



MM 8642

Overhaul 12 Caboose

Series WP 426-460

PROGRAM S-2

PROGRAM S-2

STOCKTON CAR SHOP

Work Order No. MM 8642

Repair Track 3 - Day Shift

This program involves the rehabilitation of cabooses in Series WP 426-460 built in late 1955 by International Car Company. Over the past several years approximately half of these cars have been overhauled, the balance are nearing the end of their useful life and are now in need of heavy repair. Authority was granted October 10, 1980 to proceed with a rehabilitation project at Stockton, based on prototype Caboose WP 452, released for test and evaluation March 1980. Twelve cars will be scheduled for year 1981. Original car numbers will be retained.

Four carmen will be used (Day Shift, Monday-Friday) supplemented by a painter, electrician and laborer. This will not be a station order (assembly line) type program as we have used in the past, instead only two cabooses will be under repair at any given time. Mechanical work fundamentally consists of complete truck overhaul, rewiring of all electrical circuits, overhaul of electrical supply unit and drive equipment, replacing draft sill parts and centerplates, applying reinforcement plates to body bolsters, all welded train line, new hardwood floor, modified interior, replacement of all glazing, and total repainting. Basic sequence of work required is detailed under various procedures included in this manual. Material requisitions, drawings and various related details are separated into nine procedure groups.

All material ordered for this project is to be stored separately from other caboose material.

Start-up date will depend upon delivery of material, probably no later than mid-January. Each car actually spends two months in the shop, which equals a production rate of one car per month released for service.

It is imperative that all material is charged to MM 8642 and all labor on time cards "Special Account Distribution" is charged to 21-02-8642.

Superintendent-Car Department  
December 18, 1980

Note: There is no index to this manual. Related items are grouped together (between orange dividers) as shown on the next page.

BASIC SEQUENCE OF OVERHAUL  
CABOOSE SERIES WP 426-460

1. Remove trucks, completely disassemble following Procedure for TRUCKS, and place car body on stands.
2. Strip interior of car body completely including deck.
  2. A. Remove running board, if so equipped (be governed by Safety Appl. Standards, 1/73, pages 32 and 33, Items 1, 2, 4, 5 and 6).
3. Apply new combination center plate - bottom body bolster cover plates, and top body bolster splices.
4. Remove all draft sill components, inspect draft lugs, install new couplers, yokes, draft gears, draft gear carriers, coupler carriers and coupler carrier wear plates, per Procedure for SILL/FRAME.
5. Steam clean interior/exterior.
6. Apply welded train line, hoses, piping for two A2 Valves, PEP Valve, etc., per Procedure for AIR BRAKES.
7. Paint frame members and apply new floor per Procedure for FLOOR.
8. Apply new interior walls as necessary, remove side windows BR and AL and end windows BL and AR. Paint complete interior light green (Fullerglo 110-30 base with AAY10-FFY10 additive).
9. Apply new glazing per Procedure for GLASS.
10. Apply new fuel tank, fill in window, and apply filler and vent piping, all as detailed in Procedure for FUEL TANK.
11. Install interior components (conductor desk, toilet and tank, and water tank, seats, water cooler, ice chest, bunk, grab irons, bay foot rests, window shades, sink, stove, water and fuel piping, etc.) per Procedure for INTERIOR HARDWARE.
12. Install new electrical system which includes truck mounted Dayco Drive, alternator, batteries, circuit breakers, battery monitor, complete wiring, light fixtures, per Procedure for ELECTRICAL.
13. Paint exterior per Procedure for PAINTING.
14. Rebuild and reapply Barber Bettendorf trucks per Procedure for TRUCKS.



# THE WESTERN PACIFIC RAILROAD COMPANY

## WORK ORDER

Stockton                      October 24                      19 80

M.M. 8642

SHOPS

TO R. L. Millhiser  
R. T. Price  
D. L. Johnston

The following work will be done under the above M.M. NUMBER. All labor expended and Material and Supplies drawn for this work will be reported and charged against the NUMBER of this order.

*Overhaul 12 cabooses, Series WP 426-460 as detailed in Program S-2.*

*Charge all material to MM 8642.*

*Charge all time to Special Account Distribution 21-02-8642.*

*cc - Mgr. Disbr. Accounting*

*G. S. Heaney*

*R. E. Shideler*

To be charged to 314-00-2102

Date Commenced \_\_\_\_\_

Date Completed \_\_\_\_\_

*R. W. Mustard*

*R. W. Mustard*

*RES* C.M.O.



# TRUCKS

PROCEDURE - REBUILDING TRUCKS

These cabooses were built using Barber Bettendorf, 5x9, swing motion trucks. The first two cars through this program will be converted to 5-1/2x10 swing motion trucks using all new stock material which will generate a pool of used parts to be rebuilt as outlined in the following procedure.

During final painting and stencil, each caboose shall be stencilled at the BR and AL side sill location, 5x9 or 5-1/2x10, JOURNALS STANDARD, as the case may be.

The following methods shall be followed:

1. Remove trucks and completely disassemble.
  - A. Keep all parts except side frame, bolsters and wheel sets which are to be sent to Sacramento Shops and transoms which are to be sent to the Purdy Co., 24701 Clawiter Road, Hayward, CA 94545.
  - B. Spring plank safety hangers bolted to transoms are to be carefully removed and saved for reapplication.
2. Side frame and truck bolster reconditioning (at Sacramento Shops).
  - A. Apply side frame roof liners per AAR Rule 48C5. Transom cavity to conform to WP Drawing 894-F-3080 (side frame). If buildup required use E9018 wire.\* For reference see Page 11.
  - B. Repair truck bolster bowl using the chemetron procedure, detailed on Pages 13 and 14. Bolster wear plates are to be applied using 1/4" abrasion plate cut to size as shown on SCT Drawing B5547, via continuous weldment using 70S-3 rod. Apply new side bearings, Stucki #706, using Huck fasteners.

\*Buildup of any magnitude will require normalizing per 3F.
3. Transom reconditioning (at Purdy).
  - A. Prepare top swing hanger pin bearing area, per Page 5, using gauge on Page 6.
  - B. Remove bolster wear plates (if any), check inside tolerance (10-15/16" + 1/16 - 0) per WP Drawing 894-F-9000. If buildup required, use E9018 wire and machine to specification. Machined surfaces must be parallel + 1/32" - 1/32" (WP will apply 1/4" wear plates).
  - C. Build up sharp corners in spring cavity to approximate configuration of original casting and grind to smooth radius to eliminate stress risers. Same applies to any sharp corners where truck bolster has made contact with transom.
  - D. Build back to original contour, truck side frame pin area, maintaining 2" dimension, using E9018 wire. Grind to smooth contour. (Refer to lower part of casting in half section AA on Drawing WP 894-F-9000.)
  - E. Cracks (as generally develop in certain areas) marked on print 894-F-9000 to be "v"ed out and welded with McKay 3/32" #90-E-9019 wire, including backup pass, in general accordance with 1980 AAR Rule 82A.

- F. Upon completion of welding, grinding and machining, transoms shall be normalized by heating to 1600-1675° F at a rate not exceeding 500° F increase per hour and held when uniformly heated at 1600-1675° F for 30 minutes per inch of maximum thickness. Transoms must not be charged into furnace initially if furnace temperature exceeds 700° F (temperature must be regulated and measured by use of a recording pyrometer.) When transoms are removed from the furnace, they shall be allowed to cool in shop air, protected from drafts and weather.
  - G. Each transom shall be marked on each outer end (visible when complete truck is assembled) per 1980 AAR Rule 82.D.6.
  - H. Completed transoms to be shipped to Sacramento Shops for application of 1/4" wear plates and mated with bolsters, after which transoms will be returned to Stockton.
4. Reassembly (at Stockton): See Pages 8 and 9 for details. Make certain that 5x9 transoms mated at Sacramento with 5x9 side frames are used as sets (correct tolerance built in). (As information: WP 5x9 Barber Bettendorf transoms were cast in 1955 or 1956, 5-1/2x10 transoms were cast in 1963 or later.)
- A. Apply new spring seats (Part #F-419-A).\*
  - B. Apply new spring plank bearings (Part #F-388-A)\* or modify Part #F-388.
  - C. Apply new spring hangers (Part #F-420-A).\*
  - \* Application of these parts will increase clearance from top of rail - see attached details on Page 4, Material Requisition No. 55579.
  - D. Apply new swing hanger top pins (R8304 Pattern F409) - WP Stock Item 20-03575-1.
  - E. Apply new swing hanger bottom bearings (R8304 Pattern F400) - WP Stock Item 20-03576-1.
  - F. Examine spring plank and replace if worn to any extent. Be governed by 1980 AAR Rule 49. Planks per Drawing R-8135D covered by Material Requisition No. 55584 to be used as required. Reused planks shall be modified by 1" bevel at each end as shown on drawing.
  - G. Apply new elliptic springs, WP stock item 12-01085-1.
  - H. Examine brake beams and reapply if suitable for continued service, per 1980 AAR Rule 6. (Brake beams, if new, must be Type S-371, formerly E-84-B, for use with composition brake shoes; or if Type S-370, formerly E-84-A, they must be equipped to reject cast iron shoes).
  - I. Apply flanged composition 15" brake shoes, ABEX T-2020 or Cobra V-203, Material Requisition No. 55588.
  - J. Reuse brake levers and rods if within wear limits as outlined in 1980 AAR Rule 11. All rigging pins are to be replaced.
  - K. Replace roller bearing adapters unless existing units pass all criteria as outlined in 1980 AAR Rule 37. Stock Item #21-02002-1.
  - L. Sacramento Shops will furnish full contour 5x9 roller bearing wheel sets.

- M. Spring plank safety hangers (straps) shall be reapplied, and secured with Grade 5 bolts.
- N. Frame keys shall be applied with hook fasteners.
- O. Hollube center plate liners shall be applied per Material Requisition No. 55590.
- P. New, or like new, center pins shall be applied.
- Q. NO parts of trucks, as detailed in this procedure, shall be painted.
- R. All parts not reapplied to trucks which are not reclaimable, shall be scrapped. Parts which are reclaimable, shall be accumulated in ONE designated area.

As reference - truck nomenclature is detailed on Page 7.

Application of washer adjacent to top pin bearing (if required) is shown on Page 10.

The following reference drawings are attached (these have been reduced from larger originals). Full size drawings are available from Sacramento Shops:

- R-8135D - Spring Plank
- 144-F-2090 - Bolster
- 894-F-3080 - Side Frame
- 894-F-9000 - Transom

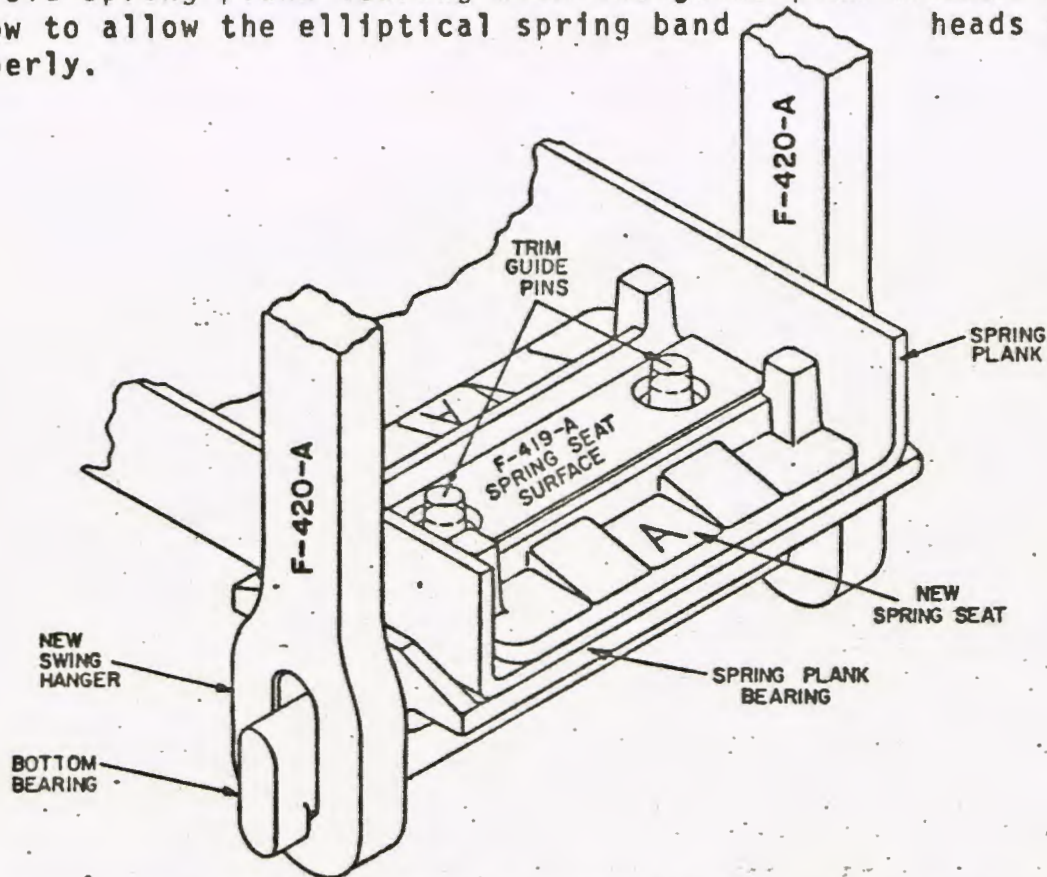
Material Requisitions which apply to truck rebuild are also attached.

## METHOD OF INCREASING RAIL CLEARANCE ON EXISTING TRUCKS

From component wear due to service, it may be possible for the bottom of the swing hanger to project outside the clearance diagram on older trucks.

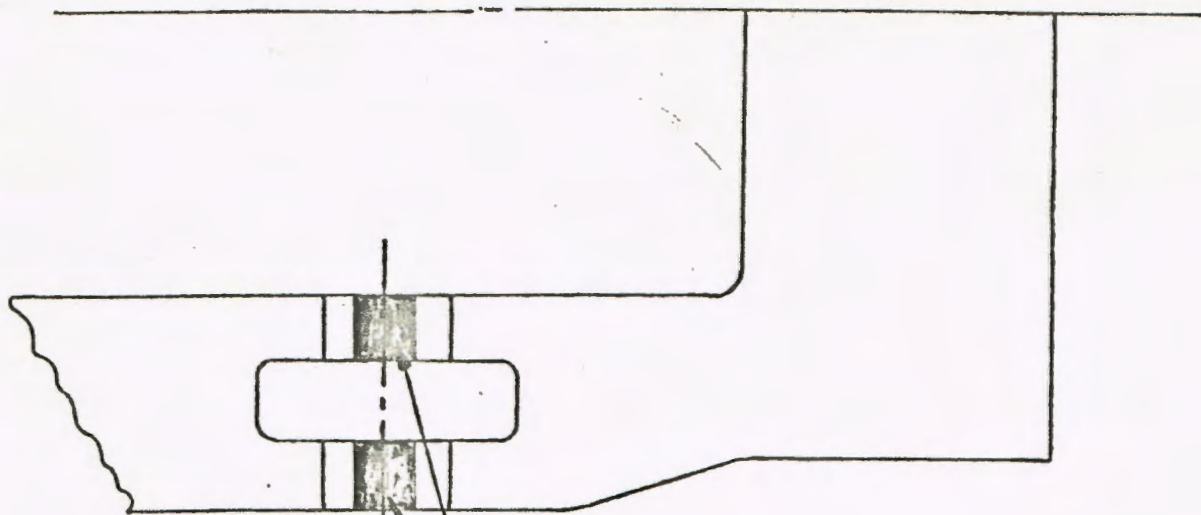
To prevent this occurrence, Standard Car Truck Company now furnishes a new, shorter swing hanger, new spring seat and spring plank bearing to provide 1" additional clearance between the swing hangers and rail on new cars.

Trucks in service can be modified by using the new swing hangers (Pattern No. F-420-A), new spring seat (Pattern No. F-419-A), and the old spring plank bearing with the guide pins trimmed as shown below to allow the elliptical spring band heads to seat properly.

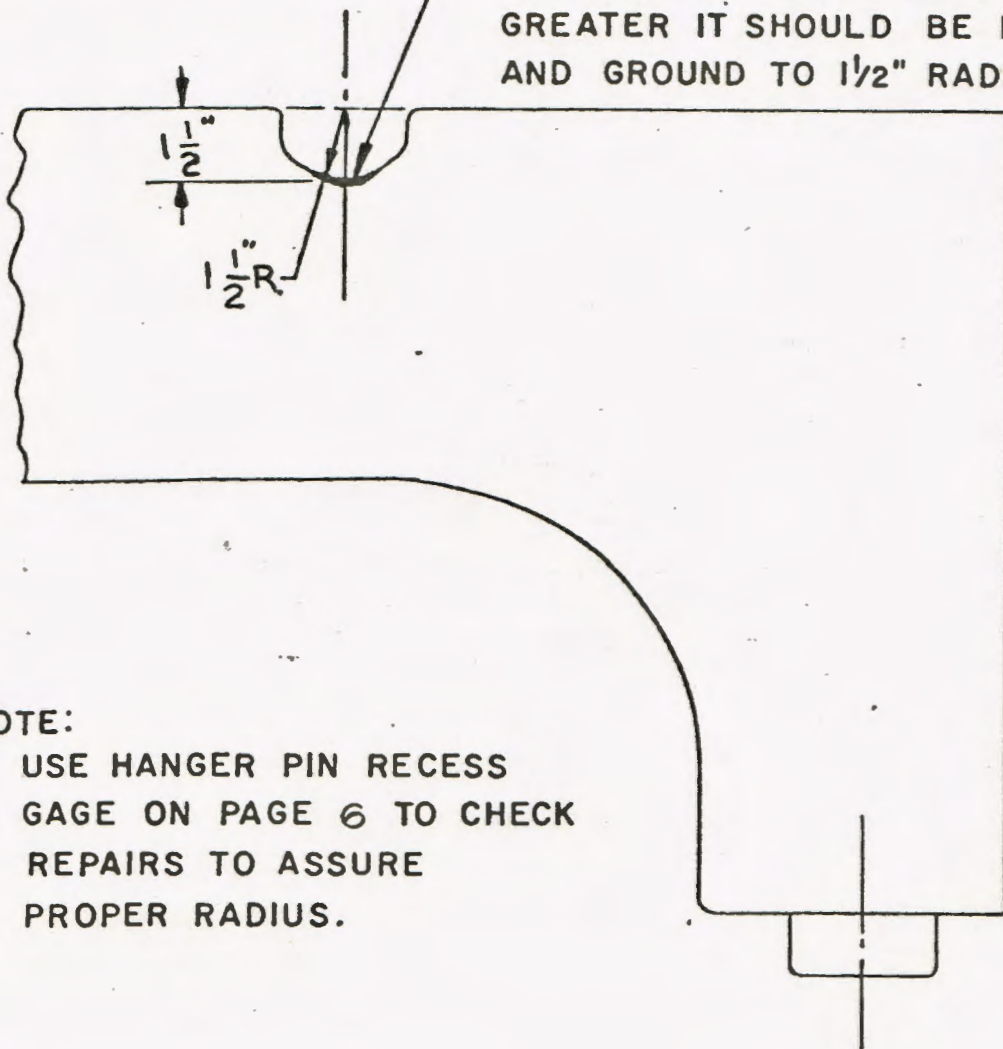


### PROCEDURE FOR INCREASING CLEARANCE ABOVE THE RAIL ON EXISTING TRUCKS

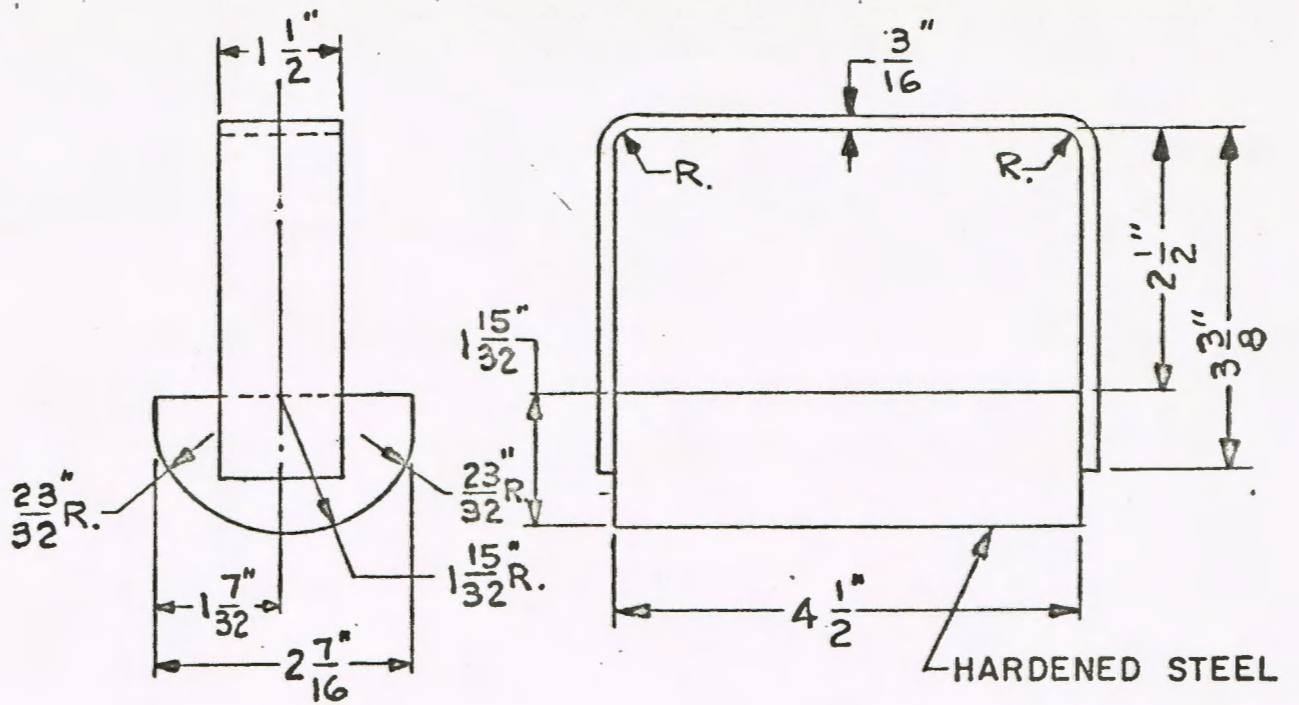
1. REPLACE SWING HANGERS WITH NEW SHORTER HANGERS, PART NUMBER F-420-A,
2. REPLACE SPRING SEAT WITH NEW THINNER SEAT, PART NUMBER F-419-A,
3. SPRING PLANK BEARING,
  - A.) REPLACE WITH NEW UNIT HAVING SHORTER GUIDE PINS, PART NUMBER F-388-A,
  - OR
  - B.) USE ORIGINAL UNIT IF IN GOOD CONDITION, BUT REDUCE HEIGHT OF GUIDE PINS SO THEY DO NOT PROJECT ABOVE SPRING SEAT SURFACE.



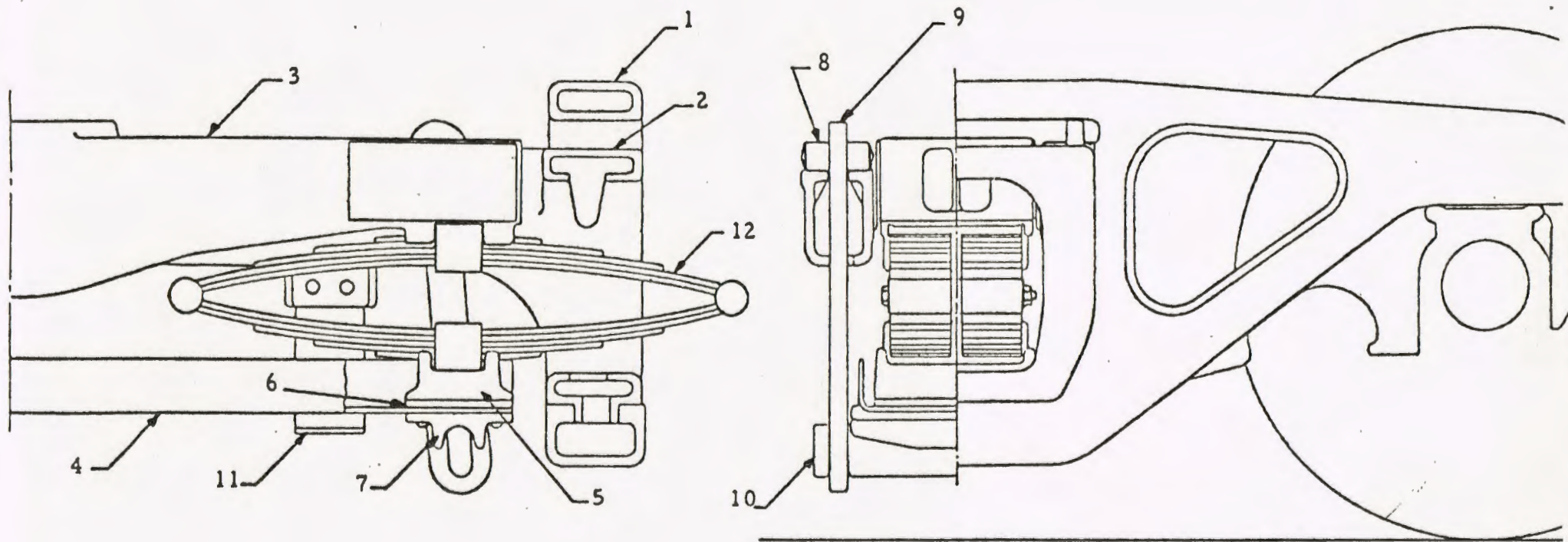
WHEN WEAR IN SHADED AREAS IN SWING HANGER TOP PIN RECESS IS  $\frac{1}{8}$ " DEEP OR GREATER IT SHOULD BE HARDFACED AND GROUND TO  $1\frac{1}{2}$ " RADIUS.



NOTE:  
USE HANGER PIN RECESS GAGE ON PAGE 6 TO CHECK REPAIRS TO ASSURE PROPER RADIUS.



HANGER TOP PIN RECESS GAGE



TRUCK NOMENCLATURE

- |                       |                               |
|-----------------------|-------------------------------|
| 1. Side Frame         | 7. Spring Plank Bearing       |
| 2. Transom            | 8. Top Pin Bearing            |
| 3. Bolster            | 9. Swing Hanger               |
| 4. Spring Plank       | 10. Bottom Bearing            |
| 5. Spring Seat        | 11. Spring Plank Safety Strap |
| 6. Shim (if Required) | 12. Elliptic Spring           |

## Suggested Assembly - Roller Bearing Equipped Trucks

### Sub-Assembly

Side frames should be prepared with brake beam wear plates.

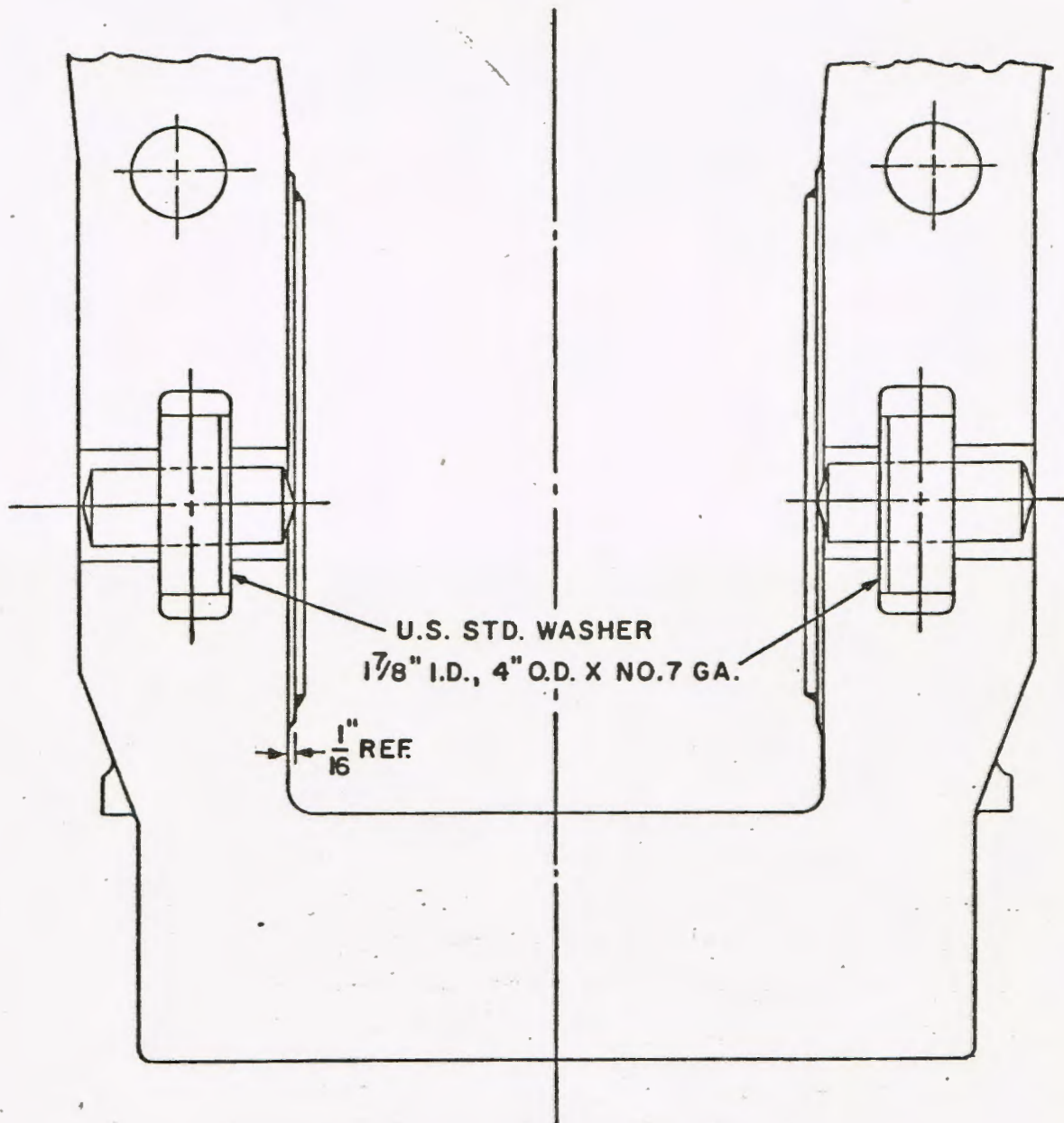
Apply spring plank safety straps to transom with bolts, lockwashers, and nuts and draw up tightly. Batten threads to prevent nuts from working loose. (If locknuts are used, lockwashers are not required nor is the battering of the threads necessary.)

Assemble spring plank bearings to spring planks.

### Assembly

1. Place transom on blocking between rails and obtain a height of 26-1/2 inches from the top surface of the transom to the top of the rail. Blocking should be placed under spring plank safety straps.
2. Place matching side frames alongside ends of transom.
3. Roll wheel and axle sets in to approximate position.
4. Hoist one side frame and move inward over end of transom. The round boss on the underside of the end of the transom should engage the hole provided in the frame. While moving the frame inward, the wheel and axle sets should be positioned so the pedestal openings will slide over the roller bearings. Bearing adaptor castings should be applied at this time.
5. Insert brake beam into wear plate in side frame that is in place.
6. Opposite side frame should be applied the same as in Step 4. (After this operation, blockage under transom can be removed.)
7. The swing hangers should be inserted in place in the slots of transom using the top pins to lock them in place. Then insert the bottom bar through the slots in the hangers with the notches downward and interlocking with the hanger's eyes.
8. Place pre-assembled spring plank into position interlocked with the swing hanger bottom bar.

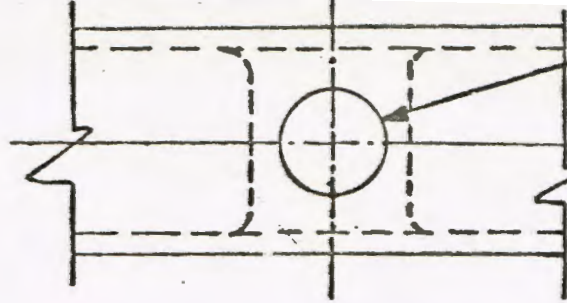
9. Drop shims and spring seats on locating bosses projecting up at ends of spring plank.
10. Place elliptic springs on spring seats of spring plank with spring bands properly seated between spring seat guides. Leave spring strapping on during assembly, however, exercise caution so that strapping does not interfere with proper seating of bands in spring seats.
11. Place bolster on top of springs with spring bands properly seated between guides on underside of bolster.
12. Clip bottom rod supports to brake beams and slide bottom rod through supports. Pin truck brake levers and dead lever fulcrum in place and secure pins with cotters provided.



### WASHER APPLICATION

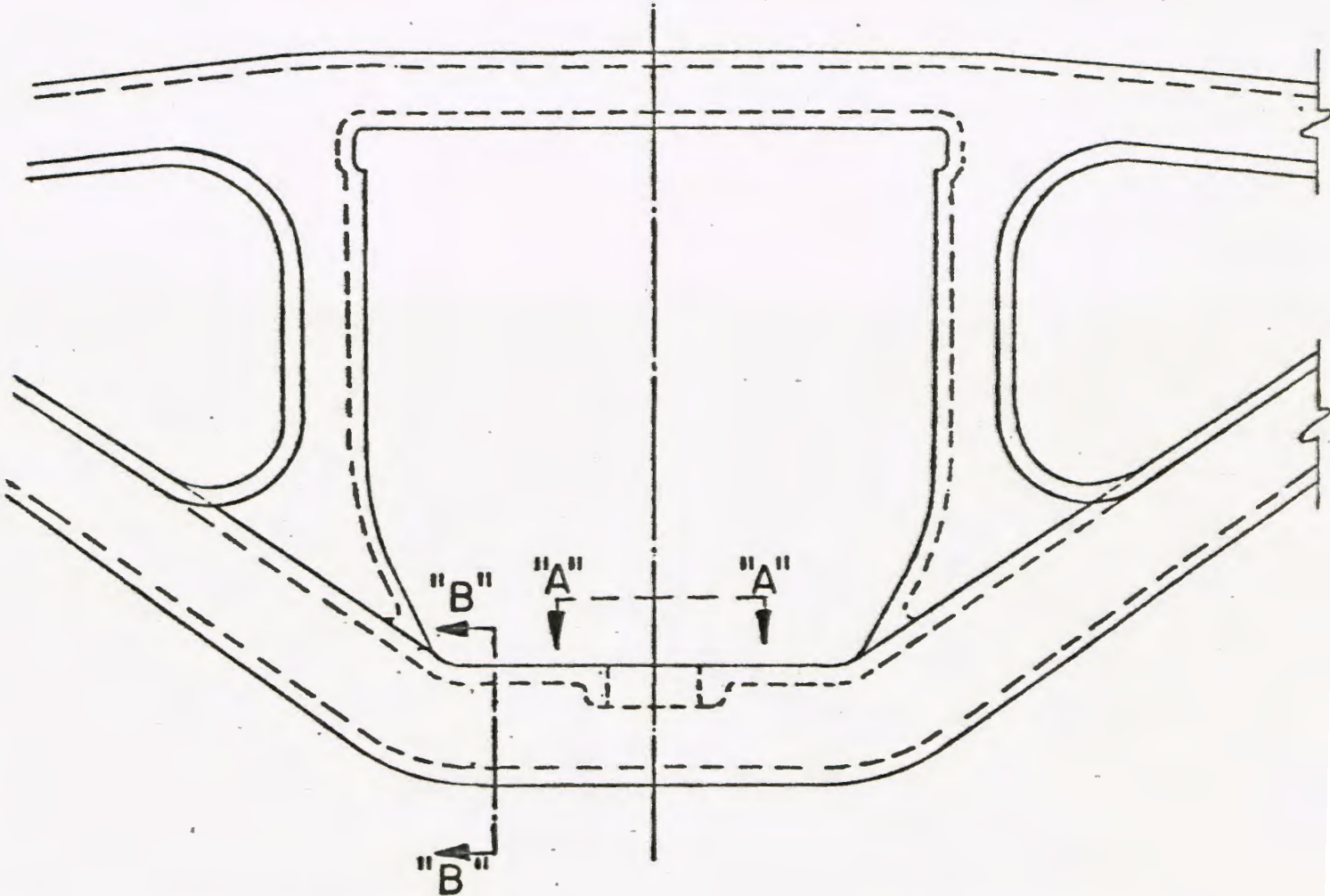
On some of the earlier trucks, there has been evidence of the ends of the top pins scoring the bolster wear plates. To prevent this, washers should be applied as shown above.

It is also recommended that these washers also be applied whenever the transom wear pads have worn and replacement wear plates have been applied.

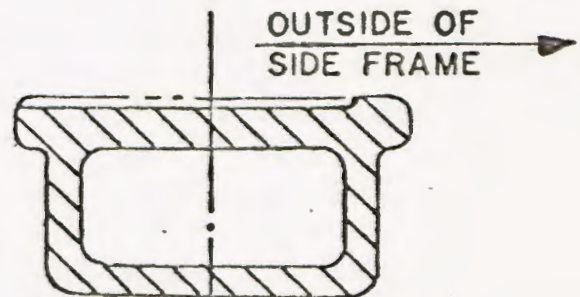


WHEN THIS HOLE FOR TRANSOM BOSS ELONGATES IT SHOULD BE RESTORED TO 3". CHECK WITH GAGE SHOWN ON PAGE 12

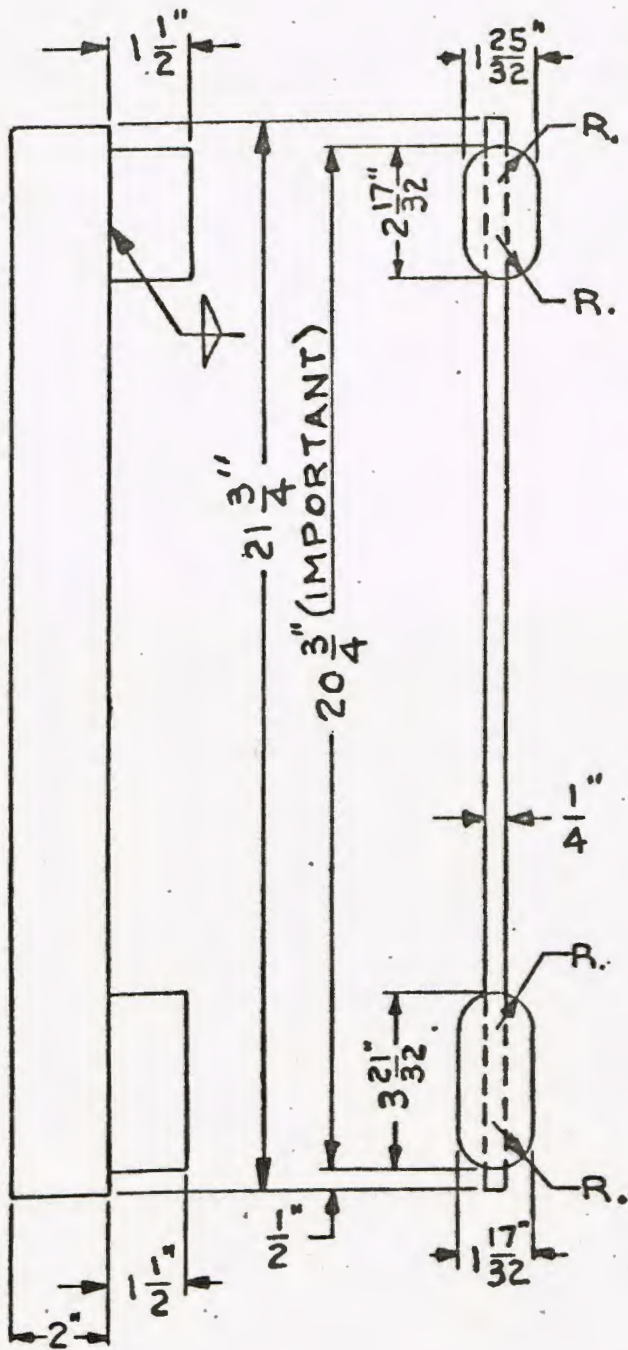
VIEW "A-A"



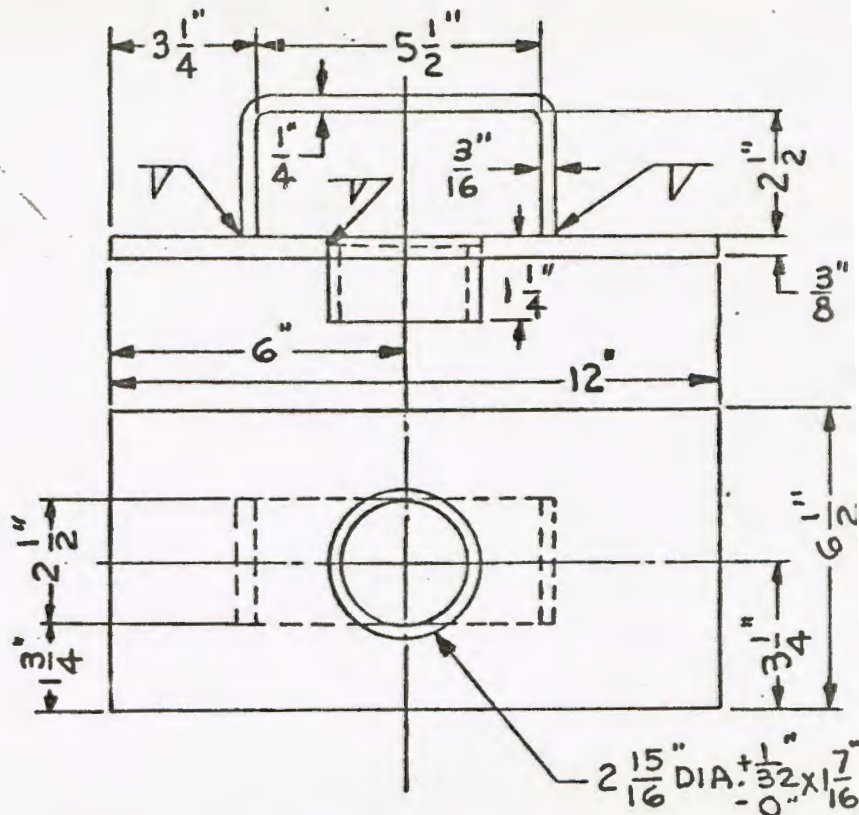
WEAR OF TRANSOM MOUNTING SURFACE AS SHOWN IN SECTION "B-B" SHOULD BE RESTORED TO ORIGINAL HEIGHT WHENEVER TRUCKS ARE DISASSEMBLED. USE TRANSOM SEAT GAGE ON PAGE 12 TO CHECK SURFACE AFTER REPAIRS HAVE BEEN EFFECTED.



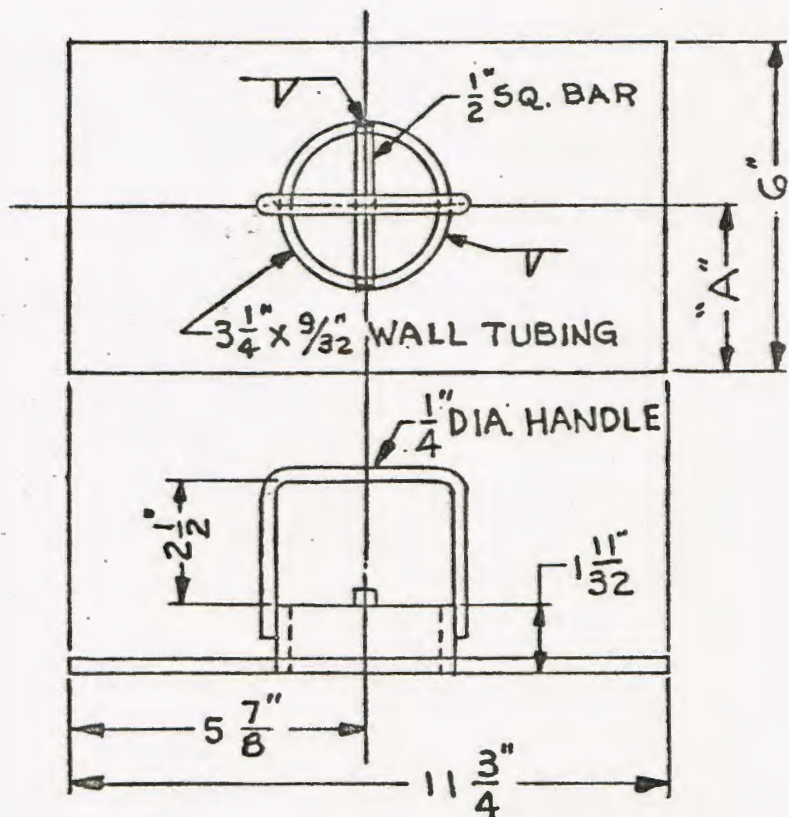
SECTION "B-B"



SWING HANGER  
SLOT GAGE



TRANSOM SEAT GAGE



TRANSOM BOSS GAGE

DIM. "A" = 2 3/4" (5 1/2" x 10" JOURNAL)

DIM. "A" = 3" (5" x 9" JOURNAL)



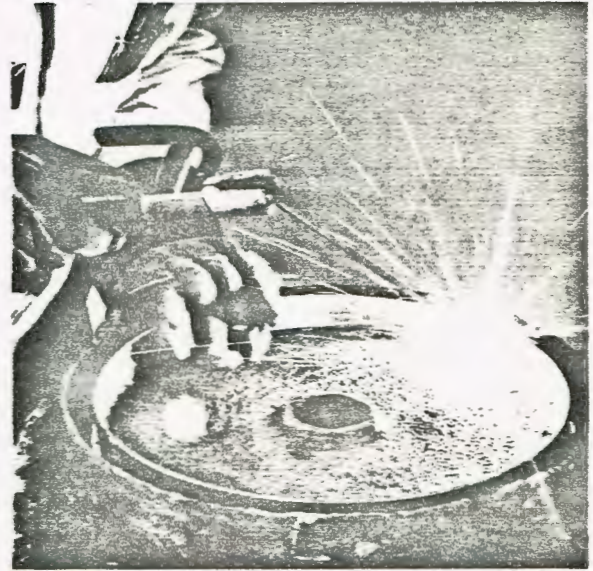
**Step 1.**  
Chamfer the female flange at a 45-degree angle,  $\frac{1}{8}$ " from the outside diameter, evenly around the circumference of the center section.



**Step 2.**  
Clean all excess slag residue.



**Step 3.**  
Preheat casting in the heavy center portion of the bolster to prevent cracking.



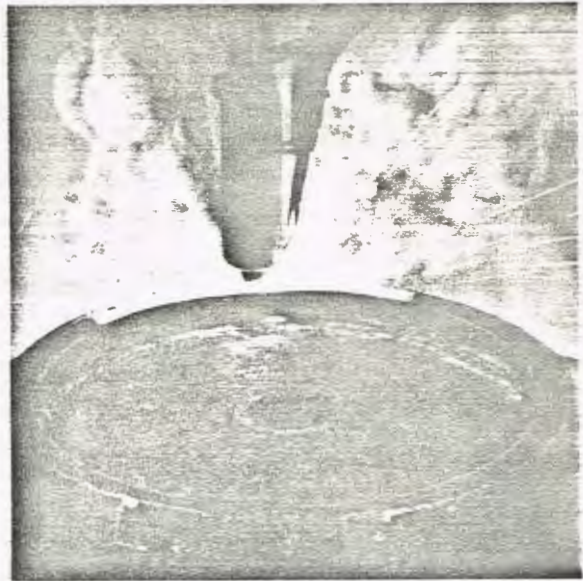
**Step 4.**  
Position the bolster ring using a centering device, and tack-weld the ring in place using Chemetron's Wear-Arc® 3IP hard-surfacing electrode.

## CHEMETRON PROCEEDURE BOLSTER BOWL REBUILDING



**Step 5.**

At this point, you can make a single fillet weld around the inside diameter of the bolster ring with the 3IP hard-surfacing electrode.



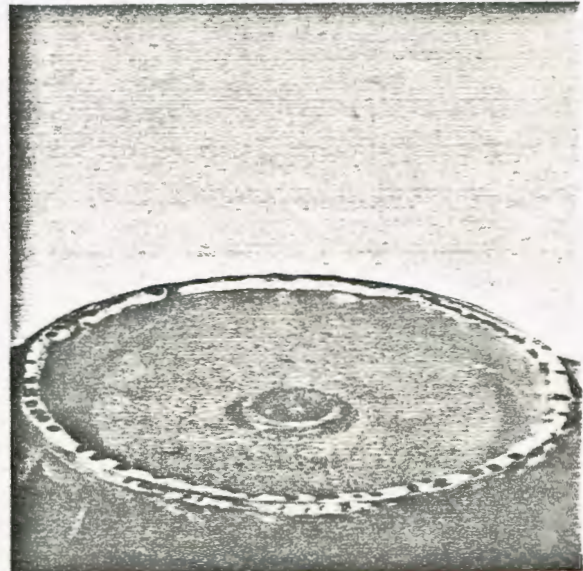
**Step 6.**

Put in a shallow first pass at the root of the square butt joint using either  $\frac{1}{16}$ " or  $\frac{3}{32}$ " Wear-O-Matic BR build-up electrode.



**Step 7.**

Make consecutive build-up passes with the BR alloy until the 45-degree groove is evenly filled with weld metal.



With the 45-degree groove filled, bolster repair is completed and the truck ready to be put back into service. Time elapsed for steps 1 through 7: approximately an hour and a half.



# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55579

DATE ORDERED  
10/25/80

DATE SHIPPED  
/ /

092

33

LOC.

DEPT.

STORE

7565

231

COST CTR.

T.E.C.

TO PROGRAM:  
MAOIPW FORM 414005 5-73  
CAR OR TRUCK NUMBER

04

21 02

8642

05

WAYBILL NUMBER

SHIP TO:  
A.FE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER

Jim Mc Call Stockton Rip Track

WHY NEEDED AND OTHER REMARKS:

MM 8642 Program S-2 Caboose series WP 426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
SWING HANGER, PART # F-420-A		20-03574-1	EA	96	2739 <u>good</u>
SPRING SEAT, PART # F-419-A		20-03572-1	EA	48	2010 <u>good</u>
SPRING PLANK BEARING PART # F-388-A			EA	20	2022 <u>good</u>
FROM: STANDARD CAR TRUCK					
NOTE TO STOCKTON RIP: DO NOT MIX THESE WITH SIMILAR PARTS. THESE ARE TO BE USED IN CAR SETS ONLY TO INCREASE SWING HANGER CLEARANCE ABOVE RAIL. COLOR CODE WITH GREEN PAINT DOT.					

ORIGINATED BY: Re. Shideler APPROVED BY AND DATE: New Munster 11/17 SHIPPED BY: REC'D BY:

J. MCCALL

WHY NEEDED

MR 55579 PROGRAM S-2 CABOOSE WP426-460

The Western Pacific Railroad Company

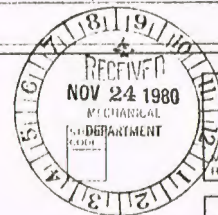
c/o

J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

SHIP TO

VENDOR

STANDARD CAR TRUCK COMPANY  
%BARBER RAILWAY DEVICES  
332 SO. MICHIGAN AVENUE  
CHICAGO, ILLINOIS 60604



IMPORTANT  
THIS PURCHASE ORDER NUMBER  
61948  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE PAPERS AND PACKAGING

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

VENDOR CODE  
71570

SHIPPING INSTRUCTIONS		TRUCK		SHIPPING CHARGES		OTHER	
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	PREPAY & INC. INTR.	PREPAY	COLLECT	OTHER
P.O. DATE	NO. DAY YR.	TAX CODE	B/C DISCOUNT TERMS	AFE NO.	DATE REQUIRED	DEPT. CODE	
	11 21 80	E D				33	
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE	
1	20	EA	F-388A SPRING PLANK BEARING		7565-231 PROJECT CONTROL 21-02-8642	29.20	

*BALANCE OF MATERIAL ON # 55579 IN STOCK @ STOCKTON*

CODES FOR UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	BT - BIT	PK - PACKAGE	SR - SHEET	TZ - TWIN DOUBLE
BP - BOXER MEASURE PAST	CC - C. CUBIC FEET	EA - EACH	CR - POUND	PH - PAIR	SS - SILE	TY - TWIN YARD
BL - BALL	CL - CYLINDER	FT - LINEAL FOOT	ES - SHEET	PF - PIECE	SP - SPOOL	
BM - BUNDLE	CR - CAN	GL - GALON	M - THOUSAND	QU - QUART	SI - SHEET	
BR - BUSH	CS - CASE	GR - GROSS	ME - THIN AND BOARD FEET	RI - ROLL	SN - SQUARE YARD	
C - CORD	CT - CARTON	GT - GROSS TON	ME - MEASURE	RM - REEL	TD - TUBE	
CA - CASE	CU - CUBIC YARD	RS - REEL	DZ - DOZENS	ST - SQUARE FEET		

REMARKS: F.P. BROGDON, Director, Purchases & Material

COMMENTS:  
CC: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS  
B. A. STILWELL - MR 55579 ATTACHED ORDER ITEMS 1&2 THRU STOCK C.

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55588

DATE ORDERED 11/6/80  
DATE SHIPPED / /

092

33

LOC.

DEPT.

STORE

7565

231

COST CTR.

T.E.C.

TO PROGRAM: MAOIPW FORM 414005 5-73

CAR OR TRUCK NUMBER

04 AFE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER

SHIP TO: Jim McCall STOCKTON R/P TRACK

WHY NEEDED AND OTHER REMARKS:

MM 8642 - Program S-2

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
FLANGED COMPOSITION 15" BRAKE SHOE ABEX T-2020					
-OR-					
COBEA V-203			EA	100	15.65
(see P/O 55751 for ref on Cobra shoe dated 10-9-79)					

APPROVED BY AND DATE: *R. E. Shideler* / *Rw Muntz 8/17*

SHIPPED BY: \_\_\_\_\_ REC'D BY: \_\_\_\_\_

WHY NEEDED

## The Western Pacific Railroad Company

SHIP TO: J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

VENDOR: RAILROAD FRICTION PRODUCTS CORP.  
WILMENDING, PA 15148  
ATTN: JOE KAHR

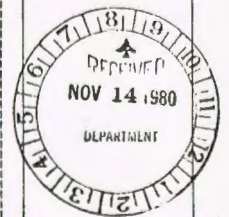
IMPORTANT  
THIS PURCHASE ORDER NUMBER

61588

MUST APPEAR ON ALL INVOICES, COPY  
RESPONSE TO THE PAPERS, AND PACKAGING

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS		MERCHANT SHIPPERS				
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	SHIPPING CHARGES	OTHER	
	NO. DAY YR	PAY C/PAY	B/C DISCOUNT TERMS	PREPAY & INCL. INVOICE	PREPAY	
P.O. DATE	11 13 80	E V		ATE NO.	DATE REQUIRED	
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	100	EA	FLANGED COMPOSITION 15" BRAKE SHOE COBRA V-203		7565-231 21-02-8642	15.65



CODES FOR UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CM - HUNDRED WEIGHT	BT - BUSH	PK - PACKAGE	SH - SHEET	TS - TON SHORT
BP - BOARD MEASURE FEET	CC - CUBIC CENT	EA - EACH	CB - CUBIC YARD	PK - POUND	SS - SACK	TL - TON LONG
BL - BALL	CL - CUBIC LITER	FL - LINEAL FOOT	LT - LITRE	PK - POUND	SP - SPool	
BN - BUNDLE	CM - CAN	GL - GALLON	MB - METER	PK - POUND	ST - SQUARE	
BS - BUS	CS - CARTON	GR - GROSS	MT - METRIC BOARD FEET	PK - POUND	ST - SQUARE YARD	
C - HUNDRED	CT - CARTON	GT - GROSS TON	MT - METRIC TON	PK - POUND	ST - SQUARE	
CA - CASE	CT - CUBIC YARD	GR - GROSS	QT - QUART	PK - POUND	ST - SQUARE FEET	

REMARKS: \_\_\_\_\_

Per: \_\_\_\_\_

COMMENTS: cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

(92) 136 33

LOC. DEPT. STORE

7565 231

COST CTR. T.E.C.

TO PROGRAM:  
MAOIPW FORM 414005 5-73  
CAR OR TRUCK NUMBER

55600

DATE ORDERED 1/17/81 DATE SHIPPED 1/1

04 AFE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER

21 02 8642 05

WAYBILL NUMBER

SHIP TO (STOCKTON PROGRAM) - SHIP TO TRUCK SHOP - SACRAMENTO

WHY NEEDED AND OTHER REMARKS:

CABOOSE OVERHAUL

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
RECONDITION 5X9 TRANSOMS PER THE ATTACHED SPECS 3A, 3B, 3C, 3D, 3E, 3F AND 3G. COMPLETED UNITS TO BE SHIPPED PER 3H. (THE ABOVE PER CONVERSATION KEN SKINNER & R. E. SHIDELER) - FROM PURDY CO -			EA *		
* QUANT. NOT TO EXCEED 20 EACH ON THIS ORDER.					
CC: DAVE JOHNSON - SEND 2 COPIES WP DRAWING 894/F900 TO PURDY - HAYWARD					

ORDERED BY R. E. SHIDELER 1/17 APPROVED BY AND DATE R. W. MONTGOMERY 1/17 SHIPPED BY REC'D BY

USER/LOCATION J. MCCAUL - STOCKTON TODAY'S DATE REQUIRED DATE APPROVED BY & DATE APPROVED BY & DATE

WHY NEEDED MR 55600 PROGRAM S-2 CABOOSE PROGRAM WP426-460

## The Western Pacific Railroad Company

c/o B. A. STILWELL  
STOREKEEPER  
3500 - 24th STREET  
SACRAMENTO, CA 95818

SHIP TO

PURDY COMPANY  
24701 CLAWITER ROAD  
HAYWARD, CA 94515

VENDOR

STORL CODE

VENDOR CODE 61820

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
62584  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGING

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS		TRUCK		SHIPPING CHARGES		OTHER	
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	PREPARE & INCL. IN INV.	PAFFAY	COLLECT	OTHER
P.O. DATE	NO. DATE YR.	TAX CODE	B/C	DISCOUNT TERMS	AFE NO.	DATE REQUIRED	DEPT. CODE
	01 20 81	D	D				33
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE	
1	*	EA	RECONDITION 5X9 TRANSOMS PER THE ATTACHED SPECS 3A, 3B, 3C, 3D, 3E, 3F and 3G. COMPLETED UNITS TO BE SHIPPED PER 3H. (THE ABOVE PER CONVERSATION KEN SKINNER & R. E. SHIDELER) *QUANTITY NOT TO EXCEED 20 EACH ON THIS ORDER.		7565-231 PROJECT CONTROL 21-02-8642		



CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CM - HUNDRED WEIGHT	ET - EIT	PG - PACKAGE	SH - SHEET	TD - TROY OUNCE
BY - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PA - PAIR	SK - SACK	YD - LINEAL YARD
BL - PALLET	CL - CYLINDER	FT - LINEAL FOOT	LI - LIN	PF - PAIR	SP - SPOOL	
BN - BUNDLE	CB - CAN	GL - GALLON	IN - INCH/AND	QT - QUART	ST - SIT	
BS - BOX	CS - CASE	GR - GROSS	MP - THOUSAND BOARD FEET	SI - SQUARE YARD	TU - TUBE	
C - HUNDRED	CT - CARTON	GT - GROSS TON	MT - METERS	RM - REAM		
CA - CASE	CT - CUBIC YARD	RS - RES	OZ - OUNCE	SZ - SQUARE FEET		

REMARKS F.P. BROGDON, Director, Purchases & Material

COMMENTS: CC: J. MCCAUL R. E. SHIDELER H. A. O'RULLIAN D. B. JENNINGS - DESK FILE

WHY NEEDED

## The Western Pacific Railroad Company

**IMPORTANT**

THIS PURCHASE ORDER NUMBER  
**63988**

MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGES

c/o

**SHIP TO**

B. A. STILWELL  
STOREKEEPER  
3500-24th STREET  
SACRAMENTO, CA 95818

STORE CODE  
**G**

**VENDOR**

BETTS SPRING CO.  
2100 WILLIAMS STREET  
SAN LEANDRO, CALIF. 94577

VENDOR CODE  
**08460**

PLEASE NOTE IF CHECKED

CONFIRMING-DO NOT DUPLICATE

STANDING ORDER

BLANKET ORDER

**SHIPPING INSTRUCTIONS** ▶ TRUCK ( AS CALLED FOR )

**TERMS OF SALE** ▶  F.O.B. DESTINATION  F.O.B. POINT OF SHIPMENT  OTHER

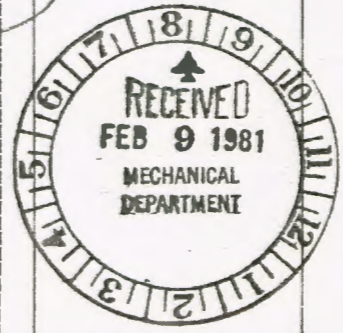
**SHIPPING CHARGES**  PREPAY & INCL. IN INV.  PREPAY  COLLECT  OTHER

**P.O. DATE** ▶ 2 6 81  TAX CODE  B/C D D DISCOUNT TERMS 01 NET 30

**DEPT. CODE** 33

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
	100	EA	"CONFIRMING PHONE" CABOOSE SPRINGS PER SAMPLE SUBMITTED  MATERIAL TO BE HELD IN YOUR WAREHOUSE AND SHIPPED AS REQUESTED DURING THE BALANCE OF 1981	12 01085 1		57 00

SEE PAGE 2  
ITEM 4



**CODES FOR UNIT OF MEASURE**

- |                         |                    |                     |                          |                  |                  |                  |
|-------------------------|--------------------|---------------------|--------------------------|------------------|------------------|------------------|
| BB - BARREL             | CF - CUBIC FOOT    | CW - HUNDRED WEIGHT | KY - KIT                 | PG - PACKAGE     | SH - SHEET       | TZ - TROY OUNCE  |
| BD - BOARD MEASURE FEET | CC - C. CUBIC FEET | EA - EACH           | LB - POUND               | PR - PAIR        | SK - SACK        | YD - LINEAL YARD |
| BU - BUNDLE             | CL - CYLINDER      | FT - LINEAL FOOT    | LT - LOT                 | PT - PINT        | SP - SPOOL       |                  |
| CA - CASE               | CR - CAN           | GL - GALLON         | M - THOUSAND             | QT - QUART       | ST - SET         |                  |
|                         | CS - CARSET        | GR - GROSS          | NF - THOUSAND BOARD FEET | RL - ROLL        | SY - SQUARE YARD |                  |
|                         | CT - CARTON        | GT - GROSS TON      | NT - NET TON             | RM - REAM        | TU - TUBE        |                  |
|                         | CY - CUBIC YARD    | KC - KEG            | OZ - OUNCE               | SF - SQUARE FEET |                  |                  |

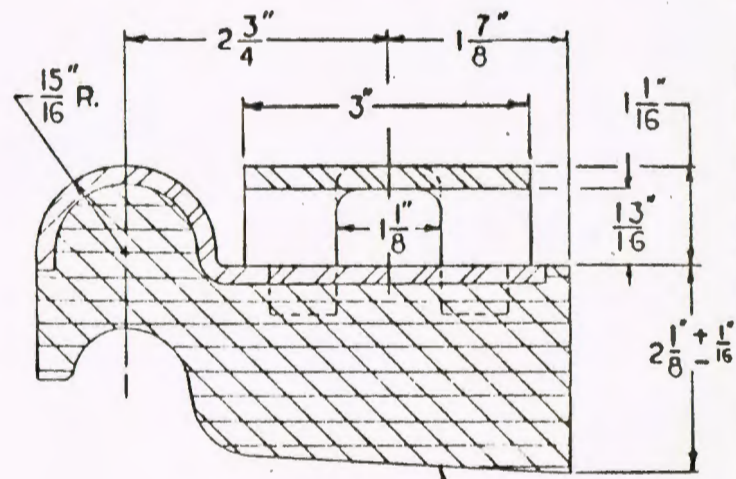
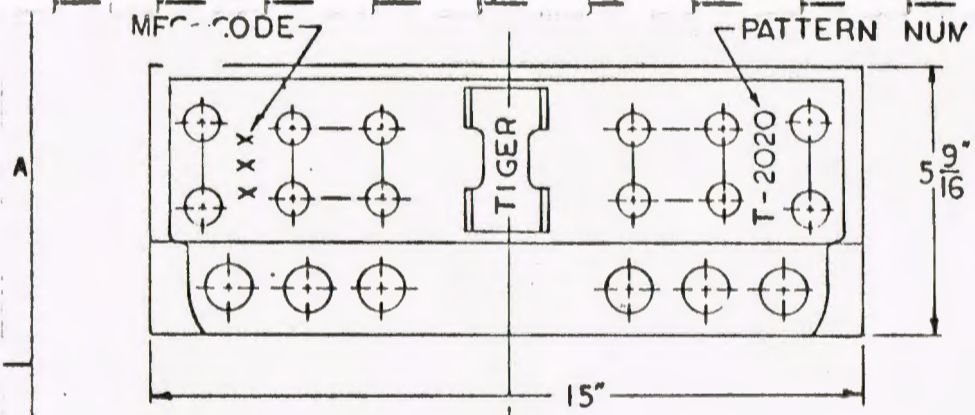
**REMARKS**

F.P. BROGDON, Director, Purchases & Material

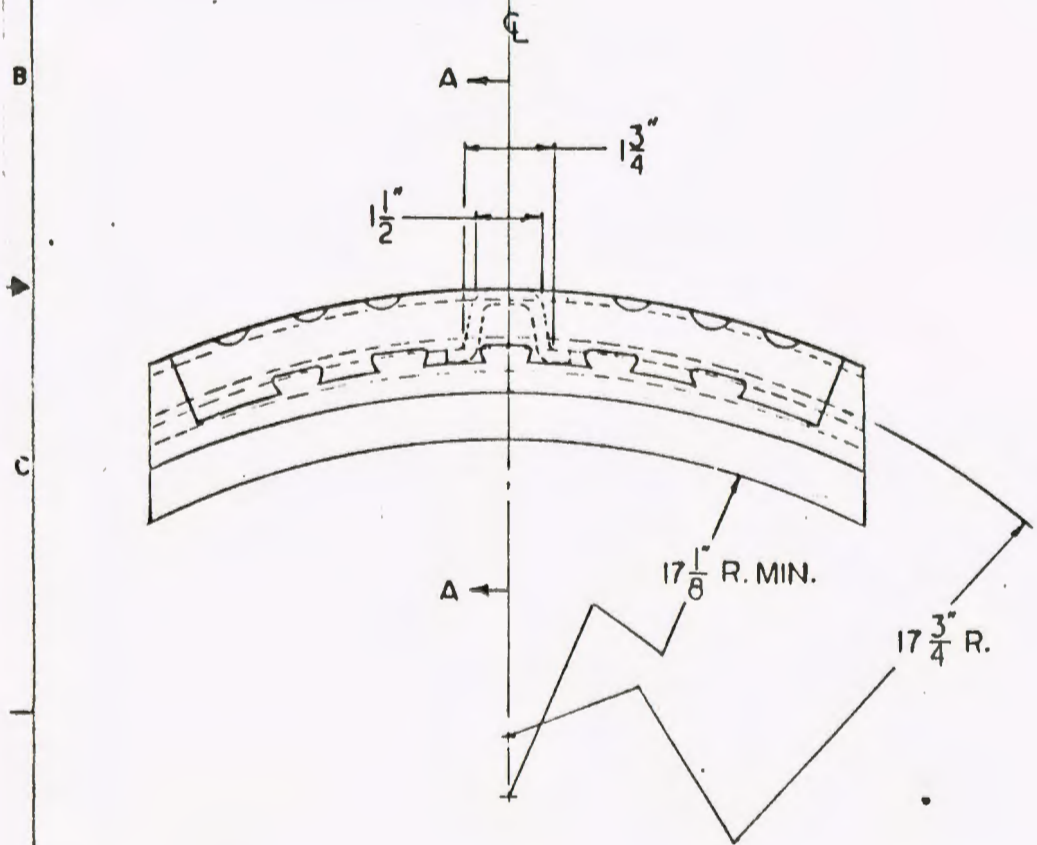
Per \_\_\_\_\_

**COMMENTS:**

CC: R. E. SHIDELER ✓ - PER OUR CONVERSATION  
B. A. STILWELL - MARK YOUR CARD



SECTION 'A-A'

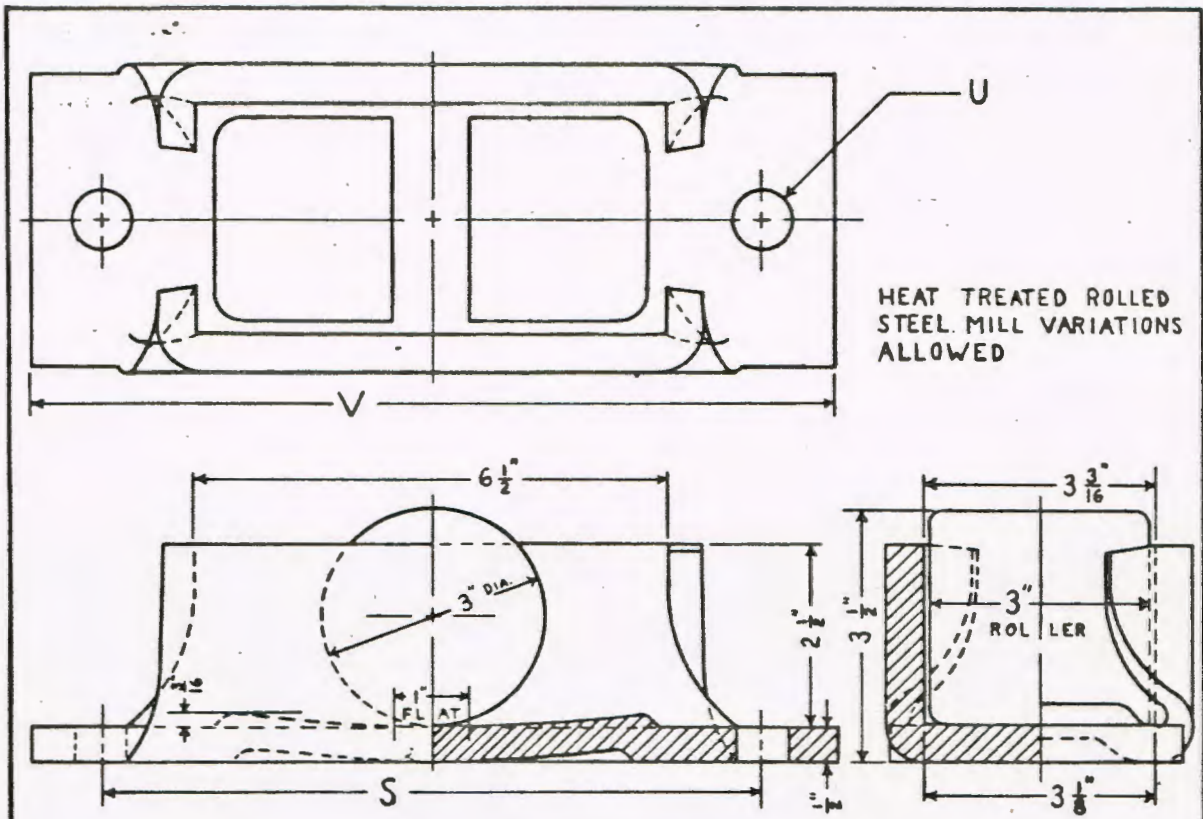


FIRST USED ON WP 452.  
 STANDARD FOR PROGRAM S-2,  
 WP 426-460 - MM 8642.

R.E.S.

T-2020

ZONE	SYM	DATE	DESCRIPTION	DR	APP
			REVISIONS		
SCALE			THIS DRAWING IS THE PROPERTY OF A UNIVERSITY OR FEDERAL AGENCY AND IS TO BE RETURNED TO THE SOURCE ON REQUEST.		
CASE NO. 0056				RAILROAD PRODUCTS GROUP	
AIPD				MAHWAH N.J. 07430	
CHECKED TIL			FLANGED COMPOSITION T-2020 15" BRAKE SHOE		
DRAWN E.S.					
DES.					
DATE 5-20-77					
			1 OF 1		



HEAT TREATED ROLLED  
STEEL. MILL VARIATIONS  
ALLOWED

NOTE: USE DRG. 142-F-2090  
FOR APPLICATION TO  
TRUCK BOLSTERS

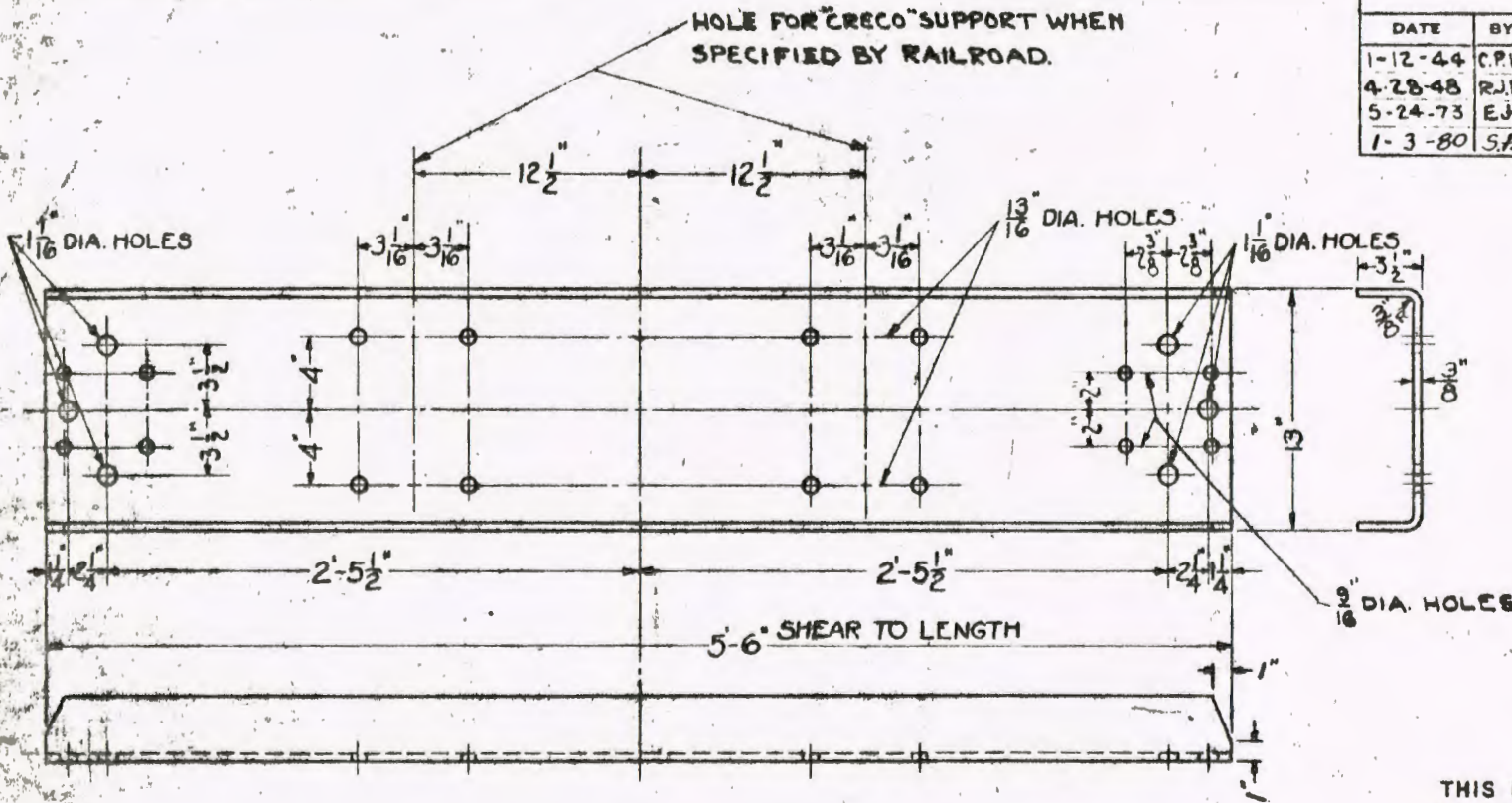
NUMBER	S	U	V
706	9"	13/16"	13"
706-A	10"	13/16"	13"
706-H	10 1/2"	11/16"	13"
706-P	9 1/2"	11/16"	11 3/4"
706-R	7"	13/16"	9 1/2"
706-V	9 1/2"	13/16"	11 3/4"
706-2C	8"	13/16"	10"
706-2F	8 1/2"	11/16"	10"
706-2J	7 1/2"	11/16"	9"

← WP CABS 426-460

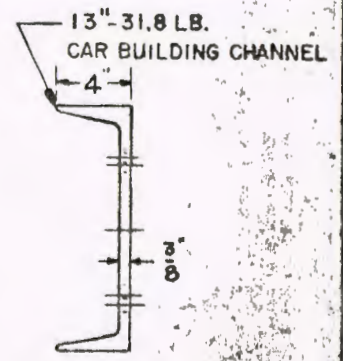
WP DRG. 141-F-5300

141-F-5300

A. STUCKI CO.	
PITTSBURGH, PA.	
SIDE BEARING	
MARCH 19, 1970	706



REVISIONS		
DATE	BY	DESCRIPTION
1-12-44	C.P.L.	ADDED 4 1/2" HOLES IN EACH END.
4-28-48	R.J.B.	ADDED NOTE ABOUT "CRECO."
5-24-73	E.J.H.	ADDED ALTERNATE CHANNEL.
1-3-80	S.P.	ADDED CHAMFER



ALTERNATE  
WHEN USED SEE  
SPRING SEAT DRGR-8306

THIS ITEM NOT FURNISHED  
BY STANDARD CAR TRUCK CO.

O.H. STEEL  
2-PER CAR

**BARBER-BETTENDORF**  
SWING MOTION CABOOSE TRUCK

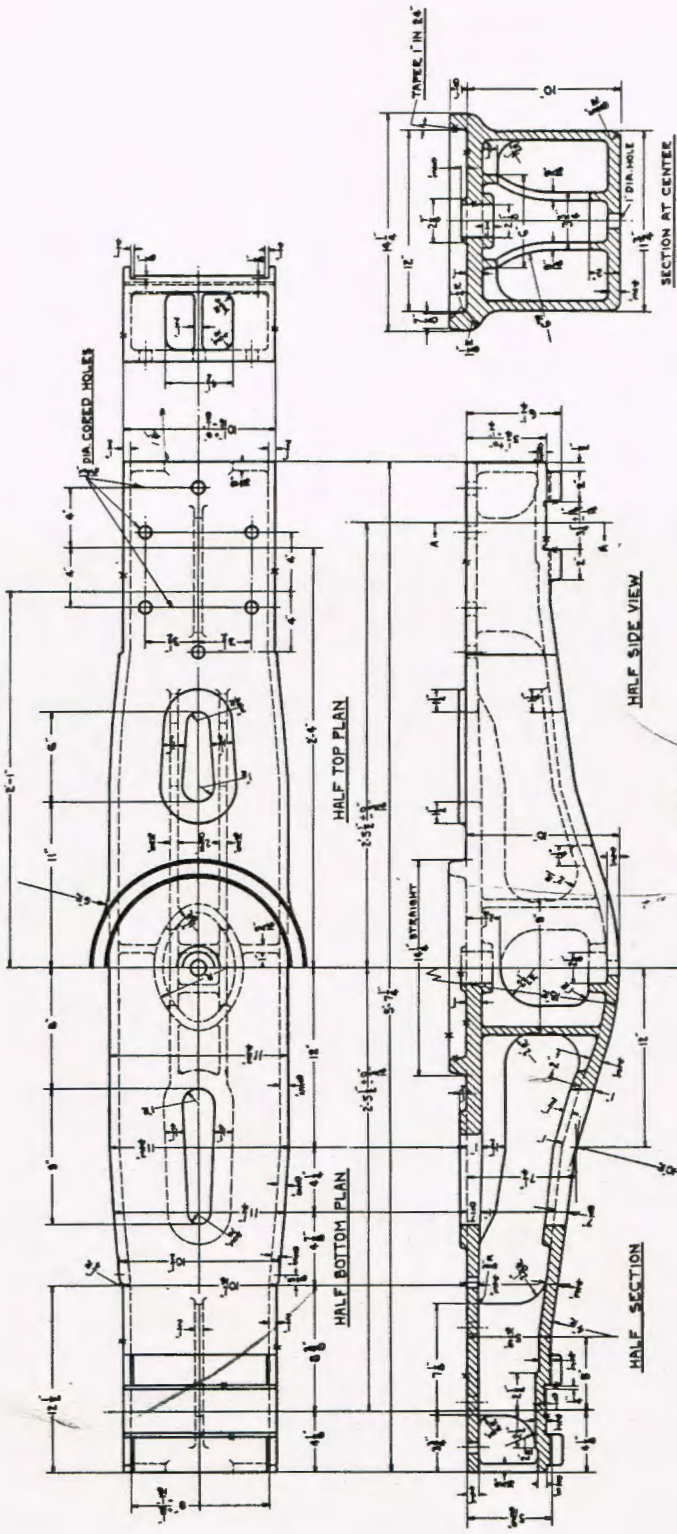
**SPRING PLANK**

STANDARD CAR TRUCK CO.  
CHICAGO, U. S. A.  
APPROVED

CHIEF ENGR.

R-8135	A	B	C	D
5-2-39	1-12 44	4-28 48	5-24 73	1-3 80

R-8135 **A B C**



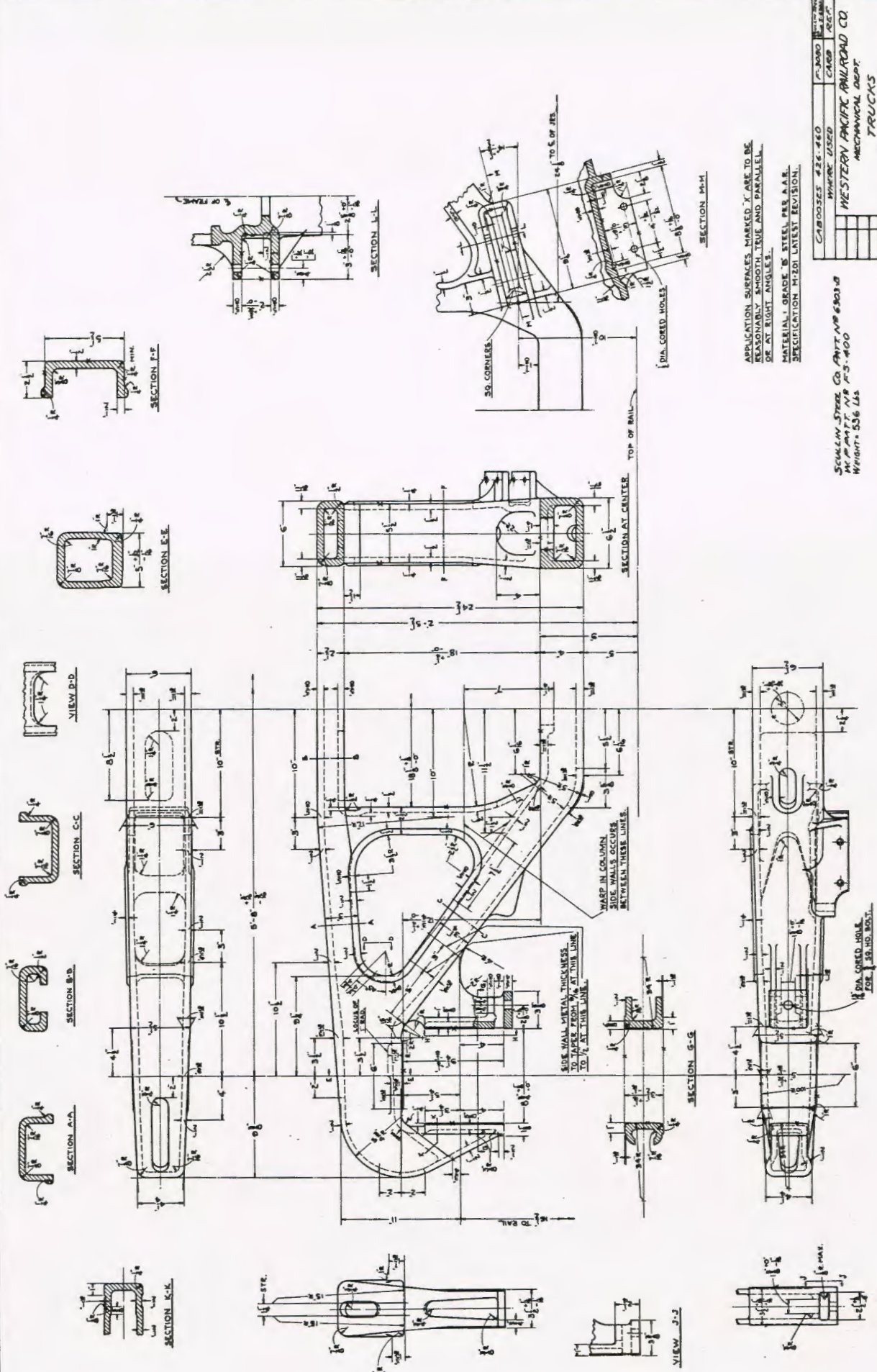
APPLICATION SURFACES MARKED 'X' ARE TO BE REASONABLY SMOOTH AND T.F.U.E.

ALL FINES AND PROJECTIONS ARE TO BE REMOVED FROM APPLICATION POINTS OF RIVETS.

MATERIAL: GRADE 'X' STEEL - PER A.A.B. - RECALCULATION WARD - WATER REVISION...

CARROLLERS 426-240	7-2030	MAINT. NO.
WHERE USED	CHAS	REC
WESTERN PACIFIC RAILROAD CO		
MECHANICAL DEPT		
BOLSTERS		
TRUCK BOLSTER		
APR 1937	144-F-2090	REVISED DATE: JAN. 9, 1937

SCALIN STEEL CO. PART. NO. 8008E  
 - N.Y. PART. NO. FS-40E



APPLICATION SURFACES MARKED 'X' ARE TO BE REASONABLY SMOOTH, TRUE AND PARALLEL, DE AT RIGHT ANGLES.  
 MATERIAL: GRADE 'B' STEEL, PER A.A.E. SPECIFICATION #1201 LATEST REVISION.

CARBOIDES 426-440	3-3000	NO. 1	REV. 1	894-F-3080
WARRANT USED	CARD	NO.	DATE	
WESTERN PACIFIC RAILROAD CO.				
MECHANICAL DEPT.				
TRUCKS				
SIDE FRAME				

SCULLIN STEEL CO. PAT. NO. 6803 B  
 M.P. PAT. NO. 65-400  
 WEIGHT: 536 LBS.

VIEW N-N

VIEW J-J

SECTION G-G

SECTION M-M

SECTION K-K

SECTION A-A

SECTION B-B

SECTION C-C

VIEW D-D

SECTION E-E

SECTION F-F

SECTION L-L

SECTION AT CENTER

TOP OF RAIL

DIA. CORED HOLES

30 CORNERS

SIDE WALL METAL THICKNESS TO TAKE FROM 1/4" AT THIS LINE TO 1/2" AT THIS LINE.

WELD IN COLUMN SIDE WALLS OCCURS BETWEEN THESE LINES.

DIA. CORED HOLE FOR 3/8" HD. BOL.



**SILL/FRAME**

## PROCEDURE - SILL/FRAME

Remove draft gear carrier, coupler, yoke, center plates and body side bearings. Examine draft sill for warp, body bolster cover plates for cracks and draft lugs for wear or loose condition; repair in these areas (if required) will be handled on an individual basis.

Apply new center plates: Drawing SK D1127 - MR 55353 (this plate combines body side bearings and serves as a bolster bottom cover plate).

Fit plate by first applying eight 3/4" grade 5 bolts, followed by continuous weld around periphery and then plug welds in four locations.

Apply body bolster top cover plate reinforcement plates with continuous weld around periphery followed with six plug welds - Drawing SKB 1130 - MR 55371.

Draft sill hardware to be assembled in usual manner. Couplers (MR 55576) and Draft Gears (MR 55577) are to be used. Y40 Yokes (drawn from stock) must be ground smooth on the bottom side to prevent excessive chafing to the Dura-guard material on the draft gear carrier plate.

Draft gear wear plate (MR 55581) shall be welded to the carrier (MR 55582) as shown on sketch SKA-1126. Note that the center three holes on each side line up with original holes in the draft sill. Four additional holes must be drilled to accommodate the new plate. Huck Fasteners are to be used.

Abex (drawn from stock) coupler carrier wear plates are to be used.

All couplers and draft gears removed are to be kept for reconditioning.





# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	53		TO PROGRAM: MAOIPW FORM 414005 5-73
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
55576	10/23/80	7565	231
		COST CTR.	T.E.C.
04		21 02	8642 05
AFE NUMBER	JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER

SHIP TO: **JIM McCALL STOCKTON R.P. TRACK**  
 WHY NEEDED AND OTHER REMARKS: **SEE MM 8642 - PROGRAM 52**

## CABOOSE OVERHAUL PROGRAM - SERIES WP 426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
<b>COUPLER</b>					
NATIONAL - PER DWG					
21E 1408 (Bottom operating)					
- OR -					
M & T - PER DWG					
E54159(B.O.) OR E54263					
pattern B-E 4943 HT			EA	25	
reference dimensions					
per attached drawing					
AW 4408C					
→ 11					
HT					

APPROVED BY AND DATE: **R.E. Shideler 11/3**  
 SHIPPED BY: \_\_\_\_\_  
 REC'D BY: \_\_\_\_\_

ISSUE & DATE	REQUIRED DATE	APPROVED BY & DATE	APPROVED BY & DATE
WHY NEEDED: <b>MR 55576</b>			

### The Western Pacific Railroad Company

SHIP TO: **B. A. STILWELL  
STOREKEEPER  
3500 - 24th STREET  
SACRAMENTO, CA 95818**

VENDOR: **NATIONAL CASTINGS DIVN.  
ZGUERIN DRAYAGE SUPPLY CO.  
1225 - 6th STREET  
SAN FRANCISCO, CA 94107**

IMPORTANT: THIS PURCHASE ORDER NUMBER **61570**  
 MUST APPEAR ON ALL INVOICES, CORRESPONDENCE PAPERS, AND PACKAGES.

PLEASE NOTE IF CHECKED:  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS		TRUCK		SHIPPING CHARGES		OTHER	
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	PREPARE INCL. IN INV.	PREPARE	COLLECT	OTHER
P.O. DATE	NO. DATE YR	TAX CODE	R/C DISCOUNT TERMS	AFE NO.	DATE REQUIRED	DEPT. CODE	
	11 07 80	E D 01	NET 30			33	
P.O. ITEM NO.	QUANTITY ORDERED	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE		
1	26	EA EK408C OR EK408Q BOTTOM OPERATED CABOOSE COUPLER	20 01020 1		368.00		

CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	DT - DRY	PG - PACKAGE	SH - SHEET	TL - LINEAL YARD
BB - BOARD MEASURE FEET	CC - CUBIC CENT	EA - EACH	LB - POUND	PK - PAIL	SC - SACK	
BL - BALL	CL - CUBIC YARD	FL - FLUID FOOT	LT - LITRE	PT - PINT	SP - SPOOL	
BR - BRICK	CM - CEN	GL - GALLON	M - MOUND	QT - QUART	ST - SET	
BS - BOX	CS - CASE	GR - GRAIN	MP - HUNDRED BOARD FEET	RL - ROLL	SY - SQUARE YARD	
BT - BUSHEL	CT - CARTON	MT - METRIC TON	RY - RAY TON	SB - BAG	TD - TUBE	
BU - BUSHEL	CY - CUBIC YARD	RT - SHORT TON	SD - SQUARE	ST - SQUARE FEET		

REMARKS: \_\_\_\_\_

COMMENTS: **cc: R. E. SHIDELER  
B. A. STILWELL - WHEN RECEIVED FORWARD TO STOCKTON PER MR55576  
ATTACHED  
D. B. JENNINGS - DESK FILE**

P.F. BROGDON, Director, Purchases & Material  
 Per: *[Signature]*



# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	33	TO PROGRAM MAOIPW FORM 414005 5-73	
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
7565	231		
COST CTR.	T.E.C.	WAYBILL NUMBER	
21 02 8642	05		

55577

DATE ORDERED  
10/23/80

04

PROJECT CONTR'L

LOCO NUMBER

SHIP TO: **Jim McCall** **Stockton Rip Track**

WHY NEEDED AND OTHER REMARKS:

SEE MM 8642 - PROGRAM 5-2

CABOOSE SERIES WP 426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
DRAFT GEAR					
MINER					
CR-6-2			EA	24	

DATE ORDERED BY: R.E. Shideler 10/23 APPROVED BY AND DATE: \_\_\_\_\_ SHIPPED BY: \_\_\_\_\_ REC'D BY: \_\_\_\_\_

USER/LOCATION	TODAY'S DATE	APPROVED BY & DATE	APPROVED BY & DATE
WHT NEEDED <b>MR 55577</b>		RECEIVED NOV 20 1980 MATERIAL DEPARTMENT	

**The Western Pacific Railroad Company**

SHIP TO: **B. A. STILWELL**  
STOREKEEPER  
3500 - 24th STREET  
SACRAMENTO, CA 95818

VENDOR: **MINER ENTERPRISES, INC.**  
1200 E. STATE STREET  
GENEVA, ILLINOIS 60134

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**61906**  
MUST APPEAR ON ALL INVOICES FOR RESPONSE PAPERS AND PACKAGING!

PLEASE NOTE IF CHECKED  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS		MERCHANT SHIPPER				
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	SHIPPING CHARGES	OTHER	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
P.O. DATE	NO. DAY YR.	TAX B/C	DISCOUNT TERMS	PREPAY	DEPT. CODE	
	11 19 80	E D 01	NET 30		33	
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	24	EA	CR-6-2 RUBBER DRAFT GEAR	20 02900 1		590.01
			SHIP 12 EACH 2/1/81 12 EACH 4/1/81			

CODES FOR A UNIT OF MEASURE

BB - BUNDLE	CC - CUBIC FEET	CM - HUNDRED WEIGHT	DT - DRY	FE - PACKAGE	SH - SHEET	TZ - TROY OUNCE
BP - BOARD MEASURE FEET	CC - CUBIC FEET	EA - EACH	LB - POUND	PP - PAIR	SS - SALK	YD - LINEAL YARD
BS - BALL	CL - CUBIC YARD	FL - LINEAL FOOT	LT - LOT	PF - PAIR	SP - SPOOL	
BU - BUNDLE	CM - CUM	GA - GALLON	M - HUNDRED	OT - OBTAIN	ST - SET	
BU - BOX	CS - CASKET	GR - GROSS	MT - THOUSAND BOARD FEET	RL - ROLL	SW - SQUARE YARD	
C - NUMBER	CT - CARTON	GT - GROSS TON	MT - NET TON	RH - REAM	TU - TUBE	
CA - CASE	CY - CUBIC YARD	RS - RES	OU - OUNCE	TF - SQUARE FEET		

REMARKS: \_\_\_\_\_

Per: **F.P. BROGDON, Director, Purchases & Material**

COMMENTS:  
cc: **R. E. SHIDELER**  
**H. A. O'RULLIAN**  
**J. MCCALL**  
**B. A. STILWELL - MR 55577 ATTACHED**  
**D. B. JENNINGS - DESK FILE**

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092		33		TO PROGRAM: MAOIPW FORM 414005 5-73	
LOC.	DEPT.	STORE		CAR OR TRUCK NUMBER	
55581	10/29/80	1/1		7565 231	
DATE ORDERED		DATE SHIPPED		COST CTR. T.E.C.	
04		21 02	8642	05	
A.F.E. NUMBER		JOINT FACILITY		PROJECT CONTR'L	
SHIP TO: JIM MCCALL STOCKTON RIP TRACK					

WHY NEEDED AND OTHER REMARKS:  
  
MM 8642 - PROGRAM 5-2 CABOOSSES WP426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
DAYCO DURAGUARD					
WEAR PLATE					
#5065A MODIFIED					
TO 9" X 18" PER THE					
ATTACHED			EA	24	
ADVISE COST					
CC: STOCKTON RIP:					
TO BE WELDED					
TO CARRIER R					
SHOWN ON SK A 1126					
(MR 55582)					

APPROVED BY AND DATE: *R. E. Shideler* 10/29/80  
 SHIPPED BY: *D. B. Jennings* 10/29/80  
 REC'D BY:

USER/LOCATION J. MCCALL	TODAY'S DATE	REQUIRED DATE	APPROVED BY & DATE	APPROVED BY & DATE
MR 55581 PROGRAM S-2 CABOOSE SERIES WP426-460				

The Western Pacific Railroad Company  
 c/o J. L. SUDDERTH  
 STOREKEEPER  
 833 - 8th STREET  
 STOCKTON, CA 95206

SHIP TO

VENDOR  
 DAYCO, INC.  
 DAYFLEX DIVN.  
 %INDUSTRIAL BEARING SALES  
 52 NINTH STREET  
 OAKLAND, CA 94607

NOV 7 1980 IMPORTANT  
 THIS PURCHASE ORDER NUMBER  
 DEPARTMENT 61530  
 MUST APPEAR ON ALL INVOICES COPY  
 HELD SECONDARY PAPERS AND PACKAGING

PLEASE NOTE IF CHECKED  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS: TRUCK

TERMS OF SALE: P.O. DESTINATION: P.O. POINT OF SHIPMENT: OTHER: SHIPPING CHARGES: PREPARE & INCL. IN INV.: PREPARE: COLLECT: DATE REQUIRED: DEPT. CODE: 33

P.O. DATE: 11/06/80 E D 20 2% 10, N 30

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	24	EA	DAYCO DURAGUARD WEAR PLATE #7520-5065A MODIFIED TO 9" X 18" PER ATTACHED		7565-231 PROJECT CONTROL 21-02-8642	30.00

CODES FOR UNIT OF MEASURE

BA - BARREL	CF - CUBIC FOOT	CR - HUNDRED WEIGHT	ET - PIE	PS - PACKAGE	SH - SHEET	TF - TON DUNCE
BB - BIRD MEASURE FLY	CC - C. CUBIC FEET	CA - TANK	EB - POUND	PA - PAIR	SB - SACK	TD - TON DUNCE
BL - BALL	CL - CYLINDER	CB - CASE	EL - LIT	PI - PAIR	SP - SPIND	
BN - BUNDLE	CE - CASE	CD - CARRIER	FL - LIT	PT - PART	ST - SQUARE	
BT - BOX	CF - CUBIC FEET	CE - CASE	FM - FOOT AND BOARD FEET	QU - QUART	TA - TANK	
C - HUNDRED	CG - CUBIC YARD	CF - CUBIC FEET	FT - FOOT	RI - ROLL	TB - TON	
CA - CASE	CH - CUBIC YARD	CG - CUBIC YARD	MT - MET TON	RS - RAIL	TD - TON	
		CB - CASE	DZ - DUNCE	SC - SQUARE FEET		

REMARKS: F.P. BROGDON, Director, Purchases & Material

COMMENTS:  
 cc: R. E. SHIDELER  
 J. MCCALL-4 WEEK DELIVERY  
 H. O'RULLIAN  
 D. B. JENNINGS-DESK FILE

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.		092	33	TO PROGRAM: MAOIPW FORM 414005 5-73	
55582	DATE ORDERED 10/29/80	DATE SHIPPED / /	LOC.	DEPT.	STORE
04	A.F.E. NUMBER	JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER	WAYBILL NUMBER
SHIP TO: Jim McCall		STOCKTON RIP TRACK			
WHY NEEDED AND OTHER REMARKS:					

MM 8642 Program S-2 CABOOSES WP 426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
DRAFT GEAR CARRIER PER DRAWING SK A-1126 (MATERIAL: 5/8" MILD STEEL)			EA	24	
Note: W.P. will supply and attach Dayco wear plate.					
cc: STOCKTON RIP TO BE USED WITH M/R 55581					

ORDERED BY AND DATE: *RE Shideler 10/29/80* SHIPPED BY AND DATE: *R. O. Rullian 10/29/80* REC'D BY:

USER/LOCATION J. MCCALL	TODAY'S DATE	REQ. REQ. DATE	APPROVED BY & DATE	APPROVED BY & DATE
WHY NEEDED MR 55582 - CABOOSE PROGRAM S-2 WP426-460				

## The Western Pacific Railroad Company

c/o  
SHIP TO  
J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

VENDOR  
BLACKWELDER'S MFG. CO.  
P.O. BOX 127  
RIO VISTA, CA 94571

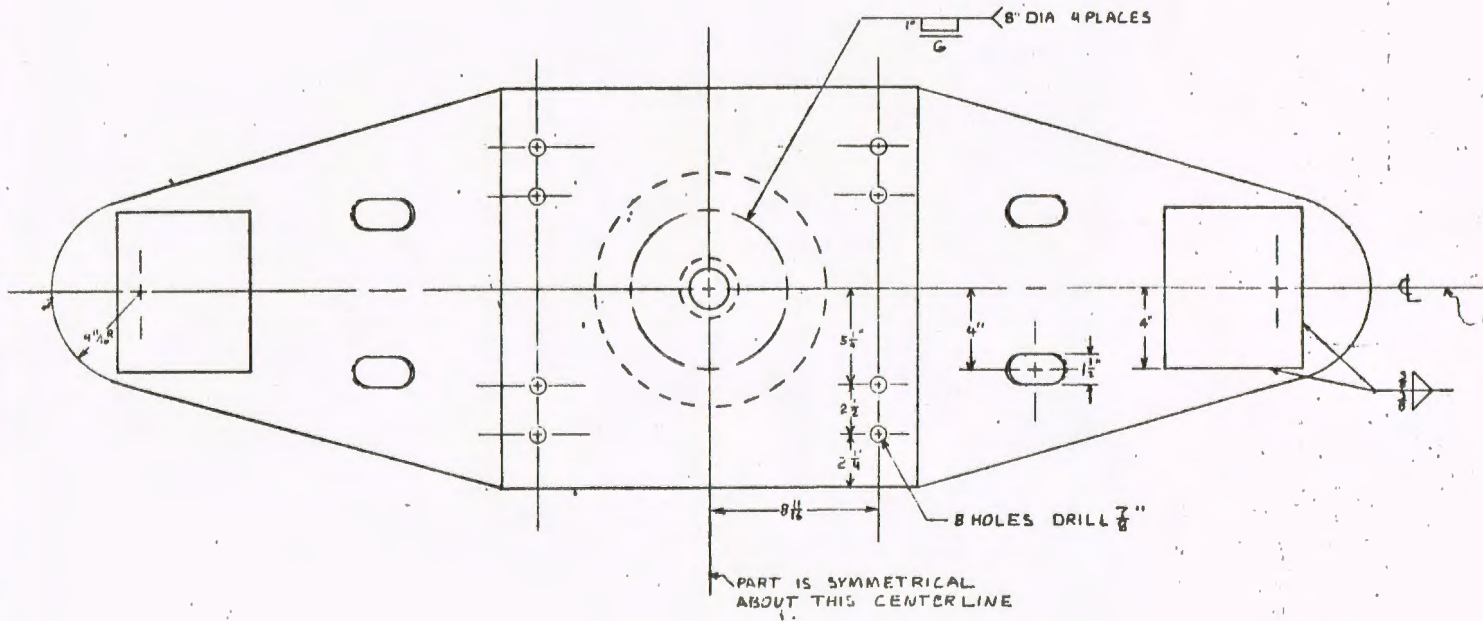
SECUR CODE	IMPORTANT THIS PURCHASE ORDER NUMBER <b>61905</b> MUST APPEAR ON ALL INVOICES FOR RESPONSE DOCUMENTS AND PACKAGES
VENUEH CODE 08340	PLEASE NOTE IF CHECKED <input type="checkbox"/> CONFIRMING - DO NOT DUPLICATE <input type="checkbox"/> STANDING ORDER <input type="checkbox"/> BLANKET ORDER

SHIPPING INSTRUCTIONS		YOUR DELIVERY				
TERMS OF SALE	SHIPPING CHARGES	DATE REQUIRED	DEPT. CODE			
X FOR DESTINATION 11 18 80	PREPARE INVOICE 100% PAY	12 15 80	33			
P.O. DATE	DISCOUNT TERMS D D 10 1% 10, N 30					
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	24	EA	DRAFT GEAR CARRIER PER DRAWING SKA-1126 5/8" MILD STEEL		7565-231 PROJECT CONTROL 21-02-8642	34.00

BB - SERIAL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	RT - NET	PG - PACKAGE	SH - SHEET	TE - TON OUNCE
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PK - PACK	SP - SPOOL	TD - LINEAL YARD
BL - BALL	CL - CUBIC INCH	FT - LINEAL FOOT	LT - LOT	PT - PINT	ST - SET	
BR - BUNDLE	CM - CUBIC METER	DL - DAYTON	ME - MOUND	QT - QUART	SI - SQUARE YARD	
BS - BOX	CC - CARTON	DR - DRY	MF - THOUSAND BOARD FEET	RS - ROLL	TR - TUBE	
C - HUNDRED	CF - CARTON	BY - BUSH FOR	RT - NET TON	RM - ROLL		
EA - EACH	CC - CUBIC YARD	AL - ALB	OL - OUNCE	EP - SQUARE FEET		

REMARKS: F.P. BROGDON, Director, Purchases & Material

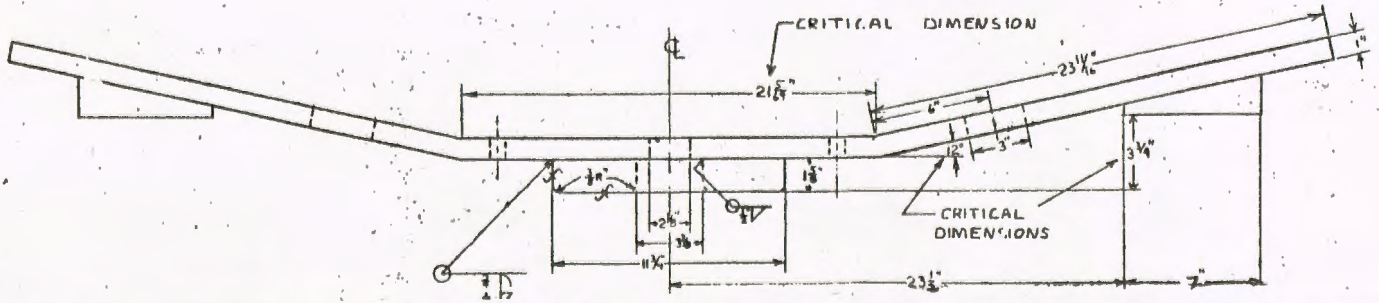
COMMENTS:  
cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS



PART IS SYMMETRICAL ABOUT THIS CENTERLINE

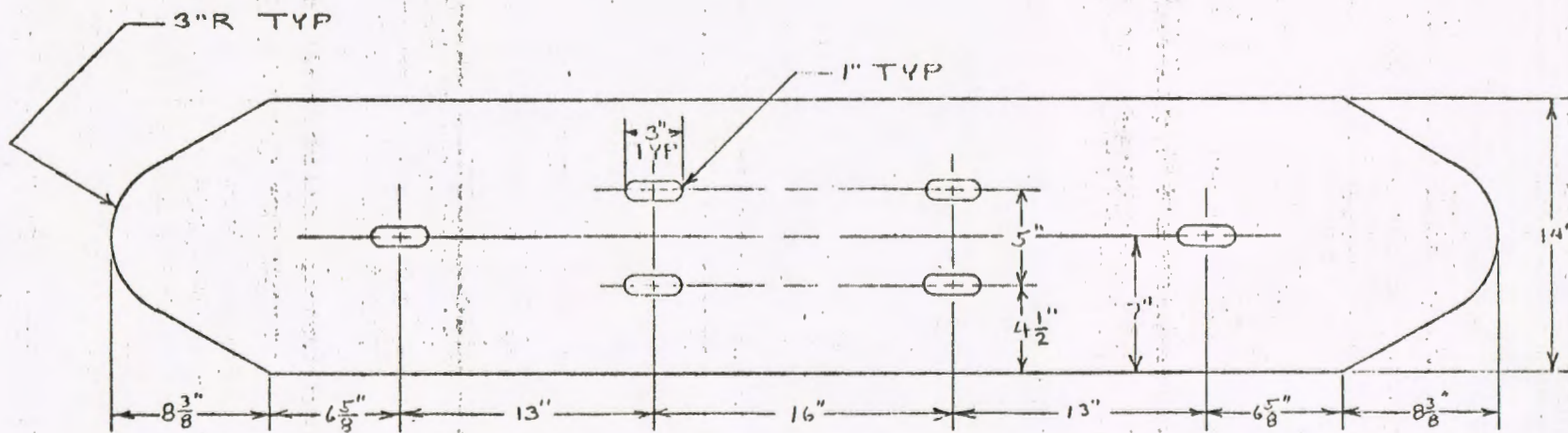
NOTES

1. MATERIAL: ASTM-A36, EXCEPT CENTER PLATE. DONUT.
2. DONUT TO BE MADE OF AISI C-1026 TO C-1030. MAX. CARBON 0.32%.
3. SURFACES MARKED MUST HAVE A 250 MICRO INCH FINISH.
4. DONUT WILL HAVE A SURFACE HARDNESS OF 300 TO 365 BHN.



CENTER PLATE  
SK D1127

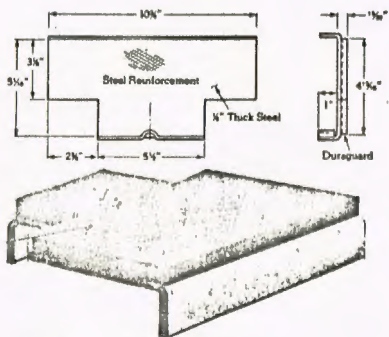
12/17/80



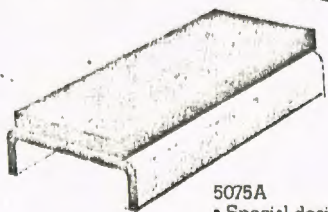
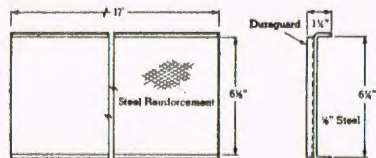
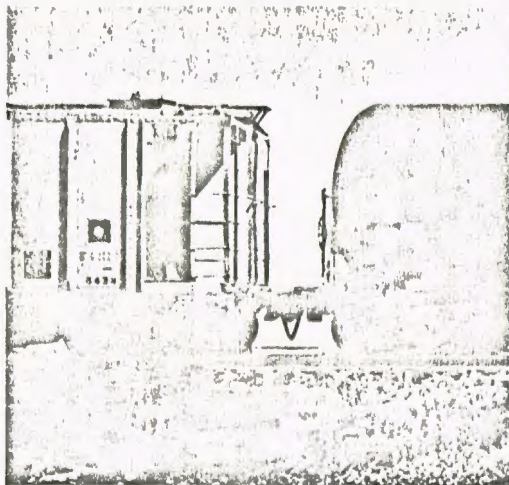
MATERIAL:  $\frac{3}{8}$ " PLATE ASTM A-36

CABOOSE 426-460			
WHERE USED		CARD	REF.
<b>WESTERN PACIFIC RAILROAD CO.</b> MECHANICAL DEPT. CAR BODY BOLSTER TOP COVER PLATE REINFORCEMENT			
DR. D. J.	CH.	AP.	SK-B1130
REVISED	DATE: 1-18-81		

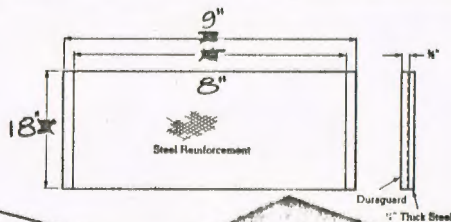
# CARRIER WEAR PLATES



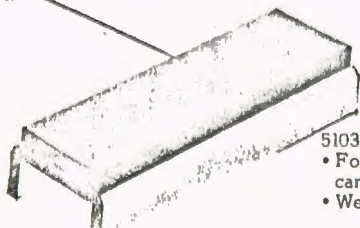
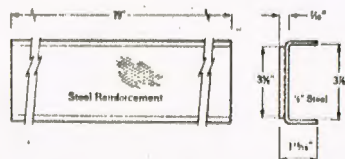
- 5071A**
- Interchangeable with STD AAR215 for Type E Couplers.
  - Weight: 2.81 lbs.



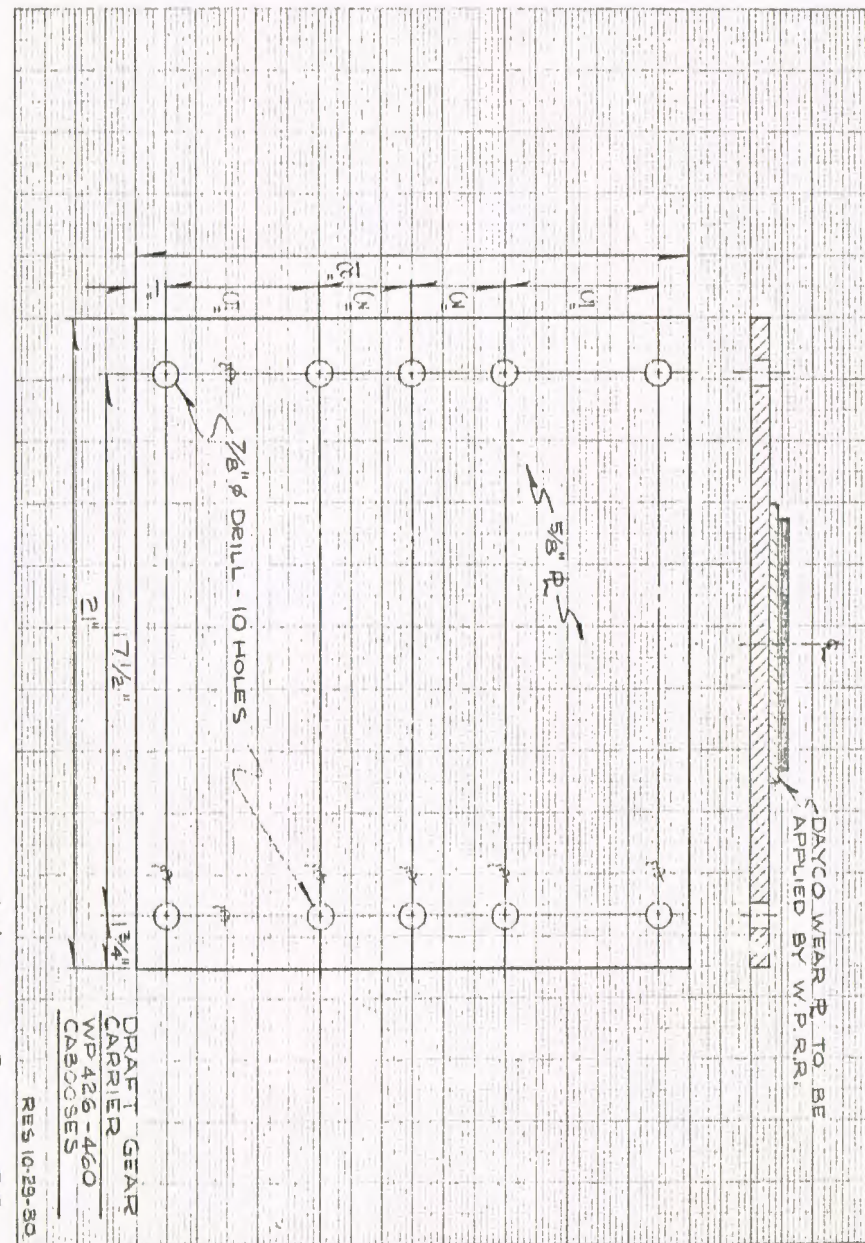
- 5075A**
- Special design for wider carrier castings.
  - Weight: 6.27 lbs.



- 5065A**
- Special for long shank couplers.
  - Weight: 8.22 lbs.



- 5103A**
- For wide coupler carrier casting.
  - Weight: 5.76 lbs.



WESTERN PACIFIC R.R.  
DRAWING: SK A-1126

DRAFT GEAR  
CARRIER  
WP 426-460  
CABOUSES  
RES 10-29-30

# MINER

## Friction and Rubber Draft Gears

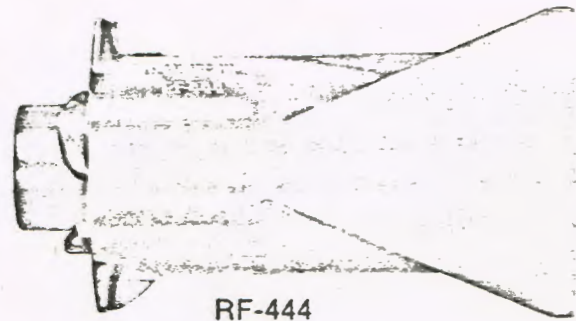
### FOR FREIGHT AND LOCOMOTIVE SERVICE

Miner SHOCK BUSTER RF-444 Rubber-Friction Draft Gear is unconditionally approved by the Association of American Railroads. Incorporating the latest innovation in Miner's proven Friction/Clutch design, the RF-444 meets and exceeds the requirements of A A R Specification M-901-E. For standard A A R 24 $\frac{1}{2}$ " pocket, utilizing standard follower plates and draft attachments. The RF-444 has an official A A R capacity of 48,300 ft.lbs. at a rated travel of 3.18" and a 568,000 lb. RFL. After Sturdiness Test 62,200 ft. lbs. at 874,000 lbs. RFL. Maximum Travel 63,900 ft. lbs. at 973,000 lbs. RFL. The excellent capacity development and sturdiness performance in these draft gears, weighing only 276 lbs. each, permit an added 100 lbs. of payload per car per trip over other M-901-E devices.

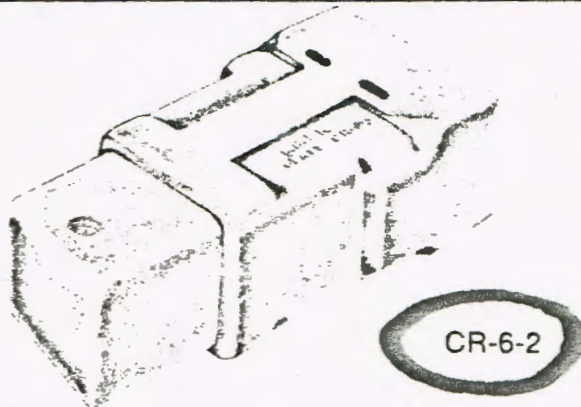
The Miner A-22 XL All Steel Friction Draft Gear is certified by the Association of American Railroads and has the characteristic of maintaining low pressures during car impact and train operation, thereby reducing damage claims. The gear is designed for use in a 24 $\frac{1}{2}$ " draft gear pocket.



A-22-XL

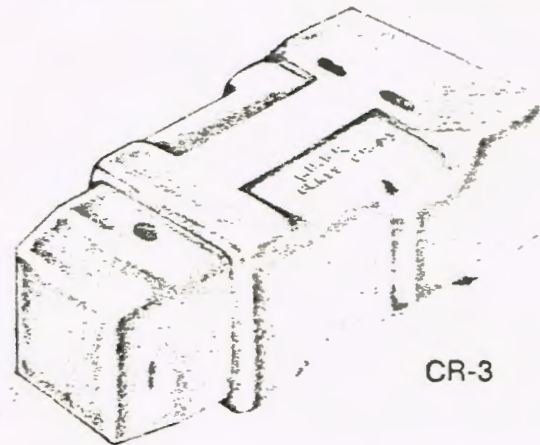


RF-444



CR-6-2

The Miner CR-6-2 Rubber Draft Gear for caboose cars provides the ultimate in comfort for trainmen in the caboose. The gear has a total travel of 6". The first 5" of movement is a smooth cushioning action, while the final 1" movement is available for higher capacity operation in pusher service. Application can be made to 24 $\frac{1}{2}$ " pocket with long shank couplers and attachments which are available.



CR-3

The Miner CR-3 Rubber Draft Gear for caboose cars is similar in principle to the CR-6-2 design, except it has a full travel of 3" and is applicable to existing or new cabooses with 24 $\frac{1}{2}$ " pockets and utilizes standard yokes, couplers, and attachments.

# E4943HT COUPLER, SINGLE ROTARY OPERATING



- Coupler Type — E Rigid Shank with Special Shank Length & Wear Plate.
- Available As — Fitted Complete; or Body Only with Wear Plate & E2A Cap.
- Material — Grade C Steel Normalized & Tempered to 90,000 60,000 psi Minimum Strength. Grade E Steel Quenched & Tempered to 120,000 100,000 psi Minimum Strength per AAR M-211.
- Separate Parts — As Listed on Page E 8 of Section E.
- Yoke Connection — Y41AHT & Y41AHTE to Match Coupler with Standard Crosskey.
- Minimum Weight — Body Only: 335 Lbs.  
Complete: 451 Lbs.

HT-DRAWING E-54263  
HTE-DRAWING E-54263-1

McCONWAY & TORLEY CORPORATION  
PITTSBURGH, PA. 15201

**FLOOR**

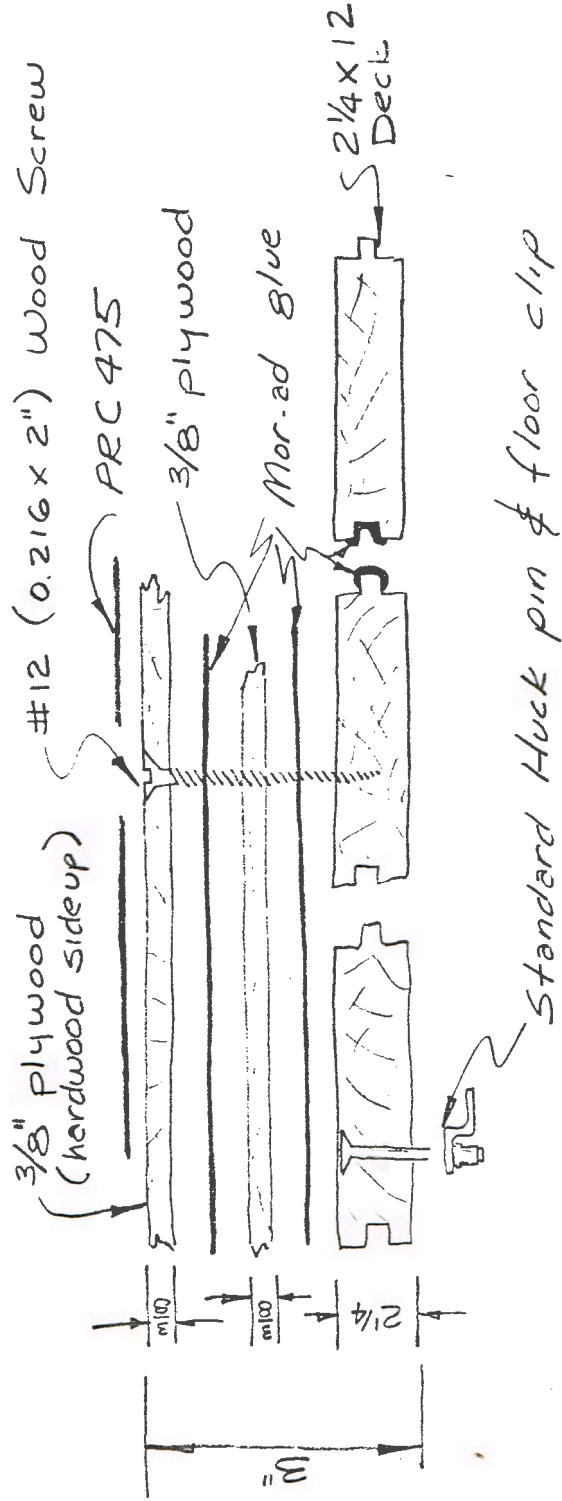
PROCEDURE - FLOOR

Frame members (body bolster, center and side sills, stringers) to be cleaned and given two coats of Black Rustoleum.

2-1/4"x12" T&G Hardwood (MR 55679 - PO 61648) to be applied using Huck fasteners and floor clips (four Hucks per board). Fasteners and clips to be drawn from store stock. Heads of Huck pins must be counter-sunk. Joints to be glued with Mor-ad (MR 55599) following instructions from Morton Chemical Company.

Two layers of 3/8" plywood will be placed on top of the hardwood subfloor with Mor-ad glue between each layer. Joints in all cases shall overlap. The "up side" of the top layer of plywood is to be hardwood (per MR 55679). Wood screws (No. 12; 0.216"x2") shall be applied around the periphery of each piece of plywood on the top layer on approximately 12" centers. Screw heads to be flush with top of floor.

Top surface of wooden floor will be primed with PRC No. 3 and coated with PRC 475 (MR 55587 - PO 61587) following instructions in manufacturer's data sheet. Application of this product to extend up side and end walls approximately 4". Application of the PRC coating will follow the installation of interior walls, fuel tank, etc.



TYPICAL FLOOR

R. T. PRICE

WHY NEEDED  
MR 55679 CABOOSE PROGRAM S-2 WP426-460

The Western Pacific Railroad Company

SHIP TO  
c/o • J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

STORE CODE  
[ ]

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**61648**  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGE

VENDOR • EVJU PRODUCTS COMPANY, INC.  
104 WIKIUP DRIVE  
SANTA ROSA, CA 95401

VENDOR CODE  
[ ]

PLEASE NOTE IF CHECKED  
 CONFIRMING-DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS ▶ TRUCK

TERMS OF SALE ▶ F.O.B. DESTINATION [ ] F.O.B. POINT OF SHIPMENT [ ] OTHER  FOB DOCK \$F SHIPPING CHARGES PREPAY & INCL. IN INV. [ ] PREPAY [ ] COLLECT [ ] OTHER [ ]

P.O. DATE ▶ 11 18 80 TAX CODE D B/C D DISCOUNT TERMS 2% 10 AFE NO. DATE REQUIRED 1 1 81 DEPT. CODE 33

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	396	EA	CONFIRMING PHONE 2-1/4" X 12" X 96-3/4" MIXED MALAYSIAN HARDWOODS WITH EXTERIOR GLUE (T&G)		7565-231 PROJECT CONTROL 21-02-8642	3.40 SQUARE FOOT

*PLYWOOD ORDER  
PENDING -  
LOCAL DELIVERY*



CODES FOR UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	KY - KIT	PG - PACKAGE	SH - SHEET	TZ - TROY OUNCE
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PR - PAIR	SK - SACK	YD - LINEAL YARD
BL - BALL	CL - CYLINDER	FT - LINEAL FOOT	LT - LOT	PT - PINT	SP - STOOL	
BK - BUNDLE	CM - CAN	GL - GALLON	M - THOUSAND	QT - QUART	ST - SET	
BX - BOX	CS - CARSET	GR - GROSS	MF - THOUSAND BOARD FEET	RL - ROLL	SY - SQUARE YARD	
C - HUNDRED	CT - CARTON	GT - GROSS TON	NT - NET TON	RM - REAM	TU - TUBE	
CA - CASE	CY - CUBIC YARD	KG - KEG	OZ - OUNCE	SF - SQUARE FEET		

REMARKS F.P. BROGDON, Director, Purchases & Material

COMMENTS:  
cc: R. E. SHIDELER ✓  
H. A. O'RULLIAN  
R. T. PRICE  
D. B. JENNINGS

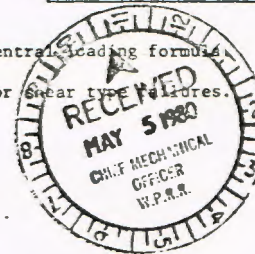
Manufacturer Kion Ling Timber Based Industries  
 Material 2" x 12" x 10' Laminated Mixed Malaysian Hardwood  
 Type of Test Specimen Static bending according to Para. 21, M-907A  
 Type of End Joint hook-butt Number/12" Length 4 and 5  
 Test Span 12 Loading Rate 0.05"/Min. Direction of Loading  
Perpendicular to span length Type of Failure Tension failure starting  
at a hook joint.

Test Results

Sample Number	S T A T I C B E N D I N G			
	Ultimate Load Pounds	Maximum Deflection Inches	Modulus of Rupture p.s.i.	Ultimate Load per Inch Width - lbs.
1	37,600	0.330	13,673 <sup>(1)</sup>	3133
2	36,050	0.202	13,425	3004
3	38,300	0.250	14,080	3192
4	28,600	0.250	10,640	2383
5	31,400	0.201	11,543	2617
Averages	34,390		12,672	

1) Modulus of Rupture calculations by central loading formula

NOTE: 12-inch test span is a test for shear type failures.



Project 79-25  
TECO, Eugene, OR  
5/29/79  
RSB/bdj

Test Results

Sample Number	Delamination, Percent	Hardness, Pounds	Density* Lbs/ft <sup>3</sup>	Moisture Content Percent **
1	0.0	853	41.4	14.1
2	0.0	1228	40.1	14.1
3	0.0	1300	39.6	14.1
4	0.0	1435	42.8	15.2
5	0.0	1538	36.5	13.8
Average	0.0	1271	40.1	14.3

\* Weight and volume - oven-dry basic.  
 \*\* Oven-dry - ASTM D - 2016 Method A

Project 79-25  
TECO, Eugene, OR  
5/29/79  
RSB/bdj

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	33		TO PROGRAM: MAOIPW FORM 414005 5-73
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
7565	231		
COST CTR.	T.E.C.		

55599

DATE ORDERED: 1/5/81  
DATE SHIPPED: / /

21 02 8642

15

WAYBILL NUMBER

04

AFE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER

SHIP TO: Jim McCall STOCKTON R.P. TRACK

WHY NEEDED AND OTHER REMARKS:

MM 8642 PROGRAM 5-2 CABOOSSES 426-460 (FLOOR GLUE)

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
MOR-AD #403 ONE PART URETHANE LAMINATING ADHESIVE			GL	10	
COST: \$148/LB = \$176/GL					
CROSS FROM:					
MORTON CHEMICAL CO					
11733 EAST SLAUSON AVE					
SANTA FE SPRINGS, CAL					
90670					
ATTN: J. G. SCHAFER					

ORDERED BY: LES APPROVED BY AND DATE: [Signature] 1/5/81 SHIPPED BY: REC'D BY:

N.A.O. \$176'S + FAT/TAX

USER, LOCATION J. MCCAUL	TODAY'S DATE	REQUIR'D DATE	APPROVED BY & DATE	APPROVED BY & DATE
WHY NEEDED MR 55599 PROGRAM 5-2 CABOOSE PROGRAM WP426-460				

## The Western Pacific Railroad Company

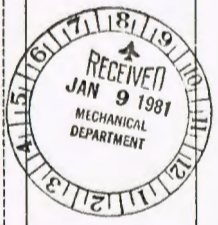
c/o J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

MORTON CHEMICAL CO.  
11733 EAST SLAUSON AVENUE  
SANTA FE SPRINGS, CA 90670  
ATTN: J. G. SCHAFER

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**62376**  
MUST APPEAR ON ALL INVOICES, COPIES, RESPONSES, PAPERS AND PACKAGES

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS	TERMS OF SALE	P.O. DATE	F.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	INIT PRICE
	CME	01 08 81	1	10	GL	MOR-AD #403 ONE PART URETHANE LAMINATING ADHESIVE		7365-231 PROJECT CONTROL 21-02-8642	17.61



CODES FOR A UNIT OF MEASURE

BB - BARREL	CP - CUBIC FOOT	EW - HUNDRED WEIGHT	BY - BUSH	PS - PACKAGE	SH - SHEET	SZ - SQUARE	TY - TON
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	EW - TON	BY - BUSH	PS - PACKAGE	SH - SHEET	SZ - SQUARE	TY - TON
BL - BALL	CL - CYLINDER	FT - LINEAL FOOT	LT - LITRE	PT - PINT	SP - SPIND	ST - STICK	TD - TON
BU - BUNDLE	CR - CASE	GL - GALLON	M - MOUND AND	QT - QUART	ST - SQUARE YARD	TD - TON	
BE - BOX	CS - CARTON	GR - GROSS	MT - MOUND AND BOARD FEET	RI - ROLL	TD - TON		
C - CUBIC	CT - CARTON	DR - DRY TON	MT - MOUND AND BOARD FEET	RM - ROLL	TD - TON		
CA - CASE	CT - CARTON	DR - DRY TON	MT - MOUND AND BOARD FEET	RM - ROLL	TD - TON		
	CT - CARTON	DR - DRY TON	MT - MOUND AND BOARD FEET	RM - ROLL	TD - TON		

REMARKS: F.P. BROGDON, Director, Purchases & Material

COMMENTS: cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCAUL  
D. B. JENNINGS - DESK FILE



TECHNICAL INFORMATION

# MOR-AD®

## INDUSTRIAL ADHESIVES



MORTON CHEMICAL

### MOR-AD® 403

#### DESCRIPTION:

A HIGH SOLIDS, MOISTURE CURE BEAD ADHESIVE, WHICH IS FLEXIBLE AND RUBBERY ON CURE.

- ° EXTRUDABLE BEAD
- ° GOOD YIELD
- ° EXCELLENT ADHESION TO A WIDE VARIETY OF MATERIALS
- ° STRONG BONDS AND SEALANT ACTION ON CURE

#### PRODUCT PROPERTIES:

PHYSICAL FORM	PASTE
COLOR	OFF-WHITE
% SOLIDS	MINIMUM 94
WEIGHT/GALLON, LBS.	11 - 12
FLASH POINT (SETAFLASH)°F	50
WORKING TIME, MINS.*	30-45
CURE TIME, MINS.*	SKIN TIME: 30 GEL TIME: 120 COMPLETE: 24-48 HOURS
SHIPPING CLASSIFICATION	ADHESIVE PASTE, N.O.S., FLAMMABLE

\*TEMPERATURE AND HUMIDITY AFFECT THESE PROPERTIES, REFER TO BULLETIN OPUL- 032 FOR A DISCUSSION OF THE EFFECTS.

#### HANDLING AND STORAGE

MOR-AD® 403 IS MOISTURE SENSITIVE AND MUST BE PROTECTED FROM EXPOSURE TO MOISTURE. IN ADDITION, STORAGE AT COOL TEMPERATURES (40-50°F) IS RECOMMENDED TO REALIZE OPTIMAL SHELF LIFE. ONCE OPENED, PAILS OF THE ADHESIVE SHOULD BE USED IMMEDIATELY OR RESEALED AFTER FLUSHING WITH NITROGEN.

CARTRIDGES OF THE PRODUCT SHOULD BE USED COMPLETELY AFTER OPENING OR RESEALED SUFFICIENTLY TO PREVENT MOISTURE PICKUP.

THE SHELF LIFE OF THE PRODUCT STORED AT 40-50°F IS NINETY DAYS.

#### SAFETY CONSIDERATIONS

MOR-AD®403 IS AN EYE AND POTENTIAL SKIN IRRITANT WHILE IN THE LIQUID STATE. UNNECESSARY OR PROLONGED CONTACT WITH SKIN SHOULD BE AVOIDED. PRODUCT SHOULD BE APPLIED ONLY IN WELL VENTILATED AREAS. IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICE AVOID PROLONGED OR REPEATED BREATHING OF SOLVENT VAPORS.

PLEASE REFER TO THE MATERIAL SAFETY DATA SHEET FOR ADDITIONAL SAFETY INFORMATION.



#### TECHNICAL INFORMATION

# MOR-AD®

## ONE PART URETHANE LAMINATING ADHESIVE

THE MOR-AD® URETHANE ADHESIVES ARE BASED ON A PROPRIETARY PREPOLYMER. THIS MOISTURE CURING PREPOLYMER IS FORMULATED TO GIVE VARIOUS WORKING AND CURE PROPERTIES. THE PRODUCT SERIES INCLUDES GRADE DESIGNED FOR SPRAY AND ROLL COAT APPLICATIONS. A MASTIC GRADE IS ALSO AVAILABLE.

### SPRAY GRADE

MOR-AD® 300C, 325, 325C, 336, 336C, 337, 337C, 340C, 342C AND 346 ARE DESIGNED FOR SPRAY APPLICATIONS. ALL PRODUCTS EXCEPT THE "C" VERSIONS CONTAIN A RED DYE FOR EASY VISIBILITY ON SPRAYING. THE "C" GRADES ARE LIGHT AMBER IN COLOR AND ARE DESIGNED FOR USE WHERE A RED COLORATION MIGHT BE DETRIMENTAL TO THE APPLICATION.

### ADVANTAGES

- ONE PART, USE AS RECEIVED; NO MIXING OR SETTLING.
- ONE SIDE APPLICATION REDUCES BY ONE-HALF THE GLUE LINES NEEDED WITH CONTACT TYPE ADHESIVES.
- EXCELLENT SPRAY PROPERTIES; RESULTS IN HIGH SPEED APPLICATION WITH GOOD COVERAGE AND YIELD.
- "WET" BOND ASSEMBLY, NO ALIGNMENT PROBLEMS, PARTS CAN BE SLID INTO POSITION.
- NO ATTACK ON PLASTIC FOAMS WHEN SPRAY APPLIED.
- EXCELLENT BONDS, STRONG, RESISTANT TO HEAT AND COLD.
- EXCELLENT ADHESION TO A WIDE VARIETY OF MATERIALS.
- NON-FLAMMABLE SOLVENT MIXTURE.

### CONTAINERS

5-GALLON STEEL PAILS, CLOSED HEAD WITH POUR SPOUT, 55-GALLON STEEL DRUMS, CLOSED HEAD WITH TWO BUNGS ON TOP.  
CONTAINERS ARE NON-RETURNABLE.  
CONTAINERS ARE NITROGEN FLUSHED BEFORE SEALING.

### TOXICITY & SAFETY

THE MOR-AD® URETHANE ADHESIVES HAVE BEEN TESTED FOR EYE AND SKIN IRRITATION AND INHALATION TOXICITY. RESULTS OF THESE TESTS ARE AVAILABLE IN BULLETIN OPUL-011-79. THE PRODUCTS ARE SAFE WHEN USED IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICE. AS PART OF A SAFETY PROGRAM WORKERS SHOULD WEAR SAFETY GOGGLES AND AVOID SKIN CONTACT WITH THE ADHESIVE.

### TOXICITY & SAFETY CONTINUED

IF SKIN CONTACT IS MADE, THE AFFECTED AREAS SHOULD BE WASHED THOROUGHLY WITH SOAP AND WATER.

IF EYE CONTACT IS MADE, FLUSH THE EYES WITH LARGE AMOUNTS OF WATER AND SEEK IMMEDIATE MEDICAL ATTENTION.

ADDITIONAL INFORMATION IS AVAILABLE IN INDIVIDUAL PRODUCT SAFETY DATA SHEETS.

### HANDLING & STORAGE

THESE ADHESIVES ARE MOISTURE REACTIVE. THEY MUST BE PROTECTED FROM UNDUE EXPOSURE TO MOISTURE. STORE CONTAINERS UNDER COVER AND PROTECT FROM CONTACT WITH RAIN OR SNOW. ONCE OPENED USE IMMEDIATELY; IF USAGE IS SLOW, BLANKET CONTENTS OF CONTAINER WITH NITROGEN. WHEN STORED AS DIRECTED AND IN THE ORIGINAL UNOPENED CONTAINERS AT 70°F (21°C) THESE PRODUCTS HAVE A SHELF LIFE OF NINETY DAYS.

### ROLL COAT GRADES

THESE PRODUCTS ARE HIGH SOLIDS, MOISTURE CURABLE URETHANES DESIGNED FOR APPLICATION BY CONVENTIONAL ROLL COATER OR GLUE SPREADERS.

### ADVANTAGES

- ONE PART, HIGH SOLIDS, USE AS RECEIVED, NO MIXING OR SETTLING.
- ONE SIDE APPLICATION
- EXCELLENT FLOW PROPERTIES AND RHEOLOGY.
- EXCELLENT BONDS TO A WIDE VARIETY OF MATERIALS.
- BONDS SHOW EXCELLENT RESISTANCE TO HEAT, COLD AND MOISTURE.

### CONTAINERS

5-GALLON STEEL PAILS, CLOSED HEAD WITH POUR SPOUT, 55-GALLON STEEL DRUMS, CLOSED HEAD WITH TWO BUNGS IN TOP.  
ALL CONTAINERS ARE NON-RETURNABLE.  
ALL CONTAINERS ARE NITROGEN FLUSHED BEFORE SEALING.

### HANDLING & STORAGE

THESE ADHESIVES ARE MOISTURE REACTIVE AND MUST BE PROTECTED FROM UNDUE EXPOSURE TO MOISTURE. STORE CONTAINERS UNDER COVER AND PROTECT FROM CONTACT WITH RAIN OR SNOW.

ONCE OPENED, USE IMMEDIATELY; IF USAGE IS SLOW BLANKET CONTENTS OF OPENED CONTAINER WITH NITROGEN. WHEN STORED AS DIRECT AND IN THE ORIGINAL UNOPENED CONTAINERS AT 70°F (21°C) THESE PRODUCTS HAVE A SHELF LIFE OF NINETY DAYS.

#### Morton Chemical

2 North Dixie Blvd., P.O. Box 100, Morton, Illinois 62450 (312) 621-7600  
Divisions of Morton Chemical Products, Inc.

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and of use are beyond our control, we make no guarantee of results and assume no liability for damage incurred by following these suggestions. Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

Form 1 in U.S.A.

MASTIC GRADE

(403)

THE URETHANE MASTIC ADHESIVE IS A MOISTURE CURABLE TYPE WHICH HAS A PASTE LIKE CONSISTENCY. IT IS EASILY EXTRUDABLE FROM CAULK CARTRIDGES USING A HAND OPERATED OR AIR DRIVEN CAULK GUN. BULK MATERIAL IS PUMPABLE; PUMPS EQUIPPED WITH RAM FOLLOWER PLATES ARE RECOMMENDED.

ADVANTAGES

- ONE PART, USE AS RECEIVED.
- ADHESIVE AND SEALANT ACTION.
- EXCELLENT WETTABILITY ON A WIDE VARIETY OF MATERIALS.
- EXCELLENT BONDS, STRONG, RESISTANT TO HEAT, COLD AND MOISTURE.

CONTAINERS

1/10 GALLON CAULK CARTRIDGES, 48 PER CASE.  
5-GALLON STEEL PAILS, STRAIGHT SIDES, OPEN HEAD

HANDLING & STORAGE

THE MASTIC ADHESIVE IS MOISTURE REACTIVE AND MUST BE PROTECTED FROM EXPOSURE TO MOISTURE. TO OBTAIN OPTIMAL SHELF LIFE THIS PRODUCT SHOULD BE PROTECTED FROM HEAT. STORAGE AT COOL TEMPERATURES IS RECOMMENDED. THE TEMPERATURE RANGE OF 40-50°F (4-10°C) IS IDEAL. IF THE PRODUCT IS STORED AT THESE TEMPERATURES IT SHOULD BE BROUGHT TO ROOM TEMPERATURE BEFORE USE. WHEN STORED AT COOL TEMPERATURES THE SHELF LIFE IS NINETY DAYS.

INTRODUCTION

Mor-Ad<sup>(R)</sup> 403 is a high solids, moisture curable mastic adhesive. This product is based on the same proprietary urethane prepolymer used in the Mor-Ad<sup>(R)</sup> sprayable and roll coatable urethane adhesives. Adhesive cure takes place by means of a chemical reaction triggered by moisture present in the air or on the adherends. Because of this moisture sensitivity, special care must be taken in product handling and storage.

PRODUCT HANDLING AND STORAGE

Mor-Ad<sup>(R)</sup> 403 is moisture sensitive and must be protected from undue exposure to moisture. When using the product from cartridges it is best if the contents of the cartridge can be used completely and as soon as possible after opening. If this is not possible the nozzle of the cartridge should be plugged with a tight fitting nail or screw and the cartridge stored in a dry cool place until further use.

When Mor-Ad<sup>(R)</sup> 403 is used with a mastic pump using a ram follower, the ram should be positioned and sealed in the container as soon as possible after the container is opened.

The vacuum created by action of the pump and follower plate will protect the material from moisture. If it is necessary to break this vacuum before the contents of the container are completely used, nitrogen or dried air should be used. Once the ram is removed the remaining material should be blanketed with nitrogen and the container sealed. The ram, pump and hose should then be flushed with a cleaning solvent immediately before the adhesive begins to cure.

Containers of Mor-Ad<sup>(R)</sup> 403 should be stored under cover to prevent accumulation of water on drum or pail heads where it might be drawn into the container. All material regardless of the the packaging should be stored in a dry, cool place. Recommended storage temperatures at 50-76°F. Optimum stability can be obtained by storing the product at 20-40°F or under refrigeration. In the latter case material should be brought to room temperature before use.

### SAFETY CONSIDERATIONS

Animal tests have shown Mor-Ad<sup>(R)</sup> 403 to be an eye and skin irritant. Unnecessary or prolonged contact with skin should be avoided. Protective creams may be used to protect exposed areas of skin which might be in contact with the adhesives. In case of eye contact, flush with water and seek immediate medical assistance.

### APPLICATION TECHNIQUES

Mor-Ad<sup>(R)</sup> 403 can be applied as a bead from conventional cartridges by the use of a caulking gun or extruded by means of a ram type pump and follower plate from 5-gallon and 55-gallon containers.

The adhesive bead is applied to one surface only. Typical yield values are:

<u>Bead Size (inch)</u>	<u>Lineal Ft/Gallon</u>
1/8	1568
3/16	697
1/4	392
3/8	174
1/2	98

The second surface is then pressed onto the bead. Where vertical surfaces are involved some means of preventing slippage should be used until the adhesive cures.

Application by notched trowel is also possible. Notch sizes of 1/16 to 1/8 inch should be sufficient for most smooth substrates. Porous substrates may require a heavier coat. The second substrate is then positioned on the adhesive coated substrate and the lamination allowed to cure.

Mor-Ad<sup>(R)</sup> 403 has a relatively long working time which allows parts to be repositioned if necessary. Working time will be affected by temperature and humidity to a certain degree. Cure times are affected by the amount of moisture present, the temperatures and strain present on the bond line.

The adhesive tends to expand slightly on cure. This results in a sealant action and an ability to fill voids not shown by liquid adhesives. The final state of the adhesive is a high density elastic bead which remains rubber and flexible.

### APPLICATION TECHNIQUES CONTINUED

The Mor-Ad<sup>(R)</sup> 403 cannot be used as a caulk or a sealant where it will have exposure to ultraviolet radiation. It must be sandwiched between two materials to be effective.

Equipment can be cleaned with Toluene, Methyl Ethyl Ketone or 1,1,1-trichloroethane. This must be done before the adhesive cures. Once the adhesive cures it will be necessary to soak the equipment for at least 24 hours in one of the above solvents.

Care should be exercised when using Toluene and Methyl Ethyl Ketone. Both solvents are flammable. Avoid inhalation of all solvent vapors.

### EQUIPMENT REQUIREMENTS

Mor-Ad<sup>(R)</sup> 403 can be applied from cartridges by conventional manual sealant or caulking guns or by pneumatic or electric equipment. The adhesive can also be applied from bulk containers, 5-Gallon pails or 55-Gallon drums by use of a ram type pump and follower plates.

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.		TO PROGRAM: <b>MAOIPW</b> FORM 414005 5-73
55587	DATE ORDERED 11/6/80	DATE SHIPPED / /
04	LOC. <b>092</b>	DEPT. <b>33</b>
AFE NUMBER	JOINT FACILITY	PROJECT CONTR'L
SHIP TO: <b>JIM MCCALL STOCKTON R/P TRACK</b>		WAYBILL NUMBER
WHY NEEDED AND OTHER REMARKS:		

**MM 8642 - Program S-2 - FLOOR COVERING**

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
THE FOLLOWING WILL COMPRISE OF ONE CAR SET:					
1) #28 Kit of Primer #19 (EA1)					
2) Primer #4 (GAL-1)					
3) PR 475-S-Gold (GAL-10)					
4) Non-Skid PR 486-S-Gold (512 Kit) (GAL-4)			1/5	12	384.08
ORDER FROM: DEAN CLARK PR & C CORP 380 POMPANO CIRCLE FOSTER CITY, CA 94404					
FOR REF: SEE M/R 53004 DATED 7-11-80					

APPROVED BY <i>R. E. Shideler</i>	APPROVED BY AND DATE <i>R. W. Mustard 11/7</i>	SHIPPED BY	REC'D BY
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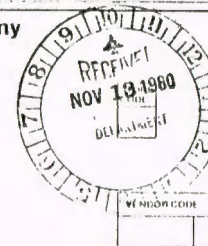
JIM MCCALL

MR 55587 MM8642 PROGRAM S-2 FLOOR COVERING

The Western Pacific Railroad Company

SHIP TO  
J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

VENDOR  
DEAN CLARK  
PR&C CORP.  
380 POMPANO CIRCLE  
FOSTER CITY, CA 94404



IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**61587**  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE PAPERS AND PACKAGES

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS ▶ **BEST WAY**

TERMS OF SALE	FOB DESTINATION	OTHER	SHIPPING CHARGES	OTHER
P.O. DATE	NO. DAY YR	TAX CURE	DISCOUNT TERMS	DATE REQUIRED
	11 12 80	D V		33

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	12	CS	THE FOLLOWING WILL COMPRISE OF ONE CAR SET: -#28 KIT OF PRIMER #19 (EA1) -#4 PRIMER (GAL-1) -PR475-S-GOLD (GAL-10) -NON-SKID PR 486-S-GOLD (512 KIT) (GAL-4)		7565-231 21-02-8642	384.08 EACH

CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	BT - BIT	PK - PACKAGE	SW - SHEET	TO - TROY OUNCE
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	FA - FAH	LB - POUND	PR - PILE	SL - SLAG	YD - LINEAL YARD
BL - BALL	CL - CYLINDER	FE - FEET	LS - LBS	PI - PILE	SP - SPOL	
BR - BUNDLE	CB - CUB	GL - GALLON	W - WEIGHT	QT - QUART	ST - SET	
BE - BEE	CS - CARPET	AM - AMPS	ME - FEET AND BOARD FEET	RE - REEL	SS - SQUARE YARD	
C - HUNDRED	CI - CANTON	ST - STONES	DI - KIT TON	RR - RAIL	TU - TUBE	
CS - CASE	CT - CONCRETE	BL - BLS	QZ - QUART	TP - TYPICAL FEET		

REMARKS

F.P. BROGDON, Director, Purchases & Material

COMMENTS:

cc: R. E. SHIDELER ✓  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS



**1. PR-475**

**USE:** PR-475 is a specially designed coating for use on metal, wood, fiberglass, concrete, polyurethane foam, and other substrates wherever a seamless coating is required for protection against abrasion, moisture, impact, and impingement.

**DESCRIPTION:** PR-475 is a two-part, chemically curing polyurethane compound consisting of a Part A and a Part B. When the two components are mixed together in a 1:1 ratio by volume, the product rapidly cures to an elastomeric coating exhibiting outstanding abrasion and moisture resistance. The product can be applied in thicknesses of 10 to 50 mils wet with a single application by brush, roller, or spray equipment, and will not sag or drip even when applied to vertical or overhead surfaces.

**FDA CONFORMANCE:** PR-475 conforms to FDA requirements for bulk dry food contact surfaces. The primer for metals in such applications is PRC Primer #33.

**COLORS:** Black or gold.

**2. RELATED PRIMERS**

**PRC PRIMER #4:** A clear brown one-part primer for use on wood or fiberglass. May be applied by brush, roller, or spray.

**PRC PRIMER #33:** A red one-part primer for use on steel and aluminum. Conforms to FDA requirements for bulk dry food contact surfaces. May be applied by brush or spray.

**PRC PRIMER #41:** A clear amber two-part primer for use on concrete or wood. May be applied by brush, roller, or spray.

**PRC PRIMER #44:** A yellow two-part, corrosion-inhibitive primer used to obtain adhesion of PR-475 to steel, aluminum, or fiberglass. May be applied by brush or spray.

**3. STORAGE LIFE**

The storage life of PR-475 and related primers is approximately 1 year when stored in the original unopened containers at temperatures below 80°F.

**4. TYPICAL PRODUCT PROPERTIES**

**NOTE:** All values typical of product at 75°F, 50% RH unless otherwise indicated.

**Mixing Ratio:** 1:1 by volume  
**Nonvolatile Content:** 75% by weight

**5. CURING CHARACTERISTICS**

A 30-mil thickness of PR-475 will achieve full cure in approximately 7 days at 75°F. This rate may be accelerated by curing 8 hours @ 75°F followed by 16 hours @ 140°F. Since cure rate is dependent upon applied thickness, a thinner specimen will require less cure time, and a thicker specimen somewhat more.

**9. MAINTENANCE**

Damaged PR-475 may be easily repaired by simply removing the damaged coating and applying fresh coating following the recommended surface preparation. The original coating immediately surrounding the repair area should be abraded prior to applying fresh coating.

**10. EQUIPMENT CLEANING**

Clean equipment with 1,1,1 trichloroethane or methyl ethyl ketone before material cures, or use a commercial stripping compound.

**11. SAFETY PRECAUTIONS**

PRC Primer #4, PRC Primer #33, and PRC Primer #44 contain flammable and volatile solvents. Keep away from heat, sparks, and flame. Proper precautions for working with flammable liquids should be followed as well as applicable safety regulations.

Although PR-475 and PRC Primer #41 have flash points greater than 100°F, they are combustible and should also be handled with suitable precaution and in compliance with applicable regulations.

**Application Life:** ½ and 2 gallon units: 1 hour; 5 gallons: 45 minutes

**Tack Free Time:** 4½ hours

**Recoat Time:** 8 hr minimum; 24 hr maximum

**Cure Time:** (30 mil thickness), 7 days @ 75°F or 8 hr @ 75°F plus 16 hr @ 140°F

**Color of Cured Coating:** Black or gold

**Hardness:** 90 Shore A

**Weight of Cured Coating:** 0.65 lb./100 ft.<sup>2</sup> for each mil thickness

**Tensile Strength (ASTM D412):** 2000 lb/in<sup>2</sup>

**Ultimate Elongation (ASTM D412):** 250%

**Tear Strength (Fed. Std. 601, Method 4211, Die C):** 300 lb/in

**Impact Resistance (Gardner Test Method):** 160 in-lb

**Abrasion Resistance (1000 gm & 1000 rev) Taber Abraser CS-17 wheel:** 14 mg weight loss

**Fungus Resistance:** Non-nutrient

**Reparability:** Excellent

**Adhesion:** Excellent to metals, wood, fiberglass, and concrete when applied with recommended primers and surface preparation

**5. SURFACE PREPARATION**

**NOTE:** All surfaces must be clean, dry, and free of corrosion, mill scale, rust, oil, tars, paint, and other surface contamination. Recommended primers should be allowed to dry at least 2 hours (but not more than 8 hours) at 75°F before application of PR-475.

**STEEL & ALUMINUM:** For optimum adhesion, the surface should be sandblasted or sanded to white metal. Afterwards remove abraded particles with brush or vacuum. In all cases the metal must be primed with one coat of PRC Primer #44 immediately after cleaning before a new attack of corrosion begins. Where FDA conformance is required, PRC Primer #33 should be used in its place.

**FIBERGLASS:** The surface should be prepared by first cleaning with a suitable solvent such as methyl ethyl ketone or 1,1,1 trichloroethane, then abrading, and finally re-cleaning with solvent to remove abraded particles. The prepared surface must then be primed with one coat of PRC Primer #4 or #44.

**WOOD:** Wood must be clean, dry, and solid. New wood with smooth surfaces should be abraded with a power sander. Prepared surface must be primed with two coats of PRC Primer #4 (allowing 2 hours drying

**12. HEALTH PRECAUTIONS**

The uncured components of PR-475 and related primers can cause irritation to eyes, skin, and mucous membranes and are harmful if swallowed. When handling, avoid all contact with eyes, skin, (especially open breaks in the skin), and clothing. In case of contact, immediately wash off with plenty of water for at least 15 minutes. For eyes, obtain medical attention. Always wash hands before eating or smoking. Obtain immediate medical attention in case of ingestion.

PR-475 and related primers contain mixed solvents. PR-475 and PRC Primer #4 contain isocyanates and may cause allergic skin or respiratory reaction. PRC Primer #41 contains an epoxy resin and an amine. Individuals with chronic respiratory problems or prior respiratory reactions to such materials should not be exposed to vapors. PRC Primer #44 contains a chromium compound. When applying PR-475 or PRC Primers #4, #33, #41, or #44, avoid breathing harmful vapors or spray mist. Fresh air supplied standard painters' hood or full face respirator must be worn by all personnel entering areas where the material is being applied or has been applied until all vapors have been exhausted. In case of extreme exposure or adverse reaction, remove affected personnel to fresh air immediately and obtain medical attention.

Suction ventilation equipment should be in operation during application to minimize the concentration of vapors and spray mist. The equipment should be arranged so as to draw vapors and spray mist down and away

(time between coats) or one coat of PRC Primer #41.

**CONCRETE:** The optimum surface preparation for concrete is sandblasting to provide a clean, dry, and sound substrate. When sandblasting is not practicable, the surface may be acid etched following the etchant manufacturer's recommendations. After sandblasting or etching, the surface must be primed with one coat of PRC Primer #41.

**POLYURETHANE FOAM:** No priming or special surface preparation is required.

**6. MIXING INSTRUCTIONS**

Mix Part A with Part B in a 1:1 ratio by volume. Purge stock containers with dry nitrogen and reseal immediately. ½ and 2 gallon units may be mixed as supplied without proportioning.

Blend the two components together 5 minutes with a Jiffy mixer blade (Model "HS" for containers up to 2 gallons and Model "PS" for 5-gallon containers), scraping down sides of containers periodically to assure complete uniformity.

**NOTE:** i. Pot life decreases with increased temperatures. ii. Not more than 5 gallons of material should be mixed at one time due to the exotherm and resultant pot life reduction. iii. Do not mix freshly catalyzed material with material nearing the end of its pot life.

**7. APPLICATION METHODS**

Excellent results are obtained by brush, roller, or spray application. Standard airless spray methods produce a somewhat smoother finish. For small applications standard pressure pot spray equipment may be used.

For spray application, the coating should be built-up by successive criss-crossing passes of the gun in lieu of a single heavy pass. This technique will minimize sagging and holidays and result in a smoother cured texture and appearance.

from the applicator and discharge them in accordance with local regulations where personnel outside the application area will not be endangered.

For additional health and safety information, consult a Material Safety Data Sheet available from the manufacturer.

**13. PURCHASING DATA**

**PR-475 BLACK OR GOLD**  
Sizes: Available in ½, 2, and 10 gallon units.

Coverage: Approximately 1125 ft<sup>2</sup>/gal per mil of cured film.

Cured Film Thickness	Wet Film Thickness	Coverage Per Gallon
8 mils	10 mils	140 ft <sup>2</sup>
20 mils	25 mils	56 ft <sup>2</sup>
40 mils	50 mils	28 ft <sup>2</sup>

**PRC PRIMER #4**  
Sizes: Pints, quarts, and gallons.  
Coverage: Approximately 250 ft<sup>2</sup>/gal (per coat).

**PRC PRIMER #33**  
Sizes: Pints, quarts, and gallons.  
Coverage: 500 ft<sup>2</sup>/gallon.

**PRC PRIMER #41**  
Sizes: #32 and #128 kit.  
Coverage: Approximately 200 ft<sup>2</sup>/gallon.

**PRC PRIMER #44**  
Sizes: #10 kit, #20 kit, and #112 kit.  
Coverage: Approximately 400 ft<sup>2</sup>/gallon.

**NOTE:** The kit designation indicates total combined contents in fluid ounces.

# **AIR BRAKES**

PROCEDURE - AIR BRAKES

1. Remove AB1B selector valve portion, A1A valve, retaining valve & piping, signal valves and signal piping.
2. Unit exchange with Sacramento for COT&S AB valves, A-2 valves, slack adjuster and hollow rod assembly. Install vented pad, 3/8" street elbow and vent protector on pipe bracket Fort #10 to replace retaining valve pipe. If toilet air is connected to pipe bracket Port #11 (front), disconnect and apply blanking pad. Apply modulating valve to brake cylinder.

Vented pad	Local purchase
Blanking pad	Local purchase
3/8" Street Elbow	Local purchase
Vent protector	Local purchase
A-2 Parts	MR 55721

3. Apply welded train line with flexible hose under platforms. Remove branch pipe tee at A1A valve and all other fittings except branch pipe at control valve and tees for conductors valves and replace with 1 1/4" socket welded couplings. Remove slip flanges at branch pipe tee and replace with socket welded flanges. Remove threaded tees and replace with socket welded tees. Reduce tees with socket welded reducer insert. Secure brake pipe at body end sill with body anchor allowing socket welded to female thread fitting to extend outboard. Secure angle cock to bracket with U-bolts after applying 12" threaded nipple. Secure nipple inboard of platform end sill with pipe anchor. Connect nipple and brake pipe with flexible hose. Replace flanges on branch pipe with welded fittings.

1 1/4" Socket weld flanges	Local purchase
1 1/4" Socket weld coupling	Local purchase
1 1/4" Socket weld to female threaded coupling	Local purchase
3,000 lb. forged steel tee	Local purchase
1 1/4 x 3/4 Socket reducer insert	Local purchase
Pipe anchor	Local purchase
1" Socket welded flanges	Local purchase
1 1/4" x 12" Nipple	Local purchase
Flexible Hose	MR 55722

4. The conductors valve (A-2) will be relocated from above the bay window to beneath the bay seat on the inboard side. This will be done using existing fittings and pipe and will be screwed assembly. All joints will be made up with joint sealing compound. No leaks will be permitted. The exhaust is to be lower than the side sill and will be protected with the vent protector used on the #8 vent valve. The train line and emergency pipes must be blown clean prior to connecting the A-2 valve.

Vent Protectors	Local purchase
1" Coupling	Local purchase

PROCEDURE                      AIR BRAKES

5. The Microphor toilet air supply should come from the 3/4" pipe connecting Port #2 on the pipe bracket to the emergency side of the AB reservoir. The emergency side of the reservoir can be identified by "EMERG" cast into a tab on the separation plate. If the air supply is not connected to this pipe, remove it from where it is connected and plug the old supply connection. A 3/8" pipe nipple should be welded to the 3/4" pipe after it has been removed from the car. Drill a hole through the 3/4 inch pipe inside the 3/8" nipple after welding. Clean all chips from the pipe prior to reapplying. The 3/8" nipple will now serve as the toilet air supply connection.

# MATERIAL REQUISITION GENERAL

MAOIPW FORM 414005 5-73

55721 THE WESTERN PACIFIC RAILROAD CO.

136

33

G

CAR OR TRUCK NUMBER

LOC.

DEPT.

STORE

55721

DATE ORDERED

DATE SHIPPED

7322

231

1 / 19 / 81

COST CTR.

T.E.C.

WAYBILL NUMBER

04

21 02 8642

05

AFE NUMBER

JOINT FACILITY

PROJECT CONTR'L

LOCO NUMBER

SHIP TO:

R. T. PRICE, GENERAL SHOP SUPERINTENDENT SACRAMENTO

WHY NEEDED AND OTHER REMARKS:

Caboose Program

Deliver to Air Room. All parts available NYAB or WABCO

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
1) A-2 Valve Complete #90261	451		Ea	4	
2) Key #90655	451		Ea	20	
3) Seal #85718	451		Ea	24	
4) O-Ring #531868	451		Ea	24	
5) Gasket #88 654	451		Ea	24	
6) Felt #90651	451		Ea	24	
7) Latch #90656	451		Ea	2	
8) Handle #18748	451		Ea	4	
9) Nut #9926	451		Ea	6	
Note: Items 3, 4 & 5 may be purchased as rubber kit NYAB 748339					
cc: Air Room					

ORDERED BY D. L. JOHNSTON      APPROVED BY AND DATE *R. T. Price* 1/25/81      SHIPPED BY      REC'D BY

# MATERIAL REQUISITION GENERAL

MAOIPW FORM 414005 5-73

55722 THE WESTERN PACIFIC RAILROAD CO.

136

33

G

LOC.

DEPT.

STORE

CAR OR TRUCK NUMBER

55722

DATE ORDERED

DATE SHIPPED

1 / 19 / 81

7322

231

COST CTR.

T.E.C.

04

21 02 8642

05

WAYBILL NUMBER

AFE NUMBER

JOINT FACILITY

PROJECT CONTR'L

LOCO NUMBER

SHIP TO:

J. R. McCaul STOCKTON RIP TRACK

REASON NEEDED AND OTHER REMARKS:

Caboose Program

ITEM DESCRIPTION

JOB

CLASS - ITEM NO.

UM

QUANT. ORDER

QUANT. SHIPPED

Aeroquip Hose

Over all length 26"

KR35-40346-0260

451

Ea

22

cc: Mr. J. R. McCaul

ORDERED BY

D. L. JOHNSTON

APPROVED BY AND DATE

*R.E. Shadole* / 1/23

SHIPPED BY

REC'D BY

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55596

DATE ORDERED

DATE SHIPPED

10/29/80

092

33

LOC.

DEPT.

STORE

7565

231

COST CTR.

T.E.C.

TO PROGRAM:

MAOIPW FORM 414005 5-73

CAR OR TRUCK NUMBER

WAYBILL NUMBER

04

21 02

8642

05

A.F.E. NUMBER

JOINT FACILITY

PROJECT CONTR'L

LOCO NUMBER

SHIP TO:

Jim McCall STOCKTON

WHY NEEDED AND OTHER REMARKS:

MM 8642

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
P.E.P. MODULATING VALVE MODEL 62-CH			EA	12	
AVAILABLE FROM: P.E.P. INDUSTRIES LTD 80 EAST JACKSON BLVD CHICAGO ILL 60604					

ORDERED BY: *R. E. Shideler* 12/16/80 APPROVED BY AND DATE: *R. E. Shideler* 12/16/80 SHIPPED BY: *R. E. Shideler* 12/16/80 REC'D BY:

USER/LOCATION J. MCAUL	TODAY'S DATE	RECEIVED DATE	APPROVED BY A DATE	APPROVED BY A DATE
WHY NEEDED MR 55596 PROGRAM S-2, CABOOSE OVERHAUL WP426-460				

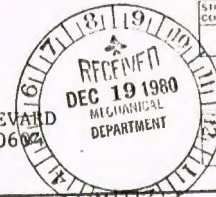
## The Western Pacific Railroad Company

c/o J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

SHIP TO

P.E.P. INDUSTRIES  
80 EAST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604

VENDOR



IMPORTANT  
THIS PURCHASE ORDER NUMBER

62185

MUST APPEAR ON ALL INVOICES, CORRESPONDENCE PAPERS AND PACKAGE

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS	TRUCK		SHIPPING CHARGES	OTHER		
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	PREPAY & INCL. IN INV.	PREPAY		
P.O. DATE	NO. DAY YR	TAX CODE	DISCOUNT TERMS	DEPT. CODE		
12 18 80	E D			33		
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	12	EA	P.E.P. MODULATING VALVE MODEL 62-CH		7565-231 PROJECT CONTROL 21-02-8642	165.00

CODES FOR A UNIT OF MEASURE

BB - BAGGEL	CF - CUBIC FOOT	GW - HUNDRED WEIGHT	ST - SET	VS - PACKAGE	SH - SHEET	TS - TROY OUNCE
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PK - PAIL	SK - SACK	TD - LINEAL YARD
BL - WALL	CL - CUBIC YARD	FT - LINEAL FOOT	LT - LIT	PP - PAIL	SP - SPool	
BR - BUNDLE	CS - CASK	GA - GALLON	M - THOUSAND	QT - QUART	ST - SET	
BS - BASKET	CB - CAB	SH - SHILLON	MB - THOUSAND BOARD FEET	RL - ROLL	ST - SQUARE YARD	
BS - BASKET	CS - CASKET	DR - DRUM	MT - MET TON	WB - WEB	TS - TUBE	
BT - BOTTLE	CT - CARTON	GT - GROSS TON	MT - MET TON	WF - WEB		
CA - CASE	CT - CASKET	HW - HEC	QT - QUART	WF - WEB		

REMARKS

Per: *F.P. BROGDON, Director, Purchases & Material*

COMMENTS:

cc: R. E. SHIDELER ✓  
H. A. O'RULLIAN  
J. MCCAUL  
D. B. JENNINGS - DESK FILE

MATERIAL REQUISITION	04				21 02 8642			139	33	G		
		AFE NUMBER	JOINT FACILITY	PROJECT CONTROL	LOCO NUMBER	LOC	DEPT.	STORE	MO.			
		ITEM DESCRIPTION	ORDERED	JOB NO.	CLASS	ITEM NO.	U/M	ISSUED	ICC	SUB	COST CTR	T.E.C.
		① Socket welded 1 1/4"	24	451	22	00989	1	ea			7322	231
		2 flange fitting										
		③ 1 1/4" Socket Weld Coupling	50	451	22	00997	1	ea			7322	231
		④ 1 1/4" Socket weld to female										
		5 thread coupling	24	451	22	00996	1	ea			7322	231
		⑥ Pipe Anchor 1 1/4"	50	451	22	00306	1	ea			7322	231
		7 1" welded flange fitting	24	451	22	00988	1	ea			7322	231
	8											
414006	REMARKS: Ship to Rip Track, Stockton Caboose program											
	<i>David L Johnston</i> SIGNATURE										1-14-81 DATE	

THE WESTERN PACIFIC RAILROAD CO.

MATERIAL REQUISITION	04				21 02 8642			139	33	G		
		AFE NUMBER	JOINT FACILITY	PROJECT CONTROL	LOCO NUMBER	LOC	DEPT.	STORE	MO.			
		ITEM DESCRIPTION	ORDERED	JOB NO.	CLASS	ITEM NO.	U/M	ISSUED	ICC	SUB	COST CTR	T.E.C.
		① 1 1/4" 3000 lb forged	48	451				ea			7322	231
		2 Steel Socket weld tee										
		③ 1 1/4" x 3/4" Socket	48	451				ea			7322	231
		4 welding reducer insert										
		⑤ 1 1/4" Sch 40 12"	24	451				ea			7322	231
		6 threaded nipple										
		7										
	8											
414006	REMARKS: Ship to Rip Track, Stockton Caboose program											
	<i>David L Johnston</i> SIGNATURE										1-14-81 DATE	

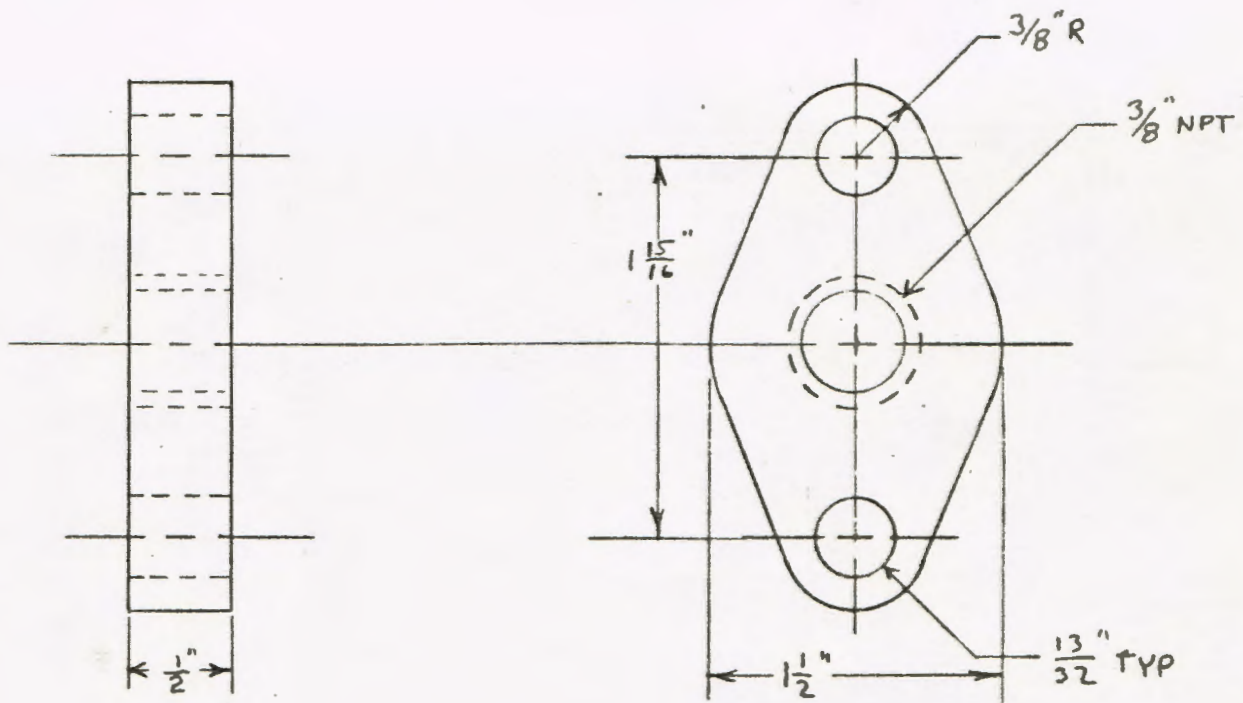
THE WESTERN PACIFIC RAILROAD CO.

414006 MATERIAL REQUISITION MAOIPW 2-73	04				21028642			139	33	G			
	AFE NUMBER		JOINT FACILITY		PROJECT CONTROL		LOCO NUMBER		LOC	DEPT.	STORE	MO.	
	ITEM DESCRIPTION			ORDERED	JOB NO.	CLASS	ITEM NO.	U/M	ISSUED	ICC	SUB	COST CTR	T.E.C.
	1 Vent protector			24	451	22	08032	ea				7322	231
	2 1" Pipe Coupling			24	451			ea				7322	231
	3												
	4												
	5												
	6												
	7												
8													
REMARKS: Ship to Rip Track, Stockton Caboose program													
										<i>David L. Adams</i> SIGNATURE		1-15-81 DATE	

THE WESTERN PACIFIC RAILROAD CO.

414006 MATERIAL REQUISITION MAOIPW 2-73	04				21028642			139	33	G			
	AFE NUMBER		JOINT FACILITY		PROJECT CONTROL		LOCO NUMBER		LOC	DEPT.	STORE	MO.	
	ITEM DESCRIPTION			ORDERED	JOB NO.	CLASS	ITEM NO.	U/M	ISSUED	ICC	SUB	COST CTR	T.E.C.
	① Vented Pad per			15	451			Ea				7322	231
	2 Dwg SK-A1128												
	③ Blanking Pads 3/8"			10	451			Ea				7565	231
	4 Wabco Pc. 566585												
	⑤ 3/8" 90° Malleable			15	451			Ea				7565	231
	6 Street Elbow												
	⑦ Vent Protector			15	451	22	09120	1 Ea				7565	231
8													
REMARKS: Ship to Rip Track, Stockton Caboose program													
										<i>David L. Adams</i> SIGNATURE		1-14-81 DATE	

THE WESTERN PACIFIC RAILROAD CO.



CABOOSE 426-460		WHERE USED	CARD	NO.
<b>WESTERN PACIFIC RAILROAD CO.</b> MECHANICAL DEPT. <b>VENTED PAD</b> <b><math>\frac{3}{8}</math>" FLANGE X <math>\frac{3}{8}</math>" NPT</b>				
DR.	D.L.J.	CHK.	AP.	SK-A1128
REVISED	DATE 1-17-81			

THE WESTERN PACIFIC RAILROAD COMPANY  
3500 24th Street  
Sacramento, California 95818

August 22, 1979

File: 413.018  
X - 413.043



Mr. R. G. Graves, Service Engineer  
Westinghouse Air Brake Company  
Steuert Street Tower  
Suite 2300  
One Market Plaza  
San Francisco, California 94103

Dear Randy:

The Western Pacific Railroad is developing plans for major program repairs to cabooses WP 426 to WP 460. Included in the plans are modifications to the air and hand brake systems to reduce slid flats, built up tread, overheated wheels, unusual brake shoe wear and high maintenance costs.

I would appreciate information on the following specific questions to assist us in making changes to the brake system and for my own education. Enclosed you will find WP Drawing 207F1070, the brake arrangement for this series.

Questions:

1. These cars are to be changed from iron to composition shoes. What do you think would be a good braking ratio for a caboose where the light weight and the loaded weight are approximately equivalent?
2. Due to the battery boxes and other equipment beneath the floor, there is little room for changing lever length. What do you think about changing the brake cylinder diameter.
3. If we use a 7 1/2" cylinder sleeve, is it still available with a groove to make the D-111-D slack adjuster function?
4. The new U.P.R.R. cabooses have 7 1/2" cylinders. Is there a 7 1/2" cylinder available for use with D-111-D slack adjuster?
5. Would you recommend the use of an 8 1/2" cylinder? Why?
6. Is the 8 1/2" brake cylinder available for use with the D-111-D slack adjuster?
7. What are the costs of the 7 1/2" sleeve, 7 1/2" brake cylinder and the 8 1/2" brake cylinder?

Mr. R. G. Graves, Service Engineer  
Westinghouse Air Brake Company  
San Francisco, California 94103

August 22, 1979  
File: 413.018  
X - 413.043

8. Could you supply me with outline drawings of the 7 1/2" and 8 1/2" brake cylinders?
9. Our cabooses are equipped with A-2 valves. What is the philosophy behind the use of the A-2 valve, A-1 valve, or a straight jump valve?
10. Should the exhaust pipe on the A-2 valve have a wasp-excluder, vent protector or some other device on it?
11. To reduce wheel heat and keep the shoes centered on the wheel, I discussed the possibility of using flange-bearing brake shoes with Joe Kahr of Railroad Friction Products, Wilmarling, and he suggested we try the Cobra V-203 shoe. Do you have any thoughts on this?
12. This series of cabooses was originally equipped with AB1B control valves and a 2A2 quick service valves. Can you briefly explain how the AB1B valve graduates a release?
13. To reduce maintenance, we will change the AB1B to AB. Is there anything which must be done other than just removing the extra portions of the valve?
14. What function does the 2A2 valve serve?
15. Is there any reason for it to remain?
16. Is it required with the A-2 valve?
17. Can you explain how the 2A2 valve works, provide service information, parts lists and a code of tests if it should remain?
18. Do you know of any reason why there must be a retaining valve on a caboose?
19. If we remove the retaining valve, what should be used to protect the outlet of the exhaust pipe?
20. These cabooses are equipped with two hand brakes, one on each end. Do you know if there is a requirement for two hand brakes on cabooses?
21. Do you know the philosophy behind the use of the two hand brakes on a caboose?
22. We are considering the use of a trainline extension hose between the angle cock which is rigidly mounted on the end sill and the brake pipe to reduce damage to the brake pipe in the event of passed couplers. Do you see any problems with this?

Mr. R. G. Graves, Service Engineer  
Westinghouse Air Brake Company  
San Francisco, California 94105

August 22, 1979  
File: 413.018  
X - 413.043

The prototype for the caboose program will be WP 452 and work is scheduled to start in about two weeks.

Sincerely yours,

David L. Johnston

cc: Mr. D. B. Jennings

cc - Mr. Dick Schidler

Mr. David L. Johnston  
The Western Pacific Railroad Co.  
3800 24th Street  
Sacramento, Calif. 95818

September 10, 1979

DLJ

WP CABOOSE MODIFICATION

SEP 11 1979

Dear Mr. Johnston:

Please refer to your August 22, 1979 letter to Randy Graves, concerning your development plans for major program repairs to cabooses WP 420 to WP 400. Listed below are answers to the questions set forth in your August 22 letter:

1. A theoretical braking ratio between 25 and 30% (based on 50 PSI D.C. pressure) should provide satisfactory braking using high friction composition shoes. Without modifying the lever ratio of 6.4, now in effect on these cabooses, by modifying the 10" brake cylinder to a 7-1/2" brake cylinder, a braking ratio of 27.8% could be realized.
2. The brake cylinder diameter may be modified by either inserting a 10" x 12" to 7-1/2" x 12" Conversion Kit, Pc. 569514, in the present 10" cylinder or by replacing the 10" cylinder with a 7-1/2" x 12" ABU Cylinder, Pc. 563828.
3. Neither Pc. 569514 or 563828 are made with a groove to operate the D-111-D Slack Adjuster.
4. No.
5. No. An 8-1/2" cylinder in combination with your current 5.4 lever ratio would produce a theoretical braking ratio of 35.7% which is higher than the 25-30% previously mentioned.
6. No.
7. Current pricing is as follows:

7-1/2" Conversion Kit Pc. 569514	\$155.00	Net Each
7-1/2" ABU Brake Cylinder Pc. 563828	\$163.00	Net Each
8-1/2" ABU Brake Cylinder Pc. 573829	\$163.00	Net Each
8. Yes.

Mr. David L. Johnston  
The Western Pacific Railroad Co.

-2-

September 10, 1979

WP CABOOSE MODIFICATION

9. Either service or emergency brake applications can be made with the A-1 or A-2 Caboose Valves. However, the handle on the A-2 Valve must be moved to full application position before it can be returned to its original LAP position. Using a 1-1/4" Emergency Brake Valve ("straight dump valve") only an emergency brake application can be obtained.
10. Since the A-2 Valve is normally installed inside the caboose, a wasp excluder or vent protector is not required.
11. The use of a plain composition brake shoe, such as our 2-inch V-174 COBRA Shoe, should be satisfactory.
12. The AD-1-B Equipment does not graduate a brake release. See Pamphlet 5062, Sup. 1, enclosed.
13. If you will no longer be using the signal pipe it should be removed from the car. There will be no connection from the signal pipe to the AB Valve.
14. For A-2 or A-2-A Quick Service Valve functions, refer to Page 15 of the enclosed Pamphlet 5050-7.
15. No.
16. No.
17. See Page 15 of Pamphlet 5050-7. Part Catalog 3211-3 and Test Code T-966-0 are enclosed.
18. No.
19. Use one each of the following items at the AD Pipe Bracket:  
3/8" Wabcoite Flange with 1/4" Pipe Top      Pc. 519186  
1/4" Street Elbow      Pc. 41009  
Wasp Excluder      Pc. 97130
20. Do not believe two hand brakes are required.

Mr. David L. Johnston  
The Western Pacific Railroad Co.

-3-

September 10, 1979

WP CABOOSE MODIFICATION

21. Probably for convenience.

22. No.

Should you require additional information, please feel free to contact us at your convenience.

Very truly yours,

R. P. Edwards  
Representative

RPE:d

Enc.

cc: H. E. Weber

J. C. Kahr

San Francisco - September 16, 1980

File - 410.2

Messrs.: H. Mettet - Milpitas  
J. Baranesky - Oakland  
R. L. Millhiser - Stockton  
D. Johnston - Sacramento  
B. Coggin - Oroville  
A. Slade - Portola  
W. O'Brien - Elko

Subject: Information - Modulating Valve

As you are aware, freight cars with cast iron shoes may be converted to composition shoes via several different methods, all of which reduce effective shoe force against the wheel while maintaining a generally equivalent retarding characteristic of cast iron shoes. Conversion is usually done by placing a 7-1/2-inch diameter sleeve and piston into a standard 10-inch cylinder, or changing brake levers to reduce ratios comparable to the requirements of composition shoes.

Another method of conversion from cast to composition shoes is to apply a pressure reducer between the brake cylinder pipe and the brake cylinder, thereby eliminating the need for sleeves, different brake levers, etc. This valve is produced by P.E.P. Industries Ltd., and is commonly known as a Modulating Valve, which is the subject of this letter. In order that you and carmen at your terminal better understand what this valve is and how it works, I am attaching Drawing SK-A1121, diagrammatically indicating all of the various interior parts. THERE ARE NO FIELD ADJUSTMENTS WHICH CAN BE MADE TO THIS VALVE, AND IT IS HIGHLY UNLIKELY THAT THIS VALVE WILL MALFUNCTION CAUSING BRAKES NOT TO SET OR RELEASE PROPERLY.

Description of Operation:

When brakes are applied, air from the triple valve, via the brake cylinder pipe enters thru port A to chamber B. Pressure in chamber B, plus force of spring 9, hold diaphragm-seal 4-2 and rest of diaphragm stack in open position. Air flows through passage C to brake cylinder.

Within mounting bracket, port D is connected to port C. Brake cylinder pressure communicates through port D to chamber E, exerting force upon diaphragm 4-1, which is larger in effective area than diaphragm 4-2. When the force upon diaphragm 4-1 exceeds the force on diaphragm 4-2 plus the force of spring 9, the entire assembly moves toward valve B, closing it to further flow. For example, in the Model 62, which we are

Messrs. Mettet, Baranesky,  
Millhiser, Johnston, Coggin,  
Slade, O'Brien

-2-

San Francisco - September 16  
File - 410.2

applying on 426 series cabooses, this will occur in a full service application when approximately 62% of the brake cylinder pipe pressure occurs in the brake cylinder.

When the triple valve moves to release position, pressure reduces in the brake cylinder pipe, port A and chamber B. When this pressure becomes lower than brake cylinder pressure in chamber C, the O-Ring 10 dilates allowing air to flow through the drilled holes F to chamber B, and to exhaust. The combination of the differential areas on the two faces of piston 1 and the force of spring 9 function to insure that at low level brake application, such as minimum service, the brake cylinder pressure is unreduced to insure brake shoe contact.

Minimum Service Brake Application:

When a minimum brake pipe reduction is made (5 psi or more) the triple valve is required to develop 8 to 12 psi pressure in the brake cylinder pipe. A unique feature of the M.V. is the action of spring 9. The compressive force of spring 9 is such that if 8 psi is introduced into port A, notwithstanding the difference in areas, a pressure of 8 psi is required to overcome the combination of air pressure on diaphragm 4-2 and spring 9. This ensures an output pressure sufficient to overcome the brake cylinder return spring as well as the brake rigging resistance and bring the shoes into contact with the wheels.

Another unique feature is the inner plunger 1. To provide long life and limit the crush force on diaphragm 4-2, the design requires both plunger 1 and 2 to be in their downward position before the valve aperture is closed. The force on the valve, however, is limited to that which can be produced by the result of the different pressures acting on the two surfaces of plunger 1.

Full Service Application:

If the brake pipe is reduced further, the triple valve will act to increase the flow of air to brake cylinder pipe. The resulting increase of pressure in port A and chamber B will again move the diaphragm stack upward, opening the valve aperture, increasing the pressure in port C and D, chamber E, and the brake cylinder. When equilibrium is again exceeded, the diaphragm stack will move again, closing the valve aperture. The result will be a brake cylinder pressure reduced in the ratio to provide the braking force desired to be equivalent with composition shoes as was previously obtained by the combination of iron shoes and a higher cylinder pressure.

Messrs. Mettet, Baranesky,  
Millhiser, Johnston, Coggin,  
Slade, O'Brien

-3-

San Francisco - September 16  
File - 410.2

Note: As the pressure increases, the relative effect of spring 9 diminishes ensuring that for any application an optimum braking force is obtained.

Maintenance:

There are no sliding seals, such as piston rings, cups or seal rings employed, therefore, the valve never needs any lubrication. It is assembled initially without lubricant and never needs any for its operation. Most pneumatic valve failures are preceded by either a chemical or age deterioration of key materials such as elastomers, or by loss, oxidation or contamination of lubricant.

Volume Reservoir:

The purpose of the volume reservoir is to ensure harmonious operation of a car equipped with a modulating valve and cars equipped with standard AAR brake equipment.

The reservoir size has been calculated so that full service and emergency equalization pressures meet AAR standards. The pressure in reservoir will be the same as brake cylinder pressure in normal single capacity AB or ABD brakes during an application.

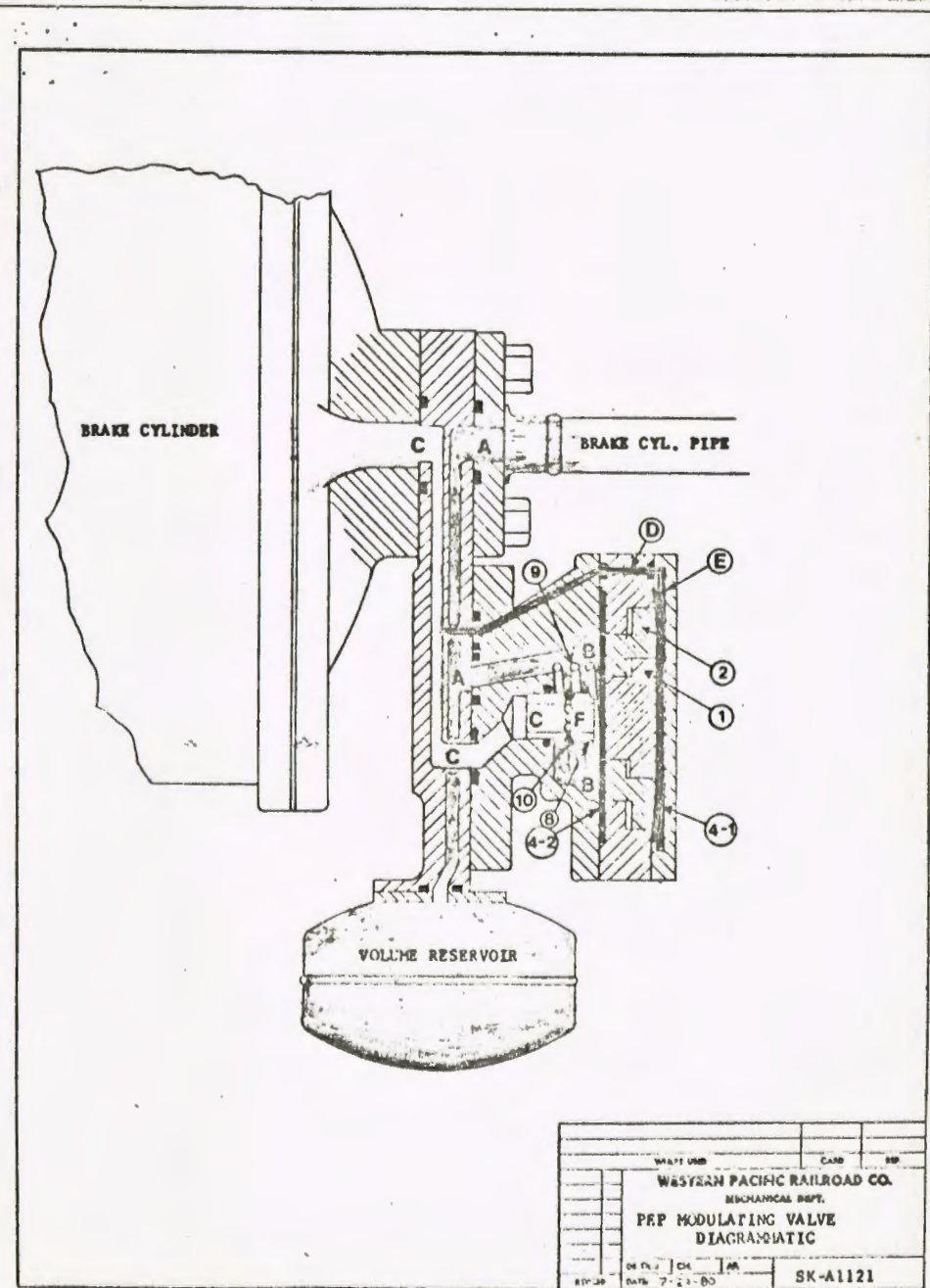
Check Valve Function:

The dilating O-ring functions as a check valve. Experience has shown that such check valves have extremely long life. It is simpler and has fewer parts than other types, is not subject to gravity orientation and has no spring. The O-ring used is as flexible at -60°F as a standard AB grade buna ring at room temperature. It is practically immune to aging in the foreseeable life of a freight car.

*R. E. Shideler*  
R. E. Shideler

Attachment

cc - M. Evans  
R. T. Price



WEST	ORD	CAD	SEP
WESTERN PACIFIC RAILROAD CO.			
MECHANICAL DEPT.			
PRP MODULATING VALVE			
DIAGRAMATIC			
DR. FILE	CH.	AM.	
REV. 30	DATE	7-21-50	SK-A1121

## Quality Throughout

The P.E.P. Modulating Valve is manufactured to the highest standards of precision, strength and durability with quality materials throughout. Use of modern materials make this attachment self-lubricated.

## Performance Data

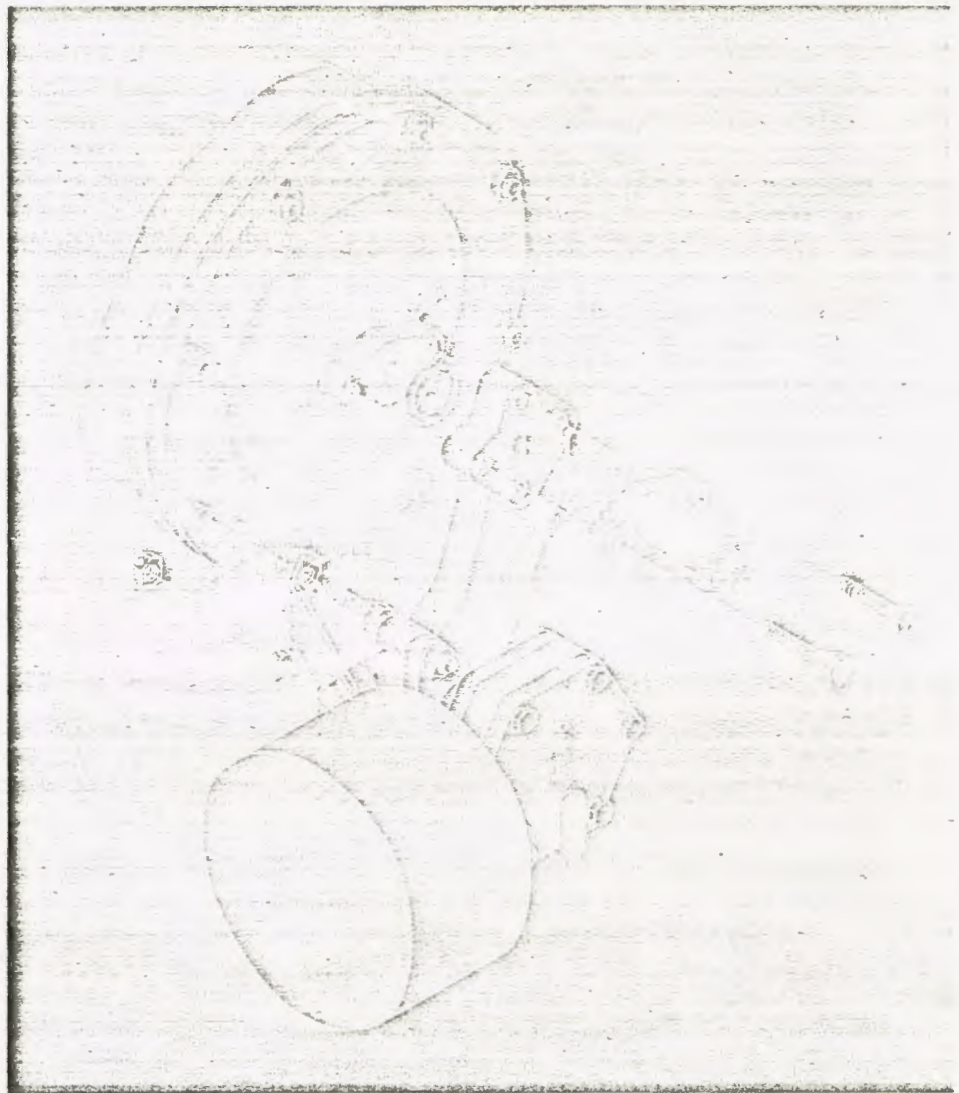
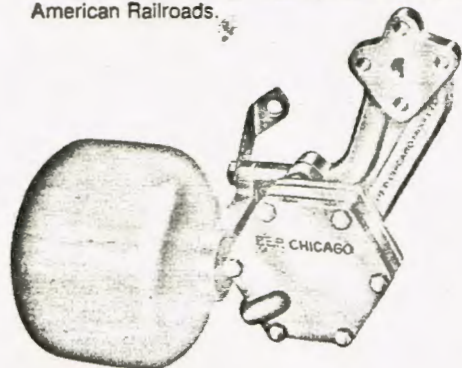
The P.E.P. Modulating Valve has met or exceeded every test and requirement specified by the AAR.

Laboratory tests clearly proved that the valve...

- Functioned properly at  $-40^{\circ}\text{F}$ .
- Functioned properly at  $+175^{\circ}\text{F}$ .
- Showed no appreciable signs of wear at over 2,200,000 emergency-level cycles, far exceeding the AAR requirement of 30,000 cycles.
- Completely withstood over 4,000,000 vibration cycles, as compared to the AAR requirement of 1,000,000 cycles.
- Thoroughly tested with dynamometer shoes on a wide variety of cars: 90-T boxes, 70-T boxes, 85-foot flat cars, 90-T covered hoppers. All tests met or exceeded requirements and expectations.

## Inherent Features

- Quality materials and rugged yet precise construction throughout.
- Resistant to dirt, water, abrasion, and hard in-service usage.
- Mounting points (4), for strength and rigidity.
- Lubrication needed—none, ever.
- ~~Special tools needed—none.~~
- Brake rigging alterations needed—none.
- Salvaged parts needed—none.
- Comes complete in one package. No additional parts, fittings, components needed.
- Special tools needed—none.
- Special installation training needed—none.
- Parts inventory needed—none.
- Operation temperature range— $-40^{\circ}\text{F}$  to  $+150^{\circ}\text{F}$ .
- Conditional Approval granted by Association of American Railroads.



## Installation

Provision has been made for meeting the clearance and attachment requirements of many types of freight cars. The above arrangement and clearance drawing illustrates how the P.E.P. Modulating Valve can be applied to most types of cars. Comparable mounting arrangements have been engineered and proved for other car applications, such as hoppers. Note that the valve knows no gravity and therefore can be mounted in any position.

The P.E.P. Modulating Valve can be installed in minutes by shop personnel. No special tools or training are needed. Complete in one package, all necessary assemblies and components are provided. This means no stocking and reworking of salvaged parts. Installation requires no cutting, burning, welding or adjustment of any part of the brake rigging, which, of course, includes brake levers and slack adjusters. No parts warehousing and inventory. And, of great importance to many railroads, installation can be completely made locally, at repair tracks, without car and/or parts handling or transfer.

Installation instructions are included with each order.

## Contact Us

Call or write for full information when you are seeking the answer to the problem of converting freight cars from cast iron brake shoes to composition shoes. Investigate the easiest, most economical, most efficient, and most positive equipment yet developed—the P.E.P. Modulating Valve. We will gladly supply names of satisfied users.

## P-E-P INDUSTRIES LTD.

80 East Jackson Boulevard  
Chicago, Illinois 60604  
Telephone 312/922-5807

**GLASS**

PROCEDURE - GLASS

Glazing, including complete sash and sliders for bay windows will be supplied by the J. T. Nelson Company per the attached schedule. A test set is now on order (for caboose WP 430 at Sacramento). When received and checked for dimensional accuracy and proper fit, an order will immediately be placed for sufficient material to cover requirements of this program.

This glazing meets requirements of the recent FRA Rules (Part 223).

Mounting details will be furnished upon receipt of material.

WESTERN PACIFIC RAILROAD  
FRA Part 223 Caboose Windows

*PROGRAM ITEMS*

<u>ITEM</u>	<u>WINDOW</u>	<u>J. T. NELSON DWG. NO.</u>	<u>TYPE GLAZING</u>	<u>SIZE (INCHES)</u>	<u>NUMBER PER CAR</u>	<u>STOCK NUMBER</u>
<u>Series WP 426 - 460</u>						<u>34 Cars</u>
1	End Bay Window	8029	9/16" Glass	10 x 33 3/8	4	47-06510-1
2	Bay Sliding Sash	35051	1/2" Glass	15 3/4 x 31 5/8	4	47-06512-1
3	End Door Drop Sash	17023	9/16" Glass	12 3/16 x 14 3/4 (drop)	2	47-06514-1
4	End Door Drop Sash	17023	9/16" Glass	8 7/8 x 17 1/4 (fixed)	2	47-06516-1
5	Body End Window	8030, Line 1	9/16" Glass	22 x 28	2	47-06518-1
6	Body Side Window	8030, Line 2	3/8" Obscure Plastic	22 x 28	1	47-06520-1
<u>Series WP 461 - 480</u>						<u>19 Cars</u>
7	End Bay Window	8035	9/16" Glass	18 15/16 x 6 3/4	4	47-06522-1
8	End Door Drop Sash	17012	9/16" Glass	15 3/8 x 15 3/8 (drop)	2	47-06524-1
9	End Door Drop Sash	17012	9/16" Glass	17 7/8 x 12 1/16 (fixed)	2	47-06524-1
10	Body End Window	9042, Line 1	9/16" Glass	21 3/8 x 25 3/8 Corners 4 1/8 R	2	47-06526-1
11	Body Side Window	9042, Line 2	3/8" Obscure Plastic	21 3/8 x 25 3/8 Corners 4 1/8 R	1	47-06528-1
<u>Series WP 461 - 465</u>						<u>5 Cars</u>
12	Bay Sliding Sash					47-06530-1
<u>Series WP 466 - 480</u>						<u>14 Cars</u>
13	Bay Sliding Sash	35059	1/2" Glass	20 x 24	4	47-06532-1

# FUEL TANK

PROCEDURE      FUEL TANK

1. Cover outside of window at AR corner with 10 gauge steel (side sheet material).
  - A. Reinforce with angle iron.

CAUTION: Outside filler pipe box will be installed on lift side.
  - B. Use continuous weld on outside and grind weld smooth.
2. Cover inside of window at AR corner with 10 gauge steel (side sheet material).
3. Set tank in place in AR corner (MR 55578).
  - A. Secure tank temporary to wall by two screws.
4. Mark location for the following pipes:
  - A. Filler Pipe - end wall. Use a straight edge to mark hole using pipe on tank.
  - B. Water Drain - in floor.
  - C. Overflow Pipe - in floor.
5. Remove tank.
6. Drill holes in floor.
7. Cut eleptical hole in inside end wall.
8. Cut square hole in outside end sheet for filler.
  - A. Apply square box on outside end sheet, continuously welded.
9. Apply tank in car.
  - A. Secure to wall with 1/4"x1" self-tap screws.
10. Apply filler, drain and overflow pipes.

**MATERIAL ACQUISITION GENERAL**

THE WESTERN PACIFIC RAILROAD CO.

092 33 MAOIPW FORM 414005 5-

55578		DATE ORDERED 10/23/80	DATE SHIPPED / /	LOC. 7565	DEPT. 231	STORE	CAR OR TRUCK NUMBER
04		21 02 8642		05		WAYBILL NUMBER	
AFE NUMBER		JOINT FACILITY		PROJECT CONTR'L		LOCO NUMBER	

SHIP TO: **JIM MCCALL STOCKTON RIP TRACK**

WHY NEEDED AND OTHER REMARKS: **SEE MM 8642 - PROGRAM 5-2**

**CABOOSE SERIES WP 426-460**

RECEIVED PURCHASING  
11/3 - 3 1980  
WESTERN PACIFIC RAILROAD

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
65-GALLON FUEL TANK WITH OUTSIDE FILL ON END OF CAR, COMPLETE WITH OVERFLOW PIPE AND DIAL LEVEL GAGE AND SUMP.			EA	12	
FROM: INTERNATIONAL CAR BALES ROAD KENTON, OHIO 43326				approx 8 to 10 weeks deliv.	440.20
reference - see PO 55659 dated 9-25-79				<del>Blackwelder</del>	310.00

ORDERED BY <i>E Shudler 10/23</i>	APPROVED BY AND DATE <i>RW Mustard 11/3.</i>	SHIPPED BY	REC'D BY
--------------------------------------	---	------------	----------



# INTERIOR HARDWARE



San Francisco - November 6, 1980

*R. T. Price  
Does this match  
with your notes?  
RES 11/6  
YES 11-10-80 RTP*

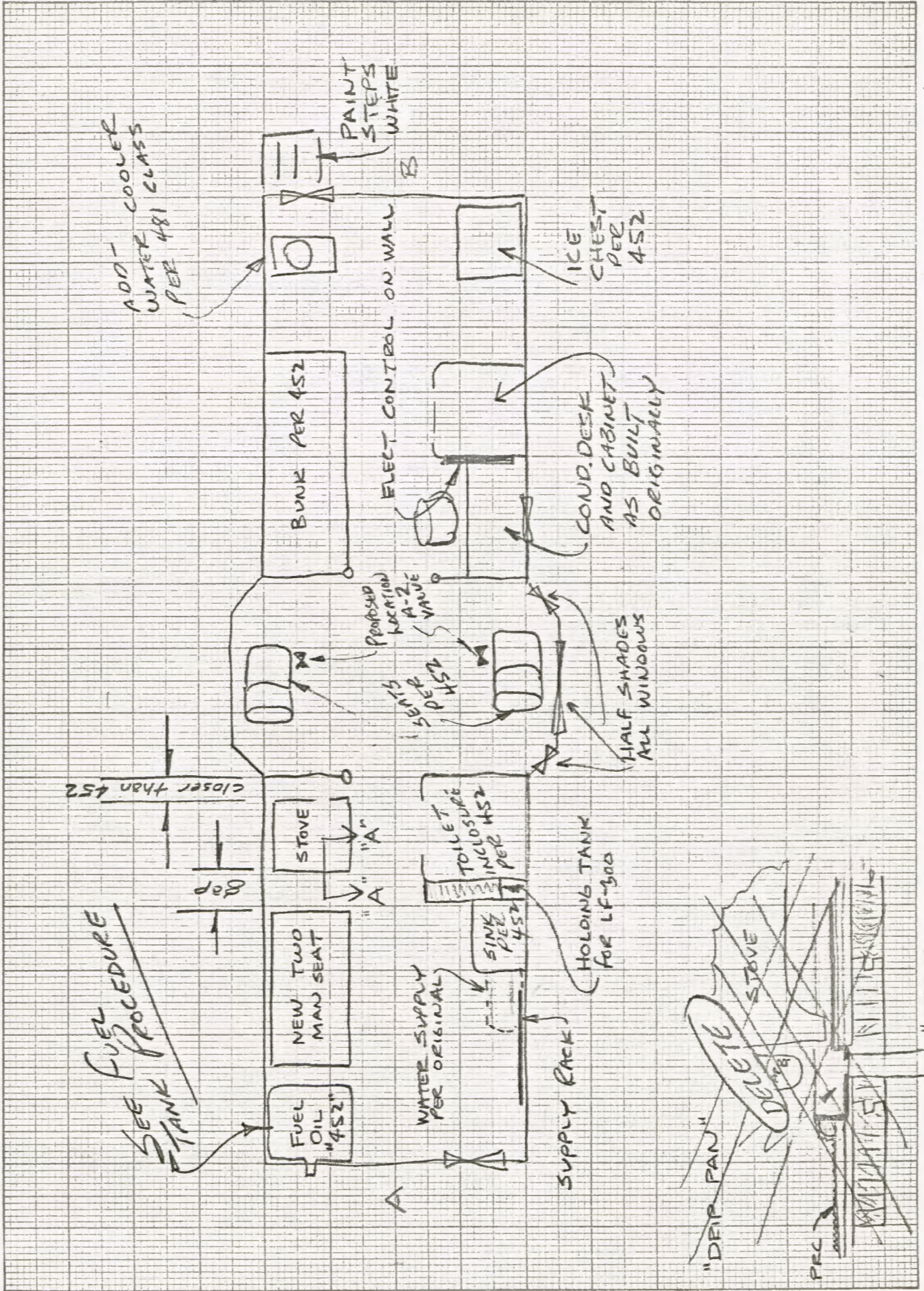
Basic changes in prototype caboose WP 452 interior per meeting at Stockton of November 5, 1980.

Arrangement per attached sketch:

- (1) Add water cooler (as used on 481 Series).
- (2) Bay seats per 452 - require double stitch, use "ladder" foot rest (UP design).
- (3) Glass per 452 J.T.N.
- (4) Cabinets - leave one more (per sketch).
- (5) Supplies - keep knuckles outside - modify holder. Design rack for supplies (T/L parts and tools).
- (6) Floor - minor modification per Mechanical Department. *(SEE FLOOR PROCEDURE)*
- (7) Bunk - one PUC per G0114. Add seat per sketch.
- (8) Conductors desk(s) return to present design - 426 Series.
- (9) Emergency Valve - reduce ~~for~~ <sup>from</sup> 4 to 2 (A2 type). Try "under seat" location.
- (10) Toilet - use Microphor with new holding tank - Mechanical Department design.
- (11) Stove - per 452 - ~~add floor basin per Mechanical Department.~~
- (12) Electrical system - per Mechanical Department - basic Dayco drive - } *SEE ELECTRICAL PROCEDURE*  
general interior as per built with modifications.
- (13) Paint - light green.
- (14) ADD - padding on stanchions per UTU request.
- (15) MODIFY - bay shades to drop only half way (in lieu of full) and add side bay shades (to drop only half way).

In attendance at Meeting: R. E. Shideler, R. T. Price, M. Evans,  
J. R. Craig, Parker & Goodwin

*NOTE: NO DETAILED PROCEDURE WILL  
BE WRITTEN FOR INTERIOR ARRANGEMENT*



SEE FUEL PROCEDURE  
TANK

ADD COOLER  
WATER PER 481 CLASS

BUNK PER 452

STOVE "A"

NEW TWO MAN SEAT

FUEL OIL TANK "452"

PAINT STEPS WHITE

ELECT CONTROL ON WALL

PROPPOSED LOCATION A-2 VALVE

WATER SUPPLY PER ORIGINAL

TOILET ENCLOSURE PER 452

SINK PER 452

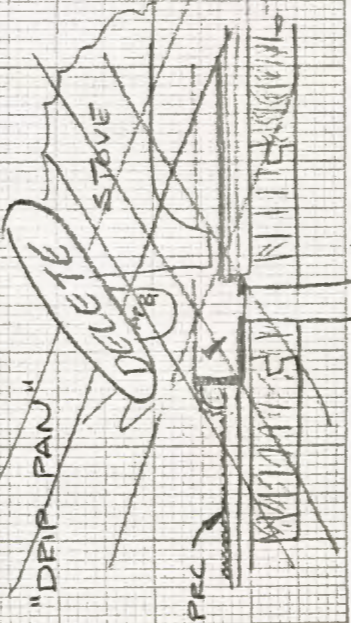
SUPPLY RACK

HOLDING TANK FOR LF-300

ICE CHEST PER 452

COND. DESK AND CABINET AS BUILT ORIGINALLY

HALF SHADES ALL WINDOWS



1" DRAIN

SECTION "A-A"

STOCKTON  
11-5-80  
RES

STENCIL: (2" LETTERS)

" IF NECESSARY TO DRAIN  
WATER SYSTEM TO PREVENT  
FREEZING, OPEN DRAIN  
VALVE IN TOILET COMPARTMENT"

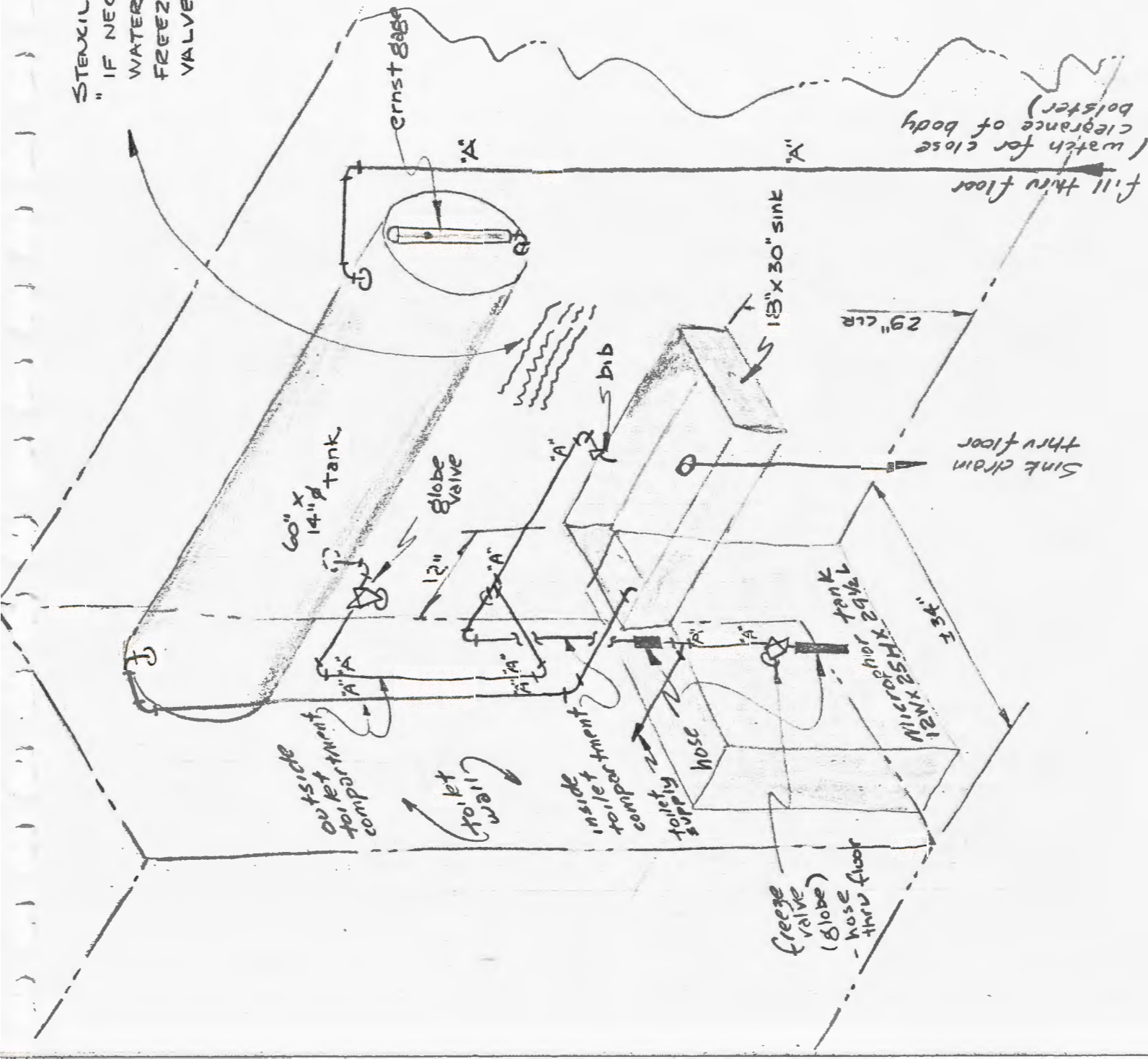
All piping 3/4" Galv.  
(except 1" bushings  
@ tank)

"A" = P.I.P.C. anchor to wall

PROPOSED  
SANITARY  
WATER SYSTEM

WP 426-460

RES 12/10/80



## SIGHT LEVEL INDICATORS

### SIGHT OIL GAGE SHIELDED BRASS

**TYPICAL APPLICATIONS:** Used to indicate level of lubricating oil supply at bearings, gear boxes, crank cases, transformers, switches, etc.

**PROTECTED VENT:** Vent hole allows free air communication with atmosphere — minimizes possibility of dust or dirt getting inside gage.

Fig. 530 Oil Gage is used where an oil gage cannot be extended outwardly.

Fig. 80 Oil Gage is made to provide a generous oil passage. Screw Cap on both types can easily be removed to permit cleaning inside of glass. Specify figure and size number when ordering.

#### WITH DRAIN COCK

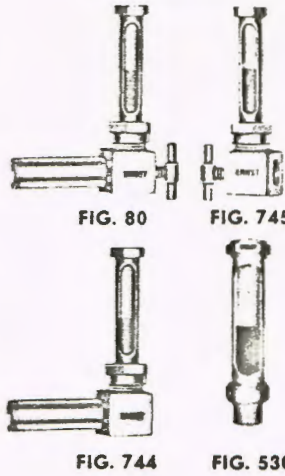


FIG. 80

FIG. 745

FIG. 744

FIG. 530

Size No.	1	4	5	6
Pipe Thread on Shank	1/8"	1/4"	3/8"	1/2"
*Length, Center Line of Glass to End of Shank	2 1/4"	2 3/4"	2 3/4"	2 3/4"
Height, Center Line of Shank to Top of Gage	2 13/16"	4 13/16"	6"	6"
Glass Length (dia. is 3/8")	1 7/8"	4 1/8"	5 3/8"	5 3/8"

\*Fig. 80 and 744 only. (Fig. 745 Female)

## HIGH-TYPE SHIELDED OIL GAGE

### STEEL, ZINC PLATED SIGHT-GLASS GASKETS: BUNA N

**APPLICATIONS:** Used to indicate level of lubricating oil supply at bearings, gear boxes, crank cases, transformers, switches etc. Designed to operate at atmospheric pressure and a maximum temperature of 225°F.

**PROTECTED VENT:** Vent hole in cap nut allows free air communication with atmosphere — minimizes possibility of dust or dirt getting inside gage.

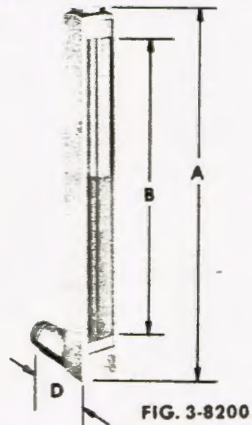


FIG. 3-8200

Pipe Size	A	B	D
1/4"	5 1/2"	4 3/16"	2 1/2"
3/8"	5 1/2"	4 3/16"	2 1/2"
1/2"	5 1/2"	4 3/16"	2 1/2"
1/4"	6 3/4"	5 9/16"	2 1/2"
3/8"	6 3/4"	5 9/16"	2 1/2"
1/2"	6 3/4"	5 9/16"	2 1/2"
1/4"	8 3/4"	7 9/16"	2 1/2"
3/8"	8 3/4"	7 9/16"	2 1/2"
1/2"	8 3/4"	7 9/16"	2 1/2"
1/4"	10 3/4"	9 9/16"	2 1/2"
3/8"	10 3/4"	9 9/16"	2 1/2"
1/2"	10 3/4"	9 9/16"	2 1/2"
1/4"	13 3/4"	12 9/16"	2 1/2"
3/8"	13 3/4"	12 9/16"	2 1/2"
1/2"	13 3/4"	12 9/16"	2 1/2"

## SHIELDED OIL GAGE

### BRASS

#### MALE PIPE THREAD

Sizes: 1/8", 1/4" and 3/8"

Glass can be drained, cleaned or replaced by closing valve. It is not necessary to drain tank or reservoir.

**TYPICAL APPLICATIONS:** Used to indicate level of lubricating oil supply at bearings, gear boxes, crank cases, transformers, switches, etc.

Designed to operate at atmospheric pressure and a maximum temperature of 225°F.

Protected vent hole.  
Specify when ordering dimension B required.  
Available up to 36" vision.

Standard B dimension  
7 3/8" and 12 1/2"

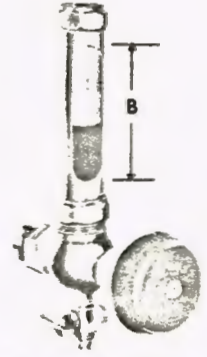


FIG. 5-050A

## HIGH-TYPE SHIELDED OIL GAGE

### STEEL, ZINC PLATED SIGHT-GLASS GASKETS: BUNA N

**APPLICATIONS:** Used to indicate level of lubricating oil supply at bearings, gear boxes, crank cases, transformers, switches, etc. Designed to operate at atmospheric pressure and a maximum temperature of 225°F.

**PROTECTED VENT:** Vent hole in cap nut allows free air communication with atmosphere — minimizes possibility of dust or dirt getting inside gage.



FIG. 4-8200

Pipe Size	A	B
1/4"	7 3/8"	5 9/16"
3/8"	7 3/8"	5 9/16"
1/2"	7 3/8"	5 9/16"
1/4"	9 3/8"	7 9/16"
3/8"	9 3/8"	7 9/16"
1/2"	9 3/8"	7 9/16"
1/4"	11 3/8"	9 9/16"
3/8"	11 3/8"	9 9/16"
1/2"	11 3/8"	9 9/16"
1/4"	14 3/8"	12 9/16"
3/8"	14 3/8"	12 9/16"
1/2"	14 3/8"	12 9/16"



**ERNST GAGE CO.**  
250 SOUTH LIVINGSTON AVENUE  
LIVINGSTON, NEW JERSEY 07039

Engineering Specialists  
since 1900

201-992-1400





PLASTIC AIR CYLINDER  
REPAIR BREAK OUT

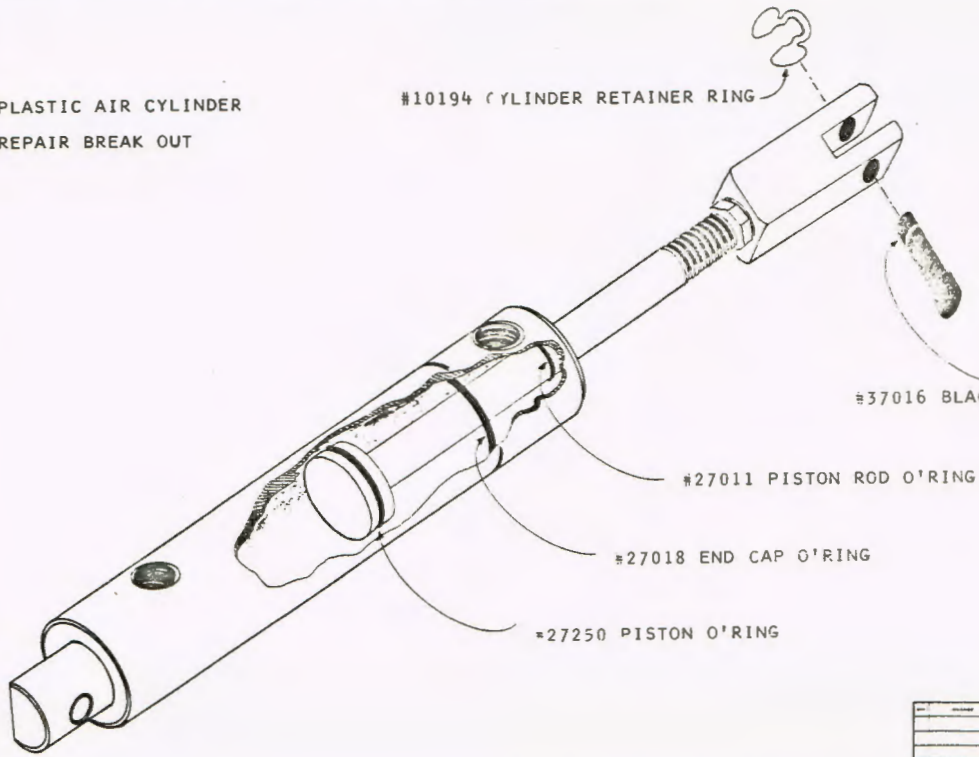
#10194 CYLINDER RETAINER RING

#37016 BLACK CLEVIS PIN

#27011 PISTON ROD O'RING

#27018 END CAP O'RING

#27250 PISTON O'RING



# ASSEMBLY INSTRUCTIONS

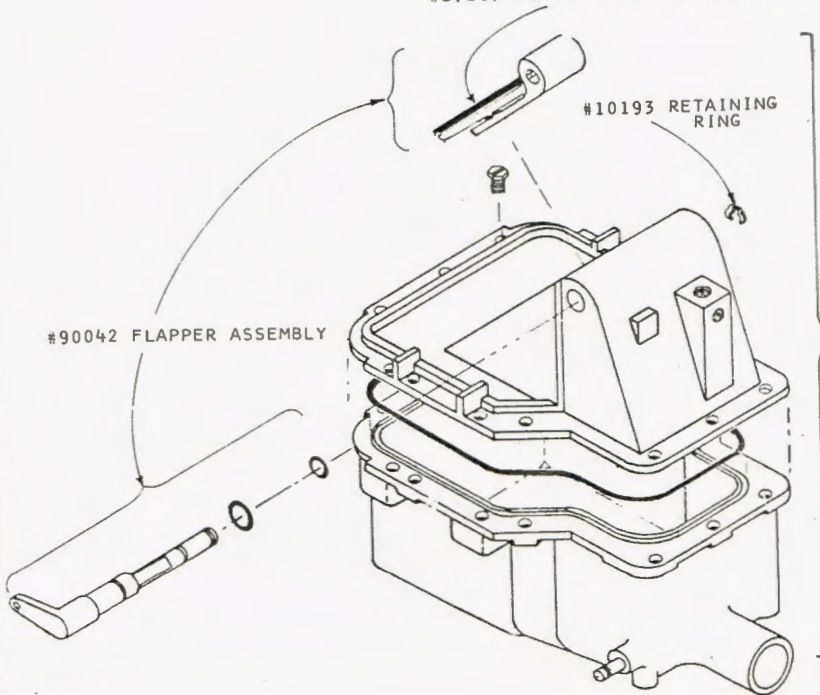
REPAIR KIT CONTAINS ALL PARTS  
SHOWN, PLUS (1 EA.) #26004  
FLAPPER SEAL ADHESIVE AND  
(1 EA.) #26736 WHITE SILICONE  
SEAL, NOT SHOWN.

#27207 RUBBER FLAPPER GASKET

#10193 RETAINING  
RING

#90042 FLAPPER ASSEMBLY

#90039 COMPLETE HOPPER ASSEMBLY



PRODUCTION		DESCRIPTION	
PRODUCTION	F		
PURCHASING			
SALES			
Microphor		PO BOX 486 MILLS CREEK TOWN	
TITLE			
DATE	SCALE		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

92	33	TO PROGRAM: MAQIPW FORM 414005 5-73
LOC.	DEPT.	STORE
7565	231	CAR OR TRUCK NUMBER
COST CTR.		T.E.C.
WAYBILL NUMBER		
04	21 02 8642	05
AFE NUMBER	JOINT FACILITY	PROJECT CONTR'L
LOCO NUMBER		

51889

DATE ORDERED: 12/30/80  
DATE SHIPPED: / /

04

SHIP TO: MR. J.R. MCCAUL SR. STOCKTON RIP.

WHY NEEDED AND OTHER REMARKS: REPAIRS TO CABOOSE 426-460.

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
FROM HARVEY METALS					
ICE BOX PER INTERNATIONAL CAR CO DWG. 13C-17 CABOOSE SERIES NP476-480			EA	4	
EST COST \$300					
Delv. 6 WKS.					

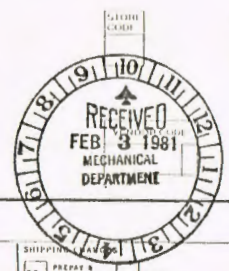
ORDERED BY: M. Evans 12/30 APPROVED BY AND DATE: [Signature] 12/30/80 SHIPPED BY: [Signature] REC'D BY:

USER/LOCATION: J. MCCAUL  
WHY NEEDED: MR 51889 CABOOSE PROGRAM S-2, CABOOSE SERIES WP 426-460

## The Western Pacific Railroad Company

SHIP TO: J. L. SUDDERTH STOREKEEPER 833-8th STREET STOCKTON, CALIF. 95206

VENDOR: INTERNATIONAL CAR CO. P.O. BOX 222 KENTON, OHIO 43326



THIS PURCHASE ORDER NUMBER: 63931

MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS AND PACKAGES

CONFIRMING - DO NOT DUPLICATE

STANDING ORDER

BLANKET ORDER

SHIPPING INSTRUCTIONS: MERCHANT SHIPPERS

TERMS OF SALE: F.O.B. DESTINATION, F.O.B. POINT OF SHIPMENT, OTHER

P.O. DATE: 2/2/81

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	4	EA	ICE BOX PER DWG. 13C-17		7565-231 PROJECT CONTROL 21-02-8642	326.67

4-1-81 Received

CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	KT - KIL	PK - PACKAGE	SH - SHEET	TO - TROY OUNCE
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PP - PAIR	SL - SLICE	YD - LINEAL YARD
BR - BRICK	CL - CYLINDER	FT - LINEAL FOOT	LT - LIT	PF - PINT	SP - SPOOL	
BU - BUDDLE	CR - CAR	GL - GALLON	M - MOUND	QT - QUART	ST - STD	
BU - BUS	CS - CARSET	GR - GROSS	MB - THOUSAND BOARD FEET	RL - ROLL	ST - SQUARE YARD	
C - CUBIC	CT - CARTON	GT - GROSS TON	RF - NET TON	RM - RIM	TU - TUBE	
CA - CASE	CU - CUBIC YARD	KG - KEG	DZ - DOZ	ST - SQUARE FEET		

REMARKS: F.P. BROGDON, Director, Purchases & Material

COMMENTS: CC: R. E. SHIDELER, H. A. O'RULLIAN, D. B. JENNINGS - DESK FILE

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55586

DATE ORDERED  
11/6/80

DATE SHIPPED  
/ /

092

LOC.

33

DEPT.

STORE

7565

COST CTR.

231

T.E.C.

TO PROGRAM:  
MAOIPW FORM 414005 5-73  
CAR OR TRUCK NUMBER

04 AFE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER

21 02 8642 05

WAYBILL NUMBER

SHIP TO:  
JIM MCCALL STOCKTON RIP TRACK

WHY NEEDED AND OTHER REMARKS:

MM 8642 PROGRAM 5-2

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
ONE PASS WALKOVER					
CABOOSE SEAT					
DWG. 1475300			EA	24	286.00
{ APPROX \$7,000.00 }					
For ordering ref -					
see M/R 55505					
dated 8-14-80					
(applied to WPT52					
not 440 os shown)					
arrange to deliver					
12 EA 1-1-81					
12 EA 4-1-81					

APPROVED BY AND DATE: *R. E. Shideler* 11/12  
SHIPPED BY: \_\_\_\_\_ REC'D BY: \_\_\_\_\_

JIM MCCALL

WHY NEEDED

MR 55586 MM 8642 PROGRAM 5-2

The Western Pacific Railroad Company

c/o J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

SHIP TO

VENDOR COACH & CAR EQUIPMENT CO.  
1951 ARTHUR AVENUE  
ELK GROVE VILLAGE, ILL 60007



IMPORTANT!  
THIS PURCHASE ORDER NUMBER  
61586  
MUST APPEAR ON ALL INVOICES FOR  
RESPONDENCE PAPERS AND PACKAGES

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS		MERCHANT SHIPPERS				
TERMS OF SALE	DESTINATION	POINT OF SHIPMENT	DISCOUNT TERMS	SHIPPING CHARGES	OTHER	
	NO DEST	X F O B		X PREPAY		
F.O. DATE	11 12 80	E	V			
P.O. ITEM NO	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	24	EA	ONE PASS WALKOVER CABOOSE SEAT DWG. 1475300		7565-231 21-02-8642	286.00
ARRANGE TO DELIVER						
12 EA 1-1-81						
12 EA 4-1-81						

*all received  
5-1-81*

CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	GW - HUNDRED WEIGHT	HT - HT	PD - PAPER	SK - SHEET	TD - TROY OUNCE
BB - BOARD MEASURE FEET	CC - C. CUBIC FEET	FA - FECH	LD - POUND	PR - PER	SL - LACK	TD - TROY OUNCE
BL - BALL	CL - CUBIC INCH	FT - FEET	LI - LIT	PT - PINT	SP - SPOON	
BU - BUNDLE	CM - CAR	BL - BALL	W - W	QU - QUART	ST - ST	
BU - BUSH	CS - CARTON	GR - GROSS	W - W	QU - QUART	ST - ST	
C - HUNDRED	CT - CARTON	HT - HUNDRED TON	WT - WEIGHT	QU - QUART	ST - ST	
CS - CASE	CT - CUBIC YARD	HT - HT	WT - WEIGHT	QU - QUART	ST - ST	

F.P. BROGDON, Director, Purchases & Material

COMMENTS:  
CC: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.		092	33	TO PROGRAM: MAOIPW FORM 414005 5-73	
55591	DATE ORDERED 10/31/80	DATE SHIPPED 1/1	LOC.	DEPT.	STORE
04	21 02 8642 05		7565	231	
AFB NUMBER		JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER	
SHIP TO: JIM MCCALL STOCKTON RIP TRACK					
WHY NEEDED AND OTHER REMARKS:					

SEE MM 8642 - PROGRAM S-2 - CABOOSE OVERHAUL WP426-460

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
AJAX MODEL 325 WATERCOOLER (TO BE SAME AS 481 SERIES CABOOSSES)			EA	12*	4 186.00
* Arrange for delivery as follows:					
4 EA	1-1-81				
4 EA	4-1-81				
4 EA	7-1-81				

4 186.00  
FOP Chicago  
4 week del.

RECEIVED BY PURCHASING DEPT.  
NOV 10 1980  
WESTERN PACIFIC RR CO.

APPROVED BY AND DATE: *R. E. Shideler* 11/29  
SHIPPED BY: \_\_\_\_\_  
REC'D BY: \_\_\_\_\_

USER LOCATION: J. MCCALL  
TODAY'S DATE: \_\_\_\_\_  
REQU. REQ. DATE: \_\_\_\_\_  
APPROVED BY & DATE: \_\_\_\_\_  
APPROVED BY & DATE: \_\_\_\_\_  
WHY NEEDED: MR 55591 PROGRAM S-2 - CABOOSE OVERHAUL WP426-460

The Western Pacific Railroad Company  
c/o J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

NOV 28 1980  
DEPARTMENT

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
61995  
MUST APPEAR ON ALL INVOICES FOR RESPONSE PAPER AND PACKAGING

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

VENDOR: AJAX CONSOLIDATED COMPANY  
7MELLS CARGO SUPPLY  
544 MARKET STREET, ROOM 601  
SAN FRANCISCO, CA 94104

SHIPPING INSTRUCTIONS		TRUCK		SHIPPING CHARGES		OTHER	
TERMS OF SALE	FOR DESTINATION	POINT OF SHIPMENT	TAX	B/C	DISCOUNT	TERMS	DATE REQUIRED
	NO. DATE	NO. DATE	NO. DATE	NO. DATE	NO. DATE	NO. DATE	NO. DATE
	11 26 80		E	D			SEE BELOW
P.O. DATE	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE	DEPT. CODE
	1 12	EA	MODEL 325 WATER COOLERS		7565-231 PROJECT CONTROL 21-02-8642	205.00	33

SHIP AS FOLLOWS:  
4 EACH 1/1/81  
4 EACH 4/1/81  
4 EACH 7/1/81

B-Revised

CODES FOR UNIT OF MEASURE

BB - BUNDLE	CC - CUBIC FOOT	CD - HUNDRED WEIGHTS	DE - NET	DF - PACKAGE	DG - SHEET	DH - 1000 OUNCE
DI - BOARD MEASURE FEET	EE - CUBIC FEET	EF - POUNDS	EG - POUND	EH - PAIR	EI - SACK	EL - LINEAL YARD
DJ - BALL	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD
DK - BUNDLE	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD
DL - BOX	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD
DM - BUNDLE	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD
DN - CUBIC	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD
DO - CASE	EE - CUBIC FEET	EF - LINEAL FOOT	EG - SHEET	EH - PAIR	EI - SACK	EL - LINEAL YARD

REMARKS: \_\_\_\_\_

F.P. BROGDON, Director, Purchases & Material

COMMENTS:

cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCALL  
D. B. JENNINGS - DESK FILE

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092		33		TO PROGRAM: MAOIPW FORM 414005 5-73	
LOC.		DEPT.		STORE	
55593		7565		231	
DATE ORDERED: 12/15/80		DATE SHIPPED: / /		COST CTR. T.E.C.	
04		21 02 8642		05	
WAYBILL NUMBER		PROJECT CONTR'L		LOCO NUMBER	
SHIP TO: JIM McCALL		STOCKTON R.P. TRACK			
WHY NEED? AND OTHER REMARKS:					

MM 8642 - CABOOSE CONDUCTORS SEAT

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
CABOOSE SEAT #1259002			EA	12	
FROM: COACH & CAR ELK GROVE VILLAGE ILL. 60007					
arrange to deliver					
6 EA 2-1-81					
6 EA 5-1-81					

ORDERED BY: *R. E. Shideler* APPROVED BY AND DATE: *R. W. Minter 12/80* SHIPPED BY: \_\_\_\_\_ REC'D BY: \_\_\_\_\_

ESTI @ \$2,500.00

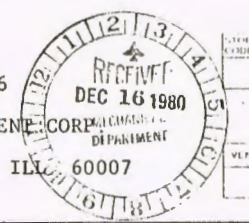
J. McCALL

MR 55593 PROGRAM S-Z CABOOSE OVERHAUL WP426-460

## The Western Pacific Railroad Company

SHIP TO: J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

VENDOR: COACH & CAR EQUIPMENT CORP.  
1951 ARTHUR AVENUE  
ELK GROVE VILLAGE, ILL. 60007



IMPORTANT  
THIS PURCHASE ORDER NUMBER: 62134  
MUST APPEAR ON ALL INVOICES FOR THIS PURCHASE ORDER  
PLEASE NOTE IF CHECKED:  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS		TRUCK		SHIPPING CHARGES		OTHER	
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	PREPARE & INCL. IN INV.	PREPARE	COLLECT	OTHER
	NO DAY YR TAX B/C DISCOUNT TERMS			APR. NO.	DATE REQUIRED	DEPT. CODE	
P.O. DATE	12 15 80	COE D			SEE BELOW	33	
F.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE	
1	12	EA	1259002 CABOOSE SEAT SHIP 6 EACH 2/1/81 6 EACH 5/1/81		7565-231 PROJECT CONTROL 21-02-8642	251.0	

*all received 5/14/81*

CODES FOR A UNIT OF MEASURE

BB - BUNDLE	CC - CUBIC FEET	EW - WEIGHT	ET - SET	PG - PACKAGE	SH - SHEET	TZ - TONS
BF - BOARD MEASURE FEET	CC - CUBIC FEET	FX - FALM	LB - POUND	PH - PAIL	SR - SACK	TY - TON
BL - BALL	CL - CUBIC FEET	FT - FOOT	LS - LINE	PI - PILE	SP - SPIRAL	YD - YARD
BR - BUNDLE	CM - CAR	LI - LION	W - WAGON	DI - DIAPHR	ST - SET	YD - SQUARE YARD
BS - BOX	CD - CARPET	MB - MILE	WT - WEIGHT AND BOARD FEET	MS - MESH	TD - TON	
C - CUBIC	CT - CUBIC TON	GT - GROSS TON	BT - NET TON	AW - BOARD FEET	TD - TON	
CA - CASE	CF - CUBIC FEET	RS - RAIL	DF - DOUBLE	ST - SQUARE FEET		

REMARKS: \_\_\_\_\_ F.P. BROGDON, Director, Purchases & Material

COMMENTS: cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. M. MCCAUL  
D. B. JENNINGS - DESK FILE

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55594		DATE ORDERED 12/16/80	DATE SHIPPED / /	092	33	TO PROGRAM: MAOIPW FORM 414005 5-73
				LOC.	DEPT.	STORE
				092	231	CAR OR TRUCK NUMBER
				COST CTR.	T.E.C.	
04				21 02 8642	05	WAYBILL NUMBER
SHIP TO: Jim McCall STOCKTON						
WHY NEEDED AND OTHER REMARKS:						

MM 8642

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
MICROPHOR # 97003					
H-12 POLYSTYRENE TREATMENT TANK PER DWG # C-2152-A			EA	12	
(unit price last quoted @ \$228.50)					
(INCLUDE IN ABOVE @ N/C #33651 PLUG, #33606 ADAPTER, #33603 FITTINGS, #33378 FITTINGS, #33377 FITTINGS, #26001 ADHESIVE)					
MICROPHOR # 95001 VALVE REPAIR KIT LF-310 TOILET			EA	12	
(unit price last quoted @ 8.75)					

ORDERED BY: *R. E. Shideler*    APPROVED BY AND DATE: *R. W. Mustard 12/16*    SHIPPED BY:    REC'D BY:

\$2377.00 + TAX & FRT.

J. MCCAUL    TODAY'S DATE    REQUIRED DATE    APPROVED BY & DATE    APPROVED BY & DATE  
 MR 55594 PROGRAM S-2, CABOOSE OVERHAUL WP426-460

## The Western Pacific Railroad Company

c/o J. L. SUDDERTH  
 STOREKEEPER  
 833 - 8th STREET  
 STOCKTON, CA 95206  
 MICROPHOR  
 P.O. BOX 490  
 WILLITS, CA 95490



STORE CODE  
 VENDOR CODE  
 49960

**IMPORTANT**  
 THIS PURCHASE ORDER NUMBER  
**62137**  
 MUST APPEAR ON ALL INVOICES OR BE SPONSORED BY PAPERS AND PACKAGING  
 PLEASE NOTE IF CHECKED  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS		TRUCK				
TERMS OF SALE	NO. OF SALES	DATE	DEPT. CODE			
NET 30	12	18 80	33			
P.O. DATE	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
12 18 80	12	EA	MICROPHOR #97003 H-12 POLYSTYRENE TREATMENT TANK PER DWG #C-2152-A		7565-231 PROJECT CONTROL 21-02-8642	228.50
			INCLUDED IN ABOVE @ N/C #33651 PLUG, #33606 ADAPTER, #33603 FITTINGS, #33378 FITTINGS, #33377 FITTINGS, #26001 ADHESIVE			
	12	EA	MICROPHOR #95001 VALVE REPAIR KIT LF-310 TOILET			8.75

CODES FOR A UNIT OF MEASURE  
 BA - BARREL    CF - CUBIC FOOT    LW - HUNDRED WEIGHT    ET - EYE    PG - PACKAGE    SH - SHEET    YD - LINEAL YARD  
 BF - BOARD MEASURE FEET    CC - C. CUBIC FEET    LB - POUND    FB - FACE    PR - PAIL    SK - KACE    YL - LINEAL YARD  
 BL - BALL    CL - CILINDER    FT - LINEAL FOOT    LT - LITRE    PT - PINT    SP - SPOOL  
 BU - BUDDLE    CB - CUB    GL - GALLON    M - METRE    SI - SHEET    ST - SET  
 BS - BUS    CR - CARTON    GR - GROSS    MP - METRE AND BOARD FEET    RL - ROLL    SQ - SQUARE YARD  
 C - CUBIC    CP - CARTON    DT - GROSS TON    ST - STRIP    SQ - SQUARE FEET    TB - TONNE  
 CA - CASE    CY - CUBIC YARD    LB - LB    DR - DUNCE    SF - SQUARE FEET    TB - TONNE

REMARKS: F.P. BROGOON, Director, Purchases & Material

COMMENTS:  
 cc: R. E. SHIDELER  
 H. A. O'RULLIAN  
 J. MCCAUL  
 D. B. JENNINGS - DESK FILE

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	33		TO PROGRAM: MAOIPW FORM 414005 5-73
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
7565	231		
COST CTR.	T.E.C.		

55595  
DATE ORDERED: 12/15/80  
DATE SHIPPED: / /

04  
AFE NUMBER: 21 02 8642  
JOINT FACILITY: 05  
PROJECT CONTR'L: 05  
LOCO NUMBER:

SHIP TO:  
Jim McCall Stockton R.P.

WHY NEEDED AND OTHER REMARKS:

MM 8642

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
ERNST GAGE CO HIGH-TYPE SHIELDED GAGE FIG. 4-8200 PIPE SIZE 1/2" DIMENSION A 14 3/16" DIMENSION B 12 9/16 FOR USE ON WATER TANK WITH FLOATING BALL				EA 12	
From: HICKMAN ENGINEERING 6 BRYANT WAY ORINDA, CAL 94563					
3/4x1/2" GALV PIPE BUSHING					
3/4" GALV PIPE TEE					
3/4" GALV STREET EL					

ORDERED BY: [Signature] APPROVED BY AND DATE: [Signature] 12/15/80 SHIPPED BY: [Signature] HELD BY:

USER/LOCATION: J. MCCAUL	TODAY'S DATE:	REQ. JINRD DATE:	APPROVED BY A DATE:	APPROVED BY B DATE:
WHY NEEDED: MR 55595 PROGRAM S-2, CABOOSE OVERHAUL WP426-460				

## The Western Pacific Railroad Company

SHIP TO: J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

VENDOR: HICKMAN ENGINEERING  
6 BRYANT WAY  
ORINDA, CA 94563



IMPORTANT  
THIS PURCHASE ORDER NUMBER  
62186  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGES

PLEASE NOTE IF CHECKED  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS		UNITED PARCEL SERVICE				
TERMS OF SALE		SHIPPING CHARGES		OTHER		
<input type="checkbox"/> F.O.B. DESTINATION <input checked="" type="checkbox"/> F.O.B. POINT OF SHIPMENT <input type="checkbox"/> OTHER		<input checked="" type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT		<input type="checkbox"/> OTHER		
P.O. DATE: 12 18 80		DATE REQUIRED:		DEPT. CODE: 33		
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	12	EA	ERNST GAGE CO. HIGH-TYPE SHIELDED GAGE FIG. 4-8200 PIPE SIZE 1/2" DIMENSION A 14-3/16" DIMENSION B 12-9/16" FOR USE ON WATER TANK WITH FLOATING BALL		7565-231 PROJECT CONTROL 21-02-8642	69.00

CODES FOR UNIT OF MEASURE

BB - BUNDLE	CC - CUBIC FEET	CD - CUBIC YARD	CE - CUBIC FEET	CF - CUBIC FEET	CG - CUBIC FEET	CH - CUBIC FEET	CI - CUBIC FEET	CJ - CUBIC FEET	CK - CUBIC FEET	CL - CUBIC FEET	CM - CUBIC FEET	CN - CUBIC FEET	CO - CUBIC FEET	CP - CUBIC FEET	CQ - CUBIC FEET	CR - CUBIC FEET	CS - CUBIC FEET	CT - CUBIC FEET	CU - CUBIC FEET	CV - CUBIC FEET	CW - CUBIC FEET	CX - CUBIC FEET	CY - CUBIC FEET	CZ - CUBIC FEET	DD - CUBIC FEET	DE - CUBIC FEET	DF - CUBIC FEET	DG - CUBIC FEET	DH - CUBIC FEET	DI - CUBIC FEET	DJ - CUBIC FEET	DK - CUBIC FEET	DL - CUBIC FEET	DM - CUBIC FEET	DN - CUBIC FEET	DO - CUBIC FEET	DP - CUBIC FEET	DQ - CUBIC FEET	DR - CUBIC FEET	DS - CUBIC FEET	DT - CUBIC FEET	DU - CUBIC FEET	DV - CUBIC FEET	DW - CUBIC FEET	DX - CUBIC FEET	DY - CUBIC FEET	DD - CUBIC FEET	DE - CUBIC FEET	DF - CUBIC FEET	DG - CUBIC FEET	DH - CUBIC FEET	DI - CUBIC FEET	DJ - CUBIC FEET	DK - CUBIC FEET	DL - CUBIC FEET	DM - CUBIC FEET	DN - CUBIC FEET	DO - CUBIC FEET	DP - CUBIC FEET	DQ - CUBIC FEET	DR - CUBIC FEET	DS - CUBIC FEET	DT - CUBIC FEET	DU - CUBIC FEET	DV - CUBIC FEET	DW - CUBIC FEET	DX - CUBIC FEET	DY - CUBIC FEET	DD - CUBIC FEET	DE - CUBIC FEET	DF - CUBIC FEET	DG - CUBIC FEET	DH - CUBIC FEET	DI - CUBIC FEET	DJ - CUBIC FEET	DK - CUBIC FEET	DL - CUBIC FEET	DM - CUBIC FEET	DN - CUBIC FEET	DO - CUBIC FEET	DP - CUBIC FEET	DQ - CUBIC FEET	DR - CUBIC FEET	DS - CUBIC FEET	DT - CUBIC FEET	DU - CUBIC FEET	DV - CUBIC FEET	DW - CUBIC FEET	DX - CUBIC FEET	DY - CUBIC FEET
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REMARKS: F.P. BROGDON, Director, Purchases & Material

COMMENTS:  
cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCAUL  
D. B. JENNINGS - DESK FILE



J. MCCAUL

WHY NEEDED

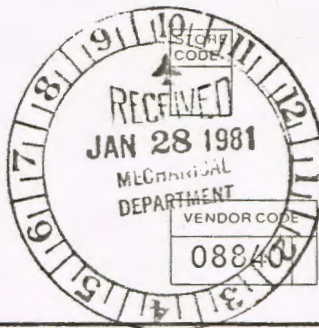
MR 55598 CABOOSE PROGRAM S-2 WP 426-460 CABOOSES

The Western Pacific Railroad Company

c/o

J. L. SUDDERTH  
STOREKEEPER  
833-8th STREET  
STOCKTON, CA 95206

BLACKWELDER'S MFG. CO.  
P.O. BOX 127  
RIO VISTA, CA 94571



IMPORTANT

THIS PURCHASE ORDER NUMBER

62645

MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGES

PLEASE NOTE IF CHECKED

CONFIRMING-DO NOT DUPLICATE

STANDING ORDER

BLANKET ORDER

SHIPPING INSTRUCTIONS

YOUR DELIVERY

RMS OF SALE:  F.O.B. DESTINATION,  F.O.B. POINT OF SHIPMENT,  OTHER. SHIPPING CHARGES:  PREPAY & INCL. IN INV.,  PREPAY,  COLLECT,  OTHER.

MO. DATE: 1 27 81. TAX CODE: D D. DISCOUNT TERMS: 10 1% 10, N 30. AFE NO.: DATE REQUIRED: 2 9 81. DEPT. CODE: 33.

Table with columns: P.O. ITEM NO., QUANTITY ORDERED, UNIT OF MEASURE, DESCRIPTION, W.P. CLASS ITEM, ACCOUNTING, UNIT PRICE. Row 1: 12 EA STOVE DRIP PAN PER ATTACHED DWG., 7565-231 project control 21-02-8642, 50.00

CODES FOR UNIT OF MEASURE

- CF - CUBIC FOOT, CW - HUNDRED WEIGHT, KT - KIT, PG - PACKAGE, SH - SHEET, TZ - TROY OUNCE
CC - C. CUBIC FEET, EA - EACH, LB - POUND, PR - PAIR, SK - SACK, YD - LINEAL YARD
CL - CYLINDER, FT - LINEAL FOOT, LT - LOT, PT - PINT, SP - SPOOL
CN - CAN, GL - GALLON, M - THOUSAND, QT - QUART, ST - SET
CS - CARSET, GR - GROSS, MF - THOUSAND BOARD FEET, RL - ROLL, SY - SQUARE YARD
CT - CARTON, GT - GROSS TON, NT - NET TON, RM - REAM, TU - TUBE
CY - CUBIC YARD, KG - KEG, OZ - OUNCE, SF - SQUARE FEET

MARKS: F.P. BROGDON, Director, Purchases & Material. Per: \_\_\_\_\_

COMMENTS: cc: R. E. Shideler, H. A. O'Rullian, D. B. Jennings - desk file



# MATERIAL REQUISITION GENERAL

092		33		TO PROGRAM: MAOIPW FORM 414005 5-73	
LOC.		DEPT.		STORE	
55585		7565		231	
DATE ORDERED 11/6/80		DATE SHIPPED / /		COST CTR. T.E.C.	
04		21 02 8642		05	
AFE NUMBER		JOINT FACILITY		PROJECT CONTR'L	
SHIP TO Jim Mc Call		STOCKTON R/P TRACK		WAYBILL NUMBER	
WHY NEEDED AND OTHER REMARKS:					

MM 8642 Program 5-2

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
CABOOSE STEP per w.P drawings SK-A-1115-1-A					
SK-A-1115-2-A			EA	10	approved 2/25/81
ORDER FROM: BLACKWELDER RIO VISTA, CA					

APPROVED BY AND DATE <i>R. E. Shidele</i>	APPROVED BY AND DATE <i>R. T. Price</i> 11/7	SHIPPED BY	REC'D BY
--	---	------------	----------

USER ID: AT-108	TODAY'S DATE	REQ REQ DATE	APPROVED BY & DATE	APPROVED BY & DATE
R. T. PRICE & J. MCCALL				
WHY NEEDED MR 55688 CABOOSE WP430, MR 55585 & MR 55584 - CABOOSE PROGRAM S-2 WP426-460				

The Western Pacific Railroad Company

c/o SEE BELOW

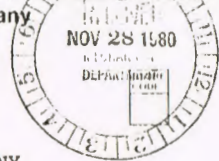
SHIP TO

VENDOR BLACKWELDER'S MFG. COMPANY  
P.O. BOX 127  
RIO VISTA, CA 94571

VENDOR CODE 08840

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**61994**  
MUST APPEAR ON ALL INVOICES CORRESPONDENCE, PAPERS AND PACKAGES

PLEASE NOTE IF CHECKED  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER



SHIPPING INSTRUCTIONS		YOUR DELIVERY				
TERMS OF SALE	NO. DESTINATION	OTHER	SHIPPING CHARGES			
X	F.O.B. DESTINATION					
	F.O.B. POINT OF SHIPMENT					
	NO. DATE YR. TAX CODE					
	11 26 80 D D					
P.O. DATE						
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	14	EA	CABOOSE STEP PER DRAWINGS SKA-1115-1-A & SKA-1115-2-A		4 EACH 7322-231 WP430 10 EACH 7565-231 PROJECT CONTROL 21-02-8642	250.00      58.00

CODES FOR A UNIT OF MEASURE

80 - BAGG	CF - CUBIC FOOT	CM - HUNDRED WEIGHT	BT - BKT	PG - PACKAGE	SK - SKT	12 - TROY OUNCE
81 - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LD - POUND	PK - PKG	SR - SHIP	19 - LINEAL YARD
82 - BCL	CL - CUBIC YARD	FT - LINEAL FOOT	LS - LBS	PT - PNT	SP - SPOOL	
83 - BUNDLE	CM - CUBIC METER	GL - GALLON	M - THOUSAND	QT - QUART	SS - SET	
84 - BOX	ES - CASE	GR - GROSS	ME - THOUSAND BOARD FEET	RS - ROL	ST - SQUARE YARD	
85 - BUNDLE	CT - CARTON	GT - GROSS TON	MT - MET TON	RM - REAM	TD - TON	
86 - CASE	CB - CUBIC YARD	KG - KGM	DL - DOUBLE	SC - SQUARE FEET		

REMARKS

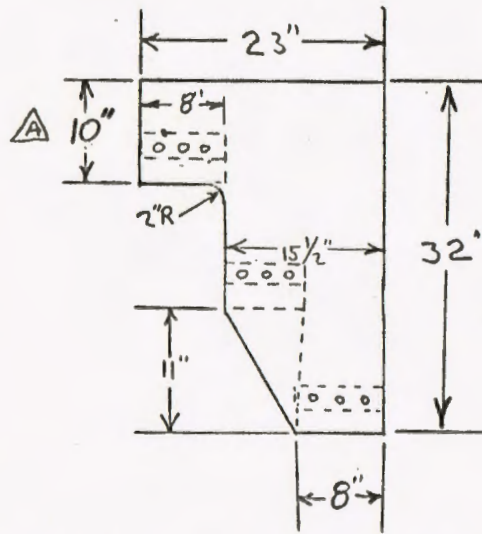
F.P. BROGON, Director, Purchases & Material

Per

COMMENTS:

CC: R. E. SHIDELEK J. L. SUDDERTH  
H. A. O'RULLIAN B. A. STILWELL  
R. T. PRICE  
J. MCCALL  
D. B. JENNINGS - DESK FILE

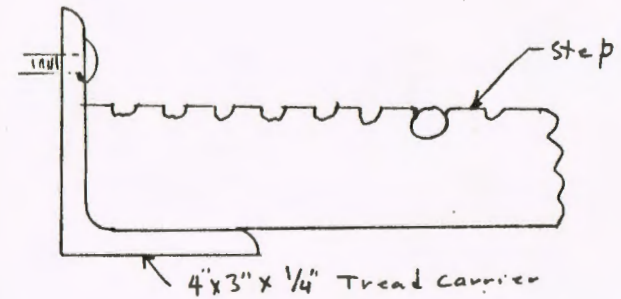
## Caboose Steps WP 426 Series



- 1) Step Stile to be 1/4" A-36 plate.
- 2) Distance between stiles is 28".
- 3) Tread width = 8", Tread run = 7 1/2", Riser = 11"
- 4) Kick Plate of 10 gauge A-36 28" x 11" for bottom and middle step, and 28" x 8" for top step, to be welded in place.
- 5) Tread material is serrated bar grating 19-W-4 with Monton 13 gauge tread grip nosing: bottom step, Ry Weld Heavy Duty Grating; middle and top step, Ry Weld grating.

SK-A 1115-1-A

- 6) Tread carrier plate is to be 4" x 3" x 1/4" angle with the 4" leg turned up



- 7) Each tread carrier will be attached to the stile with three 1/2" carriage bolts. The nuts will face out and will be tack welded to the bolt.
- 8) The complete assembly will be prime painted with a red primer

STEPS TO USED  
AS REQUIRED.  
PURCHASED FOR  
PROGRAM MM 8692

SK A1115-2-A

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	33	TO PROGRAM: MAOIPW FORM 414005 5-73	
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
7565	231		
COST CTR.	T.E.C.		
04	21 02	8642	05
AFE NUMBER	JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER

55617

DATE ORDERED: 2/12/81  
DATE SHIPPED: / /

04

WAYBILL NUMBER

SHIP TO: STOCKTON RIP TRACK

WHY NEEDED AND OTHER REMARKS:

MM 8642 - CABOOSE PROGRAM 5-2

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
AIR RESERVOIR ASSEMBLY PART NO 587 DWG D-1687K (@ 89 <sup>50</sup> EA)			EA	12	
FILTER/REG & LUBRICATOR PART NO 94015 DWG C-1233D (@ 49 <sup>00</sup> EA)			EA	12	
EXTERNAL CHORINATOR SYSTEM # 98055 (@ 75 <sup>00</sup> EA - APPROXIMATE)			EA	3	
FROM: MICROPHOR					

APPROVED BY AND DATE: [Signature]      RECEIVED BY: [Signature]

## Microphor, INC.

February 9, 1981

Mr. R.T. Price, Shop Superintendent  
Western Pacific R.R. Co.  
3500 - 24th Street  
Sacramento, CA 95813

Dear Mr. Price:

As we discussed at our meeting in Stockton 2/3/81 please find enclosed (3) copies each of the following drawings. Drawing #D1687K. Air reservoir assembly, you will notice this comes complete with the check choke valve #37520. Drawing #C1233 filter, regulator, lubricator assembly, comes complete with enclosure as shown.

Drawing #2779A external chlorinator loading system, hose to connect is normally supplied by customer.

Price of D1687 air reservoir, part #38587 is \$89.50 ea.

Price of C1233, FRL unit, part #94015 is \$49.00 ea.

Price of 2779A external chorinator system, #98055 is \$75.00 ea, price of this item depends on door & latch assembly if you require it.

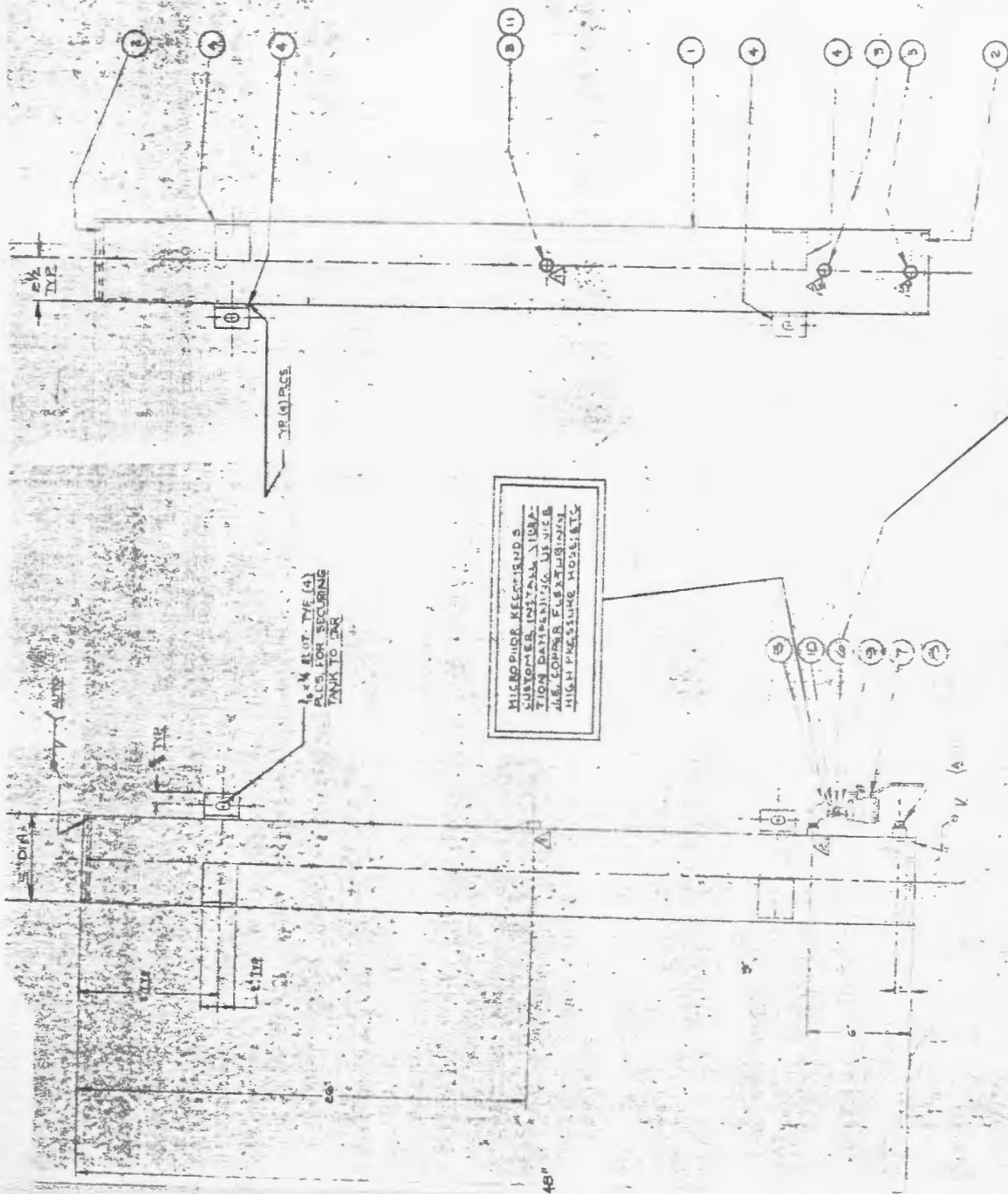
I have forwarded (12) each Microphor master catalogs to Stockton office for distribution.

I hope we have provided the information you required, if further information is needed please call or write.

Sincerely,  
MICROPHOR, INC.

[Signature]  
JAMES J. JOHNSON  
Marketing Services  
Railroad Division

JJJ/gh  
Enclosures



1/4" SLOT TIE ROD  
PLUS FOR SECURING  
TANK TO ER

MICROPHOR KELCORANDS  
CUSTOMER MUST USE SPECIAL  
INSTRUCTIONS FOR HIGH  
PRESSURE HOSES. SEE  
MATERIAL DATA SHEET FOR  
MATERIAL SPECIFICATIONS  
AND COMPRESSIVE STRENGTH  
HIGH PRESSURE HOSES.

1/2" DIA. HOLES  
FOR AIR RESERVOIR  
TIE RODS

1/2" DIA. HOLES  
FOR AIR RESERVOIR  
TIE RODS

ITEM	QTY	DESCRIPTION
1	1	W. CLOVER PLUG
2	1	REDUCER BUSHING - 1/2 INCH PT / 3/4 INCH
3	1	REDUCER BUSHING - 3/4 INCH PT / 1/2 INCH
4	1	1/2 INCH BALL VALVE
5	1	CHECK / SHOCK VALVE W/ 1/2 INCH PT
6	1	3/4 INCH ST. BLOW W/ 1/2 INCH PT / 3/4 INCH
7	1	1/2 INCH X 2 1/2 INCH N.E. WELD X 2 LONG
8	1	1/2 INCH BLACK IRON WELD COUPLER - FLIGHT
9	2	1/2 INCH X 4 INCH N.E. END PLATE
10	1	1/2 INCH X 2 1/2 INCH DIA. MECHANICAL TUBING X 4 FT LG

PRODUCTION PURCHASING  
SALES

**Microphor Inc.**

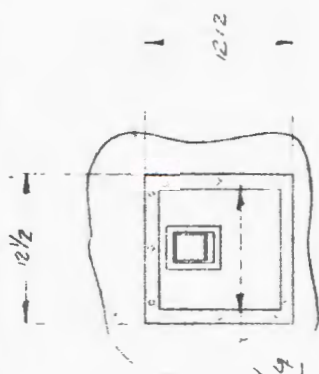
PO BOX 400  
MILITE OUF 800  
AIR RESERVOIR ASSEMBLY PART NO. 607  
MAY 9, 1975 QUARTER

17-1687 K

PRODUCTS SUPPLIED BY MICROPHOR

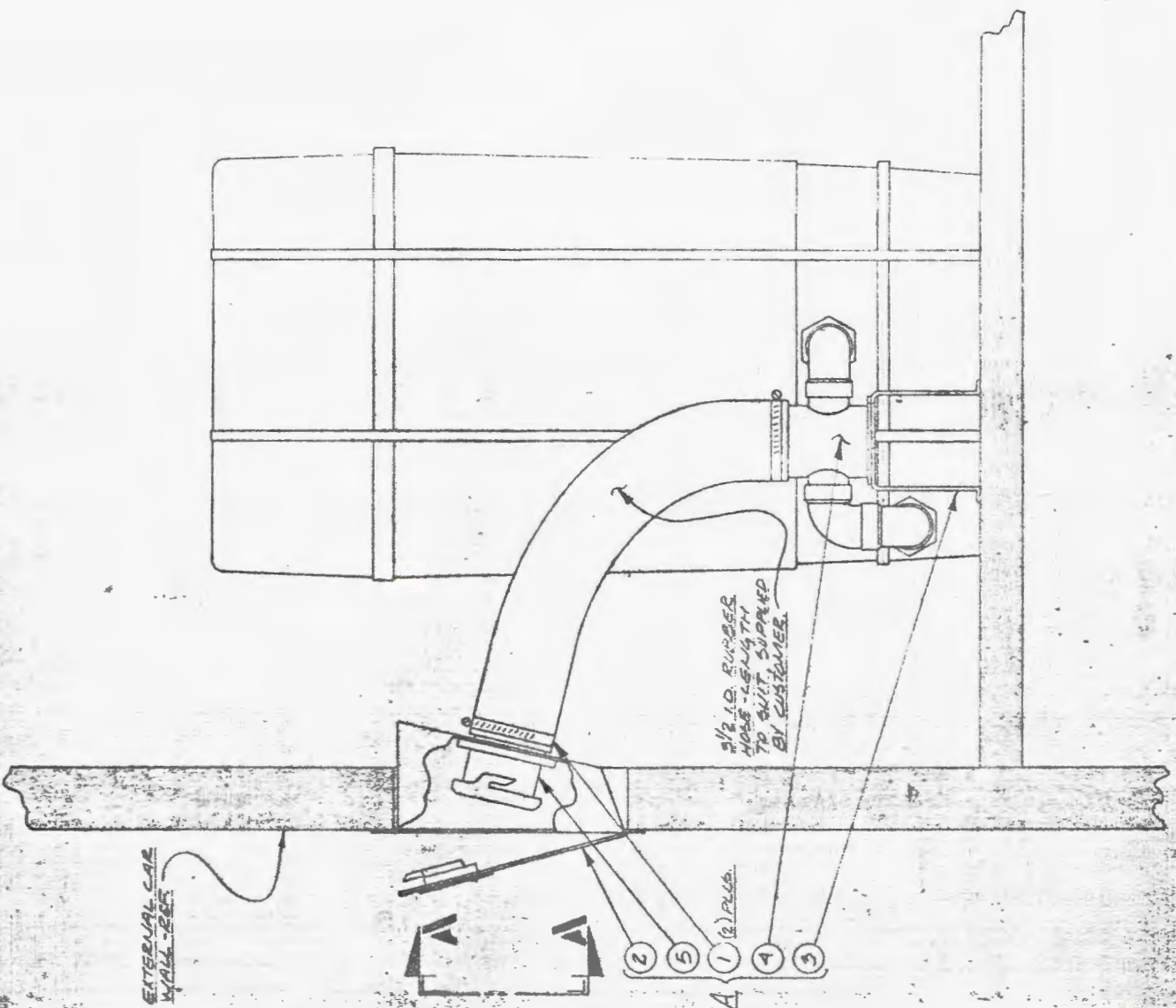
A EXTERNAL CHLORINATOR ACCESS BOX 4x4 WHICH INCLUDES THE FOLLOWING:

- 1 HOSE CLAMP - (2)
- 2 EXTERNAL CHLORINATOR ACCESS BOX
- 3 1/2" MCH-12 SUPPORT BRACKET
- 4 MCH-12 MODIFIED CHLORINATOR BODY
- 5 MCH-12 EXTERIOR LOADING FITTING



5/8" BRASS  
EX. H. G.  
W. HALL

VIEW A-A  
1/2" SIZE



EXTERNAL CAR WALL-RES

1/2" ID. RUBBER HOSE - LENGTH TO SUIT, SUPPLIED BY CUSTOMER.

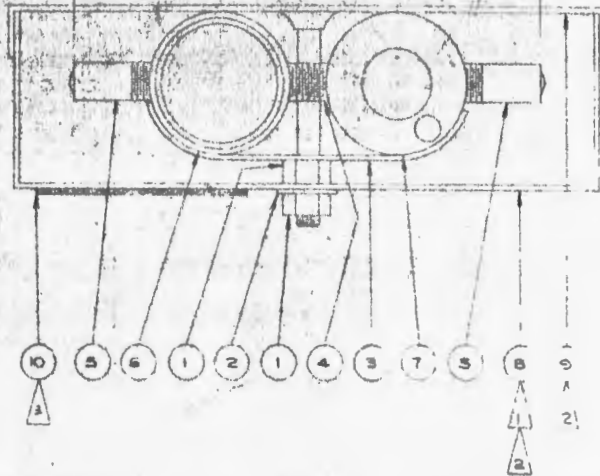
ITEM	PART NUMBER	DRAWING NO.	DESCRIPTION
		7	PRODUCTION PURCHASING
		2	SALES

REV	CHANGE	BY	DATE

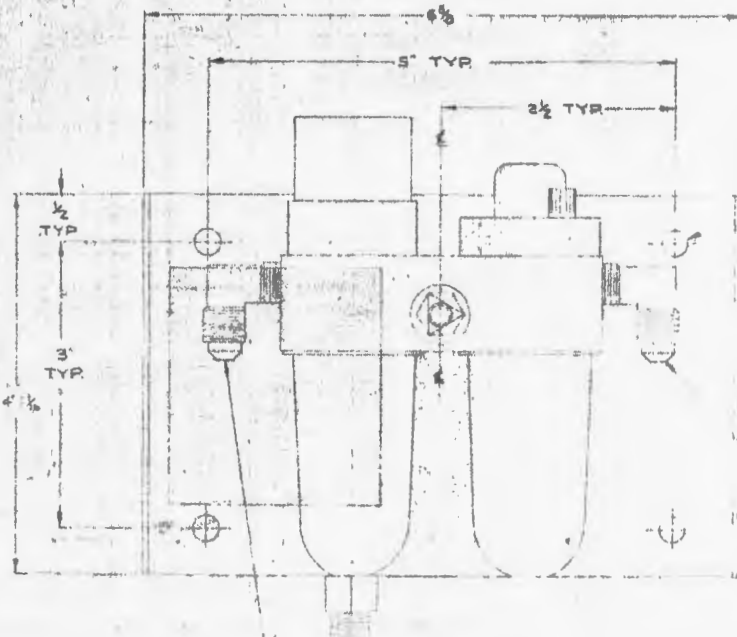
  

<b>Microphor, Inc.</b>		P.O. BOX 190 WILLITS, CALIF. 5190	
TITLE: EXTERNAL CHLORINATOR			
BOX SALES ILLUSTRATION			
DATE	SCALE	DRAWING NUMBER	
NOV 23 1960	1/2" = 1'-0"	145-52	2012-1
DRAWN BY	CHECKED BY	APPROVED BY	
W.H.H.	W.H.H.		



NOTES:

- 1. ITEM 8 IS MADE OF PERFORATED MILD STEEL.
- 2. ITEMS 8 AND 9 ARE ELECTRO-GALVANIZE COATED.
- 3. LOCATE ITEM 10 APPROX. AS SHOWN.



$\frac{1}{32}$  DIA HOLE  
TYP (4) PLCS.

$\frac{1}{2}$  COPPER TUBING  
ARE FITTING TO  
AIR LINE FITTING  
ON TOILET.

$\frac{1}{2}$  COPPER TUBING  
FLARE FITTING TO  
EXISTING AIR SUPPLY.

ITEM 8 NOT SHOWN, FOR  
CLARITY, IN THIS VIEW.

THIS DRAWING IS LOANED FOR PURPOSES OF  
ENGINEERING STUDY WITH THE UNDERSTANDING  
THAT IT IS NOT TO BE REPRODUCED, COPIED,  
OR OTHERWISE DISPOSED OF, DIRECTLY OR  
INDIRECTLY, AND IS NOT TO BE USED IN WHOLE  
OR IN PART TO ASSIST IN MAKING OR TO FURNISH  
ANY INFORMATION FOR THE MAKING OF DRAWINGS,  
PRINTS, APPARATUS, OR PARTS THEREOF, WITHOUT  
THE EXPRESS CONSENT OF THE MICROPHOR, INC.

*copy  
OK BY  
MC  
OF  
Microphor  
2-12-81*



ITEM	PART NUMBER	DRAWING NO	DESCRIPTION	QUANTITY
10	24728		DECAL	1
9	20038	D-1231	FILTER & OILER MOUNTING BASE	1
8	20037	D-1231	FILTER & OILER COVER	1
7	57112		AIR LINE LUBRICATOR	1
6	37921		AIR LINE FILTER W/ REGULATOR	1
5	30308		$\frac{1}{8}$ MNPT. $\frac{1}{8}$ JIC - 90° ELBOW	1
4	30307		$\frac{1}{8}$ MNPT. CLOSE NIPPLE	1
3	10127	B-685	FILTER & OILER WING CLAMP	1
2	10106		$\frac{1}{4}$ I.D. S. S. FLAT WASHER	1
1	00110		$\frac{1}{2}$ -20 LOCK NUT	2

PRODUCTION	2	FEB 6 1981
PURCHASING		
SALES	2	

REV	CHANGE	BY	DATE
A	CHINA # 8 WAS ADDED	JMB	10/4/74
B	ITEM 8 WAS ADDED	JMB	10/4/74
C	REVISIONS	JMB	10/4/74
D	UPDATED PARTS LIST	JMB	10/4/74

**Microphor** INC. P.O. BOX 4  
WILLITS, CALIF 95490

TITLE: FILTER/REG & LUBRICATOR WA  
MOUNTED ASSEMBLY (PART N)

DATE: OCT 4, 1974 SCALE: FULL

ORAN BY: R. LAMB CHECKED BY: DATE: 10/11/74 APPROVED BY: DATE: 10/11/74

DRAWING NUMBER: C-1231

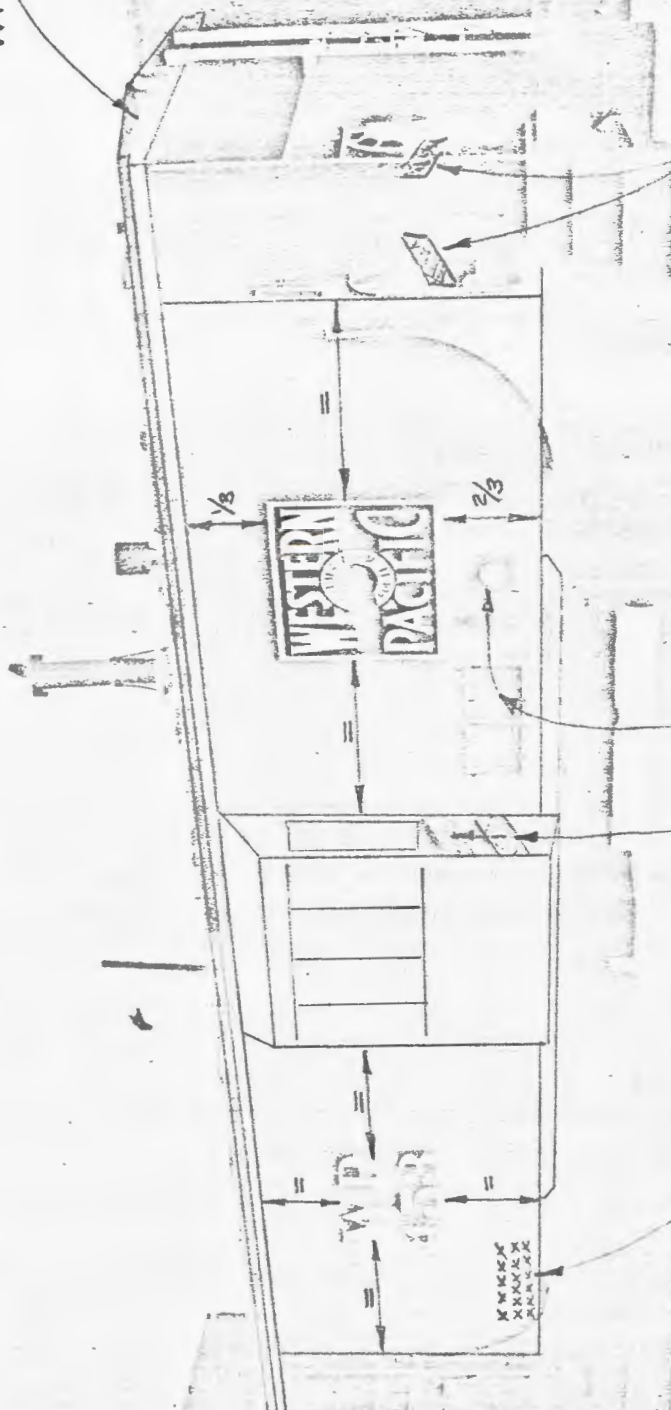
# PAINTING



Basic Exterior  
Paint & Stencil  
for Program 5-2

White roof, safety appl,  
end steps, end platform  
Red sides & ends  
Black frame  
Trucks & couplers unpainted

WPOOO  
3" LETTERS



2" COMP SHOES  
A x B JOURNALS  
LT WT OOOOO  
2" LETTERS

SCOTCH LIGHT

MOVE RULE 80  
DIRECTLY UNDER  
MEDALLION -  
ELEMIMATE  
YELLOW BALL

SCOTCH LIGHT  
ON CAR BODY  
ENDS



**THE FOLLOWING  
PAGES COVER  
CHRONOLOGICAL  
EVENTS LEADING  
TO PRESENT  
PROGRAM AND  
ARE INCLUDED AS  
A MATTER OF  
RECORD.**

THE WESTERN PACIFIC RAILROAD COMPANY  
SACRAMENTO NORTHERN RAILWAY  
TIDEWATER SOUTHERN RAILWAY CO.



1025 - 19TH STREET - SUITE ONE  
SACRAMENTO, CALIFORNIA 95814

August 27, 1979

A - 410-118

Mr. H. A. Siler  
General Chairman UTU  
Box 640  
Portola, CA 96122

Mr. H. M. Godwin  
Legislative Representative UTU  
210 Granada  
Tracy, CA 95376

Gentlemen:

This is to invite you and/or your designated proxy to a meeting at South Sacramento Shops, South Sacramento, on Tuesday, September 11, 1979 at 10:00 AM to discuss with Western Pacific Railroad Company's Superintendent Cars Mr. R. E. Shideler the 1980 caboose upgrade and rebuild program.

Mr. Shideler has indicated that he would like your input as far as suggestions concerning this important caboose program. Caboose complaints will not be handled at this meeting.

Please advise Mr. Shideler in the General Office in San Francisco, extension 396 if the date is suitable to you and/or your representatives and refer any questions you have concerning this meeting to him at your convenience.

Very truly yours,

*Madison*

C. MADISEN  
DIVISION SUPERINTENDENT

cc - Mr. R. E. Shideler  
Mr. R. L. Millhiser



~~OBSOLETE~~

SEPT 11/79 MEETING

Project	Reason
Replace 9" swing motion truck with new or rebuilt 10" swing motion truck. <i>Remain 9"</i>	9" roller bearing is specialty item. 9" axles are very hard to purchase and W.P. may have to start machining their own at 2 to 3 times the cost. 9" wheels are hard to get. The 9" trucks are the oldest caboose trucks and are worn out and show cracks requiring extensive and expensive reworking and heat treating. 9" adaptors may become hard to find, a proposed electrical system is not available for 9" bearings. A surplus of 10" roller bearings and 10" axles presently exist at the Sacramento Shop. The wheels for the 10" RWS axle and the 11" BC axle are interchangeable.
Replace present side bearing cage with Stucki <del>556</del> cage.	Present cage is non-standard and may no longer be available. Present cage will not accept resilient side bearings.
Install Hcllube centerplate liners.	Reduce interior noise and centerplate wear. <i>need item #</i>
Install Stucki resilient side bearings. <i>delete</i>	Raise truck hunting threshold and reduce interior noise level. <i>delete</i> (convert to solid blocks/wear fls)
Remove interior lockers and radio locker.	Reduce overhaul cost. Facilitate interior cleanliness. Reduce noise by reducing resonating surfaces. <i>Re- drawing of which</i>
Remove water cooler and install ice chest. <i>MR 4-938</i>	Facilitate conversion to prepackaged water and to provide cooling for lunches, canned drinks, etc.
Change seat style in bay window. <i>MR T-11</i>	Larger, more comfortable seat, with safety belts. <i>1475300</i> <i>Walk over caboose seat</i>
Replace conductor's desk with one at each end. <i>MR 4-937</i>	Gives conductor opportunity to watch condition of track and eliminates hazards of side window. <i>WP DWG</i> <i>1489300</i> <i>Conductor's seat</i>
Eliminate all side wall windows.	Reduce maintenance costs and reduce hazards of window breakage. <i>consider applying vents T. &amp; Acl - 60.</i>
Eliminate one window on each end.	Reduce maintenance costs and reduce hazards of window breakage.

6400

DAVE SUPPLY ITEM #'S FOR STOCK

Stucki 706 (9")

**OBSOLETE**

2

Project	Reason
Install plastic on side bay windows and on door windows. <i>delete</i>	Reduce hazards of glass breakage.
Install glass on end bay windows and on conductor's desk windows. <i>operate</i>	Improve visibility. <i>(vents)</i>
Install optional interior screens on glass windows. <i>leave as is.</i>	To give crew option of additional protection in high risk rock areas. <i>or use stainless steel</i>
Install A-2 valve at both conductor's desks. <i>SUBJECT TO FUTURE DISCUSSION</i>	To give the conductor the emergency brake application option. <i>(sketch)</i> <i>&amp; air gage</i>
Install printed instructions on the use of the A-2 valve at each valve.	To inform train crews of proper procedure for operation, reduce incorrect use, reduce damage to valves, reduce train break-in-two.
Install signs warning of no running board.	To conform to Federal Safety Appliance Laws. <i>(sketch)</i>
Install florescent light fixtures.	Reduce power requirements. <i>(drawing &amp; size)</i> <i>(sketch)</i>
Change generator to gear driven type.	Reduce maintenance and improve reliability of electrical system. <i>QUESTIONABLE</i>
Install battery monitor. <i>MR 4-938</i>	Increase battery life and improve reliability of electrical system. <i>add diodes (prevent reverse polarity)</i>
Paint roof white.	To reflect radiant heat, thus reducing interior temperatures.
Move fuel oil tank to end wall and install exterior filler. <i>MR 5071 Old 55655</i>	Eliminate oil spilled on interior floor, reduce oil odor.
Convert to flange bearing composition brake shoes.	Reduce brake shoe wear, reduce wheel heating, reduce fire hazard, reduce shid flats, reduce effort required to change brake shoes. <i>ABEX/WABCO (same)</i>
Eliminate hand brake from one end of platform.	Reduce built up tread.

*Skills stop & hand hold to wash windows?*

*J.T. Nelson screen (stainless) exterior \$ 600*

*Stop lights?*

*add diodes (prevent reverse polarity)*

*Must not effect markers  
K.D. Staff meet 9/16/79*

**OBSOLETE**

3

Project	Reason
Install light in toilet.	To conform to CPUC requirements. <i>per fs 5120</i>
Eliminate window in toilet door.	Reduce hazards of broken glass, improve conditions for female employees.
Eliminate 2A2 quick service valve, ABLB control valve, and signal pipe.	Improve reliability, reduce maintenance problems. <i>include in drawing</i>
Install circuit breaker panel.	Improve reliability of electrical system. System becomes user serviceable. <i>GEH 3460</i>
Install new, exposed circuit conduit.	Improve reliability of electrical system, provide faster trouble-shooting and maintenance.
Change from Microfore to Inca toilet.	Reduce maintenance, improve reliability. <i>(subject to study - fixed facilities - larger holding tank, etc)</i>
<i>m/R 50572</i> Change battery style.	Improve reliability for electrical system.
Install new hardwood floor.	Replace existing deteriorated floor. <i>glue laminated</i>
Paint completely.	Improve appearance. <i>(drawing)</i>
Install sight glass on water tank. <i>MR 52155</i>	Expedite servicing. <i>(sketch)</i>
Use 40" train line extension hose between inboard angle cock connector and end of steel brake pipe.	To limit damage caused by passed couplers to angle cock and bracket. This would protect steel train line which is complicated by large numbers of tees connecting to the emergency valves in the caboose. <i>drawing</i>
Eliminate retaining valve.	Reduce wheel problems caused by improper use, and reduce maintenance costs. Retaining valves are rarely used on the W.P. and should never be used on the caboose.
Install welded train line.	To reduce train line leaks, thus help reduce the train line gradient; also, to reduce maintenance. The only time that a welded train line application is practical on these cars is when the floor is removed. <i>drawing</i>

3 EA  
MAGNETS  
RADIO  
OTHER

**OBSOLETE**

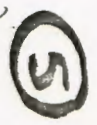


Project	Reason
Replace the radio with a six channel radio.	To allow W.P. caboose communications with E.N. and U.P. pool power while on the W.P. and with E.N. and U.P. dispatchers while off the W.P. <i>SP train to W.P. side</i>
<i>Tracks?</i>	Roof walks — per F.R.A. (W.P. sketch)
	Draft System — <i>(get specs)</i>
	Stone Vent — <i>(stocktm)</i>
	<i>Window days? shades</i>

Bench cushion

Grab Iron —	12" welded application one at each end door	U.T.V. request Mr. Silen
Window Slides —	(per m/R) —	P.U.C. requires
ABDW or add	GRE no-stay with AB/REP/ADD COMP SHOES/MECH	DI 11 SA.
Knuckle brackets	(per U.P. design) E/F each side	Mech / U.T.V.
Conductors lamps	(DAZOR #100) — must add one - use one existing	
Foot rest —	W.P. drawing	U.T.V. requested Mr. Silen

**OBSOLETE**



San Francisco, California  
February 8, 1980

File: 413.018

Mr. C. Aadnesen:

During September 1979, we met with Mr. Siler, concerning major caboose overhauls, at Sacramento Shops. As a result of that meeting, which I think was a good one, numerous mechanical changes were suggested for future heavy caboose work.

We now have "test" cabooses WP 452 close to completion and request that you contact Mr. Siler and have him meet with myself and shop staff at Sacramento Shops any convenient time during the last week of February, as I would like to discuss all the modifications, etc. Caboose WP 452 will not be complete at that time, therefore permitting any last minute mutual revisions.

R. E. SHIDELER

THE WESTERN PACIFIC RAILROAD COMPANY  
SACRAMENTO NORTHERN RAILWAY  
TIDEWATER SOUTHERN RAILWAY CO.

1025 - 19TH STREET - SUITE ONE  
SACRAMENTO, CALIFORNIA 95814

February 14, 1980

In reply please refer to files:

A - 413.018  
XR - 013.5

Mr. H. A. Siler  
General Chairman UTU  
P. O. Box 640  
Portola, CA 96122

Dear Mr. Siler:

Per our telephone conversation today.

Mr. R. E. Shideler sent me the attached letter of February 8, 1980, concerning modifications to our caboose fleet. His letter is self-explanatory.

As we discussed you will be on vacation during the week that it will be critical for Mr. Shideler to have craft input concerning modification to caboose WP 452. He is agreeable to your using Dave Amos and John Rickman as your proxies at a meeting, provided these two gentlemen are well aware of all the conversations which took place during your meeting on the same topic in the meeting of September 1979.

Will you please arrange for Messrs. Rickman and Amos to meet Mr. Shideler at the Sacramento Shops on Tuesday, February 26, 1980 at 10:00 AM for the purpose iterated herein.

Very truly yours,

*C. Aadnesen*  
C. AADNESEN  
DIVISION SUPERINTENDENT

Attachment

cc - Mr. R. E. Shideler ✓



San Francisco - March 20, 1980

File - 413.018

**united transportation union**

WESTERN PACIFIC RAILROAD COMPANY



TIDEWATER SOUTHERN RAILWAY  
OAKLAND TERMINAL RAILWAY  
ALAMEDA BELT LINE RAILWAY

CENTRAL CALIFORNIA TRACTION CO.  
STOCKTON TERMINAL & EASTERN  
MODESTO & EMPIRE TRACTION CO.

VICE-GENERAL CHAIRMAN  
F. E. PARKER - ROAD  
M. G. NELSON - YARD  
C. H. DREW - (209) 477-1695

GENERAL COMMITTEE  
OF ADJUSTMENT  
H. A. SILER  
GENERAL CHAIRMAN  
P. O. BOX 840  
PORTOLA, CALIF 96122  
916-932-3603

February 19, 1980

Mr. C. Adnesen  
Division Superintendent  
Western Pacific Railroad  
1025 19th Street, Suite 1  
Sacramento, California 95814

Dear Mr. Adnesen:

I am forwarding copies of your letter of February 14, 1980, and Mr. Shideler's letter of February 8, 1980, to Mr. Rickman and Mr. Amos.

I have taken the liberty of including Mr. F. E. Parker also. Undoubtedly, Mr. Parker will accompany Mr. Rickman. John Rickman will be able to fill him in concerning our meeting with Mr. Shideler in September, 1979.

Very truly yours,

*H. A. Siler*  
H. A. Siler  
General Chairman

HAS/jd

cc: J. W. Rickman, Jr.  
D. J. Amos  
F. E. Parker

2/20/80  
Send copies to  
R. E. Shideler



Mr. C. Adnesen:

Attention: M. C. McManus

Rebuilt cabooses WP 452 is due to be released for service early next week. Mechanically, we want to watch this cabooses closely as it is equipped with several experimental devices. Also, this cabooses has extensive interior modifications as requested by the UTU or in-stalled through joint discussions of Mechanical and Operating people.

Therefore, I would appreciate keeping this cabooses on our lines as much as possible for the next two months, including several turns on the North line so we may gain comments from as many WP crews as possible.

This cabooses will serve as the prototype for future cabooses overhauls.

R. E. Shideler

RES/ss

cc - W. F. Schrober  
D. L. Johnston  
R. L. Millhiser  
R. C. Furtney

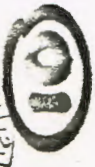
bcc - H. A. Siler, P. O. Box 640, Portola, CA 96122: Would appreciate as many comments as you can gather up, followed perhaps by a short meeting in a month or two, at your convenience, to firm up future plans. RES

THE WESTERN PACIFIC RAILROAD COMPANY  
SACRAMENTO NORTHERN RAILWAY  
TIDEWATER SOUTHERN RAILWAY CO.

1025 - 19TH STREET - SUITE ONE  
SACRAMENTO, CALIFORNIA 95814

October 2, 1980

File: 013.5  
XR 413.018



Mr. H. A. Siler  
General Chairman UTU  
P. O. Box 640  
Portola, CA 96122

Dear Mr. Siler:

Mr. R. E. Shideler has indicated to me he would like to discuss the following items with you and/or your designated representatives:

1. Caboose No. WP 452 and the rebuild/modification program.
2. General caboose conditions as they relate to his department.

This meeting would be held on October 29, 1980, at 9:30 AM, at the Stockton Rip Track.

Please advise whether you can attend this meeting and if not whom you will designate to attend in your absence.

Sincerely,

*C. Adnesen*

C. ADNESEN  
DIVISION SUPERINTENDENT

*[Signature]*

cc - Mr. R. E. Shideler

united transportation union  
WESTERN PACIFIC RAILROAD COMPANY

TIDEWATER SOUTHERN RAILWAY  
OAKLAND TERMINAL RAILWAY  
ALAMEDA BELT LINE RAILWAY  
CENTRAL CALIFORNIA TRACTION CO  
STOCKTON TERMINAL & EASTERN  
MODESTO & EMPIRE TRACTION CO.

GENERAL COMMITTEE  
OF ADJUSTMENT  
H. A. SILER  
GENERAL CHAIRMAN  
P O BOX 640  
PORTOLA, CALIF 96122  
916-932-5803

VICE GENERAL CHAIRMEN  
F. E. PARKER - ROAD  
M. G. NELSON - YARD  
C. H. DREW - (209) 477-1695

October 3, 1980

Mr. C. Adnesen  
Division Superintendent - West  
Western Pacific Railroad  
1025 19th Street  
Sacramento, California 95814

Dear Mr. Adnesen:

With reference to your letter of October 2, 1980, regarding a meeting on October 29, 1980, concerning cabooses, I am forwarding a copy of your letter to Vice General Chairman Parker in Stockton for his appropriate handling due to my absence in this period.

I am requesting that Mr. Parker contact your office regarding the above matter.

Very truly yours,

*H. A. Siler*

H. A. Siler  
General Chairman

cc: F. E. Parker - copy of Mr. Adnesen's  
letter of 10/2/80 sent.

HAS/jd



THE WESTERN PACIFIC RAILROAD COMPANY  
SACRAMENTO NORTHERN RAILWAY  
TIDEWATER SOUTHERN RAILWAY CO.

1025 - 19TH STREET - SUITE ONE  
SACRAMENTO, CALIFORNIA 95814

October 7, 1980

In reply please refer to:

File: 013.5  
XR: 413.018

Mr. F. E. Parker  
Local Chairman UFW  
313 W. Iris Avenue  
Stockton, CA 95210

Dear Mr. Parker:

Refers to my letter of October 2, 1980 addressed to Mr. H. A. Siler, copy attached for your ready reference, and Mr. Siler's letter to me of October 3, 1980, copy of which is also attached, concerning a meeting to be held at the Stockton Rip Track on October 29, 1980, at 9:30 AM to discuss cabooses with Mr. R. E. Shideler.

Due to circumstances beyond our control I would like to reschedule this meeting to November 5, 1980, same time, same location. Please advise if this date and time meets with your approval.

Very truly yours,

*R. E. Shideler*  
C. AADNESEN  
DIVISION SUPERINTENDENT

Attachments (2)

ccs - Messrs. R. E. Shideler  
H. A. Siler, GC, UJU

MEMO TO CA... Fred Parker phoned 10-17-80 11:30 AM, (November 5, 1980) will be fine for him for this meeting with Dick.

cc - Mr. R. E. Shideler

*FOR RESULTS SEE THESE TWO PAGES OF INTERIER SECTION OF THE COACH*



San Francisco - October 16, 1980

File - 413.018

Mr. R. W. Mustard:

Subject: Caboose Situation - Request for Repair Program

Please refer to the discussion of this morning regarding our need to begin a heavy repair program on the 426 Series cabooses. Also, refer to my letter of August 6, 1980, page 2, which in part pointed to the general caboose situation at that time,

"Of major importance is the necessity to overhaul twelve Series 426 cabooses built in 1955. These cabooses are in poor condition and are being continually patched. We are beginning to see train delays account various defects on these cars. Of concern here is the fact that overhauling cabooses is time consuming and we simply will not be able to rebuild these cars in time once money is available. I would expect some of these to be laid up this year. Our plan had been to rebuild one a month, starting in July, 1980, upon successful testing of prototype Caboose 452. Total cost per car is approximately \$20,000. No material has been ordered for this project."

At the moment, we have WP 462 undergoing heavy repair, 430, 434, 441 out of service awaiting heavy repair and 428 and 454 being watched after every trip. Several others are getting close to an unserviceable condition.

I again request your authority to begin a heavy repair program which includes three additional carmen (at Stockton) which would allow us to make one complete overhaul monthly. Total budget impact would amount to \$20,000 per month (all Cost Center 7565). This brakes down to \$7,300 labor, including all fringe (37%) and \$12,700 (63%) material.

May I proceed?

*R. E. Shideler*  
R. E. Shideler

cc - R. T. Price

13

*RES OK Shideler*  
*Mr. R. W. Mustard*  
*10/16/80*

## Public Utilities Commission of the State of California

REGULATIONS ESTABLISHING MINIMUM SAFETY, HEALTH AND  
COMFORT REQUIREMENTS FOR RAILROAD CABOOSES.

Adopted September 12, 1961, Effective October 2, 1961.

Decision No. 65476, Case No. 7002

As Amended: Decision No. 65476, in Case No. 7002, May 28, 1963.  
Effective August 28, 1963.

IT IS ORDERED by the Public Utilities Commission of the State of California that each railroad corporation operating in the State of California shall observe the following rules and regulations in the operation of cabooses:

- Sec. 1. Applicability:** The provisions of this order shall not apply to cabooses used as rider cars in yard transfer movements having a one-way route mileage of 16 miles or less. The provisions of Sections 2, 3, 4, 5 and 11 shall not apply to cabooses presently operated by railroads having less than 100 miles of main and branch line trackage; provided, however, that any additional cabooses acquired by said railroads shall comply with all of the provisions of this order. No caboose shall be used in service subsequent to one year after the effective date of this order unless it complies with Sections 3, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16 and 17 hereof. No caboose shall be used in service subsequent to two years after the effective date of this order unless it complies with Sections 2, 4, 5 and 7 hereof.
- Sec. 2. Construction:** Cabooses shall be of either the cupola or bay window type. Cabooses of metal construction shall have wooden or insulated metal floors. A cupola shall not extend inward toward the center line of the car more than three inches from either side of the caboose.
- Sec. 3. Trucks:** Trucks shall provide riding qualities at least equal to those of freight type trucks modified with elliptic or additional coil springs or other means of equal or greater efficiency and shall be equipped with steel wheels.
- Sec. 4. Draft Gears:** Draft gears shall have a minimum travel of  $2\frac{1}{2}$  inches and a minimum capacity of 18,000-foot pounds. Draft gears shall be of rubber or a combination of friction and rubber types, or shall have other means of providing equal shock control.
- Sec. 5. Lighting:** An adjustable, shielded electric light, or lights, shall be provided for the direct illumination of the caboose desk. A ceiling or wall light, or lights, operable from separate switches shall be provided to otherwise illuminate the caboose interior. The area of the drinking water and lavatory facilities shall be illuminated. The caboose marker, or markers, shall be electrically lighted. All cabooses constructed after the effective date of this order shall have toilets which are illuminated.
- Sec. 6. Heating:** A heating facility shall be maintained and shall be capable of providing a temperature of at least 70 degrees Fahrenheit in a standard caboose.
- Sec. 7. Seats and Cushions:** Seats and cushions shall be provided with a shock absorbent material initially at least three inches in thickness and backrests shall be of a sufficient height to protect the neck and head from injuries. Seats in cupolas shall be of the Pullman type and those in bays shall be of the passenger reversible type. The top of said seats shall not be lower than 11 inches nor higher than nine inches beneath the cupola or bay window sills and no more than 18 inches above the floor or footrest. The backrests shall incline backward to not less than three inches nor more than

five inches from the perpendicular and shall be provided with shock absorbent material initially of at least three inches in thickness. Subject to the approval of the Commission, seats of a different design or materials may be used when such design or materials provide equal or better protection or comfort than those enumerated in this section.

- Sec. 8. Bunks:** Each caboose shall have at least one bunk of not less than 24 inches in width and not less than 72 inches in length which shall be provided with a cushion of the same dimensions made of shock absorbent material initially of at least three inches in thickness.
- Sec. 9. Safety Glass and Wind Deflectors**
- a. Safety Glass:** Wherever glass or glazing materials are used in partitions, doors, windows or wind deflectors, they shall be of the safety glass type. For the purpose of this section, safety glass is any type of glass or glazing material so manufactured, fabricated, treated or combined with other materials as to reduce, in comparison with ordinary sheet glass or plate glass, the likelihood of injury to persons by objects, other external sources, or by glass or glazing material when the same is cracked or broken.
- b. Wind Deflector:** Each cupola side window shall be equipped with a wind deflector.
- Sec. 10. Weatherstripping:** Weatherstripping or weatherproof seal shall be installed and maintained at all windows and doors to protect against weather and the seepage of dirt or dust.
- Sec. 11. Window Shades:** With the exception of windows in bays and cupolas, windows shall be equipped with shades.
- Sec. 12. Stanchions:** Stanchions, grab handles, or bars, shall be installed at entrances and exits and at other locations within convenient reach of employees moving about the caboose while a train is in motion.
- Sec. 13. Drinking Water:** Drinking water facilities shall be installed and maintained so as to provide fresh and pure drinking water. When ice is used for water cooling purposes, the containers shall be so arranged that the drinking water will not come in contact with the ice. Containers used for storing or dispensing potable water shall be kept clean at all times and shall be subjected to effective bactericidal treatment as often as may be necessary to prevent the contamination of the water so stored and dispensed.
- Sec. 14. Lavatory Facilities:** Facilities for the washing of hands and face shall be provided at a location where the use thereof will not result in contamination of the drinking water dispensing system.
- Sec. 15. Fire Extinguisher:** Cabooses used in road service shall be equipped with an effective means of extinguishing minor fires. Such extinguishing agents shall be placed in a readily accessible location and shall be effectively maintained.
- Sec. 16. First Aid Kit:** Each caboose shall carry in a visible and readily accessible place, a plainly marked first aid kit which shall be so constructed that it and its entire contents are readily removable. The kit shall be fully equipped and maintained in good condition.
- Sec. 17. Maintenance and Supplies:** Cabooses shall be supplied with fresh water, paper towels, sanitary drinking cups, fuel, ice as needed, hand soap or other cleaning agent in appropriate dispensers and such other equipment as may be required for service.
- Sec. 18. Conditions Arising after Departure from Terminal:** In the event a failure of required equipment or standards of maintenance occurs in a caboose after it has commenced a move

in service, the railroad operating that caboose shall not be deemed in violation of this General Order if said failure of equipment or standards of maintenance is corrected at the first point at which maintenance supplies are available, or, in the case of repairs, the first point at which materials and repair facilities are available and repairs can reasonably be made.

- Sec. 19. Caboose Defect and Repair Register:** An equipment defect and repair register comprising a card or paper having thereon spaces to record the date and train upon which a defect occurs, the name of the person reporting the defect, the date and place at which the defect is corrected and the name of the person making the repair, shall be placed in each caboose used in service. The railroads shall provide reasonable regulations for the use of the register which shall include a provision for maintaining in each caboose the record of reported defects for not less than the previous 90-day period. [Added by Decision No. 65476, Case No. 7002, effective Aug. 26, 1963.]

**Exemptions:** If, in any particular case, an exemption from any of the requirements of this order is deemed necessary by a carrier concerned, the Commission will consider the application of such carrier for such exemption when accompanied by a full statement of the conditions existing and the reason why such exemption is asked. Any exemption so granted will be limited to the particular case covered by the application.

Approved and dated at San Francisco, California, this 12th day of September, 1961.

PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA

By: R. J. PAJALICH, Secretary

P. U. C.

GENERAL  
ORDER

114

# **ELECTRICAL**

PROCEDURE - ELECTRICAL

- 1) Pull in new #12 copper PE-PVC insulated wire from marker light switch to marker lights. Inspect marker light, remove flasher unit if found, insure proper lamp (GE-1156) installed and spare lamp is in holder. Inspect other car wiring in common junction boxes, repair or replace as necessary. Remove any unused wire.

Wire. M.R. 55715

- 2) Split circuit from battery and run thru two 30 amp, 2 pole circuit breakers. Connect radio and marker lights to one circuit. Connect carbody lights, toilet light and desk light to other circuit thru the battery monitor. Install light and switch in toilet and monitor reset buttons at each door and conductor's desk.

Battery Monitor	M.R. 55597
Circuit Breakers	M.R. 55716
Reset Buttons	M.R. 55716
Conduit, 1/2" EMT	M.R. 55716
Straps	M.R. 55716
Connectors	M.R. 55716
Cast Switch Box	M.R. 55716
Switch Cover	M.R. 55716
Switch	M.R. 55716
Lamp	M.R. 55716
Lamp Base	M.R. 55716

- 3) Change battery charging system to Dayco 9 to 1 belt ratio and Electrodyne E-105 alternator. New end cap sheave, step idler sheave, alternator sheave and two sets of matched belts are required for ratio change. The step idler is to be lined up with end cap sheave, the alternator lined up with step idler. The guide bracket pads are to be replaced and clearance between the guide bracket and guide post is not to exceed 1/32". The Daythene bushings and compression springs will be replaced. To mount the Electrodyne Alternator, the alternator lug bracket must be changed and the alternator mounting brackets cut off and moved to achieve proper sheave location. Apply roller bearing cap sheave per AAR Specifications. Reference Drawing is Dayco 30755-D. Spin test alternator and set to 13.5 to 13.55 charging voltage.

Roller Bearing End Cap 5 x 9	M.R. 55716
Roller Bearing End Cap 5 1/2 x 10	M.R. 55716
Step Idler 10.2 x 4.0 P.D.	M.R. 55716
Alternator Sheave	M.R. 55716
Daythene Bushings	M.R. 55716
Mounting Bracket	M.R. 55716
Lug Bracket	M.R. 55716
Guide Bracket Pad	M.R. 55716
Matched Belts	M.R. 55716
Springs	M.R. 55716
Alternator	M.R. 55718

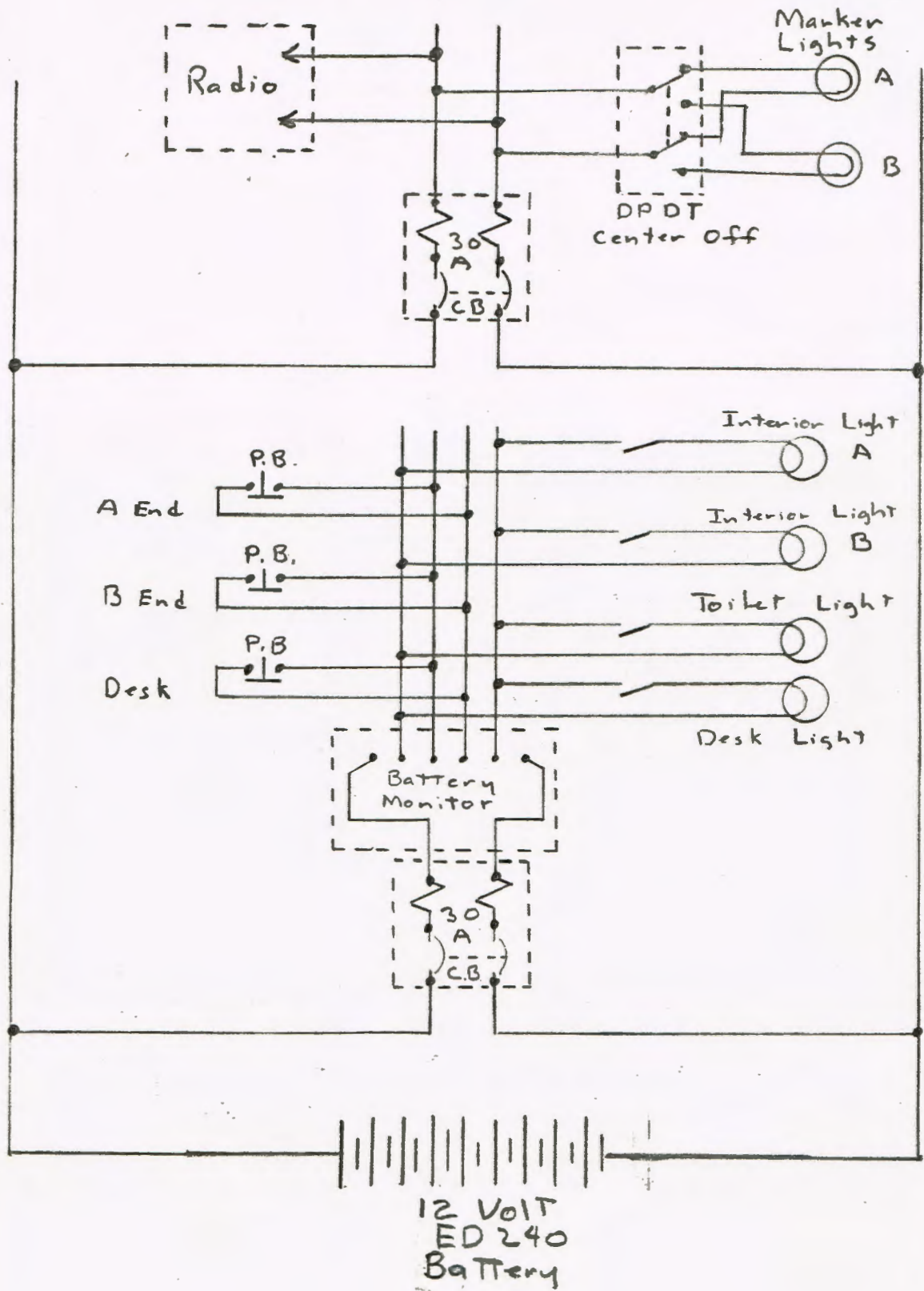
PROCEDURE - ELECTRICAL  
(continued)

- 4) Install ED-240 batteries if not presently equipped. If ED-240 battery equipped, check specific gravity per attached instructions and change electrolyte if less than nominal recommended gravity.

Battery	M.R. 55592
Electrolyte	M.R. 55719

# Co-Boose Electrical System

WP 426-460  
(PROGRAM S-2 - MM 8642)



January 8, 1981

Mr. D. L. Johnston, Engineer  
Shops & Equipment  
Western Pacific Railroad Company  
3500 24th Street  
Sacramento, CA 95818

Dear Dave:

Per our phone conversation of January 6, 1981, we are pleased to enclose herewith four (4) copies each of our layout No. 30755-D and step idler print No. 30621-C for your engineering files.

Referring to our discussion regarding the alternator mounting brackets items 8 and 9 (per layout print 30755-D) we wish to advise that your present Leece Neville alternator bracket Dayco part No. 30422-B can be used in place of Dayco part No. 30395-B (item 8 per print 30755-D). However, it will be necessary to burn off the bracket on existing Leece Neville applications and move it sideways toward the outboard side of the slide base to align the drive when converting over to an Electrodyne alternator.

Your present alternator lug bracket will have to be replaced with our bracket No. 30637-A (item No. 9) as shown on layout print 30755-D.

Confirming our recent meeting in Stockton, California, regarding your caboose upgrading program and changing your present 10.85 to 1 drive ratio to our 9 to 1 drive ratio with an Electrodyne alternator, the following changes are required:

PRESENT 10.85 TO 1 DRIVE-LEECE NEVILLE	9 TO 1 DRIVE RATIO-ELECTRODYNE
14.0" PD Cap Sheave #30374-C-14 (5½x10)	12.0" PD Cap Sheave #30374-C-12 (5½x10)
14.0" PD Cap Sheave #30415-C-14 (5 x 9)	12.0" PD Cap Sheave #30415-C-12 (5 x 9)
12.4" PD Step Idler #30626-C-12	10.2" PD Step Idler #30621-C-10
4.0" PD Alternator Sheave #23909-B	3.4" PD Alternator Sheave #30706-B for Electrodyne
5-7344 Dayco Cog Belts (2 sets - 2 per set)	4-6660 Dayco Cog Belts (2 sets - 2 per set)
Alternator Bracket #30424-A	Alternator Lug Bracket 30637-A
Adjusting Lug Bracket #30519-B for Leece Neville	Not Required for Electrodyne
Alternator Mounting Bracket #30654-B	Not Required for Electrodyne
Alternator Mounting Bracket #30422-B	Use same bracket or bracket #30395-B as shown on layout print 30755-D

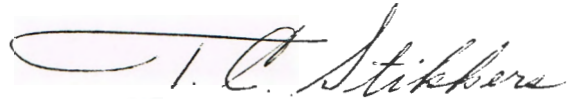
Mr. D. L. Johnston  
January 8, 1981  
Page Two

In our recent drive inspections at your Stockton Yards we noticed some of the drives had our original single compressor springs. We would suggest these be replaced with our current compression spring assembly part No. 30614-A.

Please do not hesitate to contact us if you require any additional information or if we can be of further service in any way.

Sincerely yours,

DAYCO CORPORATION



T. C. Stickers  
Application & Development  
Engineer  
BELT TECHNICAL CENTER

kjm

Enclosures

W.P.  
BASIC OPERATION AND MAINTENANCE INSTRUCTIONS  
FOR DAYCO SIDE FRAME MOUNTED CABOOSE DRIVES

The drive should be given periodic visual inspection to check for wear in pivot bracket and mounting plate Daythene bushings, belt tension and belt condition. Necessary alternator drive belt tension adjustments should be made as required.

Refer to proper DAYCO caboose drive layout drawing for all component parts, part numbers and torque values for all cap screws.

(1) Pivot Bracket and Mounting Plate Daythene Bushings (Part No. 30393-A)

A. No lubrication required.

Recommend visual inspection every six months and replace when bushings show 1/16" wear on diameter. Replace all four (4) bushings at this time.

(2) Guide Bracket Daythene Wear Pads

A. These pads should barely touch both sides of the guide.

Recommend visual inspection every six months and replacement when pads show 3/32" to 1/8" wear between pads and guide.

(3) Step Idler (Part Nos. 30621-C, 30625-C, 30626-C & 30627-C)

A. Equipped with two (2) matched pre-set Timken roller bearings which include a snap ring and cone spacer. THESE MUST be ordered and replaced as a complete assembly.

(DAYCO Part No. 107-1-M-MPSA)

- B. In normal service Step Idlers require no lubrication for two years. Step Idlers equipped with grease and pressure relief fittings require no lubrication for one year. After one year lubricate with AAR Spec. M-942 grease every six months. Do not overgrease.
- C. When mounting Step Idler to Step Idler bracket, cap screws must be torqued to 60-65 feet pounds and lock tabs bent over.

(4) Step Idler Overhaul

- A. Remove, clean and inspect bearings for wear, etc.
- B. Clean and inspect shaft, remove old grease and clean inside of pulley hub.
- C. Inspect rear mechanical seal and replace if necessary. When re-applying mechanical seal, clean seal seat and apply Bore-Tite sealant as manufactured by Chicago Rawhide Manufacturing Company (or equivalent).
- D. Pack bearings with AAR Spec. M-942 AP roller bearing grease per Timken bearing specs. The bearing assembly consists of a Timken pre-set two row spacer bearing assembly. These roller bearings are pre-set with spacers at time of manufacture thereby permitting assembly without requiring manual setting at time of installation. This allows the lock-nut to be drawn up tight during assembly and eliminates the "guess work" in trying to set the bearing lateral play.
- E. Apply grease between rear seal and inboard face of rear bearing.

- F. Apply approximately 1/8" layer of grease to inside wall of hub cavity between the two bearings.
- G. Hand pack grease in cavity between outboard face of front bearing and front grease retainer plate after installing lock-nut.
- H. Use LOCKTITE on 10-32 machine screws when reapplying grease retainer plate. Use new gasket when reapplying grease retainer plate.

(5) Primary Axle Drive and Alternator Drive V-Belts

- A. The Dayco caboose drive is engineered for use of the Dayco Cog Belt, utilizing the cog belt construction for optimum drive performance. DO NOT SUBSTITUTE.
- B. Never mix new and old belts in a set. Always be sure the belts are properly matched when applied on a drive.

(6) Belt Installation and Removal

- A. Primary axle drive
  - (a) Use large "C" clamp engaged over underside of compression spring bracket and top of mounting plate. Compress spring sufficiently to install a set of two (2) matched Dayco Cog belts by hand over pulley grooves.
  - (b) Release and remove "C" clamp. Belts are now properly tensioned by compression spring. Use same procedure for replacing worn belts or removing belts for wheel change. NOTE: To prevent damage to square head set screw always tension alternator drive before installing or removing primary axle drive belts.

B. Alternator drive

- (a) To install or remove belts, loosen the four (4) cap screws securing slide base to mounting plate, loosen nut on square head set screw and back off set screw. Slide alternator and slide base assembly toward step idler to install or remove matched set of two (2) Dayco Cog belts over pulley grooves, by hand.
- (b) To tension belts, move slide base assembly toward bolster by tightening square head set screw. When belts can be depressed 1/2", midway between centers, under application of normal thumb pressure of ten (10) pounds they will have proper tension.
- (c) Tighten nut to lock set screw in place and tighten the four (4) cap screws securing slide base to mounting plate (Torque to 65 foot pounds).

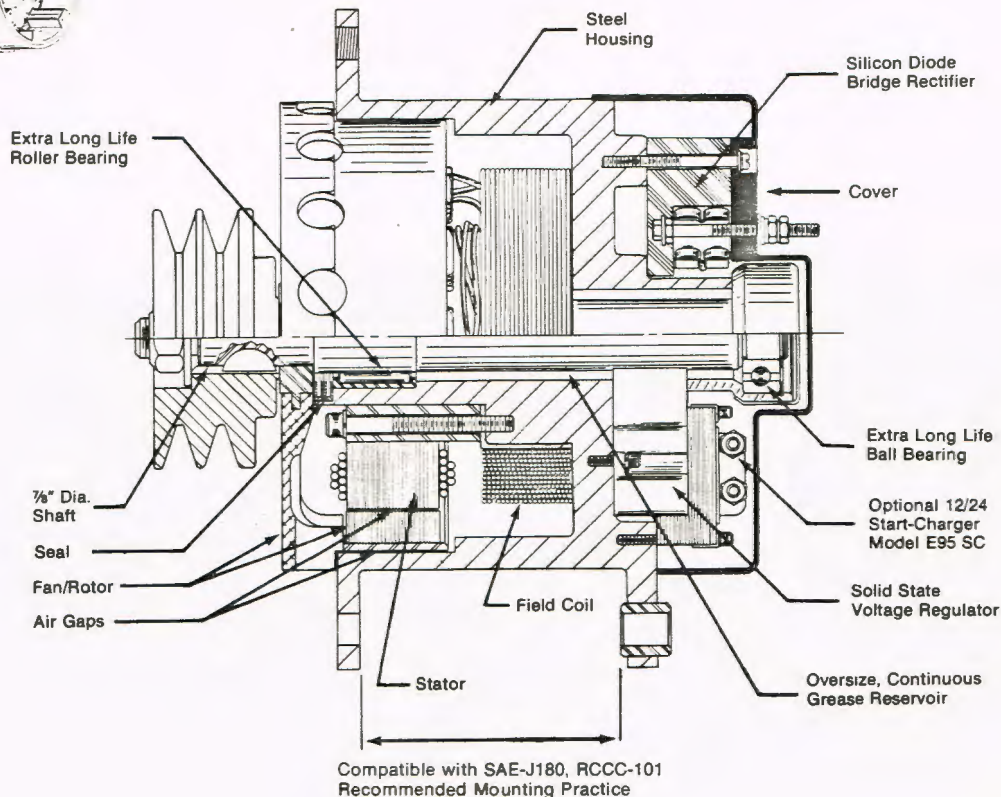
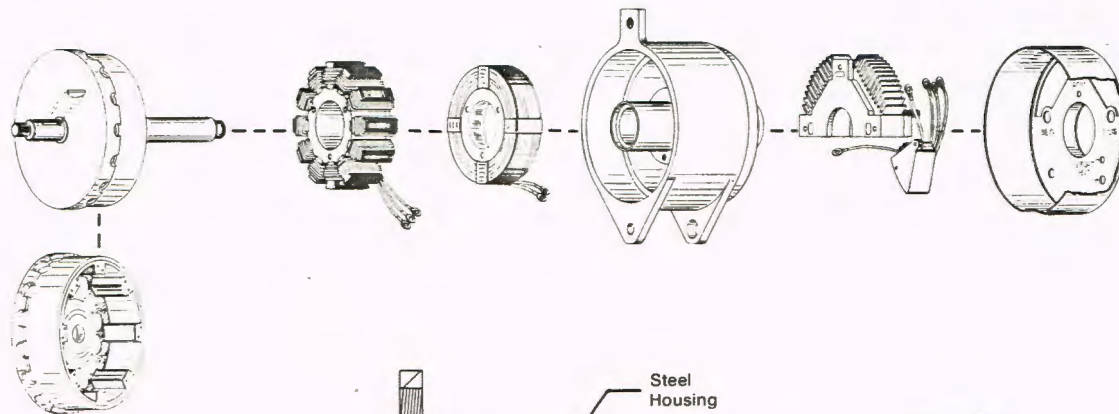
(7) Cap Sheave

- A. To remove cap sheave for wheel change, etc., remove the three (3) cap screws that bolt cap sheave to the end of axle. When replacing cap sheave, use new locking plate tab. For application to 5 X 9 and 5½ X 10 axle, torque cap screws to 140-150 foot pounds. Continue to retorque the three (3) cap screws until 140-150 foot pounds is obtained on each cap screw. The locking plate tabs should be bent up after the specified torque has been obtained. This procedure conforms to Rule 5.53 in the AAR Roller Bearing Manual. For application of cap sheave to other size axles refer to AAR Roller Bearing Manual for proper AAR torque values on cap screws.

NOTE: When installing cap sheave to cabooses equipped with NFL bearings, use new rubber grommets on bolts and install no-out plug in cap sheave in place of grease fitting.

TCS  
04/11/80

The Electrodyne Alternators are specifically designed to give the lowest operating cost per mile. Electrodynes are the most rugged alternators in the industry and have fewer parts than competitive designs. Due to their unique design and high efficiency, they also provide significant fuel savings.



— ONE MOVING PART —

The Alternator has a single moving part, a combination rotor and fan, consisting of a steel ring with laminated teeth, an aluminum rotor face and a steel shaft.

— NO BRUSHES —

All Electrodynes are brushless, eliminating brushes and slip rings with their periodic wear out and replacement.

— NO MOVING WINDINGS —

All windings are stationary and epoxy coated for protection from salt and foreign materials.

— 20,000 HOUR BEARINGS —

Electrodyne bearings are rated by the AFBMA method for 20,000 hours of life (at 50 MPH that is 1,000,000 miles). The grease reservoir is approximately 50% larger than that of competitive designs. The rotor shaft requires only one seal, it is made of a Teflon/glass compound and has a double lip. Competitive units have 3 shaft seals.

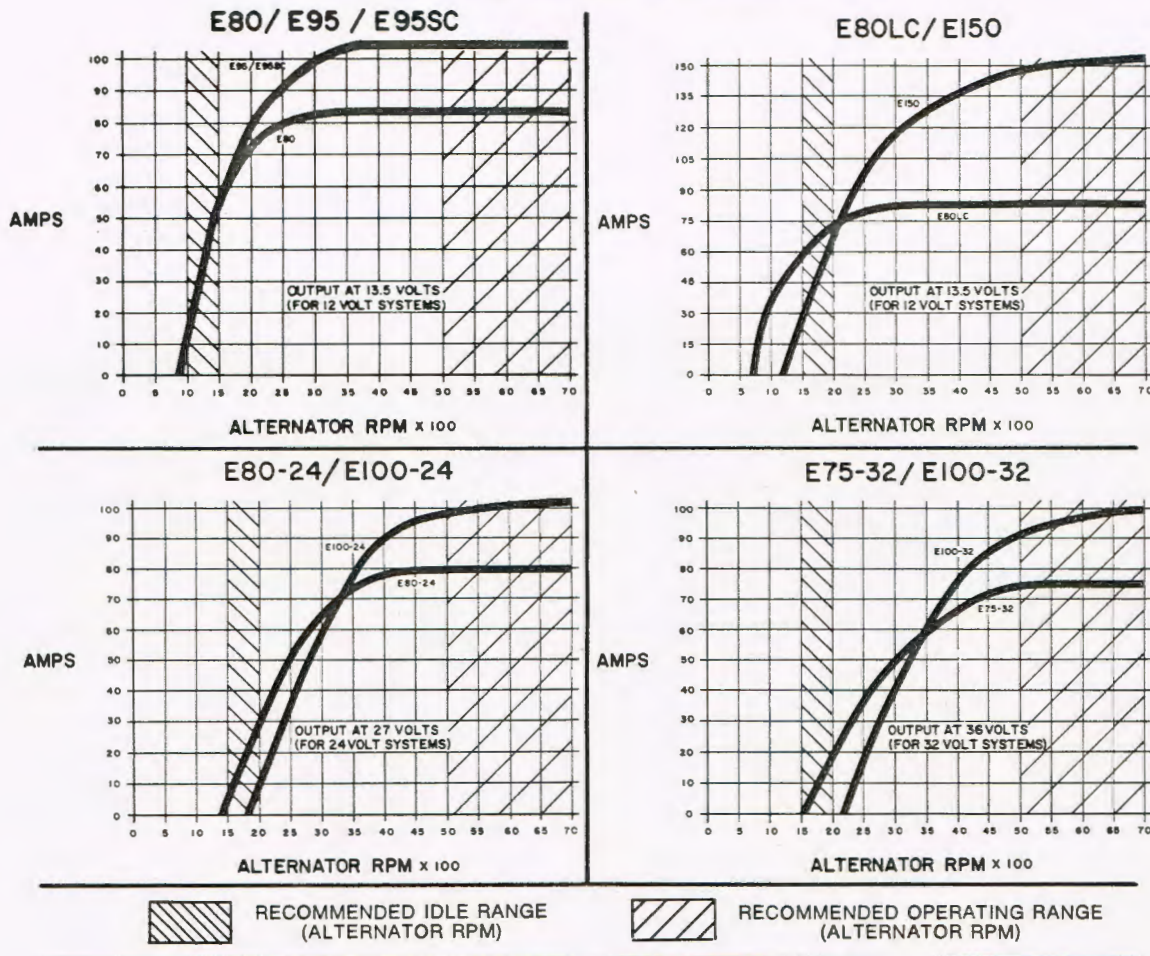
## — STEEL MOUNTING EARS —

The Electrodyne design eliminates brittle aluminum mounting ears and the unit has no through bolts. The steel housing is the strongest in the industry.

## — MORE ELECTRICAL OUTPUT —

Electrodynes produce more electrical output per horsepower input. This high efficiency is due to the revolutionary inductor design that eliminates reversing magnetism in the alternator and allows use of the heaviest output windings in the industry.

# Performance Curves



## — MINIMAL BATTERY CYCLING —

The high idle output reduces battery cycling and prolongs battery life. A fully charged battery also starts the engine easier and thereby adds to the cranking motor life.

## — FUEL SAVINGS —

The high efficiency of the Electrodyne (due to non-reversing magnetism, 12 rectifier diodes and large output windings) saves fuel. The Electrodyne requires approximately one horsepower less to run. Considering a 290 horsepower engine, 150,000 miles of use, 4.5 MPG and \$.90 per gallon fuel, the savings would be \$103.45 per year.

## — NO SERIES PARALLEL SWITCH —

The optional E-95SC (start charge) design provides for 24 volt starting and 12 volt run without the need for a series parallel switch. The electronics are built into the unit, rather than added on the back as with many competitive units.

**— FEATURES —**

Steel housing  
 Brushless  
 Inductor design  
 Three phase rectifier with 12 diodes and oversized heat sink.  
 Internal regulator  
 Regulator with discrete components  
 Laminated rotor teeth  
 Balanced light weight rotor  
 Oversized bearings  
 Epoxy protective coatings  
 SAE J-551-c compatible

**— ADVANTAGES —**

Greater strength, no through bolts  
 No brushes or slip rings to fail or require periodic replacement  
 Greater efficiency, less wasted power, increased fuel mileage.  
 Increased current carrying capacity and cooler operation.  
 Simplifies wiring, reduces failures  
 Greater capacity, added reliability  
 Reduced magnetic loss, increased efficiency  
 Lower bearing loads, increased life  
 Longer service between rebuilds  
 Components protected from contaminant  
 Minimal radio interference

**— MAINTENANCE —**

Proper maintenance consists of maintaining belt tension and periodically inspecting mounting hardware for tightness. Bearings are lubricated and sealed.

**— TESTING —**

Electrodyne alternators have many million miles field use and have been laboratory tested, they meet the following standards.

Salt spray .....	MIL-STD-810	method 509	procedure I	1000 hrs.
Sand and dust .....	MIL-STD-810	method 510	procedure I	
Vibration .....	MIL-STD-202	method 204	condition D	20 g's
Mechanical shock .....	MIL-STD-202	method 213	condition K	30 g's
Low temperature .....	MIL-STD-502	method 502	procedure I	-80 F. storage -65 F. operation
High temperature .....	MIL-STD-810	method 501	procedure I	+200 F.

**— WARRANTY —**

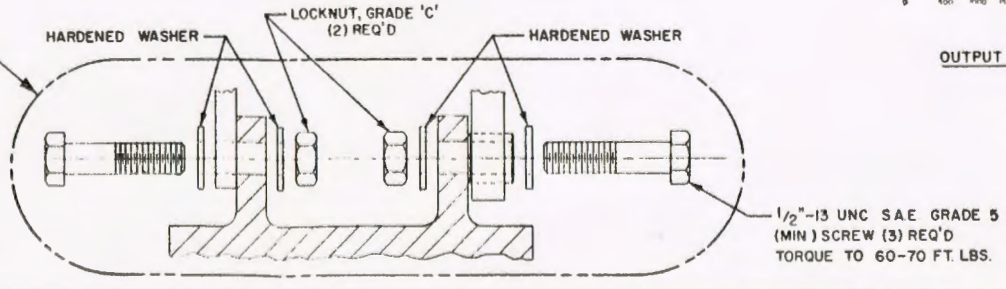
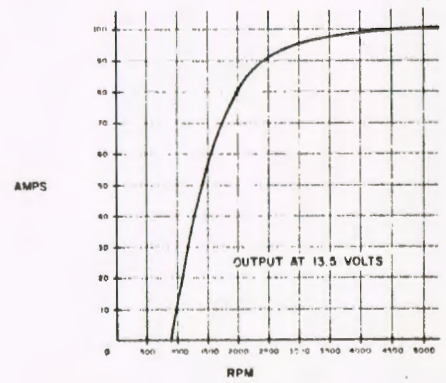
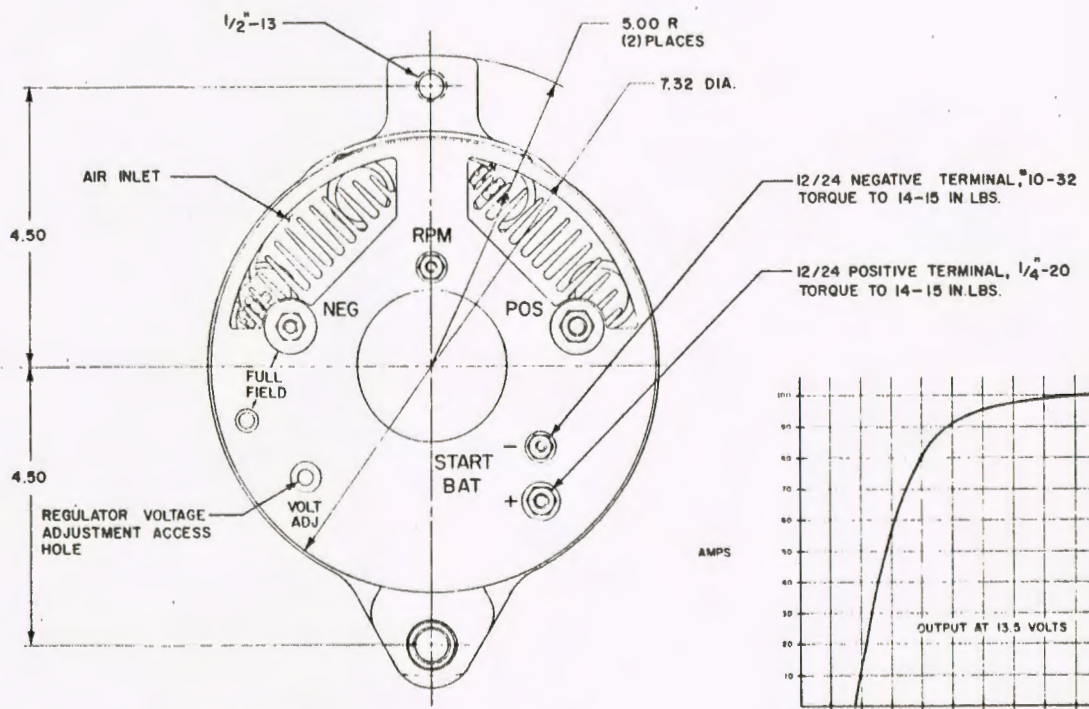
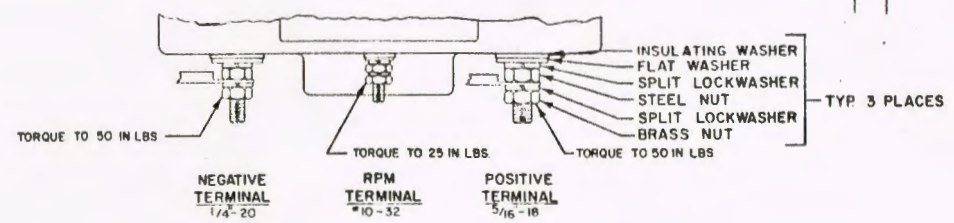
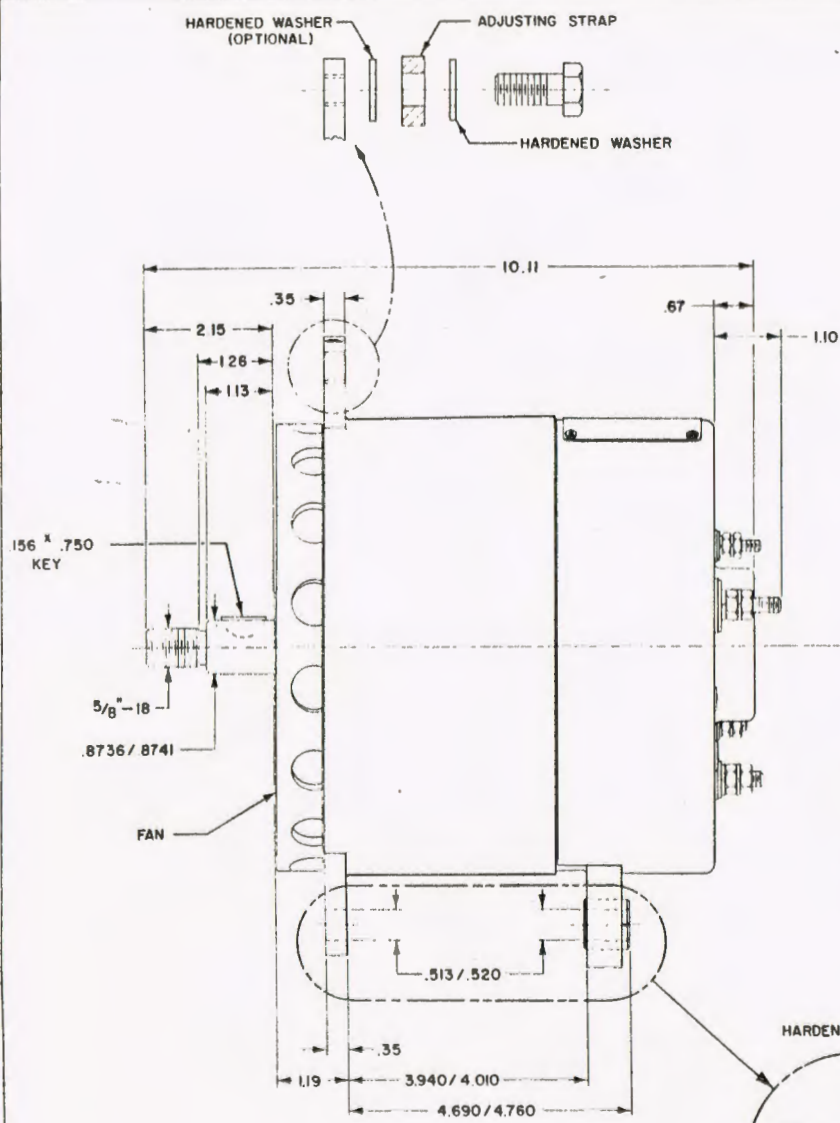
The Electrodyne warranty **250,000 MILE WARRANTY**  
 • 24 months or 3,600 engine hours

**— APPLICATION GUIDE —**

Over-the-road 12 Volt .....	E-80	80 Amps		
Pick-up & Delivery .....	E-80LC	80 Amps		
(70 Amps at engine idle)				
Over-the-road .....	E-95	100 Amps		
24 V Crank 12 V Run .....	E-95SC	100 Amps		
Bus and high power .....	E-150	150 Amps		
			<b>Off-road &amp; Industrial</b>	
			24 Volt	E-80-24 80 Amps
			24 Volt	E-100-24 100 Amps
			32 Volt	E-75-32 75 Amps
			32 Volt	E-100-32 100 Amps

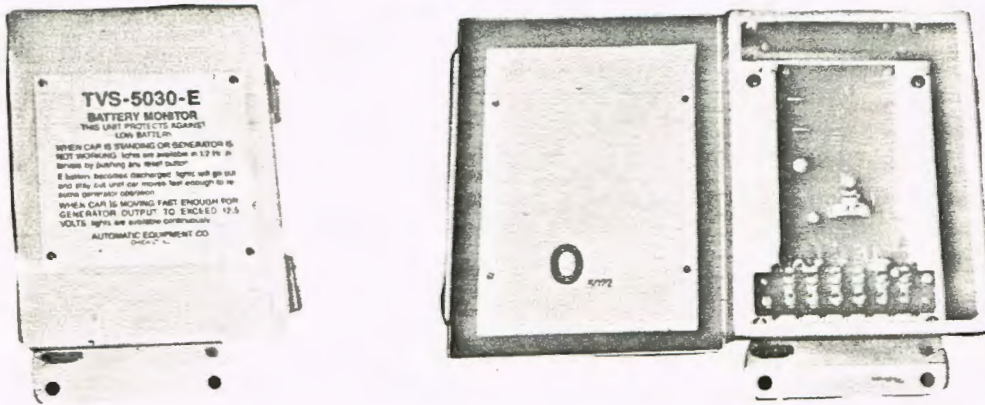


REV	REVISION	BY	DATE



REV	101050
DATE	11/15/50
BY	W.C. 310
CHKD	W.C. 310
APP'D	W.C. 310
MATERIAL	
NEW FIELD AND STARTUP	
MORGENTHAU CORP.	
LAWRENCE, MASS.	
7" BELT ENVELOPE	
E95/E95SC	
SIZE	E95/E95SC
D	

**TVS-5030-E BATTERY MONITOR**  
**INCORPORATES LOW VOLTAGE DISCONNECT & LIGHTING TIMER**  
**FOR CABOOSE BATTERY PROTECTION**



All solid state voltage sensing and timing control maintained in a unitized heavy gauge dust-proof box. Protection of the battery is provided in these features:

### **LOW VOLTAGE DISCONNECT**

When battery voltage declines to a specified level, lights and other non-essential loads are automatically disconnected. The disconnect level may be at the discharged level or somewhat higher to preserve the last bit of capacity for essential loads such as radio communication and marker lights. High accuracy (.1 volt) and repeatability of this setting are obtained by electronic balanced circuitry. Turning the load off before complete voltage collapse insures that the battery will be restored later to full use when charging occurs en route. Last minute change-outs of the battery later will thus be effectively eliminated.

### **LIGHTING TIMER**

Limits the use of lights (and other non-essential loads) to a specified usage time (nominally 1/2 hour) whenever the car is standing or moving slowly (below generator cut in speed). When the generator is operating the timer is nullified. During periods of standing, additional 1/2 hour time intervals can periodically be obtained as desired by the crew. If the caboose is unattended or is left at the end of the run with lights and other loads operating, all loads will be automatically disconnected and battery drain stopped. During layover and between runs, using the batteries needlessly is prevented. High batteries will be available for the new crew.

### **HIGH VOLTAGE DISCONNECT**

To protect lights and motors during periods when an uncontrolled voltage is applied to give a "quick charge", a high voltage cut-out automatically occurs (at 15 volts for a lead battery), but restores lights again when voltage falls below this value.

**AUTOMATIC EQUIPMENT CO.**

80 E. JACKSON BLVD.

(312) 427-0910

CHICAGO, ILLINOIS 60604

## VARIATIONS

The low voltage and timer sections can be combined in other ways to suit any particular operating condition. One such variation is to use the low voltage section to disconnect lights at a particular state of discharge. To obtain lights under such a low voltage condition, the crewman can obtain an interval of, say, 5 or 10 minutes by pressing a reset button.

## ANTI-JAMMING ASSURANCE

If the pushbutton is blocked closed, in an attempt to defeat the Timer Disconnect, only one time period is obtainable. The lights will then go out and stay out until the blocking is removed.

## DEPENDABILITY

Solid state circuits in both low voltage and timer sections insure long life and permanent settings.

The lighting load circuit is carried through heavy-duty contacts, capable of 30 amperes resistance load at 12 volts.

## INSTALLATION

All circuitry is contained in a NEMA #1 box, heavy gauge, dust-proof, oil-proof, with an external mounting flange. All devices and mountings are designed to withstand shock and vibration.

After mounting the box against a suitable partition or wall, electrical leads are brought in to a 6-terminal strip — two for battery, two for lights, and two for externally-mounted pushbutton leads.

## MAINTENANCE

Unitized circuitry allows for unit replacement of entire device which is mounted on a separable plate within the box. LED's are used to simplify inspections and setting of voltage and time values.

## AVAILABILITY OF UNITS

Units are available in enclosures or separately to suit your special conditions.

While a 12-Volt system is described here, the system with minor variation can be used on 12, 32 or 64 volt batteries. Settings are accurate and permanent, and can be verified by an electrician in seconds.

# Edison Nickel-Cadmium Storage Batteries

## MAINTENANCE INSTRUCTIONS

### General Information

1. Check specific gravity (see below).
2. Do not operate battery with improper electrolyte level (see "Electrolyte Levels").
3. Keep all battery connections clean and tight.
4. Keep a light coating of Edison Rust-inhibiting Oil on intercell connections, terminal posts, and exposed metal parts.
5. Check charging system for proper settings (see "Charging Date").
6. Observe cautions (see other side).

### Specific Gravity

1. Read and record the specific gravity of electrolyte in cells before addition of water.
2. Measure the distance between the electrolyte level and the top red line. If at top red line, no corrections necessary. To adjust solution level 1 inch or less above or below the red line: **Add** 5 points to specific gravity for each ¼ inch (6.4 mm) **above** the top red line; **subtract** 5 points for each ¼ inch (6.4 mm) **below** the top red line, except for ED-80 and ED-120 which require the addition or subtraction of 7 points. To correct specific gravity when electrolyte levels are more than 1 inch above or below recommended level, consult Table I in Bulletin 79045.
3. Check electrolyte temperature with a thermometer. Refer to that line of Table I which corresponds to the electrolyte temperature observed. The specific gravity of the electrolyte should be between the minimum and maximum gravities listed for that temperature.
4. If it does not fall within the minimum and maximum recommended gravity, renew electrolyte.

Operating batteries with an electrolyte specific gravity other than recommended may damage battery plates or adversely affect battery performance.

### Electrolyte Renewal

Dump the cells, without any preliminary discharge. Refill **immediately** with Edison Nickel-Cadmium Battery Renewal Electrolyte to the maximum electrolyte level line

of each cell. Then add 1 ounce (28 grams) of Edison Battery Oil where desired.

### CAUTION

Avoid short-circuiting the cells during the refilling operation. (See "Caustic Poison" warning on reverse side.)

### Electrolyte Levels

Make sure the electrolyte level is always maintained between the maximum (top) and minimum (bottom) electrolyte level lines inscribed in red on each battery case. Do not allow the electrolyte level to fall below the minimum mark. Do not fill above the top red line. In normal maintenance, only add distilled, deionized, or drinking water.

### Charging Data

Generally, one of two charge methods is utilized: (A) constant potential (from car buss) or (B) modified constant potential

(from separate battery charger) which is current limited. Whichever method is employed, it is important to note that at no time should the electrolyte be allowed to fall below minimum indication (plate tops).

Refer to Table 2 for nominal charge rates for each cell type.

The ED cells may be charged at a high rate providing the electrolyte temperature does not exceed 120 F (49 C).

It is recommended that a high rate of charge does not exceed 150 percent of the 7-hour rate. When charging at a high rate, the charge time should be reduced to equal the ampere-hour charge at the 7-hour rate. The cells may be charged at lower rates than the normal 7-hour charge rate as shown above. It will be necessary, when charging at lower rates, to extend the charge time to equal the ampere-hour charge at the 7-hour rate.

Table 1.  
All Type Cells

Temperature of Electrolyte (°F) (°C)	Nominal Recommended Gravity (solution at recommended level)	Minimum Recommended Gravity
120 49	1.174	1.144
110 43	1.177	1.147
100 38	1.180	1.150
90 32	1.182	1.152
80 27	1.185	1.155
70 21	1.187	1.157
60 16	1.190	1.160
50 10	1.192	1.162
40 4	1.195	1.165
30 -1	1.197	1.167
20 -7	1.200	1.170
10 -12	1.202	1.172
0 -18	1.205	1.175
-10 -23	1.207	1.177
-20 -29	1.210	1.180

Table 2.

Cell Type	Ampere-Hour Capacity at 5-Hour Discharge Rate*	Recommended On Charge Service Voltage At 77 F (25 C)	7-Hour Normal Charge Rate (amps)	Amount of Renewal Electrolyte Required	
				quarts	liters
ED-80	80	1.5	16	1.20	1.14
ED-120	120	1.5	24	1.87	1.78
ED-160	160	1.5	32	2.10	2.00
ED-240	240	1.5	48	3.36	3.19
ED-340	340	1.5	68	5.60	5.32
ED-400	400	1.5	80	4.20	3.99

\*To 1.10 volts per cell.

*These instructions do not claim to cover all details or variations in the equipment, procedure, or process described, nor to provide directions for meeting every possible contingency during installation, operation, or maintenance. When additional information is desired to satisfy a problem not covered sufficiently for the user's purpose, please contact your McGraw-Edison Power Systems Group sales engineer.*

## McGraw-Edison

Power Systems Group  
P.O. Box 28, Bloomfield, NJ 07003  
(201) 751-3700 Telex 139168

# Edison Nickel-Cadmium Storage Batteries

## For Rail or Subway Rolling Stock

### INSTALLATION INSTRUCTIONS

1. Check for shipment damage.
2. Batteries are shipped in a filled and charged condition. Check that the electrolyte level is at or near the top red line before putting cells into service.
3. Connect trays in series; positive terminal post of one tray to negative terminal post of next tray. The positive terminal post on Edison Nickel-Cadmium Storage Batteries has a red bushing around the post and a plus mark (+) molded into the cell cover. The negative terminal post has a black bushing around the post and a minus mark (-) molded into the cell cover.

4. Make sure all connections are clean and tight and vent caps are closed.
5. See that the battery is securely blocked within battery box.
6. Make sure that the charging system is set at the proper voltage for the battery (see "Charging Data" on other side).

### CAUTION

1. Use only the proper Edison Nickel-Cadmium Storage Battery Electrolyte.
2. Do not use tools, hydrometers, or utensils which have previously been used with lead-acid batteries. To do so may damage alkaline batteries.
3. Never allow an exposed flame or spark to come near the cells.
4. Do not lay tools or any metal parts on tops of the cells.
5. Disconnect all charging and load circuits before working on the battery.
6. Make sure vent caps are closed.

### CAUSTIC POISON

#### Keep Out of the Reach of Children

Edison Nickel-Cadmium Storage Batteries contain liquid caustic potash which is poisonous and corrosive and will burn or injure skin, eyes, and property. Do not take internally or allow to come in contact with one's person or property. In case of accidental personal injury, call a physician and apply the following antidotes:

**External: (Skin)** Flush immediately with plenty of water and apply wet compresses of household vinegar or boric acid solution. Call a physician. Do not apply ointments, oils or salves before treatment by a physician. **(Eyes)** Flush with plenty of water for at least 15 minutes and get immediate medical attention.

**Internal:** Drink vinegar or lemon juice mixed with an equal amount of water and call a physician immediately.

*These instructions do not claim to cover all details or variations in the equipment, procedure, or process described, nor to provide directions for meeting every possible contingency during installation, operation, or maintenance. When additional information is desired to satisfy a problem not covered sufficiently for the user's purpose, please contact your McGraw-Edison Power Systems Group sales engineer.*

# MATERIAL REQUISITION GENERAL

MAOIPW FORM 414005 5-73

THE WESTERN PACIFIC RAILROAD CO.

092

33

G

LOC.

DEPT.

STORE

CAR OR TRUCK NUMBER

55715

DATE ORDERED

DATE SHIPPED

1 / 13 / 81

7565

231

COST CTR.

T.E.C.

U4

21 02 8642

05

WAYBILL NUMBER

AFE NUMBER

JOINT FACILITY

PROJECT CONTR'L

LOCO NUMBER

SHIP TO:

J. R. McCaul Stockton Rip Track

WHY NEEDED AND OTHER REMARKS:

Caboose Program

ITEM DESCRIPTION

JOB

CLASS - ITEM NO.

UM

QUANT. ORDER

QUANT. SHIPPED

) #12 Copper Stranded (Minimum 19 Strands)

Polyethylene Jacked, PVC Insulated,

600 Volt Black Wire

451

Ft. 2,500

cc: Mr. J. R. McCaul

ORDERED BY

L. JOHNSTON

APPROVED BY AND DATE

*W. R. ...* 1/15/81

SHIPPED BY

REC'D BY

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092	33	G	TO PROGRAM: MAOIPW FORM 414005 5-73
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
55716	7565	231	
DATE ORDERED 1 / 13 / 81	DATE SHIPPED		
COST CTR.	T.E.C.		
04	05	WAYBILL NUMBER	
AFE NUMBER	JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER

SHIP TO:  
**J. R. McCaul, Stockton Rip Track**

WHY NEEDED AND OTHER REMARKS:

Caboose Program - Dayco Parts

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
1) End Cap (10") 30374-C-12	451		Ea	4	
2) End Cap (9") 30415-C-12	451		Ea	10	
3) Step Idler 30621-C-10	451		Ea	12	
4) Alternator Sheave 30706B	451		Ea	12	
5) Bushing 30393-A	451		Ea	48	
6) Mounting Bracket 30395-B	451		Ea	24	
7) Lug Bracket 30637-A	451		Ea	12	
8) Pads 30554-A	451		Ea	24	
9) Belts 4-6660	451		Pr	24	
10) Spring 30614-A	451		Set	12	

cc: Mr. J. R. McCaul

ORDERED BY D. L. JOHNSTON	APPROVED BY AND DATE <i>[Signature]</i> 1/15/81	SHIPPED BY	REC'D BY
------------------------------	--	------------	----------

USER/LOCATION J. R. MCCAUL	TODAY'S DATE	REQUIRED DATE	APPROVED BY & DATE	APPROVED BY & DATE
WHY NEEDED MR 55716 CABOOSE PROGRAM - DAYCO PARTS				

## The Western Pacific Railroad Company

c/o J. L. SUDDERTH  
STOREKEEPER  
833 - 8th STREET  
STOCKTON, CA 95206

INDUSTRIAL BEARING SALES  
52 NINTH STREET  
OAKLAND, CA 94607

STORE CODE

VENDOR CODE  
38650

IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**62023**  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE PAPERS, AND PACKAGING

PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS		BEST WAY		SHIPPING CHARGES		OTHER	
TERMS OF SALE	F.O.B. DESTINATION	F.O.B. POINT OF SHIPMENT	OTHER	PREPAY & INCL. IN INV.	PREPAY	COLLECT	OTHER
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P.O. DATE	MO. DAY YR.	TAX CODE	S/C	DISCOUNT TERMS	AFE NO.	DATE REQUIRED	DEPT. CODE
	01 23 81	D	V	2% 10, N 30			33
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE	
1	4	EA	END CAP (10") 30374-C-12		7565-231	277.35	
2	10	EA	END CAP (9") 30415-C-12		21-02-8642	277.35	
3	12	EA	STEP IDLER 30621-C-10			249.68	
4	12	EA	ALTERNATOR SHEAVE 30706B			ADVISE	
5	48	EA	BUSHING 30393-A			8.37	
6	24	EA	MOUNTING BRACKET 30395-B			41.18	
7	12	EA	LUG BRACKET 30637-A			ADVISE	
8	24	EA	PADS 30554-A			2.57	
9	24	PR	BELTS 4-6660			ADVISE	
10	12	SET	SPRING 30614-A			54.05	



*Complete*

CODES FOR A UNIT OF MEASURE									
BB - BARREL	CF - CUBIC FOOT	CM - HUNDRED WEIGHT	ET - KIT	PS - PACKAGE	SH - SHEET	TS - TROY OUNCE			
BF - BOARD MEASURE FEET	CC - C. CUBIC FEET	FA - EACH	LB - POUND	PK - P/BIN	SK - SACK	YD - LINEAL YARD			
BL - BOLL	CG - CUBIC GALLON	FE - LINEAL FOOT	LT - LITRE	PI - PINT	SP - SPPOOL				
BN - BUNDLE	CB - CUB	AL - GALLON	M - THOUSAND	QT - QUART	ST - SET				
BS - BUS	CS - CASKET	GB - GROSS	MF - THOUSAND BOARD FEET	RS - ROLL	SY - SQUARE YARD				
C - HUNDRED	CT - CARTON	GT - GROSS TON	MT - MET TON	RW - REAM	TU - TUBE				
CA - CASE	CY - CUBIC YARD	KG - KEG	QZ - QUINCE	SF - SQUARE FEET					

REMARKS

F.P. BROGDON, Director, Purchases & Material

COMMENTS:

cc: R. E. SHIDELER  
H. A. O'RULLIAN  
J. MCCAUL  
D. B. JENNINGS

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

092

33

G

MAOIPW FORM 414005 5-73

LOC.

DEPT.

STORE

CAR OR TRUCK NUMBER

55717

DATE ORDERED

DATE SHIPPED

1 / 13 / 81

7565

231

COST CTR.

T.E.C.

04

21 02

8642

05

WAYBILL NUMBER

A FE NUMBER

JOINT FACILITY

PROJECT CONTR'L

LOCO NUMBER

SHIP TO:

J. R. McCaul

Stockton Rip Track

WHY NEEDED AND OTHER REMARKS:

Caboose Program

ITEM DESCRIPTION

JOB

CLASS -- ITEM NO.

UM

QUANT. ORDER

QUANT. SHIPPED

2 Pole Heavy Duty 30 Amp Circuit

Breaker Mounted in NEMA Type 1 Enclosure

451

Ea

24

Standard Duty Push Button Station,

Momentary Contact Surface Mounted

Marked "Start" or "Reset"

451

Ea

36

1/2" EMT Thin Wall Conduit

451

Ft

600

One Hole Steel Snap Straps for 1/2" EMT

451

Ea

200

1/2" EMT Insulated Throat Compression

Type Connectors

451

Ea

200

1/2" FS Cast Box

451

Ea

12

Cover for FS Box for Single Toggle

Switch

451

Ea

12

20 Amp Single Pole Standard Toggle

Switch

451

Ea

12

Lamp Base Kenall 9056

451

Ea

12

Lamp Kenall 3663

451

Ea

12

Mr. J. R. McCaul

ORDERED BY

APPROVED BY AND DATE

SHIPPED BY

REC'D BY

L. JOHNSTON

*[Signature]* 4/15/81

ORIGINAL

# MATERIAL REQUISITION GENERAL

THE WESTERN PACIFIC RAILROAD CO.

55718

DATE ORDERED: 1 / 13 / 81  
DATE SHIPPED: / /

092 33 G  
LOC. DEPT. STORE  
7565 231  
COST CTR. T.E.C.

TO PROGRAM:  
MAOIPW FORM 414005 5-73  
CAR OR TRUCK NUMBER

04 AFE NUMBER JOINT FACILITY PROJECT CONTR'L LOCO NUMBER  
1 02 8642 05

SHIP TO: J. R. McCaul, Stockton Rip Track

WHY NEEDED AND OTHER REMARKS:  
Caboose Program

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
Electrodyne					
E-105 12 Volt					
Caboose Alternator	451		Ea	12	
Available from:					
Electrodyne Systems					
Pleasant Hill Road					
Scarborough, Maine 04074					
(800) 341-0242					
cc: Mr. J. R. McCaul					
-OR-					
AUTO ELECTRIC					
P.O. Box 921					
SPARKS, NV 89431					
702-358-1266					

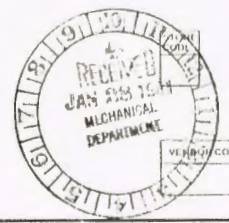
ORDERED BY: D. L. JOHNSTON  
APPROVED BY AND DATE: [Signature] 1/15/81  
SHIPPED BY: [Signature]  
REC'D BY:

USER: J. MCCAUL  
TODAY'S DATE: / /  
REQUISITION DATE: / /  
APPROVED BY & DATE: / /  
APPROVED BY & DATE: / /  
WHY NEEDED: MR 55718 CABOOSE PROGRAM S-Z, WP 426-460 SERIES

## The Western Pacific Railroad Company

SHIP TO: J. L. SUDDERTH  
STOREKEEPER  
833-8th STREET  
STOCKTON, CA 95206

VENDOR: AUTO DIESEL ELECTRIC  
P.O. BOX 921  
SPARKS, NEV. 89431



IMPORTANT  
THIS PURCHASE ORDER NUMBER  
**62646**  
MUST APPEAR ON ALL INVOICES, CORRESPONDENCE, PAPERS, AND PACKAGES  
PLEASE NOTE IF CHECKED  
CONFIRMING - DO NOT DUPLICATE  
STANDING ORDER  
BLANKET ORDER

SHIPPING INSTRUCTIONS: UPS

TERMS OF SALE: F.O.B. DESTINATION [X] F.O.B. POINT OF SHIPMENT [ ] OTHER [ ]  
SHIPPING CHARGES: PREPAY & INCL. IN INV. [X] PREPAY [ ] COLLECT [ ] OTHER [ ]

P.O. DATE: 1 / 27 / 81  
SEE BELOW 33

P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEAS.	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE
1	12	EA	E-105 ELECTRO DYNE 12 VOLT CABOOSE ALTERNATOR (FORMALLY E-95)		7565-231 project control	371.00

SHIP 4 EACH 2/1/81  
SHIP 4 EACH 4/1/81  
SHIP 4 EACH 6/1/81

*on hand now 5/29/81*

CODES FOR A UNIT OF MEASURE

BB - BARREL	CF - CUBIC FOOT	CM - HUNDRED WEIGHT	KT - KIT	PK - PACKAGE	SH - SHEET	TZ - TROY OUNCE
BP - BOARD MEASURE FEET	CC - C. CUBIC FEET	EA - EACH	LB - POUND	PA - PAIR	SB - SACK	YD - LINEAL YARD
BU - BUSH	CL - CLOSER	FL - LINEAL FOOT	LT - LOT	PT - PIECE	SP - SPOOL	
BN - BUNDLE	CM - CAN	GL - GALLON	M - THOUSAND	QT - QUART	ST - SET	
SE - BOX	CS - CARTON	GR - GROSS	MT - THOUSAND BOARD FEET	RL - ROLL	SS - SQUARE YARD	
C - HUNDRED	CT - CARTON	GI - GROSS IOM	NT - NET TON	PP - PEAN	TU - TUBE	
CS - CASE	CT - CUBIC YARD	RS - RES	DI - OUNCE	SF - SQUARE FEET		

REMARKS: F.P. BROGOON, Director, Purchases & Material

Per:

COMMENTS: CC: R. E. SHIDELER ✓  
H. A. O'RULLIAN  
D. B. JENNINGS - DESK FILE





MEMO/LOCATION: J. MCCAUL - STOCKTON  
 TODAY'S MAIL: \_\_\_\_\_  
 RECEIVED DATE: \_\_\_\_\_  
 APPROVED BY & DATE: \_\_\_\_\_  
 APPROVED BY & DATE: \_\_\_\_\_  
 WHY NEEDED: MR 55597 PROGRAM S-2, CABOOSE OVERHAUL WP426-460

**The Western Pacific Railroad Company**

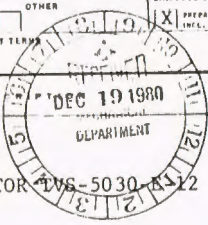
SHIP TO: J. L. SUDDERTH  
 STOREKEEPER  
 833 - 8th STREET  
 STOCKTON, CA 95206

VENDOR: AUTOMATIC EQUIPMENT COMPANY  
 80 EAST JACKSON BOULEVARD  
 CHICAGO, ILLINOIS 60604

**IMPORTANT**  
 THIS PURCHASE ORDER NUMBER:  
**62184**  
 MUST APPEAR ON ALL INVOICES FOR RESPONSIBILITY PAPERS AND PACKAGING

PLEASE NOTE IF CHECKED:  
 CONFIRMING - DO NOT DUPLICATE  
 STANDING ORDER  
 BLANKET ORDER

SHIPPING INSTRUCTIONS									
UNITED PARCEL SERVICE									
TERMS OF SALE	F.O.B. DESTINATION		F.O.B. POINT OF SHIPMENT		OTHER		SHIPPING CHARGES		OTHER
	MO	DAY	YR.	TAX	B/C	DISCOUNT TERMS	PREPAY	INCL. IN INV.	COLLECT
P.O. DATE	12	18	80	E	D				33
P.O. ITEM NO.	QUANTITY ORDERED	UNIT OF MEASURE	DESCRIPTION	W.P. CLASS ITEM	ACCOUNTING	UNIT PRICE			
1	12	EA	BATTERY MONITOR TVS-5030-12 VOLT		7565-231 PROJECT CONTROL 21-02-8642	195.00			



**CODES FOR A UNIT OF MEASURE**

BB - BOARD	CF - CUBIC FOOT	CW - HUNDRED WEIGHT	ST - ST	PC - PACKAGE	SH - SHEET	TZ - TROY OUNCE
BB - BOARD MEASURE FEET	CC - CUBIC FEET	FX - POUND	SW - POUND	PK - PACK	SS - SHEET	YD - LINEAL YARD
BL - BOLL	CL - CUBIC YARD	FX - POUND	LT - LBS	PI - PINE	SP - SPOOL	
BS - BUNDLE	CM - CUBIC METER	GL - GALLON	W - WEIGHT	QT - QUART	ST - SQUARE	
BS - BOLL	CD - CUBIC DECI-METER	GR - GROSS	WT - WEIGHT	ST - SQUARE	TD - TON	
C - HUNDRED	CF - CUBIC FEET	GT - GROSS TON	WT - WEIGHT	WT - WEIGHT	TD - TON	
CL - CASE	CF - CUBIC FEET	GT - GROSS TON	WT - WEIGHT	WT - WEIGHT	TD - TON	

F.P. BROGDON, Director, Purchases & Material  
 Per: \_\_\_\_\_

COMMENTS:  
 cc: R. E. SHIDELER  
 H. A. O'RULLIAN  
 J. MCCAUL  
 D. B. JENNINGS - DESK FILE

**MATERIAL REQUISITION GENERAL**

THE WESTERN PACIFIC RAILROAD CO.

092	33	TO PROGRAM: MAOIPW FORM 414005 5-73	
LOC.	DEPT.	STORE	CAR OR TRUCK NUMBER
55597	12/16/80	7565	231
DATE ORDERED	DATE SHIPPED	COST CTR.	T.E.C.
04	21 02	8642	05
AF NUMBER	JOINT FACILITY	PROJECT CONTR'L	LOCO NUMBER
SHIP TO: JIM MCCAUL STOCKTON			
WHY NEEDED AND OTHER REMARKS:			

MM 8642

ITEM DESCRIPTION	JOB	CLASS - ITEM NO.	UM	QUANT. ORDER	QUANT. SHIPPED
BATTERY MONITOR					
TVS-5030-E			EA	12	
AVAILABLE FROM:					
AUTOMATIC EQUIPMENT CO.					
80 EAST JACKSON BLVD.					
CHICAGO, ILL 60604					
(312) 427-0910					

DATE RECEIVED BY: R. E. Shideler 12/18/80  
 APPROVED BY AND DATE: [Signature] 12/18/80  
 SHIPPED BY: \_\_\_\_\_  
 REC'D BY: \_\_\_\_\_

December 16, 1980

R.E. Shideler:

Dayco caboose alternator drive problems which result in poor performance:

1. Design (10.5 to 1 ratio)
  - a) Large step pulley can hit floor causing loss of belts.
  - b) Max. design speed, 63 mph. Speeds above this may cause alternator rotor and bearing failures.
  - c) Non-standard design causes improper repairs off line.
2. Installation
  - a) Sheeves not properly aligned, causing belt loss.
  - b) Guide post wear plates not properly positioned causing improper sheeve alignment.
  - c) Unit not located properly about truck centerline, causing improper spring tension resulting in belt loss.
  - d) Wiring not properly supported.
  - e) Old style step sheeve bearing difficult to adjust properly.
3. Maintenance
  - a) Wrong belts.
  - b) Worn out guides and bushings.
  - c) Belts missing.
  - d) Tension springs missing.
  - e) Tie-down bolts missing.
  - f) Tensioning jack screws missing.
  - g) Inadequate belt tension (kept loose to extend alternator bearing life).
  - h) Wires frayed and terminals loose.
  - i) Sheeves with chipped flanges.
  - j) No maintenance program on step sheeve bearings.
4. Leece Neville Alternator
  - a) Inadequate front bearing.
  - b) Open to dirt.
  - c) Slip ring and brush problems.
  - d) Difficult to rebuild.
  - e) Requires expensive external regulator.

Change  
to  
9:1

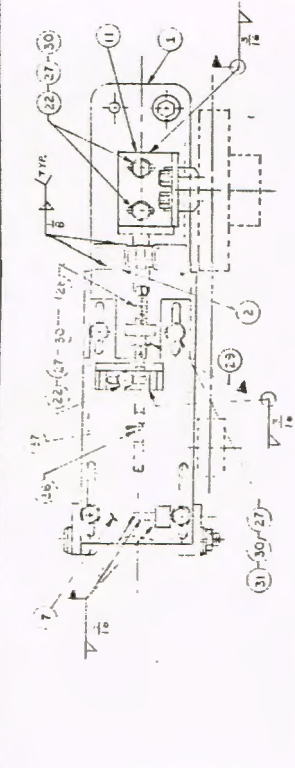
Change  
to  
Electrodyn  
E-105

I recommend that we change to a 9 to 1 ratio drive unit, the electrodyne E-105 alternator and establish maintenance standards.

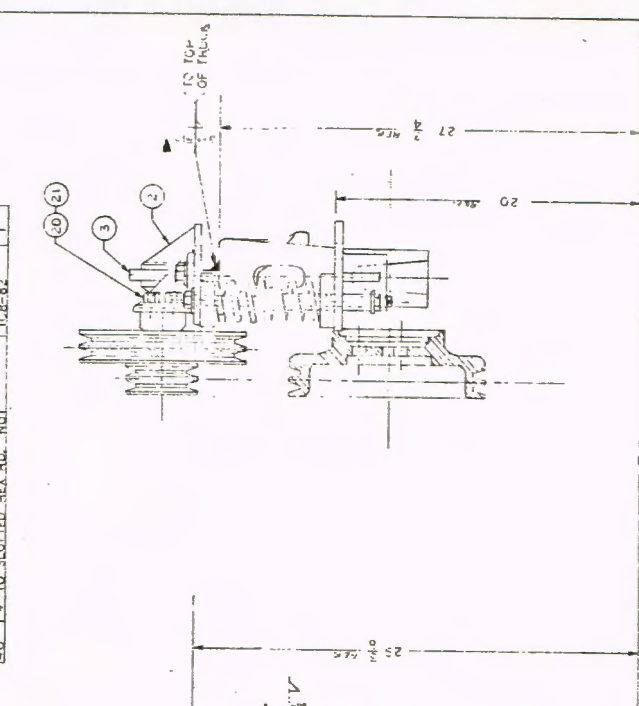
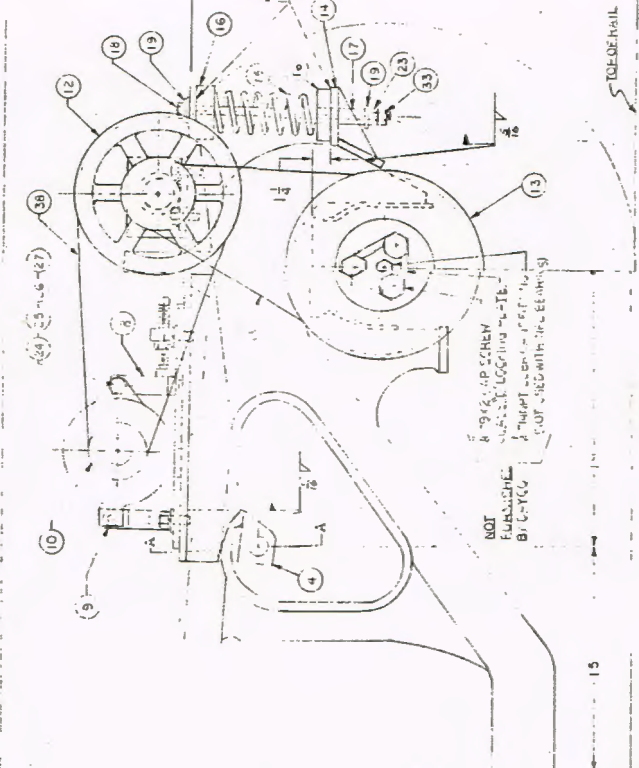
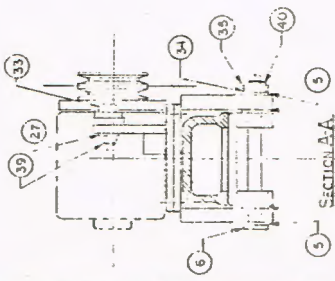
D.L. Johnston

RELATED TO NIM864E.

ITEM	DESCRIPTION	QTY	REF. NO.
1	BRACKET	1	100-10
2	GUIDE BRACKET	2	100-11
3	GUIDE	2	100-12
4	ROCKING PLATE PIVOT BRACKET	1	100-13
5	ROCKING PLATE PIVOT	1	100-14
6	ROCKING PLATE PIVOT BUSHING	1	100-15
7	ROCKING PLATE PIVOT BUSHING	1	100-16
8	ROCKING PLATE PIVOT BUSHING	1	100-17
9	ROCKING PLATE PIVOT BUSHING	1	100-18
10	ROCKING PLATE PIVOT BUSHING	1	100-19
11	ROCKING PLATE PIVOT BUSHING	1	100-20
12	ROCKING PLATE PIVOT BUSHING	1	100-21
13	ROCKING PLATE PIVOT BUSHING	1	100-22
14	ROCKING PLATE PIVOT BUSHING	1	100-23
15	ROCKING PLATE PIVOT BUSHING	1	100-24
16	ROCKING PLATE PIVOT BUSHING	1	100-25
17	ROCKING PLATE PIVOT BUSHING	1	100-26
18	ROCKING PLATE PIVOT BUSHING	1	100-27
19	ROCKING PLATE PIVOT BUSHING	1	100-28
20	ROCKING PLATE PIVOT BUSHING	1	100-29
21	ROCKING PLATE PIVOT BUSHING	1	100-30
22	ROCKING PLATE PIVOT BUSHING	1	100-31
23	ROCKING PLATE PIVOT BUSHING	1	100-32
24	ROCKING PLATE PIVOT BUSHING	1	100-33
25	ROCKING PLATE PIVOT BUSHING	1	100-34
26	ROCKING PLATE PIVOT BUSHING	1	100-35
27	ROCKING PLATE PIVOT BUSHING	1	100-36
28	ROCKING PLATE PIVOT BUSHING	1	100-37
29	ROCKING PLATE PIVOT BUSHING	1	100-38
30	ROCKING PLATE PIVOT BUSHING	1	100-39
31	ROCKING PLATE PIVOT BUSHING	1	100-40
32	ROCKING PLATE PIVOT BUSHING	1	100-41
33	ROCKING PLATE PIVOT BUSHING	1	100-42
34	ROCKING PLATE PIVOT BUSHING	1	100-43
35	ROCKING PLATE PIVOT BUSHING	1	100-44
36	ROCKING PLATE PIVOT BUSHING	1	100-45
37	ROCKING PLATE PIVOT BUSHING	1	100-46
38	ROCKING PLATE PIVOT BUSHING	1	100-47
39	ROCKING PLATE PIVOT BUSHING	1	100-48
40	ROCKING PLATE PIVOT BUSHING	1	100-49



ITEM	DESCRIPTION	QTY	REF. NO.
1	ROCKING PLATE PIVOT BUSHING	1	100-10
2	ROCKING PLATE PIVOT BUSHING	1	100-11
3	ROCKING PLATE PIVOT BUSHING	1	100-12
4	ROCKING PLATE PIVOT BUSHING	1	100-13
5	ROCKING PLATE PIVOT BUSHING	1	100-14
6	ROCKING PLATE PIVOT BUSHING	1	100-15
7	ROCKING PLATE PIVOT BUSHING	1	100-16
8	ROCKING PLATE PIVOT BUSHING	1	100-17
9	ROCKING PLATE PIVOT BUSHING	1	100-18
10	ROCKING PLATE PIVOT BUSHING	1	100-19
11	ROCKING PLATE PIVOT BUSHING	1	100-20
12	ROCKING PLATE PIVOT BUSHING	1	100-21
13	ROCKING PLATE PIVOT BUSHING	1	100-22
14	ROCKING PLATE PIVOT BUSHING	1	100-23
15	ROCKING PLATE PIVOT BUSHING	1	100-24
16	ROCKING PLATE PIVOT BUSHING	1	100-25
17	ROCKING PLATE PIVOT BUSHING	1	100-26
18	ROCKING PLATE PIVOT BUSHING	1	100-27
19	ROCKING PLATE PIVOT BUSHING	1	100-28
20	ROCKING PLATE PIVOT BUSHING	1	100-29
21	ROCKING PLATE PIVOT BUSHING	1	100-30
22	ROCKING PLATE PIVOT BUSHING	1	100-31
23	ROCKING PLATE PIVOT BUSHING	1	100-32
24	ROCKING PLATE PIVOT BUSHING	1	100-33
25	ROCKING PLATE PIVOT BUSHING	1	100-34
26	ROCKING PLATE PIVOT BUSHING	1	100-35
27	ROCKING PLATE PIVOT BUSHING	1	100-36
28	ROCKING PLATE PIVOT BUSHING	1	100-37
29	ROCKING PLATE PIVOT BUSHING	1	100-38
30	ROCKING PLATE PIVOT BUSHING	1	100-39
31	ROCKING PLATE PIVOT BUSHING	1	100-40
32	ROCKING PLATE PIVOT BUSHING	1	100-41
33	ROCKING PLATE PIVOT BUSHING	1	100-42
34	ROCKING PLATE PIVOT BUSHING	1	100-43
35	ROCKING PLATE PIVOT BUSHING	1	100-44
36	ROCKING PLATE PIVOT BUSHING	1	100-45
37	ROCKING PLATE PIVOT BUSHING	1	100-46
38	ROCKING PLATE PIVOT BUSHING	1	100-47
39	ROCKING PLATE PIVOT BUSHING	1	100-48
40	ROCKING PLATE PIVOT BUSHING	1	100-49



SECTION A-A

SECTION B-B

SECTION C-C

REDUCED COPY FOR REFERENCE.  
 ORIGINAL 22" X 34" PRINT  
 ON HAND IN CAR FOREMANS  
 OFFICE - STOCKTON

RECEIVED  
 WYOMING NO. E.A.  
 HARDWARE KIT NO. 30756-A

DAYCO  
 130756-A  
 130756-D

10 TENTH ST. STOCKTON, CA



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