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2 Static Fluids

- 2.1 Equation for pressure distribution in a fluid which is static in *some* reference frame (its "rest-frame").
- 2.2 Boundary condition on pressure at a density discontinuity in the absence of surface tension.
- 2.3 Pressure distribution in a uniform gravitational field of fluid with constant density. Manometers and barometers, forces on dams and gates, buoyancy forces on submerged and floating bodies, hot-air balloons. Stability.
- 2.4 Compressible fluids in static equilibrium in a uniform gravitational field. The isothermal ideal-gas model of the atmosphere; constant-compressibility model of the ocean.
- 2.5 Pressure distribution in accelerating rest-frames. Liquids at rest in linearly accelerating and rotating reference frames.

Read: Fay Chapt. 2, pp 44-75 (or your old undergraduate text)
 Kundu & Cohen Chapt. 1, Chapt 4.1–4.6 (inclusive)

Problems: Shapiro & Sonin 1.3, 1.4, 1.7, 1.8, 1.9, 1.10, 1.11, 1.18