VQ SBD Dauntless V3

This is one good way to set up and adjust the servos when using multiple ELRS receivers on a complex model. The information below relates to my particular setup of this plane. Values will be different for yours, but the procedure will work. See the related video for further details and explanation.

Channels

			Receiver Output (µs)				TX Output Setting	
Channel	**Function**	**Control**	**Down / Left /open**	**Up / Right / closed**	**Middle**	**Failsafe**	**Min**	**Max**
1	Right Aileron	Ail Stick	1000	2000	1500	1500		
2	Elevator	El Stick	2000	1000	1500	1500		
3	Throttle	Thr Stick	1000	2000	1500	1000		
4	Rudder	Rud Stick	1000	2000		1500		
5	Left Aileron	Ail Stick				1500		
6	Centre Dive Flap	SB	2000	1000	1500	1000	-99.8	99.8
7	Right Dive Brake	SE	1000	1490	1245	1000	-99.7	0
8	Left Dive Brake	SE	1000	1600	1300	1000	-99.8	98.2
9	Right Retract	SF	1000	2000		2000		
10	Left Retract	SF	2000	1000		1000		

Setup

1. Using servo tester, flight control linkages should be set to allow maximum travel possible for 1000 and 2000 µs inputs. Later, rates can be set to achieve recommended throws.
2. For something like the dive brakes on my Dauntless where that is not possible, determine µs input needed for each control using servo tester and watching control for maximum travel without binding.
3. Note those values on a table such as shown above. When deciding on channel numbers, make sure that basic flight controls and throttle are at the top of the list. If you

are going to use multiple receivers, this makes sure that those basic controls are on the first receiver.

4. If you have a situation such as what I had with the dive brakes where the middle µs is not 1500, note the range needed. Note the difference between the targeted maximum and minimum µs values. Adjust the rate to achieve as close as possible to that difference. Then alter the offset to get the targeted middle correct. The maximum and minimum values should then be very close to the target values.
5. Go to the outputs and adjust the max and min to hold the values to no more than the targets. This is mainly a safety measure to keep you from accidently adjusting a rate to something that could damage things. Note that if the rate set is well below what could achieve the 988/2012 limits, continue to move the max or min limit until the µs value begins to change, then move it back slightly to the desired value.
6. Press the 'MDL' button twice on your TX to get a display showing µs values. Check all channels to make sure that the outputs are correct.

Configuration of receivers

With our Dauntless, we needed to use two receivers to be able to cover all the channels. Fortunately, with ELRS, you can use any number of receivers with one model to get the number of channels that you need. Simply give both receivers the same model number, and then remap the channels on the second receiver to give them the needed channel numbers.

Steps

1. Ensure that your TX and both receivers have compatible firmware. Ideally, use the same version number of firmware for each of them.
2. Given that you are using version 4 or above, simply plan on using a switch for arming instead of channel 5. That will keep things simple. If you need help with either of these two steps, see our video on updating ELRS firmware ().
3. Using ELRS Configurator, assign the model number to the primary receiver. Enable model match required. Verify the firmware version. Verify that none of the channels have been remapped. Save changes.
4. Using ELRS Configurator, assign the same model number to the secondary receiver. Enable model match required. Verify the firmware version. Remap the channels to start from one above the last channel number on the primary receiver. Save changes.
5. Find two cables with servo connectors of the heaviest gauge wire available. I use cables that I have cut off of BECs from ESCs that I have fried over the years. They tend to be heavier gauge than ones from servos. Remove the signal wires and solder together positive to positive and ground to ground to connect the two cables.
6. Use the above cable to send power from the primary receiver to the secondary receiver. Use the battery port on each so that all the channels are available to use. The primary receiver will be powered from the BEC from the ESC or a separate UBEC.
   Note that it would also be possible to power the secondary receiver with a separate battery or a UBEC connected to the main battery. This might be needed if you have a large, heavy plane with heavy duty servos that use a lot of current.

7. When installing the receivers in the plane, seek to diversify the placement of the antennas as much as possible.