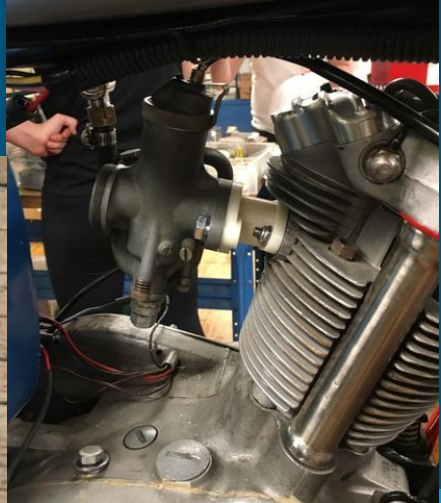


# Frame & Carburetor

Alexander Deland, Jr.  
Noelle Goudy

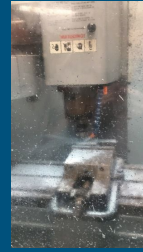
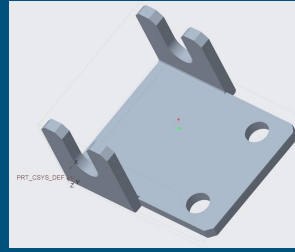


# Our Contribution

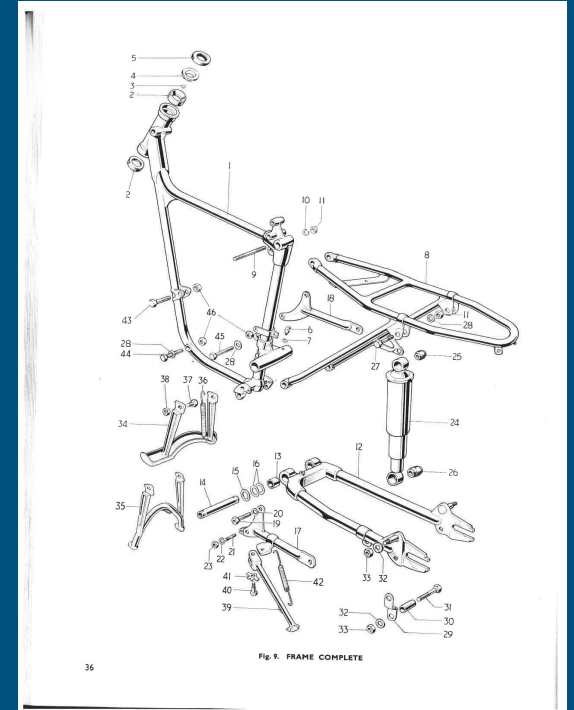
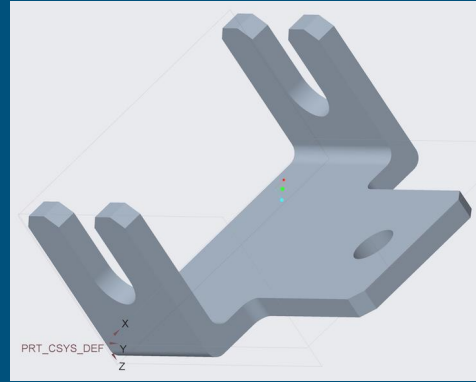
1. Frame
  - a. Sand blasting, preparation for powder coating
  - b. Assembly post-powder coating
2. Carburateur
  - a. Dismantling, assembling, cleaning, re-assembling, and testing
  - b. Throttle cable
  - c. Fuel line
3. Making parts
  - a. Manifold valve
  - b. Brackets - using CAD
  - c. Throttle cable stop
4. Handlebars
  - a. Brakes
  - b. Clutch & Throttle



# Frame

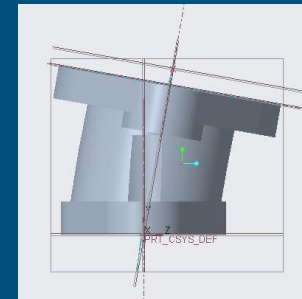
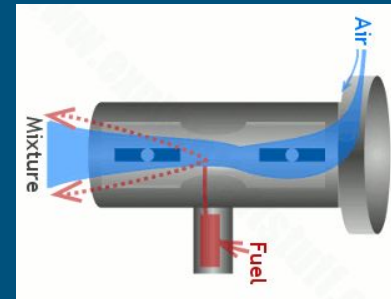
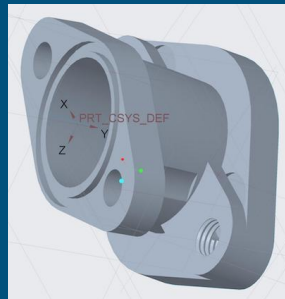
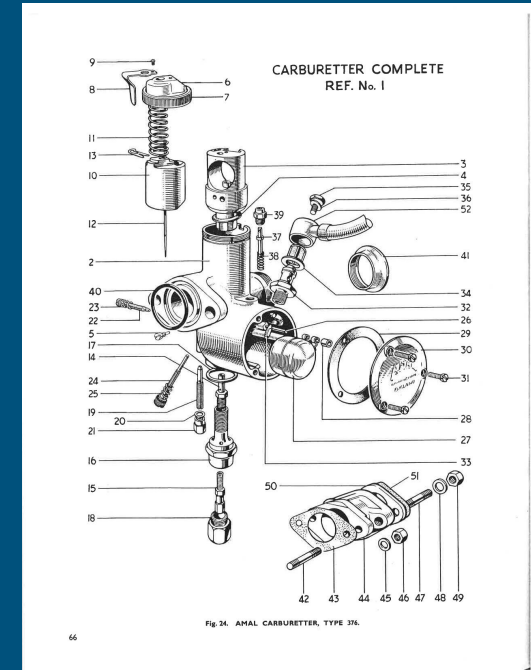


- Sandblasting
  - Purpose
  - How it works
- Handlebars
  - Throttle
- Making parts
  - CAD: PTC Creo
  - Blue motorcycle front seat bracket
  - Our front seat bracket
  - Throttle attachment



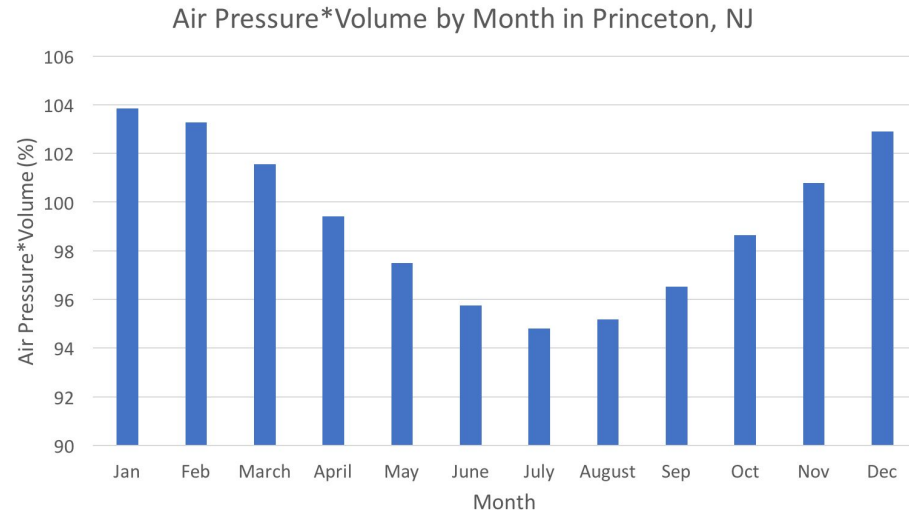
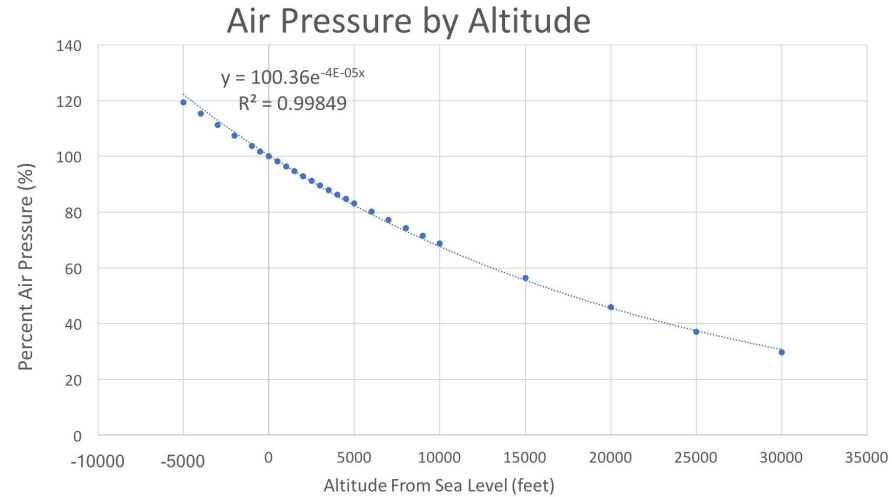
# Carburetor

- How carburetors work
  - Venturi effect
  - Choke
  - Throttle
  - Float-feed chamber
- Manifold valve
  - Increasing the angle
- Testing for leakage
  - Use gas! (Not water)



# Carburetor Calculations

- 14.7 pounds air to 1 pound fuel is a proper burn ratio
  - Without running too rich or too lean
  - Without producing HC (hydrocarbons), CO (carbon monoxide), or NO<sub>x</sub> (oxides of nitrogen)
- How does altitude affect air pressure?
- Princeton, NJ is 200 ft above sea level
  - There is about 99% of the air pressure at sea level at standard temperature (59 degrees Fahrenheit) in Princeton
- Now, how does air pressure and volume change (compared to standard temperature) by month in Princeton, NJ?
- $PV=nRT \rightarrow PV/T = nR = \text{const.} \rightarrow$   
 $P_1V_1/T_1 = P_2V_2/T_2$



# Citations

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- <http://www.explainthatstuff.com/how-carburetors-work.html>
- <https://giphy.com/explore/venturi>
- <http://www.industrialoutpost.com/5-oddly-satisfying-gifs-prove-sandblasting-misleading-term/>
- <https://www.mide.com/pages/air-pressure-at-altitude-calculator>
- [https://www.princeton.edu/ssp/63-2-tiger-cub/library/carb\\_altitude.pdf](https://www.princeton.edu/ssp/63-2-tiger-cub/library/carb_altitude.pdf)
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