

field. We went full speed ahead with the single window design, even though we didn't know how to illuminate the bubbles and photograph them through the same window, until shortly before the 15-inch chamber became operational. The 72-inch chamber worked for the first time on 24 March 1959, and it had a long and very useful life.

I'm pleased that we decided, early in our bubble chamber program, to share all our technical information with anyone interested in hydrogen chambers. As physicists, we thought of ourselves as competitors, trying to do the best experiments before our friends in other parts of the world could get around to them. But as engineers, we considered ourselves as "members of a club," and custodians of a lot of government-funded development work, so we sent copies of our voluminous unpublished "engineering notes" and "physics notes" to everyone else in the club. Very quickly, all of our potential physics competitors knew everything we did about how to build chambers and how to use our rapidly increasing volume of software, with which to analyze the bubble chamber pictures. The leaders in this important phase of our work were Frank Solmitz and Art Rosenfeld.

In my 1955 proposal to the AEC for money to build the big chamber, I pointed out that unless we could greatly increase our ability to analyze bubble chamber film — compared to cloud chamber film — the big chamber would simply be a very expensive toy, that would produce enough "interesting events" in a single day, to keep all of the world's cloud chamber experts busy for a year. Cloud chamber events usually were "solved" by reprojecting the two stereo views of each track onto tiltable and rotatable "space tables" until the two images coincided everywhere. Then the orientation of the tracks in space could be read from angular scales, and the curvature of the tracks could be measured, using sets of circles with varying diameters. It was very time consuming — one might solve two events per day, but it fitted the production rate in the low density gas. But in going to liquid density, plus very long path lengths, the event rate would rise by about three orders of magnitude.