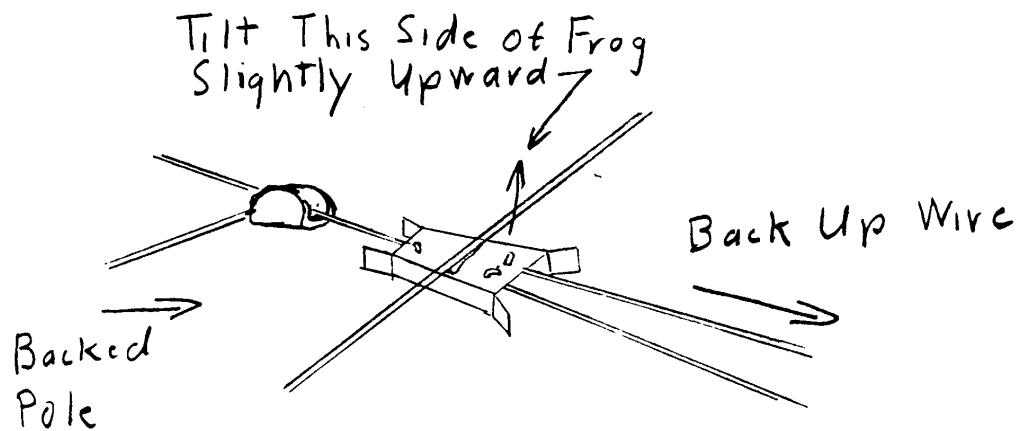


Setting One Way Back Up Direction for Ordinary Wire Frog



Can Set a Tilted Frog to Provide
One Back Up Direction Yet Still
Go Properly on Either Wire With
The Pole Correctly Raked. Difficult
to Adjust

Usually The Back Up Direction and
Forward Direction Coincide. Easy to
Do

SUGGESTIONS FOR IMPROVED OPERATION DURING SWITCHING

KEEP TROLLEY WIRE TIGHT

SHOE SHAPE FOR BACKING UP

HANGER DESIGN

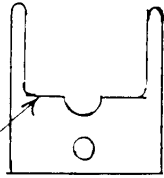
OVERSIZE GUARD RAILS

CAR WEIGHT

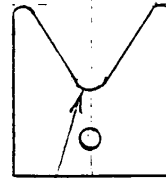
DIRT BUILD UP IN WHEEL TREADS

LUBRICATE WHEELS AND COUPLER MECHANISM WITH GRAPHITE

Trolley Shoe Shape for Easy Back Up

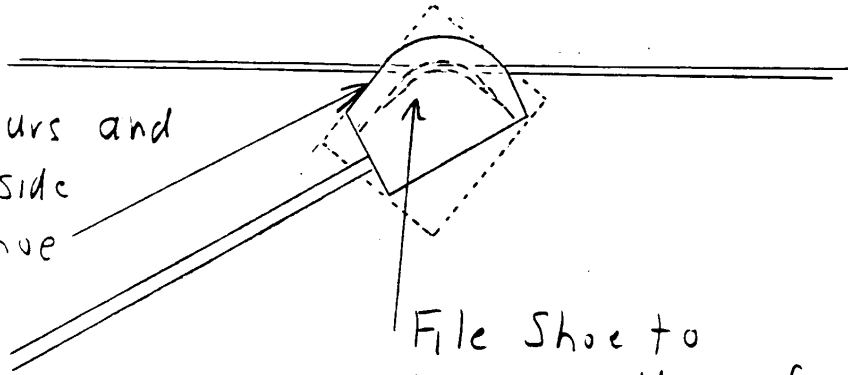


Keep Shoe Bottom Square
With Maximum Width
Small Groove To Keep
Wire Centered



V Groove Will
Catch on Hangers

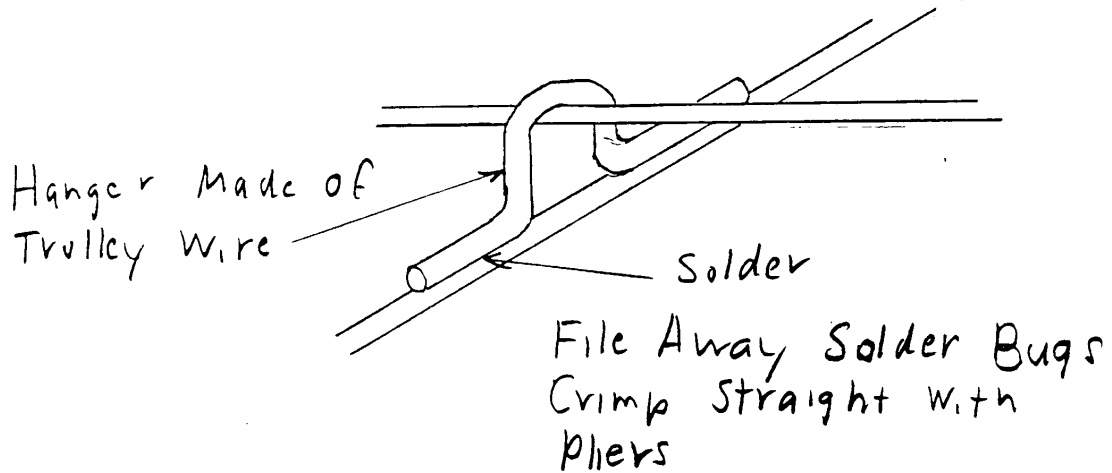
File Away Burs and
Feather Outside
Edges of Shoe



File Shoe to
Maximize Use of
Curved Top

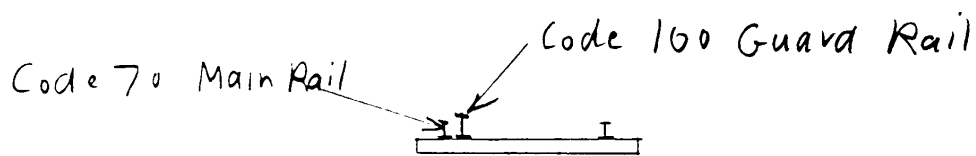
Charles C. Robinson Boston Trolley Meet April 9, 1994

28
Narrow Hangers Are Less Likely to Catch

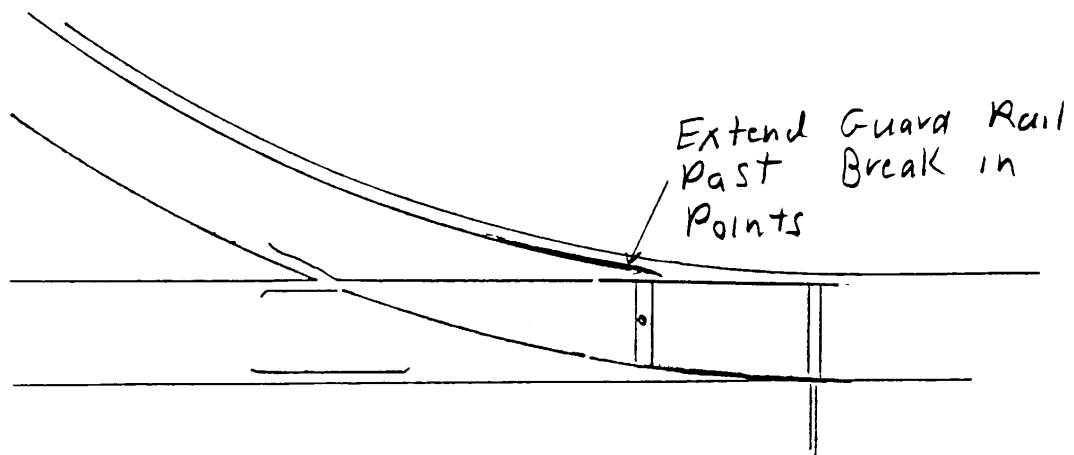


Charles C Robinson Boston Trolley Meet Apr. 19, 1994

Use Guard Rails on Inside of Sharp
Curves Where Freight Trains Move
Recommend Oversized Guard Rails



All Switches with Sharp Curves Should Have
Extended Guard Rails



Charles C. Robinson Boston Trolley Meet April 9, 1994

Car Weight - Heavy

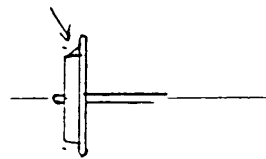
150-175 grams

5.3-6.2 ounces

5-6 cars can be pulled up 3.0% grade by typical HO 8 wheel drive freight motor or locomotive

Keep Wheels Clean

Dirt Build Up On Tread



Remove Dirt With
Small Screw
Driver Blade

Lubricate with Graphite

Coupler mechanism including
draft gear

Truck journals - Keeps train forces
down

Hands Off Switching of Trolley Freight Trains

APPENDIX

Graphs for $\exists C$ for truck centers 20 and 40 feet.

Track radius 65 feet.

(Graphs for L_1/L_2 and $\exists C$ for truck center 30 feet and track radius 65 feet are included in first section of handout.)

Bill Schopp's series of articles on trolley freight from February and March 1946 Model Craftsman (Reproduced with permission of RMC)

Ideas on arranging track work, spring switches and tilting wire frog for a preset back up direction through the frog.

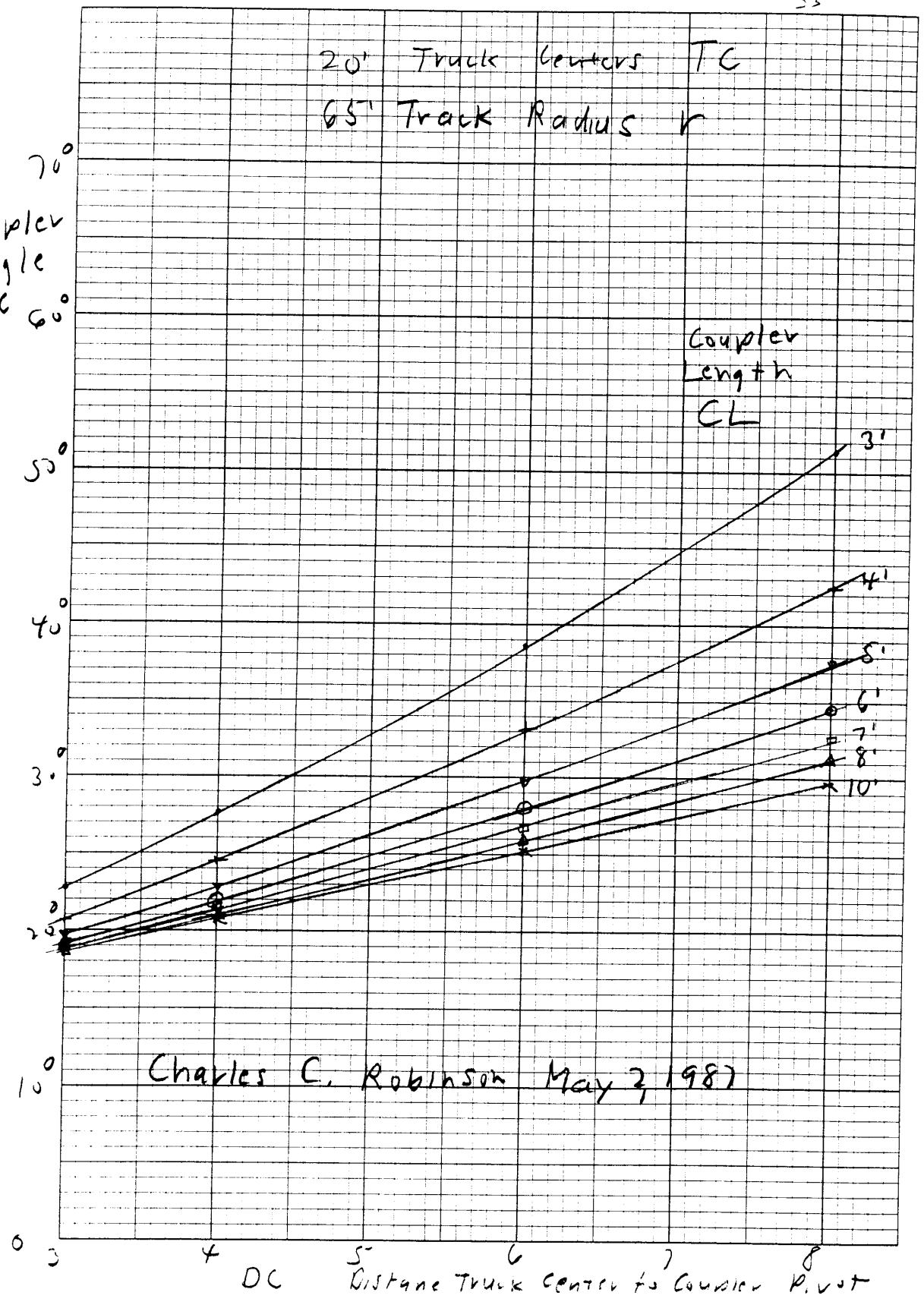
20' Track Centers TC
65' Track Radius R

Coupler Angle
 $\angle C$

Coupler Length
CL

46 0620

K-E 10 X 10 TO 1-1/4 INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.



Charles C. Robinson May 3, 1987

DC Distance Truck Center to Coupler Pivot

46 0620

K-E 10 X 10 TO 1-1/4 INCH • / X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

