Reminiscence

A small glider, tossed out over the hillside, just misses the top of the chain link fence, and its yellow wings rock in the turbulence created by the greenhouses below.The small orange rudder flicks momentarily to the right, and there is a barely audible hollow click as it dies so. Another click is heard as the rudder snaps back to its original position. Climbing a few feet, the little ship begins to drift back and forth over the crest of the hill, slightly canted into the sea breeze.

A sharp turn to the right becomes a spiral, and when the rudder is returned to neutral the glider's excess speed bleeds off in the form of a loop. A turn to the left at the exit point gets the 'ship back on track across the hill.

Several passes later it lands rather awkwardly behind the pilot. He turns off the transmitter and walks to his creation, now with its wing askew. The receiver is turned off, and the colorful little bird is brought back to the launching point.

Now the young flyer picks up a hand drill, a wire hook clamped in its jaws. The hook goes through a small metal ring in the tail of the glider, and a gentle pull on the drill succeeds in drawing out the loop of rubber. The drill rapidly twists the rubber until a row of knots is formed along the entire length of the loop. The metal piece is replaced, the receiver and transmitter are turned on, and the small glider is tossed out over the hillside once again. By the end of the day, when the breeze stops, the Nomad will have put in another 25 to 30 flights.

I was that young pilot, lucky enough to live on the crest of a hill overlooking the Pacific Ocean, with steady 15 m.p.h. winds coming up the slope nearly every day. Although the Nomad no longer exists, all of the primitive radio gear is still around and capable of reliable performance.

The vacuum tube transmitter, a CG Venus, uses two large 67½ volt batteries and a single 1½ volt D cell. Its front panel has an on/off switch mounted on the left and a red push button on the right.

The receiver is a Citizenship LT-3, one of the first of the transistorized units, tunable over nearly the entire 27 MHz spectrum. Powered by two 1½ volt batteries, it can drive either a solenoid or an electric motor.

In the Nomad, a solenoid was used to alternately release and stop a rotating shaft powered by a wound rubber loop. This escapement mechanism was connected to the rudder, driving it to extreme left and right positions and returning it to neutral when no signal was received.

When the pilot pushed the red button on the transmitter, a tone signal was sent to the receiver. The receiver then sent a three volt current to the escapement, releasing the shaft to rotate 1/4 turn and moving the rudder to the right. When the transmitter button was released, the current to the solenoid was stopped, and the shaft rotated another 1/4 turn, bringing the rudder back to neutral. The next time the transmitter was keyed, the rudder moved in the opposite direction. In flight, the diameter of a turn was controlled by the duration of rudder deflection and the time interval between commands.

While some fliers of the time rigged up additional mechanical systems capable of giving elevator control. Being able to reliably steer left and right was for me a wonder in itself! One of my biggest advancements was the purchase of an escapement which always gave right rudder at the first command.

Flight times with this type of system were always dependent upon the number of turns placed on the rubber loop and the ability of the pilot to fly with a minimum of control input. Still, this basic system served me well for nearly twenty years, giving reliable control of several sailplanes and powered aircraft, a few electric cars, and even a tug boat.

In the early '80s I bought a JR Century VII system. Proportional control of multiple surfaces and availability of mixing functions put this system light years ahead of the Nomad's equipment,

Newer systems, like JR's X-347, are even more advanced, offering multiple control presets, enhanced mixing capabilities, and other features. This setup allows one to build three control surfaces into each wing, and rudders into the fins, with independent control of each surface. The transmitter can then be programmed to move each surface so predetermined lift distributions are maintained throughout all flight regimes, extracting maximum performance from a swept wing tailless design.

Adequate means of control of high performance tailless RC aircraft has thus been possible only within the last decade or so, a fact not often appreciated. Now, with advanced airfoils, composite structures, and computerized radio systems, tailless sailplane performance is on the threshold of surpassing that of conventional designs.

A lot has been written about how this hobby should provide enjoyment for its participants — a notion with which we most heartily agree. What an aeromodeler builds and flies is thus an indicator of what provides the most enjoyment for him.

I remember with great fondness the many hours of pleasure the Nomad gave me, and I often consider spending a few days at the building board constructing another. But the challenge of utilizing current technologies in building and flying what is still considered an unorthodox planform has so far always won out. Being torn between these two extremes for over ten years has, however, been an extremely interesting experience and has provided much opportunity for introspection.

Blackbird 2M in flight. Photo by Andrew Still.