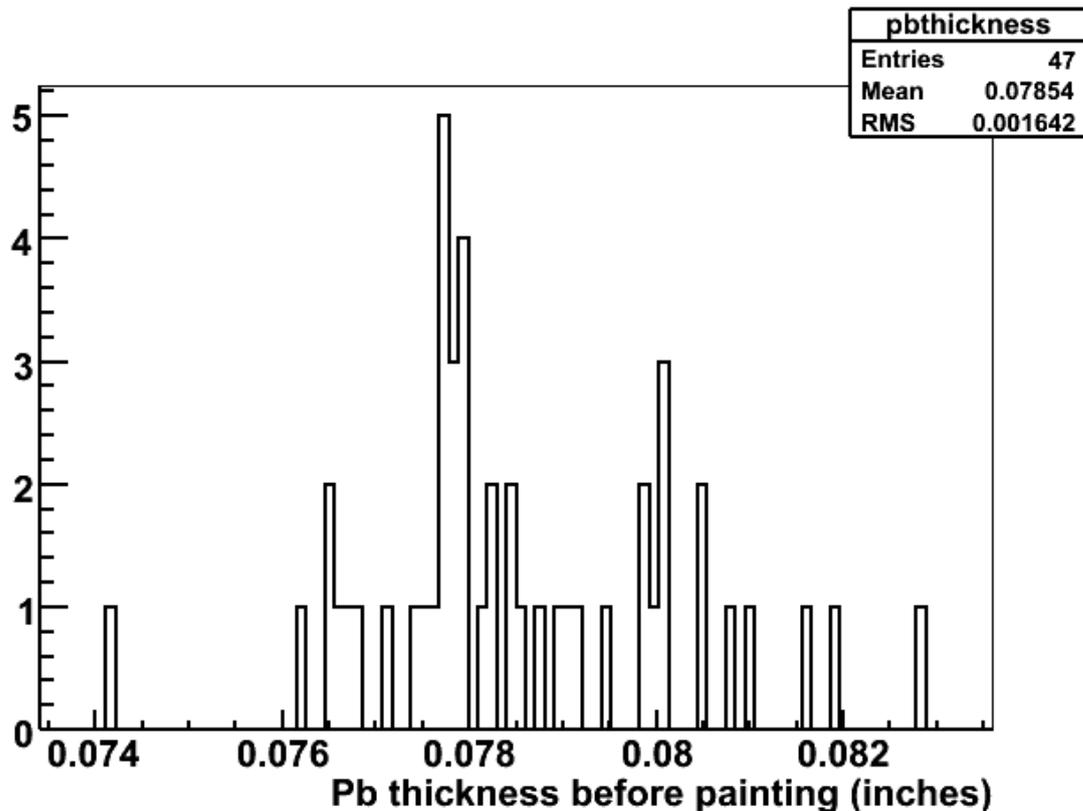


Lead Sheet Measurements

Jim Kilmer's crew has taken the Pb sheets
measured the thickness for a 10 cm grid
measured the weight of each sheet
painted each sheet
and trimmed them to size.

There are 47 sheets total
enough to make 23 absorber planes

Thickness measurements



A 10 cm grid
13x8 = 104 points

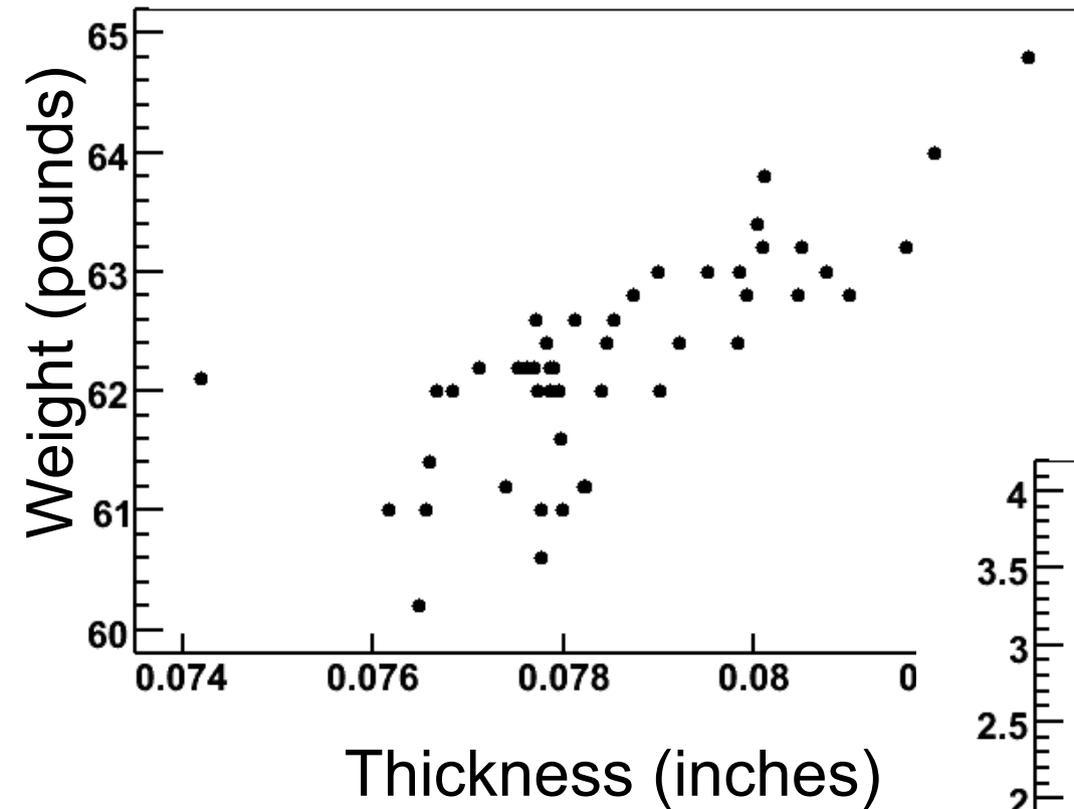
all points averaged

typical single plane
RMS was 0.001 inch

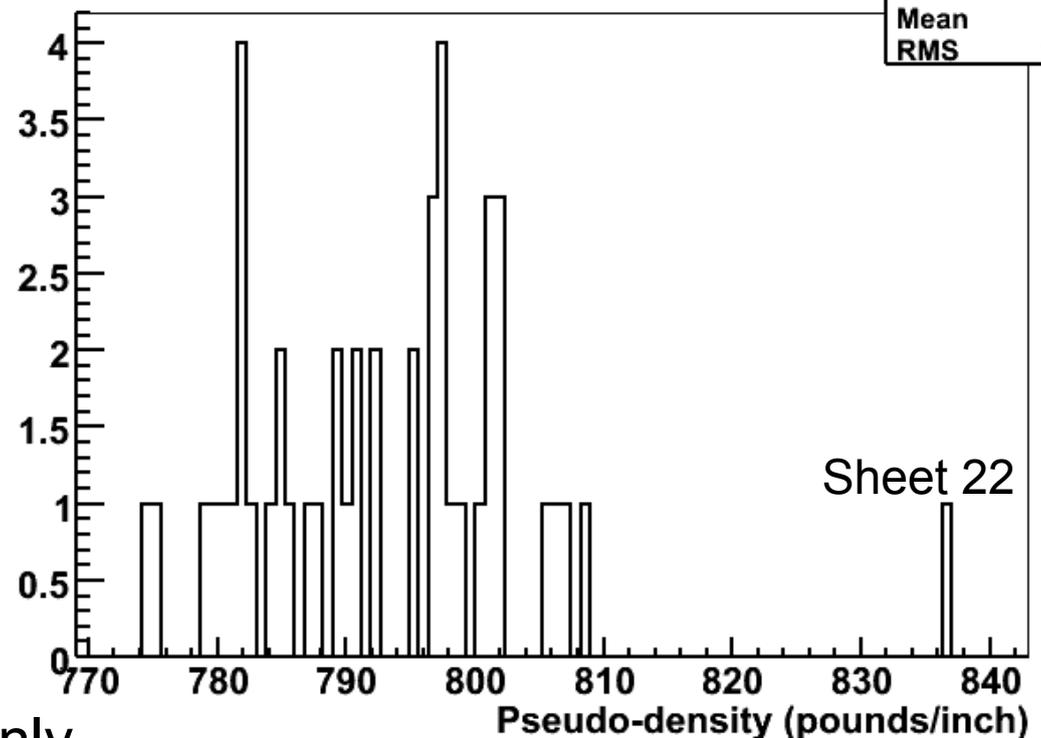
Average of 47 planes
mean 0.07854" = 1.99 mm

Just looking at the spreadsheet numbers, some planes
have dramatic thin areas (planes 35 and 45)
and some have single, strange thickness points (39, 20)

Thickness and weight correlation



myhist	
Entries	47
Mean	793
RMS	10.98



Sheet 22

Don't have re-measured
xy dimensions
on a sheet-by-sheet basis.

Compute a pseudo-density using only
weight divided by thickness

Conclusions

The rest are 1.99 mm thick on average
With a 2% RMS sheet to sheet (worst case error)
And 1.2% RMS within a typical sheet.

There are one or two noticeably strange sheets

Take out the strange ones
and a pile of electron showers
that samples many sheets has better error
But really $2\%/\sqrt{N}$ which is 1% or less.

n.b. paint layer may be a 1% increase in material