**CASE STUDY: Crashing into Law***

In designing an aircraft, it is important to understand how an aircraft might be damaged in a crash. This information can be used to create safer planes. Sven Svenson, a graduate student studying under Dr. Ole Oleson, has developed a model that predicts the damage to a 747 after a crash into a hard surface. Oleson provided the early conceptual ideas, but Sven has done most of the work in developing and testing the model. Sven validated his model by comparing its predictions of damage to the actual damage seen on three 747s that had crashed into mountainous regions.

After a Budgetair crash in the Dismal Swamp, a lawyer approached Oleson. He wanted to know whether Sven's model could be used to show what damage to the aircraft was due to the crash and what might have been due to another cause such as an explosion or fire. Oleson assured the lawyer that the model should be able to determine the source of the damage.

They agreed to a contract, which included Oleson's pledge not to reveal his initial findings to anyone accept the lawyer and Oleson's agreement to write an opinion and testify if the lawyer requested that he do so.

The lawyer faxed the data to Oleson. Oleson was eager to get started with the project. The money from this kind of consulting work would help to pay some of the graduate students until an expected grant came through. He was particularly excited at the prospect of more work from lawyers if this went well.

Oleson called Sven into his office and asked him to run his model using the data from the Budgetair crash. Sven ran his model for the Budgetair plane's speed and altitude and found that the model predicted a damage pattern that differed from that seen on the plane. Oleson then asked him to modify the shape of the plane from the 747 to the DC-9 that had crashed. This change still produced a radically different damage pattern. Oleson then suggested that they add a soft surface to the model to represent the swampy conditions in the Dismal Swamp. Sven ran the model with the new parameters and found that the model predicted some, but not all, of the damage to the aircraft.

As Sven was leaving Oleson's office, Oleson picked up the phone and called the lawyer. Sven overheard him telling the lawyer that the model showed that some of the damage was caused by factors other than the crash itself, such as an explosion or fire.