

# To Start an ALCo

By Norman Holmes

Shortly after the arrival of our VIA ALCo locomotives, on July 25, 1994, I received a call from Gary Baloun, a retired CNW CMO, who owns two Montreal/ALCo FPA-4's. He was interested in knowing what we were going to do with our units and offered advice on preparing our units for operation. The main area of concern was water in the crankcase. Since the units were out of service for five years and the exhaust stacks were uncovered in an area of considerable rainfall, up to 50 gallons of water could have accumulated in the crankcases.

The ALCo diesel engine design has an oil drain plug inside the crankcase. While this location may seem strange, it does have a distinct advantage. Usual designs have a pipe from the crankcase to the side of the locomotive where a valve is located to drain the oil. If any water has accumulated at the bottom of the crankcase this water will also be in the drain pipe and valve. In our freezing winter weather the water will freeze, the valve breaks and when the weather warms the water will flow through the broken valve, followed by all of the oil in the crankcase. (This happened to our Baldwin AS-616, O&NW #4.)

B unit 6860 was selected to be worked on first because of a possible generator problem on the A unit. On September 3, I started work on the unit. The oil drain pipe did not have a valve on the end, only a cap. The cap was removed and a valve placed on the end. This was needed to control the flow of water from the crankcase and to prevent the loss of the oil. I then discovered that the oil level was higher than the bottom of the inspection covers. I cut a wooden block the length of the inspection cover, tacked a piece of carpet on one side and cut another block to fit between the unit wall and the engine. When the cover was removed the carpeted block was quickly placed against the engine to prevent the engine oil from pouring out. Then the drain plug was located, removed and 30 gallons of water drained from the crankcase. Since the engine had not run with the water in the oil, the oil was not contaminated with water, it merely settled in the bottom of the crankcase. A set of batteries was installed earlier and charged. The engine was prelubed with an oil pump connected onto the oil filter line and to follow Gary's advice the engine was to be rotated by hand before trying to start it.

Located at the generator end of the engine in a pipe holder is a handy device called a "jacking bar." This three foot piece of pipe with a sort of hook on one end fits into a groove on the flywheel. Raising the bar or pushing down rotates the engine. I tried to rotate the engine, but it would not budge. I asked Gordon for help and finally with me standing on the bar and pushing against the ceiling and Gordon straining from the deck, the flywheel moved. After this initial movement it went easier. It rotated about a quarter turn and stopped again. We surmised that there was rust in the cylinder where the rain water made its way to the crankcase. Pulling a head with its 700 lb. torque head bolts was the best way, but this job was really a job no one wanted to do. Instead an injector was removed and penetrating oil poured through the hole into the cylinder. The engine was barred over until it stopped, backed off and tried again along with more oil. With each turn the engine would go a little further until finally a complete revolution was made.

The injector was replaced and the fuel pump turned on and an attempt was made to start. The engine would not fire. The fuel pressure showed 8 pounds, not up to the 35-45 lbs. recommended, but we thought enough. In trying to discover the problem of low fuel pressure we found that when VIA removed the steam generators they did not cap off the fuel lines and the pump was sucking air. With the suction and discharge lines capped, the fuel pressure went to 50 lbs.

A second try was made to start the engine. Gary said it might take 3-4 minutes of cranking since the engine had not run for several years and the cylinders were dry. Another idea from Gary was to put hot water in the radiator to warm the engine. This is because diesel engines ignite the fuel from heat and every little bit helps. We filled the radiator using our Hotsy pressure washer which heats water. With help from Hank Stiles giving a shot of starting fluid we again tried to start the engine. It tried to start, but before it started to run on its own we ran out of battery power. Our 512 was close by so we ran a pair of jumper cables between the units. More cranking, then one after another each cylinder started to fire until all twelve were in operation. The jumper cables were so hot the plastic on the handles started to melt, but the engine ran! It sounded like an ALCo 251 should.

Before the unit could be moved on its own, a number of air problems needed to be solved. The air compressor safety valves were missing, the two automatic moisture ejection valves leaked and there was no control air to the electrical cabinet. The engine was shut down until repairs could be made. On September 8, Howard Wise and George Childs, friends from the Pacific Locomotive Association, came by for their annual visit. Since Howard is a mechanic for Oakland Terminal Railway, he was asked if he could help solve the air problems. Howard likes a challenge and went to work. Shop air was used to charge the system so we could hear where the air was leaking. With all the leaks sealed, the unit was started. It starts easily now with only a few revolutions. Air pressure was now the 70 lbs. needed to activate the reverser and power contactors.

B units have hostler controls. This is a throttle with 5 positions, reverser and independent brake valve. It also has a horn. The reverser was put in forward, generator field switch closed, throttle opened and nothing happened. It was discovered that a wooden block was placed in back of the reverser mechanism so that it would stay in neutral during shipment. With the block removed, the throttle opened, the unit moved. So far so good. Now let's see if the A unit will control the B. Even without the A running it should. An M.U. cable was hooked up between the units, all control circuits closed and yes it worked.

Air was still a problem. It seems that the compressor in the B unit will not supply air to the main reservoir line that is connected between the two units. We learned that there is a valve that prevents loss of reservoir air if a pipe breaks and this valve would not allow air to reach the main reservoir line that connects the two units.

Attention was now directed to the A unit. Only 5 gallons of water was drained from this unit's crankcase, then the portable oil pump was plumbed into the oil system, oil circulated through the engine and an attempt to bar it over was made. The flywheel would not budge. Penetrating oil was poured into the injector hole, same as the B unit, and allowed to work. Since everyone else was busy on other projects getting ready for Railfan Day, I obtained a track jack, placed it under the jacking bar and with the aid of a five foot bar, raised the jack. The flywheel moved a few inches. Standing on the bar would not bring it back to the starting point. Placing the jack on top of the bar with a 4x4 against the ceiling still would not move the flywheel. A second jack on the opposite side of the engine under a second barring tool finally broke it loose. After more penetrating oil and jacking on the flywheel, it moved halfway around so the No. 1 piston (where the rust was) was at the top of the cylinder. Being tired of working the jack a few inches at a time and since all the pistons had gone from top to bottom or vice-

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# 9th Annual Railfan Photographer's Day

September 17, 1994

By Wayne Monger

This year, 12 different units were operational -- and this number did not include use of operational units WP 512, WP 501 and UP 849. FP7 WP 805A leading an A-B-A set of F's was to be the star of this year's show. The big uncertainty was if the recently delivered ALCo/MLW FPA4/FPB-4 set would be operational in time.

Norman Holmes exerted an unceasing effort of near-Homeric proportions that brought FPB-4 VIA 6860 and FPA-4 VIA 6776 back to life after 5 years of inactivity. Another incredible effort was made by Gordon Wollesen who made sure that all scheduled locomotives had charged batteries. David Dewey finished roof painting and detail work of 805A. Odie Lorimer then lettered the sides of both the 805A and 925C. Vic Neves touched up lettering and renumbered the wood sugar beet cars. Peter Langdon and Wayne Monger worked to bring Baldwin AS-616 O&NW 4 and S-12 USS 16 into operation. Brian Challenger, Dan Ogle, Tom Graham, Leslie Wood, Kerry Cochran, Phil Gosney, Doug Morgan and Hank Stiles floated between projects helping where they could. Bob Beattie worked on our A-8 motorcar to prepare it for visitors' lunch time rides. Steve Habeck directed up to three train crews making up the required trains, finishing "early" at 7:30 PM Friday night.

Sue Cooper had informed us early on that she wouldn't be available to supervise the Beanery at all on this day. Wayne Monger made contingency plans. Linda and Dave Dewey, Julie Anderson, Janis Peterson, and Sharon McGarr did a great job handling the crush of lunch time demands. Mardi Langdon and Wayne Monger whipped up a "killer" spaghetti dinner slaving over five gallons of spaghetti sauce and transporting it to Portola after dawn. That evening, Wayne, Mardi and Vic Neves were joined by Fred James and Jim Gronke, for the hot, thankless job of cooking 20 pounds of spaghetti noodles. Thanks go to everyone who helped clean up the kitchen and eating area following lunch and dinner.

The star of the show, WP 805A, had an emergency battery change-out in the morning. Some of the day's trains included: the 805A/925C/921D set of Western Pacific F's on a 10-car 1960's-era freight train; NW-2u WP 608 pulling a "Fruit Extra" of reefer cars and caboose SN 1632; a "1950's Shortline Freight" with four Baldwin diesels: AS-616 ON&W 4/AS-616 O&NW 3/S12 USS 16/DS-4-4-660 NVR 51; the "SP Sugar Beet Train" led by EMD SD9E SP 4404 and EMD GP9E SP 2873; and ALCo/MLW FPA-4 6776/FPB-4 6860 pulling the VIA 3-car passenger train with Norm Holmes at the throttle. All of the locomotives in use got through the day without "dying."

The after-dinner program began with two slide shows: Vic Neves with his photo review of the "FRRS Circle The Wagons 10th Anniversary" and Wayne Monger with slides on the railroads of eastern Oregon. Starting at 9 PM, Vic Neves directed two successful and spectacular shooles of the WP F's on the 1960's Freight Train. The second series had all four of the museum's cab units lined up side by side on tracks 1 through 4. Afterwards, those remaining saw a great slide show by Steve VanDenburg on the Cumbres & Toltec Scenic Railroad's "Rider Freight" behind the restored "Mudhen."

The entire "Railfan Photographer's Day" event went smoothly and safely, a testament to the professionalism and training of all of the FRRS operating department people under the supervision of Gordon Wollesen and Jim Gidley. Sr. A sincere thank you goes to all of the FRRS members who participated in any way to make this event go smoothly. These people include: Dave Anderson, Julie Anderson, Dave Bergman, Don Borden, Don Clark, Kerry Cochran, Ed Crary, David Dewey, Linda Dewey, Skip Englert, Jim Gidley, Sr., Phil Gosney, Tom Graham, Steve Habeck, Norm Holmes, Barbara Holmes, Fred James, Peter Langdon, Sharon McGarr, Wayne Monger, Vic Neves, Jack Palmer, Janis Peterson, Hank Stiles, Ed Warren, Jerry Williams, Gordon Wollesen.

The visitor count was nearly 100, including a rental car full of fans from Australia; \$1,145 was received at the gate. A special thank you goes to everyone who paid the entry fee and then volunteered to help out in some way.

The 10th Annual Railfan Photographer's Day is tentatively scheduled for Saturday, September 16, 1995 with even more surprises to be unveiled.

Conclusion of To Start an ALCo By Norman Holmes

versa I thought I'd use the starting wiring in the main generator to rotate the engine.

During the inspection of all the available ALCo units in Montreal, I could only look at the units. There was no way to evaluate their mechanical condition, only that they were all in running condition when retired. The units that I selected were ones that appeared to have the best body and wheel conditions. I learned from Gary that he had some of the most recent maintenance records of the A units and he told me that our A unit had some generator work done on it just before being retired. We contacted Dick Hulbert, a retired SP electrician to check the generator. He came to Portola and checked the generator using a "megger" on strategic parts of the generator. His conclusion was that while it was not perfect, he found no problems that would prevent us from trying to use it. He suggested washing the armature and fields with an electrical solvent, which we did. With the batteries charged, the starter button was pressed and the engine rolled over with no difficulty. Hurray!

Railfan Day was Saturday, September 17, 1994. This was Friday the 16th. The ALCo units were scheduled to pull a passenger train during the event. With help from Tom Graham, we watered the unit, connected a set of jumpers from 1857 and proceeded to crank over the engine. After a few minutes with the usual help from starting fluid and smoking jumper cables, the unit started. There were air problems to solve, the reverser wooden block to remove and the discovery of which switches has to be turned on before we could move both units.

Work continued on Saturday morning when we finally had the air problems solved. Both units were started and while I walked around outside looking for air or water leaks, I smelled electrical smoke. Smoke was coming out from inside the electrical cabinet in the A unit. I opened the battery switch, killed the engine and ran for some water to put out the fire. (I know you are not supposed to use water on an electrical fire, but the power was off and a bucket with water was the first thing I could think of. Besides the powder from a fire extinguisher makes a mess.) One of the control relay coils burned up, but luckily there was no other damage to nearby wiring. Dan Ogle was there to help and he was summoned to see what could be done. We found another identical relay on another ALCo unit, removed the burned relay and replaced it with the borrowed unit.

Time was running out, the ALCo's were scheduled to operate at 12:15 PM. Air pressure was still not up to what it should be, however shortly after the all-engine horn blow at noon, everything looked OK. We had an air test on the train and we pulled out on time. We eased out of the shop tracks, past Malfunction Jct. and around the balloon track. The photographers were all on the bank near Milward Switch, so here is where we needed to see what the ALCo's do best. Putting the throttle in run 8 the sky turned black and away we went. Speed was soon controlled with train brakes, a stop made and a repeat run was made. We had a train. The units are painted blue and yellow, the three VIA cars are blue and yellow. Portola now has its own "Blue Train." There is still more work to do on the units, someday we will want to repaint them to a different color scheme, but for now they run and next year at least the A unit will do for us what it was bought for, to relieve 921 in the rental program.