

POLYURETHANE USED WITH ALL CASTINGS.

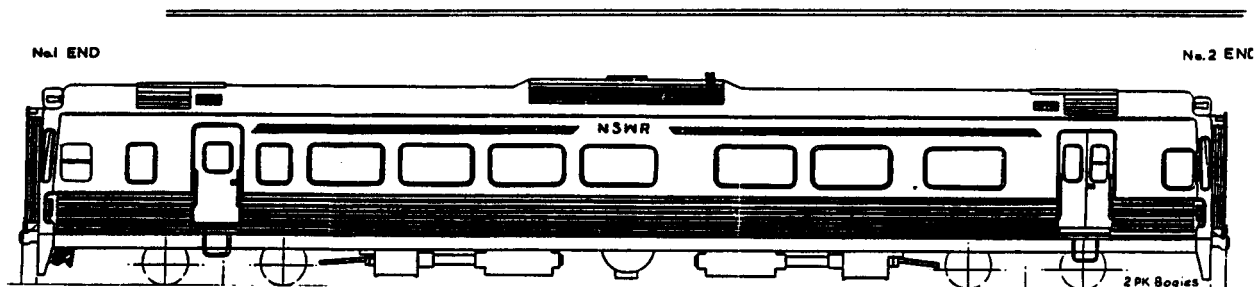
HANOVALE MODEL CASTINGS

P.O. BOX 32

Wavell Heights Nth.

Qld. 4012.

PRODUCER OF AUSTRALIAN MODEL RAILWAY KITS AND ACCESSORIES.



KIT NO. N010.

NSWGR PCH TULLOCH 1200 CLASS RAILCAR SELF PROPELLED.

ECONOMY, FIRST, LUGGAGE and GUARDS COMPARTMENT.

PLEASE NOTE; SOME PEOPLE CAN BE AFFECTED BY THE CHEMICALS USED IN THESE CASTINGS.

PLEASE READ THE INSTRUCTIONS CAREFULLY. BEFORE YOU START TO ASSEMBLE YOUR KIT.

RECOMMENDED GLUES:- ARALDITE - SUPERGLUE GEL - or GLUES OF THE SAME STRENGTH.

HISTORY.

Introduction of the air-conditioned, air sprung aluminium railcar operating in multiple as four car trains. Each train consists of 3 PCH class composite/luggage railcars and 1 PCR class composite/buffet railcar made up as PCH, PCR, PCH, PCH.

Passengers travel in air conditioned comfort in both First and Economy class sections in each railcar and are provided with a meal service, served from the Buffet section on trays, attached to the seats by TCS stewardesses.

These railcars were designed by Tulloch Limited of Rhodes, NSW who supplied ten units (7 PCH class and 3 PCR class) to the NSWGR and two DRC class, one class with luggage compartment to the Victorian Railways of similar design to the NSWGR units.

Each railcar is designed as a completely self contained unit and is fitted with two 300hp six cylinder Cummins Diesel Engines with two independent electric power generating systems and two air conditioning systems and a drivers cabin at each end. The train can be divided at various stages of the journey to provide services radiating from the main trunk line.

Interconnecting platforms and flexible diaphragms are fitted to both ends of each railcar so that movement may be maintained throughout a train in service.

Bradford Kendall cast steel bogies are fitted providing Helical coil primary springing and Sumiride Japanese type air sprung units for the secondary system.

The stressed skin aluminium alloy bodies have been designed by Tulloch Limited and all stresses and deflections have been determined by computer by their structural consultant, Tube Investments Limited of Birmingham, England.

Very wide picture windows of the double tinted glass pattern are fitted in the side walls, provided excellent visibility and contributing greatly to the light, modern and attractive appearance of these vehicles.

The 3 PCR class railcars are fitted at the No.2 end with a kitchen-galley.

The new vehicles have been designed to haul an ETP class parcels trailer when operating singly on branch lines enabling these vans to be detached from or attached to overnight mail trains thus avoiding transshipping of parcels and freight at junction stations.

These cars took longer to complete than was anticipated.

The first PCH 1221, commenced trials on 30/6/70 and was accepted from the builder on 30/10/70.

The last PCH 1227 ran its first trials on 2/5/72 and was accepted on 12/5/72.

While awaiting delivery of sufficient cars for the new service, those cars that were available were used for driver training, or in conjunction with the Budd Cars on the Illawarra Line and on the Goulburn day train.

To celebrate the 25th anniversary of the accession of Queen Elizabeth II to the British throne, a travelling exhibition was arranged and 4 former Riverina cars, Nos. 1201, 1222, 1223 and 1225 were selected to house the display.

The remaining 3 cars, Nos. 1202, 1203 and 1221 were pooled for service with the Budd Cars and based at Wollongong. Being compatible with these cars, they were frequently seen on the South Coast Daylight Express composition until withdrawn from service in February 1983 following a derailment at Erskineville.

For more information refer to the books RAILMOTORS to XPT, RAILWAY DIGEST, RAILWAY TRANSPORTATION MARCH 1972 and RAILWAY TRANSPORTATION DECEMBER 1968.

The above information was taken from "HIGH SPEED ALUMINIUM RAILCARS CUT RIVERINA EXPRESS SCHEDULES" Railway Transportation December 1968 and March 1972 and Railmotors and XPTs by David Cooke.

THIS KIT CONTAINS THE FOLLOWING:

2	SIDE WALLS.	2	END WALLS.
1	FLOOR/UNDERFRAME.	1	ROOF with RADIATORS & FANS.
2	CUMMINS ENGINES.	2	SETS OF BRASS HORNS.
2	SETS OF PEWTER SIDEFAMES	8	STEAM ERA MODEL BEARINGS.
4	26mm AXLE X 10.5mm WHEELS.	2	E-Z MATE COUPLERS & BOXES.
2	BOGIE SPACERS.	1	SET OF DECALS.
3	LENGTHS OF CLEAR STYRENE.	2	LENGTHS OF .4mm WIRE.

CLEANING INSTRUCTIONS:

Before starting construction, carefully remove any flash from the edge of all parts and windows. Sand off BACKS OF CASTINGS until correct thickness is achieved, usually indicated by flashing falling away.

When removing any flash, use a **FINE FLAT FILE** or **FINE WET & DRY SANDPAPER**.

When cleaning around **WINDOW FRAMES**, be very careful not to damage same.

When tidying up the **WALL & FLOOR EDGES**, ensure they are straight and square.

After cleaning off all the flash, wash the CASTINGS in COLD WATER with a little DETERGENT, then leave to dry on a FLAT SURFACE, such as GLASS.

This will help remove some of the MOULD RELEASE AGENT and aid in painting the model.

If the CASTINGS are **BOWED** or **WARPED**, **IMMERSE** in **HOT WATER** for a few seconds then leave to dry on a FLAT SURFACE.

Where ever you are going to glue, FILE the area and this will give you a good bond. A LIGHT FILE IS ALL THAT IS REQUIRED.

BUILDING INSTRUCTIONS:

PLEASE NOTE THAT ALL MEASUREMENTS ARE IN SCALE FEET & INCHES. THE FEET & INCHES ARE TAKEN FROM A GENERAL METAL SCALE RULER.

DIAGRAMS ARE NOT TO SCALE.

ALWAYS TEST FIT EVERY PART BEFORE GLUING.

Check the rebates into which SIDES, ENDS and FLOOR are to fit into are clear and clean. Dry fit parts together with each step to check that they do not sit proud when glued.

REFER TO RAILCAR PLAN FOR No.1 AND No.2 ENDS.

- 1 Take ONE SIDE WALL and glue at right angle to the END WALL. The SIDE WALLS glue into the REBATE in the END WALLS and check SIDE WALL is out flash with the outer edge of the ends.
- 2 Make sure that the SINGLE CLOSEST DOORS are at the same end of the car.
- 3 Glue the other SIDE WALL into position, making sure that the BOTTOM of the WALLS are level as per instruction No. 1.
- 4 Dry fit ROOF, **NOT GLUING**, and check for length. ROOF should sit neatly over the ends. Check that EXHAUSTS are towards the SINGLE CLOSEST DOOR END, which is No.2 END. Refer to DIAGRAM No. 1.

- 5 When you are satisfied with the ROOF, glue it onto the top of the SIDE WALLS and over the END WALLS.
- 6 On top of the ROOF, you will note a number of predrilled holes which are for LIFT HANDLES. Drill the holes and make up and bend and fit the .4mm WIRE as per photos. Refer to DIAGRAM No.6.
- 7 Using the .4mm WIRE, make up the HANDRAILS along the side of the SIDE WALLS and glue into position. Refer to DIAGRAM No.1.
- 8 As per photos in books and magazines for the position of the WINDSCREEN WIPERS above the drivers window which is the LEFT HAND WINDSCREEN looking at the END WALLS.
- 9 Cut the end HORNS ON BOTH ENDS OFF and drill the hole in the top of the HEADLIGHT and glue into position. Refer to DIAGRAM No.5.
- 10 Now lay the FLOOR top down and glue the MOTORS into position. You will note two things:- 1. There are two slots on both sides of the FUEL TANK, this is where the MOTORS are glued.
2. Looking closely at the MOTORS, you will note a FAN SECTION which is a large round tube and the other end is a block with a round CONVERTER TANK and this is the end that is glued into the SLOTTED SECTION on both sides of the FUEL TANK.
- 11 If you are going to fit the STEAM ERA BLACK BEETLE, now is the time to cut the section of the FLOOR out. You only require 1 (ONE) BLACK BEETLE per 2 units. Refer to DIAGRAM No.8.
- 12 Drill out the hole at the other end for the BOGIE to bolt into. Also drill out the holes at both ends for the COUPLER BOXES to screw into.
- 13 Turn the FLOOR over and drill the 4 holes for the BLACK BEETLE ADAPTER PLATE to lock into. The large holes in the plate for the WIRING is to be facing UPWARDS. **DO NOT MAKE THE HOLES ANY BIGGER.** Check that the ADAPTER PLATE is even with the rebates on the FLOOR of the car. Refer to DIAGRAM No.8.
- 14 Drill the hole in the ADAPTER PLATE for the BLACK BEETLE to screw into.
- 15 The SINGLE AIR TANK at one end of the FLOOR goes to the No.1 END or SINGLE DOOR END.
- 16 Glue the PEWTER SIDEFAMES to the lugs on both sides of the BLACK BEETLE, making sure that the AIR BAG and AIR TANKS are at the top. You may have to remove the cross piece on the back of the SIDEFAMES at the top. Refer to DIAGRAM No.3 & 4.
- 17 Now make up the BOGIE as follows:- Drill a hole through the BOLSTER, a little larger than the screw you are using. Clean out the holes on the inside of the BOGIE SIDEFAME so as to fit the BEARINGS. This only happens with the NON POWERED BOGIE. When drilling out the holes, measure the length of the BEARING and place a piece of tape around the drill bit so as not to drill too far into the SIDEFAME.
- 18 1st glue the BEARINGS into the SIDEFAMES (2) and make sure they are level with the surface of the inside.
- 19 **MAKE SURE THAT THE INSULATED WHEELS ARE ON THE SAME SIDE OF THE BOLSTER. YOU HAVE ONE SOLID METAL WHEEL AND ONE PLASTIC WHEEL WITH A METAL TYRE.**
Glue one BOGIE SIDEFAME to the BOLSTER with the flat section (BOTTOM) facing towards the rails. Now place the 2 (TWO) AXLES in the SIDEFAME and glue the other SIDEFAME to the BOLSTER and place on a flat surface, such as glass, making sure all WHEEL RIMS touch the surface.
- 20 If you wish to add additional PICK UPS, when the glue has dried, using a RAZOR SAW, cut two lines in the top of the BOLSTER, against the RIM of the WHEELS, making sure not to mark the BACK of the WHEELS. Cut 2 lengths of .4mm PHOSPHOR BRONZE WIRE and glue into position. **DO NOT BEND WIRE BEFORE GLUING INTO POSITION.** As per DIAGRAM No.4, bend the wire making sure that the WIRE is touching the RIM of the INSULATED WHEELS. **YOU ONLY NEED TO USE A PAIR OF TWEEZES TO BEND THE WIRE.** Solder two lengths of FLEXIBLE WIRE to the PICK UPS and cut a hole in the FLOOR as per DIAGRAM No.8.
- 21 Cut a length of .4mm WIRE TO MAKE UP THE coupler release handles. On the BOTTOM of each BUFFER BEAM at both ends are two pieces that the COUPLER RELEASE HANDLES fit into and then travels down under the COUPLER HOLE which has been predrilled. When the COUPLER BOX is fitted into the hole, the COUPLER RELEASE HANDLE fits snug under

the box. **DO NOT FIT COUPLER BOX AT THIS STAGE AS IT WHOLES THE FLOOR TO THE BODY.**

- 22 On the BUFFER BEAM there are a number of predrilled holes for the AIR HOSES.
- 23 Screw the BOGIE and BLACK BEETLE into the FLOOR. Check that the car is "LEVEL", measure from a flat surface that the car is sitting on to the UNDERSIL of the CAR. Check that the car is sitting "LEVEL". This will be determined by the REAR BOGIE in the case of the BEETLE and BOGIE. Adjust by removing a small amount at the top of the BOLSTER until the car sits square to the ground. **BE VERY CAREFUL WHEN FILING THAT IT IS SQUARE.**
- 24 Now test fit the FLOOR. **DO NOT GLUE THE FLOOR TO THE BODY AT ANYTIME. MAKE SURE THAT THE SINGLE TANK ON THE END OF THE FLOOR GOES TO THE No.1 END or SINGLE DOOR END.**
- 25 The COUPLER BOXES are to slide in through the hole in the BUFFER BEAM to hold the FLOOR to the car and screw into position.
- 26 The GLAZING for the car is done after painting further down in the instructions.
- 27 Now it is time to paint the model.

ON THE PLAN IT SHOWS THE HORNS ARE EACH SIDE OF THE HEADLIGHTS AND ALSO STEPS UNDER EACH DOOR. ALL PHOTOGRAPHS I HAVE SEEN OF THE SELF PROPELLED AND LOCO HAULED RAILCARS, THEY ALL SHOW THE HORNS ON TOP OF THE HEADLIGHTS AND NO STEPS HAVE BEEN FITTED. THIS DOES NOT MEAN THAT THEY WERE THERE WHEN FIRST RELEASED TO SERVICE.

PAINTING INSTRUCTIONS:

- 1 Wash the model in **COLD SOAPY WATER** AND LEAVE TO DRY.
- 2 Undercoat the model with **AUTOMOTIVE PRIMER** or undercoat of your choice.
- 3 Paint the **RAILCAR** with **AR KIT SILVER**.
- 4 Paint the **LIGHTS** on the **END WALLS** as follows:- **TOP LIGHTS "RED"** and the **BOTTOM LIGHTS "SILVER"**.
- 5 Paint the **FLOOR, CORRIDOR CONNECTORS, HANDRAILS** and **BOGIES** with **AR KIT BLACK**.
- 6 When all painting is finished and dry, coat the van with **GLOSSCOTE** so as to **DECAL** same.
- 7 The **CARS** were numbered as follows:- 1221, 1222, 1223, 1224, 1225, 1226, 1227.
- 8 The **CARS** did have the letters **PCH** only on the **SIDE WALLS** between the **THIRD** and **FORTH** **WINDOWS**.
- 9 Refer to **PHOTOGRAPHS** for the position of the numbers.
- 10 When finished **DECALLING** the **COACH**, coat the **MODEL** in **DULLCOTE**.
- 11 Measure up the inside of the **SIDE WALLS** 9mm from the **BOTTOM EDGE** of the **WALLS** and place a thin **LENGTH** of **DOUBLE SIDED TAPE** along the bottom of the **WINDOWS**. Also place a length of **DOUBLE SIDED TAPE** along the top of the **WINDOWS**. **DO NOT REMOVE THE BACKING PAPER OF THE TAPE.**
- 12 Cut to size, a length of **CLEAR STYRENE** for each side of the car and when ready peel the backing paper from the **DOUBLE SIDED TAPE** and slowly stick the **CLEAR STYRENE**, starting from one end and keeping it straight.
- 13 As **FLUSHGLAZE** is not available for the car, it is now time to fit the **GLAZING** to the **END WALLS**.
- 14 Measure the opening of each window, one at a time, and cut the **CLEAR STYRENE SQUARE** to the same size. Round off the corners and test fit in the opening.
- 15 When satisfied with fit, run a small bead of **CRYSTAL CLEAR** or similar around the opening and fit with care.

WIRING.

- 1 Refer to **DIAGRAM No.4** and bend the **PHOSPHOR BRONZE WIRE** as per the instructions.
- 2 Cut a piece of **PC BOARD** and glue to the **FLOOR** on the inside of the car so as to connect the **REAR BOGIE PICKUPS** and then to the **BLACK BEETLE**. Make sure you put a cut down the middle of the **PC BOARD** so as to separate the **TWO WIRES** and not have a **SHORT CIRCUIT**. Allow enough **WIRE** to allow the **BOGIE** to swing. Refer to **DIAGRAM No.8**.
- 3 In the early part of next year (2000), we will be releasing a kit to light up the **HEADLIGHTS** for this kit and also for **LOCOMOTIVES** and **VANS** and **COACHES**.

!!!!!!!!!! " WE HOPE YOU ENJOY BUILDING YOUR KIT" !!!!!!!!!!!

DIAGRAM #1

RAILCAR PLAN

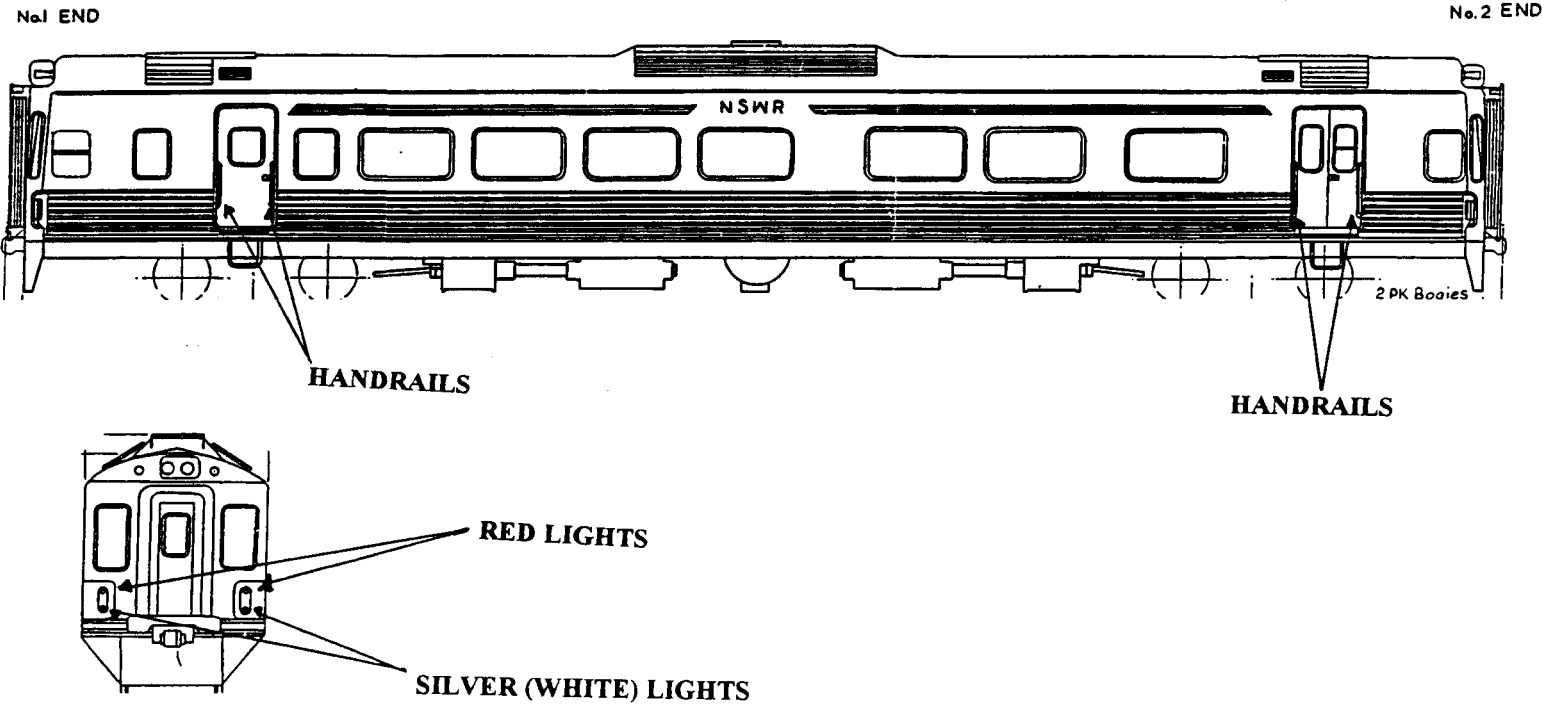


DIAGRAM #2

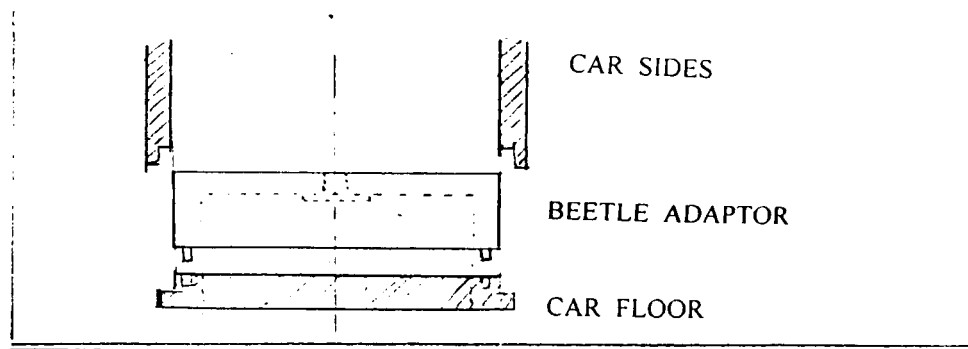
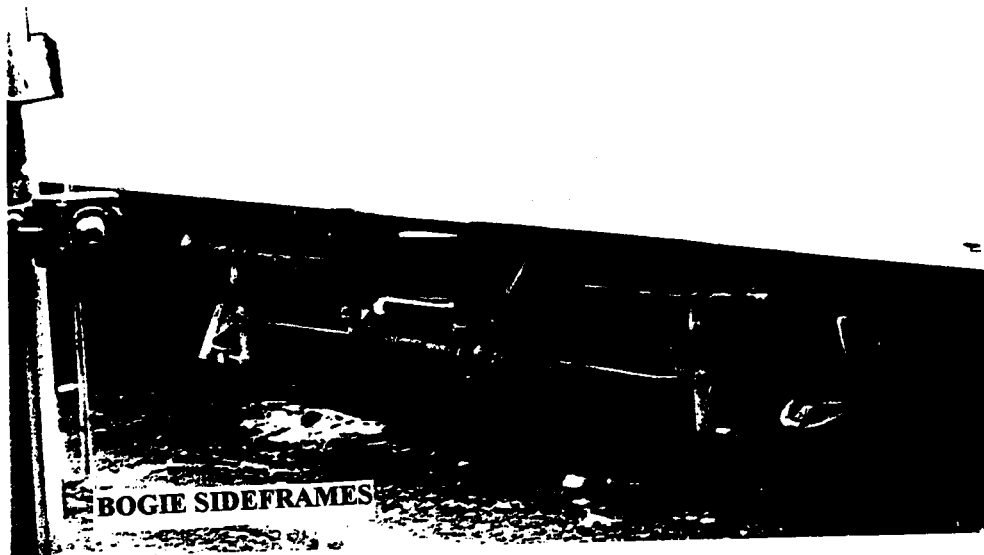


DIAGRAM #3



DRAWING NOT NECESSARILY TO SCALE

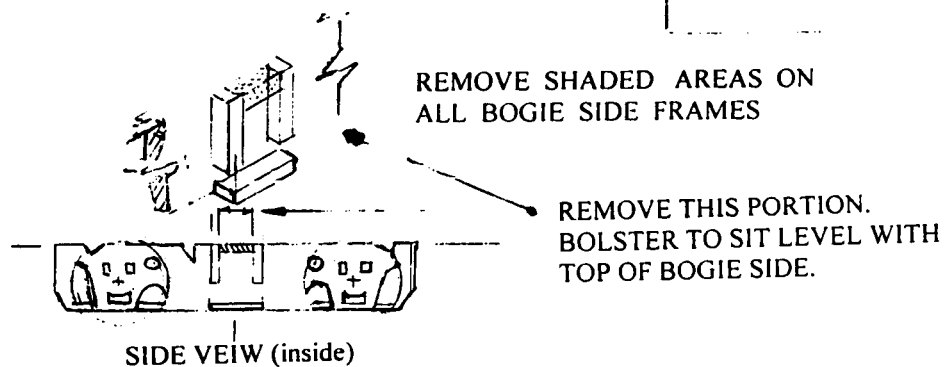
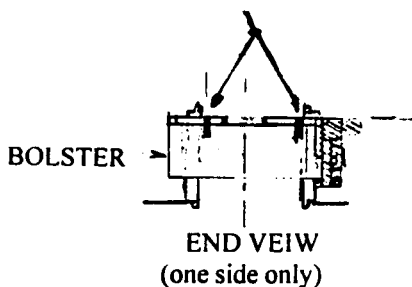
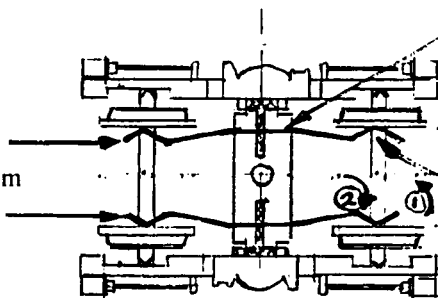


DIAGRAM #4

CUTS FOR WIRE



PH INSTRUCTION



PLAN VIEW

MAKE CUT IN BOLSTER HERE APPROX 2 mm DEEP.
GLUE IN 40mm LENGTH OF PHOSPHOR BRONZE WIRE
KEEP WIRE STRAIGHT
BEND ENDS ONLY AFTER GLUE HAS SET.

BEND WIRE HERE ONLY

1. BEND END TOWARD INSIDE FIRST.
2. BEND TOWARDS WHEEL AS PER DIAGRAM
THIS WILL ALLOW PREASURE ON THE WHEEL
DO NOT BEND AT THE BOLSTER!
SOLDER PICK UP WIRE TO PHOSPHOR BRONZE
AS CLOSE AS POSSIBLE TO BOLSTER.

DIAGRAM #5

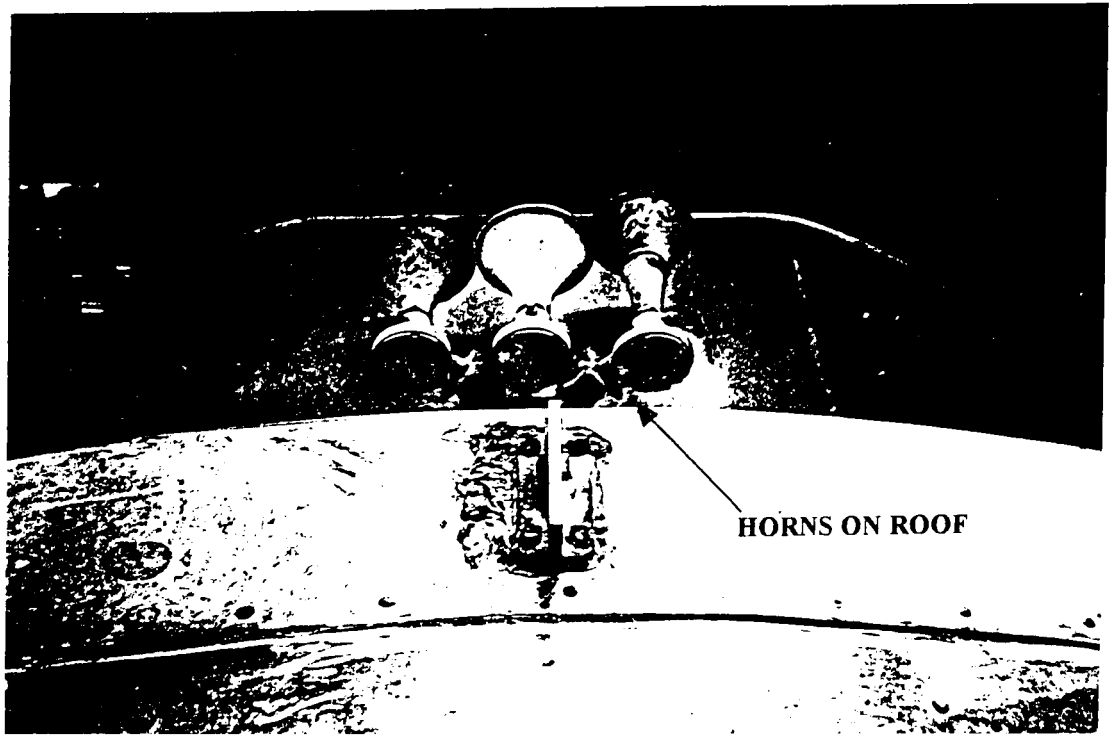
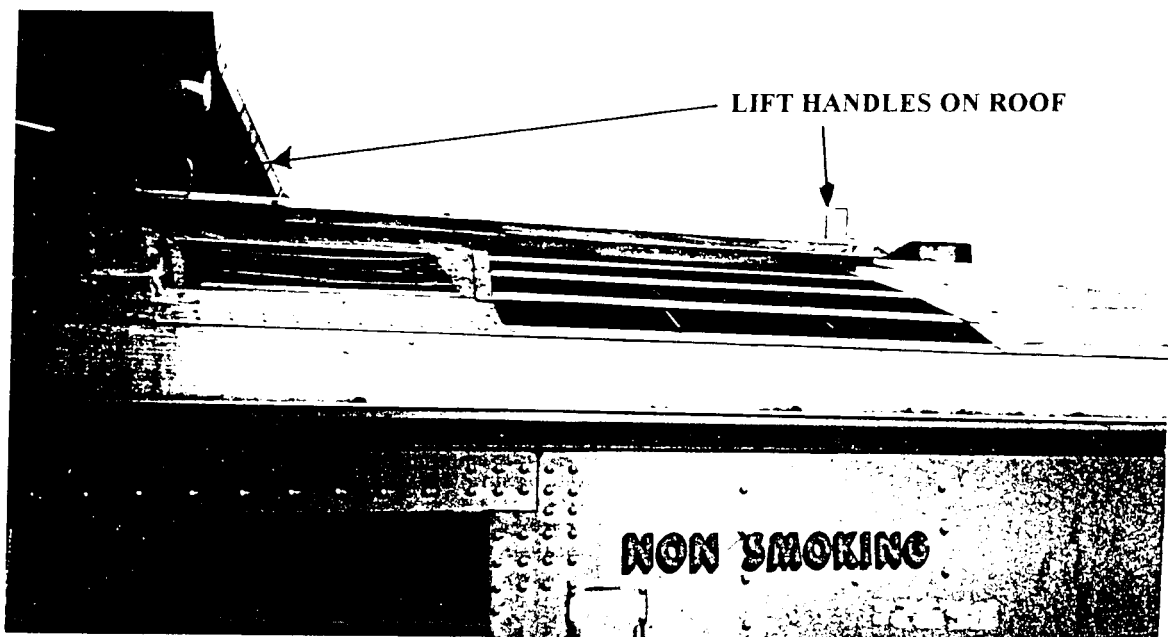


DIAGRAM #6



We wish to thank the following people who have supplied help and photographs:-
Allan Brown, John Gilbert, Peter Sallway, Bob Readon, John Morgan and the many
other people who are not in this list.

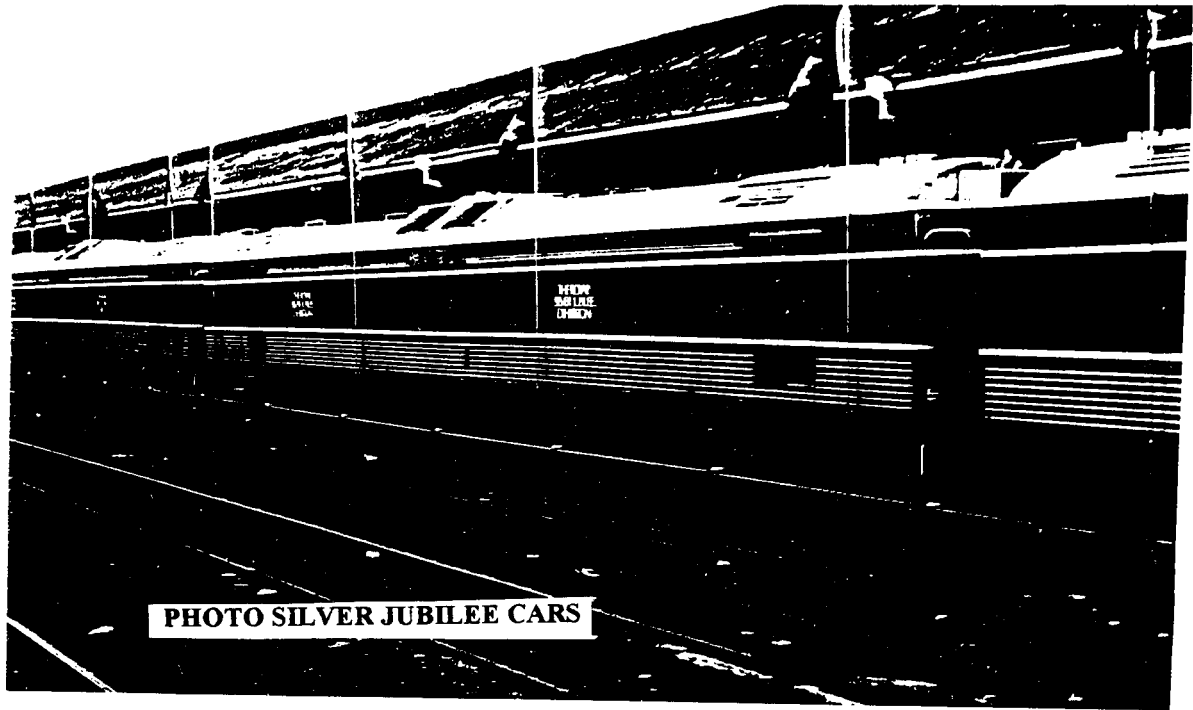


PHOTO SILVER JUBILEE CARS

No1 END

INTERIOR PLAN

No 2 END

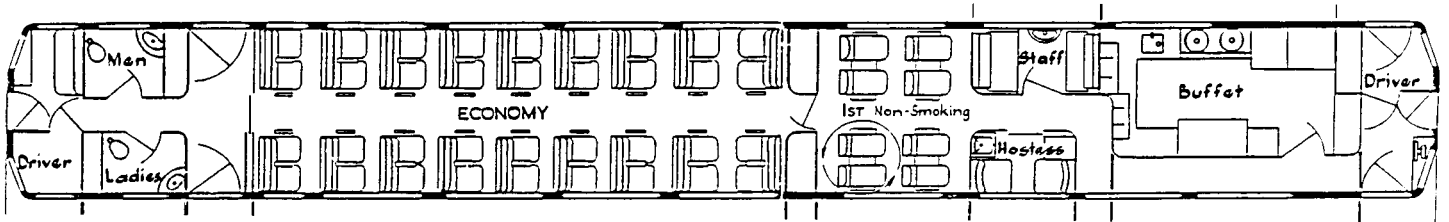
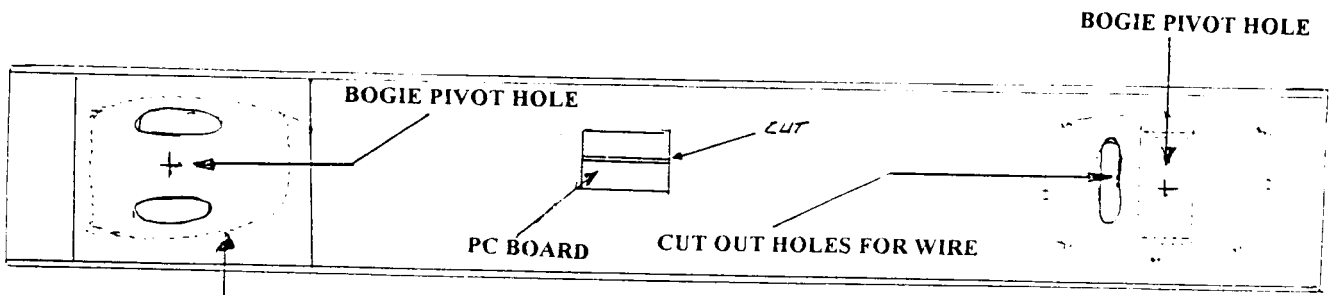


DIAGRAM #8

FLOOR SECTION



BLACK BEETLE ADAPTOR PLATE