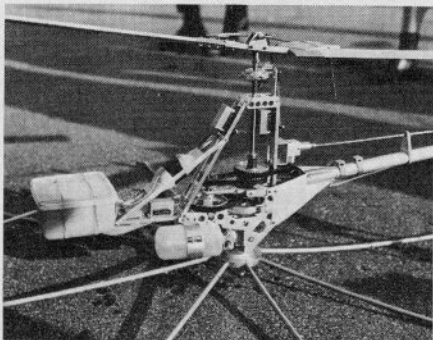
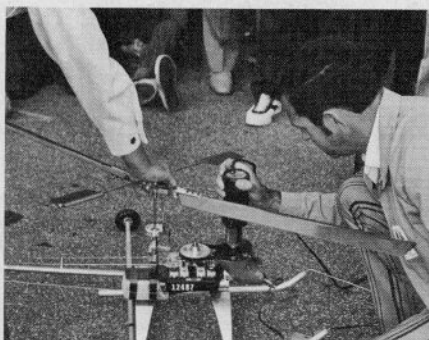


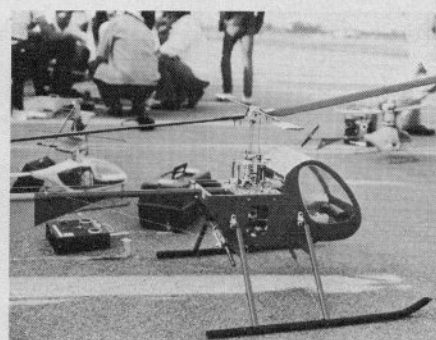
RC Helicopters at the Nats



One can't help wondering why Ernie Huber keeps his lunch in the box up front. Balances best before the meal. Excellent design won best flight award.



Cranking up the workmanship award-winning model is Faye Peoples. Model based on 2-B from Burkam's WHA1 column.



An O&R Compact engine with self-contained clutch, gears, and pull-cord starter powers Dave Gray's big model. Shows great possibilities, still being developed, perhaps a Du-Bro kit.

JOHN BURKAM

Fifteen helicopterites and 17 machines appeared for the first RC helicopter competition in the United States on July 27 and 28. Seven of the copters were the popular Du-Bros, one was a Du-Bro converted to shaft drive, one was a Schluter Hueycobra, one had Schluter mechanics and an original fuselage. The other seven were scratch-built, shaft-driven original designs. Most amazing was the fact that all of them were practical, flyable machines!

Ernie Huber stole the show by flying his original design, belt-driven machine all over the sky like a Pattern ship under perfect control. He started his Super-tigre 60 by pulling a piece of timing belt between a roller and his toothed flywheel. Then he twisted a knob on the tail which engaged the main rotor. Being more of an airplane than helicopter pilot, he wasted no time in hovering. He climbed out and up and began a series of right and left turns, dives and low passes that delighted the crowd and turned the rest of the beginning RC pilots green with envy. He made successful hovering landings after both flights and won first place in flying.

Faye Peoples, winner of the workmanship category, flew his original design based on the 2-B drive system (May 1972 AAM). On his second flight without tether lines, Faye hovered steadily at altitudes up to 20 feet, thanks in part to the teetering springs added to his Hiller rotor.

Ray Jaworski also added teetering springs to his Hiller type rotor, and it flew better than ever before. Ray, not so cautious as Faye, climbed his ship up to about 100 feet and started a left (downwind) turn. As speed increased,

more forward stick was required for forward flight. He made one turn which ended with a swoop to three feet altitude and another zoom to 30 feet. The next turn really ended with a nearly vertical dive. Latest word from Ray is that he has nearly completed repairs and is going to get that little bit of practice which will bring him the complete success for which he has worked so long and hard.

Gene Rock won first in design and second in flying with his SSP-4, an improved version of his altitude record-holder (August 1972 AAM). Gene "walked" his model up and down the runway with or against the wind, did climbs, turns, descents under full control, and picked up the wire hoop with his landing skid. After each of his two crashes—one due to a near miss with another model, another due to radio interference—the model was repaired and back in the air in less than half an hour, thanks to rugged, foldable blades.

Horace Hagen's Hueycobra performed impressively, though perhaps a little too close to the crowd. Unfortunately, a tail rotor pitch link slipped off during a hovering turn, causing him to lose power and directional control. Nevertheless, he had it repaired and back flying in about an hour. Horace won second place for his beautiful workmanship on the German kit.

Du-Bro helicopters *can* fly in a wind. All it takes is removal of the horizontal stabilizer. Bob Bentley, Dave Gray, Chuck Sherman, Bill Phillips and Mike Scun proved it. Dave Keats proved it so well that he placed third in flying. (He also picked up one of the hoops with his landing skid.)

Nate Rambo took the Schluter dynamic system and put it in his own original airframe. Nate hovered well, had a go at picking up the hoop (his helicopter didn't seem to understand his very expressive gestures), flew forward and backwards and other gentle maneuvers.

Dave Gray hovered his 14-lb. monster with the O&R gasoline engine, but hadn't yet advanced to the point of fast forward flight. Nevertheless, it won him second place for design.

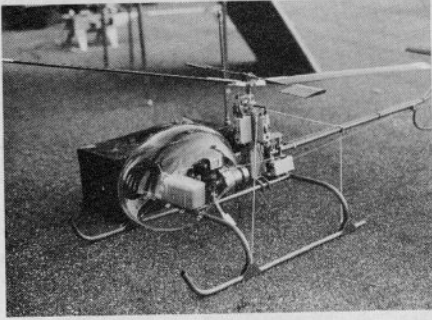
Neatest trick of the meet was performed by Ed Sweeney, who had converted his Du-Bro helicopter to shaft drive, using a Veco 19 engine, mostly stock parts from race cars, nose gear fittings and ingenuity. His two-bladed rigid rotor had conventional airfoil type blades and was controlled and stabilized by a Hiller servo rotor whose cyclic pitch was controlled by the swashplate. By Saturday, Ed had licked most of the bugs in his design and managed to fly a full circle and make a landing with good control and good wind penetration. Think of the implications of this feat!

John Burkam brought his latest helicopter, Square 2-B, but it was not completed in time to fly.

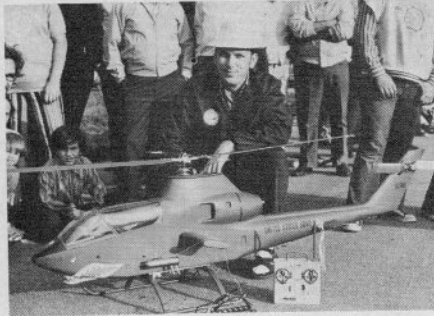
General Observations: All of the helicopters which flew forward fast had Hiller type rotors, most of which strongly resembled Dieter Schluter's rotor. Five of the Hiller rotors had spring restraint about the teetering hinge and flew quite steadily. Rotors which had single bolt attachment of the blades survived roll-overs, even crashes. Those which didn't, shattered blades every time they contacted anything.

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SEVENTEEN RC AND FOUR FF
CHOPPERS PERFORMED AT THE
72 NATS ALWAYS DRAWING
A LARGE AMAZED CROWD.



One of Ray Jaworski's two original design models. This one flew very well until it earned the "worst crash" award.

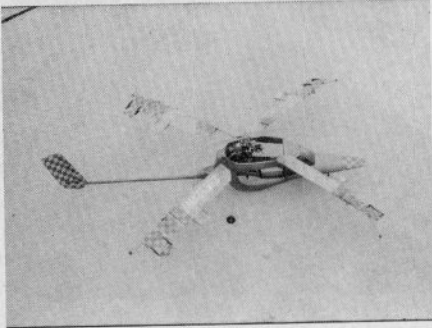


Horace Hagen and his much-flown Hueycobra from the Schluter kit. It is an inspiring sight and was the only scale design there. He makes flying look so easy.



Navy photo of another FF chopper flier, Tony Naccarato, Jr. It is 049-powered and a fairly simple configuration. Climbs very fast.

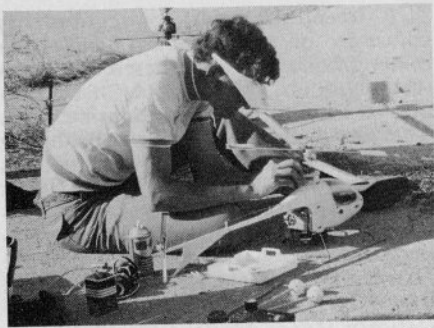
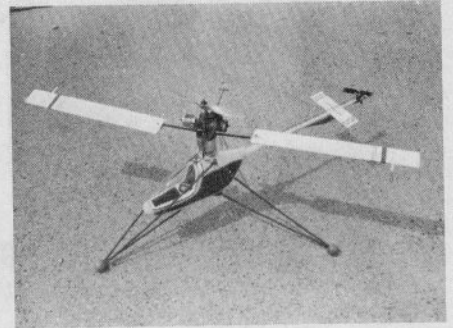
In free flight, Dr. Lee Taylor flew this familiar model. Separate blade sections provide cyclic and collective pitch control.



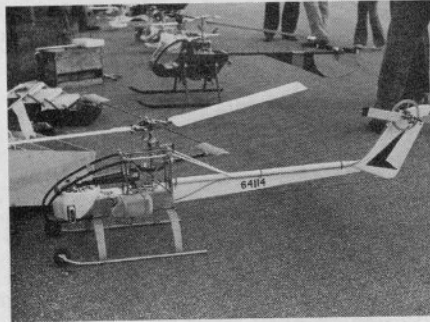
Dr. Taylor's model on its way up. Was second this year.



Very stock looking Du-Bro Whirlybird flown by Bob Bentley sports the much-recommended training gear. This gear almost prevents any turnovers.



Ed Sweeney brought along a brand-new still-testing shaft driven conversion of the Du-Bro helicopter. Powered by only a 19 and uses many RC race car parts. Simple model will be published soon.

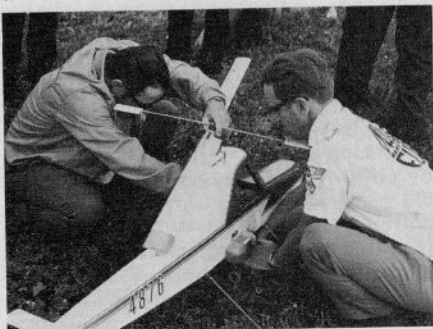


Still improving on his SSP model, Gene Rock made many excellent and smooth flights with this fourth version of the model just published in AAM. This model has torque rod driven tail rotor.

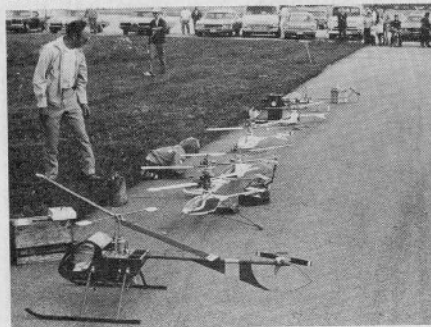


Glen Lee's large 15-powered FF model has low disc loading and so its sink rate in autorotation is very slow. Engine is on the main shaft for torque reaction drive but located below and inside the fuselage.

Nate Rambo starting his ship. It is made from many Schluter helicopter mechanical parts with Nate's own fuselage.



Dave Keats wonders which of all those Whirlybirds is his. Most of the models at the Nats were Du-Bros.



Third place in flying achieved by the always-airborne Dave Keats. He has become one of the master fliers of the Du-Bro Whirlybird.



RC HELICOPTERS

(Continued from page 42)

Everybody seemed to have a good time, made new friends, and learned a lot.

The free-flight helicopters had their day on Thursday in a contest sponsored by the National Free Flight Society. Tony Naccarato won first place with his new four-bladed torque reaction job. D. Lee Taylor came in second with his venerable sport coupe somewhat resembling the Filper helicopter. His and Tony's machines both obtained their control for turning and flying forward by means of vanes in the slipstream of the small propeller. Glen Lee's larger two-blader had the engine below, with the propeller at the bottom of a shroud, some thrust augmentation being thereby gained. Taylor's and Lee's helicopters have probably won more trophies than any other helicopters in this country.

All three designs had hingeless but flexible rotors with blades free to pitch or feather and with balance weights ahead of the leading edge of the blades. Taylor's and Lee's also had aerodynamic tabs on short booms behind the blade tips for quicker change in blade pitch for autorotation. This might be an excellent system for use on RC copters if the blades could be controlled cyclically by some kind of swashplate. At last autorotation would be possible, and the hub would be quite simple. However, test stand experiments by Gene Rock showed that these rotors go ape above about 400 rpm in a slow version of classical flutter. Viscous damping (thick grease) on the blade pitch bearings cured that, but there is still the control problem and the question of forward flight behavior.
