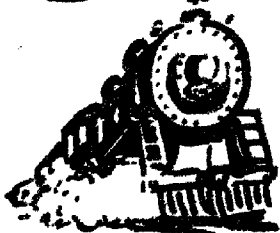


the DIVISION BULLETIN BOARD



PACIFIC NORTHWEST REGION
NATIONAL MODEL RAILROAD ASSOCIATION

"FEB 27th"
OAKRIDGE
AUDITORIUM
1:00 P.M.
BRING THE
WHOLE
FAMILY

SKETCH
MAP
of
PEOPLES REPUBLIC
OF CHINA
Showing
ROUTE TAKEN BY
TRADE DELEGATION
FROM BURNABY B.C.
OCTOBER 1976

TRAIN TRAVEL
++++
APPROX. 1200 MILES

+ PLANE
TRAVEL APPROX.
500 MILES IN CHINA



(2)

BULLETIN BOARD

The BULLETIN BOARD is the official publication of the 7th Division of the Pacific Northwest Region of the National Model Railroad Association and is mailed free of charge to all members of PNR residing in the 7th Division. Subscription rates to all others is \$2.00 per year which comprises approximately six issues.

The BULLETIN BOARD is published by the Standing Committee of the 7th Division PNR, NMRA and all correspondence pertaining to this publication should be forwarded to the Editor, as follows:-

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3.

Vancouver HO Club secretary, Gordon Richardson, reports that the same executive committee was re-elected for another one year term. Plans are well under way, with a tentative start in the very near future, for the long talked-about extension on the eastern end of the layout in the C.N.R. Station clubroom. Plexiglass is to be installed on the front of the layout to keep restless fingers and elbow supports out of reach. Open House on the last Friday of each month, 8 to 10 P.M., is still bringing the crowds for a full house.

Another five weeks has slipped by and once again it is time for the next issue of the Bulletin Board. Our last Clinic on January 23, 1977 was a participation clinic using STYRENE for the construction of a model of the C.P.R. Section House and Yard Office located at Slocan, B.C. on the old Kettle Valley Line. Frank McKinney, with the capable assistance of Brian Pate, led us through a good show, with the 57 participants attesting to the fact that it was one of the better participating clinics to date. The big turnout was not anticipated, consequently, some of the later arrivals were not able to obtain a kit. However, with a little improvising, everyone attending enjoyed an educational afternoon.

Our next Clinic is slated for February 27, 1977 at the Oakridge Auditorium when Fraser Wilson will show some 250 slides, and give us a commentary, of his recent business trip to Hong Kong and the PEOPLE'S REPUBLIC of CHINA. Fraser wishes it to be known that these slides are not ALL railroadiana, but also portray the People of China, their industries, culture and schools. This should be a very interesting and educational program, so bring your whole family along with you to enjoy one of the benefits of being a dues paid-up member in P.N.R..

A mention of the word "DUES" brings to mind that there are quite a few delinquents in the 7th Div. on the last membership list run off by Jeff Tague and submitted to your Standing Committee. Please take a few minutes to check your Membership Card and ascertain that you are paid-up. It is difficult enough for me to try to edit the Bulletin Board without any assistance from the membership, so, consider how much more difficult it is for the P.N.R. and N.M.R.A. to operate unless we all keep our dues paid up to date. Let's see some substantial improvement in the next list from Jeff Tague, --- it's entirely up to YOU. Your dues money can be mailed to

Jeff Tague
P.N.R. Office Manager
303 Anchor Loop
SELAH, WA. 98942

or you can hand it to Tom Beaton, our Superintendent, or to Ken Griffiths.

After much deliberation your Standing Committee has committed themselves to host the '77 PNR DOGWOOD CONVENTION and AWARDS BANQUET on Friday, September 23rd and Saturday, the 24th at the Sheraton Plaza 500 Hotel, 12th Avenue and Cambie St., Vancouver, (In the LAND of the ROYAL HUDSON), Beautiful British Columbia. Now that the date and location has been confirmed, your Committee can proceed with the chore of working out the other details that will bring you a program worthy of the 7th Div's good reputation. Keep your ear to the rail for further details in our next issues of the Bulletin Board.

A word of advice to those planning to attend the meet in Kamloops on April 9th 1977. You are urged to arrange your accommodations at the earliest possible date for on this same weekend there is a Hockey Tournament scheduled, and likely no last minute bookings for Hotels and Motels. Ken Vere has recommended the Thrift Inn out in Valleyview, but it has only 52 units (First come, first served!). The rates are very reasonable - \$12. Double, plus Tax per night, their address:-

For Registration:-	James Barker	Thrift Inn
	#605 - 373 Battle St.,	2459 Trans-Cda-Hwy 1 East
\$8.00	Kamloops, BC, V2C 2L5	Kamloops, BC., V2C 4A9

See you 1 P.M. Sunday, February 27th at Oakridge --- Bring your Family ---
Remember.....Paid up members are admitted FREE - - - Others please donate at the lobby entrance door.
A.J.

P.S. Not a word have I had from anyone in Kamloops wanting to plug the Apr.9th Meet.

Last summer, during our vacation, Marion and I visited the HOMESTAKE GOLD MINE and found it to be so interesting, that I thought the membership of the 7th Div. might enjoy reading of this operation. True, it doesn't have very much railroading news, but, a slight change of pace might be condoned.

We arrived in the old gold-mining town of Lead (pronounced 'Leed'), in the Black Hills of South Dakota. This town is the location of the currently operating Homestake Gold Mine which started with the Homestake Claim that was staked on April 9th, 1876. On November 5th, 1877 the Homestake Mining Company was incorporated, almost twelve years before the south half of Dakota Territory was admitted to the Union as the State of South Dakota.

In 1880 the first railroad in the area was built by the mine to bring cordwood fuel to the mills, shops and hoists also timbers to the mine. In 1902 the railroad was sold to the Chicago, Burlington and Quincy Railroad. (Today the Burlington Northern Railway operates a branch line from Edgemount, S.D. to the end of steel in Lead.) In 1901 the first compressed-air locomotives were purchased and operated underground to take over from the mules and horses.

Until about 1900 the ore was mined either by the open-pit or square-set stoping method. A 'stope' is an underground opening in which ore is blasted and broken, and stoping is the actual removal of the ore. Square-set stoping consists of using 4 large timbers 8 feet in length, held apart by smaller timber caps and ties. As a block of ore 6X6X8 feet was mined out, that block was replaced by a timber square-set. Around 1900 as the mine deepened, it was apparent that the ore bodies were especially strong and could safely stand unsupported for long periods of time. As a result a method known as shrinkage-stoping was started. This method refers to a system where the broken ore remained in the stope for the miners to stand on as they proceeded upwards to the level above. Upon completion of the stope, all the broken ore was removed and the stope refilled with waste rock from other parts of the mine and the open-cut, which was a very slow process. Starting in 1935, the waste sand from which the gold and silver had been removed, was returned to the mine to back-fill the mined out stopes. The sand, mixed with water, is run from the surface through special rubber-lined pipes to the top of the stope to be filled. By adding dry cement to the sand slurry on the top 6 inches of each sand fill pour, it gives the mine crews a concrete type of floor on which to work. In 1945, a new method known as cut-and-fill stoping was introduced. In this system the ore is mined in successive eleven-foot slices. As each slice of ore has been removed, the space is filled with sand and a six-inch cement cap, from which the next slice in the stope can be broken.

A shaft is required for finding ore and for hoisting men and materials between the surface and underground workings, as well as ventilation. The 'Ross Shaft' was completed in 1934, the 'Yates' in 1941, both of which are vertical and are 5,000 feet deep. A 'winze' is a vertical shaft that starts and ends underground. At present there are 4 winzes between the 4,100 and 8,000 foot depths, with a 5th one under way. All the ore and rock is brought to the surface through the shafts and winzes. About 1,000 mine employees are lowered and hoisted each working day. Explosives, lumber and timber, mine cars and steel rails, pipe, air operated shovels, air and battery operated locomotives, ventilating fans, tools of all sorts, air and water hose, steel ladders and tons of cement. In addition to these shafts, there are two intake and two exhaust shafts to provide ventilation to the underground mine workings.

Continued...../6.

Homestake Gold Mine (Continued)

Ore mining operations are connected on 34 levels, from 1,700 to 8,000 feet below ground, spaced at 150 foot intervals, with about 200 miles of workings on the various levels.

Our arrival at the mine touring center was just right to join the 10:30 A.M. guided tour. We were escorted up the roadway to the shop area where we could see the men sharpening the tungsten-carbide bits used to drill the hard, tough rock for placing the blasting charges. 250,000 bits are ground in these shops each year. Also noticed along the sidelines were various types of locomotives and mine cars that had been used underground and were either being repaired or else set aside as parts for future maintenance. The Railroad Car shops maintain and fabricate all the various types of cars used in the mine; the Locomotive Shop takes care of the 53 electric locomotives, 4 trolleys and 17 compressed air locomotives. Other shops maintain some 52 front-end loaders; install and inspect more than 20 miles of main hoisting wire ropes; some 150 autos, trucks, tractors, buses and cranes and the building and inspection of the 12 ore skips and the 12 men and material cages as well as the machine shop and blacksmith shop, which among other fabrications, produces some 400 pairs of switch points and frogs each year.

Located at the top of the hill are two among the world's largest hoisting units, the Ross and Yates Shafts. Each tapered drum, at least 12 feet diameter on the low side and over 20 feet on the high side, has a steel rope capacity of 5,600 feet in a single layer. D.C. motors provide several thousand horsepower necessary to hoist 60,000 pound loads up the almost mile-deep shafts at express speeds. The hoists are operated by D.C. motors from flywheel motor-generator sets which convert AC to DC. The huge, carefully balanced flywheels serve the purpose of equalizing the power demand by storing energy while the hoists are at rest and releasing energy while the hoists are raising ore, men or materials. The cages, which lower and hoist men, materials and supplies, and the skips, which hoist the ore, run up and down in the mineshafts, that extend from the surface of the earth to 5,000 feet below ground, much the same as modern express elevators in city skyscrapers. They require costly signal controls to assure accurate communication at all times. By properly applying the science of electronics and using the hoisting cable as a carrier for the signals, it results in a practical communication system between the moving cage and the hoist operator. It is accomplished by transmitting radio waves along the hoisting cable to the hoist room, thence from specially designed radio transmitter-receiver units on the cage and hoist operators platform.

An intricate underground 18-inch gauge railway system functions on all mine operating levels. Five days each week approximately 6,500 tons of ore are hauled by the railroad to the shafts and hoisted to the surface. In addition a large tonnage of waste rock must be handled, together with a vast amount of materials and supplies for the operations. It is not uncommon to see a 20-car ore train on the move. About 100 miles of track are in active use. About 750 automatic side-dump 3-ton ore cars and 510 1½-ton rocker-dump cars are moved either by electric-storage battery, or compressed air locomotives; and 20 8-ton bottom-dump cars moved by electric trolley. The ore from the railroad dump cars passes through a loading cart-ridge of measured capacity allowing 9 to 10 tons into each rectangular ore skip for hoisting to the surface.

The tour then proceeded down into the mill area by stairway and walkway. When the ore arrives from the mine, a gyratory crusher breaks blocks of ore up to 30 inches in size, into pieces which are less than 4 inches in size. Next, a standard cone crusher breaks these pieces to one inch or less. The pieces then pass over a vibrating screen with openings of one inch.

Continued...../7.

The particles too large to pass through the screen are further crushed by a short-head cone crusher, then move on to screens with half inch openings. Any pieces not falling through the screen are repeatedly crushed until they are small enough to fall through. The ore crushed to half inch is hauled to storage bins in 30-car trains pulled by an electric locomotive. Some of the gold particles in the ore are only microscopic in size and must be ground fine enough to pass through 200-mesh screens, which is finer than the meshes in flour-mill sifting cloths.

The ore is then taken to the rod mills with measured amounts of water added. The rod mills are revolving horizontal cylinders 12 feet long by 6 feet in diameter, lined with heavy steel wear-liners and nearly half filled with hard steel rods, each 3 inches in diameter. As the ore is tumbled, the added water "pulps" the ore and reduces it to less than one-eighth inch size. From here the ore-and-water pulp enters the ball mills, where the eleven foot by 9 foot diameter cylinder loaded with about 80,000 pounds of steel balls $1\frac{1}{2}$ inches to 2 inches in diameter. The pulp now passes into an inclined trough-like machine where a slow moving rake agitates the ore so that the particles that are ground fine enough float away. The courser particles settle to the bottom and are again returned to the ball mill by the rakes. About 750,000 lbs. of steel rods, 2,000,000 lbs. of steel balls and nearly 15 million kilowatt hours of electricity are used annually in grinding ore.

The gold from the ore pulp at Homestake is recovered by a process known as cyanidation. A very weak solution of sodium cyanide is used to dissolve the gold. This process has been used since 1901 and recovers 70% of the gold from each ton of ore. The courser granular sand particles (about 59%) enter the sand plant into large vats. There are 35 vats with capacities of 750 to 780 tons. When the vat is filled with the sand, most of the water is drained off through the bottom. Compressed air is then forced upward through the sand, to provide the oxygen necessary to accomplish the dissolving of the gold. Cyanide solution is then added to the top of the sand. The solution dissolves the gold as it percolates uniformly downward through the sand. Four periods of drain, air and solution, followed by a clear-water wash complete the treatment.

Recovery of the gold from this cyanide solution is made by adding a small amount of very fine zinc powder which is filtered in a filter-press. The powder is then treated in the refinery to produce pure gold. The weakened sodium cyanide solution, with the gold removed, is saved, regenerated and re-used.

The sand, with the gold removed, is then washed out of the vats, collected in reservoirs and returned to the mine as needed to back-fill mined out areas.

The finer more clay-like particles (41%) are treated in the slime plant. In this process the gold is dissolved by cyanide in the conventional methods in large agitator tanks and then absorbed from the solution by particles of granulated activated carbon in suspension in the slurry or pulp. The term "absorption" applies to a surface phenomenon in which gold ions are attracted to the surface of the carbon particles and held there by electrostatic forces. Carbon particles are then screened from the pulp and washed, and the gold stripped from the carbon with a hot caustic cyanide solution, and then deposited by electrolysis on steel-wool cathodes. A gold sponge is formed with the steel-wool which is then later converted to gold bullion in the refinery.

The refinery is a small smelting plant containing furnaces, electrolytic and other special equipment where the pulp from the sand treatment plants and the steel wool gold sponges are processed until pure gold..... Continued...../8.

Among the most peculiar problems of gold mining, apart from the never-ending exploration work and the underground rock pressures that continue to increase with the depth of the mine, is that of the ventilation which is necessary to cope with the moisture-laden air and the continual temperature increases. The rocks just below the surface of the earth have a temperature of 44 degrees F.. This gradually increases until at 6,800 feet below the surface it is 120 degrees F., and over 130 degrees at 8,000 feet. Consequently the deeper levels have necessitated the spending of several millions of Dollars on ventilation programs which included sinking a 6,200 foot air-intake shaft, enlargement of existing shafts, installation of 30 and 60 ton portable air-refrigeration units, more auxiliary ventilating fans, etc.. As it is in 1976, on the 100th Anniversary of the Homestake Gold Mine, almost 900,000 cubic feet of warm, used air is pulled from the mine every minute of the day and night; and an equivalent amount of fresh air enters the workings, flowing through the air-conditioning units to provide comfortable temperatures for the workers at all levels below ground. In the deep, hot parts of the mine the portable 'spot coolers' are mounted on rails to maintain comfortable working temperatures. Each of the 60 ton portable units is capable of air conditioning 30 average homes.

At the end of our tour a bus was waiting to return us to the original starting point. This was really a first-class tour through the Homestake Gold Mine and the Management deserves commendations for their good Public Relations effort.

FOR SALE

Phone 898-5119

18 DAYS
in the PEOPLE'S REPUBLIC of CHINA

9.

By Fraser Wilson

About 18 months ago, Mayor Tom Constable of Burnaby had dinner with the Trade Commissioner for the People's Republic of China, and was invited to convene a group of business men to visit his Country. Since no one may obtain a visa for entering that Country without an invitation, this was a unique opportunity.

The Mayor accepted the invitation and subsequently prepared for a delegation composed of 15 to 20 persons to represent Burnaby. A number of our Business group were given the chance to join the tour, paying our own way, of course.

I am happy to say that although my wife is confined to hospital with Multiple Sclerosis, she was as excited as I was to be included in this "Trip of a Lifetime".

This is what it turned out to be! 19 of us from the Lower Mainland left Vancouver for Tokyo aboard a C.P. Air 747 on October 5th, 1976. We flew over the Aleutians, crossed the International Date Line, and landed in Tokyo 5 PM Oct. 6th. Leaving Tokyo the next morning aboard a Japan Air Lines jet, we flew over North Korea and landed in Peking after a 5 hour flight.....Thus began a memorable tour of this unknown land!

Although their system of Government is so different to ours, we found the Chinese people to be friendly, courteous, and incredibly honest. Their Country is poor, and they admit it, but, in their own way they are improving their lot. The standard of living is extremely low, by our standards, but, they look forward to the future with undiminished confidence.

Our group were of various political persuasions;- an NDP Mayor, a Social Credit MLA and a Liberal Party executive who is an alderman. Those of us belonging to no political party found complete agreement on a number of observations during our trip. The Chinese people regard a world-war as inevitable. None of us could agree with them on this.

Maoism - the worship of the recently deceased Chairman Mao Tsetung is that of a diety. Not only is his picture everywhere, but, his word is spelled out in slogans on the walls of buildings, in every periodical and paper, over the radio, TV, in the schools and factories, theatres and communes. In fact, his "Little Red Book of Quotations" is the bible of the land.

The skills of their craftsmen are unbelievable. To see some of their workmanship first hand at the bench, makes N-scale look pretty crude. The patience of their artists is also awesome. Pictures of exquisite beauty are painted, embroidered and woven as in no other place on earth.

These were some of the things we saw and marvelled at, and I have a collection of over 200 slides to illustrate our trip. Although we were not unduly restricted in our wanderings, I am sorry to relate that I have very few railroad pictures to show. Those that I do have were all taken in transit, but, I can furnish information and descriptions for a number of observations.

The railroads of China are good. Concrete ties, welded rail, steel coaches and modern diesels make rail travel the best form of transportation in China.

Diesel seems to be used mainly for passenger service, with steam reserved for freight. The prototype is American, but, the sleeping cars are European in style. All equipment is built in China.

The map on the cover of the Bulletin Board gives you a rough sketch of our journey.

We stayed two days in Hong Kong and thence home via CP Air and Tokyo after three weeks abroad.

Bring your family to the Oakridge Auditorium at 1 P.M. on Sunday, February 27th to see these slides and hear Fraser's commentary. Ed.

10.

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TSB

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Mr. Stan Styles has some HO and O scale structures for disposal. He can be contacted at 876-1280 on Monday, Tuesday or Wednesday evening. Please call him for further information.