A large, light blue watermark of the Santa Fe logo is centered in the background. It features a stylized 'S' and 'F' with the words 'Santa Fe' written across the middle in a serif font.

**Detailing, modifying and kit
bashing heavyweight
passenger and head end cars**

TBD

Agenda

- Introduction
- Prototype Cars
- Resources and research
- Construction Techniques
- Results
- Impressions
- Closing

Introduction

● Why detail, modify or kitbash?

- Interest in passenger and head-end cars, 1948-1951
- Desire for an accurate consists (*The Chief, Grand Canyon Limited, Fast Mail Express* and other trains)
- Can't afford brass
- Plastic models need work to be "accurate"
- Kits not available
- Enjoy model building
- Personal satisfaction in a job well done

Prototype cars

- **Heavyweight Pullman cars:**
 - 1456 – 1463 series Diner
 - 57 – 79 series RPO
 - 1300 series Baggage/Bar/Dorm/Lounge
 - 2024 series Baggage and Mail Combine

Detailing and modifying an existing car: 1456 – 1463 series diner

- Cars delivered in 1922
- All steam ejection air conditioned (SEAC) in 1930's
- Assigned to various trains including *California Limited*, *Grand Canyon Limited(?)* and others
- All shadowed lined in the late 40's
- 1458 at San Diego showing accumulation of soot on roof



Detailing and modifying an existing car: 1456 – 1463 series diner

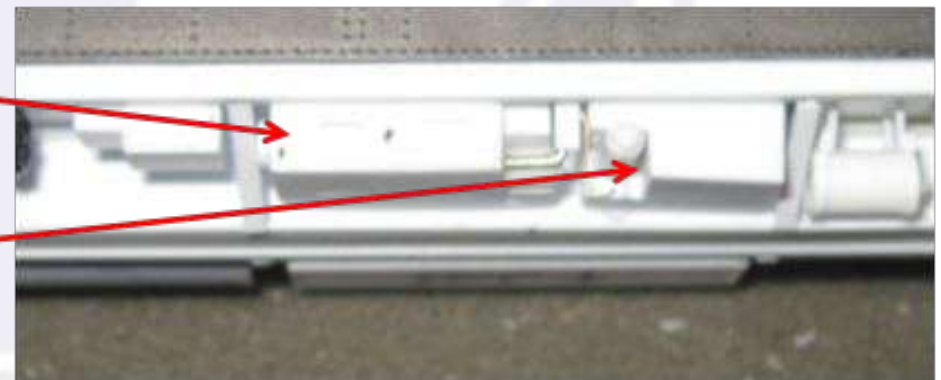
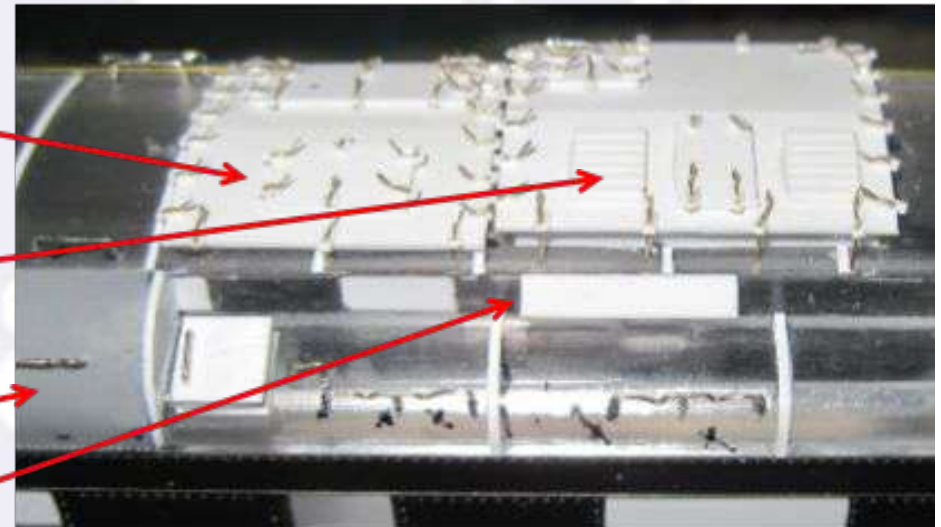
- AHM/Rivarossi model is the donor car
- Refer to Steve Sandifer article for inspiration:
<http://www.trainweb.org/jssand/Protot/RivHDiner/RivHDinPg.htm>
- Accurate length and window layout
- Changes:
 - Add Steam Ejection Air Conditioning details
 - Plate over upper portion of windows
 - Plate over louvered vents
 - Revise underbody and add new center channel
 - Remove vertical sash in kitchen area
 - Add “Santa Fe” sill



Detailing and modifying an existing car: 1456 – 1463 series diner

- Steam Ejection Air Conditioning (SEAC) details:

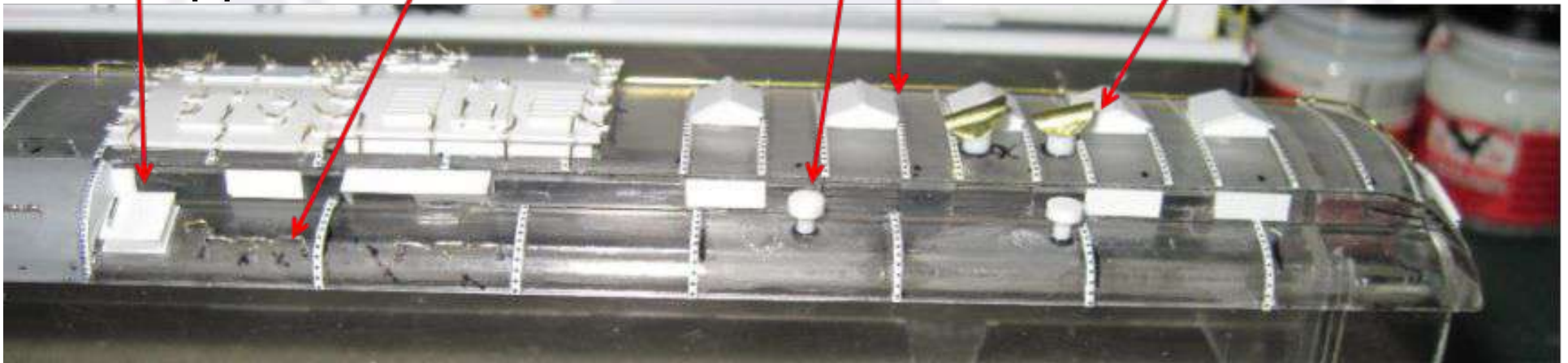
- A/C Unit Roof Hatch (scratch built base is 0.020" by scale ~5' x 5')
- Refrigeration Unit Hatch (scratch built – taller base is 0.040" by scale ~6' x 5')
- A/C Duct (NERS)
- Air Vent (scratch built)
- Condenser Water Pump and Valve Box (scratch built)
- Valve Closet (scratch built)



- All dimensions courtesy of the

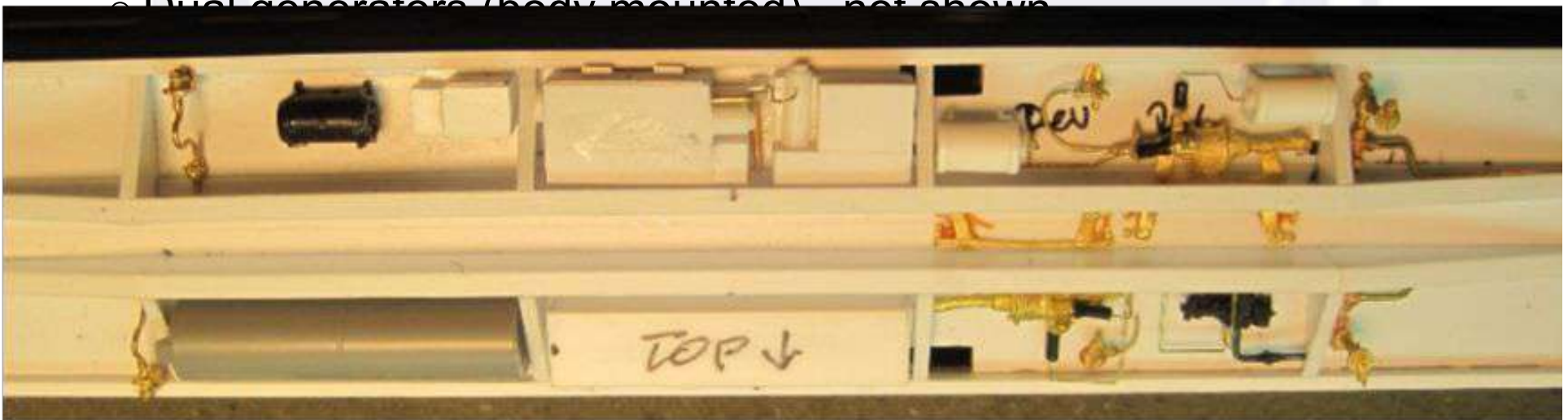
Detailing and modifying an existing car: 1456 – 1463 series diner

- Kitchen vents
 - Wind vane vent - 0.005" brass stock circle made by paper punch
 - Others vents are also scratch built
- Apply rivet strips (0.005 styrene strips)
- Ice hatches
- Re-bend 24" ladder grabs, lengthen and add center support



Detailing and modifying an existing car: 1456 – 1463 series diner

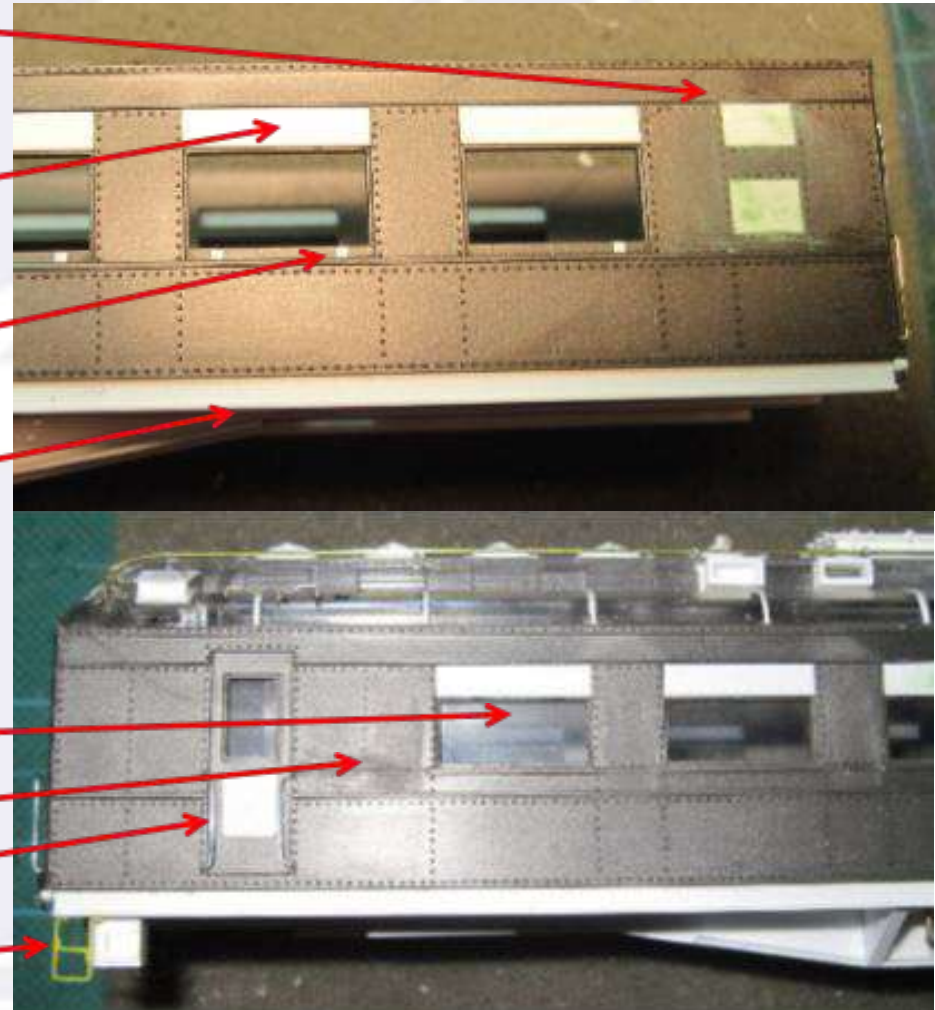
- Underbody:
 - Cut out old floor and install new floor
 - Water tank (NERS)
 - Battery box (scratch built)
 - Center channel scratch built from 5/16 styrene
 - Brake reservoirs (scratch built)
 - Detail Parts (vapor traps, A/C receptacles, brake plumbing – Cal Scale)
 - Dual generators (body mounted) – not shown



Detailing and modifying an existing car: 1456 – 1463 series diner

● Body

- Plate over vestibule vents (0.010" sized to fit), putty and sand
- Plate upper window transoms (0.010" x 0.125" sized to fit)
- Add window tabs (0.010 x 0.020 strips)
- Remove existing "sill" and replace:
 - 0.030" x 0.10 strip with 0.010" x 0.040" cap
- Remove vertical divider in kitchen windows
- Remove kitchen horizontal stripe
- Add plate on kitchen door
- Add grabs and steps



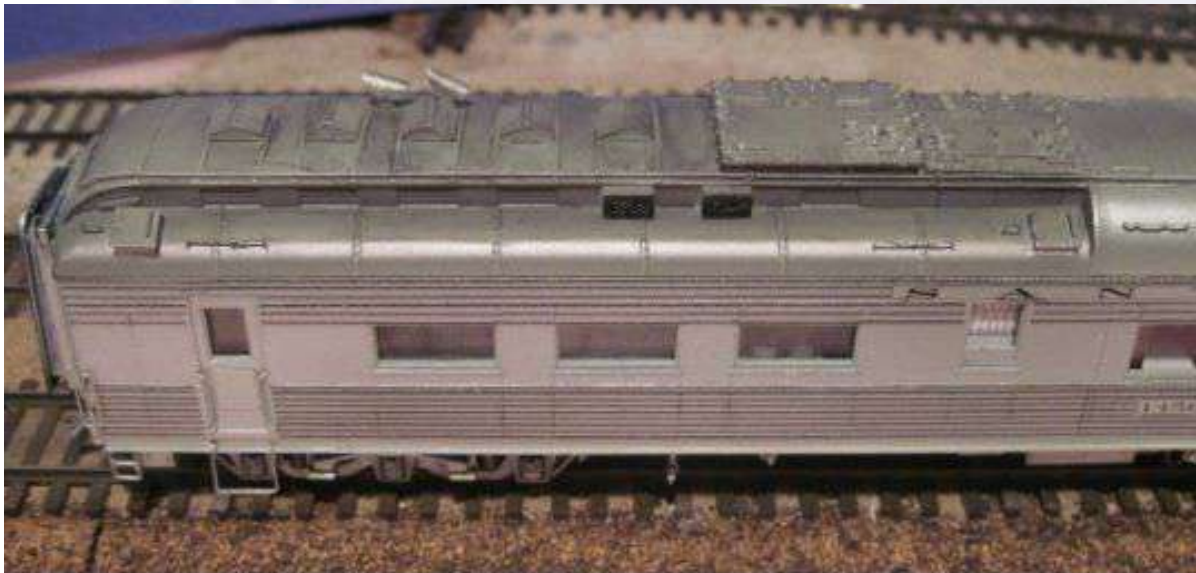
Detailing and modifying an existing car: 1456 – 1463 series diner

- Scratch build interior wall (reference Dining and Beverage Cars book for floor layout)
- Scratch built tables, chairs, galley and table
- Photocopy curtains and place settings



Detailing and modifying an existing car: 1456 – 1463 series diner

- Add couplers, lift bars, steam and brake lines
- Primer and paint (Polly S Aluminum)
- Shadow line decals (Microscale)
- Weather



Modifying an existing car: 1456 – 1463 series diner

- Completed car



Modifying an existing car:

57 – 79 series RPO

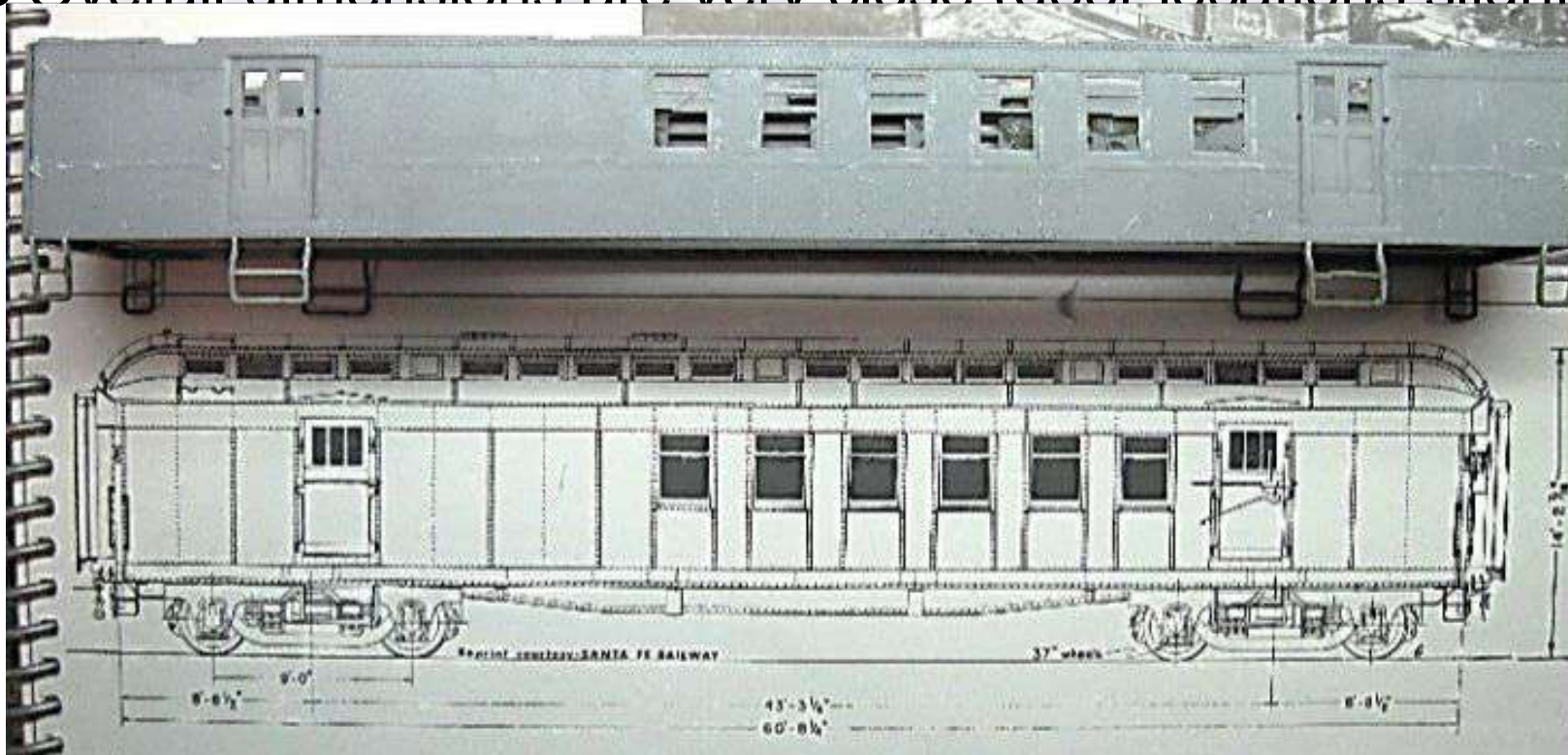
- 57-79 series delivered between 1924 and 1928
- Assigned to *Fast Mail Express* and many passenger trains
- One car, #75 received shadow line paint
- Rumored to be the subject of a future SFRH&MS kit car



Modifying an existing car:

57 – 79 series 60' RPO

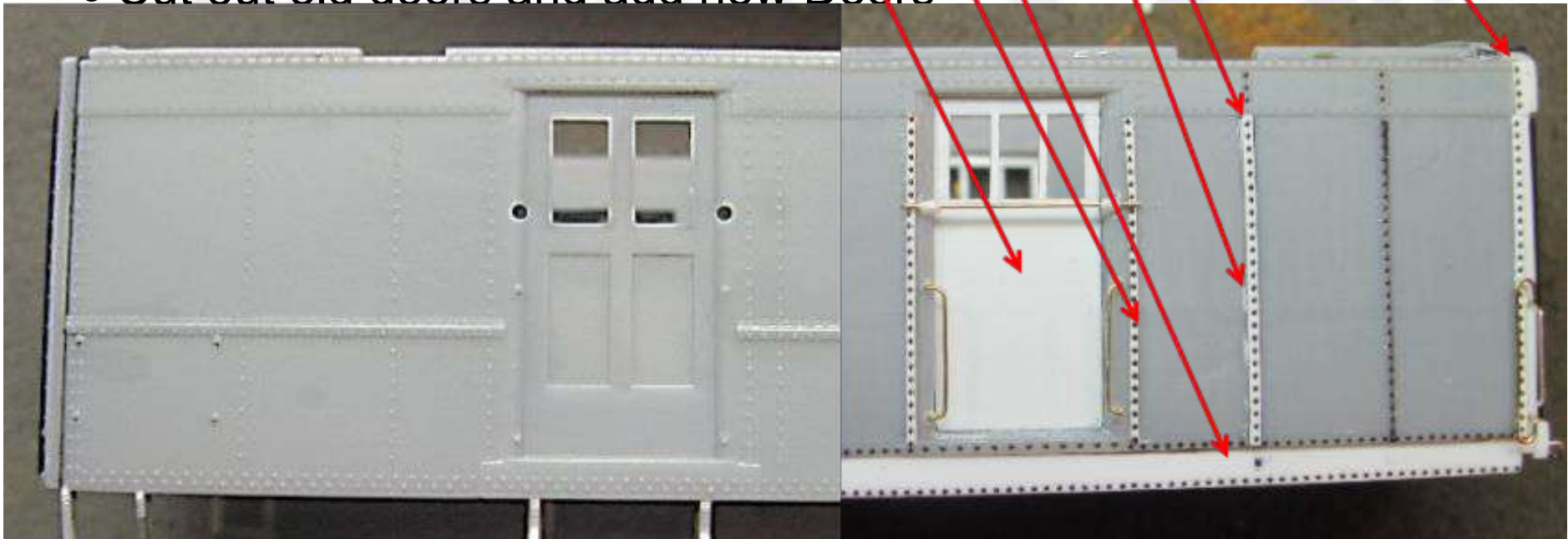
- Original model (Walthers Trainline):
 - Horizontal beltline
 - 6-wheel trucks
 - Doors, ends and sill are wrong
- Overall dimensions are very close (door locations slightly off).



Modifying an existing car:

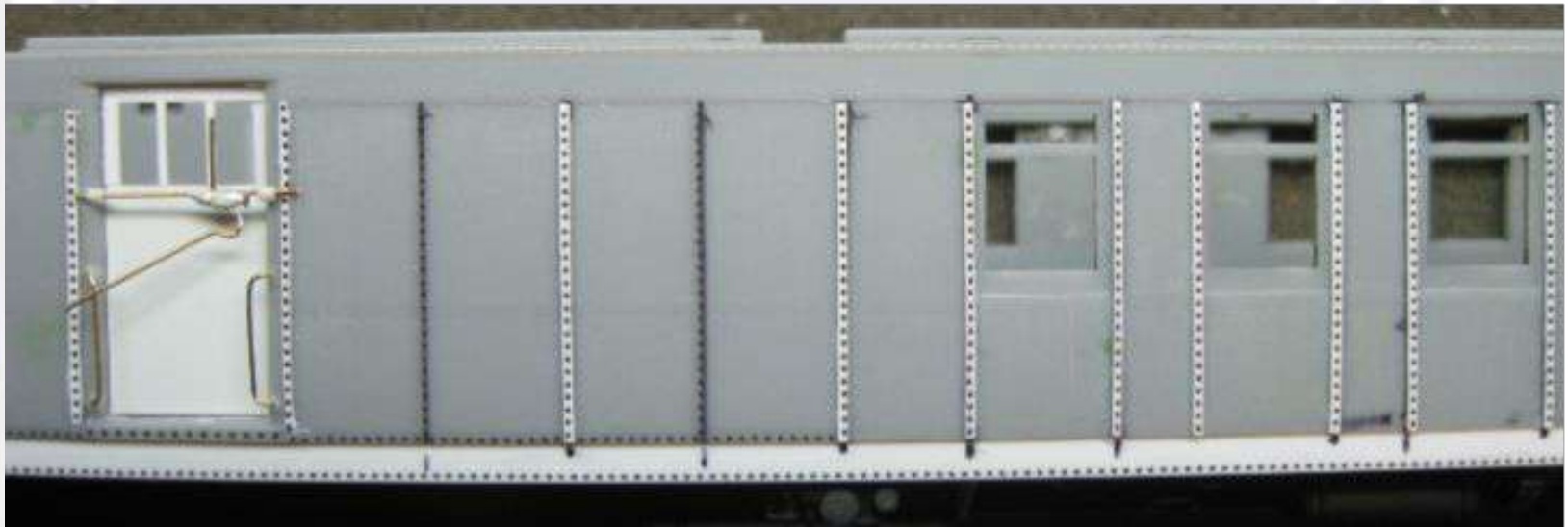
57 – 79 series 60' RPO

- Remove car ends and scratch build new styrene ends
- Apply vertical rivet strips from 0.005" styrene
- Remove beltline, vertical rivets and sand body
- Sand/cut bottom and add "Santa Fe" sill
- Apply Archer Transfer 5/8" rivet decals
Should be a double row of rivets (shhh)
- Cut out old doors and add new Doors



Modifying an existing car: 57 – 79 series 60' RPO

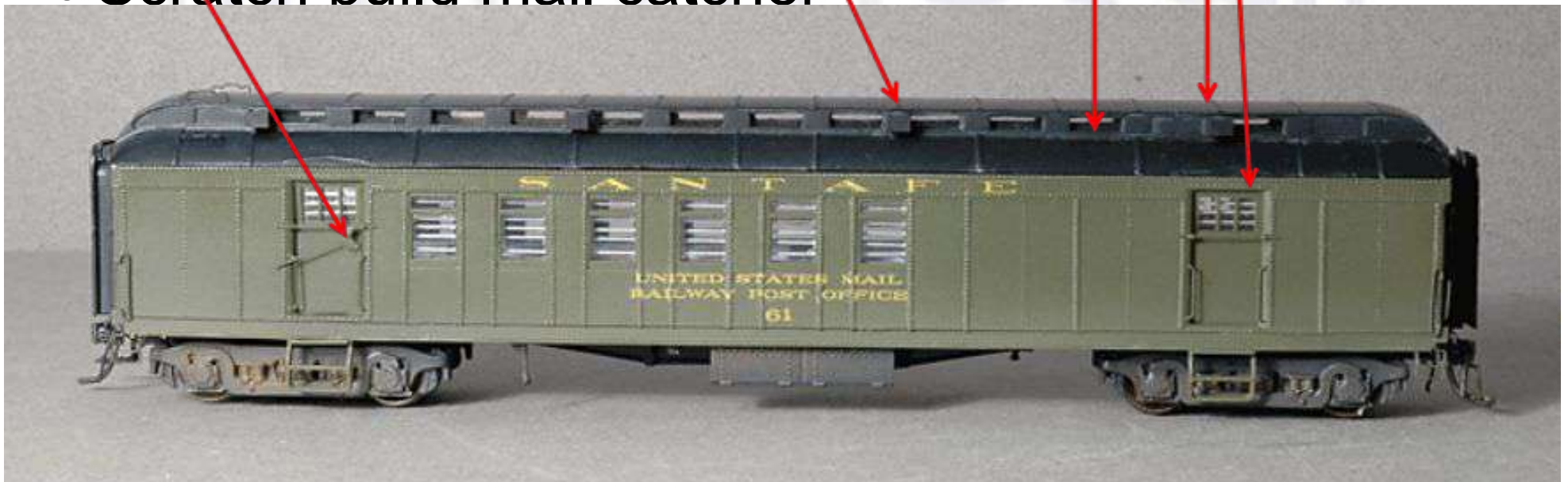
- Vertical rivet strips:
 - Cut from 0.005" styrene
 - Use a paper cutter and don't cut using a blade (unless you want curly strips)
 - Use a square to pencil/mark vertical lines



Modifying an existing car:

57 – 79 series 60' RPO

- Add security bars (painted 0.018 brass wire)
- Apply rivet strips (0.005" styrene and decal)
- Open up clerestory and glaze windows
- Add scratch built roof vents
- Scratch build mail catcher



Modifying an existing car:

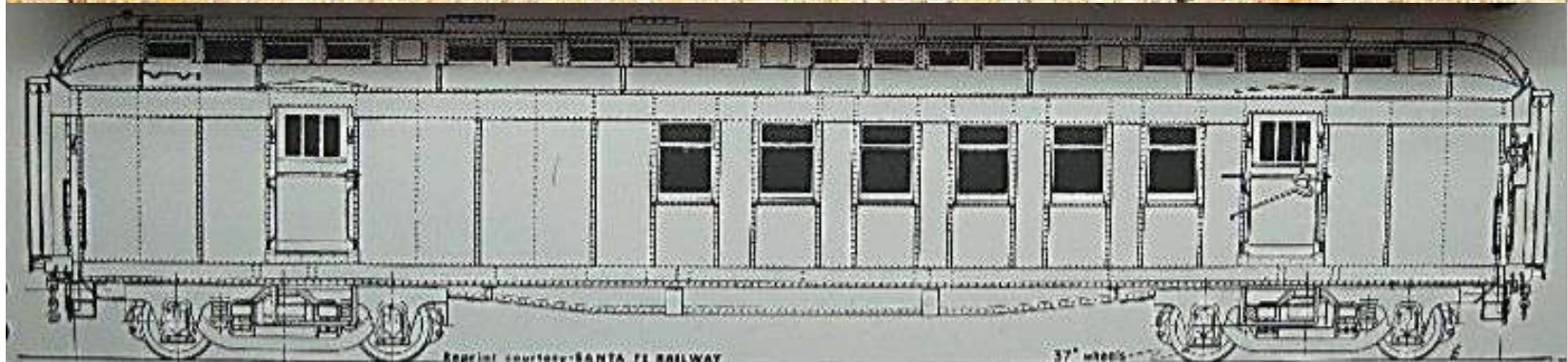
57 – 79 series 60' RPO

- Add couplers, signal and brake wheels and coupler bars
- Branchline 4wheel express trucks & 36" wheels
- Add truck mounted generator
- Paint, decal and weather



Modifying an existing car:

60' RPO comparison



Kitbash Techniques:

1300 series bag/bar/dorm/lounge

- Built in 1927 as buffet library cars
- Converted to lounge dorm cars
- Re-converted back to baggage/bar/dorm/lounge in 1948
- Assigned to *The Chief* and received shadow line paint
- 1303 below in two-tone gray



Kitbash Techniques:

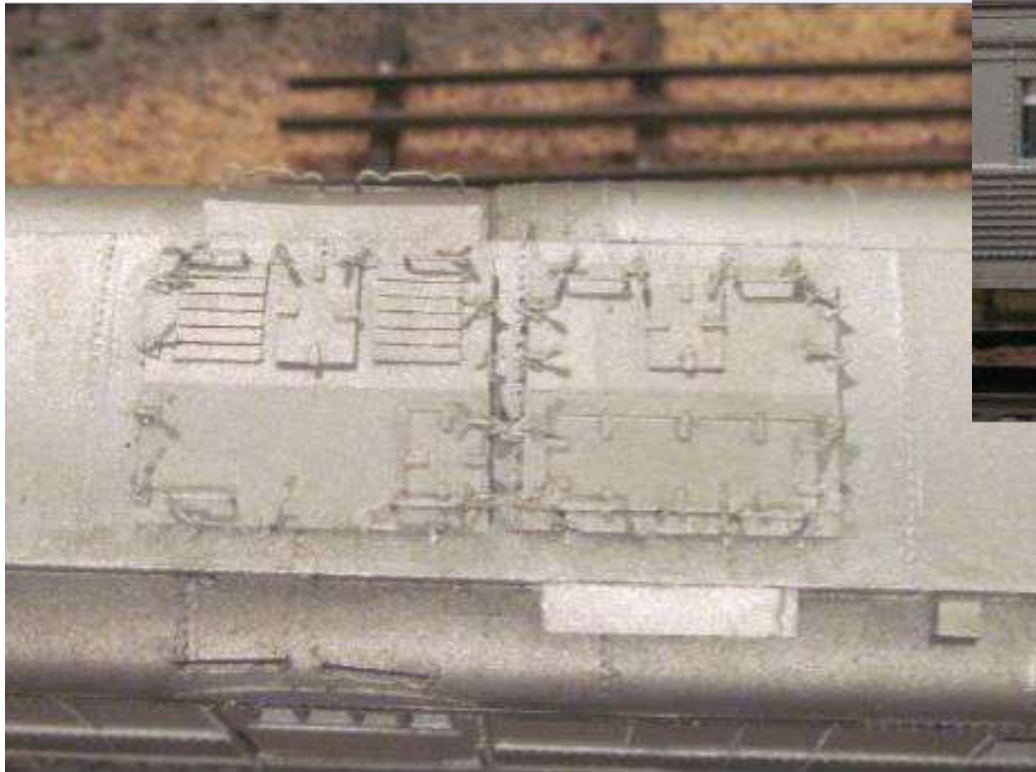
1300 series bag/bar/dorm/lounge

- Reference: Warbonnet Q4 2000 article, and the Dining and Beverage Cars of the Santa Fe book
- Need 2 Rivarossi combine cars
- Shorten baggage door (splice)
- Cut open additional windows and frame to match
- Add A/C duct (New England Rail Service)
- Scratch build steam ejection air conditioning (SEAC) roof and underbody details
- Scratch build interior
- Add lounge chairs (Red Cap Line) and figures
- Add detail parts (vapor traps, water tanks, receptacles)
- Paint and shadow line decal

Kitbash Techniques:

1300 series bag/bar/dorm/lounge

- SEAC scratch built details



Kitbash Techniques:

1300 series bag/bar/dorm/lounge

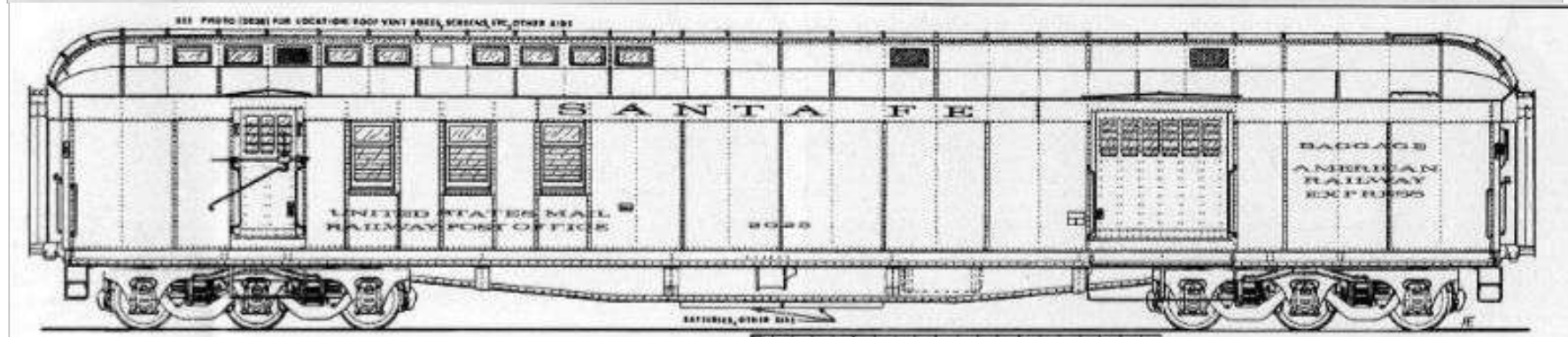
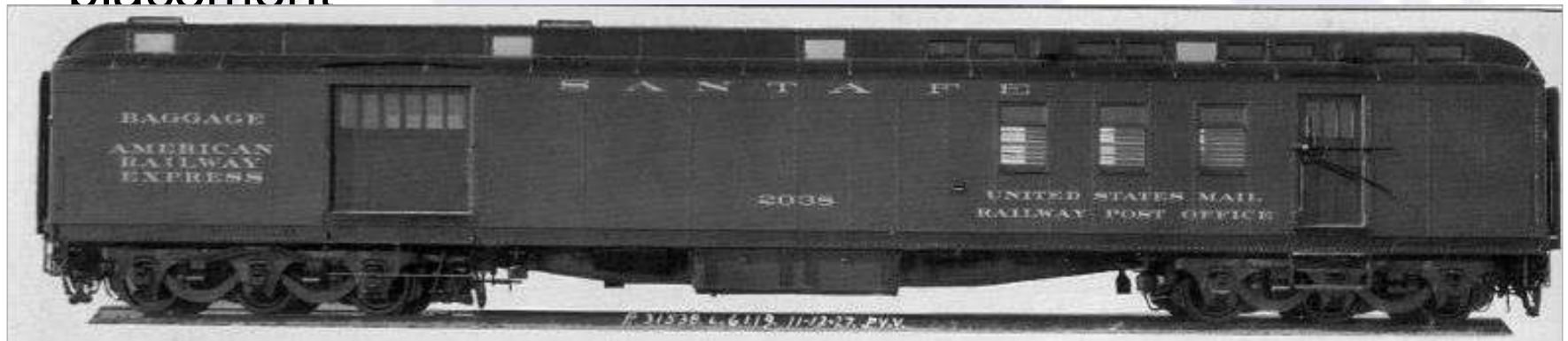
- Results



Kitbash Techniques

Pullman Baggage and Mail Combine

- 2024 – 2038 delivered in 1927, 30' mail room
- Assigned to San Bernardino local
- Rviarossi donor is reasonably accurate for length and window placement

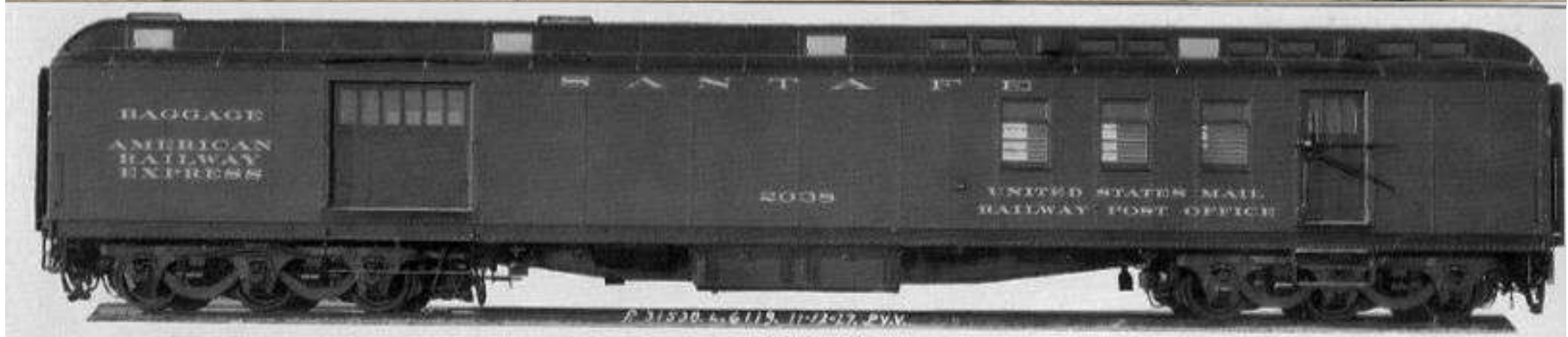


Kitbash Techniques:

2024 series bag & mail combine

- Reference: web article by Steve Sandifer
- Need 2 Rivarossi RPO cars
- Shorten baggage door (splice)
- Remove horizontal beltline and sand entire side
- Apply rivet strips (0.010 x 0.020 styrene strips)
- Apply Archer Transfer HO scale 5/8" rivet decals
- Bend steps and grabs
- Scratch build roof vents
- Add brake wheel and chain at both ends
- Change location of battery box and add vapor traps
- Add couplers, signal and brake lines and coupler bars
- Add security bars (venetian blinds)
- No changes to center sill
- Add side sill

Kitbash Techniques: 2024 series baggage & mail combine



Lessons learned

- Overall:
 - Take your time
 - Have fun
 - Take lots of pictures and make notes
 - Learn from others and exchange ideas
 - Keep eyes open for new opportunities
 - Apply to other rolling stock or locomotives

Final Thoughts

- Modifications and kitbashes are *fairly* reasonable representations
- What I'll do next time is.....
 - Figure out the double row of rivets challenge
- Special thanks to:
 - Tom Casey –
 - Author of The War Bonnet article on Modifying the IHC 1920s Combine into Buffet-Library-Combine *San Vincente*, car 1348 (4th Qtr. 2000)
 - PowerPoint presentations on modifying the AHM diner (1400 series) and other kitbashes he has done.
 - Steve Sandifer –
 - Web tutorials and “how to” article on the baggage and mail combine kitbash

Questions

The background of the slide features a large, light blue square with a white border. Inside the square is a circular logo with a white border. The logo is divided into four quadrants by a white cross. The text "Santa Fe" is written across the center of the cross in a white, serif font.

Santa Fe

Thank You!!

Appendix:

- Resources
- Donors
- Details
- Tools



Resources

- Websites:

- <http://www.atsfrr.net/> (Society website)
- <http://www.trainweb.org/jssand/SEAC/Index%20Overview/SEACOver.htm> (steam ejector a/c info)
- <http://www.trainweb.org/jssand/HeadEnd/Ma-Bag/Mail-Baggage.htm> (bag and mail car kit bash)

- Books:

- Head End Cars
- Dining and Beverage Service Cars of the Santa Fe
- ATSF Color Guide to Freight and Passenger Equipment
- Painting and Lettering Guide
- A Quarter Century of Santa Fe Consists

- Periodical:

- The War Bonnet (Society Publication)

Resources

- Archer Transfers (rivet decals 5/8" and 7/8"):
 - (<http://www.archertransfers.com/AR88026.html>)
 - Easy to use,
 - Order direct
 - Fast Shipping

The Donors

- AHM Diner(made by Rivarossi)
- AHM RPO(made by Rivarossi)
- AHM Combine (made by Rivarossi)
 - IHC marketed model is different in (lack of) rivet detail
- Walthers Heavyweight Chair Car

- Used brake fluid for stripping the AHM cars
- Used 90% isopropyl alcohol for the Walthers car

Suggestion: if buying second-hand, avoid the brightly colored versions (i.e. Great Northern) as the paint is harder to remove

The details

- Grab irons: Detail Associates
 - 17" Drop (2202)
 - 22" x 22" Corner Grabs (6205)
 - 28" Ladder Type F/E Units (2215)
- Wheel sets: Kadee 36"
- Signal and steam lines: Cal Scale (190-275)
- Air hoses: Hi Tech Details
- Couplers: Kadee #58
- Diaphragm: American Limited (9100)
- Lounge Chairs: Red Cap Line
- Coupler lift bars: Detail Associates
- Paints:
 - Modelflex paints
 - Polly S paints (easier for me to use)
- Decals:
 - Microscale
 - Shadow-line decals
 - Santa Fe Heavyweight Passenger Cars (87-1105)
 - Archer Transfers (www.archertransfers.com)
 - 5/8" rivet decal sets

The tools

- Xuron cutters
- Needle files
- Pin vise and various bits
- X-acto blades: round corners of #17 blade to prevent “digging in”
- Micro Sanding Wands (Micro-Mark # 81471)
- Wet-dry sand paper (600, 800 and 1200 grit)
- Photocopier
- Paper cutter (cutting 0.005 styrene strips)
 - Results in consistent, non-curled strips
 - Straight edge method (for me) resulted in curly strips
- MicroMark wire bending jib

The little details

From Google images:

- Place settings (too small to tell it is not Mimbres china)
 - Navajo carpets
 - Navajo curtains
 - Linoleum floors
- “Screens” from sheer cloth

