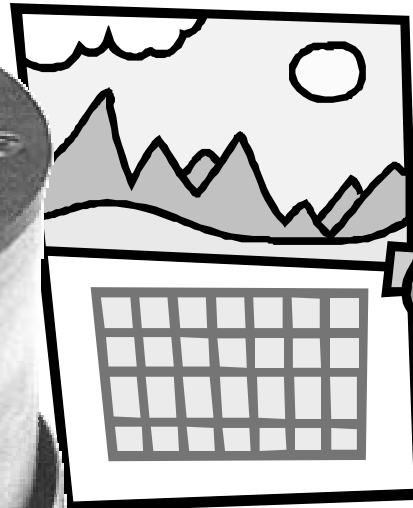


"A YEAR WITH..." **DAVE**



DYNAMIC ANGLE VALIDATION

L. Michael
10/30/02

Approved Gyrotory Compactors



Pine AFGC125X



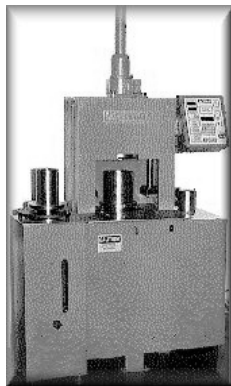
Pine AFG1



Brovold



Rainhart



Troxler 4140



Troxler 4141

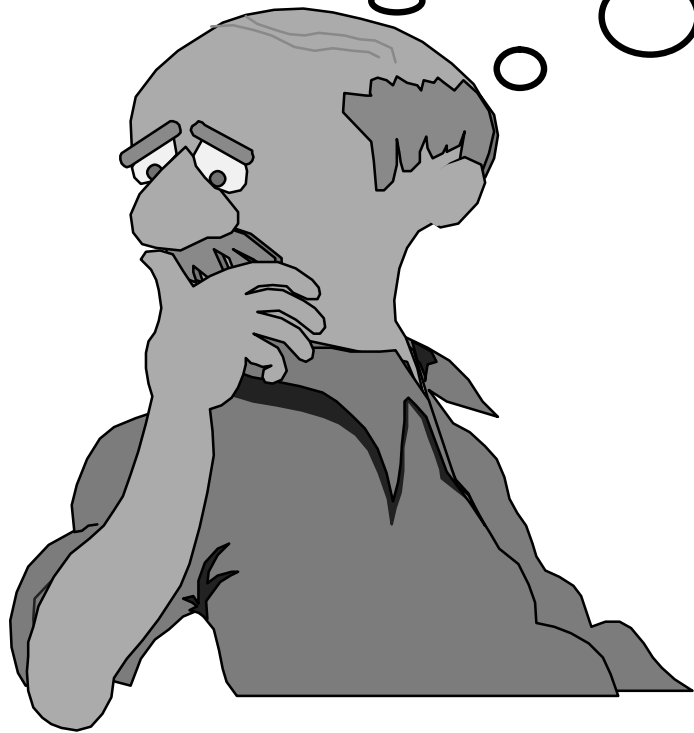
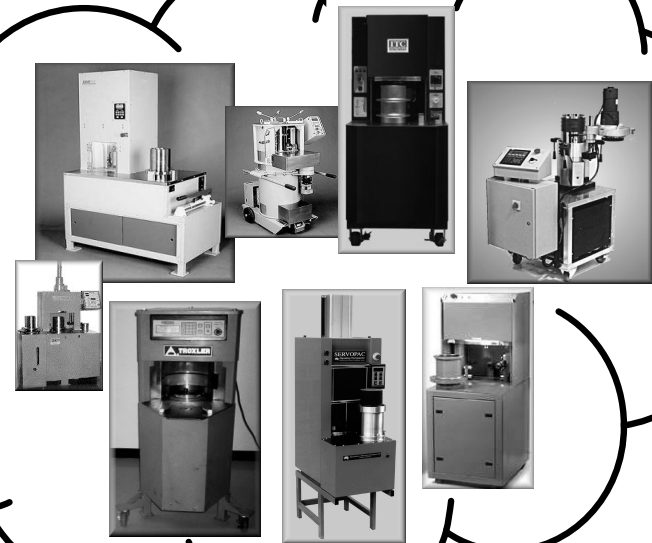


Interlaken



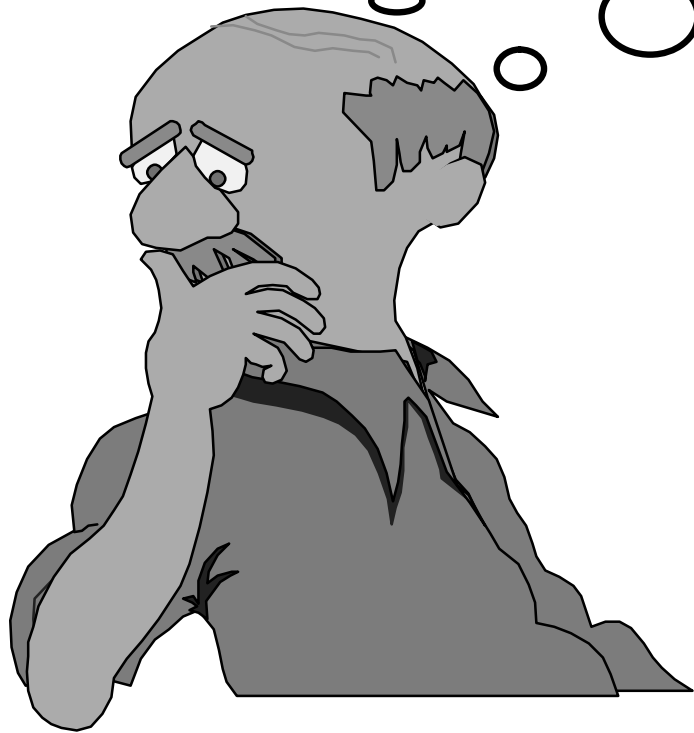
IPC ServoPac

Are they all
the same?



2001

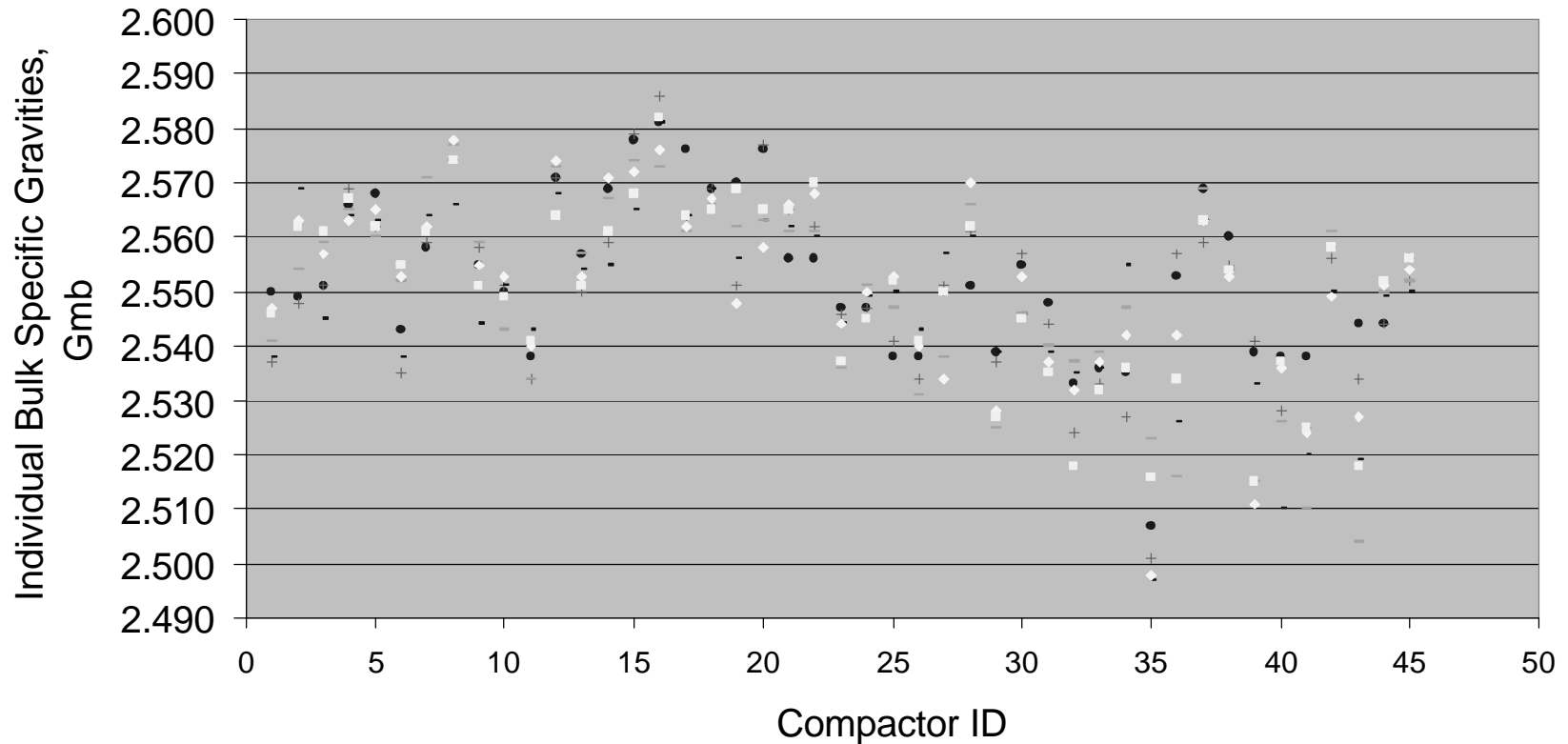
Are they all
the same?



2002
NO!!!

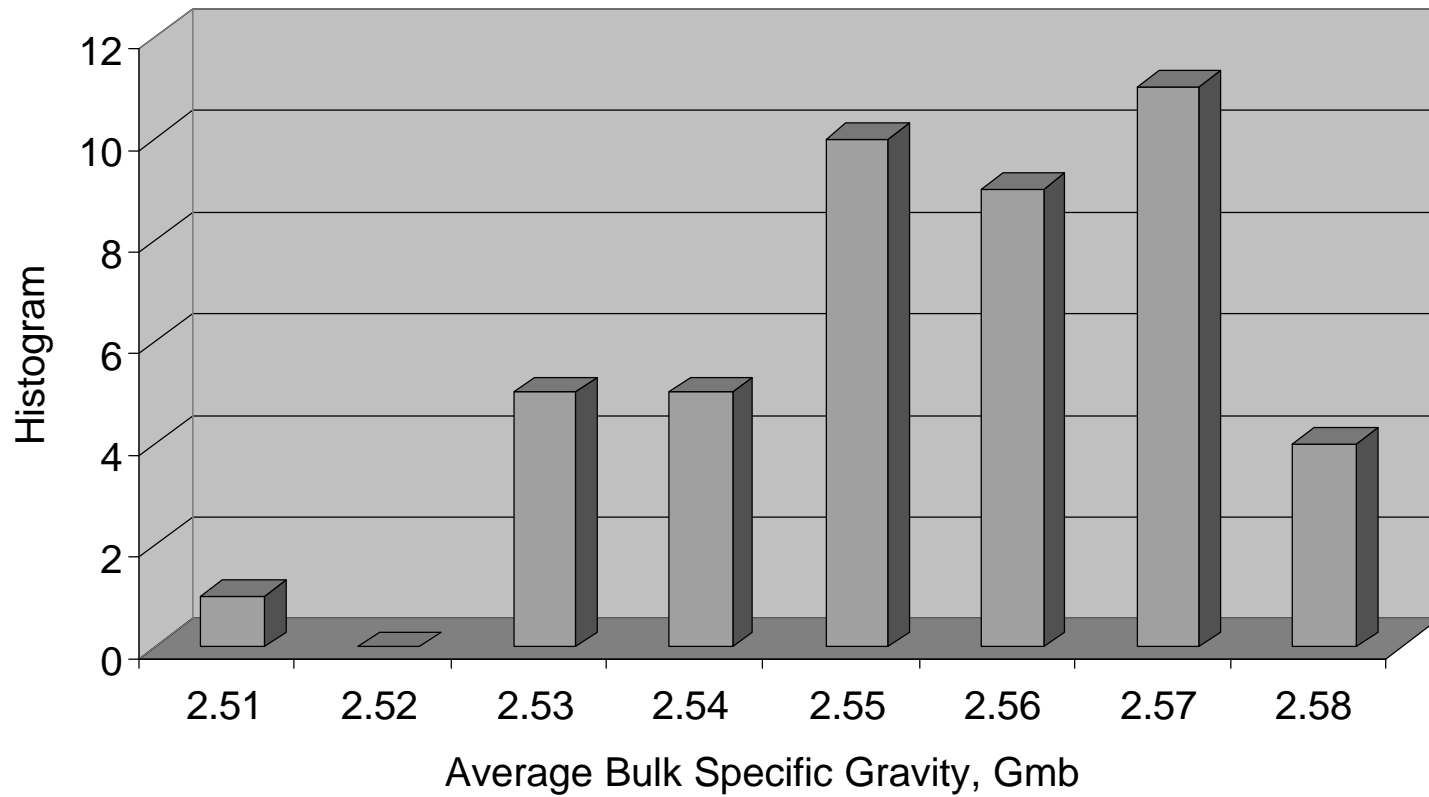
Maryland SHA Round Robin

SGC Set to 1.25 degrees Externally
12.5mm Mixture / 6 Replicates



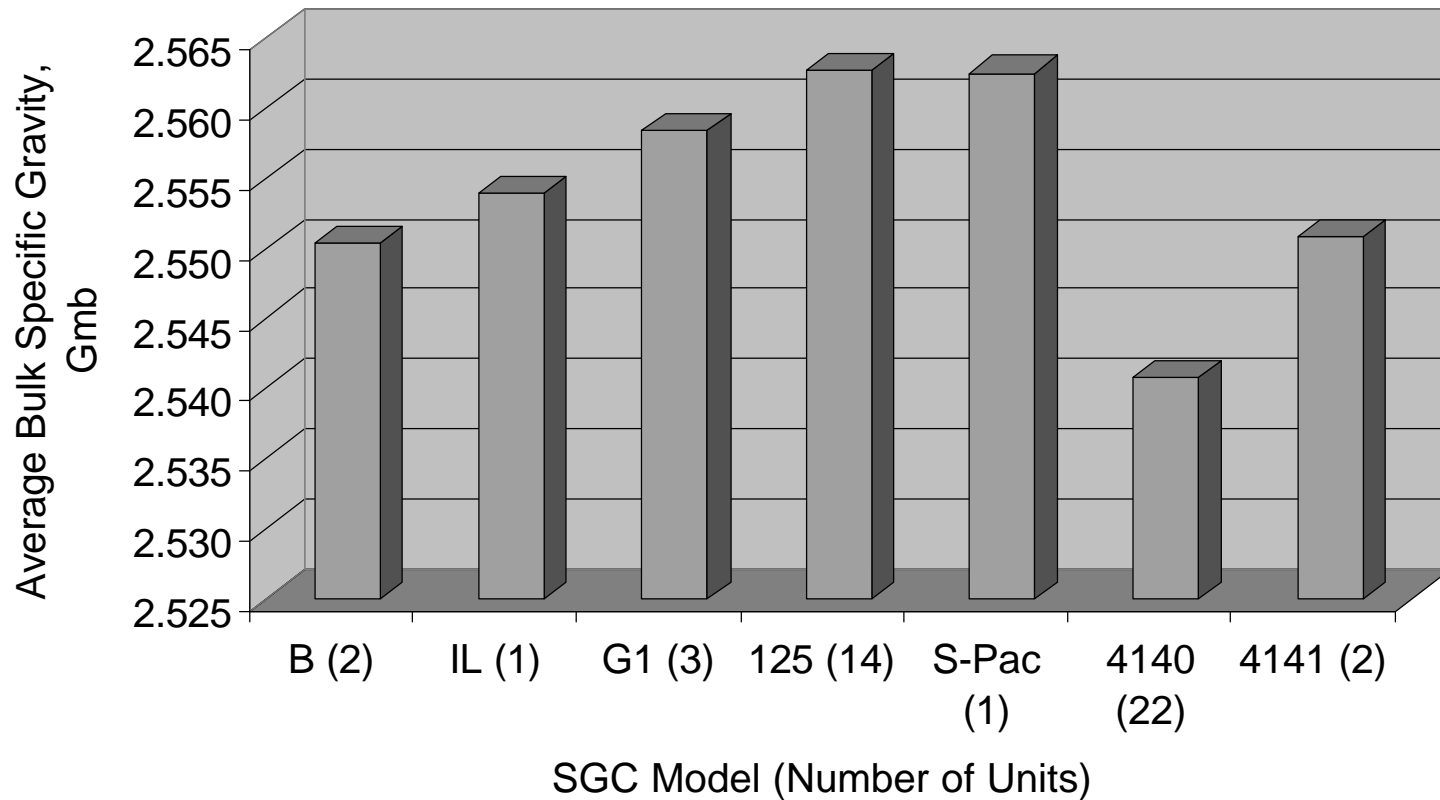
Maryland SHA Round Robin

SGC Set to 1.25 degrees Externally
12.5mm Mixture / 6 Replicates



Maryland SHA Round Robin

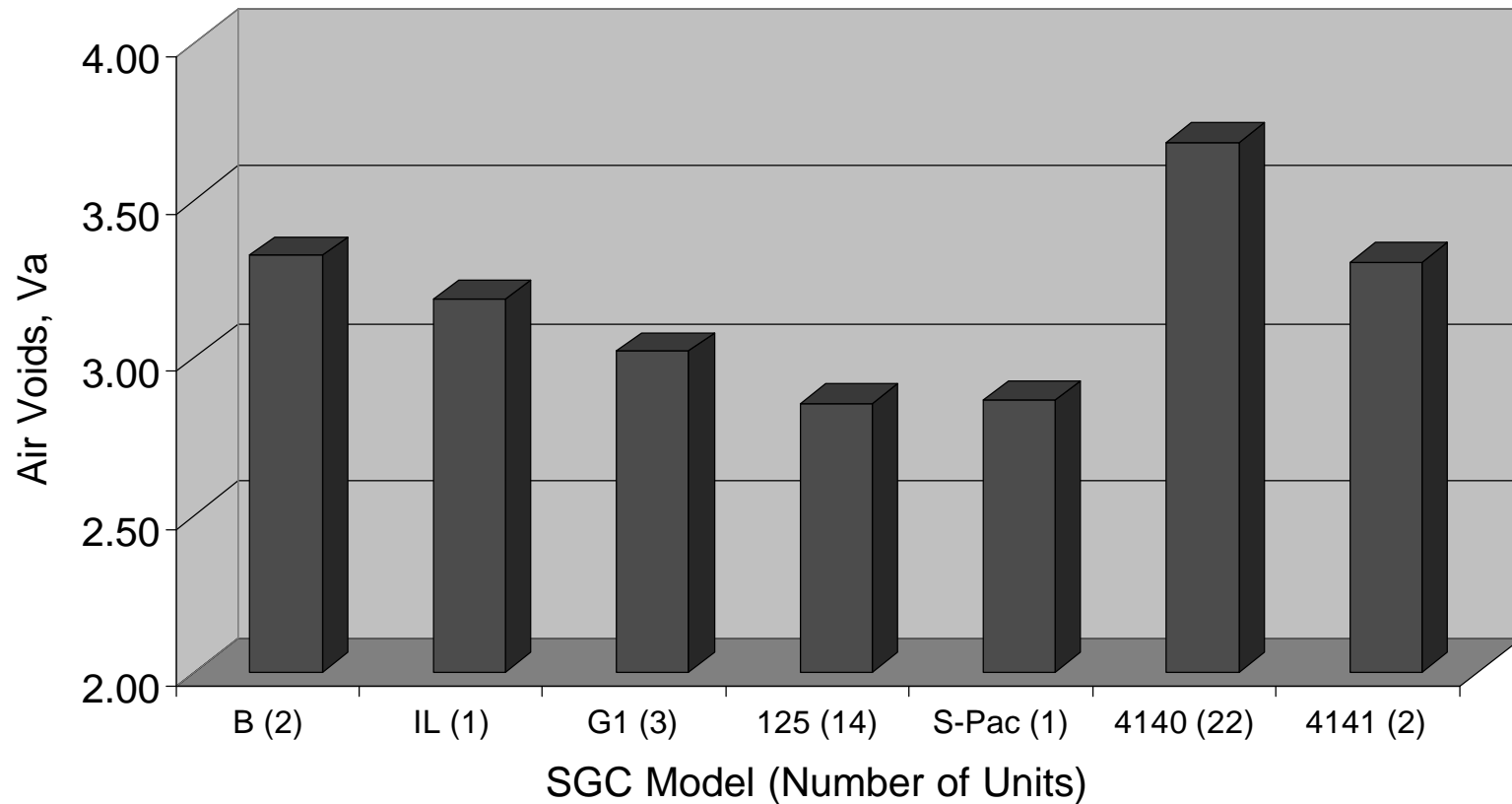
SGC Set to 1.25 degrees Externally
12.5mm Mixture / 6 Replicates



Maryland SHA

Round Robin

SGC Set to 1.25 degrees Externally
12.5mm Mixture / 6 Replicates



Maine DOT

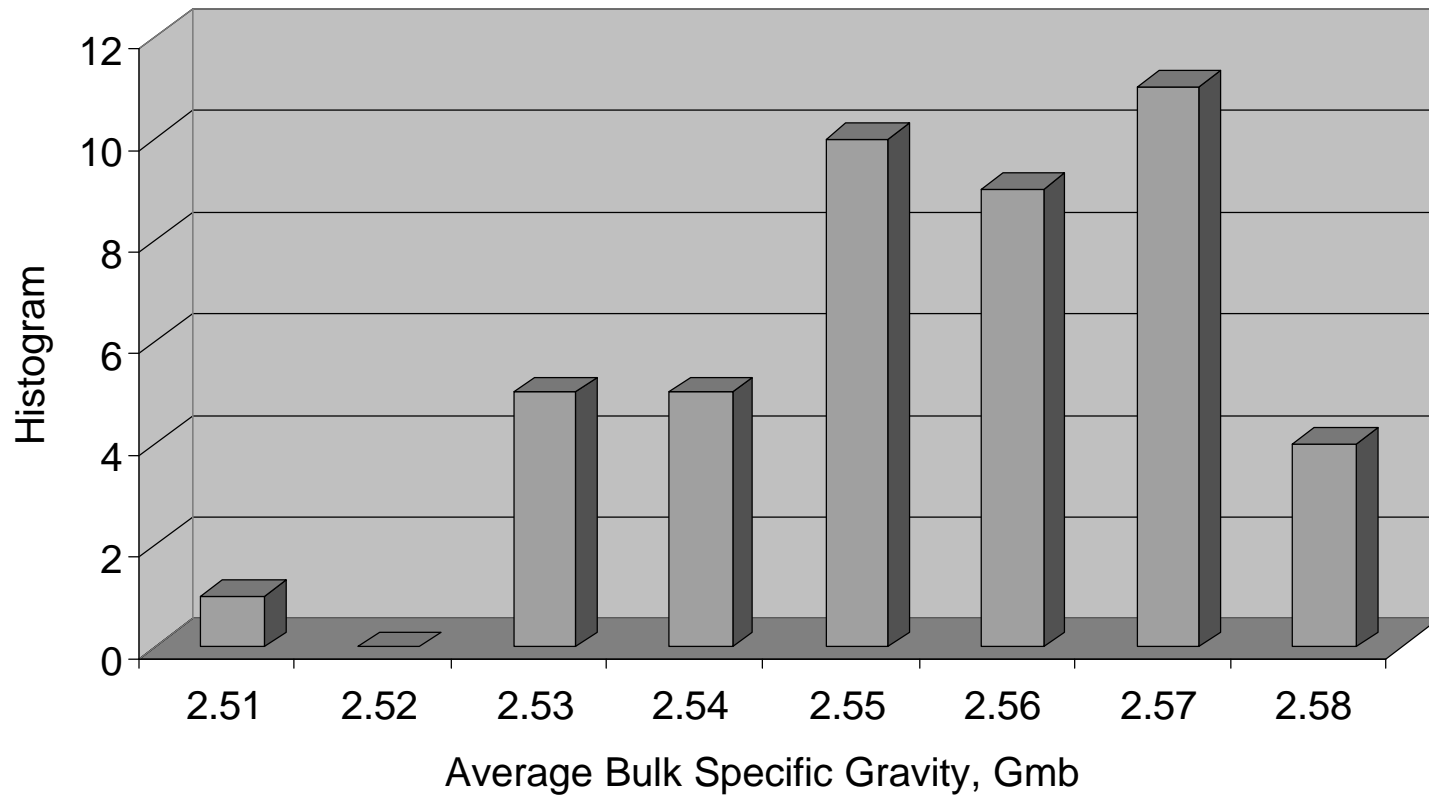
- Since going to internal angle set by DAV
- In 2002
 - ✍ Out of over 2000 bulk splits (DOT/Contractor)
 - ✍ 1.5% dispute rate
 - ✍ 0.5% overturned



Maryland SHA

Round Robin - Original

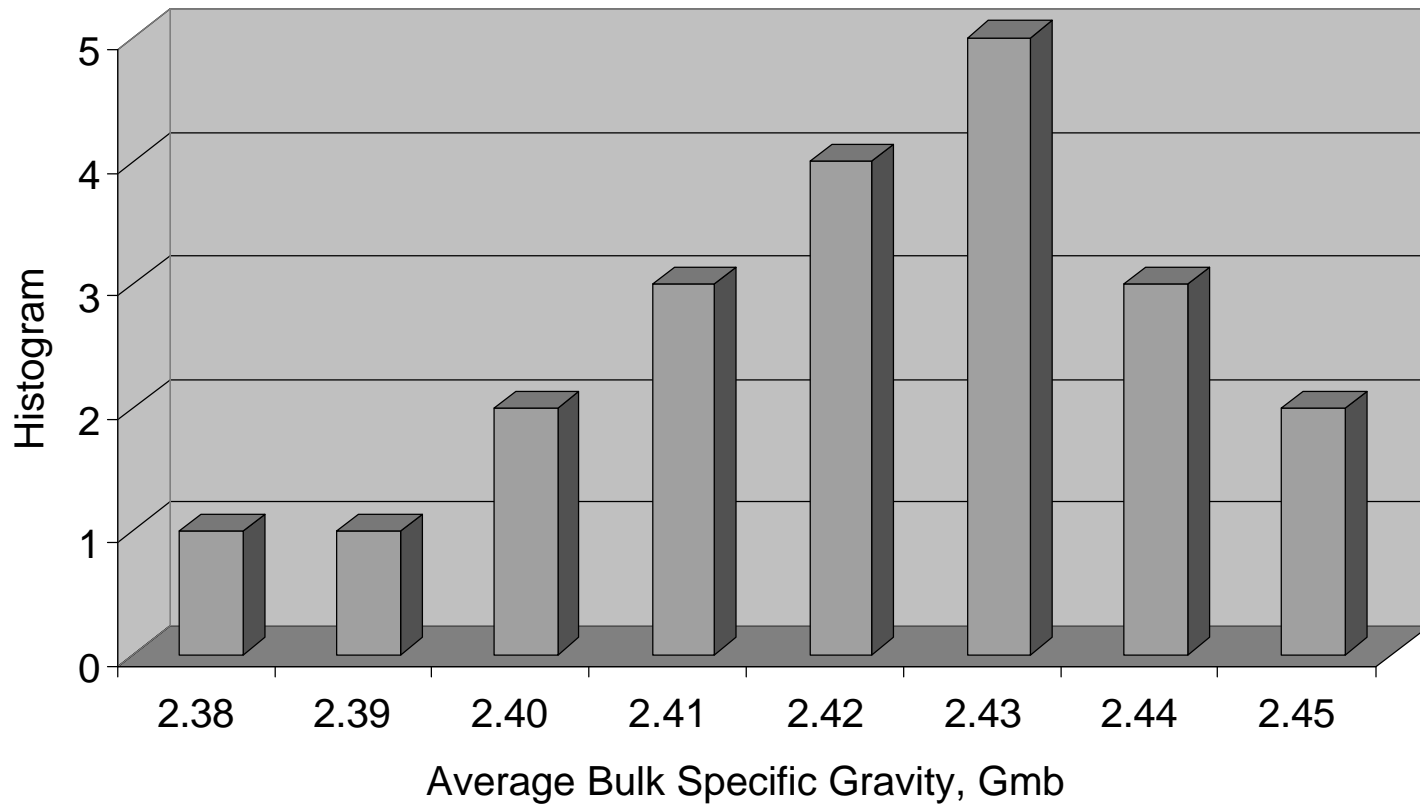
SGC Set to 1.25 degrees Externally
12.5mm Mixture / 6 Replicates



Maryland SHA

Round Robin - DAV

SGC Set to 1.16 ± 0.02 degrees using DAV
12.5mm Mixture / 6 Replicates



LESSONS LEARNED WITH DAV

● Gyrotory Compactor

- ✎ Bearings - excessive wear
- ✎ Brake - not functioning properly; does not maintain the same starting point
- ✎ Ram head - excessive wear
- ✎ Column - lack of grease
- ✎ Machine - not maintained; stops during compaction; worn parts need replaced



LESSONS LEARNED WITH DAV

● Molds

- ✍ Out of round
- ✍ Excessive wear
- ✍ Lack of maintenance



LESSONS LEARNED WITH DAV

- Mix

- ✍ Different mix sizes change internal angle

- Some compactors do not compare;
reason is unknown

Refinement of AASHTO T 312-01

Additional Issues

● Implementation Issues:

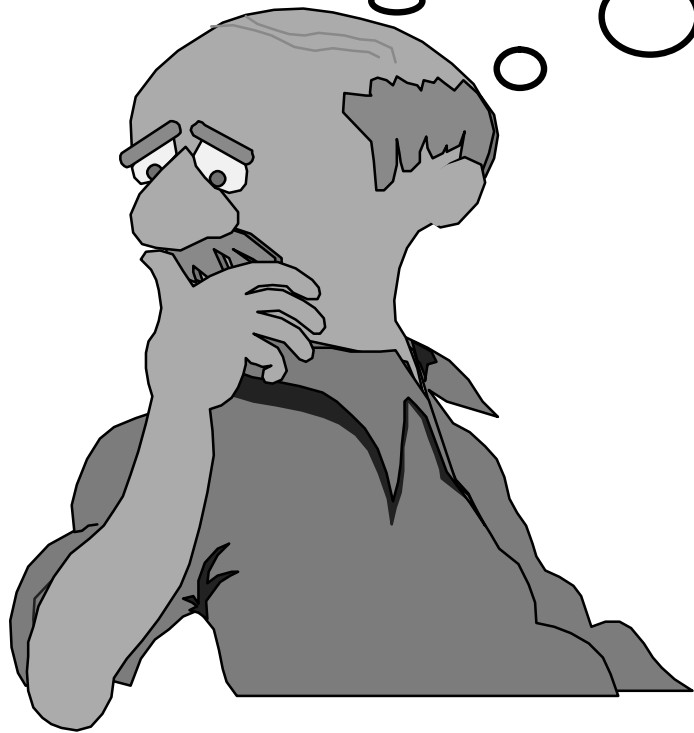
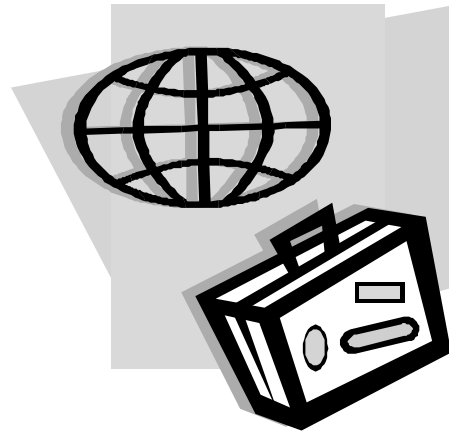
- ✍ Cost(s)
- ✍ Maintenance
- ✍ Specifications

● Mixture stiffness versus internal angle

● Mold Wear

● Round-robin (inter-laboratory) study

Now What ?



2003

2003 IN MARYLAND

● Gyrotory Compactor

- ✍ Must be serviced and Internal Angle set
- ✍ at 1.16

● Molds must be checked for:

- ✍ Out of round
- ✍ Excessive wear

Questions...

