

A large, faded watermark of the Santa Fe logo is centered in the background. The logo consists of a circle with a cross inside, and the words "Santa Fe" written across the center in a stylized font.

Building SFRH&MS car kits

Santa Fe Mini-Meet

April 9, 2011

Agenda

- Introduction
- Prototype Cars and Kits
- The Kits and Construction Techniques
- Lessons Learned
- Final thoughts
- Questions
- Appendix

Introduction

- Why build kits?

- Interest in passenger and head-end car operations between 1948-1951
- Desire for reasonably accurate consists (*The Chief, Grand Canyon Express and Fast Mail Express*)
- Can't afford brass
- Ready-to-run models not available
- Enjoy model building

Prototype Cars and kits

- **Heavyweight Cars**

- Pullman 1900-1999 series Horse Express car
- Pullman 1820-1839 series Baggage car

- **Lightweight Cars**

- Pullman 17-1 Sleeper (Chaco – series)
- Pullman 8-2-2 Sleeper (Tolchico – series)

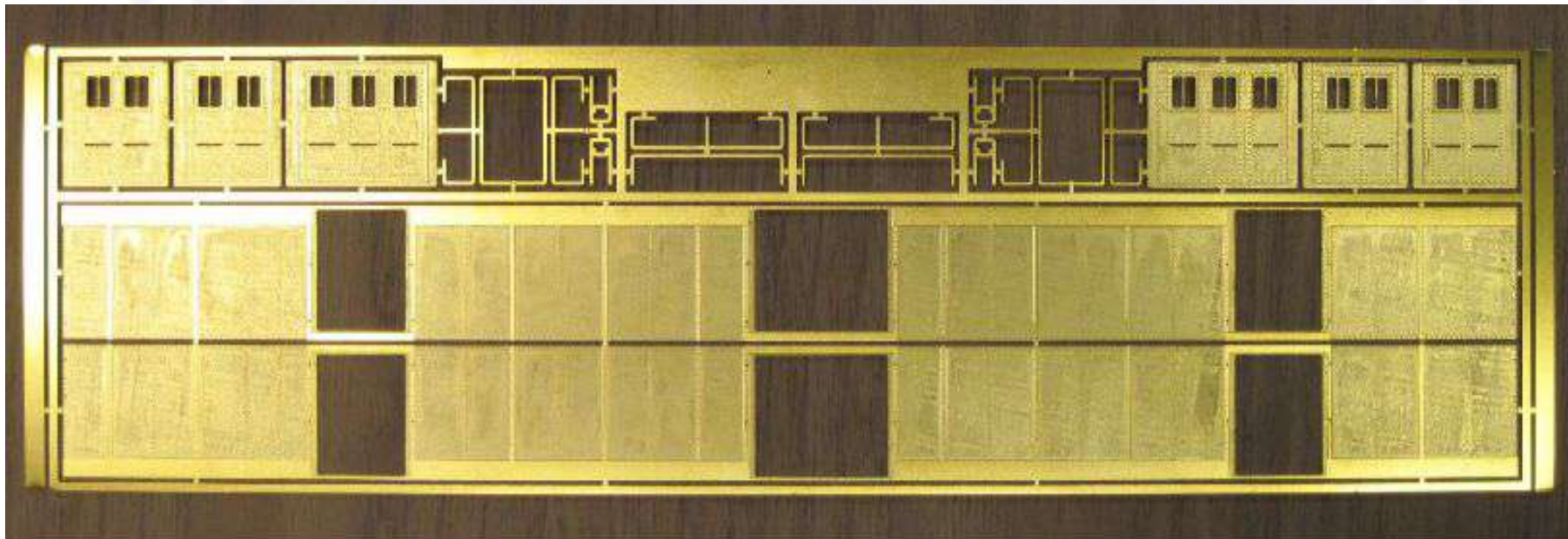
Pullman 1990 class Horse Express

- 1990 – 1999 series built in 1930
- Ran on *Grand Canyon Express*
- Distinguishing features are multiple side doors and the end door
- Some used till the 60's



Construction Techniques: Horse Car

- Photo-etched brass sides, side doors and stirrups
- Excellent rivet details (double rows)
- Resin roof, ends, floor and underbody details
- Directions with reference photos



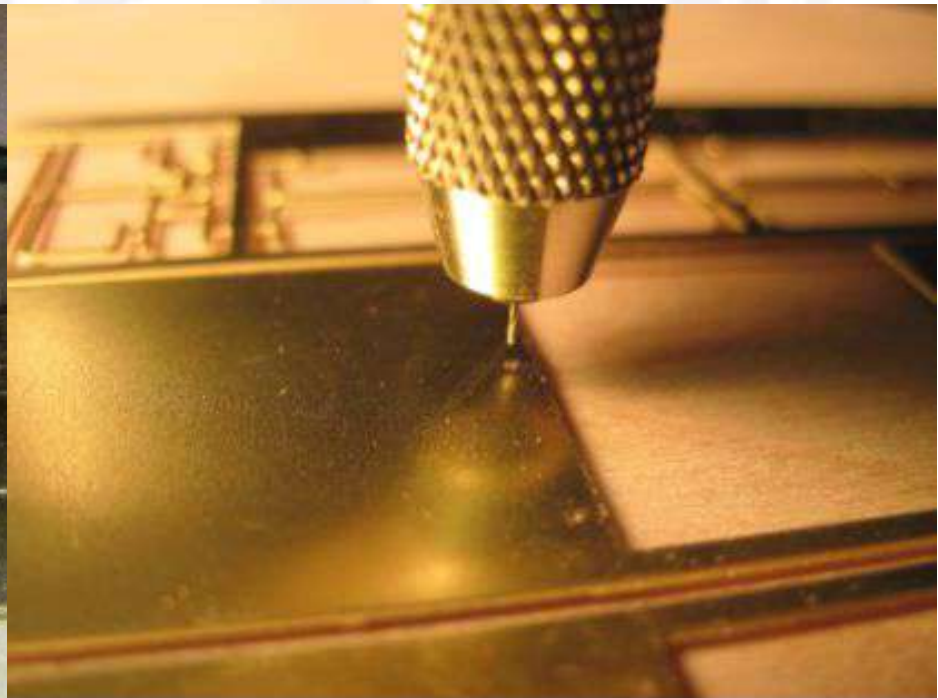
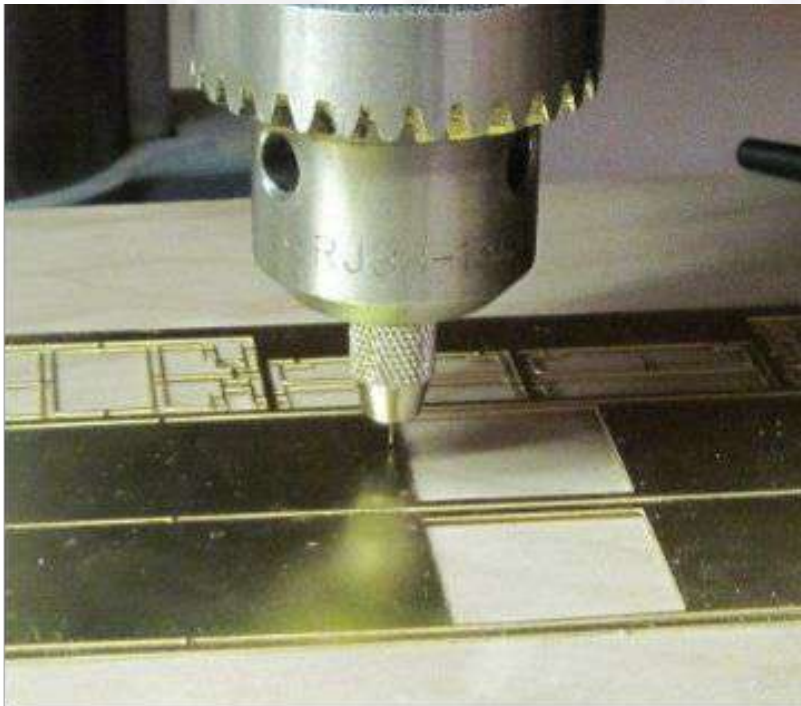
Construction Techniques:

General order of assembly

- Drill grab iron holes
- Wash all parts with brush
- Use “Goo” to attach brass to styrene or resin
 - “Scuff” brass surfaces with 600 grit paper
 - Theory that “flexible” bond will be more durable
- Use CA to glue resin to styrene
- Fit, test fit and glue doors and spacers
- Fit, test fit and glue sides to ends
- Fit, test fit and glue roof to sides and ends
- Fit bottom, add detail parts and then attach floor
- Attach sill and remaining detail parts

Construction Techniques: Horse Car

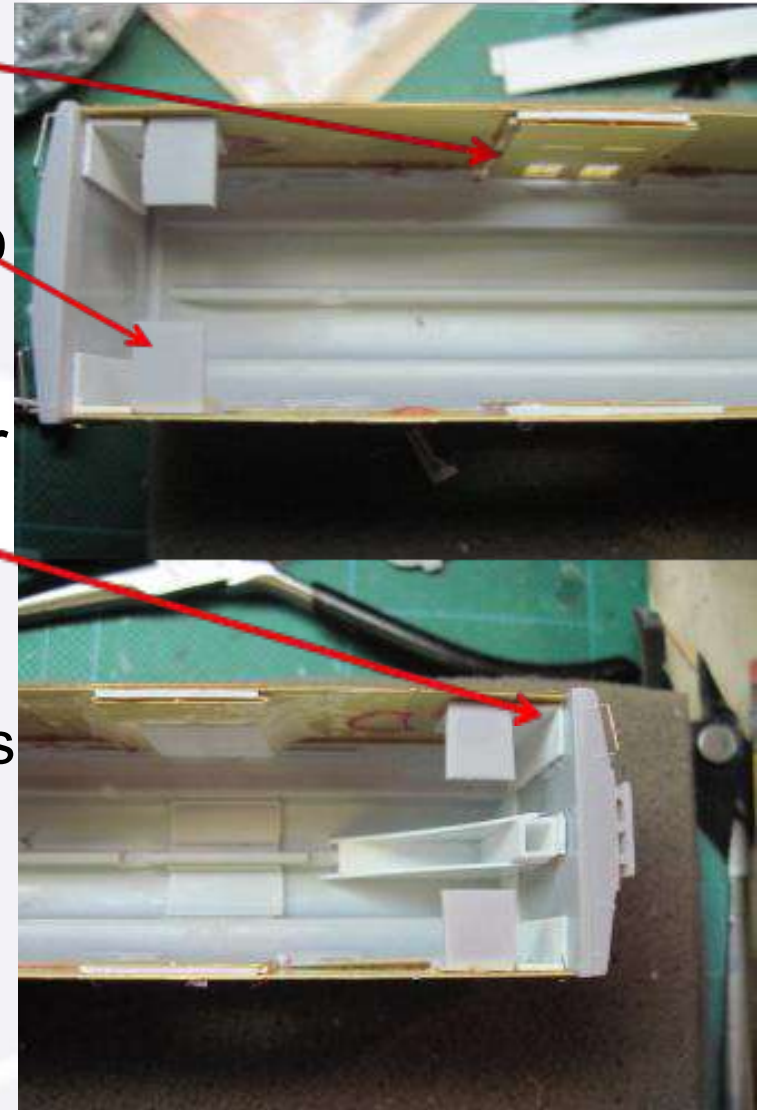
- Use shears to separate parts from brass fret
- Drilling holes for grab irons with #80 bit
 - Insert micro-chuck (available from Micro-Mark) in drill press (use same technique for Walthers cars)
 - Dimples are on the inside of the car – align carefully



Construction Techniques:

Horse Car

- 0.030" spacer strips between doors and sides for "depth"
- Floor mounting tabs are insert so floor bottom is flush with sides
- Install corner and end bracing for stiffening (kit comes with resin braces)
 - Corner braces are set back so sides are flush with ends



Construction Techniques: Horse Car

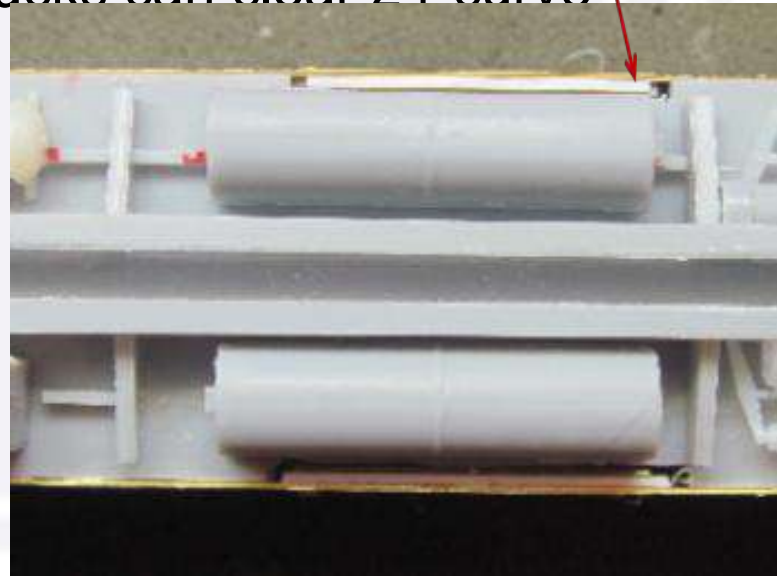
● Roof Alignment:

- Important to align non-door end first, then door end
- Roof may have shrunk (up to 0.030")
- Solution: add filler strip on end-door
 - Example needed 0.020" filler strip
 - Extend roof filler strips with 0.010" x 0.020 strips and shape to profile
 - Putty, sand and inspect your work and



Construction Techniques: Horse Car

- Floor and underbody details:
 - Note orientation of floor to doors for proper alignment
 - Bottom of floor is flush with bottom of sides
 - Cut out floor for door clearance (covered in directions)
 - Attaching sill is “tricky” due to mating of sides to floor and sill - floor on my model is not *easily* removable (used CA to glue resin sill to resin floor and tack to brass sides to minimize gaps)
 - Careful placement of stirrups so trucks can clear 24” curve



Construction Techniques: Finishing

- Inspect work
- Wash and air dry
- Primer and painting:
 - Used Polly S and ModelFlex paints using a single-action airbrush (Prefer Polly S)
 - Heavyweights: Entire models shot with “Santa Fe” green then brush-painted black roofs
- Decals
 - Used mainly Microscale and some Champ
- Weathering:
 - Dusted with Polly S “dust” and “earth” colors
 - Finished with powdered pastels

Construction Techniques: Horse Car

- Finished product – lightly weathered



Pullman 1800-1839 Baggage

car

- 1800 – 1819 Mail storage cars built in 1917
- 1820 – 1839 Baggage and Express cars built between 1927 and 1929
- Majority of cars converted to MOW use



Construction Techniques: Baggage Car

- Brass sides, doors, stirrups
- Resin roof, ends floor and underbody
- Directions with fewer photos (older kit)
- Same order of assembly
- Make sure to align floor with sides (Floor casting “N” aligns with narrow door)



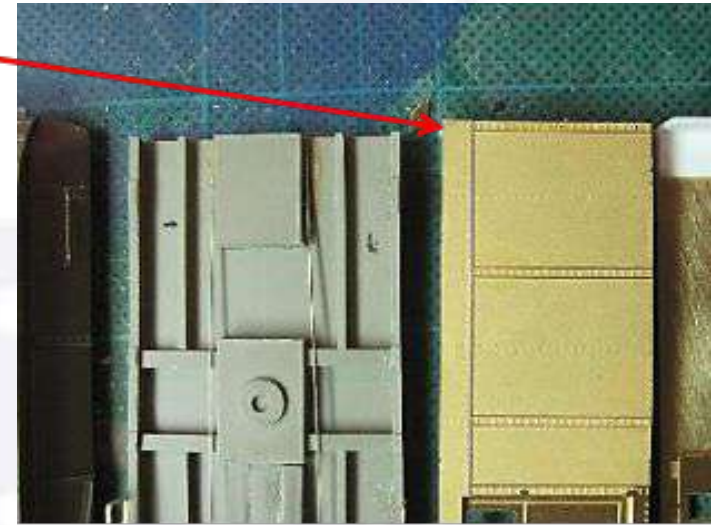
Construction Techniques: Baggage Car

- Underbody details
 - Channels supplied with cutouts for braces
 - Detail parts supplied in resin or plastic
 - Placement indicated in directions
 - Brake plumbing is an educated guess
- Doors
 - Add 0.030" filler strip for depth
 - Spacer included for safety bars

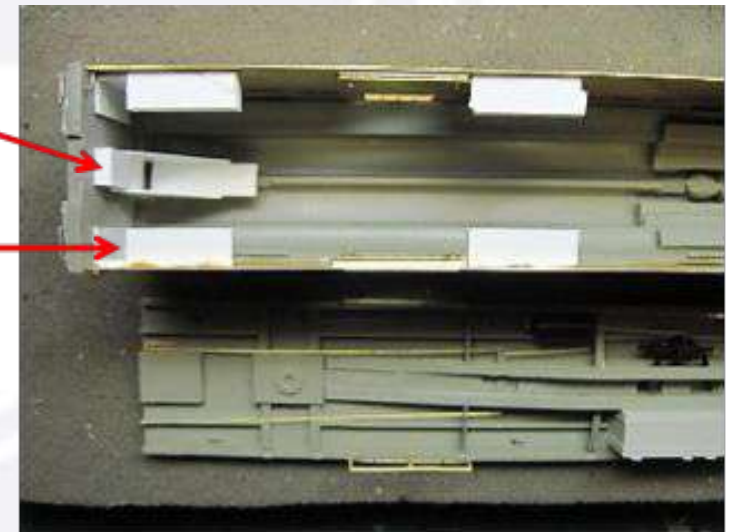


Construction Techniques: Baggage Car

- Floor and roof short due to shrinkage
 - Solution used: sand end pieces to fit (thinner ends vs. filing sides)
 - Better: cut roof at a rivet seam and insert shim (like the horse car)



- End bracing
 - End and roof gaps filled and sanded
 - Add bracing to minimize cracking
- Pads for screws to attach floor (set back bottom of floor so it is flush with sides (drill and tap with 2-56 screws)
 - Note placement of pads to avoid interference with detail parts



Construction Techniques: Baggage Car

- Truck mounted generator:
 - Directions not clear so look at prototype



- Solution:



Baggage Car – Finished model



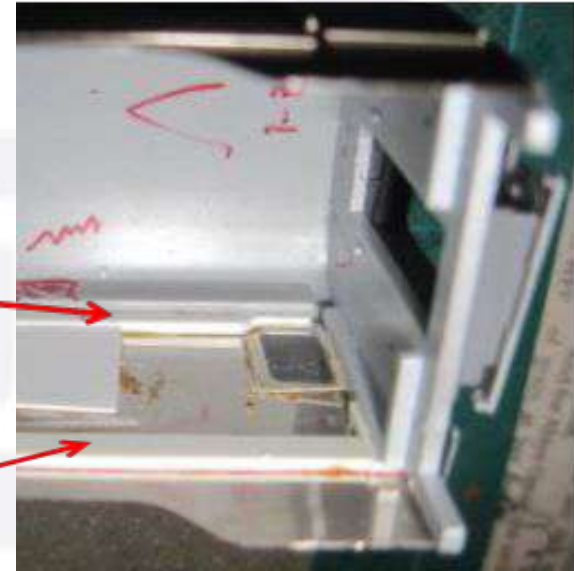
Pullman 17-1 Sleeper

- *Chaco*-series: 8 cars delivered in 1938 for *The Chief*
- All converted to coaches in 1960
- Pictured below is the *Chimayo* after the coach conversion
- PS roofs made from “Cor-Ten” steel, not stainless steel and were apparently painted (Budd roofs were stainless)



Construction Techniques: Pullman 17-1

- AMB core kit (roof, ends and floor)
- Nickel-plated etched brass sides
- Same order of construction
- Shim strip on the top of the sides corrects spacing (etched sides thinner than plastic sides)
- Add floor spacer strip (critical alignment)
- Add bolster fillers to prevent gaps



Construction Techniques:

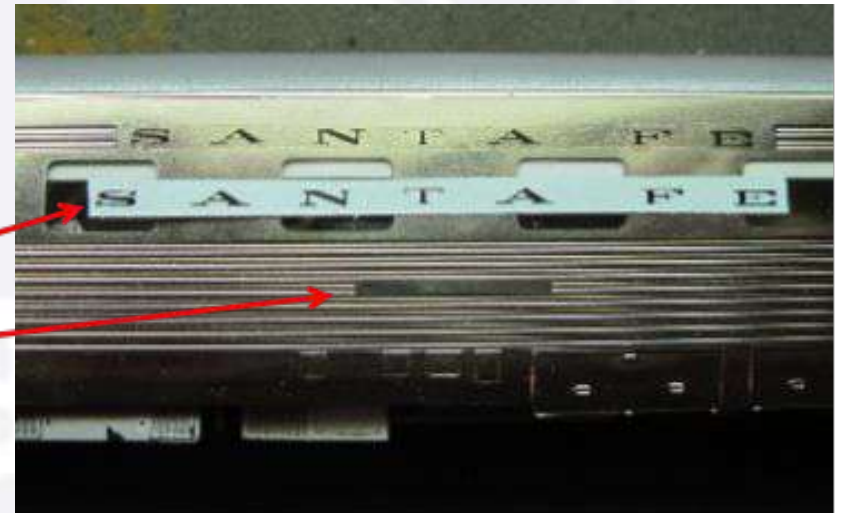
Pullman 17-1

- Build simplified interior using 0.020" styrene based upon Pullman blueprints, add seats and benches
- Add kit supplied underbody components
- Add details and glaze windows with 0.005" clear styrene



Construction Techniques: Pullman 17-1

- Bend skirts around 1" dowel
- Floor is held in by skirts and is removable
- Trim Microscale decals to fit
- Name plate too narrow for decals, add 0.01" aluminum overlay



Pullman 8-2-2 Sleeper

- *Tolchico*-series: 14 cars delivered in 1938 for *The Chief*
- Most rebuilt to coaches in 1962
- Pictured below is the *Torrowean*



Construction Techniques:

Pullman 8-2-2

- AMB core kit (roofs, ends and floor)
- Nickel-plated brass sides
- Same order of construction as others: glue sides and ends then roof
- Other construction details are virtually the same as the 17-1
 - No issues with adding decal to name plate



Construction Techniques: Finish on nickel-plated cars

- Personal preference: nickel-plating is too shiny
- Toned down with matte finish
- Differences in Pullman fluting between cars due to different suppliers (NKP on the left – 17-1)



Lessons learned

- Overall:

- Take your time and **have fun**
- Read, re-read and read again all instructions
- Adopt an “order of construction” and follow it
- Dry fit all parts prior to gluing (or tack with CA)
- Measure, measure and measure

- Heavyweight

- Use filler strips to lengthen a short roof as necessary
- Resin is brittle, prone to shrinkage and warping
- Filing brass stirrups without bending them is a challenge
- Didn't add window bars on Horse Car

- Lightweight

- Underbody detail – align with etched hatches
- Painting roof and ends – use Alclad to get a better match?
Modeler's license: some cars had roofs re-painted silver after WWII (roofs painted black during the war) and PS roofs were apparently not stainless steel.

Final Thoughts

- Kits are not perfect but enjoyable to work on and personally very happy with results:
 - Will buy 2-3 baggage cars (when re-stocked)
 - New car is a available (1976 – 1979 baggage and express)
 - Will buy “fish belly” baggage car (when available)
 - Will buy 60-series RPO car (when available)
 - Need only one Horse car (restocked!!)

Questions

Thank You!!

Presentation posted on Goggle Documents:

<https://docs.google.com/present/edit?id=0ASSImh6s65dXZGR0cXNtdzhfMTEzYzNmOHc2ZHY&hl=en&authkey=COTU4qAC>

Feel free to email me with questions or comments:

c.kikawa@comcast.net

Special Thanks

Tom Casey: Slide decks and insight into the kits

Baggage Car:

<https://docs.google.com/leaf?id=0BySlmh6s65dXMDY5ODJkOTEtNTk3Yi00MTBhLWEwNjgtNzk5MTQzYzE0MmNk&sort=name&layout=list&num=50>

Prototypes:

<https://docs.google.com/leaf?id=0BySlmh6s65dXNzY4YTU0MjgtOGMwMS00OGY4LWE2YTAaNmZmNGM2OTdhZWVj&sort=name&layout=list&num=50>

Diner:

<https://docs.google.com/leaf?id=0BySlmh6s65dXODI3ZjdINjAtOTU5Zi00M2I4LWlyM2EtMGEyMWU0NiY2MDM5&sort=name&layout=list&num=50>



Appendix:

- Kits
- Resources
- Details
- Tools



The Kits

- Order from the Society page:
<http://www.atsfrr.net/store/index.htm>
- Heavyweight Cars:
 - Photo-etched brass sides and stirrups
 - Resin Roofs, Floors and underbody
 - Trucks, no wheels
 - Manufactured by NKP Sides (Tom Schneid)
 - Masters by Tom Casey
- Lightweight Cars
 - Nickel plated brass sides
 - AMB cores supplied (roof, underbody and some details)
 - Trucks, no wheels

Resources

- Websites

- <http://www.atsfrr.net/>
- <http://www.qstation.org>
- <http://passcarphotos.info>

- Books

- Head End Cars
- Painting and Lettering Guide
- A Quarter Century of Santa Fe Consists
- The Official Pullman Standard Library – Santa Fe
- ATSF Color Guide to Freight and Passenger Equipment

- Articles:

- Passenger cars from core kits (Model Railroader, March and April 2005)
- Santa Fe Chief (Mainline Modeler, June 1992)



Details Parts

- Grab irons: Detail Associates
 - End 17" Drop (2202)
 - End 22" x 22" Corner Grabs (6205)
 - Roof 28" Ladder Type F/E Units (2215)
- Glazing: Evergreen clear styrene 0.005"
- Weights: A-Line
- Wheel sets: Kadee 36"
- Signal and steam lines: Cal Scale (190-275)
- Air hoses: Hi Tech Details (made of flexible rubber)
- Couplers: Kadee #58
- Diaphragms: American Limited (9100)
- Coupler lift bars: Detail Associates
- Chain: Detail Associates Safety Chain
- Brass Wire (0.012" for most handrails) Detail Associates
- Brake Wheels: Detail Associates
- Paint: ModelFlex and Polly S paints (CN Green)
 - Personally prefer Polly S as they are "easier" to apply
 - Interior paints use craft paints available from Michaels
- Decals: Microscale and Champ
 - Horse Express (87-1043): SF Head-end and Express Cars
 - Baggage (87-1105): SF Heavyweight Passenger Cars
 - Champ decals are correctly sized for the baggage car but harder to work with (thicker and brittle due to age)
 - Pullman (87-061): Streamline /GS Sleepers (1939-1971)

Tools

- Xuron cutters
- Needle nose, bending loop and other pliers
- Needle files
- Pin vise and various sized 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 grits)
- Goo and CA (medium set)
- Good light and magnifiers