

## White Sands, but No Seashore

Slightly populated Brevard County, while only fifteen to twenty miles wide, stretched for seventy miles along Florida's east coast, midway between Jacksonville and Miami. Its main feature, an elbow of land called Cape Canaveral, jutted out into the Atlantic. The Cape covered forty square miles. Early Spanish sailors, who came up the coast and then moved out into the North Atlantic, noted the abundance of cane reeds, and gave the area its name, Canaveral, the Spanish name for a thicket of canes. It was the second-oldest place name in the United States, next to that of Florida itself.

While most vacationers and retirees went through the area to Palm Beach or Miami, North Brevard residents turned from hunting and fishing to nourishing citrus groves. Industry barely had a toehold. Only one firm, Harris Electronics in Melbourne, employed over twenty workers. With the heaviest population near Melbourne in the south and the county seat Titusville in the north, Brevard County had no central focus. But it did have room. It covered almost as many square miles as the State of Rhode Island.

The people of Titusville looked directly east over the Indian River, Merritt Island, and Banana River to the Cape. A larger community, Daytona Beach, hugged the Atlantic fifty miles to the north. Orlando lay thirty miles beyond St. John's River, the county's western boundary. Organized in 1855, only ten years after Florida entered the Union, the county bore the name of Judge Theodore Washington Brevard, Comptroller of the Sunshine State.

In October 1946, a committee of the Joint Chiefs of Staff decided that Cape Canaveral in Brevard County was the place for the military services to test guided missiles. Several factors dictated this choice. The flights went over the sea, not over inhabited territory. They could go southeast more than 5,000 miles into the South Atlantic. Many Caribbean islands offered sites for electronic equipment to monitor the flights. The Banana River Naval Air Station served as a support base, and the launch area was accessible to water transportation.

This decision set in motion a series of events that over a few years brought 25,000 engineers to the area—more individuals than had pre-

viously lived in the county. When the first space-workers arrived in 1947, they found no shopping centers, schools, churches, libraries, or theaters, and few residences. They had to drive on a narrow road to Orlando to purchase the things they needed. And yet, 100,000 people, the spaceport workers and their families, were to come in a short time. Besides servicemen and personnel of the National Aeronautics and Space Administration (NASA), set up in the meantime, numerous companies had their part in this tremendous enterprise—Boeing, McDonnell, Douglas, Pan American, TWA, IBM, RCA, Convair, Grumman, Lockheed, Rockwell, General Dynamics, General Electric, Bendix, North American Aviation, and Martin, among others, and their suppliers and subsidiaries. In a short time, the area was to be an internationally known center for space exploration.

The story of the spaceport and its influence on the development of the State of Florida begins in one aspect far away on the dry uplands, near Roswell, New Mexico. Back in the 1920s, an American scientist, Robert Goddard, after facing opposition in his native New England, had moved there to experiment with rockets. Over the succeeding years, Americans showed interest in other areas of thrust and power. Unfortunately, none of his countrymen carried on Goddard's work.

In the Weimar Republic of Germany, however, a group of young men were moving into this field in the late 1920s. The Versailles Treaty had greatly restricted the development of German armament. It limited the number of airplanes and forbade the development of heavy artillery, but ignored rocketry. As a result, some of the brighter young men in the German scientific community, led by Dr. Wernher von Braun, experimented with rockets. Von Braun was a protégé of Herman Oberth, a German scientist born in the Transylvanian Province of the old Austro-Hungarian Empire, who, in 1923, published a classic study, *Die Rakete zu den Planetenräumen* (*Rockets in Planetary Space*). During the 1930s and on into World War II, these young men with von Braun tried new theories and ultimately developed several weapons, called V-1 and V-2, that caused havoc during and shortly after the invasion of Normandy in 1944. In order to make sure that these men and their rockets did not end up in the hands of the Soviets at the fall of Germany, the American military dispatched special forces into Germany to bring out

a number of the V-2 rockets and sent General John B. Medaris to make contact with the von Braun team that had developed these rockets at Peenemünde on the Baltic Coast.

Tall, erect, and square-shouldered, Dr. Wernher von Braun had the vision of novelist Jules Verne, the diplomatic persuasiveness of a contemporary, U.S. Senator Lyndon Baines Johnson from Texas, and the engineering and administrative skills of James Eads, who built the iron-clads that opened the Mississippi River during the Civil War and erected the great bridge that spanned its waters shortly after the conflict. Like these three men, von Braun put his full attention and unusual skills to the new task.

It is strange, in looking back, to find that the men who had almost brought disaster to the Allied forces in the invasion of Western Europe should now be given opportunities in America to develop more powerful rockets. One must not forget, however, that in international affairs, the *next* war is always the important one. Japan, for instance, was an ally of England and America in World War I, an enemy in World War II. Twenty years later, navy officials invited the Japanese naval officer who planned the devastating attack on Pearl Harbor to address fledgling American naval officers. Military machines have turned on their allies shortly after a victory or recognized, as the United States did, that our former ally Russia, not Germany, threatened stability in Western Europe. And so, the American Army brought these Germans to America and gave them the opportunities to develop more sophisticated rockets. Florida was to have a significant part in that development.

To bring German rocket specialists, men who a year before had been using their genius to try to stop the Allied efforts for victory in Europe, into an area of the United States where men had fought and died in that fight against Nazi power, seemed a hazardous undertaking. One could imagine occurrences of violence against scientists of Germanic background. The hiring agencies were aware of this. José González of El Paso, Texas, who worked with the von Braun team from the earliest days, explained the procedure to avoid trouble. Those who hired American veterans to work with the German scientists, General Electric among them, were cautious. They asked where a candidate had served in the war, if he had any brothers or cousins who served in the Euro-

pean theater, and whether they were killed there. Anyone who failed to pass this security test went into areas of work not involving citizens of the former enemy. In this way, things moved reasonably well. There was little evidence of friction between the Americans and the new-coming German rocketeers.

General Medaris chose the area of White Sands, between Alamogordo and Las Cruces, New Mexico, near to the place where Robert Goddard had worked. In this less populated area, noise and strange flying objects were of less concern than they might have been in other areas of the country, such as Dr. Goddard's native New England.

A resident of Cocoa Beach, Florida, Frank Ochoa-Gonzalez, who grew up in Las Cruces, recalls hearing his grandfather talk of the coming of the missiles and the missile-men. In mid-August 1945, 300 railroad freight cars brought V-2 components to the Southwest. Frank's grandfather worked on the 46-foot V-2 rocket during its frequent tests in 1946 and 1947.<sup>1</sup>

On May 29, 1947, a rocket chose its own flight pattern and landed in a cemetery near Juarez, Mexico. The president of that country had already vetoed flights from California that threatened Mexican territory. Would the *gringos* ever learn? "German scientists," a comedian stated, "we're flying German birds onto Mexican territory and we paid. Montezuma was taking revenge in an unusual way." An eight-year-old boy in El Paso, Raul Ernesto Reyes, outside his home in a bus, heard the thud of that rocket across the Rio Grande. He had already seen the missiles trucked through El Paso, and he sensed the meaning of the noise. Little did he dream that twenty years later he might conduct tests of rockets destined to send men to the moon.

## A Primitive Spaceport

The von Braun team, officially the Army Ballistic Missile Agency, had to find two new homes, one to develop missiles, the other to test them in flight. The town of Huntsville, on the Tennessee River in the north central section of Alabama, had housed the Redstone Arsenal since 1941, the first year of World War II. The place had many advantages for developing missiles. The Army had used it to produce and test weapons for

chemical warfare. By 1947, it went on sale as surplus property. Alabama Senator John Sparkman, local Congressman Bob Jones, and businessmen of the area looked for a new tenant. They pointed to the advantages of the area: (1) the existing arsenal facilities with an area of 425.5 square miles; (2) abundant low-cost electric power from the TVA; (3) adequate water supply from the Tennessee River; and (4) open space for future development. Further, the Tennessee River offered a waterway to transport materials and finished rockets via the Ohio and Mississippi Rivers, and ultimately the Gulf of Mexico, and around the Keys to reach Cape Canaveral. The missile team moved, then, to the Redstone Arsenal at Huntsville, Alabama, in 1950, to continue its rocket development.

Among the members of the team going to Alabama, von Braun chose five New Mexicans of Hispanic background: Rodolfo Barraza, Antonio Beltran, Ramon Samaniego, Carlos Marshall, and the already-mentioned José González. In recruiting these skilled men of an often-spurned minority, von Braun anticipated fair employment practices that came to be implemented by many government agencies and private industries in the following years. Not too long after settling in northern Alabama, the von Braun team began to invite math and science teachers from the high schools of the region to visit Huntsville. Those who took advantage of the offer returned to their communities and talked of interplanetary travel and landing men on the moon to mostly unbelieving audiences. They might just as well have said that von Braun and his missile-men were planning to level Appalachia and deposit four feet of black loam on those once rocky areas to enrich the countryside with alfalfa fields.

In the meantime, on September 1, 1948, the newly independent Air Force had taken over the Banana River Naval Air Station. The Navy had opened the station shortly after the attack on Pearl Harbor to counteract enemy submarines along the Florida coast. The Air Force planned to use it as the headquarters for the joint long-range proving ground, and set up Patrick Air Force Base there. It lay twenty miles south of Cape Canaveral, an ideal place to launch missiles. On May 11, 1949, President Harry S. Truman signed a bill that called for the development of a missile range, to be called the Long Range Proving Ground. Slightly more than a year later, the Department of Defense assigned the responsibility