

PRODUCTS IN USE

■ By Jay Burkart

GRAUPNER'S ELECTRIC JUNKERS JU 52

For a multi-engine RC model, you just can't beat ultra-reliable, vibration-free electric power. Graupner's all-balsa semi-scale replica of the famous WWII German trimotor uses three inexpensive Speed 400 motors running on a single battery pack.

The Junkers Ju 52 originally started out as a commercial endeavor and ended up being the workhorse of the Luftwaffe during WWII. The Ju 52 entered service in the Luftwaffe as a make-shift bomber in 1935, however, its primary function during WWII was as a troop and cargo transport throughout Europe, Russia, and North Africa. Toward the end of the war the Ju 52's main function was that of a flying ambulance. Many Ju 52s saw service after the war as passenger aircraft, military transports and military trainers.

Graupner's 1/20 semi-scale Ju 52 was designed to be flown with three Speed 400 electric motors. Their GR6070 Power Set includes everything you need to set up and mount the motors in this model—three Speed 400 motors, prop adapters, scale flying props, clamp-type motor mounts, capacitors, screws, wire, and Graupner connectors, and instructions. An exploded

view drawing makes things easy to understand even if this is your first electric model.

With only a single seven-cell 1700-mAH battery pack the Ju 52 has plenty of power, producing flight times of 5-7 minutes depending on your use of throttle. Shortly cropped grass runways should not present a problem for the model. On a paved runway the Ju 52 lifts off in about 20-25 feet. The kit is produced in Germany and imported and distributed in the U.S. by Hobby Lobby in Brentwood, Tennessee.

THE KIT

The kit quality is exactly what you would expect of Graupner, which has been producing models since WWII. The wood is of exceptional quality (Graupner has its own balsa plantation in South America) and the die-cutting is way above average. The clear canopy and windows are a nice

touch. The side windows are molded on a single strip that matches the spacing on the fuselage, making installation of the fourteen side windows (seven on each side) quick and easy. The entire piece is simply bonded to the inside of the fuselage—no cutting for each window. Plastic engine nacelles and cowls round out the molded parts.

Everything you need to know about the construction of the Ju 52 is included on four large instruction/plan sheets. One contains the instructions and parts list in English and French, two sheets have the full-size plans and construction detail drawings, and the fourth has the German instructions along with 14 construction photos and a small three-view drawing.

CONSTRUCTION

Construction is basic and shouldn't present problems for anyone with a couple of kits under their belt. You'll need to have



If there was a little snow on the hills in the background you'd almost think you were in Bavaria! Jay reports the Junkers kit is very complete and includes most of the required hardware. The box label provides an excellent guide for finishing, although there are any number of other color schemes you could copy—text gives a good source of documentation info. Bob Banka's Scale Model Research has Foto-Paaks (photo documentation studies) for seven different existing Ju 52s, including this one in Swiss markings.



Graupner's 1/20-scale trimotor paints a pretty convincing picture both on the ground and in the air. Hobby Lobby now offers a video of the Junkers in action; you can order the video for \$9, watch it and return it later for \$6 credit. Ask for Video #40.

the Graupner GR6070 Ju 52 Power Set on hand before you start construction, as it's necessary to install the wiring for the two wing-mounted motors into the structure as it is being built.

The wing is a conventional D-tube

structure with spruce spars, cap strips and shear webs. The scale ailerons hang below the wing and are actuated by a single servo via flexible cable pushrods built into the wing. Each wing motor mounts to a plywood keel and is then covered with the plastic engine nacelles. Take care to trim the nacelles to get an exact fit to the wing profile; if you just follow the cutting line on the plastic you will probably end up with some small gaps between the nacelle and the wing. The simple wire landing gear is mounted by straps to a hardwood block in the wing.

The fully sheeted fuselage has flat sides and bottom with a curved top. Applying the top sheeting over the bulkheads and stringers can be made much easier if you first soak the sheeting in an ammonia/water solution to make it pliable, then pin it to the structure until dry, after which it can be easily glued in place. Be careful during this part of construction; the top and bottom fuselage sheets were incorrectly

marked in the English instructions, but were correctly identified on the drawings.

A clever design feature of the fuselage is that the battery tray is positioned behind the windshield so that the batteries can be removed for charging without taking off the wing. Simply remove the windshield and the batteries can be accessed through the opening in the front of the fuselage.

The tail surfaces are built-up structures that are very light, yet quite stiff. The elevator and rudder are sheet surfaces with the latter having three large lightening holes to reduce weight. The tailwheel wire mounts directly to the bottom of the rudder for steering.

RADIO SYSTEM

You should plan on using micro or mini gear in the Ju 52 to help keep the weight down. Every ounce saved in an electric model translates into better performance. I used three Futaba S-133 micro servos for the flight controls. The Graupner Power

GRAUPNER'S ELECTRIC JU-52

WINGSPAN 59 in.

WING AREA 403 sq. in.

FLYING WEIGHT ... 56 oz. (58 oz. as tested).

WING LOADING 20.7 oz./sq. ft. as tested.

OVERALL LENGTH 39 in.

RADIO Lightweight four-channel system required.

POWER Three Graupner Speed 400 7.2V

motors (GR6070 Power Set, includes motors, motor mounts, scale propellers, wiring and connectors), running on a single seven-cell 1700-mAH battery pack.

PRICE Kit and GR6070 Power Set together runs about \$250 from Hobby Lobby.

Produced in Germany by Graupner, imported and distributed in the U.S. by Hobby Lobby, 5614 Franklin Pike Circle, Brentwood, TN 37027; (615) 373-1444. New Catalog #27 available to new customers for \$2, includes a \$5 discount for first order.

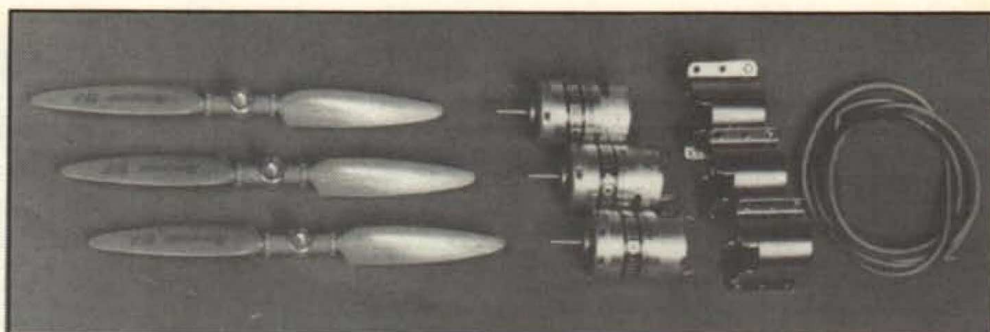


An excellent design feature of the Junkers is the quick and easy access to the motor battery via the removable canopy. A single seven-cell 1700-mAH SCRC battery pack runs all three motors and is good for flights of seven minutes or more, depending on how aggressive you are on the throttle.

MOS 30 proportional speed control with BEC eliminates the need for an airborne battery, helping to further reduce the model's all-up weight. The radio I used is a four-channel Airtronics that has proven itself reliable over the years.

FINISH

My entire model was covered with Oracover Silver Buff to match the finish as shown on the kit box. Testor's Model Master Aluminum and Dark Blue paints were used to trim the canopy and paint the engine nacelles. A copy of *Schiffer Military/Aviation History Junkers Ju 52* by Heinz J. Nowarra will supply you with a wide variety of color schemes to choose from. The Ju 52 was flown by many different nations and in many different roles.



Graupner's GR6070 Power Set was put together specifically for the Ju 52 kit and provides you with all of the power components needed to get it airborne—motors, scale-looking props, mounts, wiring, connectors, etc. Photo supplied courtesy of Hobby Lobby.

You'll find color schemes from basic ambulatory white up through beautiful splintered camouflage. Whatever finish you choose, *remember to keep it light!*

FLYING

With an all-up weight of 58 ounces (only 2 ounces over the specified flying weight), my Ju 52 has a wing loading of only 20.7 ounces per square foot. This produces an agile model that lifts off quickly, flies well, and best of all, lands slowly.

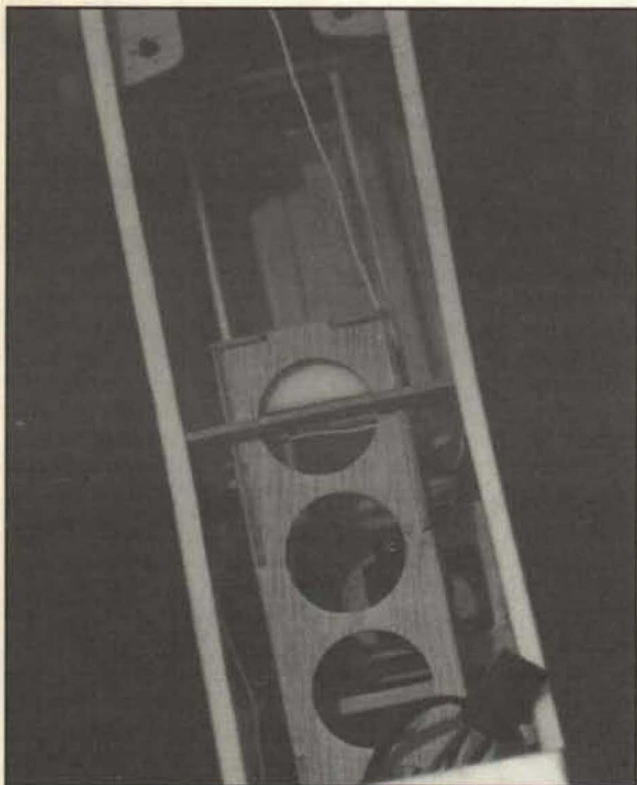
Initial test flights are always a time of jittery nerves, but with the Ju 52 there is no need to get the shakes. This is one of the nicest behaving scale models around. The wide-stance landing gear makes ground handling easy. On the first takeoff I advanced the throttle a little, held a bit of right rudder, more throttle, ease up on the right rudder . . . and suddenly I was airborne. The climbout was better than I expected and I found myself reducing the throttle back to cruise speed after making my first turn. Flying at scale speed requires about half throttle. At this setting the Ju 52 will give you flight times of over

7 minutes.

The best part of flying the Ju 52 is the sound. Yes, I know, electric is quiet. But if there are no engine-powered models flying you can still hear the three props singing their beautiful synchronized song. And, unlike a gas model, there is no chance of an engine-out as all three electric motors work as one. Multi-engine flying without the engine-out landings, balky engines, trying to synchronize engines that don't want to run at the same rpm, and worrying if one engine will run out of fuel before the other—what more could you ask? When the juice does start to run down, all three motors stay in sync and you set up for an uneventful final approach. Why would anyone want to fly a multi with anything but electric power?

After several flights I cannot find any fault with the handling qualities of the Ju 52. Takeoffs are easy, general flight characteristics are great, stalls are gentle and straight ahead, and it's probably one of the easiest landing scale models you'll ever fly. Scale flying has never been a big thing with me until the Ju 52. After flying a multi electric I find myself looking at other multis and wanting to scale them to fit Speed 400s.

If you've ever wanted to build a scale multi engine model but were afraid to, the Graupner Ju 52 is the model you've been waiting for. Overall it's a great looking model, an excellent flier, and a real attention getter that is truly fun! **MB**

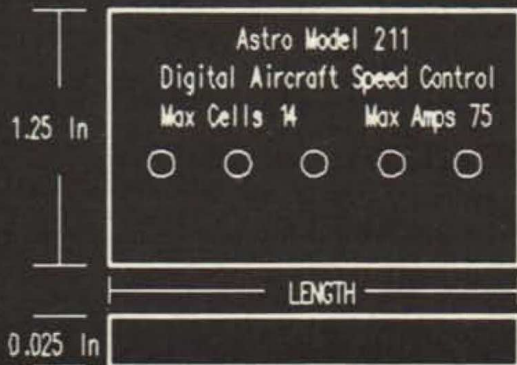


View of the inside of the cavernous fuselage with the wing removed. Just barely visible are the rudder and elevator servos (Futaba S-133 micros), which are mounted upside down, above the battery tray. Tray is screwed in place and is removable in case you need to make servo adjustments later.

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Switching Rate	2800 Hz	2800 Hz	2800 Hz	2800 Hz
Heat Sink	Yes	Yes	Yes	Yes
Connectors	Zero-Loss	Zero-Loss	Zero-Loss	Zero-Loss
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Retail Price	\$129.95	149.95	\$84.95	\$109.95



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