The control push-pull rod is attached to the dural elevator control horn, the details of which are shown on Sheet No. 1. Make certain that this horn fitting is secured firmly in position by means of the countersunk duralumin rivets. This type of control system, if properly constructed, has a minimum of lost motion. The cutout in the vertical fin permits the use of a one-piece elevator. The control horn is mounted in line with the cutout in the fin. Allow a 1/32" clearance for the elevator range of movement from the edge of the cutout in the fin. Note that the vertical fin on the *McCoy* model is slightly reduced in area.

ENGINE MODIFICATION. In order to obtain a minimum of projected frontal area, the fins on each engine have been turned to a smaller diameter, those for the *Hornet* being 1.670" in diameter and those for the *McCoy 49* being 1.520". The engine lugs are filed to conform to the fuselage engine bearer lines. The engine exhaust stack is cut short to conform to the lines of the engine cowl.

PROPELLER INSTALLATION. A single blade propeller of special design is used. This propeller is carved by hand and is made from carefully selected and well-aged maple. The *Froom* type propeller spinner has been counterbalanced to permit the use of a single blade. The pitch for this type of propeller is 12 inches, high for this type of propeller design, but it has been found usable on both engine installations.

WEIGHT AND BALANCE. The models are balanced, with a full fuel tank, at the leading edge of the wing tip. The gross weight for the *Hornet* ship is 26.75 oz., whereas the *McCoy* model weighs 22.12 oz.

DOLLY DESIGN. Note that these models are of the lift-off type for use with a conventional dolly fitted with race car wheels to assist in obtaining proper tracking and launching at high speed.

PREVIOUS PERFORMANCE RECORDS. Both of these planes, which are of the same general design except for engine installation, were built for experimental high speed basic training purposes. Certain innovations in the design were made by the builders to allow test flight at high speeds and to engage in a series of experiments with fuel adjustment. The *Hornet* ship (AMA30793) and the *McCoy* job (AMA30789) formerly held the world's speed records for Class D and Class C competition, the record speed having been made at the Los Angeles record trials on February 29, 1948. The *Hornet* had one test hop prior to the record trial, whereas the *McCoy* set the record during the initial test hop; previous testing was not possible prior to the competition. This is interesting in that it proves the sound ideas of these designs. Since then, the builders have used these models for experimental high speed flying and have exceeded the previous records in routine test flights. Several types of fuel systems have been used with varying success. The *Hornet* job has exceeded 153.25 m.p.h. on occasion, whereas the *McCoy 49* powered plane flies at a speed in excess of 140 m.p.h. For a design that will give you real high speed experience, these models are relatively easy to construct. A fuel mixture of nitro-methane, one part Baker AA castor oil, and two parts methanol is used. When using this kind of fuel, exercise the usual safety precautions.

LAP CLOCKING. At the speeds at which these models have been flown, lap clocking by stopwatch is preferable. An assistant should be available who will check the speed until two secs. per lap is attained; then a check for official speed timing is called. In this manner, flying close to the ground at level altitude is undertaken after the fuel mixture and the engine operating temperature reach an optimum condition. Lap clocking requires that the assistant snuggle under the pylon during the speed trials.

To train for competition for high speeds above 140 mph requires considerable practice and fortitude on part of the pilot. You can't train for this kind of competition with a plane of only moderate speed. All of the techniques of handling the plane for the optimum conditions of speed and fuel mixture can only be attained by consistent practice. It is suggested that beginners to speed flying study the article, "How to Break a Speed Record" in the November 1948, issue of MODEL AIRPLANE NEWS.

In conclusion it should be pointed out that while we call the models described in this article "trainers," they are plenty fast enough to win trophies for you in most local and area meets.

PHOTO CREDITS

Page		
1	(All)	B. L. J. Neal
6	(All)	Acme
13	(All)	Jim McClelland
21	(All)	Leonard Wieczorek
27	(All)	Raymond Studios

(SEE OFFICIAL ENTRY BLANK ON OTHER SIDE—PAGE 44 OF THIS JUNE 1949 ISSUE MODEL AIRPLANE NEWS)

Official Information Bulletin 18th National A.M.A. Model Airplane Championship Meet

WHERE

Outdoor events at the U. S. Naval Air Station, Olathe, Kansas.

Indoor events at the Municipal Auditorium, Kansas City, Missouri.

WHEN

Competition: July 26th through 31st, 1949 (six days).

Registration: July 25th and 26th (Monday and Tuesday).

OFFICIALS

Contest Director, Jess Hall, Olathe, Kansas.
Contest Supervisor, Val Sherrard, 1021 W. 6th, Topeka, Kansas.

Directors: Rubber & Glider, Indoor and Outdoor:—Jim McClelland, Independence, Kansas.

Control line speed:—Richard Gelvin, St. Louis, Missouri.

Control line stunt:—Roy Mayes, California. John Clemens, Dallas, Texas.

Free flight Gas:—Leo Rutledge, Wichita, Kansas.

Radio Control:—June Pierce, St. Joseph, Missouri.

Field Manager:—L. L. Cooke, Kansas City, Missouri.

Recording and Timing:—Mom and Pop Robbers, Oakland, California.

Timing will be by members of the United States Navy under the supervision of field judges certified by the Academy of Model Aeronautics.

HEADQUARTERS AND REGISTRATION

Legion Memorial Building until July 25th. From July 25th on, Headquarters will be at the Naval Air Station, Olathe, Kansas. All advance entries should be made to Jess Hall, Contest Director, Olathe, Kansas.

HOUSING

All male contestants may be housed aboard the Naval Air Station at 35 cents (linen charge) for the six day event. Meals for all contestants will be provided at the Navy Mess Hall at about $1.05 per day or portion thereof. Female contestants will be provided suitable accommodations in private homes in Olathe at very low cost. Persons desiring hotel accommodations in Olathe or Kansas City (26 miles away) should submit requests to the Contest Director at the earliest possible moment.

Contestants living aboard may use the Navy swimming pool, the largest in the Midwest. Bring your trunks.

A 24 hour guard is provided by the Navy at the dormitory aboard, but the Navy assumes no responsibility for loss or theft. Locker space is very limited.

Parking space is ample adjoining sleeping quarters and workshop.

All bus, rail, and airlines converge on Kansas City. Busses of the Missouri Pacific Trailways marked "Olathe Base" leave the terminal at 11th and McGee, Kansas City, hourly.

Ship all planes and personal gear via Railway Express direct to Olathe, Kansas.

MEETINGS

The Academy of Model Aeronautics will hold Executive and Leader meetings, in addition to Contestant meetings, during this period.

PRIZES

In addition to the coveted perpetual awards, new perpetual trophies will be announced later. The permanent trophies this year are exclusively designed for this meet, and have never been equalled in distinctiveness. Added events, such as the Pan-American Airways "PAA" Load event, will be explained later.

ADDED

On the afternoon of July 30, and again on July 31st, the Navy will present an air show for the entertainment of both contestants and spectators.

VICTORY BANQUET

An outstanding Victory Banquet will be held Sunday evening, July 31st, after which trophies, prizes, and awards will be given to winners in the 51 events. In addition to perpetual trophies, permanent trophies will be given to the first four places in each event, with suitable recognition made through the first 12 winning places—this, in addition to merchandise prizes provided by the model industry.

GENERAL INFORMATION

The U. S. Naval Air Station, Olathe, was established in this part of Kansas because it lies outside of the high wind belt. Maximum free-flight recovery is assured by down-wind ramps, radio communication, recovery jeeps, flight cover (provided by the Sheriff's Air Patrol of Jackson County) and by the fully organized co-operation of surrounding farmers, and state and local police patrol.

Eleven new world records were established at the Nationals at Olathe in 1948, and free-flight recovery was 93.3%.

A complete line of model airplane parts and accessories will be available at the Meet workshop. Food and drink for contestants and spectators will be provided at concessions on the Naval Air Station.

Church services will be held at the Station Chapel on Sunday, July 31st.

Every effort will be made to make your visit to the 1949 Nationals at Olathe a pleasant and satisfactory one. Additional information may be secured from:

JESS HALL, Contest Director
Legion Memorial Building
Olathe, Kansas.