Computer Models
For
Fire and Smoke

Model Name:	COMPBRN III
Very Short Description:	Zone model for compartment fires, compatible with probabilistic analysis.
Modeler:	G. Apostolakis, University of California at Los Angeles
References:	Ho, V., Siu, N., and Apostolakis, G., "COMPBRN – III – A Computer Code for Modeling Compartment Fires," UCLA-ENG-8524, NUREC/CR-4566, November 1985.
Availability:	On request (public domain)
Hardware:	IBM-compatible PC Math co-processor 5 ¼" floppy drive, 640 kB RAM, 10 MB hard disk
Language:	FORTRAN 77
Size:	185 kB (executable), 100 kB (service) plus input and output files (variable)

Detailed Description:

COMPBRN is a deterministic fire hazards computer program designed to be used in a probabilistic analysis of fire growth in a particular room. It is a zone model. COMPBRN III requires a large amount of input data to specify a particular problem. In addition to the geometry of the enclosure and the different fuel types present, physical parameters such as the density, specific heat, thermal conductivity, heat of combustion, piloted and auto ignition temperatures, burning rate constants, combustion efficiency, etc., are required for each fuel. The output includes the total heat release rate of the fire, the temperature and thickness of the hot gas layer, the surface temperature of individual fuel elements and the thermal heat flux at user-specified locations.