Jim Frost is a researcher and consultant, who is an aficionado of both statistics and also *Star* *Trek.* And he has posed an interesting question, which you may have also considered. Jim notes that the shirts of the *Star* *Trek* crew are color coded according to three general categories of function. There are the blue-shirted science and medical personnel, the gold-shirted command and helm staff, and the red-shirted operations, engineering, and security personnel.

Jim suspects that the fatalities are significantly more common among the red-shirted crew members. So that is his research hypothesis. The null hypothesis, of course, is that fatalities occur equally among the three categories. Here are the data that he presents.

You'll be able to analyze this data with the new skills that you will acquire this week. But here's a far more serious question to think about. When the Titanic struck an iceberg and began sinking, there was a mad rush to abandon ship and put passengers and crew on lifeboats. But many people died. Who is most likely to survive?

There are many variables that might be considered; sex and age, passenger versus crew, and where one's quarters were on the ship. Let's consider the location of quarters.

This diagram shows that, in general, first class passengers had berths higher up, closer to deck, and the third class passengers were located far up in the bow or far back in the stern. And their berths were further down below decks. One research hypothesis might be that the first class passengers might have been able to get to the upper deck more quickly and therefore had a better chance of being evacuated before the Titanic went down.

Here, the exposure of interest is ticket class as a marker of room location. Note, however, that there are some confounding factors given that this occurred during an era when chivalry was not yet dead. There may, for example, have been a concerted effort to evacuate the women and children first.

We will consider the issue of confounding in a later module. But for now, let's simplify things by just looking at the fate of adult female passengers based on whether they had a first, second, or third class berth. Here is the data. We'll analyze this later once you have the appropriate statistical methods.