MODELLING QUEENSLAND RAILWAYS IN HO n 3 1/2

by Arthur Hayes.

WHY MODEL QUEENSLAND RAILWAYS.

Queensland Railways is the rail system we all see each day, we use it to travel to and from work or school, we wait for it at level crossings, see it carrying the states produce from town to town, it is the railway system on our door step running pass the back fence.

If we were to check out our Hobby Shops across town we would find any number of Locomotives, carriages, wagons and buildings, surely we would find something that could be used. After all a train is a engine pulling a few wagons behind, or is it !

I found myself purchasing rollingstock that looked like Queensland Railways stock, at times adding bits and pieces in an attempt to make it look the part, not being satisfied with the end result, I would even cut off sections to improve the appearance, sometimes a repaint job was also required.

HOW DO WE GO ABOUT IT !

All rail systems have a beginning, for Q.R. it was back in 1865, called The Pony Railway. A 10 class locomotives, having a working weight of 22 tons, hauling a collection a four wheeled wagons and carriages.

As time rolled on locomotives became larger, and by 1950 Beyer-Garratts weighing in at 137 tons were running on the state rail system, carriages and wagons had moved up from carrying 6 tons to 24 tons.

November 1952 saw the start of a new railway, Diesel - Electric Locomotives entered traffic, soon after steel air - conditioned carriages were working our Mail Trains. Wagon construction also had gone to steel, carrying capacity being increased to 42 tons, coupling from link to auto knuckle were being added.

The next eighteen years saw both steam and diesel, wooden and steel wagons and carriages working together, by 1970 goods wagons painted red were reentering traffic grey, steam was also gone.

Six weeks short of ten years later saw the inauguration day of the Brisbane electrification, this was later extended to the Central Queensland coal fields and the North Coast Line.

Mid nineteen eighties with the introduction of two man crews saw guard vans disappear from freight trains, along with the introduction of the Queenslander.

Not only did the trains change, bridges build of timber were replaced by concrete, on the Safe Working front, semaphore signals gave way to electric color lights, even the role the railway has changed.

With the above in mind I think we have a choice of three ways to go about it,

(1) FREELANCE.

That is any thing goes, you are uncommitted to any period or era,
e.g. A double header A 10 pulling the Sunlander.

(2) FREELANCE SET PERIOD.

You do not commit yourself to any given area but would like model a particle era,
e.g. You like the rollingstock etc., from the mid sixty's, the layout or the yard is of your own designed.

(3) PROTOTYPE.

You would like model a particular area to a give era,
e.g. "WOOMBYE" during the early seventy's.

SCALE.

Queensland Railways is not a standard gauge rail system, here lays the biggest problem. Most HO model railways are all based on the track gauge of 4' 8 1/2" or commonly known as standard gauge, i.e. N.S.W. English, European, American.

Queensland Railways track gauge is 3'6", in model railways this is classed as a narrow gauge system. If we were modelling an American railroad in 1 : 87 scale, it is known as H.O. Scale, to model Queensland Railways on a 3'6" gauge in 1 : 87 scale it is shown as H.O.n 3 1/2.

As in all model railways, the bigger the scale, more area that is required, or should I say less that will fit into a given space.

I feel that modelling Queensland Railways in H.O.n 3 1/2 in today modern society is a good size, not a lot of room is required to set aside a piece of your favourite railway nostalgia.

A large percentage of Queensland Rail is single line operation with passing loop and a couple of sidings.

Plus you have the advantage of the scenery items from other Australian Railway systems or the possibility of another railway operator. i.e. Rocklea area with both Queensland and New South Wales Railways together.

TRACK.

Queensland Railways has four track classifications, general details are as follows :-

CLASS	"S"	"Some A"	"A"	"Some B"	"B"
Rail lbs/Yd	107/+	94/82	94/82/63	60/42	42 & less
Axle Load	20/25	18	15	12.5	10
Traffic	Coal	NC/ISA	Main	M/Branch	Branch
Loco's	110t	93t	90t	60t	60/40t

Bridges also play a big part in this classification.

Model railway track is usually referred to in Code, that number refers to the height of the rail in thousandths of an inch.

107 lb track is equivalent to Code 70
60 lb ; ; ; ; Code 55

3'6" translated into H.O. equals 12.25mm.

Few years back, Tri-ang produced a Table Top (TT) arrange of models, 3mm to the foot or 1 - 100 scale, this provided models at a mid point between "N" and "H.O." Thus a track gauge of 12mm. In a ready to run and over the counter manufactured track system, this was a close as one wished to obtained.

Over the years various manufactures from Britain and Europe produced 12mm systems.

Currently available in Brisbane over the counter are two track systems, Bemo and Shinohara.

BEMO

STANDARD

This is a 12mm set track system, code 83 weathered rail, points 2' radius, 1 meter flexible track is available in kit form.

FINE SCALE

This 12.25mm track system is manufactured for Bemo by Shinohara, code 70 weathered rail in 1 meter flexible lengths and 2' radius points.

Bemo wheel sets are of a European style, similar to Lima, being of a course mature, operate on both track system.

nature

SHINOHARA

This is a 12.25mm track system, code 70 rail in 1 meter flexible lengths and 3' radius points.

WARNING:- 12mm RP25 Wheel sets WILL NOT RUN through points with out modification to points or back to back on wheels.

Add a Kadee 10 thou washer (insulated) to widen back to back

MODEL RAILWAY WHEELS

K&M WHEELS.

Over a number of years K & M have produced both Brass and Nickle Silver disc wheels for 12mm and HO n 3 1/2 systems.

The following wheel sizes are available

7.5, 9.5, & 10.5mm dia	RP-25/110	profile wheels on	20.9 axle
9.5 & 10.5mm dia	RP-25/88	; ; ; ;	20.9 axle
7.5, 9.5, & 10.5mm dia	RP-25/110	; ; ; ;	19.9 axle

3 Foot 6 MODELS.

Have just released 7.5 & 9.5 mm 8 spoke RP-25/88 wheels on 19.5 axle.

MODEL RAILWAY BOGIES

If we were to seat down and add up all the different styles, types and classification of bogies that ever ran on Queensland Railway, the total would exceed the 100 mark.

A large number of these bogies on the system are also unique to Queensland Railway.

Currently, there are no ready to run bogies available, however with some modellers licence I use the following:-

FREIGHT

4' bar frame bogie:-

Axle Load 5 Ton. Wheel Base 4' No Build 6500.

FUTURES: Steel bar sideframes, Timber bolster
2' 2" Wheels, most were spoked, however some were disc.
Journals 7 x 3
Wagons:- C, CLF, H, K, N, S, U, or conversions CH, SP, HW.

4' bar frame bogie con:-

HOn3 Precision Scale Logging Bogie. (Coil springs)
This bogie is available with plastic or brass side frames from Walthers dealers.
Replace wheels with 3'6" Models 7.5mm spoke wheels and ream axle boxes so the wheels just clear the side frames with bearing tool. Assemble as per instructions.

Far North Hobbies produce a brass bogie with wheels for $12.

4'9" diamond bar frame bogie:-

Axle Load 9 Ton. Wheel Base 4' 9" No Build 200.

FUTURES: Steel bar sideframes, Steel bolster
2' 2" Wheels, under HS & HVS Wagons
2' 9" Wheels, under VH & some HJ Wagons
Most were spoked, however some were disc. Journals 8 x 4

HOn3 Roundhouse Arch Bar Bogie.
Replace wheels with ones of your choice and extend bolster to accommodate longer axles.

5' Bar Frame Bogie:-

GROUP No 1.

Axle Load 9 Ton. Wheel Base 5' No Build 1200. Dia 6

FUTURES: Steel bar sideframes, Journals 8 x 4,
Steel bolster 2' 2" Wheels, most were spoked.
Wagons:- CJ, CJF, CMB, CMC, CMI, HJ, SJ, MTW, WR, some Tanks,

GROUP No 2.

Axle Load 9 Ton. Wheel Base 5' No Build 1600.

FUTURES: Steel bar sideframes, Journals 8 x 4,
Steel bolster 2' 9" Wheels, most were spoked.
Wagons:- CJ, CJF, CMI, HJ, HJS & Family some Tanks,

GROUP No 3.

Axle Load 5 Ton. Wheel Base 5' No Build 250.

FUTURES: Steel bar sideframes, Journals 7 x 5,
Steel bolster 2' 9" Wheels, most were spoked.
Wagons:- H, K, UR,

The Turntable produce a white metal kit that requires wheels of your choice.

During the early fifties, a new modern bogie concept hit the rails, a 3 piece, ride control, cast steel bogie. Queensland Rail classified these bogies from QR 1 and have continued on to QR 54 being the latest on BCZY & PCZY wagons. At first, these bogies were fitted with plain bearings, and later with roller bearings. Each of these bogies have their own characteristic.

For us modellers, we can divide them up into 6 groups or even less if we wish. To the average eye most of these bogies look the same.

GROUP No 1. 4'9" Cast Steel Bogie:-

QR 1, 3, 4, 5, 14, 17, 20, 24, 40, 41.

FUTURES:- Wheelbase 4'9" (1450mm) Wheel 2'2" (600mm)
Axle load 9 ton No Built 1650.

Some years back, PMH produced derlin 2BP bogies for NSW Railways rollingstock.
Fit with 7.5mm wheels ones of your choice and reduce bolster to accommodate shorter axles.

3 Foot 6 Models AO 6 40 ton Freight Bogies with 2'2"Wheels.

GROUP No 2. 5'6" Cast Steel Bogie:-

Early style.

QR 2, BLC, CLC & conversions PCL, PB, PR, PCE.

FUTURES:- Wheelbase 5'6" (1575mm) Wheel 2'9.5" (850mm)
Axle load 10 ton No Built 190.

top covers

spoked wheels

AR Kits 2BP Bogies modifyed as below.

GROUP No 3. 5'6" Cast Steel Bogie:-

QR 7, 8, 9, 11, 12, 13, 15, 16, 18, 19, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 33, 35, 36, 42, 48.

FUTURES:- Wheelbase 5'6" (1575mm) Wheel 2'9.5" (850mm)
Axle load 10 to 22.5 ton No Built 9500.

AR Kits 2CL Bogie or Roundhouse Freight Bogie.
Fit with 9.5mm wheels ones of your choice and reduce bolster to accommodate shorter axles.
This can be achieved by using K&S hollow rectangle brass No 262 square 3/32 or 12mm Bogie conversion kit.

3 Foot 6 Models AO 5 Modern Freight Bogies.

Diagram 7 on

GROUP No 4. 5'6" Cast Steel Bogie:-

Dia 12.

QR 32, 34, 37, 38, 50.

FUTURES:- Wheelbase 5'6" (1575mm) Wheel 2'6" (750mm)
Axle load 12 to 16 ton No Built 1300.

AR Kits 2CL Bogie or Roundhouse Freight Bogie. Fit with 8.5mm wheels ones of your choice and reduce bolster to accommodate shorter axles. This can be achieved by using K&S hollow rectangle brass No 262 square 3/32 or 12mm Bogie conversion kit.

GROUP No 5. 5'9" Cast Steel Bogie:-

QR 43, 44. VAZ Wagons, QR 49 VSN Wagons.

FUTURES:- Wheelbase 5'9" (1575mm) Wheel 3' (915mm)
Axle load 22.5 ton No Built 1000.

AR Kits 2CL Bogie or Roundhouse Freight Bogie. Fit with 10.5mm wheels ones of your choice and reduce bolster to accommodate shorter axles. This can be achieved by using K&S hollow rectangle brass No 262 square 3/32 or 12mm Bogie conversion kit.

GROUP No 6. 7' Cast Steel Bogie:-

QR 39, 54, Roadrailers.

FUTURES:- Wheelbase 7' (2135mm) Wheel 2'9.5" (850mm)
Axle load 18 ton No Built 400.

PASSENGER

5'6" Plate Frame, 5'6" Fox's Patent, 5'9" Pressed Steel, Passenger Bogies:-

Roundhouse No. 2924 HO "OLD TIMER"
Fit with 9.5mm wheels ones of your choice and reduce bolster to accommodate shorter axles.
This can be achieved by using K&S hollow rectangle brass or 12mm Bogie conversion kit.
Most of these bogies have a 3' wheel (10.5mm in HO), to maintain the correct floor height modification would be necessary.

3 Foot 6 Models AO 4 Sunshine Express Coach Bogies.

2/3/4/5 All could be grouped as same bogie

5'3" New Zealand Passenger Bogies fitted with 2'9" wheels:-

Roundhouse No. 2936 HO Old Timer 4 wheel Passenger Trucks.
Modify as above.

5'3" New Zealand Passenger Bogies fitted with 2'2" wheels:-

~~Kenton~~ Kentron HOn3 Passenger Bogie:-
Replace wheels with ones of your choice or cut axle in half, and extend by using K & S tube or used biro tube, extend bolster to accommodate longer axles.

4'6" (1372mm) Angle Iron Bogie:- Older

Far North Hobbies Brass Bogies

3 Foot 6 Models AO 10 Wood Passenger-Short Wheel Base Bogie.

5'0" (1524mm) Angle Iron Extended Bogie:- Older

3 Foot 6 Models AO 11 Wood Passenger-Long Wheel Base Bogie.

COMMONWEALTH BOGIES:-

3 Foot 6 Models AO 8 Sunlander Coach Bogies.
AO 9 Stainless Steel Suburban Coach Bogie.

RAIL MOTOR BOGIES:-

Leading bogies on "Red Fred" Rail Motors.
Modify Kadee "N" scale Arch Bar Bogies.

Trailer bogies.
Modify HOn3 Arch Bar or Logging Trucks.

3 Foot 6 Models AO 12 Railmotor Trailer Bogie.

MODIFYING BRASS BOGIES:-

When modifying brass bogies, be sure in reassembling that the insulated wheels are on the same side.

COUPLINGS:-

Up to the early fifties, Queensland Railways drawgear was mainly side buffers, draw hooks and screw couplings. Conventional wagons such as H and C class wagons had continuous drawgear, both drawhooks at each end of the wagon are joined together via springs and a drawbar. Hoppers type wagons like VJ class coal wagons had a non continuous drawgear. (D4 Drawgear)

Bigger locomotives could pull larger loads and stronger drawgear was required. Some wooden wagons build in the late forties CJF, and steel wagons constructed in the early fifties HJS, CMIS had "Select Drawgear" (D3 Drawgear)

Wagons entering general traffic in the late sixties QLX, QFX had a stronger hook drawgear called "Premium" (D2 Drawgear) Most wagons in this group in later years were fitted with Automatic couplers.

Around the same time, wagons in the mineral Traffic were entering service with Automatic couplings, where block train operated, buffers were removed. (D1 Drawgear)

From the early seventies all wagons constructed entered traffic with automatic couplings, as time passed other wagons were fitted with this type of coupling.

During this period both automatic and hook wagon could run attached using a transition coupling, this also had a bearing on the way in which trains were marshalled. i.e. Locomotives, Carriages and Wagons having all types of couplings. (Vehicles with automatic coupling without buffers could not be placed next to vehicles with buffers and hook couplings.)

By 1995 most rollingstock fitted with buffers and draw hooks had been removed from traffic, buffers and transition couplings were then removed from all vehicles making QR a full automatic coupling system. (Some exception)

COUPLINGS FOR OUR MODELS.

However, as a modellers I think it is best to have a standard system of couplings on all your rollingstock.

To date I have used HO Kadee Couplings for wagons that I break up to shunt and dummy knuckles for block racks.

Mainly using No 5 couplings with the coupling box protruding out from the headstock bending up the trip pin to clear the rail, in some cases I have used No 16, but have never to happy with them, the coupling shank often hangs down and the distance between wagons.

On some wagons with the bogies right on the end of the wagon, the draft box will restrict the movement of the wheels. I have assembled the coupling onto the floor of the wagon less the draft box and using a 8 BA screw to hold the coupling and spring together.

Box must protrude out with buffers.

More refined coupling are now available and could be a welcome change, Kadee make a 711 and 714 coupling, these are 3/4 size made from delrin and assemble similar to "N" gauge couplings. The 714 coupling has a shorter trip pin to meet HOn3 standards. Both coupling will work with other Kadee HO equipment.

BUFFERS:-

Over the years, I have used a good arrange of what was available at the time, now went I sit back and look at some of my fleet I feel some are to big.

* However, the flavor of the month is Krystall Castings wagon buffers (new pattern). A packet of 24 cost around $3.00

THINGS TO THINK ABOUT.

Just as Queensland Railways served many industries, think of industry that will give your railway a reason to operate, take time out to think of the traffic generated from these various sources of revenue.

(1) SAWMILL.

Traffic In.		Traffic Out.	
Logs	S wagons	Timber	H wagons
Machinery	H, C wagons	Fire wood	F, H wagons
Fuel (drums)	H wagons	Ety drums	H wagons

(2) BUTTER FACTORY.

Milk	Roadside :	Rail Motor : C wagons	(picking up cream & milk). Butter	ABG, CMB wagons
Packaging		C wagons	Cheese	ABGC wagons

(3) SMALLGOODS PLANT.

Livestock		Smallgoods	CMR wagons
Pigs	L, MG, N wagons	Tallow	FJT FET wagons
Cattle	IC, K wagons		
Packaging	C wagons		
Fuel (Oil)	OB, OC wagons		
(Coal)	H, VJ wagons		

(4) OIL DEPOT

Bulk Fuel OB, OV wagons	Drum Fuel FJS, H wagons
Ety Drums FG, HJS wagons	Tanks H wagons
Grease etc C, H wagons	
Tanks H wagons	

(5) PRODUCE COMPANY

Hay & various Feeds	Hay & various Feeds
H, HJ, CJF, QLX wagons	H, FJ, ALG, CJ wagons

(6) COUNCIL DEPOT

Drum fuel F, FG, H wagons	Machinery FJS, HJS wagons
Bitumen OF, OQ wagons	
Machinery HJS, QFX wagons	
General AG, CJ wagons	

You may like a particular type of wagon and to give your layout some operation, lets allocate traffic we would find the following wagons at work.

BOX WAGONS. A ABG C CLF CLFF CJFP CLC BLC QLX

General Freight:- Goods Shed, Freight Forwarder, Wool, Hay, Produce, Packaging, Beer, Fruit, Flour, Sugar.

OPEN WAGONS. H HJ HSA HWO HO F FG FJM

General Freight:- Goods Shed, Freight Forwarder, Steel, Timber, Machinery, Cars, Tarped Loads i.e. Wool, Hay.

FLAT WAGON. MTW S SS SP QFC PE

Machinery, Logs, Timber, Sleepers, Pineapples, Heavy Machinery

BULK WAGONS. OT OC QGX VAO VAOA HJM

Petrol, Oil, Wheat, Coal, Malt.

CONTAINER WAGONS. PCE PYC QFCR PCO

Box, Tank, Open, Flat Containers.

DEPARTMENT WAGONS. CAMP WAGONS, MATERIALS, TEST WAGONS.

Carpenters, Plumbers, Painters, Scalemakers, Trainmen.
Ballast, Bridge Timbers, Huts, Rails, Sleepers,
Weight bridge Test wagons,

CONCLUSION:-

More and more items of rollingstock is coming available each day, from ready to run locomotives, wagon and locomotive kits of one or two pieces to the more complex model.

Don't let the cost detour you from starting out, minimum out lay can produce that prototype scene.

Large section of Queensland Railways is single track operation, there are many small towns, industries or branch line to choose from to model which will give you hours of fun and relaxation.

Start off with a simple layout, you will find it both productive and rewarding as you learn.

Hear are some tips to think about:-

(1) All stations have a main line, most would also have a station building of some sort, high or low level platform.

(2) So trains can pass each other, a crossing loop.

(3) Most stations had a Goods Shed and Side Loading Bank on a separate siding. This could be off the loop or on the same side as the station with a siding off the main line.

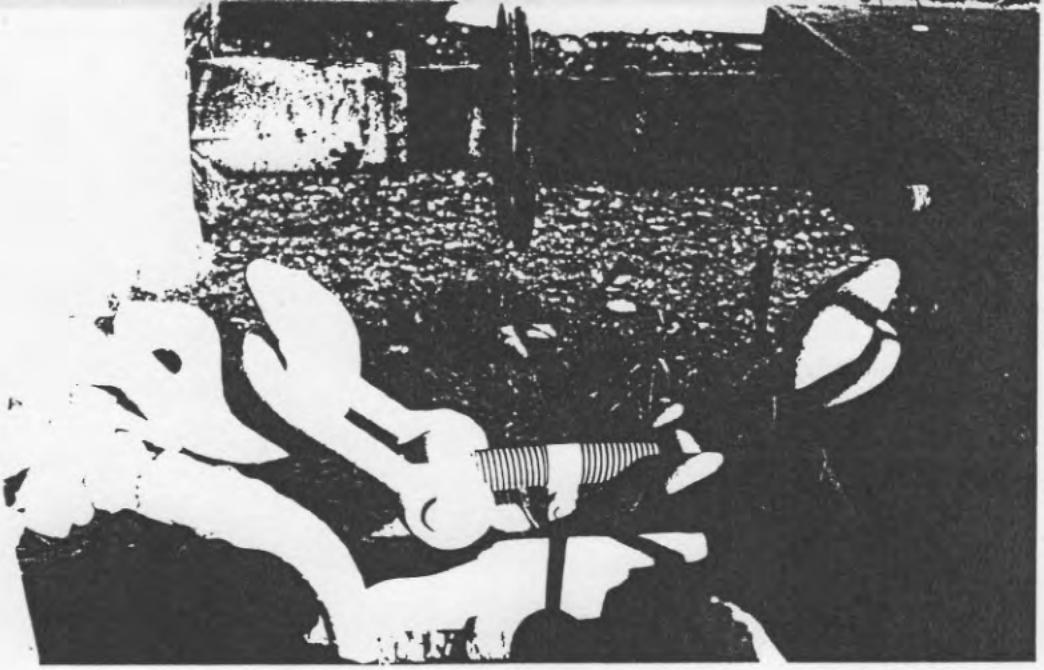
Now you have an prototypal operational layout, a small amount of track, 4 points and a hand full of rollingstock you can run two trains, and shunt the siding.

As funds become available, run a few trains, build a kit or two and think of how to extend your layout.

The next set of points could add another siding or extend the goods shed road down to a small industry.

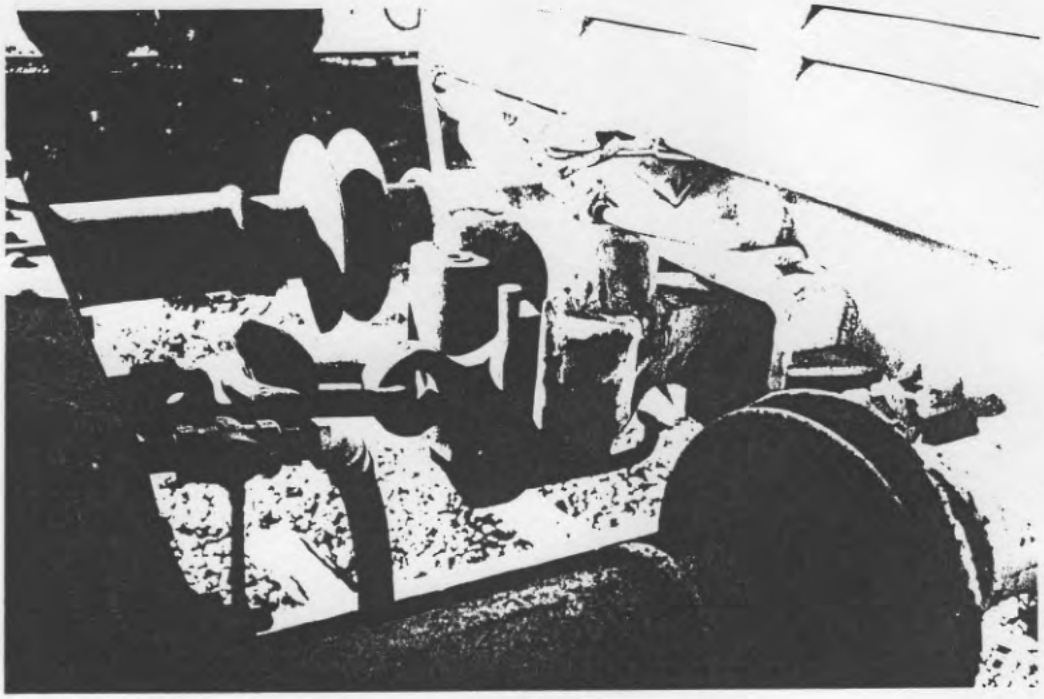
I trust you found the day interesting and informative,

Happy Modelling.



D 3
DRAW GEAR
BUFFERS
SCREW COUPLING
HOOKS

DIA N° 1

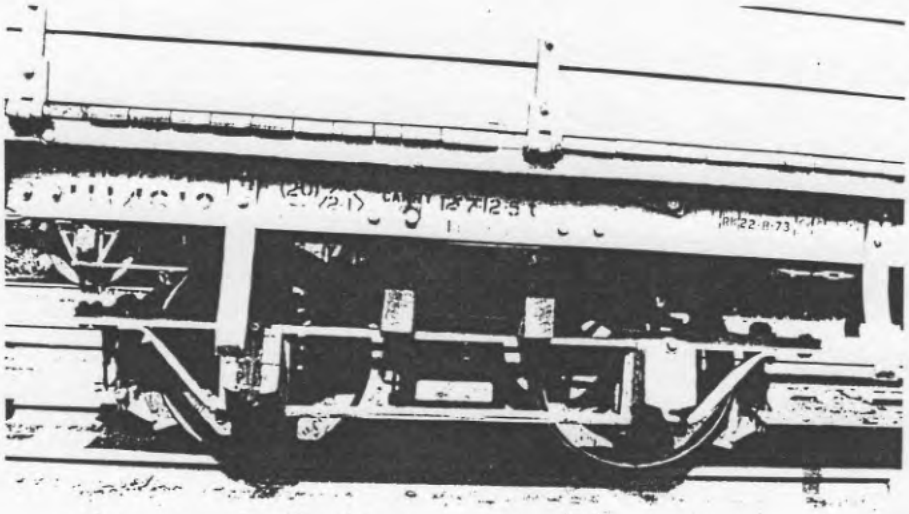


AUTOMATIC
COUPLING
TRANSITION
LINK
AS TO
HOOK
DRAWGEAR

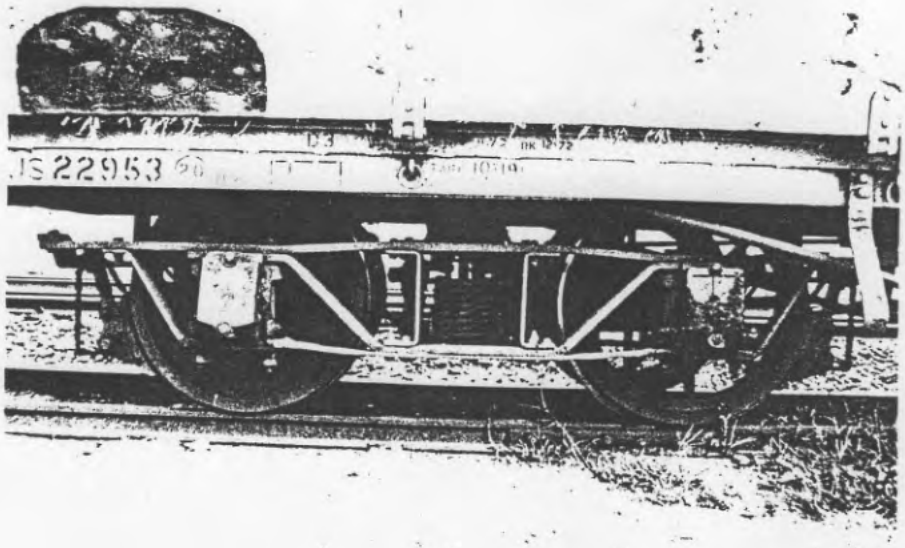
DIA N° 2

D 1
DRAWGEAR
AUTOMATIC
COUPLING
LESS BUFFERS.

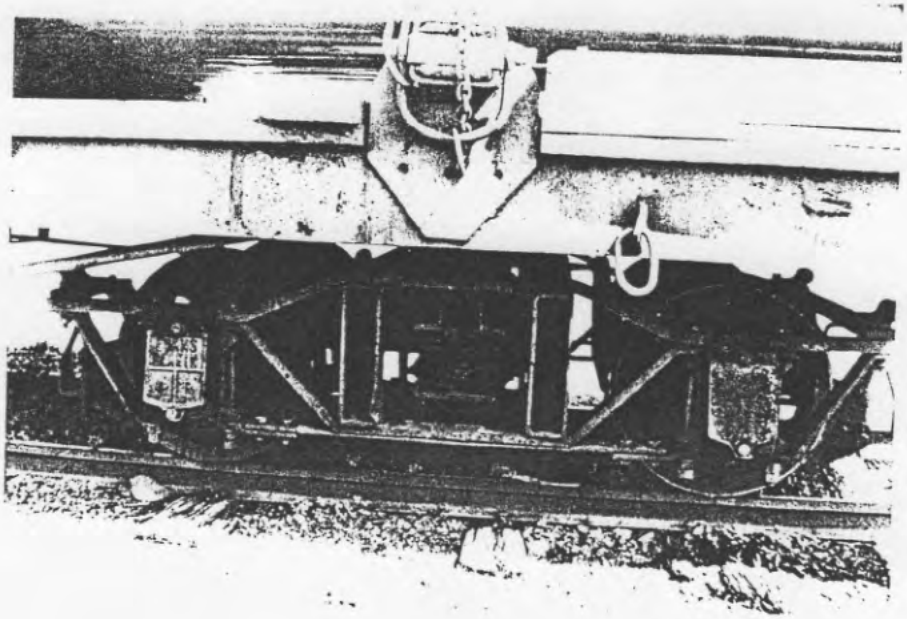
DIA N° 3.



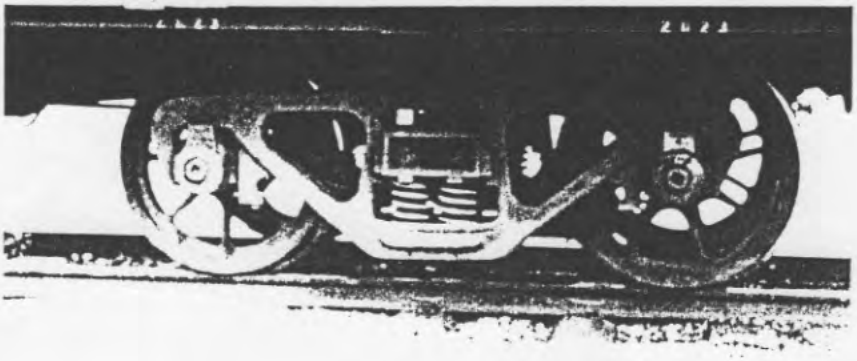
4' Bar Frame
Bogie
H Wagon
Dia № 4



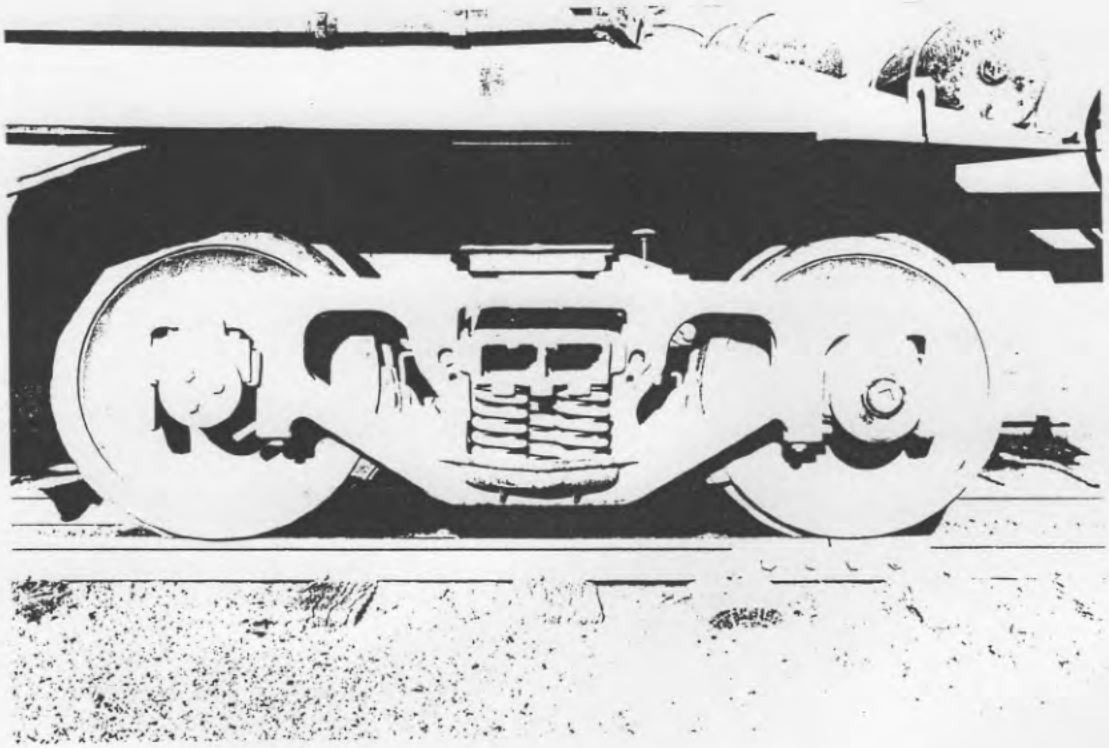
5' Bar Frame
Bogie.
HIS Wagon
Group № 2
Dia № 5



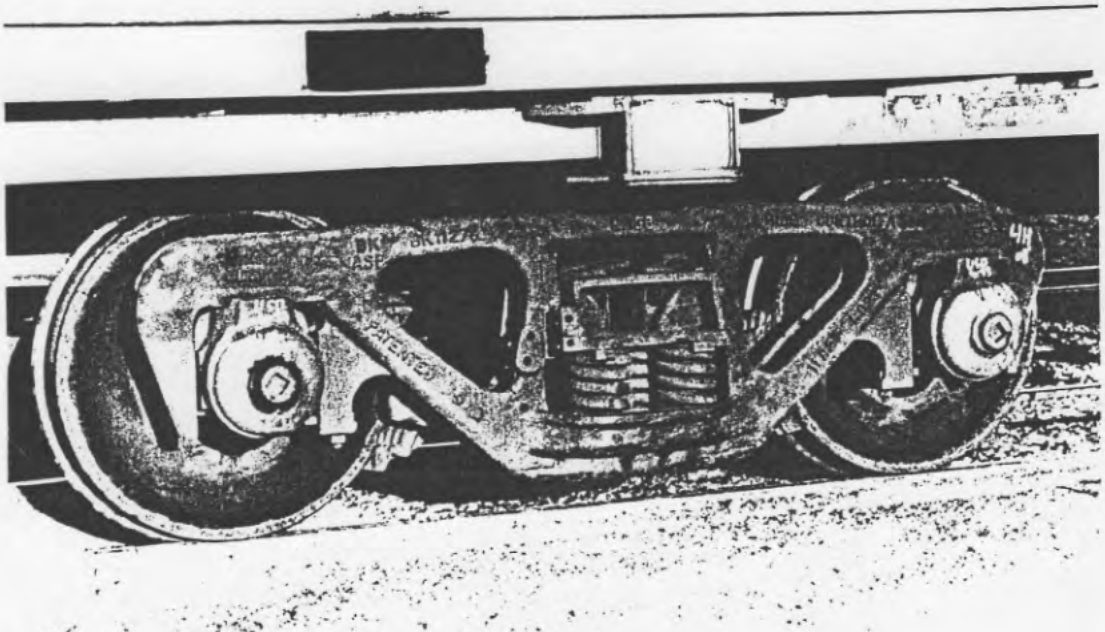
5' Bar Frame
Bogie
WR Wagon
Group № 1
Dia № 6



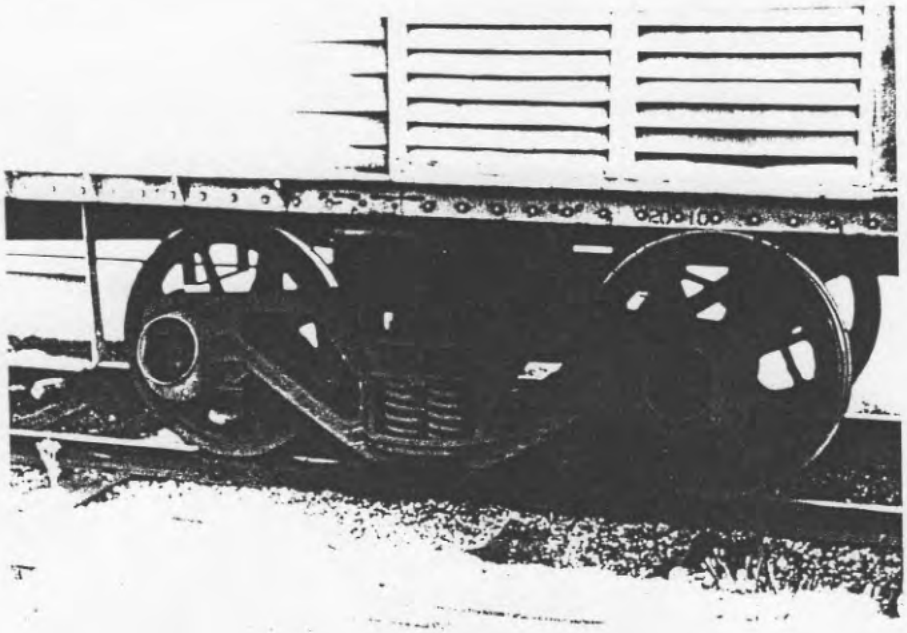
QR 16
BOGIE
QLX WAGON
GROUP № 3 C/STEEL
DIA № 10



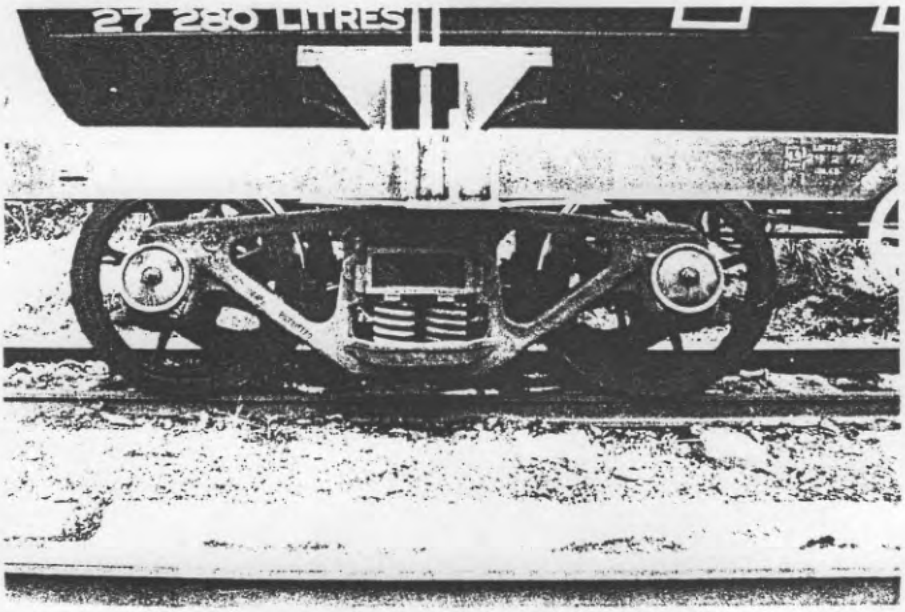
QR 23
BOGIE
VAO WAGON
GROUP № 3 C/STEEL
DIA № 11



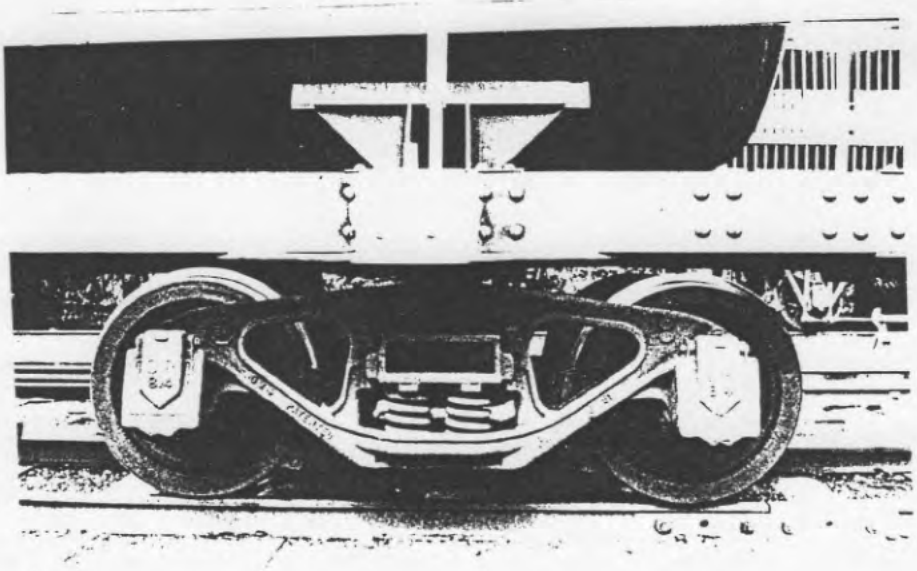
QR 38
BOGIE
PCO WAGON
GROUP № H C/STEEL
DIA № 12



QR 2
Bogie
BLC Wagon
Group 2 c/Steel
Dia No 7



QR 8
Bogie
OLE Wagon
Group 3 c/Steel
Dia No 8



QR 4
Bogie
OV Wagon
Group 1 c/Steel
Dia No 9