Angle of Attack:

Harrison Storms and the Race to the Moon

by Mike Gray

Prologue

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To the good old boys watching from the bench across from the Russel Erskine Hotel, John O'Keefe's quick step must have given him away. Obviously a Yankee. But there was something else that set him apart from the tradesmen waiting for their cars to be brought around on that bright fall morning. Something in his eyes. He was in his early forties, but he had the bounce of a teen-ager. In fact, he looked like a man in love, and in a sense he was. John O'Keefe was an astronomer, and astronomers are the flower children of the scientific community. For the rest of us, middle age brings awareness of mortality. But astronomers think in eons and it gives them perspective; they understand the similarity between human life span and the one night stand of the mayfly.

Like Marco Polo, O'Keefe knew something most of the rest of us didn't: he knew what was out there, on the other side of the valley, beyond the rim of the galaxy. O'Keefe had seen the star factories of Orion with his own eyes, and watched at night from mountain tops and seen suns like our own in the process of being born. He knew that if only one star in a trillion had planets like this one, there would be 10 billion planets like this one out there. He suspected that we were not alone.

But O'Keefe hadn't come to Huntsville to talk about the stars. He was here on Army business. Dr. O'Keefe worked for Army Map, a semi-secret arm of the Corps of Engineers, and his assignment was to find out where Moscow was.

The position of the Russian capital was known roughly--within a mile or two--but direct measurement across the ocean was not possible. The only way to put a yardstick across the Atlantic was to have an astronomer on each side of the ocean note the exact instant that the moon passed in front of a specific star. Since the speed and position of the moon and earth were known, the time between sightings would reveal the distance between astronomers.

But the moon has rough edges, it's too big, and too far away for precision. For a ballistic missile to hit the Kremlin--even with an atomic warhead--a one mile mistake was no good. What Army Map needed was a small moon, something about the size of a basketball, say, about

a hundred miles up.

Privately, O'Keefe didn't really care all that much about the transatlantic distance; he was fascinated with the idea of an artificial moon. But he didn't dare say so. There was a Colonel Nickerson in the U.S. Army a couple of years earlier who was raving about satellites and space exploration and when he started talking to the press, the Pentagon quickly cut some new orders and sent him to Panama.

The American people, on the other hand, knew nothing about this. When President Eisenhower announced that the United States would launch an artificial satellite some time the following year, he said it would be a scientific gift to mankind. In fact, it would be the solution to a simple artillery problem.

Ten miles west of Huntsville on Alabama 72, O'Keefe turned left through the gate of Redstone Arsenal, a hundred square miles of red clay, rolling hills, and loblolly pine stretching south to the Tennessee River. It was here that the U.S. Army had stashed its most prized booty from World War II: the German rocket team. Back in the spring of 1945, as the Russians were entering Berlin, the rocket engineers who had built the infamous V-2 were working their way across the destruction of Germany toward the Allied lines. They surrendered themselves, blueprints and all, to a U.S. Army private from Milwaukee. "We despised the French," said one engineer, "We were mortally afraid of the Soviets; we didn't believe the British could afford us, so that left the Americans."

There were about 80 in all--scientists, engineers, and master mechanics--led by a dashing young genius named Wernher von Braun. Son of the Weimar Republic's minister of education, erudite, charming, and practical, he had managed somehow to move his whole organization clear across Germany just minutes ahead of the advancing Russians.

A number of people--particularly the British who had been on the receiving end of the V-2 rockets--wanted to string them up on the spot. But a few of the more far-sighted generals realized that these men were the gunners of the future. So the U.S. Army plucked them up and installed them in the desolate southwestern desert near White Sands, New Mexico. They took along several German war surplus rockets which they fired off periodically to show the Americans what it was all about, and things went well until they accidentally dropped a V-2 into a Mexican cemetery south of Juarez.

Fortunately, the victims were already dead, but the incident sent ripples all the way to the White House; it was clear von Braun and his people needed more room. After that, they began launching their missiles into the Atlantic from the Florida coast.

This incident also had the side effect (quite possibly intended) of rescuing the designers from the desolation of White Sands. For the fourth time in a decade, von Braun pulled up stakes and moved his huge organization intact, setting up shop in the old army arsenal outside of Huntsville.

Like O'Keefe, Wernher von Braun had an ulterior motive, an obsession that underlay almost every move. There was a notebook in one of his filing cabinets that revealed it--a little lined notebook he managed to keep with him over the long journey from Berlin to Peenemunde to Nordhausen to White Sands to Huntsville. In it were the preliminary sketches for a spaceship; he had drawn them when he was sixteen.

Like O'Keefe, von Braun had to keep his mouth shut about his plans for space travel. The Army thought they were using him; if they had discovered it was the other way around, they probably would have been just as upset as SS Reichsfuhrer Heinrich Himmler was when he found out.

O'Keefe liked von Braun. The square-jawed German aristocrat had none of the Prussian superiority that infected some of his colleagues. He was open, accessible, direct, and his sense of blue-eyed wonder about the future was contagious. He moved people. When he entered the room, there was a feeling that great things were afoot, and when he spoke, he had the hypnotic ability to convince everybody that what he was talking about was terribly important.

Von Braun's command of the meeting that afternoon was a model of Teutonic efficiency. O'Keefe was dazzled; he was quite unused to meetings that moved directly from point to point, solving problems one after another. In the normal scientific gathering, the original question was quickly lost in theoretical rambling, and decisions flitted out of your grasp like butterflies. But von Braun moved through the agenda with the single-mindedness of a tank commander: there was a problem on the last test firing; they lost some data near the end of the flight; the man responsible gave a terse report; somebody recommended a new antenna design; Von Braun agreed. Next item?

When the meeting broke up, O'Keefe--who could also be very direct--went up to von Braun to tell him how impressed he was with that performance. The German scientist towered over him. He smiled his big, wide smile, and grabbed the astronomer by the arm. "Come with me. I want to show you something."

Von Braun's office had the look of a laboratory, filled with drafting tables, blackboards, and models. He closed the door and unrolled a blueprint across the desk and it suddenly dawned on O'Keefe why he was asked to come here.

"This was the flight path of the September 20 launch of the Jupiter C," said von Braun.

The thin curve on the blueprint showed that the three-stage missile had reached an altitude of nearly 700 miles before falling back to earth some 3000 miles downrange. Von Braun watched as the significance of the information sank in. "This rocket," he said, "if it had a fourth stage, would have gone into orbit."

It was a simple statement with astonishing implications. It meant von Braun could put a satellite out there any time he wanted to. What was holding him back? A direct order from the Joint Chiefs of Staff. President Eisenhower's advisors had decided the honor of launching the world's first artificial moon would go to the United States Navy.

The Navy's *Vanguard* rocket was much more complex than von Braun's--its development lagged far behind since they were groping for experience the Germans had put behind them years earlier--but the simple unspoken truth was that the Pentagon wanted the world's first satellite to be launched by red-blooded Americans, not a bunch of Nazi retreads.

Von Braun rolled up the blueprint and handed it to O'Keefe. "We are now watching through radar the firings of Russian ballistic missiles," he said. "We know they have the capacity to go into space any time they want to. Now, I will tell you what is going to happen. During the spring of next year, the Vanguard rocket will get into trouble. It will get into worse and worse trouble and finally its firing will be delayed. In the meantime, the Russians will fire and they will get their thing up before we do."

O'Keefe was shaken. He had no trouble grasping the political significance of being beaten into space by the Russians. "What can I do?"

"I want you to go see John Hagen at the Naval Research Laboratory, and I want you to tell him that if he wants to, he can paint 'Vanguard' right up the side of my rocket. He can do anything he wants to, but he is to use my rocket, not his, because my rocket will work and his won't."

Escorting O'Keefe down the hall, Von Braun had a final word. "Now if Hagen says to

you, as I think he will, that all that really matters is science, that it doesn't matter who gets into orbit first..." His voice was rising. "... Will you say to him, if that's what he really thinks--will he for Christ's sake get out of the way of the people who think it makes a hell of a lot of difference!"