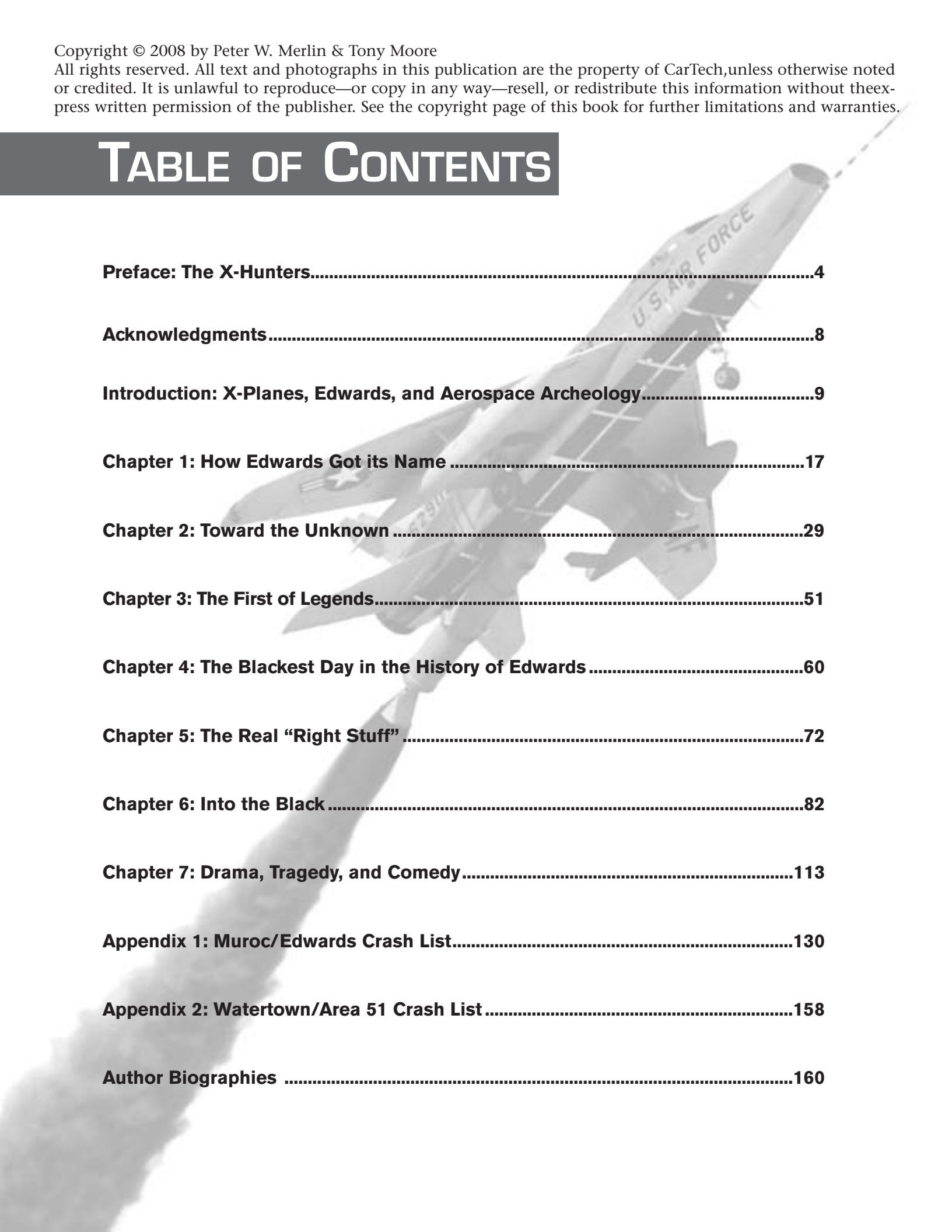


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CHAPTER 6



The third A-12, known as Article 123, served as a testbed for inertial navigation system and camera testing. It was the first Oxcart airframe to crash. (Lockheed via Jim Goodall)

INTO THE BLACK

The desert holds many secrets. On a cool October day in 2003, I held one of them in my hand. A shard of titanium gleamed in the late-afternoon sunlight as I examined it. The fragment was about six inches long and less than two inches wide. An attached clamp held a segment of metal tubing, probably part of a hydraulic line. There were no markings. It might not have looked very impressive, but to me it was like the Holy Grail. It was part of a once-secret airplane, and it represented the end of a search I had begun 10 years earlier.

Nothing is more intriguing than the mysterious and forbidden. As much as we like any high-performance experimental aircraft, Tony and I have always had a special place in our hearts for those vehicles that were developed within the hidden realm of classified special-access programs, otherwise known as the “black world.”

In the course of our research, we had the opportunity to visit crash sites of many such craft. Although they had originally been developed in secrecy, some of them—after they were declassified—became some of the most famous aircraft in the world.

The Angel from Paradise Ranch

In 1954, Lockheed’s Advanced Development Projects division (better known as the “Skunk Works”) began work on a top-secret reconnaissance aircraft for the Central Intelligence Agency (CIA) under the codename Project *Aquatone*. Clarence L. “Kelly” Johnson, the brilliant engineer behind such aircraft as the P-80 and F-104, designed a single-engine jet to carry its pilot over “denied territory,” such as Russia and Cuba, while cruising at altitudes above 70,000 feet and carrying a variety of cameras and sensors. Powered by a Pratt & Whitney J75 engine, the airplane featured long, slender wings and bicycle landing gear. It was officially called the U-2. The “U,” for “utility,” was meant to obscure the airplane’s true mission: strategic reconnaissance. The CIA also developed an elaborate cover story that the U-2 was to be used for weather research by the NACA.

The U-2 prototype was built at Lockheed’s Skunk Works facility in Burbank, California, by a small team of engineers and technicians. It was

never assigned a military serial number, and was referred to simply as Article 341. Kelly Johnson called it the “Angel.”

Due to the secrecy of the program, a secure test location was required. After a lengthy search, the CIA and Lockheed selected Groom Lake, Nevada, because the dry lakebed made a perfect natural landing field. A small airbase with a 5,000-foot paved runway was constructed just off the southwest corner of the playa. It was a primitive facility in a very remote location. With wry humor, Johnson initially dubbed it “Paradise Ranch,” but it was officially named Watertown. In later years it was called Area 51, a name that has come to symbolize both government secrecy and exotic aircraft testing.

Lockheed technicians completed construction of the U-2 prototype on 15 July 1955. Ten days later, Article 341 was shipped to the test site inside a C-124 cargo plane and static engine runs were completed two days after that.

Preliminary taxi tests were conducted on 1 August. During the second taxi run (at 70 knots), test pilot Tony LeVier noticed that the U-2 had become airborne and was about 35 feet above the lakebed. He brought it down with some difficulty, blowing the tires on the main landing gear, and setting the brakes on fire.

Following additional taxi tests, LeVier made a second flight, on 4 August, to get a better feel for the airplane’s handling qualities. “It flies like a baby buggy,” he told chase pilot Bob Matye. The 20-minute flight ended with more landing difficulties. LeVier flew again on 6 August to practice his landing tech-



Lockheed’s U-2 prototype, known as Article 341, was designed to be lightweight and aerodynamically clean in order to facilitate flight at high altitudes. The original configuration was not optimized to avoid radar detection. (Lockheed Martin)

nique. By now, he had determined that the best approach involved landing the airplane like a tail-dragger, tail wheel first.

The official first flight took place on 8 August 1955, with LeVier using the call sign *Angel 1*. Matye and Johnson flew chase in a T-33. The flight lasted nearly an hour and reached an altitude of 32,000 feet. It ended with a low pass over the spectators, including Richard Bissell of the CIA and Col. Osmond J. Ritland, Air Force liaison to the CIA.

Tony LeVier went on to make 18 more flights in Article 341, completing Phase I testing. His accomplishments included taking the aircraft to 52,000 feet and a speed of Mach 0.85. After LeVier left the program, Lockheed test pilots Matye and Ray Goudey took over. Robert Sieker joined the program in September 1955. Bob Schumacher followed in November. Through an intense series of flight tests, they expanded the airplane’s operating envelope to its design altitude.

The First “Stealth” Airplane

Article 341 served as a test aircraft throughout its entire career. Lockheed technicians installed strain gages to correspond with those in the static test article. Engineers then compared flight-test data with static-test data to determine the airplane’s load limits.

As flights progressed to higher altitudes, trouble developed with the J75-P-37 engine. Fuel control was unsatisfactory, the bleed valves didn’t work properly, and flameouts occurred with alarming regularity. An



For test and training purposes, the U-2 aircraft were originally based at Watertown Strip on the edge of Groom Dry Lake, Nevada. To conceal their covert reconnaissance mission, the airplanes were painted in NACA markings. (Lockheed Martin)



Lockheed personnel examine the wreckage of Article 341 in central Nevada. Engine overheating resulting from application of radar-absorbent material began a chain of events that culminated in loss of the airplane and pilot. (Central Intelligence Agency)



In 1957, Article 341 was partially coated with radar-absorbent materials. Because the coating added a great deal of excess drag, the airplane was dubbed a "Dirty Bird." (Central Intelligence Agency)

improved J75-P-31 engine arrived in January 1956 and was installed in Article 341. The engine's performance problems were eliminated, but the new engine could not be restarted in flight above 35,000 feet.

The U-2 prototype's final test program involved development of a way to make the airplane less visible to radar. Working with physics professor Ed Purcell and Dr. Frank Rogers of the Massachusetts Institute of Technology, Lockheed engineers worked to create the world's first "stealth" airplane. Luther McDonald led the Skunk Works team, assisted by Mel George and Ed Lovick. In early 1957, they modified two U-2 test aircraft for a series of radar cross-section reduction tests called "Project Rainbow." Article 341 received a coating of high-frequency radar absorbent material (RAM) on the underside of the aircraft. The RAM, varying in thickness from a quarter-inch to about one inch, consisted of a fiberglass honeycomb topped by layers of Salisbury Screen, a conductive graphite grid on canvas sheets. It was nicknamed "wallpaper" because of the circuit grid pattern on its surface. This type of RAM was capable of absorbing radar energy in the 65- to 85-MHz range. With the RAM attached, the U-2 suffered from excess weight and drag, making it aerodynamically "unclean." Hence it was known as a "Dirty Bird." The modifications reduced the airplane's maximum altitude by 5,000 feet and cut its range by 20 percent. Additionally, the RAM coatings prevented the dissipation of engine heat through the aircraft's skin.

On 4 April 1957, Robert Sieker took Article 341 up for a Project *Rainbow* test flight against radar operated by EG&G, Inc., near Indian Springs. Airframe heat build-up caused a flameout at 72,000 feet, and Sieker's pressure suit inflated when cabin pressure was lost. The clasp on his faceplate failed, however, causing him to lose consciousness. Article 341 stalled and entered a flat spin at 65,000 feet. Sieker regained his senses at a lower altitude and attempted to bail out. He released the canopy and jumped, but was struck by the aircraft's tail and was killed. The aircraft impacted on its belly and caught fire.

It took search teams several days to locate the wreckage in central Nevada's White River Valley. It was spotted by Lockheed test pilot Herman "Fish" Salmon and Ray Crandall while flying a borrowed Beechcraft Bonanza. The silver airplane, shattered but recognizable, lay in sagebrush on level ground. Its tail remained upright and the wings were largely intact. The engine was exposed amidst the burnt-out center section of the fuselage. The cockpit was broken up but had not burned. Sieker's body lay just 200 feet away.

Hunt for the Dirty Bird

I had wanted to find the crash site of Article 341 since I first read about the accident, but detailed information was scarce. In 1993, I found an old newspaper article that described the site as being "15 miles southwest of Sunnyside, Nevada, in a long valley." That