accident prone, the Federal Aviation Administration (FAA) oversaw an extensive research study on the similarities and dissimilarities of pilots who were accident free and those who were not. The project surveyed over 4,000 pilots, half of whom had "clean" records while the other half had been involved in an accident.

Five traits were discovered in pilots prone to having accidents *[Figure 2-4]:*

1. Disdain toward rules
2. High correlation between accidents in their flying records and safety violations in their driving records
3. Frequently falling into the personality category of "thrill and adventure seeking"
4. Impulsive rather than methodical and disciplined in information gathering and in the speed and selection of actions taken
5. Disregard for or underutilization of outside sources of information, including copilots, flight attendants, flight service personnel, flight instructors, and air traffic controllers

In contrast, the successful pilot possesses the ability to concentrate, manage workloads, monitor, and perform several simultaneous tasks. Some of the latest psychological screenings used in aviation test applicants for their ability to multitask, measuring both accuracy and the individual's ability to focus attention on several subjects simultaneously.

Research has also demonstrated significant links between pilot personality and performance, particularly in the area of crew coordination and resource management. Three distinct subgroups of flight crew member personalities have been isolated: right stuff, wrong stuff, and no stuff. As the names imply, the right stuff group has the right stuff. This group demonstrates positive levels of achievement motivation and interpersonal behavior. The wrong stuff group has high levels of negative traits, such as being autocratic or dictatorial. The no stuff group scored low on goal seeking and interpersonal behaviors.

Figure 2-4. *Pilots with hazardous attitudes have a high incident rate of accidents.*

These groups became evident in a 1991 study, "Outcomes of Crew Resource Management Training" by Robert L. Helmreich and John A. Wilhelm. During this study a subset of participants reacted negatively to the training–the individuals who seemed to need the training the most were the least receptive. The authors felt that personality factors played a role in this reaction because the ones who reacted negatively were individuals who lacked interpersonal skills and had not been identified as members of the "right stuff" subset. It was surmised that they felt threatened by the emphasis on the importance of communications and human relations skills.

The influence of personality traits can be seen in the way a pilot handles a flight. For example, one pilot may be uncomfortable with approximations and "guesstimates," preferring to use his or her logical, problem-solving skills to maintain control over instrument flight operations. Another pilot, who has strong visual-spatial skills and prefers to scan, may apply various "rules of thumb" during a instrument flight period. The first pilot's personality is reflected in his or her need to be planned and structured. The second type of pilot is more fluid and spontaneous and regards mental calculations as bothersome.

No one ever intends to have an accident and many accidents result from poor judgment. For example, a pilot flying several trips throughout the day grows steadily behind schedule due to late arriving passengers or other delays. Before the last flight of the day, the weather starts to deteriorate, but the pilot thinks one more short flight can be squeezed in. It is only 10 minutes to the next stop. But by the time the cargo is loaded and the flight begun, the pilot cannot see the horizon while flying out over the tundra. The pilot decides to forge on since he told the village agent he was coming and flies into poor visibility. The pilot never reaches the destination and searchers find the aircraft crashed on the tundra.

In this scenario, a chain of events results in the pilot making a poor decision. First, the pilot exerts pressure on himself to complete the flight, and then proceeds into weather conditions that do not allow a change in course. In many such cases, the flight ends in controlled flight into terrain (CFIT).