

Ferrocarril Piedra Baya

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Rough Mountainous terrain - 10 1/4" gauge —0-4-0 Outside frame, Steam outline loco —Forest of low thorn trees and bushes —Steel bar and channel rails —50 ft min. radius —3.5 % grades —(almost) Untouched nature —Enclosed passenger cars —Cuts —Bridges —Five years of (discontinuous) hard work —Pumas, foxes, wildcats and the like. Take all these ingredients and what do you have? The Ferrocarril Piedra Bays (Bay Stone RR - bay is for the colour), so called after the name of our estate.

The story actually begins in 1990, when we moved from Buenos Aires to the Province of San Luis in the geographical centre of Argentina at the foothills of the Comechingones Sierra (7000



ft elevation). Our house is at about 3300 ft.

The sadness of having to dismantle a large HO model railroad, gave way to “domestic” approval to try something bigger on our property —both as hobby and to carry passengers in the not so distant future (for we run a small tourist business).

We lived 7 miles from the nearest town (Merle - pop. 5,000), which could be reached only by an unpaved country road. All the materials needed to build a RR had to come from other cities, like Buenos Aires, some 500 miles away.

But there was another problem, too. There were no miniature RRs in our country, nor did I any information or litera-



After the completion of the branch, friend Roger Davis is in charge of a train running towards the station. July 1998.



On the turntable. Note the engine is still without number plates. April 1998



In the late afternoon, a train crosses the trestle. January 1999.



Two internal combustion “ride in cab” tanks! October 1998.



To carry 20 ft. long track panels on the 11'8" long car, we used an extra long (5ft.) coupling bar between loco and car. Nov. 96

ture. From time to time, I read US model railroad magazines and saw articles and ads about 7 1/2" Gauge, 1/8 scale models which, I must confess, did not appeal to me very much. Please, don't misunderstand me: I do admire the work to build them, but I was not enthusiastic about riding ON a scale miniature loco and was not convinced that "sit astride" cars would be the right thing for hauling the public.

Used two foot (actually 600 mm) gauge equipment was available, but was too heavy for RR built by just myself and my wife.

And what then? Friends Roger Davis and Danny Thomas had magazines and books of the U.K. They kindly loaned me some with articles about miniature railways. I was introduced to a new concept in this matter: The building of narrow gauge equipment to a larger scale. When I saw photos of the 10 1/4" Isle of Mull Railway (U.K.), with enclosed "bogie coaches" and ride inside cab locomotive, I was really hooked.

Our first intention of buying a loco and some rolling stock or, at least, some trucks in the U.K., Australia or U.S.A., was precluded because of the ever changing economics of our country, so the answer was "Do it yourself." But I must say here that I'm not technical minded and that I have only elemental tools in our workshop: hand and bench drills, angular grinder, a not so powerful electric welding machine and little else. (No lathe and the like). Conclusion? Ask your friends for help. (But more on this, later).

Being narrow gauge minded, I opted for a freelance narrow gauge RR, built to 10 1/4" gauge, so that two passengers could sit side by side. In 1992 we surveyed the land (not a simple task because of the thorn trees and shrubs and the irregular topography). We built a homemade transit with a rifle scope, a level and scale. My wife and two sons assisted with the intensive use of axe and machete (and much sweat!!)

This done, the next step was track. The lightest rail available in our country is 20lb. (10 kg/meter) —too heavy and too expensive for our use. Again influenced by the British (this time the local ones, my friends), we decided to use bar stock. After some calculations, we opted for 1 1/4 by 1/2 in section, 20 ft long standard MS bars. This would work for our estimated maximum axle load and, most important, would allow me to work "solo". Well, almost.

In 1993 we level a place at the side of a hill, at one corner of our garden, intended for a future small yard with a passing siding and a lead to the future turntable and engine house/car barn. Here we placed our first panel of track, the bar stock welded to "chair plates" of MS 1 1/2" x 1/8" x 2 1/2" long which were pre-

viously screwed to 3" x 2"x 2' long untreated hardwood ties by means of two screws each. This gave us track panels 20 ft long, with 20 ties placed some 12 inches apart and a weight of about 180 pounds each panel.

Meanwhile my friends, Roger and Danny, without much previous experience, were in charge of the construction of the line, rolling stock and loco for a new tourist 500 mm gauge (approximately 20" gauge) RR, to be built in the south of Argentina, the Ferrocarril Austral Fueguino, the RR of the End of the World. This was the first attempt in our country to build a steam locomotive and a big challenge for my friends, but this is another story. As I said before, my motto was "do it yourself" and, if you can't, ask your friends for help. And so I did!

Roger built a pair of 10 1/4" gauge archbar trucks and 6 switches. The switches and bars for 500 yards of track were shipped from Buenos Aires by a heavy truck, which could not enter the last 500 yards of our drive. We had to finish caring the materials with our World War II armored Bren Gun Carrier. (This particular unit was English designed and US built in 1943 by Ford in Detroit.) Danny drove 8 hours to bring the pair of trucks in his car. We tested them on the already laid track panel. This was a great moment for all of us.

Work progressed slowly. We laid the track across the garden, then into the forest (still on our property) after opening a gap in the dry stone wall where we had to build a cattle guard.

A short wooden bridge and a concrete level crossing for use of the tank came next. At "milepost 145" (145 yards from start) we stopped laying track because we had to build a 40' bridge to cross the Arroyo Seco (Dry Creek, which by the way, is not so dry due to heavy rains). There were no steel channels available. However, after a long wait, we obtained second hand 6" by 2" steel channels and built the bridge in four sections which were bolted into place.

Work resumed, and a few track panels later, we had to cross a ravine, this time by means of a 40ft long, 50 ft radius curved trestle on a constant 1.7% down grade. This time we use Quebracho and other sorts of hardwood to do the job.

With the pair of trucks and the help of a local blacksmith, I built our first sample of rolling stock, car 3001. It is of my own design, 138" long by 36" wide, with a 80 mm by 50 mm steel channel chassis. The floor, ends and sides are wood. It is easily (without tools) converted in a few minutes to flat car to carry track panels or to a low side gondola for ballasting or to carry 10 passengers. This car was very useful for track work.

It was fun too, to have some exhilarating gravity runs on the 1.7 % down grade till the curved trestle. To get control when



Curved trestle near completion in May 1996

riding the car by gravity, sitting on top of 3/4 to 1 ton of ballast, I built a hand brake which actuates on one axle alone, but it works. Any volunteers?

Past the trestle the grade was now 1.7% up, in a cut along a hill where the (first) terminus was planned. The 100 yards of excavating was a hard job, done with picks, shovel and heavy bar to remove the big rocks. Sometimes my wife and I worked all day to finish one yard of roadbed. Pushing the car by hand (while loaded with ballast and track panels) on the grade became a bit tedious: time to think about motive power.

Danny Thomas came from Buenos Aires to visit us and we discussed battery and petrol locomotives. We talked about a Diesel outline, but my wife Gertrude, with the *not so common* common sense said that, for carrying tourists in the future, it would be better to build a steam outline engine, despite our “purists” objections. So, steam outline it had to be, and petrol hydraulic was chosen for power. A Decauville style 0-4-0 outside frame loco was elected because it seemed practical to build and adequate to hide the engine and hydraulics.

Danny drew a scale plan to our maximum loading gauge of 3 ft wide and 5 ft high and, living in Buenos Aires, bought all the commercial parts, like Honda 8HP petrol engine, Vickers hydraulic pump and motor, hoses, bearings, chains and the like. He also supervised the construction of the loco, which was handled at a small metallurgy workshop in Buenos Aires.

The engine is about 80” long with a wheelbase of 26”. It weighs about 3/4 of a ton empty. She was delivered in September 1996 by another friend, on a 2 axle rural trailer behind his Ford pick-up all the way from Buenos Aires.

Once on our tracks and with the presence of Danny, we had some emotive “first runnings” without any problems. I finished the loco here by adding details like domes, cylinders, piping, valves, a firebox (which hides the motor), a real steam pressure gauge (set always at 120 psi), a real steam loco whistle, a 12 V. electric air compressor and an air tank to operate it, front and rear lamps which were operated by a car battery, as is the air compres-

sor. Two individual folding seats allow the driver to sit sideways, when alone. This is very important when you run the loco cab first. The two side tanks are actually used to carry some 30 gallons of hydraulic oil, eliminating the need for a fan to cool the oil, and adding more weight to the engine.

The locomotive is painted green (again those British!), with a gray (graphite) smokebox, black boiler and red front and rear plates and motion. Couplers are of my own design and I used discarded motorcycle shock absorber coils for buffers.

With the engine, two more switches arrived, again built by Roger. Track laying continued and, at the end of 1996, with help of the new loco, we reached the terminus: only a passing siding, some 500 yards from the start.

As I mentioned before, we run a small tourist business using the Bren Gun Carrier (less the gun) for carrying the tourists, combined with some trekking in the forest and culminating in our living room, where my wife serves different types of german cakes and tea or coffee. Because we intended to complement this, we needed a station building to depart from and to arrive at with our “train”, in order to offer our customers another choice of trip. Instead of building a station at the yard as planned, an existing building, adjacent to the garage/workshop, was adapted to look like a station with the addition of a short gallery. To get to it, we had to build an extension or branch from the existing yard, this time cutting along another hillside (3.5 % down grade) and then, via a reversing switchback to the station, which was single track. (More on this, latter).

With this arrangement, the engine pulls when departing and pushes when arriving. When starting from the station, the trains must climb at 2 to 2.5% grade, then, at level, through the reversing switch and then back pushing the train on the 3.5% grade till the yard. Here, the loco is uncoupled, turned on the turntable and coupled again in front of the train before starting for the rest of the journey. All this switching adds to the interest of the operation, both when “playing” or when carrying tourists.

When we laid the track towards the station building, by way of experiment (and against the advice of my friends) we used 40 by 20 mm (approximately 1 1/2” by 3/4”) steel channel “rails”, welded to slightly larger 1/8” chair plates fixed to ties in the same manner as before. For a given axle lead, this allows the use of fewer ties per panel, resulting in a lower cost and, of course, looking far better than the bar rail track.

Ties were spaced 18” apart, and we used standard 1” by 1/4” MS bar, 8” long for fishplates, bolted with four 5/16 x 1” bolts on each plate. So far, we experienced no problems with this type of track and we are happy with the results. By the way, to bend the “rails”, we use a fork of a tree and arm power!

With a proper station, we started carrying tourists during the 1998 season. That means January/February (our Summer), Easter holidays and two weeks at winter school holidays. This first experience, without derailments and welcomed by customers, showed us the need for another extension of the line to offer a longer run



Railroading is fun! My wife Gertrude painting the passenger car in our “free air shop” Dec. 1999



Switching at yard. March 1999



School girls and boys enjoy a free ride on the FCPB near the end of the school year. Nov. 1999

and to get to a place where some taller trees provide for shadow on hot summer days. That meant 200 more yards of track through the thorny forest and up a constant 3.5% grade over a tortuous and curved route.

We placed another switch at the existing terminus and started laying track in April 1998, this time with channel rails and curves of some 70 ft. radius to compensate for the severe grade. We finished this extension by December, just in time for the new season. At the new terminus we installed another turntable so we can turn the engine and run it Chimney front for the journey back, to provide better pictures or video shots when crossing the bridges, where we stop for run bys.

In addition to the tracklaying work, I designed a true enclosed passenger car, 160" long, 38" wide and 60" high, with two compartments each for 4 passengers and two balconies each for 2 passengers. The heavy 4" by 2" channel chassis, the tubular steel structure and the metal side panels were made locally at a blacksmith workshop. My wife and I finished it here, at our "free air workshop". We fitted the car with the heavy duty pair of trucks built at the same firm which built the locomotive, again to Danny's design. This time, hand brakes were provided to the four wheels of one truck. So, for the first time since he begun the project, we had a "real" train of loco and two cars to run on our 900 yards of track.

Recession combined with bad weather resulted in a poor year for tourism during 1999, so building our rather large two track engine/carriage shed near the turntable, had to be archived in the "dreams box", awaiting better times. We did, however, need something to protect our rolling stock from weather, as well as providing better protection, for our visitors whilst they were waiting for "train time".

An affordable answer to this was to enlarge the station's gallery so as to cover the track for the whole length of the 35' platform. But this was still not long enough to protect all the stock and half of the engine was always exposed to weather.

So, what next? When we had finished the extension of the line in December '98, we removed some bar rail track panels from the now unused first terminus and we had some lengths of second hand corrugated iron in stock, too, so why not lay a second track at Piedra Baya Station and build a small engine shed there? It would not only be practical but would enhance the overall picture and the RRs atmosphere as well.

One obstacle was that the terrain drops abruptly in front and, principally, at the side of the station area. We first had to erect

a 5 ft. dry stone retaining wall. Stones from the surroundings and from Dry Creek were collected and transported by train, wheelbarrow or simply by arm (not so simply!) again with the sole help of (who else) my wife. Then the area was filled with sand and soil (the roof supports were cemented into solid ground. In the meantime, our boys became young men and moved back to Buenos Aires, where they got better jobs than the ones available here in the country —no more help from them.

The next job was to place a switch and lay the track of the siding, which is approximately 60 ft long. At the level crossing, the track lies on and is embedded in concrete, so our Bren Carrier Tank can cross without destroying it.

At that time, things were taking shape and I thought it would be nice to complete the picture with a water tank. What?! Water for a P.H. engine? Well, of course it is not necessary but it adds to the scene and, who knows what may be in the future? The tank is a surplus 50 gallon oil drum mounted on a home made MS angle structure and piping connected to the water system, so it is actually ready to operate, should you visit us with your real steamer!

Back to the engine shed —it has a corrugated roof and walls and some is 16 ft, 5 inches long by 6ft. 8 inches wide, so we can house our 80" long engine and still have room for another one of similar length.

Purists will object that the proximity of the station to the engine house and servicing area for being unprototypical. We were aware of this but this was the way we could afford it and it is practical to operate when we have visitors/tourists. But the most important fact is that, by having all the buildings and the rolling stock in the same area, I can sit nearby, look at the scene... and dream of trains!

What about the future? We will try to lay some more track, about 200 plus yards, in order to have a still longer run. Then, courtesy of Roger Davis, another pair of heavy duty archbar trucks are in stock so we can build another car in the future. And, to plagiarize the words of the article about the G.S.P. & P. RR (G.S.Q. NO 10, page 14) "There is almost no end to the work that can be done on any railroad".

To conclude, if by chance you come to Argentina, you are cordially invited to pay us a visit, talk about trains and have a ride on the "tanks". If you would like to exchange correspondence, I'll do my best with my "spanglish" to answer you. Sorry but my closest approach to the cibernetic age is this Remington typewriter of the 50's, so no e-mail for me. However, I can be reached at **C.C. No. 52, 5881 Merlo, Pcia de San Luis, Argentina.**



Piedra Baya Station and locomotive shed on a cloudy day in June 1999