VIII. PRESSURE CALIBRATION

As runs were made the oil pressure in the lines to the rams was recorded. This was related to the actual pressure inside the tetrahedrons by calibrating against established transitions.

In all runs the pyrophyllite tetrahedron faces were painted with a slurry of rouge in methanol to increase the friction between the tetrahedron and the anvil face. The tetrahedrons were baked at 110 ^{o}C for at least one hour.

Lees has studied the pressure distribution in the tetrahedron and found about a seven per cent gradient between the centroid and the anvil face and very strong gradients near the gaskets (31). Within one-eighth inch of the centroid the pressure gradient was probably less than one per cent. Since the samples used in this study were generally within one-sixteenth inch of the centroid the pressure gradient over the sample was considered negligible.

In prior calibration studies the relation between oil pressure and sample pressure has been shown to have two regions. Up to 25 kilobars the realtion is an S shaped curve and above 25 kilobars it is quite linear for three-fourth inch anvils (32). Since runs were made above and below 25 kilobars both sections of the curve were