ence of different anvil lubricants on the stress distribution. Molybdenum disulphide (coefficient of friction = 0.04) was used in Figure 7, and iron oxide (coefficient of friction = 0.71) was the lubricant for Figure 8. The higher surface friction retards the radial expansion, and causes an intensification of the stresses at the wafer center. The shearing stress vanishes along the wafer axis and on the mid-meridian plane by virtue of symmetry. Both of these figures indicate that the axial variations are not significant for the unconfined wafer, especially in the low shear case. This latter case also points the discrepancy involved in assuming that the pressure in the wafer is the total force divided by wafer area, or what is equivalent, the average value of the normal axial stress σ_z .

The influence of wafer material properties has been examined from the results of compression tests on 6061 aluminum and Armco iron. Typical applied force-displacement, and stress distribution diagrams have been constructed in the manner described earlier, and are shown in the following figures. Wafers having two different D/H ratios were constructed from 6061 aluminum, and their applied force test results were superposed on Figure 9 to show the apparent agreement with the analysis. This figure indicates that the wafer shape (D/H ratio) does not play a major role in the compression of unconfined wafers, within the range studied herein. Figure 10 represents the corresponding stress and pressure distributions for 6061 aluminum, and it is noted