

TOSSUP 97

<http://pages.prodigy.com/PFBX524/toss.htm>

Best Flier Award

(Bob Swet)

The 1996 award for *Best Flier* went to Don McNamee. Congratulations!

New rules were approved at the January meeting for the TOSS 1997 Best Flier Award. First, you must be a paid club member. Second, all monthly contributions will be normalized to the HIGHEST score of that TOSS monthly contest, REGARDLESS of the class that it was scored in. Lastly, the HIGHEST accumulative score based on the "Total number of TOSS monthly contests minus two" highest normalized scores. Examples of that last rule would be; if there were 12 monthly contests, we would count your top 10 scores. If there only 9 monthly contests, we would count only your 7 highest scores. The trophy will be passed to the 1997 winner at the January 1998 club meeting.

January Meeting Minutes

Old Business

There was no old business - the last meeting was at the end of November when we just changed hats.



New Business

1) *"Flyer of the Year"* - Mike Reagan came in with the "Flyer of the Year" trophy which he finally relinquished after 5 years. The meeting decided to change the way that the winner was calculated and to award the winner of this trophy a free membership subscription for the next year.

2) *Monthly Competition Awards* - we want to issue plaque type trophies for 1st place finishers in Sport, Open and 2m. Charlie was tasked to call the supplier and order 24 (6 months supply).

3) *Spending Money* - The meeting resolved to

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get new winch batteries and lines.

4) *Cross Country Competition* - Edgar Weisman wants to hold a Cross Country competition in May instead of the normal monthly contest. There was some discussion of this because we didn't know whether:-

- The date may clash with another AMA sanctioned event
- There were some logistical problems caused by the current requirement to have passengers riding in the back of pickup trucks seated in approved seats and held in with approved restraints (seat belts).

4) *Contest Directors* - We nominated a CD for each monthly competition for the rest of this year.

5) *Electric Sailplanes* - Thomas Akers brought up the subject of electric sailplanes at Redwood. This subject had surfaced before Christmas with a posting on the RCSD Internet listserver that was critical of TOSS because we didn't allow electrically launched gliders at Redwood.

The consensus of the meeting was this was not a good idea because it was difficult to mix power and sailplanes at this site. Since there was no clear cut way of distinguishing between an electrically launched sailplane and an electric power plane it was thought easier to just not run power at this site. Edgar W. mentioned that it was OK to fly electrics at Paramount Ranch.

SW Regionals

(By Edgar Weisman.)

These were held near Phoenix over the weekend of the 2nd February. They attracted about 170 entrants from all over the US, of which 5 came from TOSS.

The contest was made up of two separate contests back to back, the final score being the

total from each competition. The first competition was a 'Triathlon' - three 10 minute rounds with scoring biased towards even minute times. The second competition was a 5 round TD contest that used a line landing. Everyone made their times so the points differences were in the landings.

BJ Weisman won the contest, beating Joe Wurts by 2 points. Other placings were Don McNamee (16), Edgar Weisman (18), Art McNamee (28) & Miles Moran (60). TOSS placed second overall to Pasadena, beating out Torrey Pines.

This competition was the first serious test of the *Addiction*. As it turned out 10 of the first 20 places were taken by the *Saffire*.

"Larry's Letters"

Larry Jimenez handed out a flier at the club meeting advertising his capability to make vinyl or Monokoie lettering. He can make them in red, navy blue, black or white and any height between 1/2" and 2". Cost is \$2 per AMA number or 25c a letter for other lettering such as your name or the name of the plane. There's a wide choice of fonts - his sheet listed about 70. (It looks as if he can use any 'True Type' font.) You can contact him at:-

1943 Channel Drive,
Ventura, CA93001
(805) 652-1937

Larry also brought along some lettering that he's done for people at the meeting. They looked very professional, identical to the kinds of transfers that come with kit planes.

February Monthly Contest

(By Bob Swet)

It was a cool morning with dew glistening in the rising sun. Our precious planes were propped against any available object in hopes of keeping them dry. The contest director, Mike Reagan, informed the anxious pilots of the days tasks. First round, 4 minutes. Then two rounds of 8 minutes each. Landings would be on measured on 25 foot tapes. Flight time will count 950 points each and landings would be worth 50 points each.

It wasn't long before the first flier was in the air. Soon, lift was found over by the hill. And so the day was started with gentle off-shore breezes, which after the first round, did their normal 180 degree swing. For most, it was a day of gentle lift and strong sink. For the lucky

few, there was the rare strong thermal. And for those waiting, we occasionally got to watch pilots like Edgar, Don N. and Bill K. work their sailplanes at very low altitudes to hopefully make their times.

Before too long, the scores were being totaled and the plaques were awarded. For those not present, picture plaques were (will) be awarded to the top two pilots in open, the top finisher in two-meter class and to the top scorer in sportplane. There is only two stipulations, there must be more than one flier in that class and at least eight fliers total. February results yielded Mike Reagan first in open, Art McNamee second in open, Mike Stern first in 2-meter and Don Northern was first in sportplane.

P.S. Don N., you better watch your tail feathers, Don Mc. is threatening to teach you a few flying lessons with his new Spirit 100 to be flown in sportplane class.

NAME	CLASS	Glider	R 1			R2			R3			Total Points	Norm Points	Yearly Flier Points
			Time	Land	Points	Time	Land	Points	Time	Land	Points			
Art McNamee	Open	Addiction	3:58	95	989.56	7:58	65	978.5	8:01	92	994.0	2962.1	1000.0	1000.0
Mike Reagan	Open	Addiction	3:59	87	989.5	8:00	61	980.5	7:59	87	991.5	2961.6	999.8	999.8
Bob Swet	Open	Opus	4:00	79	989.5	7:59	57	976.5	7:58	85	988.5	2954.6	997.5	997.5
Myles Moran	Open	Mako	4:00	81	990.5	8:00	75	987.5	8:01	49	972.5	2950.5	996.1	996.1
Don McNamee	Open		3:23	74	840.5	8:00	72	986.0	7:58	97	994.5	2821.1	952.4	952.4
Don Northern	Open	Paragon	4:00	95	997.5	6:22	0	756.0	7:59	0	948.0	2701.6	912.0	912.0
Greg Nikola	Open	Addiction	3:57	91	983.6	8:00	68	984.0	5:54	0	700.6	2668.3	900.8	900.8
Edgar Weisman	Open	Saphire	3:58	96	990.0	4:49	27	585.5	7:57	93	990.6	2566.1	866.3	866.3
Hank Schorz	Open	Addiction	4:00	65	982.5	3:52	76	497.2	8:01	92	994.0	2473.7	835.1	835.1
Bill Karp	Open	Magic	3:34	78	886.1	5:43	0	678.9	7:01	47	856.7	2421.7	817.6	817.6
Gary Filice	Open	Mako	4:01	0	946.0	2:52	76	378.4	4:32	59	567.8	1892.3	638.8	638.8
Michael Stern	2m	Banshee	3:55	0	930.2	7:53	52	962.1	8:00	0	950.0	2842.4	1000.0	959.6
Art McNamee	2m	Secret	3:23	92	849.5	-	-	0	-	-	0	849.5	298.9	286.8
Don Northern	Sport	Paragon	2:47	71	696.5	8:01	89	992.5	8:02	87	989.5	2678.6	1000.0	904.3
Devin Holzer	Sport	Paragon	4:07	47	961.1	3:00	66	389.3	8:01	80	988.0	2338.9	873.2	789.6

Sand Canyon Fliers

(by Martin Usher)

Gary Filice sent in a note about this group of fliers. They are a fairly informal but well organized group that are based in Simi Valley. They have leased some 5000 acres of land north of the 118 freeway. This site is accessed through locked gates on Erringer and Sycamore and is isolated from Simi Valley proper by hills.

The site is large enough to accommodate both power planes and gliders. Power planes are flown off a EW oriented strip some 600' long by 50' wide - large enough for some full sized planes. Gliders are flown from a grassy hilltop about half a mile to the south. This hill has 360° exposure and can be used for slope except when the wind is from due North.

Gary and some others have joined this club as a way of securing somewhere casual to fly. It fills the void between the competition oriented environment that we have at Redwood and casual slope flying at rough sites such as Kanan Rd. I have flown at this site and found unlimited opportunities for slope and thermal lift. Its probably a bit pointless flying a competition ship there (it will stay up indefinitely) - this is the place to bring your Contender or other slope rocket or maybe your scale plane to aerotow it. The site is big enough to accommodate other activities - family picnics and even overnight camping is encouraged.

Membership dues are \$50 per year and members are required to put in one day's labor per year (this is usually in March to repair and regrade the access tracks). People interested in this club should contact:-

Sue Rose,
3591 Hearst Drive, Simi Valley CA93063
805.581.6131 / 805.581.6006 (fax)

What's a URL?

Several people have asked about the Web pages that we've organized and how they might access them. Although the *Universal*

Resource Locator (URL for short) is printed on the front of this newsletter they've had trouble accessing the pages. The most probable reason for this is that they have mistyped the URL. The most probable reason for that is that the format of the URL is derived from Unix file name syntax, and Unix anything is decidedly user-hostile.

The URL format is organized in three parts:-

1. The *http:* bit, which indicates the type of resource being accessed.
2. The *//xxxxxx/* bit, which identifies the computer where the resource lives
3. The rest, which identifies a file on that computer.

Two things that really screw up non-users are letter case and the use of default values. Letter case is important because computers use a different numeric code for upper and lower case letters. Needless to say, some computer systems don't care about letter case, some do. Default values add to the confusion by automatically filling in parts of the address for you - sometimes.

For your information. The computer address will be 'resolved' to a pair of numbers - one is a 32 bit *Internet Address* and the other a 16 bit *Port Number*. (The port number is usually a default number but you will occasionally see it following a colon - WACO's home page used to have this.) If there is no file name then the browser will be looking for a file called *index.html*. If you see a '~' character - known as a tilde - then you are being steered to the 'root' directory of one of the users of a multiuser computer (you'll see this quite a bit on pages hosted by universities).

The bottom line. Type everything in exactly as you see it. Or else.

Bob's Servos

Bob Swet has contributed a comprehensive servo survey which he assured me could be printed on a single page. In deference to the membership's eyesight I've not shrunk it that far - it takes up the next four pages. I think its worth the paper.

SERVO COMPARISON (List compiled by Bob Swet)

MANUFACTURER	P/N	DESCRIPTION	TORQUE (oz./in)	WEIGHT (oz.)	SIZE W x L x H (in.)	SPEED sec/60	BALL BEARINGS	MOTOR	METAL GEARS	RETAIL	torque/wt
ACE	Micro 380	Micro	30	0.60	0.55x1.125x1.094	0.10	None	3-Pole Ferrite	No *	39.95	50.0
ACE	Mini 310	Mini	28	0.95	0.55x1.25x1.20	0.22	None	3-Pole Ferrite	No *	30.95	28.5
ACE	Sport 330	Standard	42	1.55	0.79x1.43x1.60	0.24	None	3-Pole Ferrite	No	17.95	27.1
ACE	Pro 342	Pro	42	1.55	0.79x1.43x1.60	0.24	Bushing	3-Pole Ferrite	No	22.95	27.1
ACE	Pro 342 HS	Pro High Speed	32	1.55	0.79x1.43x1.60	0.10	Bushing	3-Pole Ferrite	No	26.95	20.6
ACE	Giant 370	Giant (90 degree)	130	3.50	1.14x1.97x2.30	0.23	Dual	3-Pole Ferrite	No	39.95	37.1
ACE	Giant 370	Giant (180 degree)	130	3.50	1.14x1.97x2.30	0.23	Dual	3-Pole Ferrite	No	46.95	37.1
AIRTRONICS	94501	MicroLite	29	0.57	0.50x1.07x1.07	0.23	None	Coreless	No	79.95	50.9
AIRTRONICS	94555	MicroLite w/Aluminum gears	30	0.58	0.50x1.07x1.07	0.21	None	Coreless	Al	79.95	51.7
AIRTRONICS	94407	Micro	29	0.96	0.60x1.23x1.23	0.23	Single	5-Pole Ferrite	Mixed	69.95	30.2
AIRTRONICS	94145	Micro w/Al output/BB	33	1.11	0.60x1.42x1.29	0.07	Single	Coreless	Al output		29.7
AIRTRONICS	94141	Micro	45	1.17	0.60x1.42x1.29	0.20	Single	Coreless	Yes	79.95	38.5
AIRTRONICS	94831	Mini	38	1.10	0.71x1.46x1.18	0.21	Single	3-Pole Ferrite	No	49.95	34.5
AIRTRONICS	94734	CONTEST Retract	74	1.73	0.79x1.54x1.38	0.40	Dual	5-Pole Ferrite	No	79.95	42.8
AIRTRONICS	94739	CONTEST Proportional Retract	74	1.77	0.79x1.54x1.38	0.42	Dual	5-Pole Ferrite	Mixed	99.95	41.8
AIRTRONICS	94742	CONTEST GP High Speed	50	1.79	0.79x1.54x1.38	0.11	Dual	3-Pole Ferrite	No		27.9
AIRTRONICS	94732	CONTEST Aircraft	68	1.80	0.79x1.54x1.33	0.19	Dual	Coreless	No	89.95	37.8
AIRTRONICS	94735	CONTEST Helicopter	75	1.80	0.79x1.54x1.38	0.20	Dual	Coreless	Mixed	89.95	41.7
AIRTRONICS	94743	CONTEST AP Standard	60	1.83	0.79x1.54x1.33	0.20	Dual	3-Pole Ferrite	No		32.8
AIRTRONICS	94737	CONTEST High Speed	57	1.95	0.79x1.54x1.33	0.15	Dual	Coreless	Mixed	99.95	29.2
AIRTRONICS	94738	CONTEST High Torque	71	1.95	0.79x1.54x1.33	0.21	Dual	Coreless	Yes	99.95	36.4
AIRTRONICS	94102	Precision Heavy Duty Standard	50	1.59	0.79x1.54x1.42	0.22	None	3-Pole Ferrite	No	34.95	31.4
AIRTRONICS	94322	Precision Heavy Duty Standard	50	1.60	0.79x1.54x1.42	0.22	None	3-Pole Ferrite	No	44.95	31.3
AIRTRONICS	94157	Pro RR High Speed	95	2.07	0.79x1.54x1.43	0.06	Dual	Coreless	Al		45.9
AIRTRONICS	94158	Pro ZZ High Torque	130	2.10	0.79x1.54x1.43	0.09	Dual	Coreless	Al		61.9
AIRTRONICS	94161	Pro Large Scale	135	2.50	0.79x1.54x1.65	0.25	Dual	3-Pole Ferrite	Yes	104.95	54.0
AIRTRONICS	94921	Low Profile Ball Bearing	75	1.60	0.86x1.75x0.92	0.16	Dual	Coreless	No		46.9
AIRTRONICS	94924	Low Profile Ball Bearing Retract	85	1.60	0.86x1.75x0.92	0.48	Dual	3-Pole Ferrite	No		53.1
AIRTRONICS	94581	Sail Winch - Arm Type	170	4.94	1.58x3.65x1.78	1.76	None	3-Pole Ferrite	No	59.95	34.4
CIRRUSS	CS-30	2BB Mini "3002" Type	44.4	0.85	0.63x1.22x1.21	0.23	Dual		No	34.95	52.2
CIRRUSS	CS-50	Standard Sport	52.8	1.48	0.74x1.52x1.26	0.26	None		No	9.99	35.7
CIRRUSS	CS-70	2BB Standard Professional	55.5	1.55	0.79x1.59x1.50	0.24	Dual		No	24.95	35.8
CIRRUSS	CS-90 BB	Low Profile Fast "9102" Type	30.55	1.13	0.86x1.75x1.13	0.09	Single		No	29.95	27.0
CIRRUSS	CS-90	Std. Low Profile "9102" Type	47.2	1.48	0.86x1.75x1.13	0.23	None		No	21.95	31.9
CIRRUSS	CS-100	2BB Retract "136" Type	102.7	1.20	0.89x1.78x0.97	0.50	Dual		No	41.95	85.6
CIRRUSS	CS-400	BB Giant Pro	138.9	4.00	1.04x2.15x2.03	0.25	Dual		No	36.95	34.7
CIRRUSS	CS-600	BB FET Jumbo	237.3	4.78	1.27x2.48x2.22	0.21	Dual		No	74.95	49.6

SERVO COMPARISON (List compiled by Bob Swet)

COX	80111	Micro	30	1.00	0.75x1.22x1.25	None	No	42.20	30.0	
COX	801020	Standard	40	1.60	0.78x1.50x1.25	None	No	42.20	25.0	
DAD	788	Tot	19	0.56	0.52x1.0x1.0	Oilite	No	39.95	33.9	
DAD	788MG	Tot w/metal gears	19	0.56	0.52x1.0x1.0	Oilite	Yes	49.95	33.9	
DAD	688	Tina Reflex	40	0.63	0.52x1.1x1.1	Oilite	No	29.95	63.5	
DAD	688MG	Tina Reflex w/metal gears	40	0.85	0.52x1.1x1.1	Oilite	Yes	39.95	47.1	
DAD	388	Lite	42	1.13	0.71x1.46x1.25	Iron/Oilite	No	24.95	37.2	
DAD	388MG	Lite w/metal gears	42	1.38	0.71x1.46x1.25	Iron/Oilite	Yes	34.95	30.4	
DAD	288	Pro	44	1.59	0.79x1.63x1.64	Iron/Oilite	No	14.95	27.7	
DAD	288MG	Pro w/metal gears	44	1.94	0.79x1.63x1.64	Iron/Oilite	Yes	24.95	22.7	
DAD	188	Pro Plus	80	1.76	0.79x1.63x1.64	Iron/Oilite	No	26.95	45.5	
DAD	188R	Pro Reflex	130	2.12	0.79x1.63x1.64	Iron/Oilite	Yes	39.95	61.3	
DAD	188LE	Pro LE w/Helical gears	60	1.76	0.79x1.63x1.64	Iron/Oilite	Helical	26.95	34.1	
DAD	88	Big Daddy	140	3.39	1.14x2.33x2.00	Iron/Oilite	No	29.95	41.3	
DAD	088MG	Big Daddy w/metal gears	140	4.23	1.14x2.33x2.00	Iron/Oilite	Yes	39.95	33.1	
FMA DIRECT	S100	Micro	30	0.6	0.51x1.01x1.1	No		24.95	50.0	
FMA DIRECT	S200	Mini BB	44.5	0.9	0.63x1.22x1.21	Single		24.95	52.4	
FMA DIRECT	S300	Precision	41.6	1.5	0.8x1.6x1.5	No		12.95	28.1	
FMA DIRECT	S301	Dual BB	41.6	1.6	0.8x1.6x1.5	Dual		19.95	26.8	
FMA DIRECT	S400	Giant BB	180.5	4.0	1.04x2.14x2.02	Single		29.95	45.1	
FMA DIRECT	S500	Giant - BB - FET	298	5.4	1.27x2.48x2.22	Single		54.95	55.2	
FMA DIRECT	S600	Compact Retract BB	100	1.1	0.89x1.78x0.97	Single		39.95	88.5	
FMA DIRECT	S700	Low Profile BB	30.5	1.2	0.89x1.76x1.13	Single		24.95	25.4	
FMA DIRECT	S701	Low Profile Std	43	1.5	0.89x1.76x1.13	No		17.95	29.1	
FUTABA	S3101	Micro	30	0.60	0.50x1.06x1.12	None	Ferrite	No	50.0	
FUTABA	S5102	Micro Precision w/metal gear	27.8	0.80	0.50x1.06x1.12	None	5-Pole Ferrite	Yes	99.95	34.8
FUTABA	S9601	Mini w/ ball bearings	36	1.10	0.62x1.21x1.16	Dual	Coreless	One	99.95	32.7
FUTABA	S3002	Mini w/metal gears and BB	46	1.20	0.62x1.21x1.16	Dual	5-Pole Ferrite	Yes	99.95	38.3
FUTABA	S5101	Dual Ball Bearing	55.6	1.40	0.77x1.52x1.36	Dual	5-Pole Ferrite	No	69.95	39.7
FUTABA	S9101	Coreless w/ball bearings	41.7	1.50	0.77x1.52x1.36	Dual	Coreless	No	99.95	27.8
FUTABA	S3001	Precision Ball Bearing	42	1.52	0.77x1.59x1.41	Single	3-Pole Ferrite	No	44.95	27.6
FUTABA	S148	Precision	42	1.50	0.77x1.59x1.58	None	3-Pole Ferrite	No	39.95	28.0
FUTABA	S3003	Standard	42	1.50	0.77x1.59x1.58	None	Ferrite	No	29.95	28.0
FUTABA	S9001	Coreless w/ ball bearing	54.2	1.70	0.78x1.59x1.48	Single	Coreless	No	79.95	31.9
FUTABA	S9402	Coreless w/ ball bearings	111.1	1.90	0.78x1.59x1.53	Dual	Coreless	No	149.95	58.5
FUTABA	S9202	Coreless w/ball bearing	69.5	1.70	0.79x1.59x1.40	Dual	Coreless	No	99.95	40.9
FUTABA	S9304	Coreless w/ball bearing	69.5	1.70	0.79x1.59x1.40	Dual	Coreless	No	99.95	40.9
FUTABA	S9403	Coreless w/ball bearing	44.5	1.75	0.79x1.59x1.40	Dual	Coreless	No	99.95	25.4
FUTABA	S9203	Coreless w/ ball bearings	76.4	1.90	0.79x1.59x1.48	Dual	Coreless	No	149.95	40.2
FUTABA	S9204	Alloy Gear	131.9	1.90	0.79x1.59x1.48	None	Coreless	Yes	69.4	

SERVO COMPARISON (List compiled by Bob Swet)

FUTABA	S9303	Coreless w/metal gears	99	2.30	0.79x1.59x1.55	0.19	None	Coreless	Yes	114.95	43.0
FUTABA	S136G	Compact Retract	76.4	1.48	0.87x1.75x1.00	0.50	Single	5-Pole Ferrite	No	74.95	51.6
FUTABA	S9102	Wing Mount	75	1.60	0.87x1.85x1.05	0.13	Dual	Coreless	No	124.95	46.9
FUTABA	S125	Sail - Arm Type	129.3	2.30	0.88x1.56x1.69	0.62	None	Ferrite	No	69.95	56.2
FUTABA	S134G	Quarter Scale Retract	173.8	2.80	1.14x2.32x1.97	0.33	Single	5-Pole Ferrite	No	79.95	62.1
FUTABA	S3302	Quarter Scale w/metal gears	110	3.60	1.14x2.32x1.97	0.19	Dual	5-Pole Ferrite	Yes	99.95	30.6
FUTABA	S3801	Sail - Arm Type	194	3.77	1.14x2.32x1.97	0.22	Dual	5-Pole Ferrite	Yes	94.95	51.5
FUTABA	S3303	Quarter Scale w/ ball bearings	194	3.80	1.14x2.32x1.97	0.26	Dual	Ferrite	No	51.1	
FUTABA	S5801	Sail Winch	136.1	2.93	1.81x1.73x0.98	0.50				46.5	
Hitec RCD	HS-60	Ultra Micro	15.4	0.49	0.51x1.02x0.94	0.21	None	3-Pole Ferrite	No	58.95	31.4
Hitec RCD	HS-80	Sub Micro	30.8	0.62	0.5x1.1x1.1	0.15	None	3-Pole Ferrite	No	39.95	49.7
Hitec RCD	HS-85	Mighty Micro	38	0.70	0.5x1.1x1.1	0.18	Single		No	49.95	54.3
Hitec RCD	HS-80 MG	Sub Micro w/metal gears	30.8	0.76	0.5x1.1x1.1	0.15	None	3-Pole Ferrite	Yes	58.95	40.5
Hitec RCD	HS-101	Mini	23.8	0.93	0.5x1.3x1.2	0.20	None	3-Pole Ferrite	No	33.49	25.6
Hitec RCD	HS-101 MG	Mini w/metal gears	23.8	1.07	0.5x1.3x1.2	0.20	None	3-Pole Ferrite	Yes	49.95	22.2
Hitec RCD	HS-225 BB	Might Mini	55	1.10	0.6x1.3x1.3	0.14	Single		No	49.95	50.0
Hitec RCD	HS-205 BB	Super Mini	43.3	0.98	0.7x1.3x1.2	0.20	Single	3-Pole Ferrite	No	41.95	44.2
Hitec RCD	HS-205 MG	Super Mini w/metal gears	43.3	1.13	0.7x1.3x1.2	0.20	Single	3-Pole Ferrite	Yes	58.95	38.3
Hitec RCD	HS-525BB	High Speed	46.2	1.60	0.8x1.5x1.4	0.16	Single	5-Pole Ferrite	No	59.95	28.9
Hitec RCD	HS-545BB	High Torque	61.6	1.60	0.8x1.5x1.4	0.21	Single	5-Pole Ferrite	No	59.95	38.5
Hitec RCD	HS-303	Econo Sport	42	1.57	0.8x1.6x1.4	0.19	None		No	16.99	26.8
Hitec RCD	HS-300	Standard Sport	42	1.60	0.8x1.6x1.4	0.19	Nylon (1)	3-Pole Ferrite	No	17.95	26.3
Hitec RCD	HS-422	Standard Pro	43.4	1.70	0.8x1.6x1.4	0.20	Oilite (2)	3-Pole Ferrite	No	19.95	25.5
Hitec RCD	HS-425 BB	Standard Pro Ball Bearing	43.4	1.70	0.8x1.6x1.4	0.20	Dual	3-Pole Ferrite	No	29.95	25.5
Hitec RCD	HS-605 BB	Ultra Torque	77	1.73	0.8x1.6x1.5	0.16	Dual	3-Pole Ferrite	No	59.95	44.5
Hitec RCD	HS-605 MG	Ultra Torque w/metal gears	77	2.12	0.8x1.6x1.5	0.16	Dual	3-Pole Ferrite	Yes	70.95	36.3
Hitec RCD	HS-615 MG	Super Torque	107	2.12	0.8x1.6x1.5	0.23	Dual	3-Pole Ferrite	Yes	75.95	50.5
Hitec RCD	HS-75 BB	Retract	92	1.23	0.9x1.7x1.0	0.50	Single	3-Pole Ferrite	One	59.95	74.8
Hitec RCD	HS-700 BB	Giant Scale	133	3.6	1.1x2.3x2.0	0.22	Single	3-Pole Ferrite	No	44.95	36.9
Hitec RCD	HS-725 BB	Sail Winch - 4 Turns	161	3.80	1.1x2.3x2.0	0.27	Single		No	73.95	42.4
Hitec RCD	HS-705 MG	Giant Scale w/metal gear	161	4.05	1.1x2.3x2.0	0.27	Single	3-Pole Ferrite	Yes	69.95	39.8
Hitec RCD	HS-715	Sail Arm Servo	161	4.05	1.1x2.3x2.0	0.27	Single			59.95	39.8
Hitec RCD	HS-805BB	Mega Series	224	4.20	1.2x2.4x2.2	0.20	Dual		No	73.95	53.3
Hitec RCD	HS-815	Mega Sail Servo	231	5.10	1.2x2.4x2.2	0.20	Dual		No	79.95	45.3
HOBBICO	CS-11	Micro	30	0.61	0.54x1.1x1.1	0.15	None	3-Pole Ferrite	No	49.99	49.2
HOBBICO	CS-31	Mini	20	0.93	0.6x1.3x1.2	0.22	None	3-Pole Ferrite	No	34.99	21.5
HOBBICO	CS-51	Standard	38	1.75	0.8x1.6x1.4	0.21	None	3-Pole Ferrite	No	17.99	21.7
HOBBICO	CS-67	Deluxe	43	1.61	0.8x1.6x1.4	0.20	Dual	3-Pole Ferrite	No	29.95	26.7
HOBBICO	CS-55	Deluxe	40	1.61	0.8x1.6x1.5	0.23	Bushing	3-Pole Ferrite	No	19.99	24.8
HOBBICO	CS-57	Deluxe Ball Bearing	40	1.60	0.8x1.6x1.5	0.23	Dual	3-Pole Ferrite	No	25.99	25.0

SERVO COMPARISON (List compiled by Bob Swet)

HOBBICO	CS-63	Low Profile	92	1.23	0.9x1.7x1.0	0.50	Offite (1)	3-Pole Ferrite	No	59.95	74.8
HOBBICO	CS-72	1/4 Scale Ball Bearing	130	3.60	1.1x2.3x2.0	0.23	Dual	3-Pole Ferrite	No	49.99	36.1
HOBBY LOBBY	HLS15652	Industrial Power	1344	8.75	2.80x3.31x1.50	0.20	Bushings		Yes	179.00	153.6
JR	341	Micro	31.9	0.63	0.50x1.12x1.17	0.24	None	5-Pole Ferrite	No		50.6
JR	351	Micro w/ metal gears	31.9	0.75	0.50x1.12x1.17	0.24	None	5-Pole Ferrite	Yes		42.5
JR	321	Mini	29.2	0.77	0.58x1.30x1.02	0.23	Single	5-Pole Ferrite	No		37.9
JR	3021	Mini (coreless)	37.5	0.84	0.58x1.30x1.02	0.22	Dual	Coreless	No		44.6
JR	3025	Mini Ultra Speed	29.2	1.61	0.58x1.30x1.02	0.15	Dual	Coreless	No		18.1
JR	3321	Glider Wing (coreless)	59.8	0.95	0.58x1.30x1.30	0.36	Dual	Coreless	No		62.9
JR	901	Mid-Size	43.1	1.33	0.71x1.37x1.32	0.27	Dual	5-Pole Ferrite	No		32.4
JR	9021	Mid-Size (coreless)	57.5	1.50	0.71x1.37x1.32	0.22	Dual	Coreless	No		38.3
JR	507	Standard	40.3	1.47	0.73x1.52x1.32	0.25	None	3-Pole Ferrite	No		27.4
JR	517	Standard w/Bearing	40.3	1.58	0.73x1.52x1.32	0.25	Single	3-Pole Ferrite	No		25.5
JR	4000	Ultra Linear	73.6	1.76	0.73x1.52x1.32	0.19	Dual	Coreless	No		41.8
JR	4131	Ultra Precision	90.4	1.50	0.73x1.52x1.32	0.23	Dual	Coreless	No		60.3
JR	4721	Ultra Torque	119.6	1.72	0.73x1.52x1.32	0.22	Dual	Coreless	No		69.5
JR	4735	Ultra Speed	90	1.72	0.73x1.52x1.32	0.15	Dual	Coreless	No		52.3
JR	7000	Ultra Linear Low Profile	62.6	1.45	0.88x1.73x0.93	0.19	Dual	Coreless	No		43.2
JR	703	Low Profile Retract	93.2	1.16	0.88x1.73x0.93	1.36	Dual	Cored	Yes		80.3
JR	7005	Low Profile	62.6	1.31	0.88x1.73x0.93	0.19	Dual	Coreless	No	89.95	47.8
JR	605	Monster FET	139.1	4.75	1.26x2.50x2.30	0.28	Dual	Cored	No		29.3
ROYAL	77-837	Micro	27	0.90	0.63x1.5x1.22	0.14	Bushings(2)	3-Pole Ferrite	No	32.95	30.0
ROYAL	77-806	Mini	33.5	1.10	0.69x1.44x1.44	0.16	Bushings(2)	3-Pole Ferrite	No	24.95	30.5
ROYAL	77-801	Shorty	44	1.40	0.75x1.69x1.63	0.23	Bushings(2)	3-Pole Ferrite	No	18.45	31.4
ROYAL	79-376	Titan/Standard	48.7	1.80	0.75x1.88x1.63	0.24	Bushings(2)	3-Pole Ferrite	No	15.99	27.1
ROYAL	77-852	Maxi	112	3.70	2.31x2.25x1.12	0.22	Single	3-Pole Ferrite	No	32.95	30.3
TOWER	TS-11	Micro w/Bushing	30	0.61	0.54x1.1x1.1	0.15	Bushing	3-Pole Ferrite	No	28.95	49.2
TOWER	TS-31	Mini w/Bushing	20	0.93	0.6x1.3x1.2	0.22	Bushing	3-Pole Ferrite	No	29.99	21.5
TOWER	TS-51	Standard w/bushing	38	1.75	0.8x1.6x1.4	0.21	Bushing	3-Pole Ferrite	No	14.99	21.7
TOWER	TS-55	Deluxe w/Bushing	40	1.61	0.8x1.6x1.5	0.23	Bushing	3-Pole Ferrite	No	16.99	24.8
TOWER	TS-57	Deluxe Ball Bearing	40	1.60	0.8x1.6x1.5	0.23	Dual	3-Pole Ferrite	No	21.99	25.0
TOWER	TS-67	Deluxe	43	1.61	0.8x1.6x1.4	0.20	Dual	3-Pole Ferrite	No	24.99	26.7
TOWER	TS-63	Low-Profile	92	1.23	0.9x1.7x1.0	0.23	Dual	3-Pole Ferrite	No	44.95	74.8
TOWER	TS-72	1/4 Scale Ball Bearing	130	3.50	1.1x2.3x2.0	0.23	Dual	3-Pole Ferrite	No	40.99	37.1

* = Available as replacement parts through dealer

NOTES: