

RADIO CONTROL SYSTEMS FOR THE SEAWIND

By Mike Eades - SeaWind Class Secretary (info believed to be accurate when compiled 3/15/06 but no guarantees!)

I have been asked many times what radio systems are recommended for the SeaWind.
Here is a summary of what I see as the best available options based on information as of March 2006.

1. Radios

1.1 Lowest Cost

1.1.1 Futaba 2DR 2-Channel AM radio/1-S3003 standard rudder servo/1 S3801 sail winch Combo Price \$89.99 - #LXGRNO** - Tower Hobbies

- Includes AM Rx (42x28x17mm), weight .59 oz,(16.7g)
- Need to specify Tx/Rx AM crystals frequencies required.
- Additional crystals for alternative channels can be obtained. Price \$14.99 - LXH282** - Tower Hobbies
- Some users have experienced interference problems in large fleets.
- No built-in socket for charger jack. Need to use alkaline AA's or charge re-chargeable batteries independently.
- Needs ratchet and screw for left stick conversion. Price \$1.94 - LXH435 & 436 - Tower Hobbies
- INCLUDES RECOMMENDED SERVOS, mounting hardware and Rx battery box.

1.1.2 Hitec Ranger IIN 2-Channel AM radio Price \$39.99 - LXARPO** - Tower Hobbies

- Includes AM Rx HP-2RNB (53x35x19), weight .99 oz. (28g)
- Need to specify Tx/Rx AM crystal frequencies required.
- Additional crystal sets can be obtained - use same as for Futaba 2DR above.
- Likely to have similar interference issues as Futaba - see above.
- Includes built-in charge jack socket and ratchet for left stick conversion.
- Includes 2 HS-311 standard servos and mounting hardware plus Rx battery box.
- NEED a Futaba S3801 SAIL WINCH, see below.

1.2 Mid Range Cost

1.2.1 HITEC 4-Ch Laser 4 FM radio Tx Only \$69.95 - #156750** - Servo City

- Includes 9.6v 600mah battery (re-chargeable)
- Includes Tx/Rx Charger
- Includes built-in charge jack socket . Batteries can be re-charged in place.
- Need to specify Tx FM crystal frequency required.
- Additional crystals for alternative channels can be obtained, usually readily available.
- Need separate battery box. Price \$3.99 - LXJC12 - Tower Hobbies
- NEED TO BUY SEPARATE RECEIVER (Rx) & SERVOS (See below)

1.2.2 HITEC FM Receivers

Note: AM & FM Radio systems on the same channel cannot be used simultaneously.

1.2.2.1 - 3-Ch HFS-03MM FM Rx Rx only \$31.99 - LXCBC7 - Tower Hobbies

- Need to buy separate FM Rx crystal \$10.99 - #LXPY05** - Tower Hobbies
- Some second and third order interference issues may occur
- Rx (39x26x17mm) , Weight .56 oz., (16g)

1.2.2.2 - 3-Ch DCX FM Dual-Conversion Rx 75Mhz S/J Rx only \$39.99 - #LXN522 - Tower Hobbies

- Need to buy separate FM DC Rx crystal \$12.99 - LXPY03** - Tower Hobbies
- Free of interference issues
- Rx (40x28x18mm), weight .75 oz, (21g)

1.2.3 Futaba 4YF 4-Ch FM system \$119.99 - LXEFJ** - Tower Hobbies

- Includes 9.6v NiCAD batteries (re-chargeable)
- Includes Tx/Rx charger
- Includes built-in charge jack socket. Batteries can be charged in place.
- Need to specify Tx & Rx dual conversion crystal frequency required.
- Additional crystal sets are available.
- Includes 4 S3004 standard servos (Same size and weight as S3003 but better & more expensive)
- Includes servo mounting hardware.
- Includes Futaba R127DF 7-Ch Rx, (Dual Conversion), Size: (64.3 x35.8x21mm), Weight: 1.5 oz (40.5g)
- Includes Nicad Rx battery but reputed to need replacement with 6v pack or alkalines..
- NEED TO BUY SAIL WINCH AND BATTERY BOX FOR ALKALINES. Battery box \$3.29 - LXJC12 - Tower hobbies

1.3 High End Cost

SPEKTRUM DX6 6Ch Park Flyer System \$Approx 200.00 - Island Hobbies and others

- Includes 1 AR 6000 DSM Dualink 6-Channel Park Flyer Rx
- Rx is light weight (7 grams), compact (39x39x9mm) and has short (3.75") antennas
- Additional Receivers can be purchased for use with other models \$Approx 60.00 -Various suppliers
- Includes 600 mah re-chargeable battery, may need replacement with larger capacity battery?
- Tx Antenna is short and compact
- Requires no channel specification - automatically finds and locks on to vacant channel(s)
- System includes 4 S75 micro servos which are redundant
- NEED TO BUY SEPARATE SERVOS (See below)

2. Servos

2.1 Standard servos for rudder operation

2.1.1 FUTABA S3003

\$10.99 - Servo City or Tower Hobbies

- Max Output - Torque: 56.8 oz-in, Speed: 0.19 Sec/60 Degrees (at 6.0v)
- Size: 1.6" x 0.8" x 1.4" (41x20x36mm)
- Weight: 1.3 oz. (37.2g)

2.1.2 HITEC HS-311

\$8.99 -Servo City

- Max Output - Torque: 51 oz-in, Speed: .15Sec/60 Degrees (at 6.0v)
- Size: 1.57" x 0.79" x 1.44" (40x20x36.5mm)
- Weight: 1.52 oz, (43g)
- THIS MODEL IS BEING DISCONTINUED

2.1.3 HITEC HS-322HD Deluxe karbonite gear

\$9.99 - Tower hobbies

- Max Output - Torque: 51 oz-in, Speed: .15 Sec/60 Degrees (at 6.0v)
- Size: 1.60" x 0.8" x 1.40" (41x20x37mm)
- Weight: 1.5 oz, (43g)

2.2 Sail Winches for arm-type operation

2.2.1 FUTABA S3802

\$49.99 -Servo City or Tower Hobbies

(Not recommended - power inadequate, does not match holes in radio board)

- Max Output - Torque: 153 oz-in, Speed: 0.56 Sec/140 Degrees (at 6.0v)
- Size: 1.8" x .9" x 1.7" (46x23x43mm)
- Weight: 2.6 oz (73g)
- Bearing Type: Dual ball bearing
- Gear Type: 1 Nylon gear, 1 Metal output gear

2.2.2 FUTABA S3801 Hi-Torque (recommended!)

\$54.99 - Servo City or Tower Hobbies

- Max Output - Torque: 194 oz-in, Speed: 0.26 Sec/125 Degrees (at 6.0v)
- Size: 2.4" x 1.2" x 2.0" (61x30x51mm)
- Weight: 3.7 oz, (107g)
- Bearing Type: Dual ball bearing
- Gear Type: 3 Nylon gears, 1 Metal output gear
- Includes sail arm (47/8" (124mm) overall length) & servo mounting accessories

2.2.3 HITEC HS-765HB with J plug (hi-torque, slower but cheaper alternative)

\$38.00 - #33765J - #LXGZU2 - Tower Hobbies

- Max Output - Torque: 183 oz-in, Speed: 0.23 Sec/60 Degrees (at 6.0v)
- Size: 2.32" x 1.14" x 1.96" (59x29x50mm)
- Weight: 3.88 oz, (110g)
- Bearing Type: 1 Ball bearing and 1 Oilite bushing
- Gear Type: Karbonite Gears
- Includes sail arm (like Futaba's) + mounting accessories and alternative horns

2.2.4 HITEC HS-815BB with J Plug (V. hi-torque, but slower, too large and 50+% heavier)

\$44.99 - Tower Hobbies

- Max Output - Torque: 343.01 oz-in, Speed: 0.38Sec/140 Degrees (at 6.0v)
- Size: 2.59" x 1.18" x 1.26" (66x30x57.6mm)
- Weight: 5.6 oz, (152g)
- Bearing type: Dual ball bearing
- Gear Type: Heavy duty nylon gears
- Includes sail arm (like Futaba's)

Summary Total System Cost:

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|-----------|---------------------------|-------|--|-------|
| Lowest | 1.1.1 | \$90 | Or 1.1.2 + 2.2.2 (includes spare HS-311) | \$95 |
| Mid Range | 1.2.1+1.2.2.2+2.1.1+2.2.2 | \$193 | Or 1.2.1+1.2.2.2+2.1.2+2.2.3 | \$174 |
| | 1.2.3.+2.2.2 | \$180 | | |
| High-End | 1.3+2.1.1+2.2.2 | \$265 | | |

Bottom Line:

What type of radio system should I get?
 It depends on what level of activity you expect to get into.
 For solo recreational sailing go with one of the lowest cost options above.
 If you are joining a Club and will be active in fleet racing go with either the Mid-Range or High-End options.
 The High-End option is expensive but may be the wave of the future (See article by Dick Martin in MY #142!)