

weight and the take-offs are not smooth. On the other hand, if the main gear is too far forward when taxiing on a rough grass field, the nose wheel will tend to lift off the ground when it hits a bump. Some adjustment may be obtained by bending main gear fore or aft.

Don't forget, on landing be sure to touch down on the main gear first, so that when the nose wheel touches down your plane will be at a negative angle of attack and just cannot bounce. We feel sure you will like it.

If you set your trike gear properly, we know you will enjoy its many benefits.

*Best of luck and happy landings,*

*Ed Kozmirski*



## **R/C TRICYCLE LANDING GEAR**

**HELPFUL HINTS and SUGGESTIONS**

by

**Ed Kozmirski, the designer**

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By this time the advantages of the trike gear are well known. However, let's review them for those who are not familiar with them.

First off, touch and go and landings are a dream with a trike gear with much less skill required. If there is any secret about the ease of landings with the trike gear it is the negative angle of attack. As all three wheels touch down the negative angle of attack holds the model on the ground and prevents bounce.

Steering while taxiing is positive and firm, even in high winds. This, of course, is a big contest advantage.

The Top Flite Nose wheel has been thoroughly proven over hundreds of flights. The nylon bearings will not wear from the engine vibration and shock loads. Rough grass fields require a gear that will spring back and not slow the model down as it hits bad bumps. You don't have to baby this gear. The torsion coil will take all the rough treatment you

can give it. It can be bent back 90° and come back to its original position.

You will note the axle is about 1/4" behind the vertical pivot point. This caster will make the model track straight as an arrow. If you have too much caster, turning will be difficult because the model will want to travel in a straight line. On the other hand, no caster will make steering too sensitive.

Model should have a slight nose down attitude when setting on the ground, as shown on the plan. This will give the desired negative angle of attack mentioned above. It is most important that you touch down on the main wheels first. All three wheels is next best. But if you touch down on the nose wheel first, the model will porpoise and it is quite difficult to stop. For this reason a short nose gear is best. With a large nose down attitude, the model looks awkward setting on the ground and take-offs are not as smooth.

Some adjustments on this nose down attitude can be made by changing wheel size and by using washers between the nylon bellcrank and the bottom nylon bearing. You will note that with the trike gear you can use smaller wheels. The Air Span wheels with nylon hubs are very light and come in a good range of sizes. Use the smallest practical size for your surface to keep weight and drag down.

The trike gear installation adds about 3 ounces to the model but is well worth every ounce. The ship slows down just a little but will not affect your maneuvers. On hard runways you can use a 2 1/2" wheel on the nose and 2 1/4" on the main gear.

You will note the bellcrank has stops built into it. With normal travel the model should be able to turn around its wing tips. If you desire to change the turn rate, you can put washers under the bottom nylon bearings to reduce the travel, or file the nylon bellcrank stops to increase the travel.

Notice also that the nose wheel steers through springs to eliminate servo

shock. Spring tension must be set up just right to insure proper operation. If springs are stretched too tightly the steering mechanism will tend to bind. On the other hand, if springs are too loose, steering will be soft and spry.

The 1/16" cable guide tubing should end ahead of the wing leading edge which allows the cable to ride over the top of the wing. This system works well and presents no problems.

To convert your existing conventional gear model to a trike gear is also no problem. First, cut out bottom motor support blocks. Then drill hole in F1 as shown on the plan. Hole should be large enough to be able to insert wheel collar. This will allow you to tighten the collar set screw after nose block is glued back in. Bearings should be mounted on F1 as per plan. Insert nose gear making sure there is no bind. This is important. If there is any bind, bearings should be shimmed and fit until gear rotates freely.

After making this adjustment nose block should be cut off and fit back in place.

To install main gear, remove covering at main gear position. Cut out ribs to accept hard wood gear mount. The 1/16" plywood doublers are glued in place as shown on plan. Note hardwood gear mount is flush with bottom of wing.

The gear mount top corners may be trimmed between the ribs to reduce weight. Clamp is now put in place and fit so gear plugs in. With this type of plug in gear it may be taken out at any time by removing the retainer plates. After all parts are installed as per plan, this bottom section may be recovered.

For the average model, the main wheels should be located at 50% of the chord for best results. With an empty fuel tank, if the tail of the model is pushed down, it should stay almost all the way down.

If main gear is too far back, the elevator has to lift too much nose

