

Continued investigation of smoke movement in halls has concentrated on a study of gravity currents in long ducts with the salt water modeling technique. A brief description of typical results obtained is given here. A more complete description of the data will require a model for the flow and this is still being developed.

Although these flows fail to model gravity currents formed in accidental fires because heat transfer effects are completely absent, they do illustrate many interesting features of flows produced in fires and will greatly facilitate the study of these flows in planned, large gas-fire experiments in which heat transfer processes are important.

The chief aim in the work reported has been to obtain an understanding of the effects of viscosity on the development of gravity currents - a problem still being studied. Also being studied is the reflection process, which occurs when the gravity current impinges on the closed end of the duct, and the propagation of the reflected wave from the end of the duct to the origin of the current.

The apparatus and the results of a typical high Reynolds number experiment, are described. Correlations of the data from a large number of experiments for several key parameters are given.