

Early History of Radio Control Club of Detroit!

by John K. Dixon
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I first heard about the Radio Control Club of Detroit in 1952.

My interest in model airplanes began years earlier. In the early 1940s, when I was in elementary school, I built solid wooden model airplanes. In high school, I built and flew control line stunt planes. I belonged to a small club called The Mercury Controlliners. We met in the back room of the Mercury Camera Shop, a shop on six mile road near Schafer that also sold model airplane supplies.

My favorite control line airplane was built from a kit and it was called the "Squaw." This plane had a symmetrical airfoil and powered by a 0.35 Fox glow plug engine, it would do stunts such as the inside loop, outside loop, wingover, inverted flight, and figure eight.

I also had an interest in radio. I obtained my amateur radio operator's license when I was 16 years old and I started a small business building radio transmitters and selling them by mail while I was in high school.

1952 was a busy year for me. In the spring my cousin, Armi Kuusela, won the title of Miss Finland in a beauty contest and then went on to win Miss Universe in Hollywood. After the contest she came to Detroit to visit her relatives. Then I graduated from Cooley High School. In the Fall I entered Lawrence Tech to study Electrical Engineering.

Lawrence Tech was then located in an old ivy covered building that had once been the Henry Ford Trade School. It was located on Woodward Avenue right next to the Ford Highland Park plant. I lived near Mercy College and had no car, so every day I rode the bus to Lawrence Tech.

One day, after chemistry class, I overheard Jack Lemon, a fellow student, talking about radio controlled model airplanes. I thought radio control was the wave of the future, but I had never seen one. Having had some experience with both model airplanes and electronics, I was very interested. Jack belonged to a group of RC enthusiasts that met in the evening at a school on the east side of Detroit. Jack offered to drive me to the meetings.

I attended my first meeting in the fall of 1952. At that time the group was meeting every month but had no formal organization. There were about 20 members and they often brought their airplanes to the meetings. The group became formally organized in 1953 as the Radio Control Club of Detroit. At age 18, I was the youngest of the charter members.

My first RC plane was completed in the spring of 1953. It was a kit called the "Live Wire." It was a high wing monoplane made of balsa wood and covered with silk. It was powered by an 0.09 glow plug engine and had rudder only control. The radio was a one tube super regenerative receiver operating in the 27 megacycle citizens band. A rubber band powered escapement operated the rudder. For the younger readers, a vacuum tube is a glass tube from which all the air has been pumped out. It contained a glowing filament, a grid and a plate. It was used to amplify electrical signals during the first 50 years after the invention of radio, before transistors became available.

At that time there was a large open field at the north west corner of Southfield and Northwestern highway. This location is about a mile north west of Northland shopping center. Of course Northland did not exist in 1953. Construction began in 1952 and it opened in 1954.

This field had been a favorite flying site for all types of model airplane builders since the 1930's. In the 1950s both Southfield and Northwestern were surface roads. Getting on to the field was a simple matter of turning off the pavement of Northwestern highway on to the grass. My Live Wire was flown here for the first time in the spring of 1953. It flew very nicely and could even do loops. By holding hard rudder for a few seconds, the plane would go into a spiral dive and build up speed. By then holding opposite rudder for a short time, the wings would level out and excess speed would cause the plane to loop.

The plane did pull Gs when looping and the wing was attached to the fuselage by rubber bands. On one occasion I did not use as many rubber bands as I should have and when I did a loop, I could see the wing pop up and nearly come off the airplane. I never made that mistake again.

Taking off from the ground was a risky business so most flights began with a hand launch. After all the fuel was used up, the engine would stop and the plane would then glide down and land on the grass. In those early days, all landings were "dead stick." Of course the pilot could still use the rudder to steer the plane to good landing place. But without elevator control there was no way to flare out and make a smooth landing.

There is principle of aerodynamics which says that the lift generated by a wing will increase when the wing gets close to the ground. This principle is called "ground effect." I designed and built a low wing RC plane in order to get the wing closer to the ground, thus increasing the ground effect. Although this plane had rudder only control, it worked as planned. It would flare out by itself due to the ground effect and it did make smooth landings.

The flying field was covered with grass - there was no gravel or paving. In the spring, after the snow melted, the field would be muddy and driving a car onto it was dangerous. Sometimes a flyer would drive his car on to the grass without any trouble, but then the car would find a soft spot and sink into the mud. Sometimes a group of club members could push the car to safety by brute force, but once wheels had sunk far enough that the rear differential housing was on the ground, the situation was hopeless. It was necessary to call a tow truck. This happened to Jack Lemon with his green Hudson Jet and to several other members. It never happened to me because I did not own a car.

It sometimes happened that a pilot would lose control of his plane because it got too far away - out of range of the radio transmitter. It was important to always make a range check of the radio on the ground before flying. The flyer would put his plane on the ground, turn on the radio and walk away with the transmitter. At a short distance one could see the rudder move in response to radio commands. But at a longer distance it was necessary to enlist a friend to provide hand signals that could be easily seen.

But sometimes things would go wrong. Batteries would run down, a receiver might be mistuned, a wire might break and a plane would be lost.

Wind was sometimes a problem. If the surface wind is a light 10 miles per hour, the wind at flying altitude would be faster, perhaps as high as 20 miles per hour. If the airplane flew at 30 miles per hour, this would mean that the ground speed of the plane would be 50 miles per hour when flying downwind, but only 10 miles per hour when flying upwind. If the pilot made a wrong

turn, a plane could get out of range in a hurry.

Each RC pilot pasted a note on the wing of his aircraft giving his name and phone number and asking the finder of a lost plane to call the owner. Sometimes an RC plane would be lost in a bushy area and where it was difficult to find. Fortunately Jack Lemon owned a full-sized airplane, an Aeronca Champion, a two seater with an 85 horsepower engine. Jack kept his plane at Berz Airport on 15 mile road. On several occasions Jack was asked to fly over a bushy area in his Aeronca to see if he could spot the lost RC plane from the air. These trips were usually successful.

Once my own plane flew out of range and was lost. Since I knew the wind direction and speed and the amount of fuel in my plane, I was able to estimate that the plane went down about 13 miles away in the town of Grosse Point Farms, near Lake St. Clair. I drove to a hobby shop in that town and posted a notice about my lost plane. In this way I was able to recover it unharmed.

On one occasion an RC plane was lost and traveled all the way to Florida. I don't recall the owner of the plane, but I think it might have been Richard Branstner. The plane ran out of fuel above Detroit City Airport, about 10 miles east of our RC flying field. At the end of the airport runway was a twin engine DC3 with engines running, waiting his turn to take off. The DC3 pilot saw the RC plane approaching the airport and, thinking it was a full size airplane, he waited for it to land. It made a perfect landing on the active runway. Only then did the DC3 pilot realize that it was a model aircraft. He jumped out, picked up the RC plane in order to clear the runway, and then put it in his DC3. He then took off on his trip to Florida. When he returned to Detroit and few weeks later the pilot called the owner of the RC plane, returned it, and explained how it happened to travel to Florida.

To solve the out-of-range problem, I built a more powerful transmitter with switch to select low power or high power. Since I had an amateur radio operator's license, I built the transmitter to operate on 54 megacycles so that I would not interfere with the other flyers. The plan was to fly using to low transmitter power and then switch to high power if the plane ever got out of range.

I recall having an argument with a friend of mine who claimed that this arrangement did not increase the maximum range of the transmitter and that I should always fly on high power. He did not seem to grasp that the high-low power switch provided information. It provided a warning when the airplane was getting near the limit of it's range. Then the pilot could recover from the situation by flipping the power switch. This was much easier than searching for a lost airplane.

In those early days, we all hungered for better radio control of the aircraft. We wanted to control the elevator and the throttle in addition to the rudder. These would allow us to do touch and go landings and to fly much more smoothly. A few visionaries even dreamed of ailerons and retractable landing gear.

A fellow RC flyer named Frank Schmidt who lived in Erie, Pennsylvania came up with a solution. He built a radio control receiver using steel reeds. His receiver contained a set of five steel reeds mounted above an electromagnet. Each reed was a different length and thus would vibrate at a different audio frequency. The transmitter would send an audio tone and the appropriate reed would vibrate and strike a contact, thus operating some control device. This was called a five channel radio system. The five channels were usually connected in the following way: 1. Right rudder, 2. Left rudder, 3. Up elevator, 4. Down elevator, 5. throttle. The

transmitter had a joy stick for flight controls and a button for throttle. Schmidt set up a business and offered his system for sale. I believe the price was about \$200 for transmitter and receiver.

You might wonder how one could control the throttle with only one radio channel. Should there not be two throttle channels? One for "faster" and one for "slower" ? In the early 1950s model airplane engines did not have throttles. They were intended to run at full power at all times. The speed of the engine could be controlled by adjusting the mixture. When the mixture was too rich, the engine would slow down. RC flyers modified the engines by putting two needle valves in the air intake tube. The needle valves were then adjusted so that one would provide a lean mixture so that the engine would run at full power. The other was set rich so the engine would run at idle speed. An escapement was then arranged so that it would switch from one needle valve to the other. Thus the pilot could push the throttle button to change from full power to idle and then push it again to go back to full power.

Jack Lemon and a friend of his decided to fly to Erie in Jack's plane and buy two copies of the Schmidt RC system. The trip to Erie was uneventful, but coming back was a problem. Jack had a stiff headwind and his ground speed was greatly reduced. He was forced to land and buy gasoline several times.

The Schmidt system worked, but it did have problems. The audio tone generator in the transmitter was sensitive to battery voltage. The tones would shift as the transmitter battery voltage went down. There was a screwdriver adjustment on the transmitter to set each of the five tones to exactly the proper frequency. Sometimes a pilot would have his engine running, ready to launch, would make a last minute check of his controls and would discover that the tones had drifted. So he would have to pull out his screwdriver and adjust the transmitter until all controls worked properly. Of course if the tones drifted while he was in flight, he would have a difficult situation.

Ernie Kratzet was the first president of the RC club of Detroit and was also one of the most active and enthusiastic early members of the club. After multi-channel control arrived Ernie designed and built a most amazing RC biplane, called "Eskimo." (Ernie's initials were "ESK.") In the 1950's most model airplanes were built of balsa wood. But the fuselage of the Eskimo was not made of balsa wood. It was made of fiberglass and weighed 16 pounds. Ernie intended the Eskimo to be crash-proof, and it was.

On one occasion, Ernie was approaching for a landing, coming in over Northwestern highway. Ernie got a bit too low and a car zipping along the highway crashed into the Eskimo. The corner post of the car was bent and it needed extensive repairs. The Eskimo was unharmed and was ready to fly again. The club insurance policy paid for repairs to that car. I suspect this was one case where the insurance company had set their premiums too low. They were counting on flimsy balsa wood aircraft, not a solid machine like the Eskimo.

At one point the club needed a new meeting place. Ernie was able to supply it. At that time He was manager of a group of salesmen that sold cemetery plots. We were able to hold club meetings in the large room where Ernie managed his salesmen. The walls were covered with blackboards where Ernie recorded the sales results of his salesmen. These results were organized into a variety of contests created by Ernie to motivate his salesmen.

Richard Branstner was one of the more colorful charter members of the RC club of Detroit. Richard was famous for an event during his high school days. Whenever Richard was mentioned to a newcomer or an outsider, this event was sure to be discussed. It was the



*Details and picture of the ESKimo – provided by Ernie Kratzet
Yes- those are Corsairs in the background!*

ESKimo Biplane

Wingspan:	72"
Wing Area:	1300 sq in
Weight:	16 lb
Power:	Fox 60 Special
Covering:	Parachute Nylon
Radio:	Bramco 12 ch Reeds
Airfoil:	Clark – Y
Propeller:	14x6
Dihedral:	6° total
Features:	Elevator; rudder; ailerons; throttle; flaperons. Any 3 channels operate simultaneously. On-board glow ignition in low throttle. Steerable tailwheel.

Designed, built & flown by Ernie Kratzet.
First flown in 1954. Picture taken with
Richard Branstner at Selfridge air base.

defining event of Richard Branstner's life.

It seems that Richard had a disagreement of some sort with one of his high school teachers. Richard expressed his displeasure by slugging the unlucky teacher and knocking him down flat on the floor. That event marked the end of Richard's high school career.

Richard became a very talented expert on racing boats. He knew how to get a little more speed out of a boat. He was much sought after by owners of the very fast "rooster tail" boats that raced on the Detroit river. He knew how to make a boat into a winner.

Richard also knew how to fly RC airplanes. He noticed that the "two-needle-valve" method of engine speed control was far from perfect. Running rich certainly did slow down the engine, but it also wasted a great deal of fuel. The engine in my airplane, a K&B 0.29, actually burned more fuel per minute when it was idling rich than when it was running lean at full power. Richard designed a true throttle that had a rotating barrel. It could slow the engine by cutting back on the air that the engine could inhale, instead of enriching the mixture.

Richard decided to go into business and sell his throttle to other RC flyers. The name of his business was Bramco. I bought one of his throttles and I still have it (in 2013). He sold a good many throttles and then decided to improve the vibrating reed unit used in multi-channel receivers. His Bramco reed unit used gold plated contacts, since gold had a very low contact resistance. I bought one of his reed units and, in 2013, I still have it.

Then Richard decided to sell a complete radio control system with both transmitter and receiver. He asked me to design the electronic circuits and I did. I tested the transmitter and receiver in my basement workshop. The receiver used three vacuum tubes, a superregenerative detector, an audio voltage amplifier, and a power amplifier to drive the reed unit. The system worked well and Richard sold quite a number. He rented a building and hired employees to manufacture the equipment.

The Radio Control Club of Detroit held RC flying contests every year and members also traveled to other towns for contests held by other clubs. I remember driving to Toledo for a contest held by the Weak Signals club, to Ann Arbor for contest of the Ann Arbor Airfoilers, to Findley Ohio and to a Canadian contest in Ontario. Of course flyers from other towns came to Detroit for our own contests.

The RC Club of Detroit decided to create a perpetual trophy. It had a brass plate on the front to record the name of the winner each year. I took a photo of the trophy and it was published in one of the magazines. I think it was in Model Airplane News.

At some point in the 1950's the first commercially available transistor came on to the market. It was the Raytheon CK722. I bought one and tested it out. I built an RC receiver using one vacuum tube and one transistor. It performed well in flight and I wrote an article about it that was published in a model airplane magazine called Air Trails. It was, to my knowledge, the first use of a transistor in a model airplane. The CK722 was too slow to operate at 27 megacycles, so vacuum tubes were still needed for the radio frequency portion of the RC system.

In June, 1957 I graduated from Lawrence Tech with a degree in Electrical Engineering. The very next day I began work at Chrysler Missile Division. This plant was building rockets on an assembly line for the military. They built the "Redstone" short range ballistic missile and the "Jupiter" intermediate range missile. I designed electrical circuits for the Redstone and the Jupiter. In October 1957, the space age began when the Russians put up the first satellite. A few months later the US launched the first American satellite using one of our rockets, a modified Redstone which was called a "Jupiter C."

While working 58 hours per week at Chrysler Missile, I did not have much time for RC model flying. But in 1959 I got a 40 hour per week job at Bendix Research. I was designing electronic equipment for guided missiles and aircraft. By this time vacuum tubes were on the way out for military applications and the silicon transistor was king.

Around this time, one of the members of the RC Club of Detroit decided to set up a company to make a modern all-transistor radio control system. (John Kraver, who also made his living as a very successful photographer.) The name of the company was Minox. Jack Lemon was hired to design the transmitter and receiver. The Minox system used an eight channel reed unit. It was very successful and the company was in business for a number of years.

I bought one of the Minox systems and installed it in a Live Wire Senior airplane. This plane had rudder, elevator and throttle control. It was powered by an K&B 0.29 engine. Instead of relays, I designed an all transistor circuit to provide power to the servos. I flew it a number of times during the early 1960's. On one occasion it got stuck in a tree when I was flying at the field of the Wyandotte club. It took some doing, but I finally got it down in one piece.

I put a large balloon fuel tank in my plane so I could make long flights. It could fly for about 30 minutes. I gave my son, Bruce, an introduction to RC flying with that plane.

I shot a lot of 8mm movies of the RC flying at the old field. I have about 400 feet. Someday I will have it transferred to DVD and send a copy to RC club of Detroit.

My involvement with the Radio Control Club of Detroit ended in 1965 when I traveled west to study for my PhD in computer science at the University of California at Livermore. I took my Live

Wire Senior with me and flew it a few times in the Livermore valley. When it crashed I put it in a box. I still have that airplane and perhaps someday I will repair it and fly it again.

I now live in Chantilly Virginia. I have done very little RC flying in recent years. I did belong to the Northern Virginia Radio Control Club in 2005. I now own an electric powered Slo-V ParkZone trainer and a Magister foam plastic model which has a 64 inch wing. It is also electric powered.

RC flying was a very good thing for me. It provided a fun introduction to the principles of electronics and aerodynamics that was very helpful during my education and professional career. I highly recommend the sport.
