

Channel Expansion

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While laboring over my *Rookie II* the past couple of months, it dawned on me I might be a channel or two short when it came time to set up the RC system in that jet. While pondering that situation, I set about doing some research on applications that might help me out. I will spend the rest of this report sharing that information with you.

I am sure many have looked on with envy at all the emerging high dollar, multi-channel RC systems. Their bells, whistles, and added gizmos are a testimony to the rapidly emerging microprocessor-enabled RC capabilities wrapped up in glitzy so-called GUI (Graphical User Interface) displays. And you've likely thought to yourself, having come up one or two channels short in a setup for a new model: "How in the world could I justify **that** sort of expense to solve my problem?" There is a lot jet fuel wrapped up in one of those gorgeous RC systems.

Along with others, I have also drooled all over myself looking at this new stuff and asked the same question, having come up one or two channels short. Personally, I would rather spend the money on a new airframe or maybe apply it to the cost of a year's worth of jet fuel.

If you have not been to that threshold yet, here are some practical applications that usually beg for added channels:

1. Slaved dual elevator servos (and the need to possibly reverse one of the servos)
2. Dual aileron servos with independent end points needed for aileron differential
3. Multiple servos on any control surface
4. Slaved nosegear steering but with individual centering and end points independent of the rudder servo
5. Setting up flap servos with independent end point(s), midpoints, and the need to reverse one of the servos
6. Condition-dependent situations triggered by other channels for opening and closing canopies, dropping bombs/stores, etc.

Without one of today's latest 9, 10, or even 12, or 14 channel RC systems, any of the above might be a non-starter if you only have a seven channel or less system on your hands. Except for item 6., I've encountered every one of the above examples on my jets and some of my sport planes.

Well, guys, there is a Santa Claus. You can achieve any or all of the above on the cheap. There is no need to spend almost two kilo bucks on a solution. Both JR and Futaba – along with an aftermarket manufacturer, Smart-Fly – market solutions that handily respond to these challenges.

Here is a summary of what I found out: Channels on the Cheap!

JR makes a couple of goodies; one of which is their *MatchBox* pictured below. It can take care of items 1. thru 5. The cost? About \$70; available at your local hobby shop. Additional details can be found on-line at <http://www.horizonhobby.com/Products/Default.aspx?ProdID=JRPA900>.



JR's MatchBox

Next in the JR line is the *Channel Expander*, a great solution to item 6., which, by the way, would really strain even some of the high dollar systems' point-mixing capabilities. The cost? A whopping (.not.) seventy bucks – also available at your local hobby shop. Likewise, additional details can be found on-line by going to <http://www.horizonhobby.com/Products/Default.aspx?ProdID=JRPA905>.



The JR Channel Expander

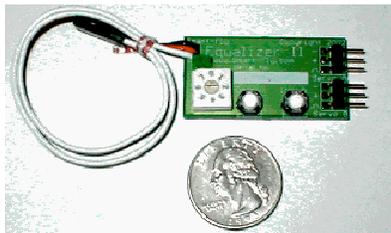
Futaba is also right there with a handy little gadget called the *Multi-Servo Adjuster* that will also punch out any of items 1. thru 5 for \$60. Like the other goodies, this item can be found at your local hobby shop. On-line details can be found at <http://www.futabarc.com/radioaccys/futm4155.html>.



Futaba's Multi-Servo Adjuster

You will note the size and form-fit of these little packages are all but identical. With the exception of the *Channel Expander*, they all are set up and programmed the same and they don't care what manufacturer's RC system they sit it.

Rounding out our list of Channels on the Cheap solutions is, perhaps, the most cost effective of all: Smart-Fly's *Equalizer II*. While this gizmo can only handle 2 servos, vice the JR and Futaba solutions' four servos, it can still handle items 1. thru 5. however, at a nominal cost of only forty bucks. This item would probably be a special order item at your local hobby shop. Find out more by pointing your Web browser to this address <http://www.smart-fly.com/Products/EqualizerII/equalizer.htm>.



Smart-Fly's *Equalizer II*

While it does not sit in a nice little plastic enclosure, the *Equalizer II* is every bit as capable and the set up and programming functionally approximate what Futaba and JR ask of you. I only recently discovered the *Equalizer II* but I can assure you I will find a use for it too. Most important, the setup appears to be the easiest of the bunch.

So, what have I used these handy little goodies for?

- I used a JR *MatchBox* in my old *Ultra Sport 1000* to set up dual elevator servos on an old (very old) 6-channel RC system.
- A *MatchBox* hides inside my *BVM Classic Bandit* to set up the flap servos (with 3 settings) on one channel using my Futaba 9C system. And I am seriously considering an *Equalizer II* to get back the channel I am now using for slaved nose steering.
- A *Multi-Servo Adjuster* is being used in a similar 3-position flap application in my new *Reaction 54*.
- A pair of the Smart-Fly *Equalizer II* gizmos found their way into my *R2*. They ended up being a perfect solution to setting up the ganged aileron/elevator control surfaces that function as elevons.

If you have learned anything from this report, I hope you take away the fact you can solve some of your multi channel setup and programming challenges and not have to resort to purchasing a completely new RC system. With very few dollars and some programming and setup patience on your part, you can achieve what others are spending thousands of dollars to achieve. What's not to like?