



*Low cost,
high satisfaction*

KYOSHO

Nexus

by HENRY KORCZAK

THE NEXUS is Kyosho's* newest entry in the .30-size helicopter market. It's a low-cost heli for those who want to try their hand at the challenges of helicopter flight. The Nexus follows in the footsteps of the Concept 30—the machine that I learned on. It took me from learning how to hover, to forward flight and basic aerobatics. It was a faithful companion and always ready to please. It was easy to fly, easy to maintain and could take a lot of abuse. The Nexus has the same attributes.

THE KIT

This new heli has some major improvements; first is the main rotor head, which has fewer parts and now uses a solid, one-piece axle instead of the dual flapping head used on the Concept. This helps to reduce the chance of boom strikes. The second change is in the engine area. Instead of being mounted inverted (Concept 30-style), the engine is mounted with its crankshaft pointing up and canted 15 degrees forward of the main shaft. This eliminates the problems associated with inverted engine installations and makes the starter cone easy to reach. The engine can also be removed in just a few minutes by removing the throttle linkage, fuel and pressure lines and removing the four



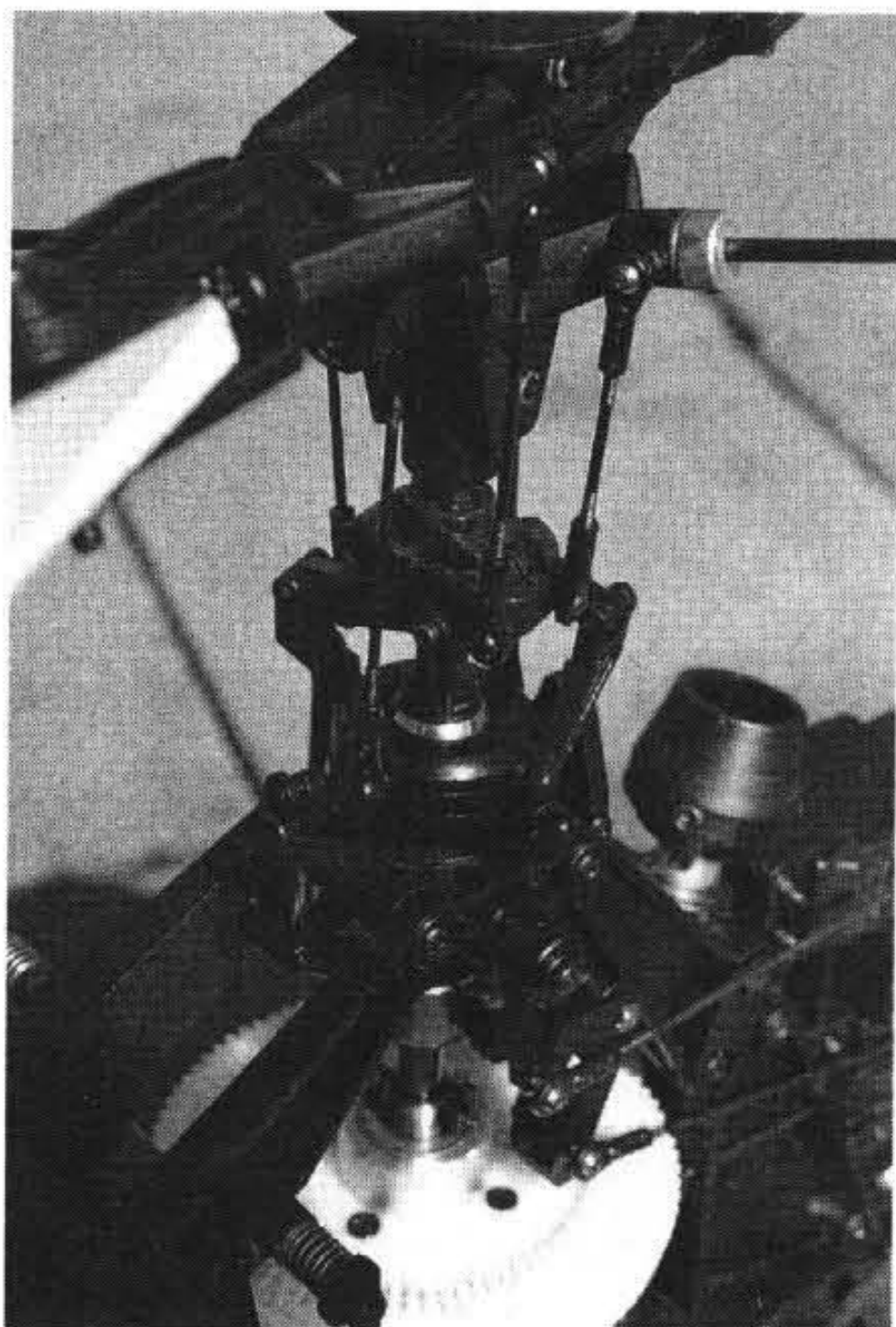
PHOTOS BY WALTER SIDAS

mount bolts. The engine will simply fall out. There are fewer parts in the kit, and this helped Kyosho keep the price down. The included muffler designed for the Nexus is a nice feature; its exhaust outlet can be pointed in any direction (instead of just downward). Other features include: autorotation, ball bearings (18 in all), a rotor-head button, 2mm tail-drive wire and tail boom supports.

ASSEMBLY

Two instruction manuals come with the kit. The main manual consists of the more common exploded view of all the sub-assemblies. A neat feature of this manual is that in every step that requires a screw, nut, bolt, pushrod, etc., the fastener is shown full size. This eliminates a lot of confusion about which screw to use, and where. The other manual supplements and clarifies the steps listed in the main manual.

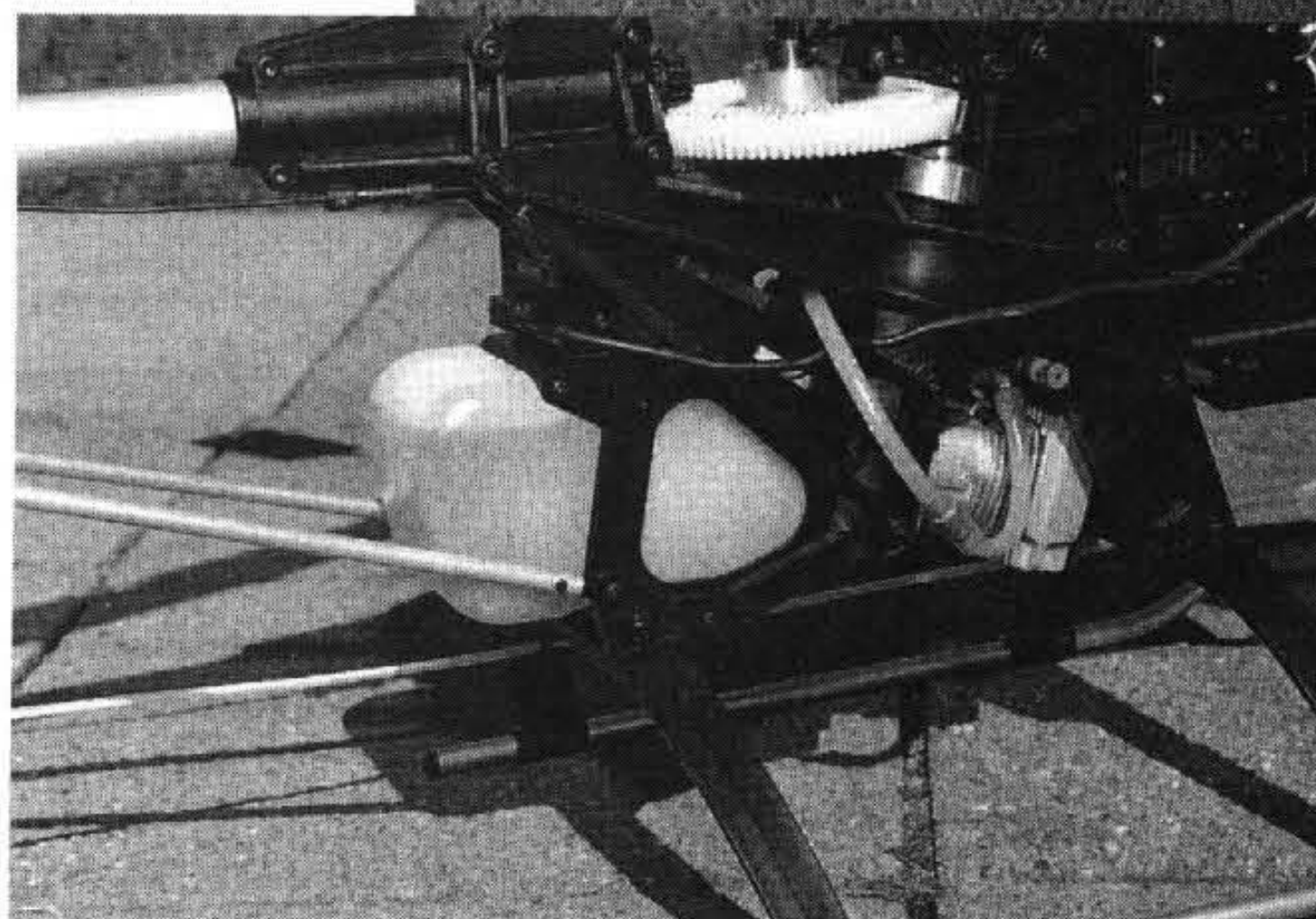
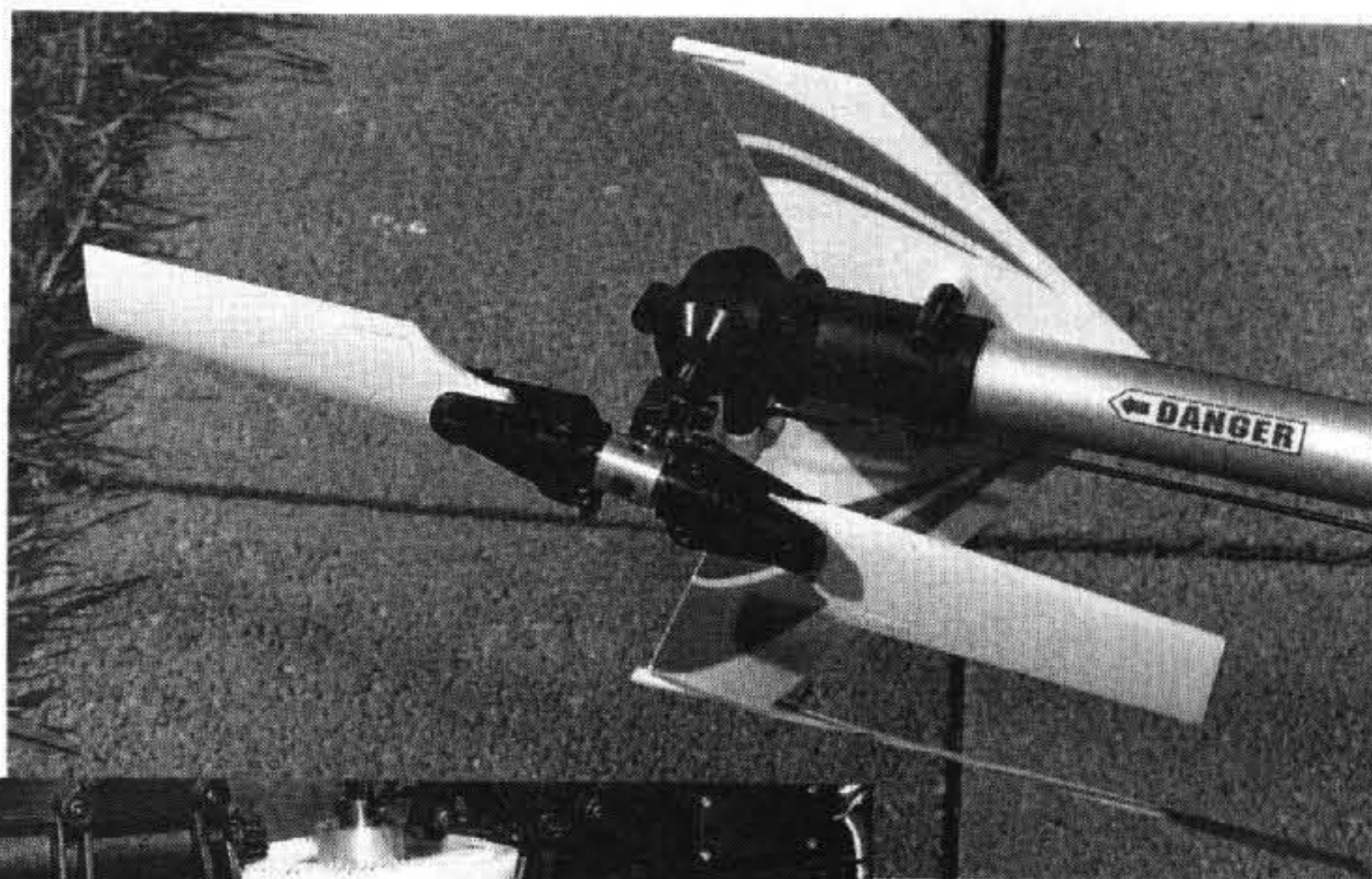
Because the Nexus is so easy to assemble, I'm not going to give a blow-by-blow



Shown here are the swashplate and main rotor head. The rotor head has fewer parts and a one-piece axle instead of the dual flapping head used on the Concept hell.

description of each step. Instead, I will highlight the areas that need care or special attention. Let's start with some things to keep in mind during assembly. Use a thread-lock compound on all metal-to-metal fasteners to prevent them from loosening because of vibration. Also, the majority of the assemblies are held together with self-tapping screws in plastic parts, so it's important not to overtighten the screws and strip out the plastic; snug is perfect. Don't use thread-lock on screws that go into plastic; over time, it will

The tail rotor and rotor drive are standard designs. The Nexus uses a 2mm drive wire to power the tail rotor. The larger than normal drive wire reduces the possibility of "wind up" when power is applied.



Another change is in the engine layout. Instead of the crankshaft pointing straight up, the Nexus has its engine tilted 15 degrees forward. This eliminates inverted engine problems and makes it easier to start.

dissolve the plastic. For peace of mind, use a drop of thick CA on the screw instead.

Moving right along, we start with Step 1: the start shaft and clutch bell. I secured the bearings' inner races to the shaft using a little thread-lock. This will prevent them from spinning on the shaft and wearing it out prematurely. Step 2: on the tail-drive shaft, I again secured the bearings with thread-lock, using a side frame to space them correctly. In Step 4, the plastic bushings on the lever assembly were too tight,

and this prevented the lever from pivoting freely; a chamfer on the bushings took care of the problem. (I also oiled them.) In Step 5, be certain to use thread-lock on the screws that secure the autorotation hub to the main gear. Step 7: I slightly enlarged the holes in the bellcrank so it could pivot freely on the retaining pin. Step 12: use care to align the start shaft and engine/clutch assembly, then slip a piece of paper between the pinion and main gear to adjust the gear mesh. When it's adjusted

SPECIFICATIONS

Model Name: Nexus 30

Type: helicopter (collective pitch)

Manufacturer: Kyosho

Distributor: Great Planes Model Distributors

Rotor span: 47.2 in. (1,200mm)

Length: 41.3 in. (1,050mm)

Weight: 6.17 lb. (2,800g)

Gear ratio: 9.8:1:5 (engine:main:tail)

Engine req'd: .30-size heli engine

Engine used: O.S. .32SXH

Radio req'd: 5-channel heli radio (aileron, elevator, throttle, rudder and collective)

Radio used: Futaba* 6XH with 5 S-148 servos

Gyro used: Futaba G153

Prices: \$399.99 (standard kit), \$599.99 (assembled with engine).

Features: low cost; easy to build; great instruction manuals; good technical support; sleek styling; very stable hovering platform; easy to maintain; easier engine removal; one-piece canopy.

Comments: the Kyosho Nexus is a fine way for a beginner to explore helicopter flight. Its stability helps with learning to hover and fly forward. It's easy to build quickly and correctly, and the manuals answer any questions that may arise. Technical support is just a phone call away.

Hits

- Low cost.
- Quick and easy to build.
- Comprehensive manuals.
- Great looks.
- Very stable in hover.
- Easy to maintain.

Misses

- Slight blade tracking problem during aerobatics.

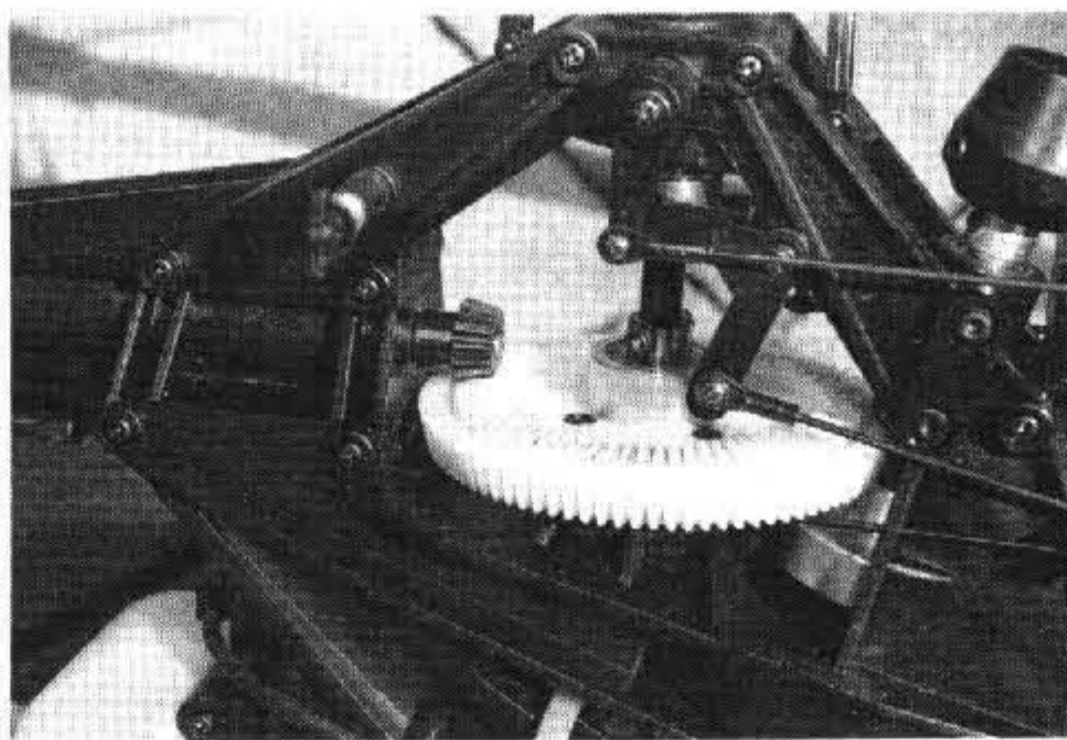
FLIGHT PERFORMANCE

The O.S.* .32SXH was first broken in on a test stand; this allowed the high- and low-end needle settings to be dialed in. The first flight was during a dead calm evening—perfect for trimming. The first liftoff was uneventful; the trims were almost perfect, and only a few clicks of cyclic and a few of tail rotor were needed. The tracking was right on, with no adjustments needed. The head speed was a little on the low side, so both blades were reduced in hovering pitch. The trim positions on the transmitter were noted, and the appropriate pushrods were adjusted so the trims could be re-centered. All of this was easily done on the first tank of fuel.

After the adjustments had been made, the Nexus would hover hands off—quite an accomplishment for a new heli. To break in the gears and other moving parts, I continued to hover the Nexus for a few tanks. Then it was time to drop the nose, add power and move into forward flight. The Nexus responded well and cruised around easily. Forward flight was very solid with no pitching tendencies. I tried some aerobatics and found that the recommended setup was for a more relaxed flying style. One thing I noticed was that the main blades would not hold their tracking through maneuvers—most likely because the dampers are very soft—but this shouldn't cause any problems. I tried a few autorotations and found the blades to be marginal, especially in no-wind conditions.



properly, there should be a slight clicking between the gears. Step 15: I pointed the muffler outlet away from the chassis (instead of pointing it downward) to help prevent dirt and dust from blowing up into the heli. Step 19: before securing the flybar in the rotor head, be sure to center it. Step 20: before putting the flybar paddles on, I put an 1/8-inch wheel collar on each side of the flybar to fine-tune the balance. The rest of the helicopter was assembled with no problems.



Here you can see the main drive gear and secondary tail rotor drive gear. The Nexus comes with an auto-rotation clutch.

RADIO INSTALLATION

Installation of the Nexus' radio is very straightforward. All pushrods are shown full size in each step in the manual. Attach the servos using the kit-supplied screws; do not use the brass eyelets that come with the radio. Kyosho has taken great pains to show the correct servo horn placement for each control—a big help for someone who has never before set up a helicopter. This will at least allow beginners some chance of success, if they go at it alone.

ROTOR BLADES

The blades that come in the kit are weighted and pre-covered. If the covering

is loose, it can be re-shrunk by using a steaming teapot. The blade root covers need to be epoxied to the blades. I removed them where they are attached to the blades and used 30-minute epoxy and clamps to bond them into place. Be sure the Kyosho logo is on the top blade cover, as there is a top cover and a bottom cover. After the epoxy cured, I balanced the blades by teetering them on a pivot between two glasses. I added some tracking tape to the light blade so both of them were level. All that remained to do was to trim the one-piece canopy and apply the decals, and the Nexus was ready for flight.

SUMMARY

The Nexus is very easy to build; it took me about six hours from start to finish. If you're a beginner, it might take a little longer—but not much. If you do have any problems, the Kyosho Helicopter Hot Line is available to assist you, and replacement parts are readily available. The Nexus is a great first helicopter that can become a faithful companion.

**Addresses are listed alphabetically in the Index of Manufacturers on page 118.*