

the assault. The recorder captured the sounds of loud thumps, crashes, shouts, and breaking glasses and plates. At 10:00:03, Jarrah stabilized the airplane.⁸⁷

Five seconds later, Jarrah asked, "Is that it? Shall we finish it off?" A hijacker responded, "No. Not yet. When they all come, we finish it off." The sounds of fighting continued outside the cockpit. Again, Jarrah pitched the nose of the aircraft up and down. At 10:00:26, a passenger in the background said, "In the cockpit. If we don't we'll die!" Sixteen seconds later, a passenger yelled, "Roll it!" Jarrah stopped the violent maneuvers at about 10:01:00 and said, "Allah is the greatest! Allah is the greatest!" He then asked another hijacker in the cockpit, "Is that it? I mean, shall we put it down?" to which the other replied, "Yes, put it in it, and pull it down."⁸⁸

The passengers continued their assault and at 10:02:23, a hijacker said, "Pull it down! Pull it down!" The hijackers remained at the controls but must have judged that the passengers were only seconds from overcoming them. The airplane headed down; the control wheel was turned hard to the right. The airplane rolled onto its back, and one of the hijackers began shouting "Allah is the greatest. Allah is the greatest." With the sounds of the passenger counter-attack continuing, the aircraft plowed into an empty field in Shanksville, Pennsylvania, at 580 miles per hour, about 20 minutes' flying time from Washington, D.C.⁸⁹

Jarrah's objective was to crash his airliner into symbols of the American Republic, the Capitol or the White House. He was defeated by the alerted, unarmed passengers of United 93.

1.2 IMPROVISING A HOMELAND DEFENSE

The FAA and NORAD

On 9/11, the defense of U.S. airspace depended on close interaction between two federal agencies: the FAA and the North American Aerospace Defense Command (NORAD). The most recent hijacking that involved U.S. air traffic controllers, FAA management, and military coordination had occurred in 1993.⁹⁰ In order to understand how the two agencies interacted eight years later, we will review their missions, command and control structures, and working relationship on the morning of 9/11.

FAA Mission and Structure. As of September 11, 2001, the FAA was mandated by law to regulate the safety and security of civil aviation. From an air traffic controller's perspective, that meant maintaining a safe distance between airborne aircraft.⁹¹

Many controllers work at the FAA's 22 Air Route Traffic *Control Centers*. They are grouped under regional offices and coordinate closely with the national Air Traffic Control System *Command Center*, located in Herndon,