The AN/PDR-27

My experience in the US Navy's nuclear propulsion program exposed to me the use and maintenance of various radiation detectors. One of those happened to be the AN/PDR-27 that was used in Rendlesham that night. As a result, I feel I can act as something of an expert on this part of the Rendlesham case.

First of all, the choice to use the AN/PDR-27 was not a very good one. If I were going out to measure radiation levels on the ground, I certainly would not have brought the 27. Instead, I would have used an E-140N frisker (Beta-Gamma) and, possibly, an AN/PDR-56 (Alpha). I also would have recorded everything on a survey map showing what was read where and not relied upon an audio tape to record the data.

On the tape, Sgt Nevels, kept focusing on the number of "clicks" he was reading and not the actual deflection on the meter. The audible clicks is only a guideline to note that there is an increasing radiation level. The rule of thumb is 30 counts/minute (cpm) is equal to about 0.01 mr/hr (0.07 would give 210 cpm or over 3 cps). Nevels keeps referring to a few clicks here and there (without any reference to time - we can only assume he is stating so many clicks every few seconds), indicating what he was reading was very low.

There are items that can cause faulty readings. These meters had to respond to small electrical signals. To do this, they pivoted on "jeweled bearings" that made them highly responsive. Unfortunately, this also made them highly responsive to the operator moving the radiac. This is one of the reasons they included a shoulder strap on the radiac to prevent faulty readings due to moving the unit. We can also add the concern about the level of charge on the batteries, calibration of the unit, and the physical condition of the sensor probe. All of these can contribute to erroneous readings.

My biggest concern was the experience level of the operator. What was Sgt. Nevels training and experience with the AN/PDR-27? I am sure he used it occasionally during a few drills but how often was that? My experience in the navy was that those that used the instrument daily and were trained in its detailed operation, were very proficient with it. Those that used it once a month or several times a year, were not so good at using the equipment. If you couple this with operating the device while tired and in the dark, you have the recipe for errors and mistakes. The comments on the tape demonstrate that Nevels did not quite understand the device or was unfamiliar with it. Is he actually describing the audible signal or is he referring to each tick on the meter as a "click"? His reading of the meter as "seven-tenths" also speaks volumes. A proficient operator would have announced the reading as 0.07 mrem or mroentgens/hour.

It is important to note is that the AN/PDR-27 large probe has a "beta-window" on it (see the photo at bottom). If the window is open, it allows the probe to read low energy Beta radiation that normally would not be detected with the window closed. Potassium-40 is a high energy beta-emitter found in soil.

Exactly what levels were existing as background in Rendlesham forest is unclear. Colonel Halt claimed on a Strange but true program that only the center of the "triangle" was "hot" and the rest of the forest was "cold". This is not accurate because the tape has Sgt. Nevels noting radiation levels on the trees, in the various holes, and when pointing it at the "winking eye". Halt even reports they were getting radiation levels of "three good clicks" after they had ventured beyond the second farmer's field! This refutes his claim that the rest of the forest was "cold" and shows the readings were similar throughout the forest. Most important to note is that not one document exists showing a radiation survey of any kind that SHOULD have been done if they suspected radiation levels of significance. Instead of having hard data, we have readings that were incorrectly measured/recorded and are essentially worthless.

Over the years, the Rendlesham radiation readings have reached mythic levels. Ignored is the fact that soil can have naturally occurring radioactive elements emitting radiation that might be detected and, contrary to what Nick Pope has stated, the levels reported are insignificant even if the maximum reading of 0.07 mr/hr was even accurate. Like much of the Rendlesham story, the radiation levels are not that unusual when examined properly.