Dressed for the job. While EG&G was responsible for scientific photography, a secret Hollywood studio, Lookout Mountain Laboratory, made documentaries for military and government briefings and then for public consumption. This Lookout Mountain photographer (1956) is outfitted to protect himself from radiation. *(Photo: Open Source)*

From Glimmer to Fireball: Photographing Nuclear Detonations

Photographing nuclear explosions was not for the faint hearted. Some of the cameras were manned, but those close to a detonation were remotely controlled and placed in bunkers or outfitted with armor-like housings. To retrieve the film, photographers donned breathing masks and radiation-protection clothing, with wrists and ankles taped against leaks.

The technology had to be cutting edge. EG&G (Edgerton, Germeshausen, and Grier), the defense contractor that made the scientific films, used a wide variety of cameras and film stocks, some radiation resistant. Much of the equipment was developed just for the tests. Hollywood and the commercial and scientific photographic industries later adapted many of these advancements in photography.

Capturing the yield-signifying phenomena occurring in the thousandths of a second after time zero (the instant of detonation) required extremely high-speed cameras. Exotic "rapatronic" cameras (rapid-action electronic cameras) had exposure times of 4 to 5 millionths of a second. And one camera, the "teletronic," had an exposure time of a single billionth of a second. It could record a detonation's first glimmer—almost time zero itself.

The rapatronics photographed the fireball and the double flash representing the bomb's pulse of thermal radiation. Each camera took only a single photograph, exposed on a glass plate, so cameras were arranged in groups of 12 to 15 and triggered one right after the other to document the effects' evolution through time. An equal number of movie cameras, running at up to 3,000 frames per second, filmed alongside the rapatronics.

~Eileen Patterson