

# RTV Molds & Resin Casting

**Some thoughts & examples**

# Definitions

- RTV Silicone (room temperature vulcanization silicone) is a type of silicone rubber made from a two-component system (base plus curative; A+B).
- Resin Casting: a method of plastic casting where a mold is filled with a liquid synthetic resin, which then hardens (2 part-base plus catalyst).

# Resin Casting Advantages

- Make small, not readily available parts
  - Odd prototype
  - Building corbels
  - Captures fine detail
- Stronger finish than 3D printing
  - ‘layers’ fused – one pour
- Challenge & fun
  - Try something different

# Disadvantages

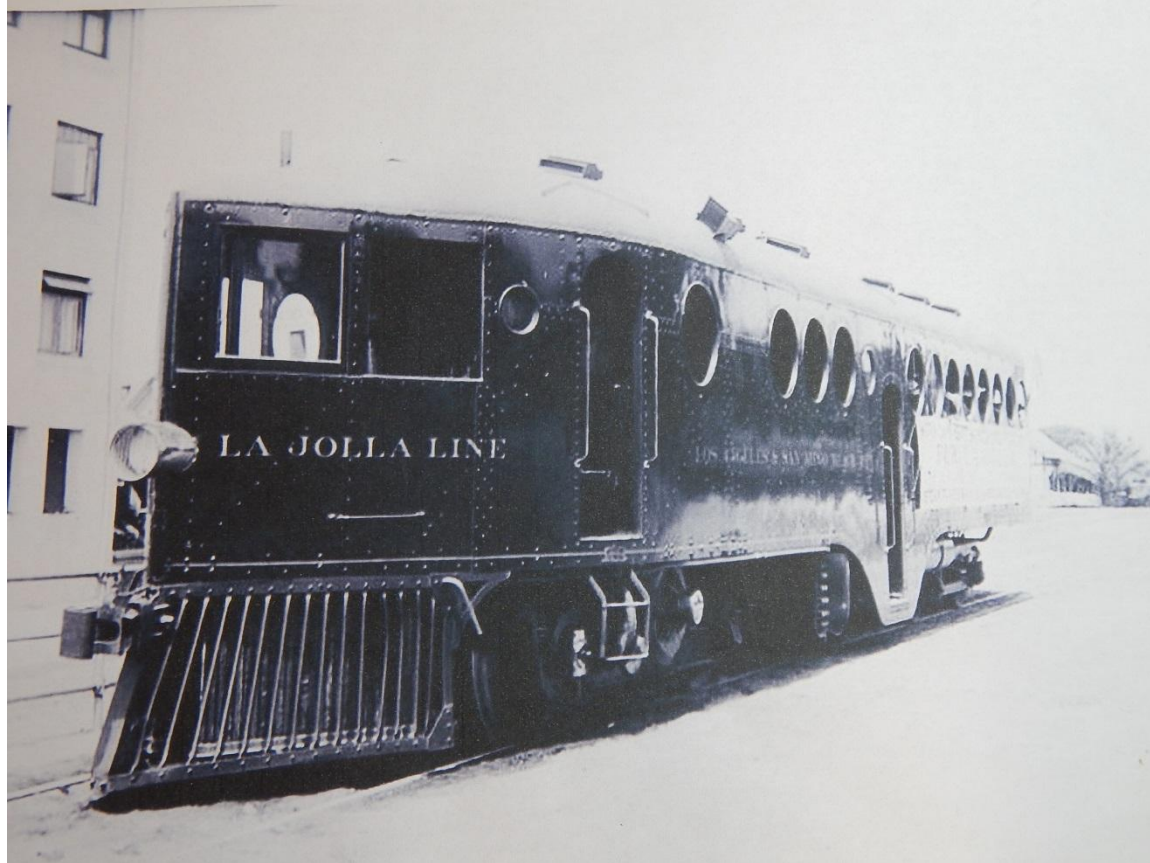
- Relatively hi-cost
  - for materials vs output
- Limited shelf life
  - Resin ~ 6 mo
  - RTV ~ 12-18 mo

# Clinic Contents

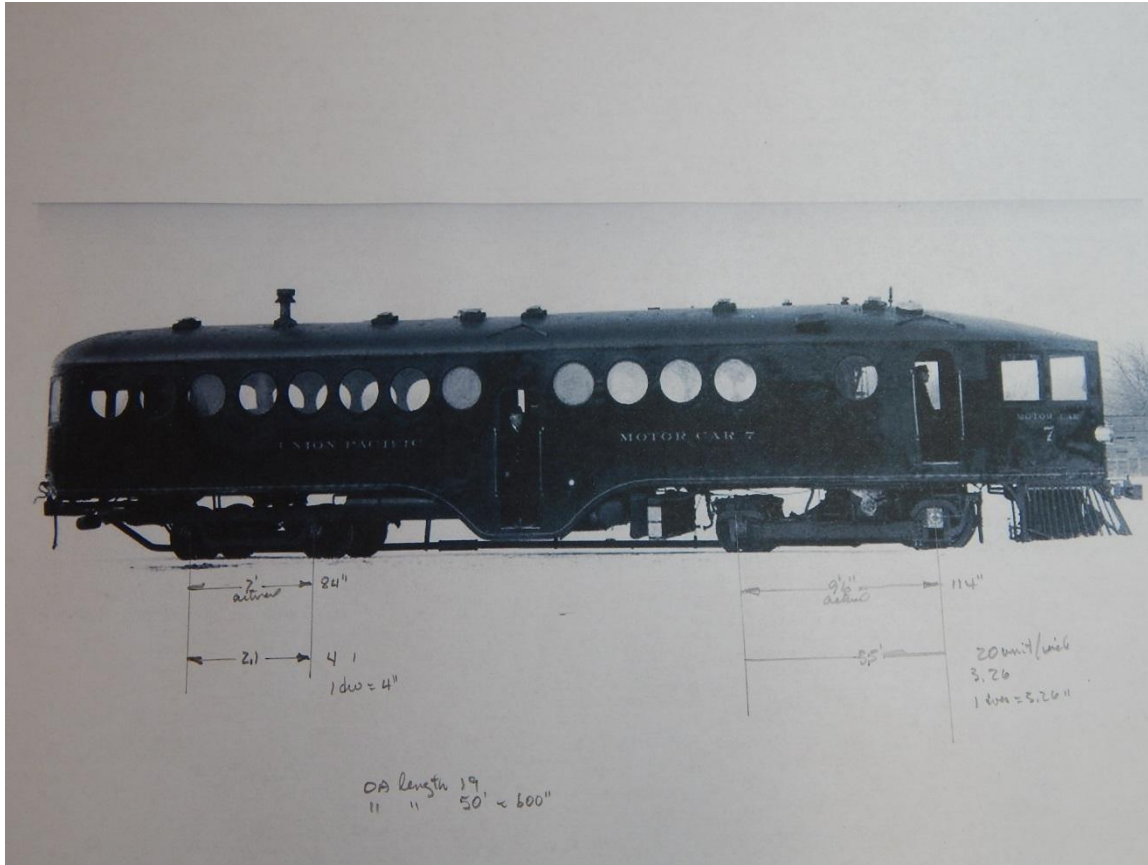
- Master
- Casting mold
- Resin casting
- Cleanup & painting
- References
- Materials & cost

# Making the Master

- Research
  - Pictures
  - Drawing
  - Measurements
- Pattern & Material
  - What to use
- Container – for the casting mold
  - Types of mold



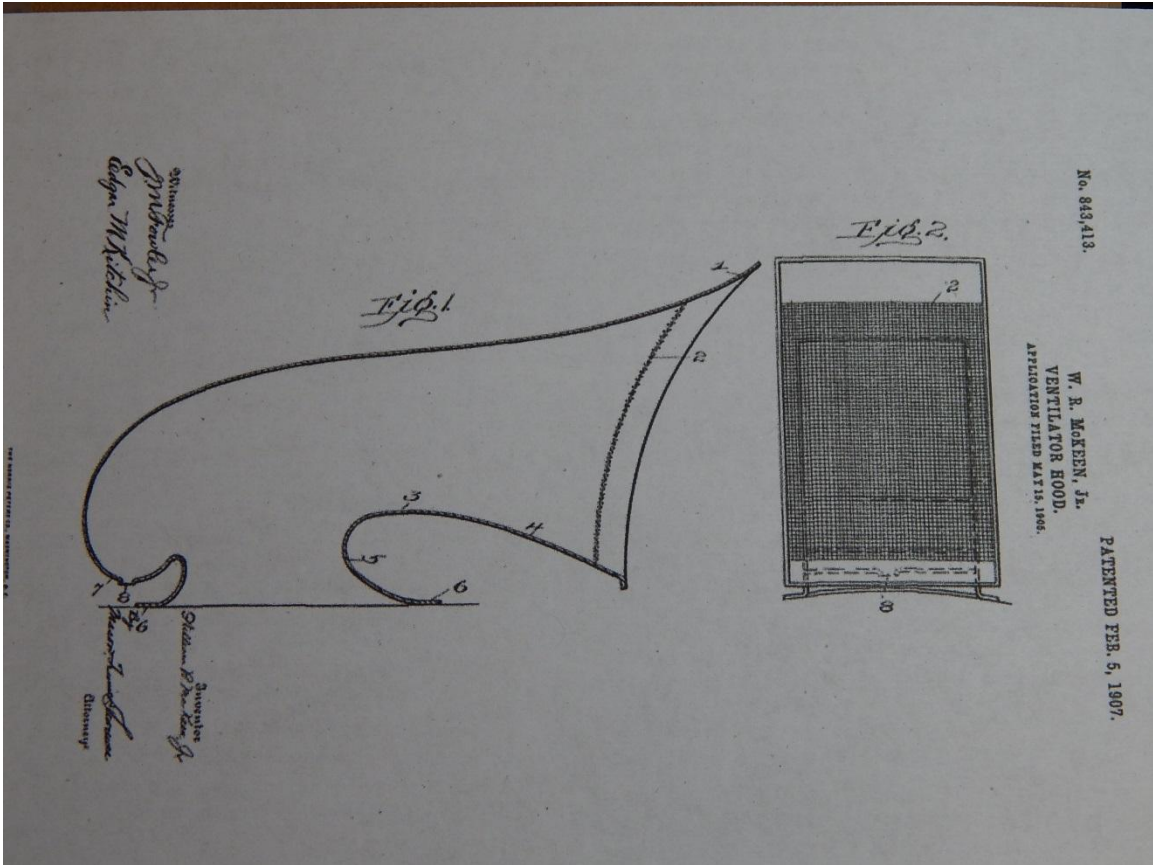
**McKeen Motor Car**



## McKeen car

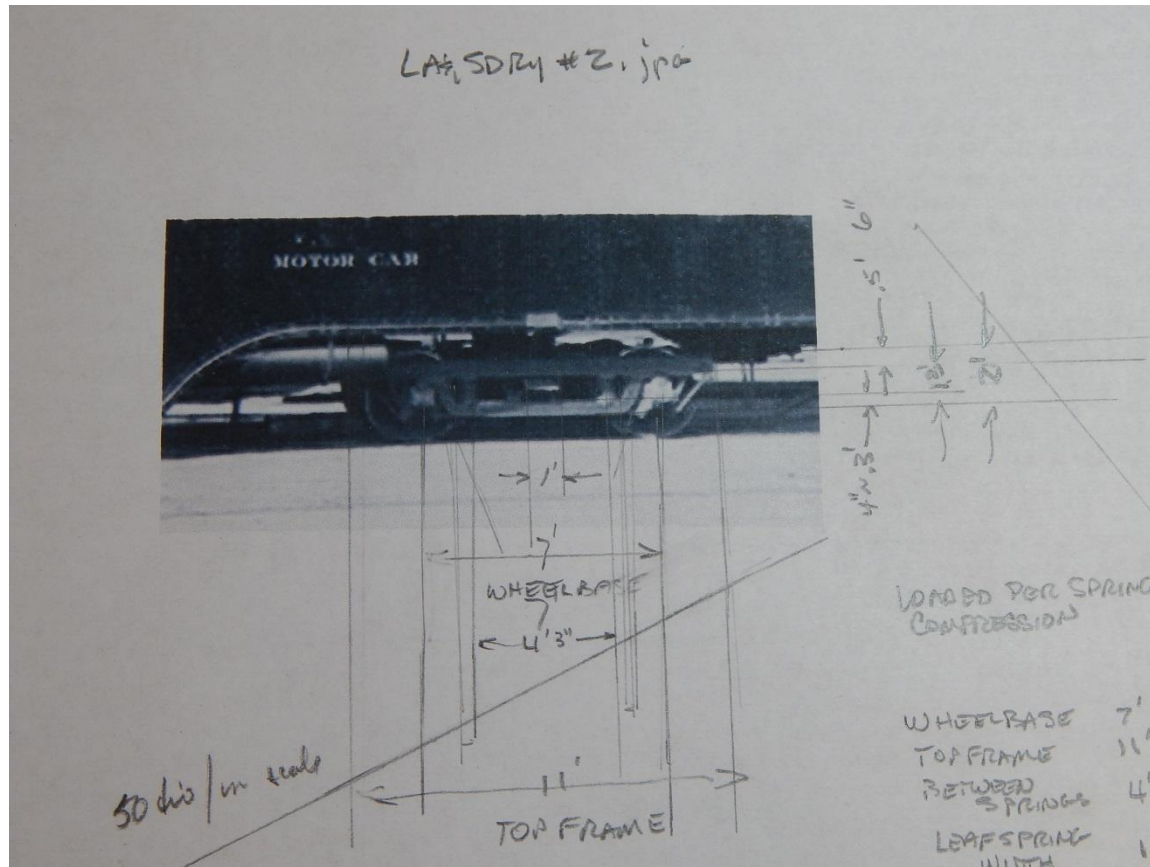
Ventilators and Rear Truck Side-Frame





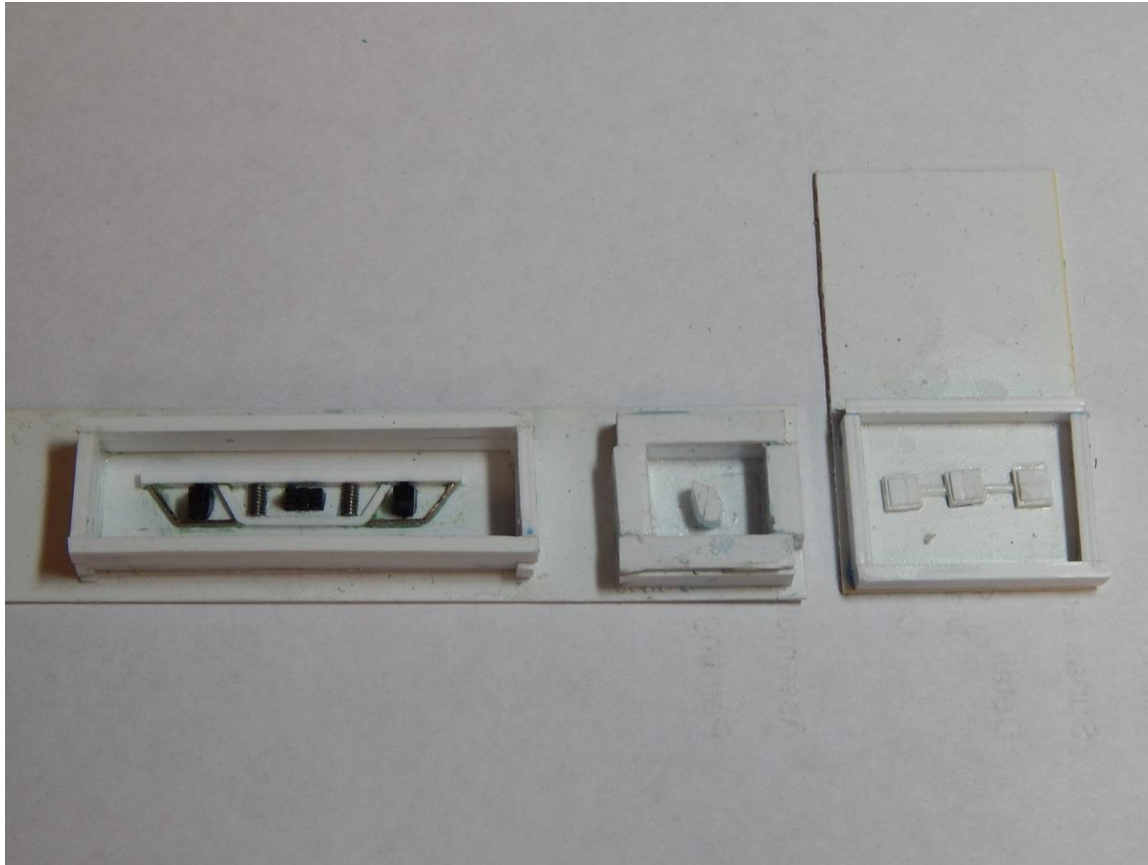
# Ventilator

Patent Drawing



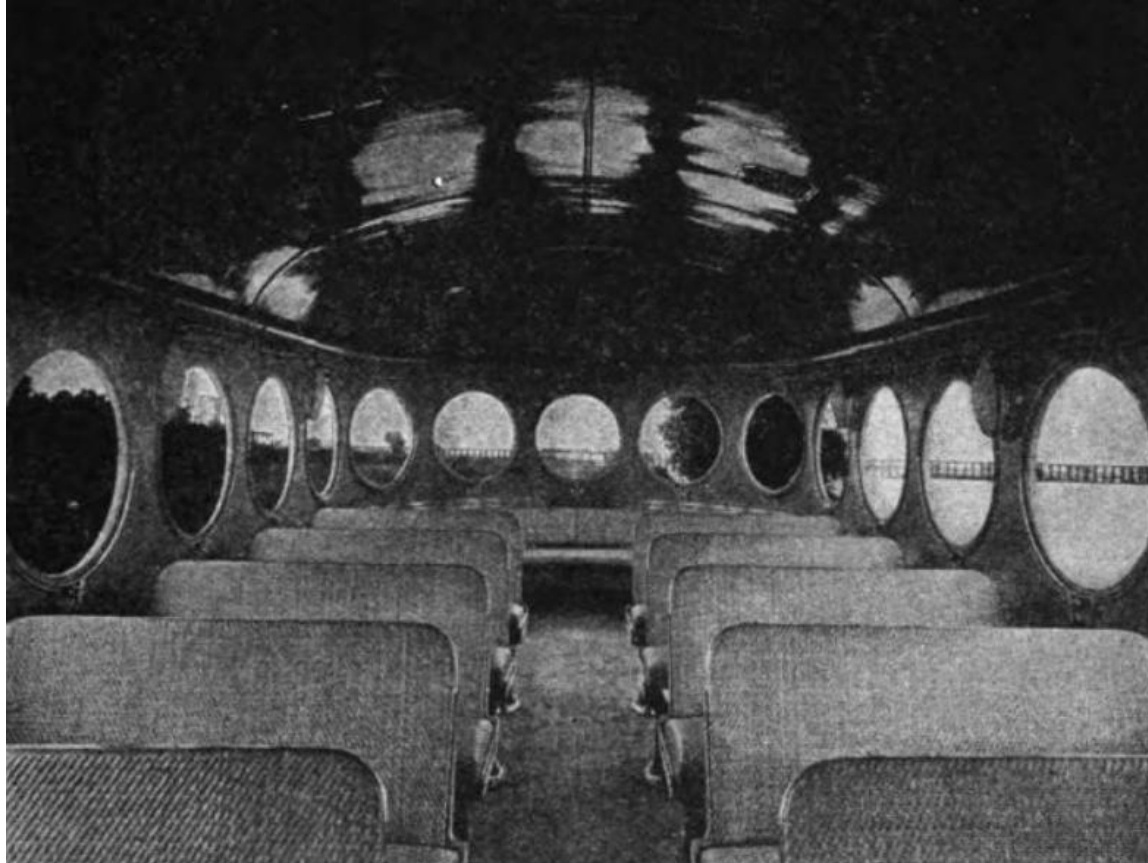
## Rear Truck Side Frame

Extracting the dimensional data



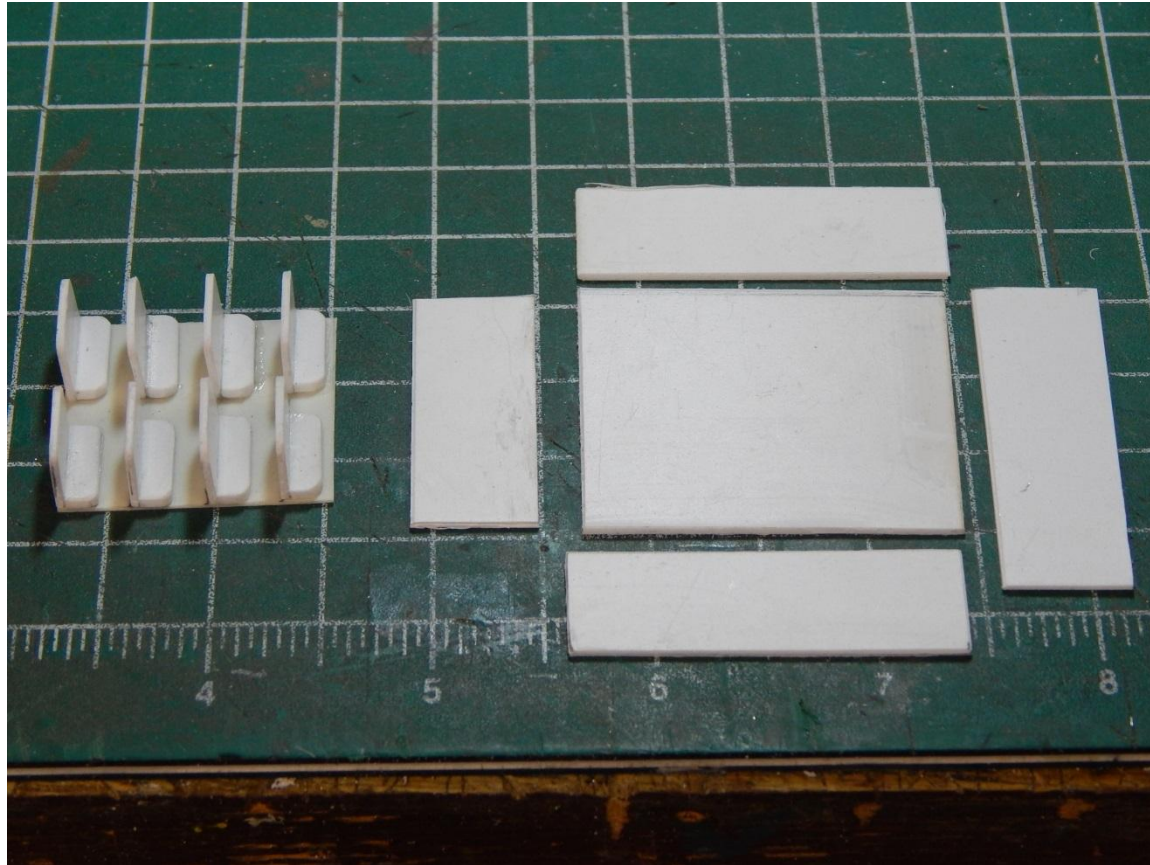
## The Master Molds

Side Frame, Ventilator intake, Ventilator exhaust



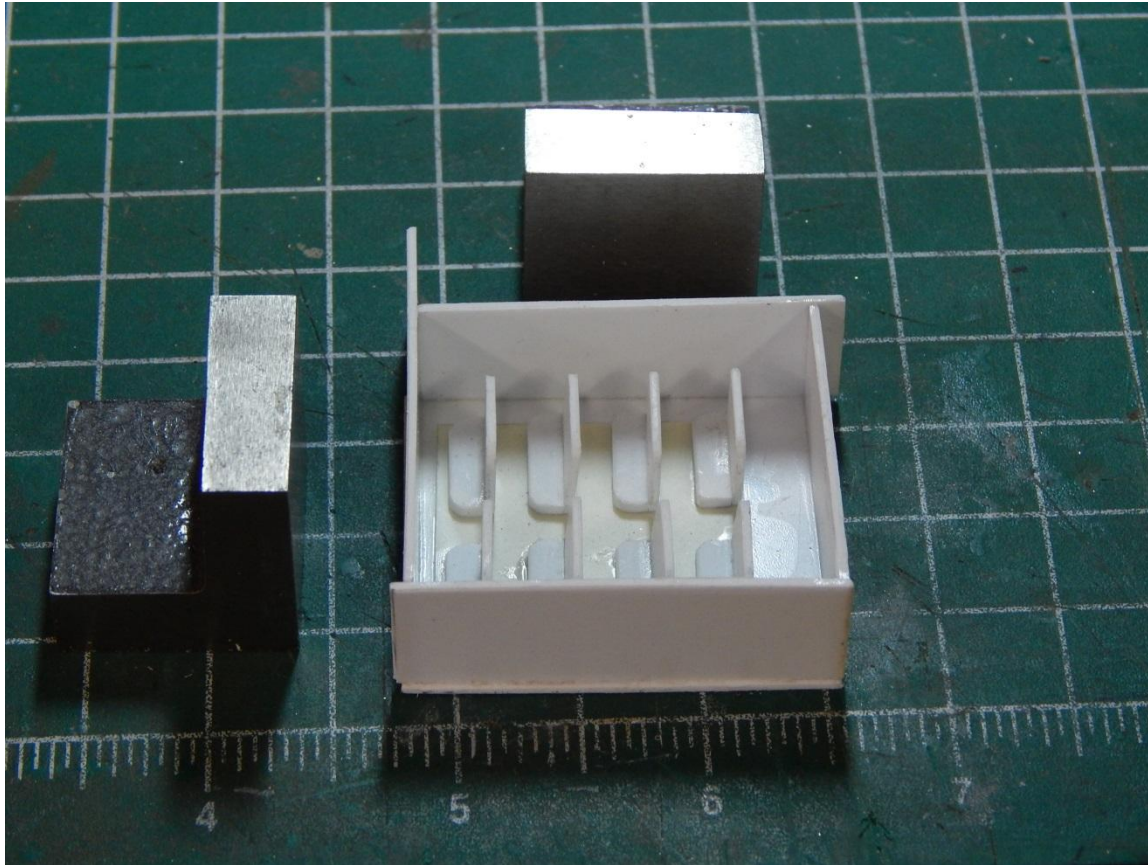
## **McKeen Interior Seats**

Size, Location, orientation



## McKeen Seat Master

Styrene parts



## McKeen Seat Master

Assembled

# Casting the Master Mold

- Materials
- Measuring
- Samples



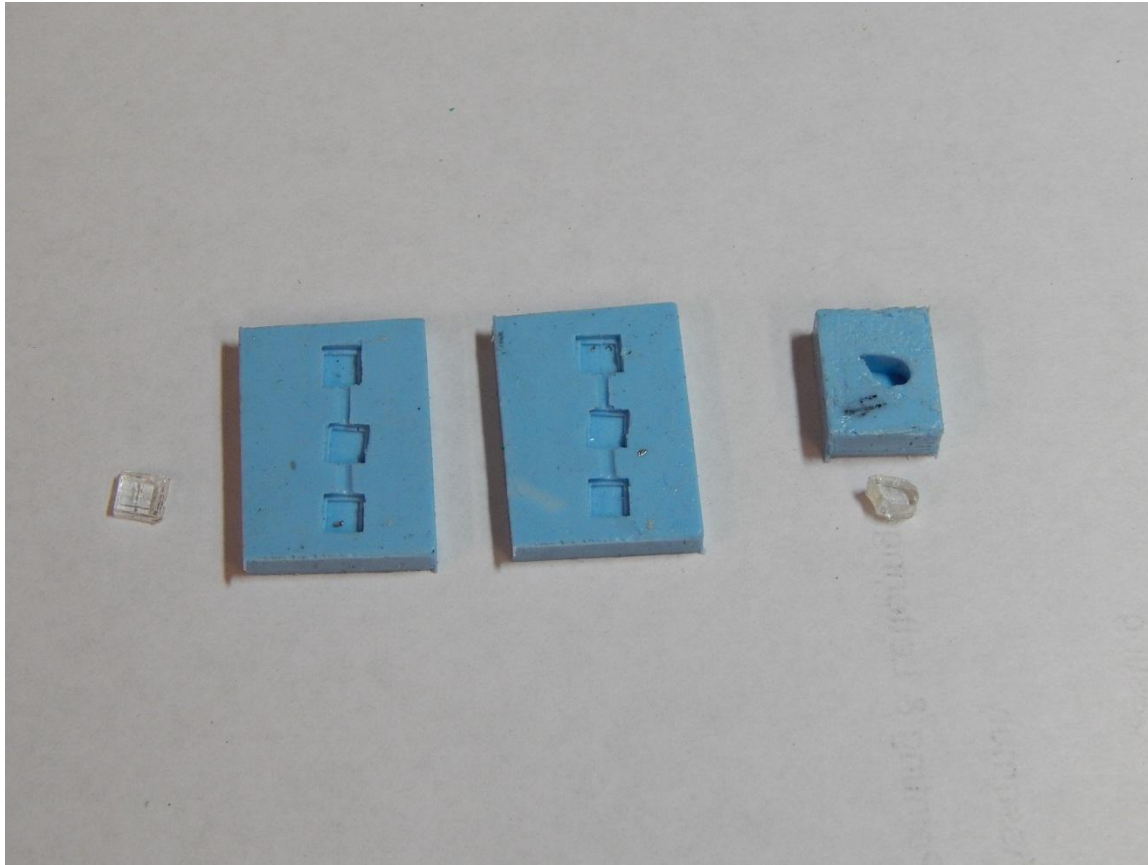
## Materials

RTV & Composi Mold



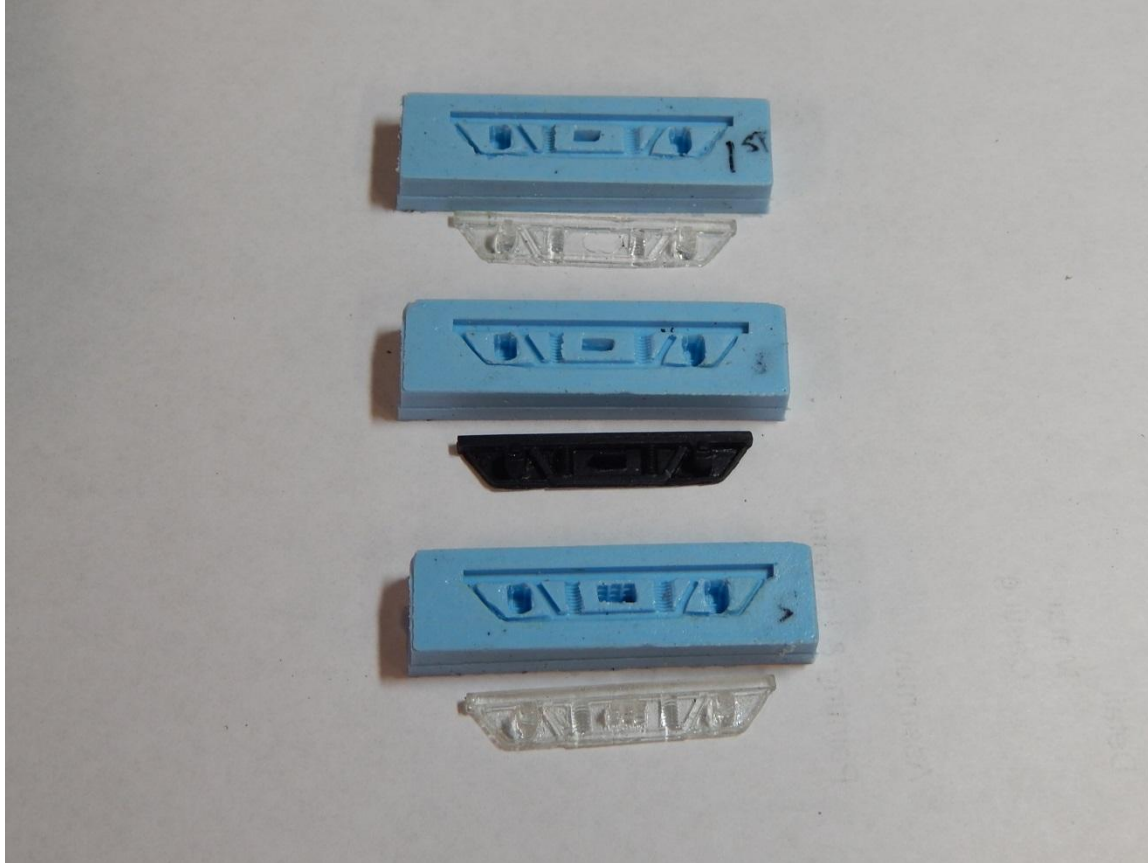


**Measure, mix, release**



## Ventilators

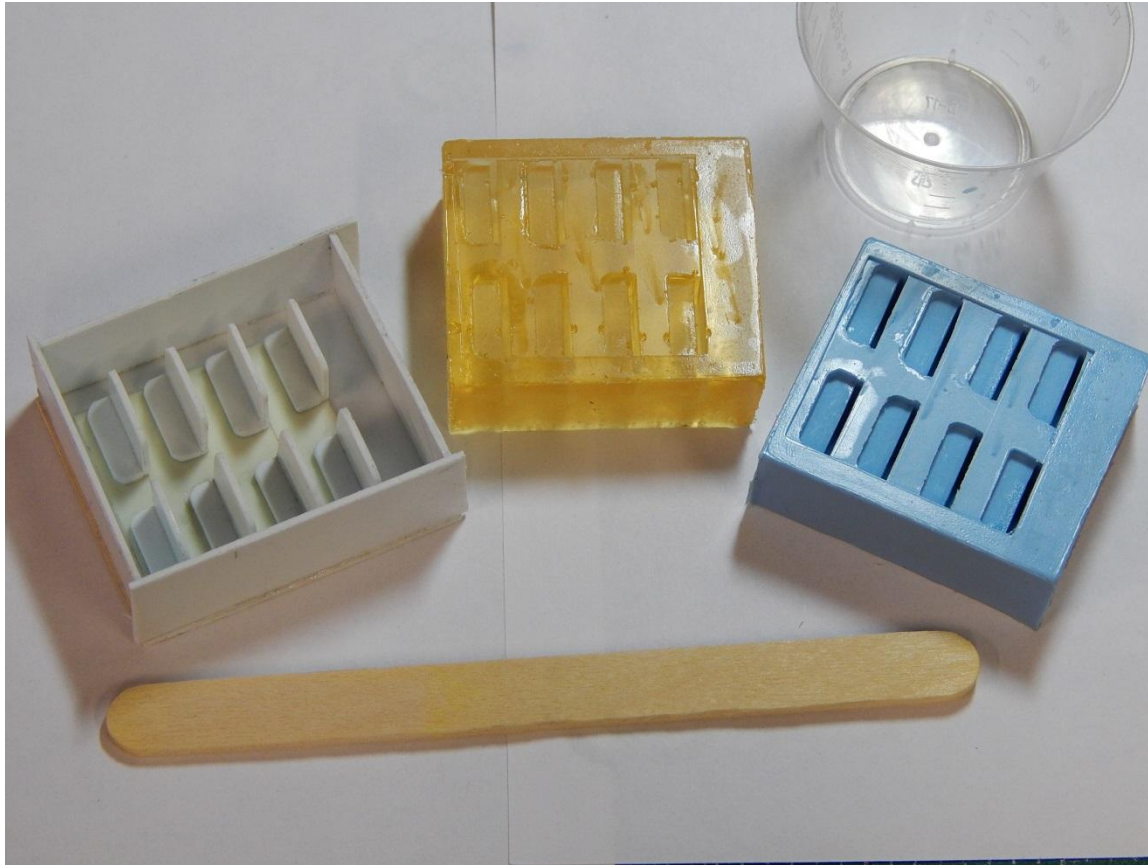
Exhaust & Intake ventilator RTV molds and castings



## Rear Truck Side Frame

The RTV molds - 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> tries

The result castings



## MeKeen Seat

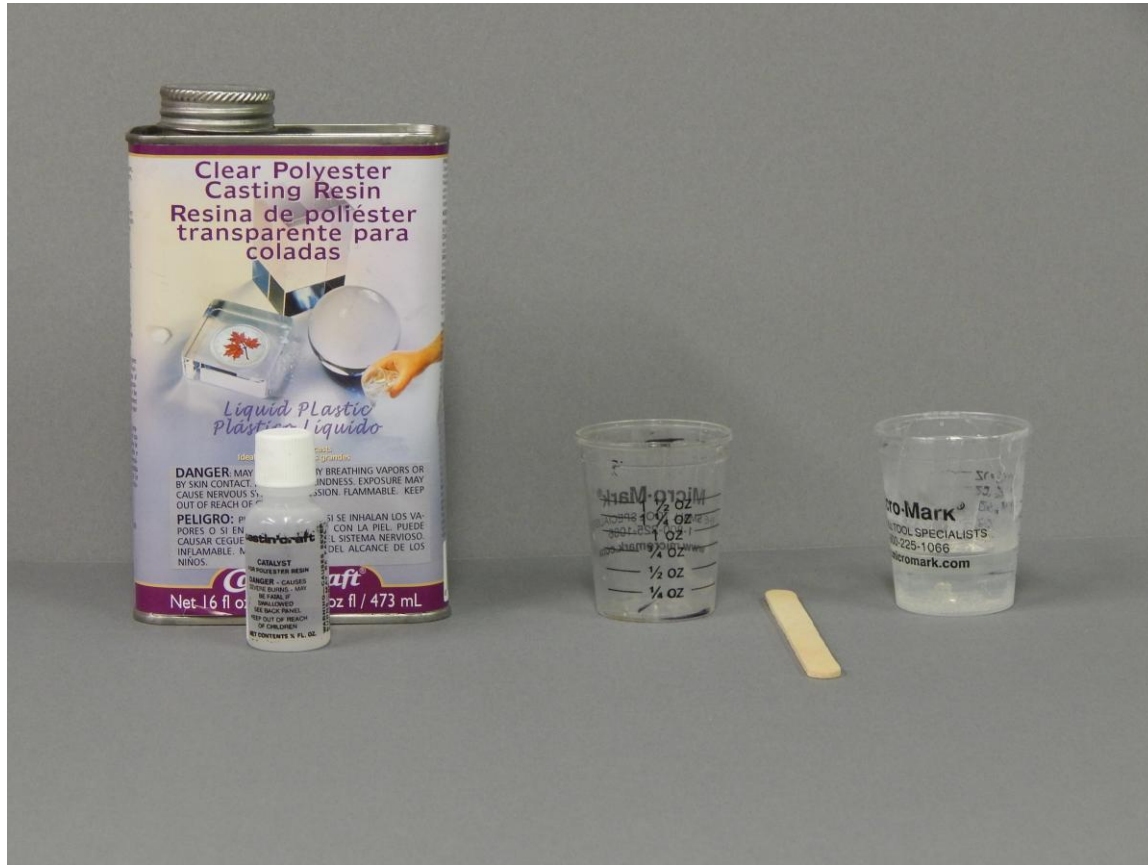
Master, Composi Mold & RTV castings

# Resin Casting

- Resin
- Measure
- Mixing (shaken, not stirred – WRONG)
- Pour (dribble?)
- Cure (thick vs thin)



# Resin Materials & Mold Release



## Resin Materials

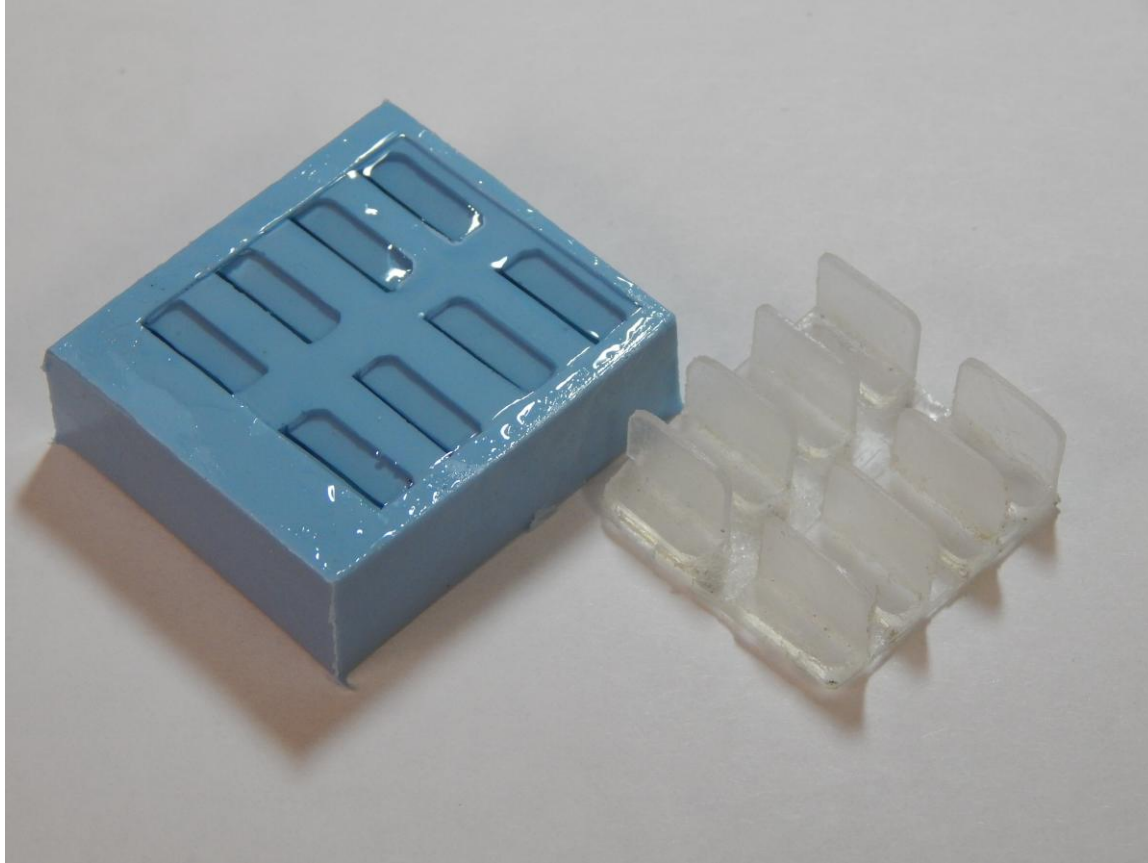
Resin, catalyst, measuring cups & stirrers



## Preparation to Cast

Resin, catalyst & RTV mold





## **RTV mold w/resin**

Before & After Pour

# Casting Cleanup & Painting

- Trim casting - sprue
- Preparation for paint - clean
- Painting
- Drying

# References

- MicroMark
  - YouTube videos
- Model railroad magazines
  - Example: MR - May 2002
- Internet
  - Google RTV molds and/or Resin casting

# Material

## Sources & cost

- MicroMark – RTV & Composi Mold
  - RTV ~ \$40
  - Composi Mold ~ \$18
  - Mold Release ~ \$20
- MicroMark Casting resin
  - CR600 Casting resin (2 part) - \$35
  - CR900 Hi-strength resin (2 part) - \$40
- Micheals – Casting resin & catalyst
  - Casting Craft ~ \$25
- Misc styrene
- Drawings & Photos - Internet

# Other

**Bridge truss**

**Rock face**

**McKeen car (preview)**



**Preview**