

This explosion is about two-thirds as powerful as the 12 kiloton explosion over Hiroshima at the end of World War II. About half of the energy in a nuclear explosion is released as blast, so 4 kilotons of chemical explosives simulates an 8 kiloton nuclear explosion. The blast duration of the chemical explosion is somewhat different and, of course, there is no nuclear radiation associated with the chemical explosion.

These Defense Nuclear Agency explosions are the best opportunity available for low cost demonstration tests of blast shelters. Accordingly, the **Fighting Chance** project of the Oregon Institute of Science and Medicine plans, with the collaboration of the Emergency Technology Group at Oak Ridge National Laboratory, to have an experiment in the test in June 1989.

At present, we plan to test a complete standardized shelter identical to that in our shelter plans at a distance from the explosion corresponding to 200 psi. We know that the shelter will withstand this overpressure for which it is designed.

Also, included in our experiment will be a series of seven other tanks of different thicknesses and diameters. Some of these will be much weaker than our standardized shelter. We expect that one or more of these will collapse under the blast load.

One deficiency of the current literature on blast tests of shelters is that nearly all of the shelters have survived. The ultimate failure points for the various designs have not been accurately determined. This leads to overdesign and excessive expense in shelter construction.

These experiments which we plan to conduct will be of significant value. Unfortunately, the explosions are carried out at two year intervals and experiments must be planned about a year in advance, because of government red tape. We therefore must wait until June 1989 for this test.

Other simulation methods are available, but these are far too expensive for our current civil defense project to consider. The Defense Nuclear Agency supplies this explosion without charge, so the expense is solely the shelter construction and installation and some government administrative costs.

FALLOUT SHELTER SIGNS

The Rogue Valley Civil Defense Council which was started in Grants Pass with a postal patron mailing of *Fighting Chance* has initiated several valuable grassroots programs for the civil defense of their community.