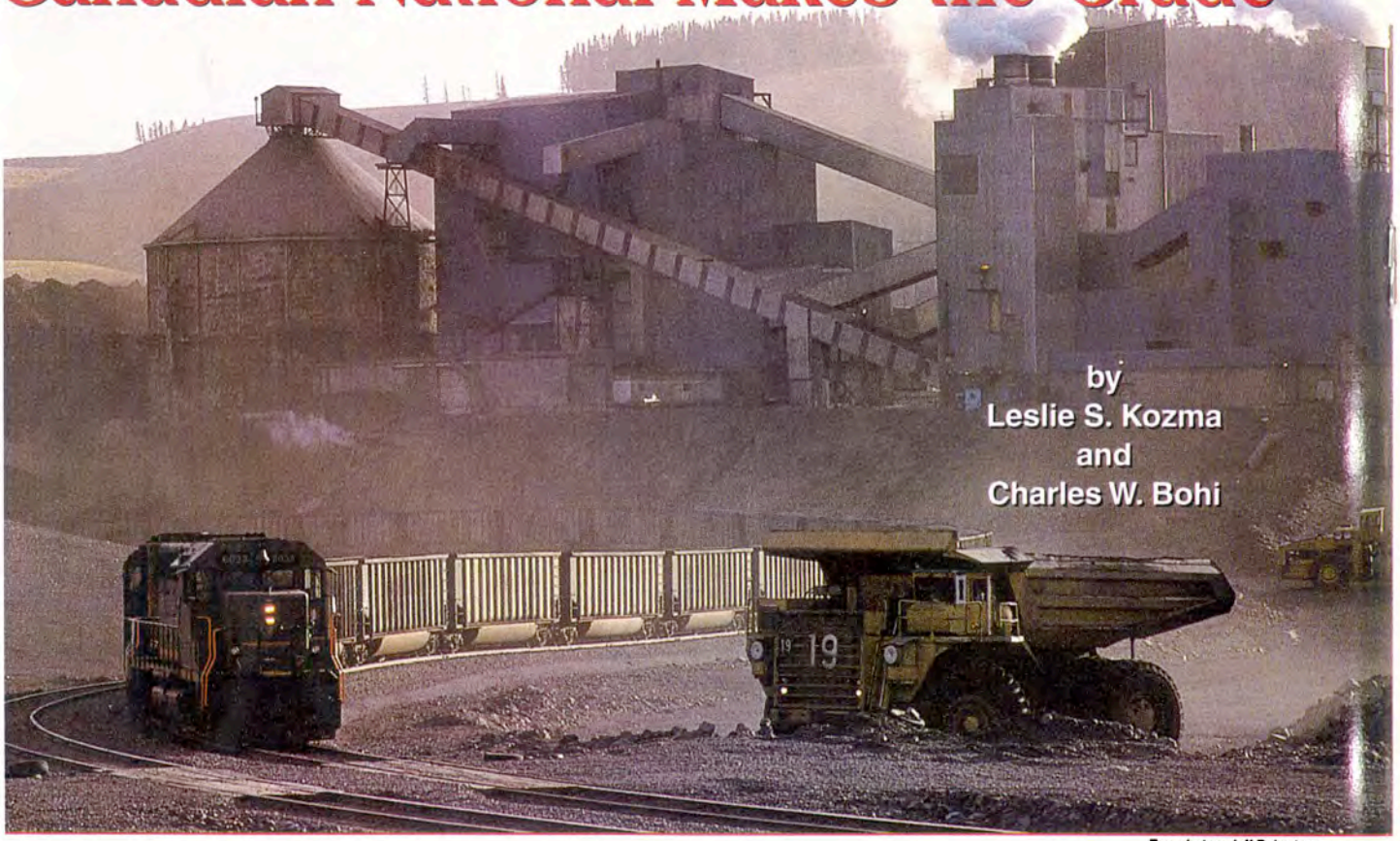
Canadian National Makes the Grade



by
Leslie S. Kozma
and
Charles W. Bohi

Two photos: Jeff Robertson

CN's overlooked Alberta Coal Branch

IT IS ROUTINE for railfans to drive west on Highway 16 from Edmonton to the mountains to satisfy their fix or rail photography. However few are apparently aware that with a slight detour south from Edson or Hinton is perhaps one of the most scenic branch lines in western Canada. Here, on the Canadian National's Alberta Coal Branch, tucked in the foothills along the eastern slope of the Rocky Mountains, unit coal, sulfur and rock trains negotiate some of the most treacherous grades on the system.

With the large influx of immigrants to Canada around the turn of the last century and the railways expanding ever westward, coal became an increasingly important commodity. Indeed, the settlement and development of western Canada became dependent upon coal. Coal deposits that had been assumed to exist on the eastern slopes of the Rockies were finally confirmed in 1908, and the following year the Grand Trunk Pacific Railway, building its main line through west-central Alberta, sent surveyors into the area. Some of the collieries were already producing coal when the GTP commenced work on the line in June 1911.

The resulting Coal Branch ran in an inverted "Y", southwesterly from the GTP main line at Bickerdike. The stem and east arm, built by the GTP, was completed to Sterco in January 1913. The west arm from Coalspur to Mountain Park, within the Nikanassin Range of the Rocky Mountains, was built by the Mountain Park Coal Company. High grade steam coal was being shipped from Mountain Park by the end of

***CANADIAN NATIONAL TRAIN 791** with GCFX SD40-3 6033 meets a Cardinal River mine haul truck near the loadout on December 27, 1997 (**above**). The SD40-3s are leased and maintained by GEC ALSTHOM AMF Transport, Inc., for dedicated service on the Alberta Coal Branch. CN train No.771 with SD40-3 6034 prepares to leave the Gregg River loadout two days later (**below**). CN SD50 5435 leads a string of new aluminum bathtub gondolas down the grade from the Cardinal River mine near Leyland on October 9, 1996 (**opposite**).*

1913, with the GTP operating the line on behalf of the colliery.

Coal at Cadomin was discovered by chance during construction of the railway to Mountain Park. Cadomin was destined to become the largest pre-1970 producer on the Coal Branch. The bituminous coal from Mountain Park and Cadomin was principally used by the GTP's locomotives east of Edson. The sub-bituminous coal mined along the Foothills Subdivision, of inferior quality, was sold for domestic heating.

The GTP went bankrupt in 1919 and in the following year was folded into the federally-owned Canadian National Railways, with the new company assuming operations of all lines on the Coal Branch. Indeed, in 1921 the CNR extended a five-mile spur from near Cadomin up to a new mine at Luscar.

Mining and railroading

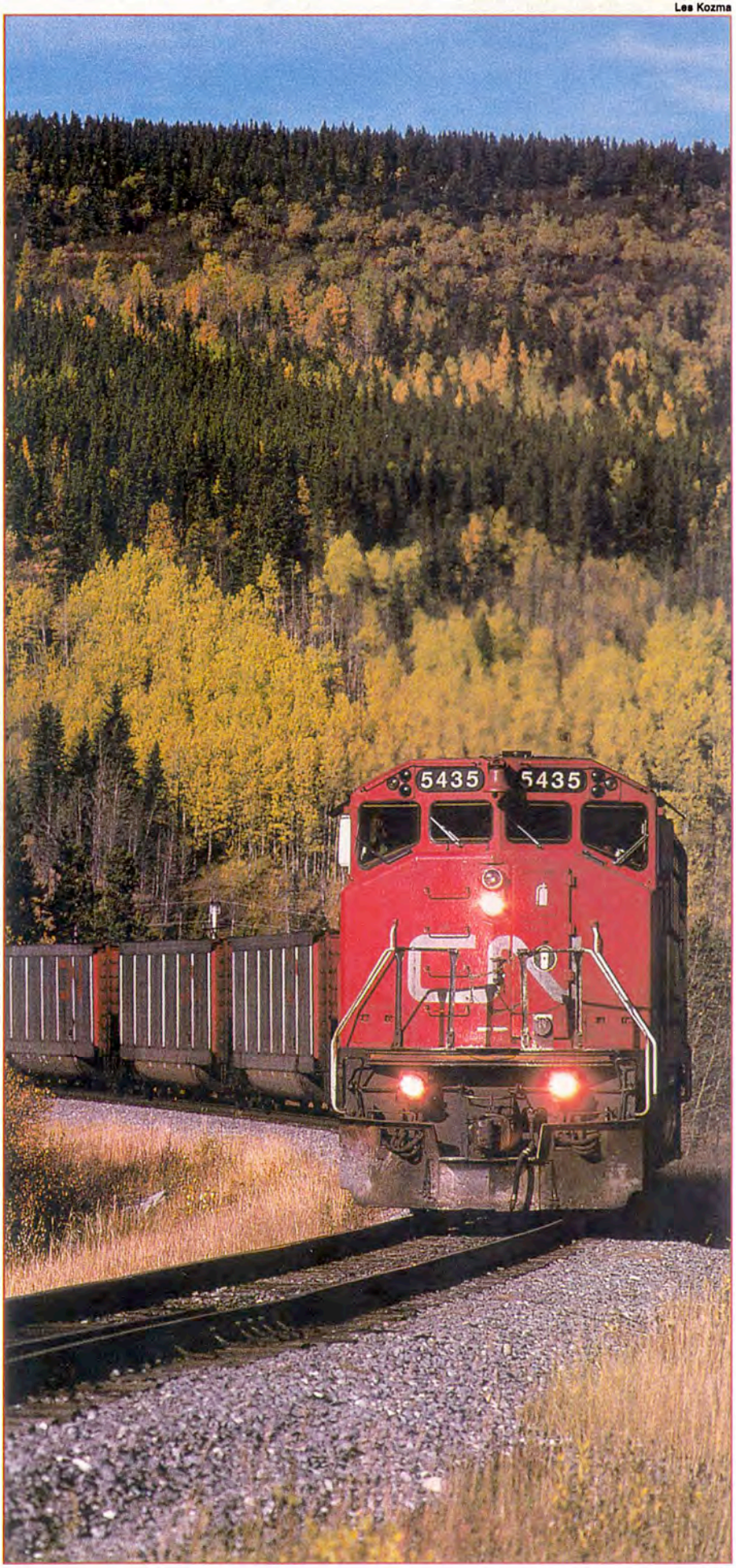
The isolation of the mining communities along the Coal Branch made them utterly dependent on the railway. But the vagaries of supply and demand and the dangers inherent in their respective occupations were a common bond for the miners and the railroaders. Further, being so far off the "high iron," train operations were quite casual. The mixed train, dubbed the *Blue Flea* by the locals, could be flagged down practically anywhere, so it invariably ran on its own schedule.

The miners and railroaders had other common interests which became particularly evident during prohibition. The potent elixir brewed along the Coal Branch was in great demand down the main line. There are stories of how the *Blue Flea's* whistle sounded a warning to local entrepreneurs when the law was on board, but this was never proven!

Edson's importance as a railway terminal was based largely on its proximity to the Coal Branch. During the steam era Edson had a large roundhouse and car shop, primarily for maintaining the locomotives and rolling stock used in coal service. Edson crews worked the outpost trains which ran "turns" out of Coalspur to the various mine sites. Due to the rickety track, steep grades and sharp curvature, trains from the south and east were limited to 14 cars. The loaded cars were marshaled into trains in the small Coalspur yard, which were then moved down into Edson, where they were consolidated into longer trains and moved east.

Commencing in 1927 the bridges on the Coal Branch were eliminated, strengthened or renewed and the track was upgraded. The diminutive 400-class Moguls that labored along the line since the days of the GTP were finally replaced by 2100-class Consolidation and 4300-class Santa Fe types which

Les Kozma



could handle significantly more tonnage. Pre-1970 coal production on the Branch reached its peak in 1928-'29.

The fall and rise of coal

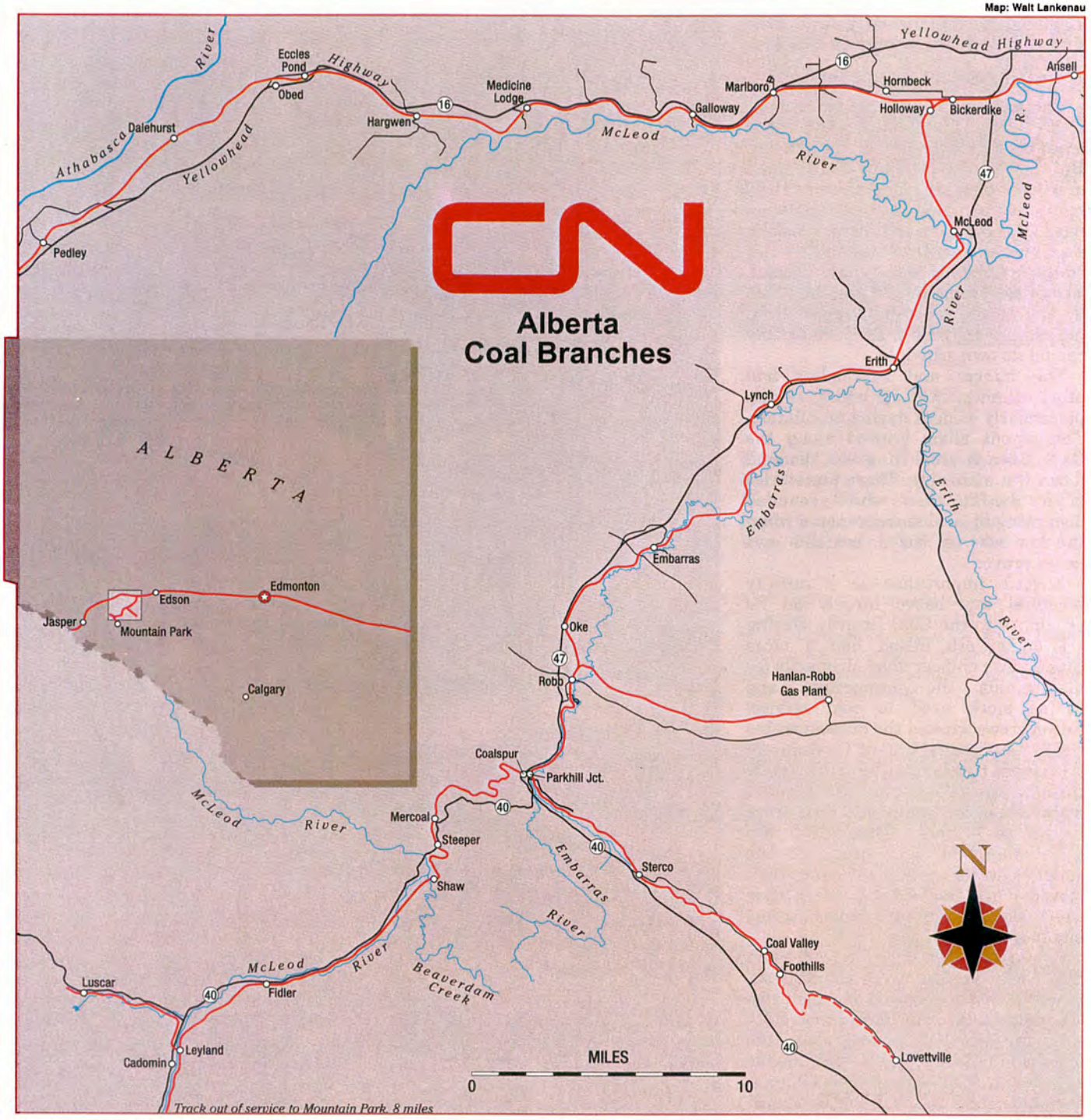
The construction of roads into the Coal Branch region in the 1940s provided an attractive alternative for communication with the outside world and reduced reliance on the CNR. Locally cut lumber no longer required for mine timbers was shipped to outside markets, principally by highway. Consequently, the days of hopping a local freight to get to and from a favorite fishing hole were numbered.

With the decreased demand for steam coal following World War II, the CNR expected better quality control for Luscar coal, necessitating elaborate and expensive cleaning facilities. Increasingly, with new sources of cheaper oil and natural gas in the 1950s, the domestic coal market shrunk dramatically. It became abundantly clear that the mines on the branch were living on borrowed time. Even the CN, still the branch's largest customer, commenced using Bunker 'C' fuel oil for its steam locomotives operating on the line. The spread of oil-fired steam engines to the prairies and rapid dieselization spelled the end for the mines on the Coal Branch. One by one the mines were shut down and the townsites were deserted. The Luscar mine was the last to close in 1958.

In 1953-'54, while coal production waned, Inland Cement made detailed investigations of the limestone deposits in the Cadomin area. The opening of the limestone processing and handling facilities in 1955 spared the Coal Branch from sure extinction. The rock was shipped to Inland's new cement plant at Bissell, on the western outskirts of Edmonton.

The inactive trackage between Coalspur and Foothills, Leyland and Luscar and Cadomin and Mountain Park was retained in anticipation of

Map: Walt Lankenau



***CANADIAN NATIONAL TRAIN No.791** works the Cardinal River loadout, preparing to start downhill on July 16, 1997 with SD50F's 5403, 5435 and 5456. The Inland Cement rock tipple near Cadomin (**below**) is loaded by gravity. Train No.725 is loading while SD60F 5563 and SD50F 5400 wait on an adjacent track on October 9,1996.*

renewed mining activity. The coal dust had scarcely settled when contracts for high grade metallurgical coal were signed with Japanese Steel Mills, a consortium of five companies. The line between Luscar and Bickerdike was upgraded and on March 1970 CN's first ever "unit train" left the new open pit mine opened by Cardinal River Coals on the site of the old underground operation at Luscar.

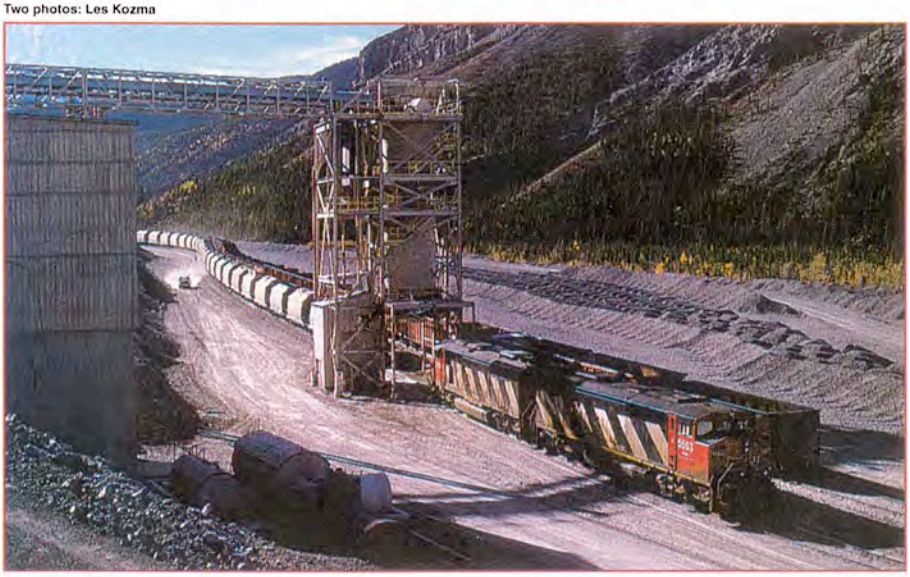
Rising energy prices and heightened international concern about the security of energy supplies resulted in a renewed interest in the energy potential of thermal coal. Thus, in 1977 Luscar-Sterco Limited opened a mine at Coal Valley (formerly Foothills) specifically to supply Ontario Hydro with thermal coal. Contracts were later secured to ship coal from this mine to Japan. To add to the traffic mix, in November 1982 construction was completed on the 9.4-mile Bryan Spur to Petro-Canada's (formerly Gulf) Hanlan-Robb gas plant, just east of Robb. The first revenue load of sulfur left for the coast the following March. The following year, Gregg River Resources Limited opened a mine two miles west of Cardinal River.

This renaissance spurred reconstruction of the Branch including the installation of new 100-pound rail, extended passing sidings at Erith, Embarras, Coalspur, Shaw and Leyland, bridge replacements and finally, in 1984, Centralized Traffic Control between Bickerdike and Parkhill Junction.

In 1996, with coal at the Cardinal River mine expected to be depleted by the turn of the century, Cardinal River Coal and CONSOL of Canada made application for a new open pit mine at Mountain Park. Environmental hurdles for the so-called Cheviot mine project, bordering on Jasper National Park, were largely overcome in late 1997. In conjunction with this, rehabilitation of the inactive rail line between Cadomin and Mountain Park is expected to commence shortly.

Edson was devastated by the mine closures on the Coal Branch in the 1950s, but remained the turnaround for crews from Edmonton and Jasper until 1996 when trains began running through. It also continued as the home terminal for crews working the Coal Branch, with 13 enginemen, twelve conductors and three trainmen in 1998.

Two photos: Les Kozma



Touring the Coal Branch

The Foothills Subdivision leaves the main line near Bickerdike. The three-track yard at Holloway (milepost 1.5) is the real northern terminus of the Coal Branch. Near McLeod River station (MP 5.6) the line crosses its namesake stream on a four-span steel bridge 446 feet long and 40 feet high.

The line follows the Embarras River in an undulating but ever-climbing

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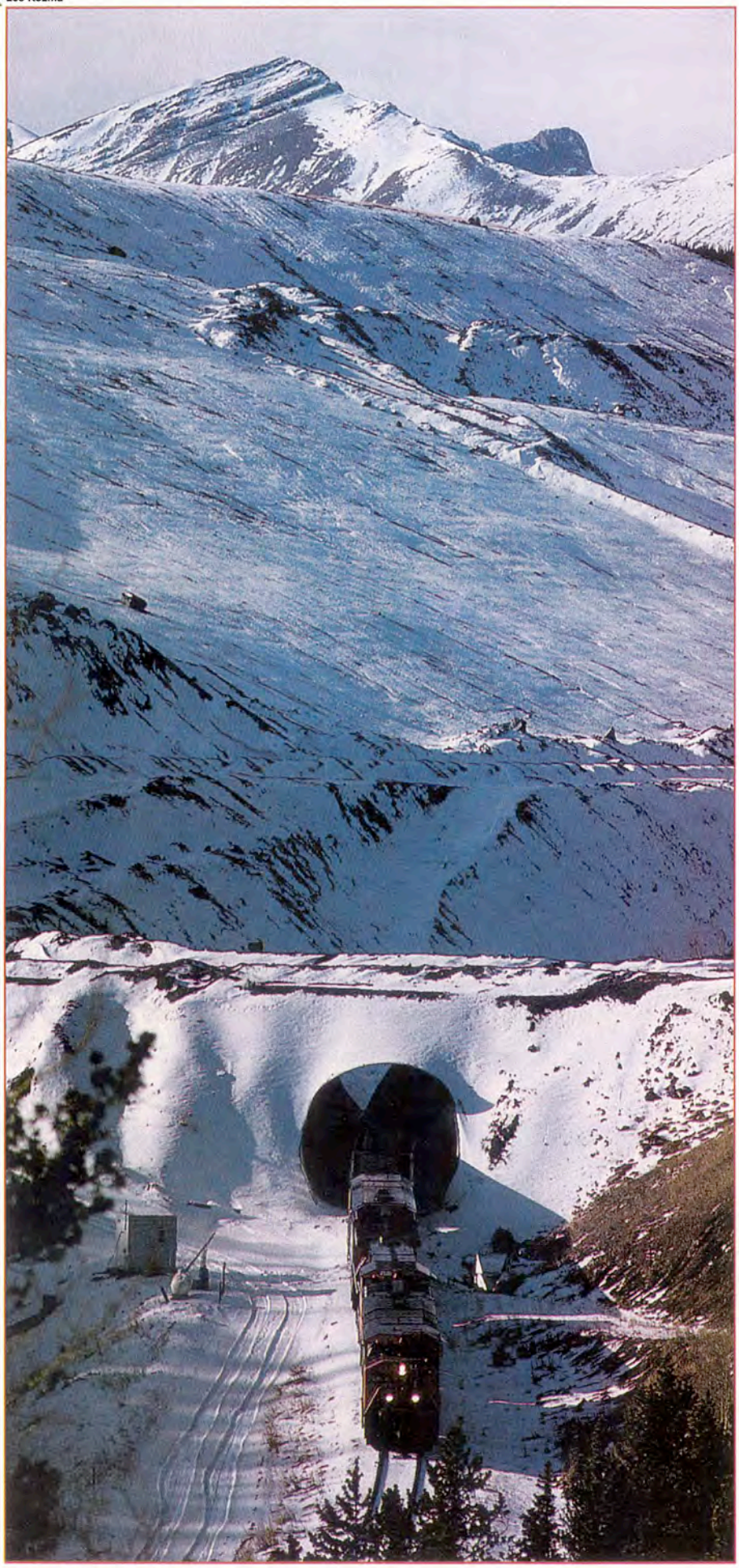

profile up into the foothills. From Lynch (MP 16.5) grades of up to one percent are encountered. South of Robb (MP 32.1) the line curves sharply west through an outcrop of unstable clay in a 591-foot-long concrete-lined tunnel (MP 33.4), then turns abruptly south. Beyond Parkhill Junction (MP 35.9) it turns southeasterly and the grade stiffens to two percent virtually all the way up to Coal Valley (MP 48.5).

The Mountain Park Subdivision diverges westerly from Coalspur (MP 0.5). Here the foundation of the old three-stall engine house and a stretch of abandoned mine trackage provide good props for photography. The track climbs the high hills west of Coalspur in a gigantic loop, known as "Yellowhead Curve." Here the first 87-car unit train "shoe stringed" and derailed, necessitating extensive upgrading in the early 1980s, including the installation of concrete ties. Despite this work, trains on this Subdivision were subsequently limited to 50 steel or 55 aluminum cars. Ten-degree curves and long stretches of 2.4% grade are encountered up to Mercoal (MP 6.9).

At Mercoal the line momentarily drifts downgrade. Here the scarred hillsides are dotted with clapboard company houses — now vacationers' cottages — tailings and the concrete foundations of the former mine workings. Mercoal is spelled out with whitewashed rocks on the creek bank near the tracks.

The steep ascent continues to a summit at the appropriately named Steeper (MP 8.2), a good play on words but actually recalling a long-time CNR superintendent. It passes under a timber overpass near the south end of the station before making a giant reverse loop as it drops into the McLeod valley, crossing Beaverdam Creek (MP 10.6). In 1978 the 820-foot-long 50-foot-high timber trestle over the creek was replaced by a 260-foot-long steel viaduct on a new alignment just downstream of the existing bridge.

The grade bottoms out near Shaw (MP 11.8) then rises steadily. The McLeod River is crossed on a girder span at MP 16.0 and remains within sight of the tracks, past Fidler (MP 18.0) all the way to Mountain Park. In 1984, following a serious runaway, a series of sharp curves near the west end of Fidler was realigned on a high fill.

Leyland (MP 22.5) is the junction with the Luscar Spur and the staging point for trains going up to the coal mines and for rock trains operating to Inland Cement via Cadomin (MP 23.7). The limestone quarry is the present end of operated track. Beyond this is the mothballed line winding its way relentlessly at a steady 2.4% up to Mountain Park (MP 31.6), 2300 feet above Coalspur and claimed to be the

Jeff Robertson

CN No.790, A SOUTHBOUND COAL TRAIN, crests the hump at Steeper on October 18,1996, with SD50F 5435 in charge. The location is named for a former CN superintendent, not for the steep grade. At milepost 33.4 of the Foothills Subdivision, a trio of SD50F's emerge from the east portal of Robb Tunnel (**below**) with train No.791 on July 16, 1997. About a mile from Cardinal River, train No.791 with Dash 8-40CM 2416 on the point heads downhill from the loadout (**opposite**).

highest railway station in Canada (6000 feet above sea level). Track and bridges on this section were left in place, but most of the structures have disintegrated, lengths of rail are missing and slides have obliterated portions of the alignment, while at other spots the subgrade has washed out leaving only hanging track.

From Leyland, the 7.1-mile Luscar Spur turns back on itself, through a CNR ballast pit on the flats, before turning west into the pinched valley of Luscar (formerly Greasebone) Creek. It climbs up to the Cardinal River and Gregg River mines on a sustained grade of up to three percent, the steepest on the CNR. The lunar-like landscape around the Cardinal River load out is surreal.

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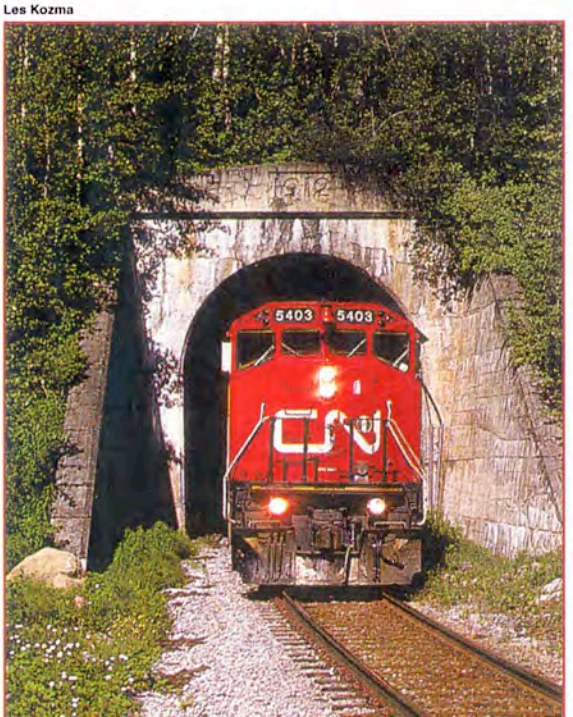


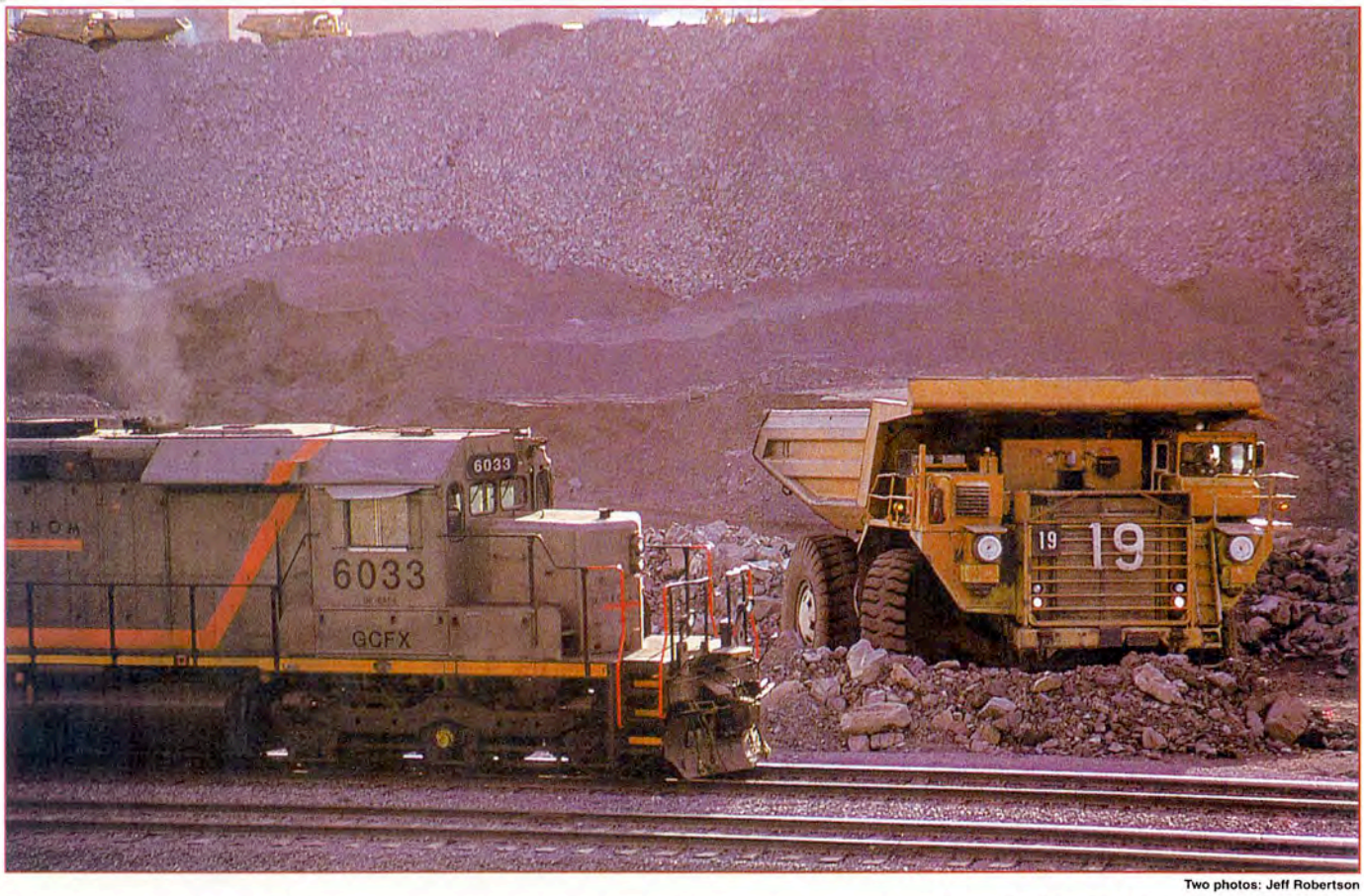
In 1996 Cardinal River and Gregg River loaded 6.5 million tons of coal, while 2.5 million tons were shipped from Coal Valley, nearly half of it westbound. The financial crisis in the Pacific Rim in early 1998 may reduce the demand and price paid for metallurgical coal by the Japanese.

Operations

There are three scenarios for coal train operations. Empty unit trains from Thunder Bay, known as train No.785, are staged in the Edson yard. Local crews take the train up to Coal Valley for loading, usually bringing it back within twelve hours.

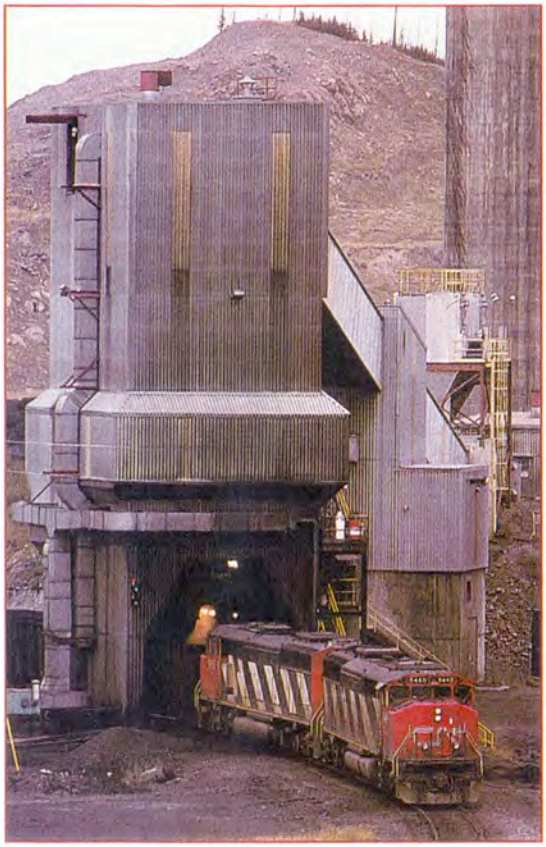
All trains of empties from the Pacific coast arrive at Holloway. Those bound for Coal Valley (Nos.788 and 798) remain intact, while the trains headed up the Mountain Park mines are broken in half by an Edson crew taxied to Holloway. They take the first cut of 50 to 55 cars up to either the Gregg River (No.770) or Cardinal River (No.790) mine for loading, which takes up to six hours. The timing for ordering the crew for the second cut roughly coincides with the anticipated completion of the loading of the first cut. This usually results in a meet somewhere up the Branch. Once both loaded cuts of cars reach Holloway, the second crew normally re-assembles the two sections into one train. A crew taxied in from Jasper couples the locomotives onto the train for its journey west. Trains run to the coast and back on a 4-day cycle.

With the recent construction boom in the West, the Inland rock trains have been running up to six times weekly. Fifty-car rock trains stop at Leyland only long enough to make a phone call to the Inland quarry supervisor to confirm that a train is available for loading. The train then runs to Cadomin, where the units run around the cars on the siding, then back the train to the far west end of the loading tipple. Once the cars are tied down the units are uncou-



Two photos: Jeff Robertson

A MINE HAUL TRUCK EYES *GCFX SD40-3 6033 (originally CN SD40 5120) near the loadout at Cardinal River on December 27, 1997. Train No.770 works the Gregg River loadout on October 18, 1996, with SD50F 5440 on the point (below). The foundations for the demolished three-stall engine house are evident at Coalspur siding as train No.771 with Dash 8-40CM's 2442, 2443 and 2454 await a "down train."*



pled, the safety switch east of Cadomin is set and they return to Leyland, where the crew takes it easy in the company bunkhouse next to the former depot. The empties are connected to an air line which is used to activate the brakes on the cars are which spotted under the tipple by gravity. The average 50-car spot is loaded within four hours, whereupon the crew is notified and the units retrieve the train, moving it down into Edson. An Edmonton crew takes over for the move east to the Inland Cement plant at Bissell.

Trains run to the Bryan Spur gas plant (No.706) bi-weekly to load granulated sulfur which is moved to Vancouver in 100-car unit trains via Holloway.

The Edson Switcher (No.549) departs Edson on Thursday afternoons exchanging empty and loaded OCS ballast cars at Inland's quarry near Cadomin and at CNR's Leyland ballast pit. Sometimes it also ventures onto the Bryan Spur to perform minor switching at the gas plant.

The problem is not so much getting empty trains up the Coal Branch as it is getting the loaded trains down safely. Trains on the Luscar Spur are restricted to 15 miles an hour while those running between Leyland and Coalspur must not exceed 20 mph. The balance of the line is 25 mph track with many permanent slow orders. Meets are frequent, with all but Shaw siding accessible by reasonable public roads. The scheduled 1999 opening of the Cheviot Mine will add yet another dimension to railway operations on the Branch.

Chasing the Coal Branch

Even without hard information about operations, prospective chasers are virtually assured of at least two trains daily in each direction. A scanner and some familiarity with the line are recommended to get the most out of each situation. A copy of the *Canadian Trackside Guide* (Bytown Rail Society, Inc., P.O. Box 141, Station 'A', Ottawa, Ontario K1N 8V1 Canada) will prove helpful.

Both portals of the Robb tunnel (MP 33.4) are accessible. To get to the west portal, take Mile 34 Road east from Highway 47 and walk in from the grade crossing. To reach the east portal from Highway 47, take the south access road (49th Avenue) east into Robb, bear right at the fork, past the

Who's Who on the CNR's Alberta Coal Branch

Train No.	Origin-Destination	Commodity
549	Edson Switcher	Switches Edson yard, then to Cadomin and Leyland pits, ordered Thursdays 10:00 a.m., but also runs "As Required"

All other trains run subject to prevailing traffic requirements. All trains retain their main line identification numbers regardless of their direction on the ACB.

706-707	Petro-Canada Hanlan-Robb gas plant (Bryan Spur) to Vancouver	Granulated and Molten Sulfur
724-725	Inland Cement Cadomin to Edmonton (Bissell)	Limestone
770-771	Leyland to Vancouver (Neptune)	Coal
784-785	Coal Valley to Thunder Bay	Coal
788-789	Coal Valley to Vancouver (Neptune)	Coal
790-791	Cardinal River to Vancouver (Neptune)	Coal
798-799	Gregg River to Vancouver (Roberts Bank)	Coal

Typical power on the Coal Branch (1998): Dash 8-40CM (2400-2454), Dash 9-44CWL (2500-2602), SD40-2(W) (5241-5363), SD50F (5400-5459), SD60F (5500-5563), mixed and matched. By mid-1998, expect to see most trains powered by the distinctive gray SD40-3s, leased from GEC ALSTHOM AMF Transport Inc. (GCFX 6030-6079). Switchers are powered by a pair of GP9RM (4000-4024) or GP38-2 (4700-4810), depending on the units assigned to yard job.

Radio Frequencies: 160.485, 161.025, 161.415

Bryan Hotel, turn right onto Valley Road, cross the tracks, then right at Balkan Drive; keep your eye out for the access road to the track on the right-hand side, immediately after the hair-pin turn. Including the short walk, allow about twelve minutes from the highway to the portal. An intermediate signal on the west end of the tunnel is visible through the tunnel and warns of approaching northbound trains. Do not enter the tunnel and watch out for bears!

Access to the three mine and the Hanlan-Robb gas plant load outs is limited. The Cardinal River and Gregg River sites are easily photographed from a public road. Responsible visitors are welcome at Inland Cement's Cadomin operation, but only if they ask permission at the main office. Safety boots are necessary and a limited number of hard hats are made available.

Since workers generally commute from Edson or Hinton to the mine sites, there is only a sparse local population, supplemented considerably in summer by cottagers, fishermen and campers. Paved and gravel highways parallel much of the railway, and the old logging roads lacing the foothills provide additional opportunities for photography. Portions of the Coal Branch are quite remote, necessitating discretion when traveling the back road between Coalspur and Leylan, designated as Highway 47, which can sometimes become impassable during inclement weather. Be prepared for rain or snow at the higher elevations and always carry a good spare tire.

Snacks and fuel are available at Robb and Cadomin, the latter at Jacoby's Mountain Road Grocery Store whose Hole in the Wall Cafe also serves one of the best burgers anywhere, contrary to the "eat here and get gas" noted on the sign outside.

The Coal Branch is a line for all seasons. In the spring the mountains show off their snowy flanks; in the summer the foothills are clad in lush green forest, then in the fall, dappled with the yellows of the larch and poplar.

In early 1998 CN and GEC ALSTHOM AMF Transport, Inc., of Montreal signed an agreement for the maintenance of 50 locomotives dedicated to western coal service. Shortly thereafter CN's upgraded SD40-3s, in their distinctive gray livery, began appearing regularly on westbound coal drags.

If nothing else, the Coal Branch provides an interesting diversion for a day or two before going on to the mountains. It is more likely however that the ACB's bewitching scenery and the severe grades that test man and machine will cast their spell and the CN's Coal Branch will become the focal point of the trip.

Les Kozma