



Van opened to show office in rear, etc.





Colman fills van tank at Mott and chats with Peavey Manager, Joe Munch, "biggest NP customer on branch."



Tractor on highway with NP bridge in background.

Van parked outside Elgin depot.

Heart of the new service concept is a bus-type van fully-equipped as an office. And with all due respect to the countless agents who have manned the hundreds of stations on NP's system for close on to a century. the company is now expending more effort, through the use of these men and vehicles, to help the agents do a better job for the railway than ever before. It started to get off the ground when Norm Lorentzsen, operating vice president, established a three-man committee to work out the details of the program. These men — Dick Mossman, assistant to vice president — planning; Bill Taylor, freight traffic manager, and Darrell DeMars, assistant supervisor of station service in the transportation department, all in St. Paul — put their heads together and came up with the working plans.

Initially, they got up a manual and a training program for the agents selected. Then they went out into the field and helped these men to get their feet on the ground in what is a whole new way of doing an agent's job. Now the project is well established and plans are in the mill to inaugurate the service on several other Dakota branches and a few in Minnesota.

Economics is a part of the picture, of course. But the up-to-the minute, personalized service that's possible under this arrangement make it a natural for an up-up-and-away company like NP. As Dick Hance of the NP-GN audio-visual department would say, "It's got grahtz!"

Colman Quill and his co-agents on these vans function in so many different areas of railroading it makes one wonder if some kind of new title shouldn't be created for them. Know what they do?

They sell NP, of course. But they've got to have a flair for public relations, in the first place. So they can get inside the customer. And they've got to know about traffic. That makes them one kind of salesman. Transportation service, too. Which is selfexplanatory. And operating matters. How the railroad is run. Accounting. Talk about records, financial and otherwise!

The manual capsulizes it this way: The objectives of the Direct Service Agency are: 1. To provide for closer and better customer relations. 2. To improve service to the customer. 3. To intensify solicitation of traffic. 4. To improve equipment utilization. 5. To improve operating efficiencies. And it goes on.

"Basically, duties of the DSA will be the same as a single agency's duties; i.e., preparing bills of lading, waybills, OS&D inspections and reports, car orders, yard checks, grain door inventories, freight collection where applicable, etc. These duties," it continues, "will normally be performed in the territory, and duties performed at the base station will include demurrage records, on hand reports, abstracting where applicable, maintaining cash book, remitting cash collections, compiling various accounting and station monthly reports, etc."

Using the van as his office, Quill and the others make daily or frequent calls on customers, picking up bills of lading, car orders, and performing other duties as the prime Northern Pacific representative at the stations they serve.

On the Wednesday he was accompanied by a GO! rep, Colman was making those calls on his customers. Practically all of them knew him almost as well as a member of their families. Because the Mandan South Line is where this new breed of rail cat has made his life. He started at Flasher. And that's where he was when he married Violet Ouill, who's a teacher at New Leipzig high school. Most recently, Colman was a dual agent for New Leipzig and Burt. And the Quills make their home with their two daughters (remember Beatrice. the NP scholarship winner?) at the old depot in New Leipzig.

This is grain country, this Mandan South territory. So the men Colman called on were principally elevator managers for PV, GTA, Birdsall, etc. And while the PV plant at Mott is really Don Whiteman's call, the DSA usually pulls in there to fill up the van'stank with gas and have a friendly chat with Joe Munch, Peavey's manager, who happens also to be NP's biggest customer on the branch.

And so it went from station to station. Checking on car needs. Giving another customer a couple of numbered metal strips to seal the doors on a car of wool he was shipping. Calling back from Flasher to Whiteman at Mott to give him the car orders for transmittal to St. Paul. But Tuesday and Friday are his biggest and most demanding days, in a way.

Those are the days the local heads out of Mandan and goes down to Mott and back. Colman works ahead of the train, lining up industry switching and leaving waybills for the outbound movements for the conductor to pick up. He likes to wait for the train and make sure everything gets moved, too. The way the customer wants it. And all the while his eyes rove over the countryside. His mind works on material for the next crop report, issued by the agricultural development department. He doesn't know Barbara Albrecht in Ken Cook's office, but she types up the pertinent information he gleans from the rolling waves of grain and his elevator customer-friends and other sources. Come winter, that's one chore he won't have to do. But life won't be any easier.

Grain stored in bins might be moved if the price is right. The train still runs bi-weekly and the snow doesn't help when he has to keep pace with it. But he winks and says the heated van does make it easier (warmer) to check on cars on sidings, sometimes.

Yup. Colman Quill and his counterparts are part of a whole new way of railroading. But that's working for Northern Pacific and people like them. We're all up to our ears in the goingest transportation company in the business.



Don Whiteman, base agent at Mott.



Darrell DeMars trys out "office" chair.

The following story appears in GO! through the courtery of the Seattle Post-Intelligeneer. and the author, free-lancer Peter Hemp. It ran in the May 25 edition of the P-1. It ran in the May 25 edition of the P-1. Bailroads are run by People

John Phillips



There are faster ways to get to Montana - but we weren't in a hurry.

Remembering from boyhood the excitement of a train ride, it somehow seemed unfair to raise three children who had never traveled far enough on a railroad to eat in a diner, sleep in a berth or wait for daylight in a long dark tunnel.

We had discussed destinations with less interest than what route we would take out of Seattle. Time tables and maps on the floor, we sought an overnight trip with a mid-day departure. Billings (1,009 miles) fitted our wishes ideally.

The well-known Vista Dome North Coast Limited leaves King Street Station every afternoon at 2:30. Three diesel engine units eased our 10 cars

by Peter Hemp

quietly and smoothly south to Auburn, then up the Cascade slopes and through two-mile Stampede Pass tunnel. Seen through glare-proof dome car windows, mountain country is wild. Better than by auto or air.

Some things though are missing from train travel I had remembered. The diesel whistle, when audible, had an unfamiliar ring. A stewardess called out points of interest on a public address system piped to every car.

RAILS

But much is still there. The rush of air and clack of rails in the vestibules between cars. Shoes shined at night by the sleeping car porter. A fresh rosebud on each table in the diner.

Most of our time was spent in the "Skylounge" dome car with a 360degree view of a 60 mph panorama, facing seats for conversation and a rack of folders for reading ("Shooting tips for camera fans," "A brief history of the N.P.," "Old west trail adventure map"). About five in the afternoon (Cle Elum) the dome car steward placed before us assorted cheeses and crackers, then took drink orders.

Dinner (lamb roast, pork chops, hamburgers) was served through the Ellensburg-Yakima canyon. A giant potato, N.P.'s trademark for many years, cradled four pats of butter. A children's menu was offered "for keeps" by dining car steward Wayne P. Smith who has to be N.P.'s friendliest employe. Dessert (a la carte) was sherbet, ice cream and fruit. In contrast to the silver service and white linen, most diners were casually dressed. The views were beautiful. The pace pleasingly slow. It took us nearly two hours to eat. A record for our family.

At Pasco we streiched on the station platform while the Portland cars joined our caravan east. Spokane was the last glimpse of anything recognizable.

COMPARTMENTS

Upper and lower berths are no more on the North Coast. Passengers now fit themselves into compartments called "roomettes" with private toilet and basin. One sleeping car is comprised of "bedrooms," two of which open into a "suite." This arrangement produced for us four berths not unlike twin bunks, though roomier, with two sleeping fore and aft, two crosswise. The suite contained large picture windows, two lavatories, a reclining chair, ample closets and facing seats. (our son, 16, slept down the aisle in a roomette.)

I beat the family to breakfast after a restful night. Over the Missoula paper I had hot cross buns and black coffee. Outside we passed through Bearmouth, Mont., and its two-story wood frame hotel, closed.



Christine Hemp

Playing cards with Stewardess Pleasant.



Abandoned ranch house near Billings.







Engineer Nelson

erNelson

Fireman McConnell

Most of my trip notes were made during the 94 miles between Butte and Bozeman - two and a half hours - when I was privileged to ride (one of the "extras") in the locomotive cab. As we climbed to a 2.2 per cent grade over the Continental Divide of the Rocky Mountains. I pulled the whistle cord (two longs - one short - one long) at several crossings and visited with cigar-smoking engineer Elmer Nelson (27 years with N.P.) and fireman J. E. "Mac" McConnell (25 years). We traveled 20 to 30 mph through tunnels and turns over the 6,329-foot summit, but rolled comfortably at 70 on the straightaways.

The fireman, seated on the left side of the cab, calls to the engineer, "Clear block!" as he sights semiphore signals far down the track. Now and then the engineer, hand to the throttle, tests with the other the air brake pressure. This is noted with a deafening shriek in the cab. Nelson explains that about 30 minutes ahead of us is a track supervisor on a small speeder, checking for fallen rocks in our way.

ON TIME

On time to the minute, we slowed to a gentle stop at the Billings station, piling off into brilliant sky and sunshine. Later in the comfort of the Northern Hotel, there was time for some reflection.

After 600,000 miles in airplanes, I couldn't help but look for contrasts. Railroads don't wear their personality on their sleeve. It is below the surface. It is built on generations of tradition. Porter Jimmy Coleman remembers his trip on the first Vista Dome. Traveling engineer John Phillips' father and grandfather worked for Northern Pacific. If occasionally you have to dig for that personality, it is well worth the discovery: A feeling of what it was once like to travel — with people running the show.

Early the morning of departure on the return trip I called to inquire about the Westbound, due in at noon. The Billings agent said, "Well, he's a little late out of Glendive this morning, but I expect to hear from him again in about an hour."

Railroads are run by people.



Charlie Hunkins



Don McMahon



UILLISTON These GO! people track the biggest game of all...oil!

You've heard it called "black gold." More often, just plain "crude." Whatever, it's still oil. And in many places all over the world, these words set men's hearts beating faster. Like the gold prospectors of '49 and '98.

Here, on the Northern Pacific, oil is another of those things that make this a railroad that's bigger than a railroad. Not that anyone is blasé about it. Even though the company has had oil income for more than 50 years. A half-century? Right. Discovery No. 1 was made on NP land in Park County, Wyoming. Back in June, 1918. Three years later we had a subsidiary known as the Absaroka Oil Development Company. Its job was to make a systematic geologic survey of company lands in search of more.

Some additional producing wells resulted. This time in Montana. As late as 1951, these older wells brought in about \$655,000 from lease royalties. Gene Thornquist

Then, the real blast-off. Williston Basin. Initial discovery made near Tioga, N.D., some 60 miles away from the nearest NP lands. But on July 13. Shell Oil told of a discovery near Richey, Montana. And this was on land to which we had retained mineral rights, including oil and gas. So we were off to the races. Without STP. too.

In November of that year, Texaco brought in a well on land covered by a permit from the company. In the Pine Unit area some 10 miles southwest of Glendive. Other wells at widely separated points on noncompany lands were sunk in this

Well, just after you get off the elevator on the fourth floor you run up against receptionist Mary Fine. She can get you in to see George and the rest of the group. They include Charlie Hunkins, assistant veep, who is the petroleum engineer for the outfit: Earl Whitaker, production manager; Bill Beam (no relation to Jim), land manager; W. H. "Dub" Maloch, exploration land manager, and John Carlson, who's manager of accounting.

Their back up team includes Mrs. Ruby Armstrong, George's secretary. Then there's Bill McMahon, senior draftsman, who's veteran of them all



vast basin where NP owns well over 3 million acres of land surface and mineral rights. The potential looked great. So we hired an oil consulting firm to help lay out a program.

As a result of that firm's efforts, our company organized the oil development department, headed now by Vice President George Washington. That was in 1952, when five new discoveries were made on NP lands. Texaco was responsible for three of these. Shell for two, and all five were in Montana.

Today, the railway owns some 5.5 million acres of oil and gas rights in the three states mentioned, as well as in Washington and Oregon. (But there's no production in these last two, although the potential is there.) Headquarters for the whole operation are in the Midland Bank building at Billings. Where 23 people make things go in offices on the fourth and fifth floors. What do they all do?

John Carlson

Throughout geologic time, much of North America was flooded by comparatively shallow seas. In these, marine life lived, died and was buried under layers of what geologists call "loosely consolidated sediments."



with his 24 years in the company. Bill is assisted by draftsmen Harry Michaelis and Bill Frisbee.

Ward Langstroth, geophysicist, has a team of geologists made up of Jerry Doroshenko, Don Meiss and Keith Mohl. Ward is the exploration manager for the department. And that's not all of them, of course,

John Pulley works with Charlie Hunkins. Bill Beam's secretary is Davy Dewing, who studies law in his spare time under NP's educational advancement program. Gene Thornquist assists Carlson, whose secretary is Ada Carlson.

Marge Hartung performs secretarial duties for Maloch and Whitaker. Another steno in the office is Delores Isern. But she's not the last of the distaff group, because there's Rose Ann Dira, who keeps all of the leases, other documents and files in good order. And we're not overlooking Carl Peters, either, A recent bridegroom, Carl, oil department clerk, is the son of Billings' postmaster.

That's the line-up. What they all accomplish together is quite a story, which might be better understood if it's prefaced by a bit of info on the history and formation of the product they work with. Oil. They tell it like this:



The accumulation of sediments, dead organic remains and entrapped sea water came under increasing pressure and temperatures. This compacted and cemented the sediments into rock and changed the chemical composition of the organic matter to make oil.

Newly-formed droplets of this fossil fuel instantly began migrating out of their birthplaces on the sea water in the rock pores until the oil was trapped or lost at the sea floor or ground level. Oil traps themselves were formed in a variety of ways. Names of these, familiar to all geologists, are: anticlines, pinch outs, truncations, fault traps, and buried reefs.

Anticlines are sort of arches with the porous rock layers containing the oil bounded above and below by nonporous layers. The oil rises to the top of salt water and lies in the dome of the porous layer, much like a liquid held in a sponge's pores. In a fault trap, vast sections of the earth's mantle were split along planes and either rose or fell, bringing a porous



Bill Beam and Dub Maloch

layer into contact with the face of a non-porous layer. Again, gas and oil rose to the top of the faulted layers and were trapped.

Similar situations developed in reefs buried under sedimentary layers. Such layers also pinched out tilted layers or buried the exposed porous layers that may have been parts of worn down anticlines. But whatever the case, gas and oil did not form pools in the accepted sense. They filled rock pores. So when a well is sunk, it really acts as an escape valve for entrapped petroleum products. Biggest problem is finding the traps.

So here we have the Williston Basin. Loaded. With lots of that black stuff. Oughta be able to sink a shaft almost anywhere and make a strike. Right? If only that were true. Fact is, of 121 wildcat wells drilled on NP properties alone in 1968, all but 11 were drilled on one formation and all were dry holes. What does George Washington say about this?

"An oil trap is an elusive target for the oil explorationist," he says. "Not only are traps buried, but in many cases a trap is successfully located and found to be filled with salt water instead of oil or gas.

"Over the years," he goes on, "the oil industry has developed a whole battery of oil trap location techniques which fall into three broad categories. Surface, subsurface and geophysical methods."

The first of these includes photogeology, or the study of aerial photos; surface mapping of strike and dip, and outcrop studies of lithology and thickness. (Lithology is the study of rocks, dealing with their formation in terms of structure, composition, color and texture.)

Subsurface methods bring into play the core and sample studies of drill holes and a scrutiny of the mechanical logs thus obtained. Geophysical studies involve the use of graviometers and magnetometers as well as seismological instruments.

Surface methods, of course, make use of materials a geologist can get without drilling. Photos, for example, can reveal surface displacements



VP George Washington



caused by faults and uplifts and permit study of exposed rocks for porosity, oil shows, thickness and lithology. From such studies, and others, he can predict favorable trapping conditions beneath the surface and select targets for drilling and the resultant subsurface information acquired may then be studied.

Where exact locations, shapes and extents of subsurface traps are not evident from surface or subsurface investigations, geophysical methods are used. "The seismic tool is most commonly called into play," according to Ward Langstroth, who's a seismologist, too, "because it can define structure ahead of the drill with great precision." Langstroth and his three men have sufficiently varied backgrounds in geology to permit the department's use of any and all of these traplocating techniques. And they get the information themselves, as well as from other companies with whom they've been working for many years.

The exploration section of the department concentrates its prospect hunting in the land grant strip and adjacent areas in Montana, western North Dakota and northern Wyoming. It's in this broad region that its files are most complete because of all the drilling and exploration studies that have been conducted on NP ownerships. But our exploration is carried out on acquired properties as well as our own. This is where Dub Maloch comes in.

He's responsible for and supervises all land records. This covers lease acquisitions in addition to the administration of company lands. Bill Beam's bag is negotiating with other companies on NP properties. That makes him, essentially, a land man.

A flexible policy applied to activities of the department permits negotiation of any of the types of contracts which are customary in the industry. These can be roughly termed leases or operating agreements.

Oil development has its own lease form. Where a company will commit to drill a well on our land to a formation which we feel will test a prospect, a lease will be granted free of charge. Such are usually limited to 5,000 acres and, in most cases, call for a royalty to NP of either 17.5 or 20 per cent.

In the event of production, a lessee is required to continuously develop the lease by being allowed no more than 30 to 90 days between wells, whether producers or dry holes. Undeveloped tracts drop from the lease when this continuous development operation is halted by the contractor.

There are also bonus-type leases where an operator wants acreage without a drilling commitment. A bonus payment based on acreage is charged in lieu of royalty, and can vary from \$3 to \$20 per acre. This lease generally runs for five years and requires an annual rental of \$1 per acre.

Operating agreements differ from leases in the way income and expenses are shared. Under a lease, NP gets royalty without putting up any cash. But under operating agreements, we enter into full-interest, reduced-interest or carried-interest arrangements where we pay all or part of the drilling and production costs. The working interest is what's left after royalty has been deducted. However, our royalty is not less than 12.5 per cent under any agreement.

In a full-interest type, we pool our acreage with other owners or leaseholders and pay our full share of costs and receive a full share of working interest production from the entire area of a prospect. Reduced interest agreements require us to decrease our proportionate share of the ownership within an area for a consideration from another company. And so it goes. There are other kinds of deals made. But, by and large, what counts is that we get revenue from oil or from leases, options or operating agreements.

In 1969, our estimated income before deductions for expenses, taxes, etc., will be in the neighborhood of \$8,424,000. Since our oil department was established, our gross revenue through May of this year has come to more than \$101,310,000. And that's why those 23 GO! people are out there in Billings.

Of course, there's more to getting oil out of the ground than is spelled out here — such as secondary recovery methods by which various kinds of pressure may be injected to boost production from a well. But this is the big picture of a big operation. That couldn't get off the ground — or out of it — without these people.



George with Hunkins, Whitaker and Ward Langstroth.



Ruby Armstrong





BY ACT OF CONGRESS, THEY BUILT A RAILROAD THAT BUILT A NATION

We get it thrown at us a lot. By mayors and governors, township board members and congressmen, and the man on the street. Most of whom, unfortunately, don't know the whole story.

"The Northern Pacific got millions of acres of land from the government



free. And now they're making millions of dollars on it and still want to discontinue such-and-such a train."

Perhaps, even, there are some NP people who think or believe the same thing. Or make the same unwarranted conclusion. But the plain fact is, that land grant was no gift. It took nothing from the taxpayer. And if the truth is faced squarely, the fair-minded will have to agree with Charles Russell Lowell that the government really made a pretty good deal.

What did Lowell say? Only that "It may be found that even with the most liberal construction of the grant, the government has not been so 'munificent' as sharp." He didn't say that yesterday. He made the remark 110 years ago. Let's look at the outcome of his prediction.

By an Act of Congress dated July 2, 1864, the Northern Pacific Railroad company, our predecessor, was chartered as a federal corporation and authorized to build a railroad and telegraph line from Lake Superior to Puget Sound "by the most eligible railroad route within the Territory of the United States," on a line north of the 45th parallel. In the course of time, the company has received 39,125,125.85 acres of land under the grant which the charter provided. Needless to say, most of it was sold to build the railroad. The first was sold in May, 1872, and by 1921, more than 35 million acres had been disposed of. The net return before taxes, from these sales was \$134,139,000. And we built a railroad.

But it wasn't all that easy. No, sir. The charter also said we couldn't mortgage any of this land. Which made it impossible to get money. So, finally, Congress gave the company permission to sell bonds and put a mortgage on it. This wasn't very succesful either.

The record shows clearly that the banking house of Jay Cooke went broke in its efforts to sell those bonds. And few people know that Henry Villard, who was serving as president when the road was completed in 1883, received no salary. Too, he sunk his entire personal fortune into the venture to keep it alive after that. All to no avail. And what of the government?

Well, it had 1.5 billion acres of land west of the Mississippi before any of the "Pacific" lines were built.



Montana - View of Glendive in the Yellowstone Valley.



Henry Villard



This map, originally drawn to show the extreme outer limits of areas within which some land might be granted to railroads is frequently reproduced in American History texts with captions describing it as showing lands actually granted — thereby exaggerating by approximately four times the area received by railroads.





The Federal Government granted lands to railroads in alternate sections, retaining the sections between. It is impossible to present this "checkerboard" pattern on so small a map, but the shaded areas show the approximate locations of the land grants, and are in proportion to the amounts actually received by railroads.



Dalrymple bonanza farm in North Dakota.



Gen. George A. Custer and scouts.

agricultural and industrial development immeasurably. It accelerated statehood for many territories and made a whole country out of these United States far ahead of the pace at which it had been proceeding prior to rail construction westward.

Oh, yes, Charles Russell Lowell, you hit the nail on the head when you said the government was more sharp than benevolent. With hindsight, the fair person will concede that we had some pretty smart people in "the establishment" in those days. They did what many felt couldn't be done. And Northern Pacific, in its part of the country, had a lot to do with it, too. Didn't it?

And it valued those lands at \$1.25 per acre. Yet there were no takers. Because there was no railroad. No reliable form of transportation, in fact. And most thought it was just about uninhabitable. So Congress devised the land grant scheme.

"Get railroads out there," it said, "and people will go west." And that's what happened, eventually. But to make sure it lost nothing, the U.S. increased the value of all sections of land neighboring land grant sections to \$2.50. Good thinking. Good business in anybody's book. At the same time, they fixed it so land grant roads had to haul government goods and people and mail at reduced rates.

NP records don't reflect just how much the government benefitted from our own land grant. But by extension from what figures are available, it's safe to say the taxpayers were saved more than \$50 million 'on the NP alone. However, the truly astounding figure comes from the fact that other railroads who wanted to participate in government traffic equalized their rates with the land grant roads and the taxpayer benefitted to the tune of \$1.25 billion from the beginning up until the land grant reduction requirement was lifted by Congress on October 1, 1946. And Congress itself admitted at that time that, on the basis of the deductions compared to the value of the 131 million acres involved in rail land grants, the U.S. was repaid 10 times over for the land!

The land grant method of developing the country, then, has to be called highly successful just on that basis. But, in addition, it converted non-taxable land into taxable property, resulting in millions of dollars paid to local, state and federal governments. It created billions of dollars in new wealth. It speeded up

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Land Grant lands sold in Washington State helped speed agricultural development immeasurably, especially in the "Big Bend Country." The company's agricultural, traffic and operating departments still pursue a course aimed at developing the full potential of our areas. NP regards remaining Land Grant lands as a sort of public trust. Maintaining it, as this western Montana tree farm indicates, to provide a continuing impetus to local and national economies.