

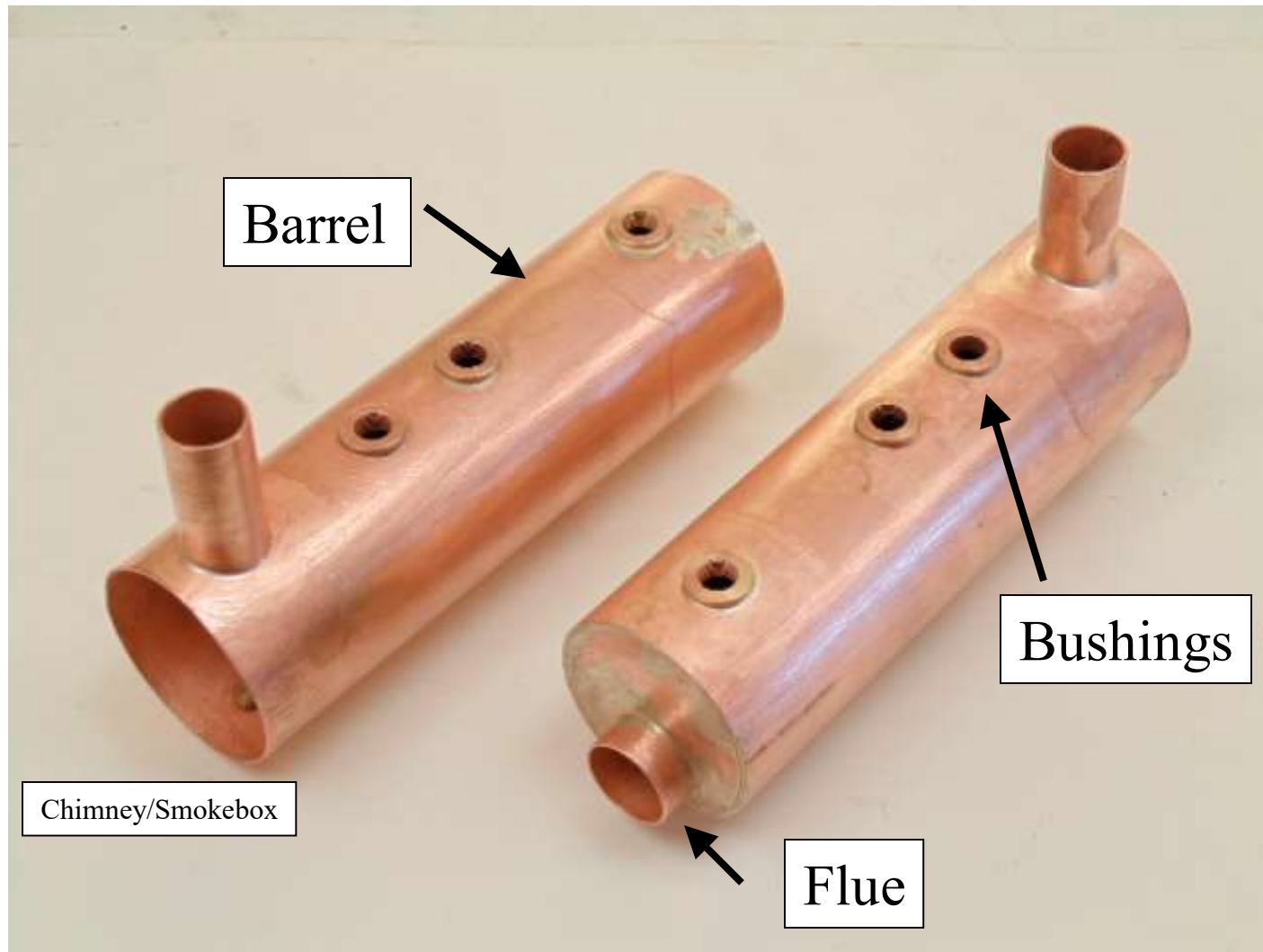
Boiler Building

Bob and Andy Sorenson

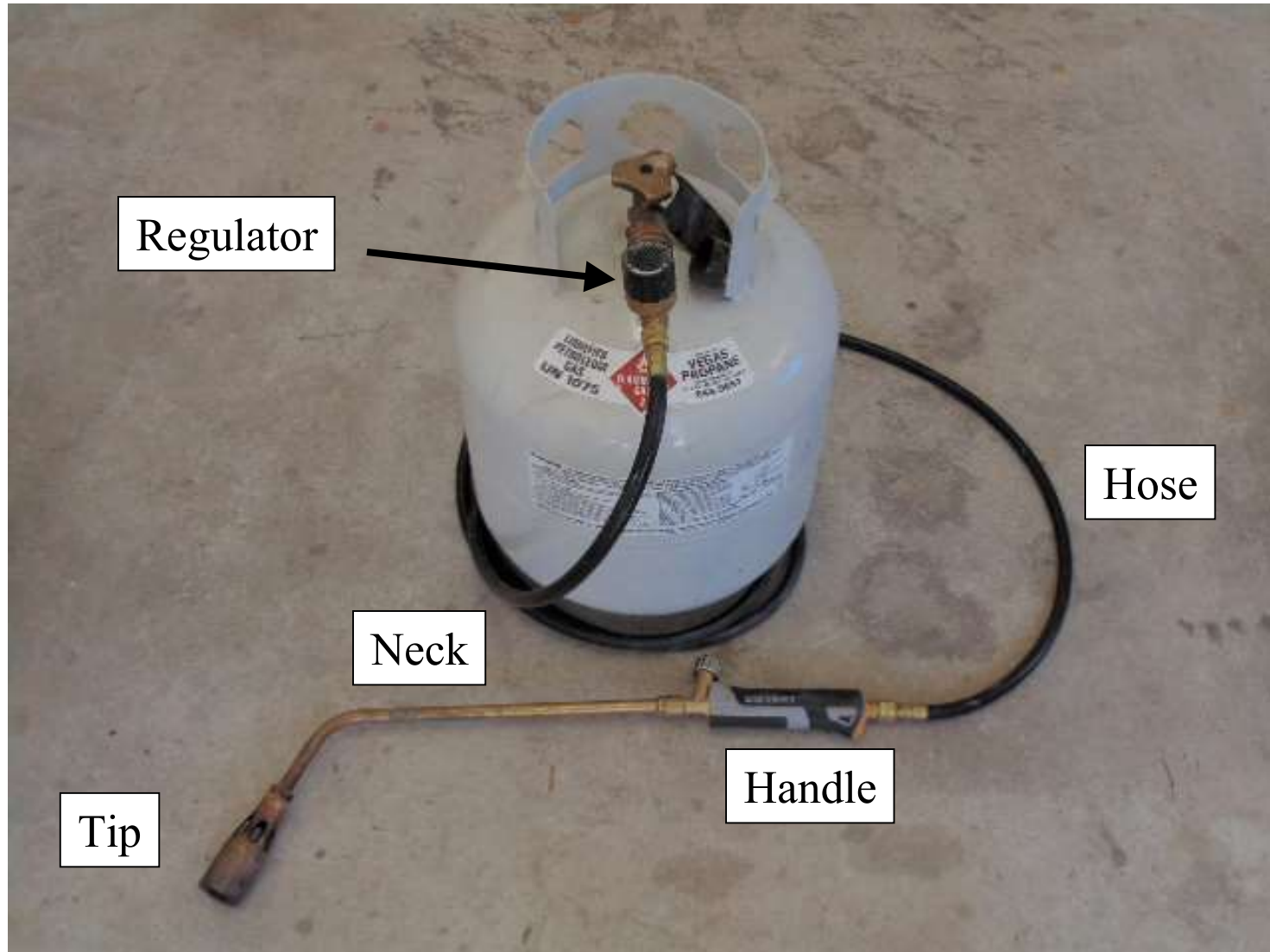
Objectives

- Boiler Nomenclature
- Soldering Torch and Supplies
- Boiler Assembly
- Testing Method
- Recommended Practice

Nomenclature



Torch Assembly



Torch Assembly



- Sievert Brand
- Propane & Air
- Tip #2942 (small)
- Tip #2943 (medium)
- 75,000 to 150,000 BTU
- 10' hose
- 5 gallon BBQ tank
- www.BestMaterials.com

Silver Solder

Trade Name	American Standard Designation	Silver	Copper	Zinc	Tin	Cadmium	Flow Temp (F)
Easy-Flo 45	B _{Ag} -1	45	15	16		24	1145
Safety Silv 56	B _{Ag} -7	56	22	17	5		1205

1/16" diameter wire

Sold by the ounce of silver content - 5oz = 27'

Cadmium is Toxic!! Use in well ventilated areas.



Flux



After Soldering -- “Pickle Bath”



The Build

Bushings



- Alloy 932
or 936 Bronze

- NO brass

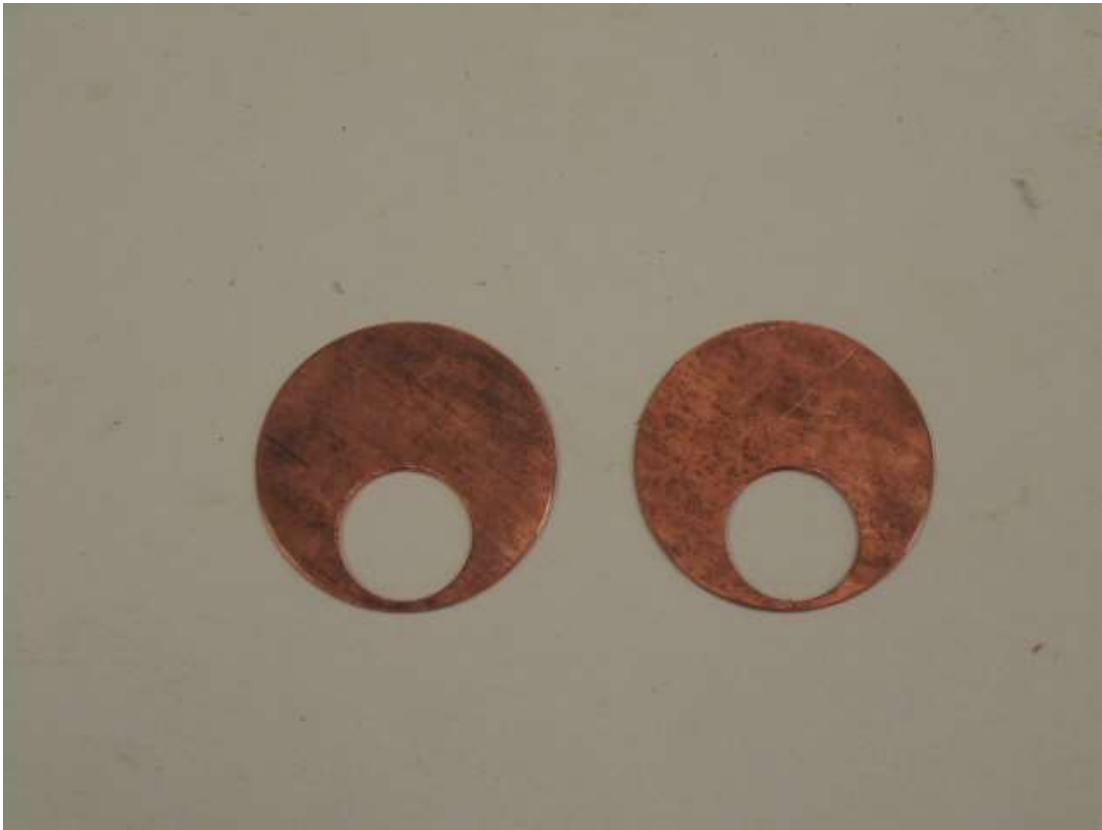
Boiler Barrel



- Copper plumbing pipe “Type M”

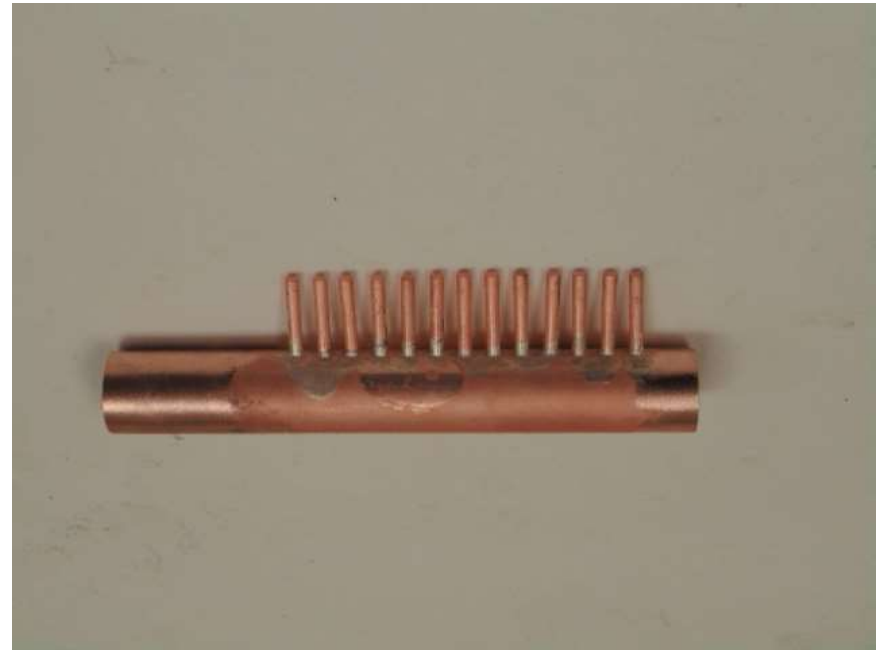
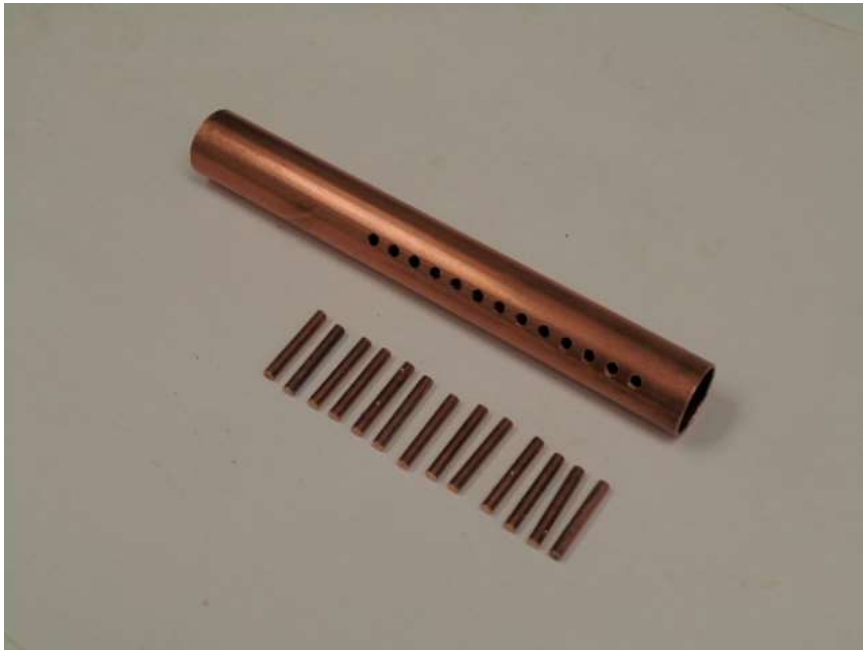
- Thin wall copper tube 0.032” wall

End Plates



1/16" thick
copper sheet

Flue



- 1/2" or 3/4" copper plumbing pipe
- 1/8" diameter copper round "porcupine"

Assembly



Assembly



Assembly



Assembly



Assembly



Finished



Testing



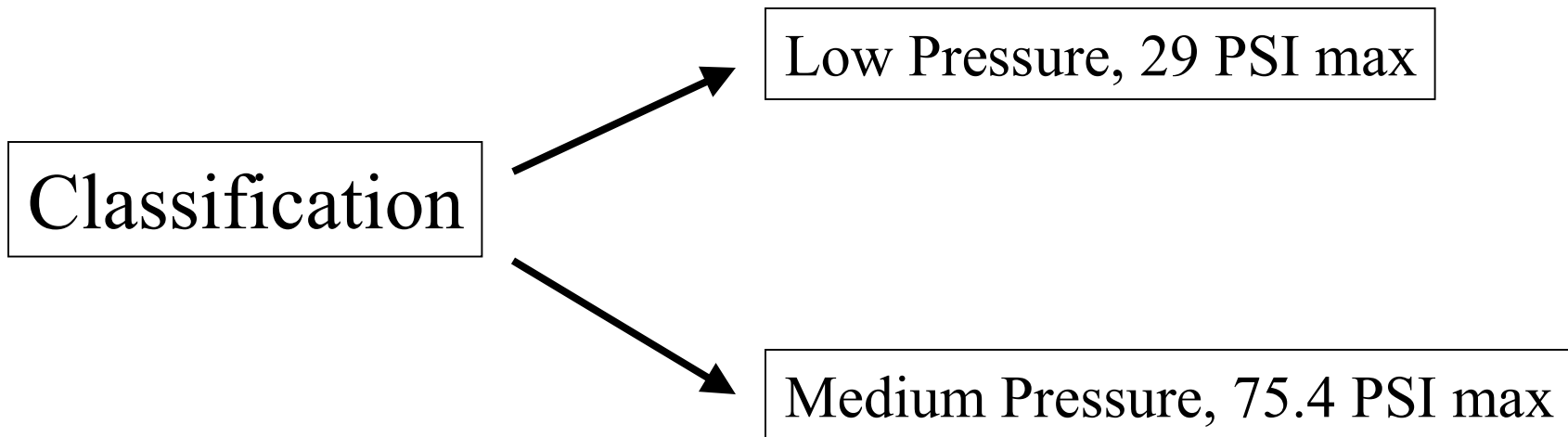
- Hydraulic test pump to 2x operating pressure
- Hold pressure for 20 minutes
- NO leaks allowed

Design Criterion

Australian Miniature Boiler Safety Committee

(AMBSC)

Code Part 3



AMBSC, Medium Pressure Boiler Practice

- Maximum pressure 75.4 PSI
- Boiler Barrel
 - Up to 60 mm 0.91 mm thickness
 - 60 mm to 77 mm 1.2 mm thickness
- Unflanged End Plates
 - Barrel up to 51 mm 1.6 mm thickness
 - 51 mm to 77 mm 2.0 mm thickness
- Silver soldered throughout
- Bushings -- Copper or Bronze

Questions??