

LA-UR- 09 - 00788

Approved for public release;
distribution is unlimited.

Title: Proton Radiography photos for "Dirty Jobs"

Author(s): Alexander Saunders

Intended for: "Dirty Jobs" TV show



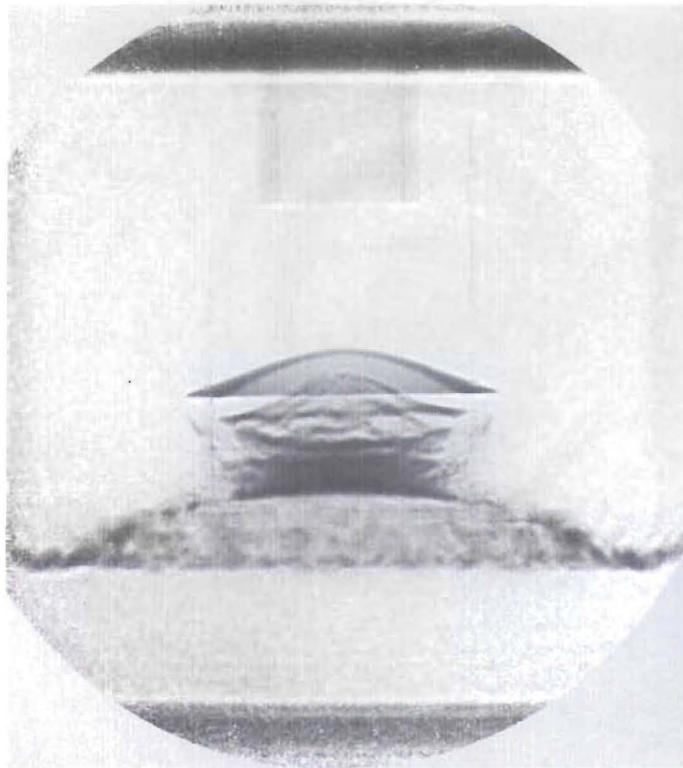
Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the Los Alamos National Security, LLC for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396. By acceptance of this article, the publisher recognizes that the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

The PRAD Cave



Here is a photo of the proton radiography “cave” which we use to contain the radiation involved in producing a proton radiograph. The high explosives are contained in the six foot steel vessel on the left; the high energy proton beam passes through the vessel in the steel pipe leading across the floor.

Proton Radiography at LANSCE



Here is a picture of a typical proton radiography experiment in progress. This is a piece of aluminum metal being driven from below by a high explosive charge.



Here is one of our explosives technicians, Joe, inside the six foot diameter steel ball that contains the explosive shots. The high energy proton beam passes from left to right. The shot is the little package to Joe's right. After the shot, everything in the vessel will be destroyed and reduced to sooty rubble.