

Jersey Modeler's Complete Fueling System

aka: "The Really Great Fueling System"
by Frank Granelli



The assortment of field support equipment available to today's RC model pilot is nothing short of amazing. This is especially true of the wide variety of machines designed to get fuel into and out of an airplane. Back in the dark ages, model pilots used hand squeeze bulbs for this task. An electric pump was available but it often leaked. Those were the only alternatives at the time. I used a 2-ounce turkey baster with a piece of fuel line attached to the tip for almost two years.

There are many fine electric-powered and hand pump fueling systems now that make this dreary task acceptable. Several fueling systems are detailed in other articles in Sport Aviator's "Baggage Compartment" Section. Each works well, but all have at least one disadvantage. All that is, until this thing from Jersey Modelers was introduced.

In all honesty, this fueling system is perfect. There are no caveats or exceptions. Every problem or minor inconvenience that is part of fueling an airplane is eliminated with this rig. Every single negative is gone for good.



Photo 1

Photo 1 shows just how the Jersey Modeler Fuel System arrives at your door, minus the shipping box of course. This system is entirely assembled and ready for use. There is only one extra part and it is ingenious. More on that part later.



Photo 2

This model fueling system uses a heavy duty electric pump to move the fuel around (photo 2). The pump appears sturdy and over-designed for this purpose. So far, in about a month of use, no problems have occurred. The pump is extremely powerful and fast. It will fill the empty 24-ounce tank in the Dave Patrick Extra 330L pictured in the first photo in just 48 seconds. This is one ounce every two seconds! That means just 20 seconds are needed to fill the standard 10-ounce fuel tank provided in most [ARF](#) and [RTF](#) 40-size trainer aircraft. 20 seconds to fill up? Even a New Yorker can wait that long.

Point One – it is very fast putting fuel in or taking it out.

The 1100 mAh, Nickel Cadmium (Ni-CD) battery powering this speedy pump is composed of eight Sanyo rechargeable batteries. Sanyo is one of the highest quality Ni-CDs in the world.

Point Two -- Such battery quality is not usually offered in field support equipment.



Photo 2A

Even better, the eight cells create a 9.6-volt system. If that sounds familiar, it should. 9.6 volts is the same voltage every RC transmitter uses to broadcast its signal. Most 9.6 volt transmitter battery packs are 700-1100 mAh NI-CDs. This means that a standard transmitter wall charger, or one of the many 12-volt powered field chargers (see a great one in the Sport Aviator article "[The Sirius Fast Charger and Battery Tester](#)"), can be used to recharge this fueling system.

Point Three – No separate charger to be lost and the unit can be recharged at the field.

The system pictured here is labeled for a Futaba charging system but is actually used with all transmitter chargers except JR. JR charge plugs set the center contact as negative. All others are positive. Jersey Modelers offers a JR polarity system as well.

But if you use several different brand transmitters, there is an even better answer to the polarity question. The Sirius company mentioned above, (www.SiriusElectronics.com), offers a polarity reverser for its field chargers that converts a standard charge plug to JR polarity. Simply using this plug allows a Futaba-labeled Fueling System to be charged with a JR charger or vice-versa. Sirius sells this conversion plug for about \$4.00.



Photo 3



Photo 4

Accidental operation during transit is one of the problems associated with an electrical powered fueling system. This can't happen with the Jersey Modeler's system. First, there are two switches that must be engaged. It is unlikely that transport bumps will simultaneously operate two switches located on different sides of the unit (photo 3). The actual pump switch itself is protected by two raised "wings" that make accidental operation nearly impossible (photo 4).

Point Four – it is impossible to run down the battery by accident.



Photo 5

With most fueling systems, the actual fuel probe is just inserted into the top of the container. It can pull loose or leak if the unit falls over. On this System, the probe locks into the top and can only be removed with a quarter-twist. Plus, the container has a very wide bottomed and has proved impossible to flip on its side unlike all other containers we have tested.

Point Five – No accidental spillage during transport.



Photo 6



Photo 7

All the fuel systems we have tested required additional fuel filters to make sure only clean fuel gets into the tank. Not so for the Jersey Modeler's System. First, there is what appears to be a Sullivan two-stage filter right in the fueling line (photo 6). This is one of the very best glow-fuel filters available for the model pilot. Again, just another sign of this unit's very high quality.

But there is also a very fine filter mounted inside the container (photo 7). If this very fine-mesh filter can't stop something, then the fuel line filter will. Both are included from the factory.

Point Six – Only very clean fuel gets into the aircraft's tank.



Photo 8

The Jersey Modeler's Fueling System has a separate, wide-mouth, opening used to fill the storage container. This has several advantages. First, *no funnel is required*. If this System had no other advantages, not needing a funnel would make it a must for any serious RC pilot. Funnels get dirty and are impossible to clean. If not cleaned after every use, the fuel's oil residue attracts and holds dirt like the proverbial magnet. Just wiping the funnel removes the dirt but leaves behind invisible cloth or paper fibers that then wash into the storage container the next time the funnel is used and then onwards into the aircraft.

I used to clean my fill funnel after every use and used a fuel filter in the fill line. After about 60 flights on my new Precision Aerobatic competition aircraft, a Bob Noll-built Prophecy, the next flight saw a loss of full power. After the very nervous landing, I found that the airplane's first internal fuel filter, there are three on most of these competition aircraft, was completely blocked with white fibers. The engine's fuel "pump", actually about 7 pounds of tank pressure on a YS 140FZ engine, just could not deliver enough fuel to maintain full power through the block filter

At the time, I had a full analytical lab at my disposal so I had the fibers checked. They were from the paper towels used to wipe the funnel clean! These fibers were invisible but accumulated

enough to nearly down the airplane. Since then, I never wipe the funnel but store it in a sealed plastic bag after each use. This System eliminates that hassle forever.

This system also eliminates the hassle of unscrewing the container's cap with all the hoses attached. Invariably, the fuel fill line disconnects from the cap, falls to the ground and gets dirty. The cap's interior pick-up line must be left in the container during re-filling or it too could touch the ground and pick up dirt. This makes it hard to see how much is in the container while refilling. The result is usually a messy overflow. But seeing the fuel level in this System is easy because of the wide mouth and the transparent container.

Point Seven – No funnel required for convenience and cleaner fuel.

Point Eight – No chance of an overflow spillage.

It is hard to show this in a photo, but the container is not the usual gallon size. Instead, it holds 1 and $\frac{1}{4}$ gallon. Yes, this means you can carry a little more fuel to the field each time without having to pack an extra gallon. This can be important when your airplanes can empty a 24-ounce tank in 15 minutes. But the real advantage is something else.

One of the problems inherent in a gallon container is that there is always some fuel left in it when it is time to refill. So you grab a full gallon can and start to pour it in. But the fuel still in the gallon can means that the container fills up while still leaving 8-10 ounces in the bottle. You are stuck with leftover fuel in the bottle that begins quickly venting alcohol and precious nitromethane into the large atmosphere above it while even more quickly absorbing water. Not good. But with this system, you can pour the entire gallon into the container even though there was some fuel already there.

Point Nine -- No fuel leftovers to go bad and no extra fuel bottles lying around



Photo 9

I think the point is made that the Jersey Modelers Fuel System eliminates every problem or inconvenience inherent in most other fueling systems. As far as I can tell, they have thought of everything. So how is it to use?

I was surprised to find that complete, color-photo illustrated instructions were included (photo 9). Since there is no assembly required, a simple paragraph or two would have been more than sufficient. But, in keeping with the high quality and thoughtful design parameters of this unit, there were full instructions.



Photo 10

Basically, the pump has a three-position switch (photo 10). The right hand position fills the aircraft, the center is "off" and the left hand position empties the tank. But this switch is not operative until the main switch, a push-button on/off type, is first pressed. This is the safety system we discussed. It is a good idea to leave both switches off until filling. Always make sure the pump switch is in the center, off position, especially when charging.

To charge the unit, center the pump's switch, plug in the charger and then press the main switch button. Use your regular transmitter charger. After the charge is complete, remove the charging jack and turn off the main switch. That is all there is to it.



Photo 11

Before the first use, charge the battery and then pour about 16 ounces of denatured alcohol into the container. Shake it around some and then empty the container, safely. Alcohol is extremely flammable and burns hotter than gasoline so do this operation outside, away from flames or cigarettes. This cleaning removes any production residue from the container. Mine did not have any but this cleaning is still a good idea. Pour about 8 more ounces into the container and activate the pump to remove any production junk. Then empty the container again. Do not use rubbing alcohol as it contains water that might later contaminate the fuel.



Photo 12

Fill the container with fuel and you are ready to go. The Jersey Modelers Fuel System has one final, very useful, advantage. Remember that one extra piece we mentioned at the beginning? Look closely at photo 8 and you will notice that there is a fuel line wrapped around the yellow cap. This is the overflow return line.

Simply connect the fill line to your aircraft's fill line. Then put the black plastic end into the mount just vacated by the fill line. Hook it in place with the usual $\frac{1}{4}$ turn and connect the other end to the airplane's overflow line. When the tank is filled, the overflow goes back into the container rather than all over the ground. This saves fuel and protects the grass, concrete or asphalt from fuel damage. (Nothing eats asphalt or kills grass faster than model glow fuel.) Overflow recovery is a nice feature considering that the pump is so fast that most times the airplane will be filled before the pilot can shut off the pump.

This System is just ideal. The quality is amazing and the design work cannot be faulted. The Jersey Modeler folks have really thought of everything required to fuel and de-fuel a model aircraft while eliminating all the hassles. Based on the visible signs of quality, Sanyo batteries and Sullivan fuel filter, I expect this System will last a very long time.



Photo 13

(Photo courtesy Jersey Modeler)

Quality and good design like this does come at a price. However, the unit's \$99 cost seems a bargain once you try using it. There is also a 2.5 gallon System available for only a few dollars more at \$106. Identical units equipped with a hand pump instead of the electric one sell for \$53 and \$55 respectively for the 1.25 and 2.5 gallon units. All pricing includes 2-day delivery charges.

For more information on this amazing Fueling System, please go to: www.jerseymodeler.com