

APPENDIX C

COMPUTER PROGRAMS

The analyses described in the text were programmed in the FORTRAN IV algorithmic language for calculation on Battelle's CDC 3400 computer. The following is a list of programs which includes a brief description of each:

PROGRAM COMPST1 - Analysis of compound (multi-ring) cylinder based upon static shear strength. Calculation of pressure-to-strength ratio $p/2S$ in Figure 10 in the text.

PROGRAM COMFPG1 - Analysis of compound cylinder based upon shear fatigue strength. Calculation of pressure-to-strength ratio p/σ shown in Figure 11.

PROGRAM SEGMENT1 - Analysis of ring segment under radial pressures. Some results given in Appendix A.

PROGRAM SEGM2N - Analysis of pin segment under radial pressures and shear. Some results given in Appendix A.

PROGRAM COMPHS1 - Analysis of compound cylinder with high-strength liner. Calculations of pressure-to-strength ratios p/σ_1 and p/σ shown in Figures 12, 13, 14, and 15.

PROGRAM COMPHS2 - Analysis of compound cylinder with high-strength liner. Calculation of shrink-fit interferences, operating stresses, and prestresses.

PROGRAM PLTR1 - Analysis of Poulter (ring-segment) cylinder with high-strength liner. Calculation of pressure-to-strength ratios p/σ_1 and p/σ shown in Figures 16, 17, 18, and 19.

PROGRAM PLTR2 - Analysis of Poulter cylinder or pressure support cylinder (inner part of ring-fluid-segment container). Calculation of interferences, operating stresses, and prestress.

PROGRAM PSCYL1 - Analysis of pressure support cylinder (inner part of ring-fluid-segment container). Calculation of pressure-to-strength ratios p/σ_1 and p/σ_3 shown in Figures 20, 21, 22, 23, and 24.

PROGRAM PGSPNCYL - Analysis of segmented shear-pin (pin-segment) cylinder with high-strength liner. Calculation of pressure-to-strength ratio p/σ_1 and p_1/p shown in Figures 25 and 26.