- STAGS "refined" soccerball; elastic-plastic; dent from point load; Wimp=0.297 inch; 490; usrfab, node 3976
- STAGS "crude" soccerball; elastic-plastic; imposed loads cos(theta) dent; Wimp=0.2343 inch; node 911
- Δ STAGS "crude" soccerball; elastic-plastic; imposed w cos(theta) dent; Wimp=0.1777 inch; node 911
- + STAGS "crude" soccerball; elastic-plastic; imposed w cos(theta) dent; Wimp=0.2615 inch; node 911
- X STAGS "crude" soccerball; elastic-plastic; n=1 mode imperf; Wimp=0.200 inch; 480; usrfab, node 911
 design pressure (psi)

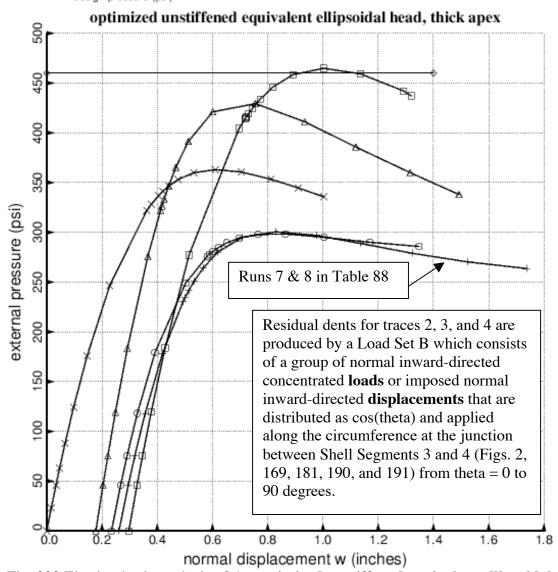


Fig. 200 Elastic-plastic analysis of the **optimized unstiffened equivalent ellipsoidal** shell with the thick apex with t(apex) = 0.4 inch; Wimp=0.2 inch; the optimum design is listed in Table 78. Collapse of the imperfect shell with four different kinds of imperfections. trace 1= imperfection is a residual dent caused by a single concentrated load (Fig. 171); trace 2 = imperfection is a residual dent caused by a "cos(theta)" distribution of concentrated imposed normal loads along a circumferential line from theta = 0 to 90 degrees (Fig. 186); traces 3 and 4 = imperfections are residual dents caused by a "cos(theta)" distribution of concentrated imposed normal displacements along a circumferential line from theta = 0 to 90 degrees (Fig. 197), and trace 5 = a linear buckling modal imperfection with n=1 circumferential wave (Figs. 190 and 191). Notice the similarity between traces 2 and 4. Compare with Fig. 188.