



Remote-control enthusiasts stand in a safe place, and with a radio, maneuver the models of their choice through feats that they would never attempt if they were in there themselves. RC modelers skillfully take their crafts through dangerous loops, rolls, dives, jumps and — perhaps not so skillfully — crashes. But the only loss to be found in the pile of rubble is a lot of sweat, a little pride and some money. The drivers always walk away.

Photo illustration by Dean Saito

Remote Control

To crash and live

By Thomas Boylan

ENTERTAINMENT WRITER

Radio-controlled helicopters, airplanes, cars and even motorcycles are flying and driving around like never before. They're a rapidly growing hobby and industry and a lot of fun, and if you want more than fun, they also compete, internationally. Texas A&M just happens to have some of the finest radio control pilots around.

Radio-controlled (RC) vehicles range from toy cars that do little more than roll slowly to jet look-alikes that fly as fast as 180 miles an hour. They range in price from a few dollars for a toy to several thousand for a serious hobby machine. The one characteristic that links them all is their ability to move without visible controls.

Bill Bennett is an RC enthusiast and the owner of Keyser's Inc., a hobby shop at 2021 Texas Ave. "I was a stock broker for 10 years and decided to get into something that was a little bit more fun," Bennett said.

Helicopters

Bennett flies RC helicopters, which he says are more expensive and harder to fly than airplanes. How much harder? He described it as "kind of like flying two airplanes

at the same time." He has been flying them for five years, however, so he has had time to learn.

A helicopter is more difficult to fly because it has many more degrees of freedom than an airplane. It can go forward, backward, up, down, and in almost any combination of directions. However, the complexity can lead to some off-the-wall benefits, Bennett said.

"You can actually fly the helicopter upside down and bring it down low enough to cut the grass," he said. It works, too — he has tried it.

The field of radio control has changed rapidly over the last five years, Bennett said. "Technology has brought the radios down to micro size," he said. "The receiver used to weigh five pounds, and now it only weighs a few ounces. It carries five channels instead of one."

In the past, a one-channel radio cost about \$1,000, but now four channels cost only about \$100, he said. Each channel controls a different part of the helicopter (or airplane or car) — one channel for acceleration, another for angle, etc.

One of the nation's best RC helicopter pilots is an A&M faculty member. Dr. Dave Youngblood, professor of physics and director of the cyclotron, competed in Bern, Switzerland in 1987.

He won his contests consistently until the end. "I lost on the last one," he said. The last competition was for the world championship, the end of a battle between 36 competitors from 18 countries.

The loss was to his son, a University of Texas student and now world champion.

"We're often invited around to do exhibitions, and I usually decline," Youngblood said. "My son is better than I am, by a lot. After they see him fly, they're not even interested in me."

Youngblood said practices flying his helicopters at least weekly. "You get rusty if you don't fly," he said. "The helicopters are particularly bad because they have so many degrees of freedom. . . . You lose your edge."

The Brazos Valley RC Modelers

Club has a flying field in Bryan just off Old Reliance Road, and Youngblood occasionally flies there.

For RC novices, Youngblood does not recommend learning how to fly helicopters. "Don't do it," he said. "Go learn to fly airplanes. When you can fly an airplane at any attitude, when someone can throw you a radio while the plane is going in any direction and you can gain control of it, you can handle flying a helicopter."

He added that it is a misconception that airplane flying is not relevant to helicopter flying. Like Bennett, Youngblood said flying helicopters is more difficult than flying two airplanes at the same time. An airplane only goes forward, but helicopters can go in any direction, he said.

Airplanes

Airplanes are simpler and less expensive than RC helicopters, and they come in a broad range of prices and styles. Linda Kirk, a Keyser's employee and former A&M student said, "We sell the airplane kits and some of them that are already built up. With the kit you need a radio transmitter and receiver, an engine and then other accessories like covering materials."

Part of the process of building the model airplane is covering the frame, which comes as a skeleton. Fiberglass, silk or heat-shrink material — which Kirk recommends — can be used. "Heat-shrink is easiest," she said.

Airplanes range in size, as well. "A quarter-scale plane may have a five- to six-foot wingspan," Kirk said. "Most of them are about four feet in wingspan."

Some planes come without motors at all, flying like gliders. "A glider may have an engine or no motor at all," Kirk said. "One (kind) has an electric motor and a 7.2 volt battery. You can either hand-launch it or use a rubber band."

The rubber band literally flings the glider into the air. The glider then catches rising columns of warm air called thermals and continues upward. On the gliders with small electric motors, the motors can be turned off after the plane is aloft.

Kirk is just learning to fly. She

said the most difficult part is taking off and landing, but it is not so bad once the plane is in the air.

"Normally you get someone who knows how to fly and they take it up, and then you fly it around," she said. "You really have to think about what you're doing."

To land the plane, she hands the radio to the trainer and lets him or her bring it down.

RC flying is not a sport without hazards. An airplane or helicopter can come down for a variety of reasons, and a crash can be expensive. Bennett described one case in which a radio failed while the airplane was about 150 feet in the air.

Because the plane was circling slowly, the operator had time to disassemble the radio, find and repair an electrical short and land the plane safely, although only just in time. The plane was losing altitude gradually as its battery ran down, sinking lower with each turn.

A new and, for Bennett, particularly exciting part of RC flying is jets. "I have just gotten into jets," he said. "They're one-fifth scale models of just about any jet, and they use a ducted fan that produces a thrust similar to a turbine engine."

"The jet was somewhere between 180 and 200; the car wouldn't go any faster."

— Bill Bennett, RC enthusiast

Jets are considerably faster than regular airplanes. Bennett said he has clocked one flying at more than 160 miles per hour.

"We used a Porsche and flew the plane beside the car," he said. "Your average trainer will do about 90 miles per hour, and a sport plane will do 130 to 140. The jet was somewhere between 180 and 200; the car wouldn't go any faster."

Cars

Cars are the easiest way to get into radio-controlled modeling. They are inexpensive, fast and easy to learn.

"The introduction of cars has

boomed our business within the last three years," Bennett said. "The biggest innovation is the nickel cadmium batteries — they hold enough juice to make these little cars do 30 to 40 miles an hour." Scaling the actual speed to the size of the car, the speed would be 10 times that figure.

Cars are less expensive than flying RC machines. Kirk said, "Electric cars range from \$175 to \$800. . . . Our boss had one (an \$800 model), and it was a hot little car."

The average gasoline car costs about \$325, she said, not including the engine and radio. A complete RC car costs about \$550-\$600.

When it comes to customizing, Bennett said, "You can hop these cars up with different battery packs and motors." He listed a variety of available parts, including magnesium wheels, graphite frames, '57 Chevy bodies, gearboxes, and just about any other accessories imaginable.

Unlike airplanes and helicopters, RC car controllers must deal with obstructions, negotiating rocks, curbs, cars, pedestrians and ditches. The cars are moving fast while they are being directed, so they do not always swerve or turn quickly enough.

For accident repairs, Bennett keeps plenty of extra parts on hand. "We sell lots of parts because they go fast," he said, "but they're easy to fix."

Forty miles per hour just isn't enough for some RC enthusiasts. For them, there are dragsters that will go faster than 70 miles per hour, Bennett said. Those cars only go in a straight line, but they do it fast.

But what happens if a car stops receiving its radio signal? "If you lose radio contact, the receiver is going to pick up whatever's out there," Bennett said, "like someone with another car." If the car fails to pick up someone else's signal, however, it is likely to keep going until something stops it. However, a car's leaving the radio range is unlikely, Bennett said.

As technology has improved, the radio range of the cars has increased, Bennett said. It is possible to control a car for as far as half a mile — so the car would be long out of sight before it got out of control.

DAT heralds latest, greatest wave in music recording technology

By Chuck Squatriglia

CORRESPONDENT

Imagine Mozart in your living room, conducting his Requiem Mass. The brass and percussion resound through your home, while the strings send shivers up your spine. It is all possible with digital audio tape.

Digital audio tape is the next advancement in the quality of music recording, but lawsuit threats have kept the product from reaching the mass market.

DAT recorders allow the digital recording of music onto cassettes, which provide sound quality comparable to that of compact discs. The advantage of DAT is you can record on it, whereas you can't record on a CD.

DAT provides home recording studios with the same advantages as a large recording studio, allowing them to produce high quality sound recordings, says David Cooper, owner of Brasswind Recording Studio in College Station.

DAT has been available to professional recording studios for several years.

"DAT is phenomenal," he says. "It's convenient, reliable and it provides a vastly superior sound quality."

Because DAT would provide the consumer with the ability to make high quality tapes, several record companies represented by the Recording Industry Association of America are working to prevent the release of DATs.

"DAT is a quantitative leap in home taping because for the first time, there will be no distinction between the original and the copy," says Hilary Rosen, vice president of government relations for the RIAA. "This increases the incentive to tape one-hundred fold," she says.

If DAT is made available to the public, consumers would be more likely to record music at home, resulting in lost sales and lost royalties to the musicians, she says.

"Home taping drains artists and record companies from reve-

nue they make when they sell records," Rosen says. "They don't get paid when it gets played on the radio and they don't get paid when someone tapes it at home. The RIAA says the record industry loses \$1.5 billion in roy-

DAT, the Home Recording Rights Coalition is working to defend the consumer's right to use home recording equipment.

"We support the consumer's right to tape at home for personal use," Phil Bangert, an HRRC

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— Hilary Rosen vice president of government relations, Recording Industry Association of America

alties each year due to illegal home taping. This figure is based upon a survey of consumer taping behavior, Rosen says.

She says she is unsure how much more revenue could be lost by the introduction of DAT.

While the RIAA is working hard to prevent the release of

spokesman, says. "DAT is merely another format by which a consumer can exercise his right to tape at home."

Bangert says the HRRC bases the consumer's right to tape on two events: the 1984 Supreme Court decision in the *Universal City Studios v. Sony* case and the

1972 Sound Recording Amendment to the copyright law.

In the *Sony* case, commonly known as the *Betamax* decision, the Supreme Court said copying television programs for personal use does not constitute a copyright infringement, provided the copies are not sold or used for other commercial purposes.

"Although the Supreme Court's *Betamax* decision was talking about videotaping as opposed to audio taping, we feel the same theory could apply to consumers' use of audio tape," Bangert says.

With the 1972 Sound Recording Amendment, Congress specifically said it does not intend to restrict or make illegal the consumer's use of audio taping equipment for home use.

Because of these two events, the HRRC believes the RIAA's arguments against the release of DAT are nullified.

"You have both legislative and judicial language stating that consumer use of recording equip-

ment does not constitute a copyright infringement," Bangert says.

The RIAA disagrees with the HRRC's belief that the *Betamax* decision is an applicable precedent.

"The decision is limited to video," Rosen says. "From a legal standpoint, the Supreme Court said off-the-air timeshifting was a legal use of the VCR. People don't tape a record to listen to it at 8 o'clock instead of 4 o'clock and then erase it."

"Every objective survey done on taping behavior shows a difference between audio and video taping and the Supreme Court specifically and purposefully narrowed its decision to off-air programming."

Popular opinion on the validity of the *Betamax* decision as a precedent for the DAT issue is divided.

David Cooper of Brasswind says, "The *Sony* decision is per-