Thin Unsteady Heavy Jets (Classic Reprint) (Paperback)

By Joseph B Keller

Forgotten Books, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****.Excerpt from Thin Unsteady Heavy Jets The hydrodynamic theory of jets attempts to determine the surfaces of a jet and the detailed velocity distribution within a jet. The main difficulty stems from the nonlinear boundary conditions to be satisfied on the unknown jet surfaces. When the flow is restricted to be two-dimensional and steady, and surface tension is neglected, this difficulty can be overcome by the method of conformal mapping and the surfaces and flow can be found exactly. This determination is based on the exact equations of hydrodynamics, omitting viscosity. In order to treat more general problems (unsteady, three-dimensional, or including gravity) the simpler hydraulic theory is usually employed. In this theory one gives up the attempt to find the detailed velocity distribution within the jet, but instead assumes that the velocity is constant on each cross-section of the jet. Since this assumption is incompatible with the exact equations of hydrodynamics, it is necessary to use different, approximate, equations based on the conservation laws of mechanics. These equations can be solved and yield the shape, thickness...

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