The Greenbrier Hotel

In the Fall of 1968 the Air Force Cambridge Research Laboratories (AFCRL) conducted some fog dispersal tests in West Virginia. Dr. Vernon Planck of AFCRL had been tasked with seeing if the downwash from various types and weights of helicopters could disperse fog over runways. He invited me to observe the project and fly on several of the missions.

It is common for fog to form at night in the foothills of the Appalachians several weeks each Fall when temperatures begin to cool, and the skies are clear during Indian Summer. Vernon had selected a period in late September and early October for the field operations. He gathered several Air Force Reserve pilots, helicopters, and fixed wing aircraft in Roanoke, Virginia for the experiment. A few days before a high-pressure area was to move over the central Appalachians, he called and asked me to join the Project in Roanoke in anticipation of several days of fog experiments.

Because travel funds were very restricted for the Air Force in 1968, rather than take a commercial flight to Roanoke, I was told I could only visit the project if I could arrange military travel. Surprisingly, I was able to make connections by flying a Military Airlift Command shuttle flight from Scott AFB near St. Louis to Andrews AFB near Washington, D.C. and connect with another shuttle to Norfolk, Virginia where I could drive a GSA (Government Services Administration) sedan to Roanoke. They didn't call this shuttle from Scott AFB to Andrews AFB *The Vomit Comet* for nothing. On the way into Andrews AFB, my C-54 shuttle aircraft lost an engine and the pilot had to declare an emergency landing. This was not uncommon in those days before the old WWII aircraft were replaced with newer jet aircraft. It was normal when flying cross country on military shuttles to spend the night at any base we stopped at for mechanical repairs.

Fortunately, we landed without incident. But, my trials were not over. I had to wait several hours for the shuttle to Norfolk and then take a taxi for some forty miles more to find the GSA office where I was able to get my car, just as the office was closing on a Saturday afternoon. I then drove all night westward across the State of Virginia to Roanoke, arriving at five in the morning, just in time to fly the first experimental flight into the mountains of West Virginia at six. It had taken me twenty-four hours of flying and driving to get to Roanoke!

I was so tired from my travels that I was not particularly enthusiastic about flying this first mission, but I was afraid if I didn't go, I might not see another operation if the anticipated fog didn't last for the few days I had allotted to observe the project. I was assigned to the spotter aircraft which was a C-82, affectionately called the *Flying Boxcar*. It looked like a large potato wedged between two fuselages powered by two large piston engines. The back of the *potato* opened when in flight to allow cargo and paratroopers to be pushed out the rear of the aircraft. This large opening permitted a great view of the terrain below. The plane was expected to fly large ovals in the sky about a mile above the helicopter operations and document the attempts at clearing fog with still and movie cameras.

I had never flown in this type of aircraft before and really don't wish to do so ever again. I assume the plane was considered safe, since it was used extensively to deliver men and materials during WWII but, for some reason, this aircraft seemed unusually dangerous to me. First, I sat in a jump seat near one of the engines. All I could see out my window was the cowling on the right engine.

During takeoffs and landings, the pilot opened a door in the cowling to permit more airflow around the engine. Unfortunately, this gave me an unrestricted view of several of the *jugs* – the cylinders which encased the pistons. These cylinders glowed red hot after they had warmed to operating temperature, and I swear, I could see the pistons moving back and forth through the metal walls. In addition, these were the noisiest engines I've ever hear on any mode of transportation, anywhere. Probably because I was seated within three feet of the right engine and partly because the walls of the fuselage were only a single thickness of aluminum with no insulation, it sounded like the engine was going to tear itself apart any moment and engine parts were going to come flying through the compartment.

When the pilot taxied to the end of the runway for takeoff, he sat for several minutes revving the engines until they smoothed out from the initial backfiring. He then locked the brakes, set the props, and pushed the throttle all the way forward. We bounced up and down for several seconds as the propellers dug into the air trying to move the plane forward. When the pilot released the brakes, we began to slowly creep forward through a cloud of smoke, flame, and noise. After several thousand feet of runway had sped past my window, we were still moving along the ground with no hint of leaving terra firma. I began to grow concerned that we were going to run out of runway. Finally, after passing seven thousand feet of runway, we slowly inched off the ground, but the plane didn't seem to want to climb into the blue. I noticed trees and houses just feet below the engine outside my window. Were we going to make it? I had no view ahead. Slowly, the trees and houses seemed to recede, and we appeared to be airborne. But, I wasn't convinced we were going to stay that way. The engines continued to roar and spit flames. At no time did the pilot ease back on the throttle. I'm not convinced the plane was really designed to fly. As Jim Moore, an associate at the U.S. Bureau of Reclamation years later, once declared about the F-14, "If the engines quit, it has the flight characteristics of a free-falling safe." But, we eventually climbed to a higher altitude as the foothills of the Appalachians appeared below.

As we flew West, fog began to appear in some of the valleys as the sunlight became brighter behind us. We arrived over a patch of fog and began to orbit the area in our assigned racetrack pattern. The pilot opened the rear door and we left our seats to look out the opening. The cameramen began setting up their equipment on tripods and checking light levels.

Below, one of the helicopters arrived over the target area and flew slowly back and forth along the runway used by the Greenbrier Hotel, an old, vintage resort in West Virginia, also known as the White Sulphur Springs Hotel. It seemed like a strange location for the Air Force to be conducting fog dispersal tests. Why would the military use a private landing strip to conduct its experiments? I asked one of the Reservists on the C-82 why these operations were being conducted here. He told me that he didn't know, and I should ask Dr. Planck. Later, back at the airport in Roanoke, I asked Vernon why he had selected this location, but he said it was

Top Secret and couldn't tell me. I thought this was a bit strange, but since we were still in the middle of the Vietnam War I didn't question it further.

The operations below were beginning to show some success. The fog had thinned behind the helicopter as it flew slowly up and down the runway. The type of helicopter being tested that day was a Sikorsky Flying Crane. It's a large, ugly thing, sometimes called, *The Praying Mantis*. This type of helicopter is regularly used for lifting heavy loads. Military applications are for equipment and troops. Commercial applications are for lifting heavy objects to the tops of buildings and mountains and for logging operations. It had a large horizontal rotor on top of the aircraft with a smaller vertical rotor on the tail. A large, square box was attached beneath and behind the cockpit which could normally carry equipment and personnel. When the box was detached from the helicopter, it truly has the look of a praying mantis. For this operation, the box was attached and contained a large rubber bladder filled with water to make the helicopter heavy. The bladder was used to simulate the weight of a full load of people and to increase the downdraft below the helicopter.

As the Sikorsky flew to one end of the runway, it stopped and hovered for several minutes. Slowly, an opening in the fog appeared and began to expand as the downwash from the horizontal rotor dried out the air near the ground. Typically, in fog situations, the air above the fog is warmer and drier than the air near the ground. As the helicopter hovers, this air is forced downward to mix with the foggy air near the ground, drying it out and increasing the visibility. The heavier the helicopter the greater the downdraft required to support its weight and the more air is forced downward.

We documented the clearing produced by this helicopter and several other types on the following days with photographs taken from the airborne platform and by observations on the ground below the helicopters. After several weeks of operations, this experiment was declared a success. It was concluded that helicopters and planes could land on a runway covered by fog if it was not too thick and the wind was not too strong. The technique required locating the desired landing spot and hovering over it for several minutes until the visibility cleared

enough to drop slowly to the ground. This operation could be applied to any location when the conditions were right.

But the question recurred to me from time to time, “Why had this operation been conducted not far from the Greenbrier Hotel?” In the summer of 2000, this question was answered for me. It was announced over the evening news and in *Time Magazine* that because the *Cold War* was over, an emergency fallout shelter which had been built in the basement of the Greenbrier Hotel was no longer needed. This emergency shelter had been built to house up to a thousand people for several months in case of World War III. The President and his staff, the Supreme Court, the Senate, and the House of Representatives would have been transported from Washington D.C. to this concrete bunker where our government would have operated until the hostilities were over.

Someone had realized several years after the bunker at the hotel had been built in 1965, that if war broke out when the Appalachians were covered in fog, it would be difficult to get everyone there by plane or helicopter. Thus, the Air Force was charged with solving this problem. I had observed this Top-Secret operation but not told why it was conducted because I only had a Secret clearance and did not have a *need to know*.