



**American Miniature Racing Car Association**

**Member, World Organization for Model Car Racing**

**MODEL RACE CAR**

**NEWS**

Established 1940

Spring 2020

**TRACKS OPENING FOR RACING**



**President's Message**

*By Dave Lundegard*

The Covid 19 virus has become a worldwide pandemic and the global impact has been felt by all. The United States has been in lockdown for three-months now and may continue until August or later. All race tracks in the U.S.A. have been closed during this period. The tracks in Anderson, Indiana. and Whittier Narrows in California. are now being reopened. They're able to race again, however with the use of face masks and/or social distancing strictly enforced. The track in New York is still closed until further notice.

During the closure of our track at Whittier Narrows we have been able to work on a variety of projects. I'd like to take this opportunity to thank our track builder, Mr. Steve O'Donnell, for his continued effort in grooming our new facility and Mr. Dan Bridges from Aggressive Engineering in Anaheim, California, for providing us with the necessary tools to do so. Finally I'd Like to thank Mr. David Jallo and Mr. Louie Guerrero from the Whittier Narrows Parks Department for their tireless effort on our behalf with maintenance, tree trimming, clean up etc. and keeping our racing area beautiful. The first proposed event at Whittier Narrows is on Sunday, June 14th.



**Secretary's Notes**

*By JPhil McDonald*

Oh, how the world has changed!! I have been sequestered at home now for a couple of months. All parks in Anderson, Indiana, were closed to the public until June 1st. Now, I have received word from Anderson Park Superintendent Jama Donovan that we

may resume racing activities at Jackson Park! Social Distancing is the only requirement.

Last year I hadn't even heard of Social Distancing and now it is probably one of the most used terms outside of Covid 19. Upon the resumption of racing, we will observe social distancing and/or the wearing of masks.

The 2020 A.M.R.C.A. ballot issue voting was very light. As a result of that ballot, A.M.R.C.A. Nationals will once again be held on each of our three tracks but not on the same date. With the August weather issues in California, I can well understand their desire to wait until later in the year. Also, as a result of the vote, we have the following four new classes:

- Class III - E: Custom - Electric Powered
- Class VI - E: Mites - Electric Powered
- Class IX A - E: Modern Nostalgia - Electric Powered
- Class IX B - E: Modern Nostalgia - Electric Powered

My thanks go out to all who bid on the cars offered in the Ted Maciag Memorial Auction. Please find my accounting report below.

That's it for now. I have to go wash my hands for the one hundredth time today.

Keep your speed up...and stay safe

**Ted Maciag Memorial Auction**

*By J. Phil McDonald*

On August 21, 2019, long time A.M.R.C.A. member and dear friend Ted Maciag of Sharpes, Florida passed away at home just a little over 90 days prior to his 80th birthday.

Art Brayman, Ted's El Paso high school classmate, called me and asked me to come to Florida and recover Ted's tether cars from his home. In September, I drove to Ted's home and met with Art. I did my best to recover all things tether car related.

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Upon returning home I photographed and measured 21 cars. Ted wished for the cars to be offered first to A.M.R.C.A. members hoping that the cars would return to the tracks. I had a mailer prepared which I sent to 100 A.M.R.C.A. members.

The auction ran from January 1st to the last day of February. Nineteen Cars received bids with the first car being shipped on March 7th. The two cars not receiving bids were put on Ebay and sold by auction on March 29th. One of those cars went to an A.M.R.C.A. member.

The 21 cars brought in \$27,949.55. Shipping, boxes, printing of the auction mailer, stamps, PayPal fees and Ebay fees came to \$1,409.50. Therefore, the auction produced \$26,540.05 for the A.M.R.C.A. Treasury. Quite a memorial to a dedicated tether car racer!

Hopefully, Ted's final gesture will be an incentive for others in the A.M.R.C.A. to remember the hobby which has for so many years brought them joy!

INCOME:	\$27,949.55
EXPENSES:	
Shipping	\$817.60
Boxes and Bubble Wrap	\$40.31
Mailer Printing	\$221.34
Postage on 100 mailers	\$115.00
PayPal Fees	\$111.54
Ebay Fees	<u>\$103.71</u>
TOTAL EXPENSES:	\$1409.50
 NET TO A.M.R.C.A. CHECKING:	 <b>\$26,540.05</b>

***Thank You!***

The AMRCA wants to thank the late Ted Maciag and J. Phil McDonald for the contribution and sale of Ted's amazing collection of cars. Phil put a lot of effort into the preparation of a brochure, the auction, and ultimate sale and shipping of the cars. Thanks, too, to all who purchased them.

The above income added to the AMRCA Treasury significantly.

*Walt Wilson*

**In Memoriam  
Roger Phillips  
1941-2020**



Roger was a past president of the AMRCA, twice, for a total of five years. He raced conventional glow-powered cars for many years before he and his late brother, George, became pioneers in the development of electric-powered tether cars. They founded a company and manufactured "Vector" cars. Roger had the satisfaction of building the fastest tether car on the planet, with an unofficial speed of 224 mph. The car didn't fit any organizationally recognized set of specifications, so the record is "Unofficial". Rest in peace, Roger. May the tracks ahead always be open.

**2020 AMRCA Racing Schedule**

**Whittier Narrows, CA**

*(All Sundays except as noted)*

- June 14, Sanctioned Race
- June 28, Sanctioned Race
- July 18, Saturday: Night Races
- July 25, Saturday: Mite Night
- August 9 Fun Run
- September 6, 2020 Mite GP
- September 20, Sanctioned Race
- October 4, Sanctioned Race
- October 18, Sanctioned Race
- November 8, Sanctioned Race
- November 14, Saturday: Nationals or Regional
- December 6, Sanctioned Race (season end)

**Seaford, NY**

*Track is not currently open*

*The following dates are tentative:*

- August 22 Saturday
- September 11,12,13, Friday - Sunday (Nationals)
- October 2 ,3, 4 Friday - Sunday (rain date for Nationals Oct 2,3,4)

**Anderson, IN**

*(Saturday and Sunday)*

- June 6-7
- July 11-12
- August 1-2
- September 11,12,13, Friday - Sunday (Nationals)
- October 3-4

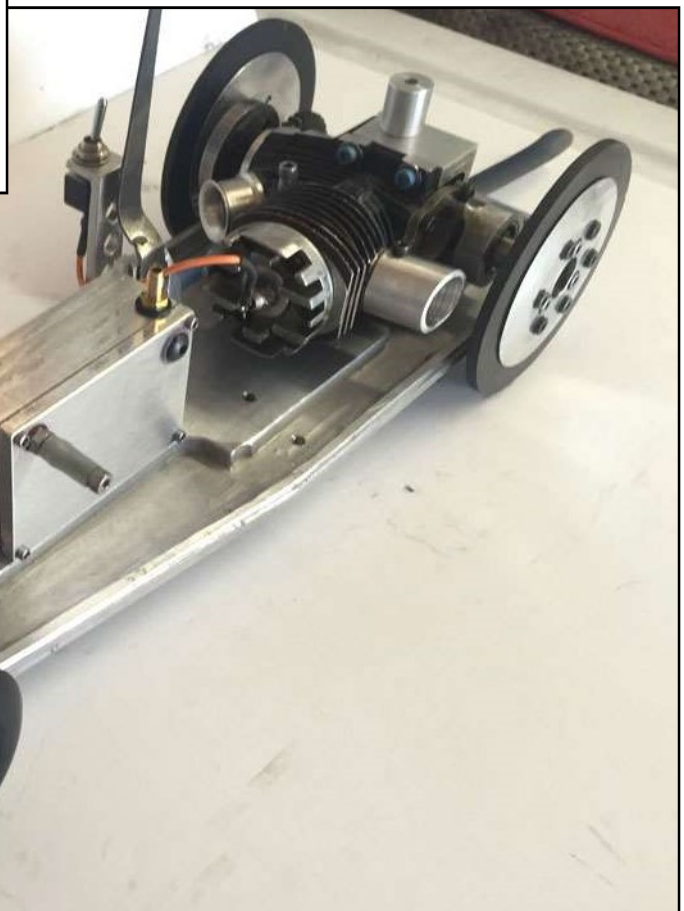
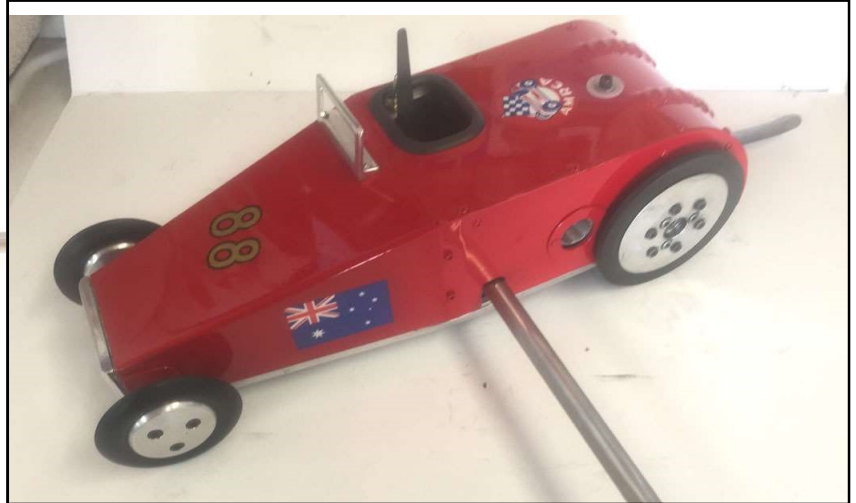
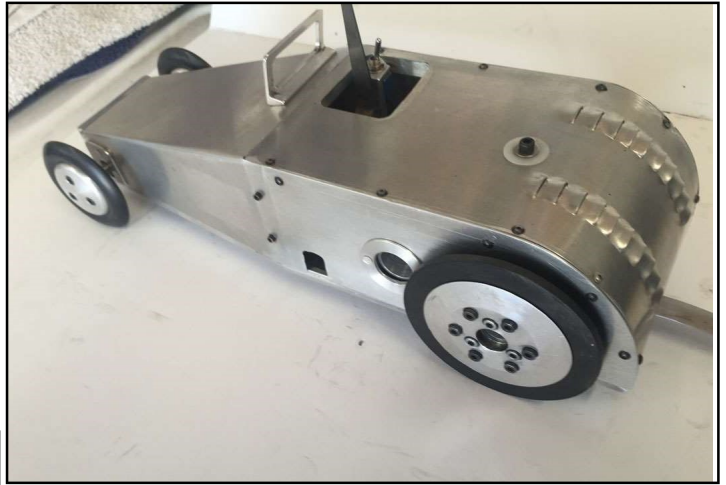
## Something Different

By Charlie Hamill

Here are a few photos of my latest car. It is designed to run in the Australian "M" Class category. It has no suspension and a spur gear drive with a 3.5cc Rossi engine.

I am using an engine out of an old Monza car I had. My intention is to test it here when the track is open again and then send it to some friends in Australia to run in their races, or I might just fly over and run it there myself.

We're hoping to be able to get out to the track and run, soon.



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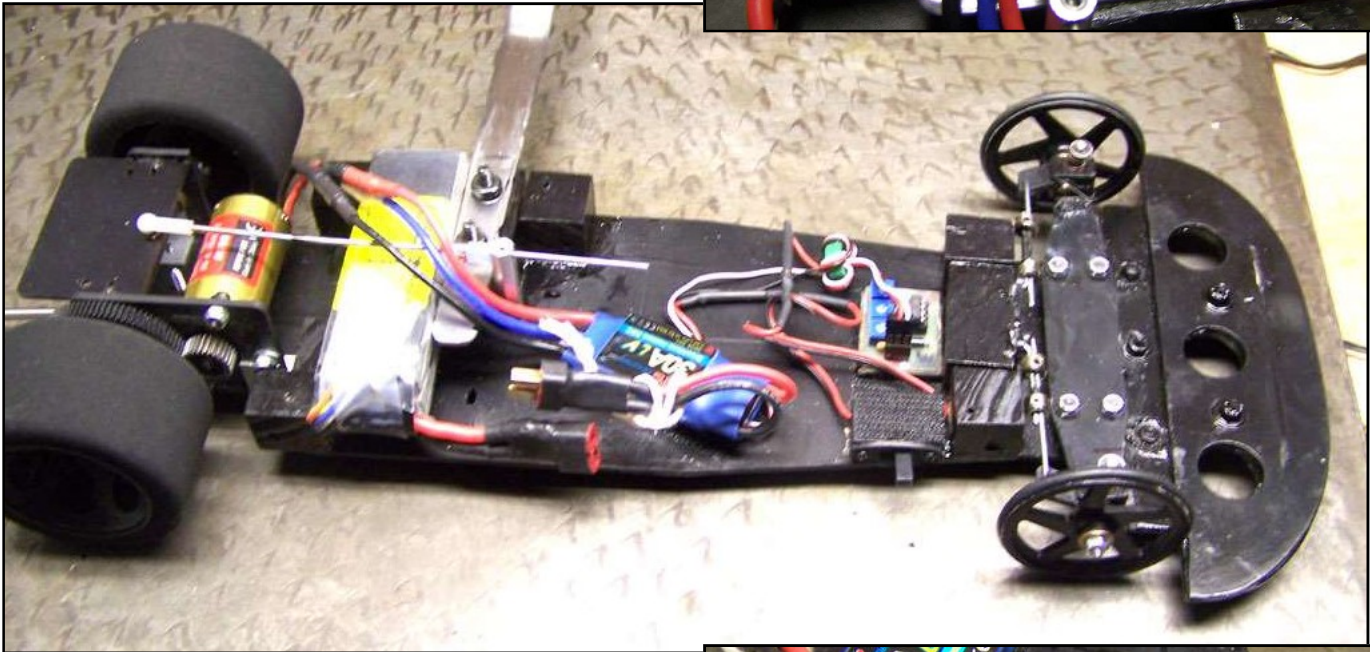
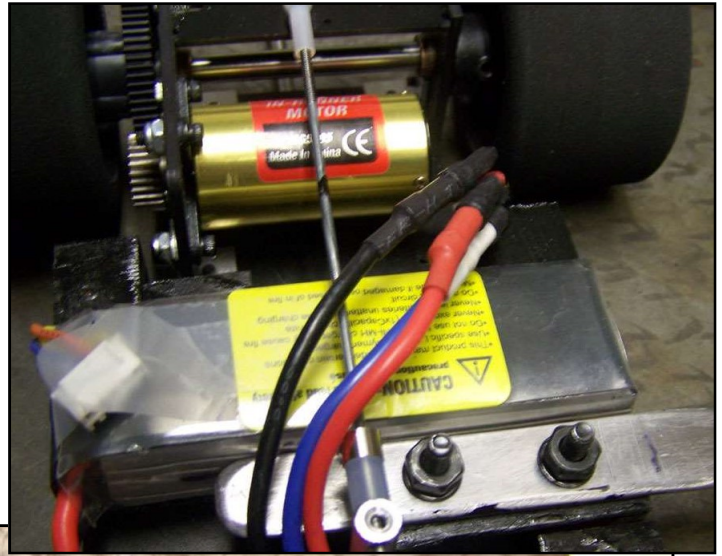
## New R/C Car Conversion Electric Mites

By Mike Baldwin

After building a number of ducted fan cars over the past few years, I was inspired by seeing Walt Wilson's "Kiss Special" to build a wheel-driven car. The easiest and least expensive route seems to be the R/C conversion built by Bill Siry and featured in the Winter 2018 Model Race Car News

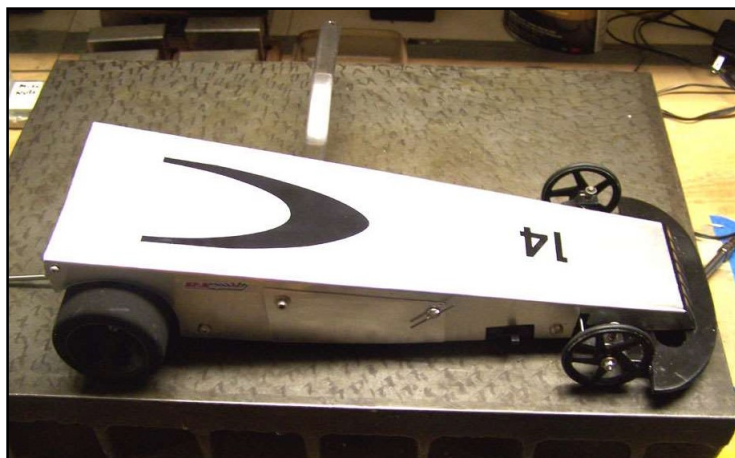
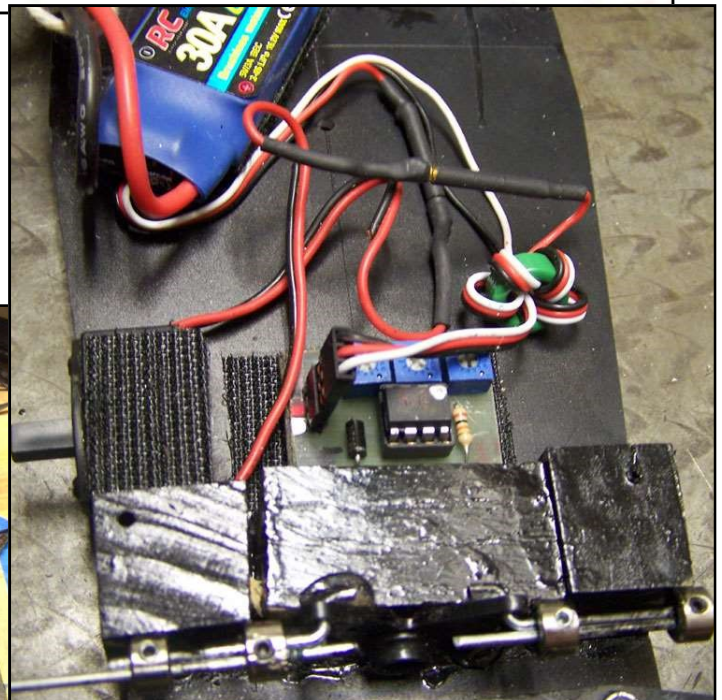
The basic car is an RJ Speed Pro Stock kit that is readily available at hobby shops and online. The kit comes with a clear plastic car body. I replaced it with a more streamlined body formed from .030 aluminum.

The motor is an Ammo 24-45-3790kv brushless in-runner. The battery is a Thunder Power Rampage four-cell, 14.8 volts, 70C.



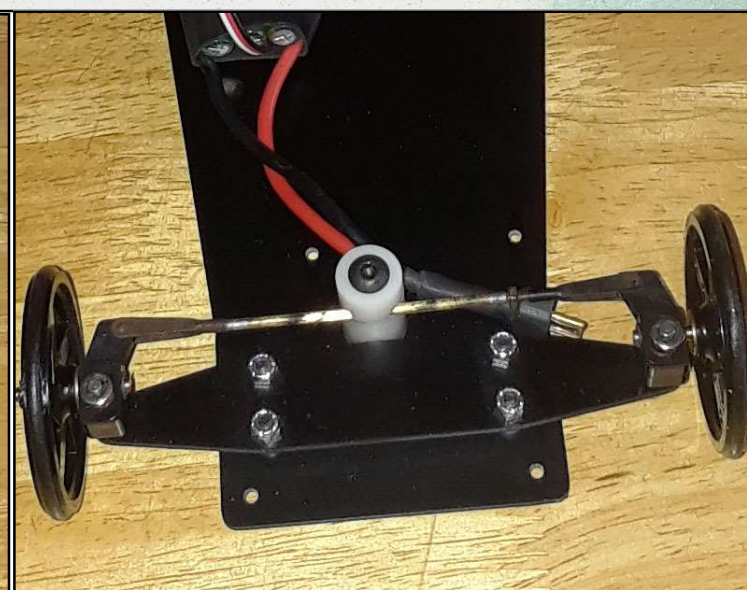
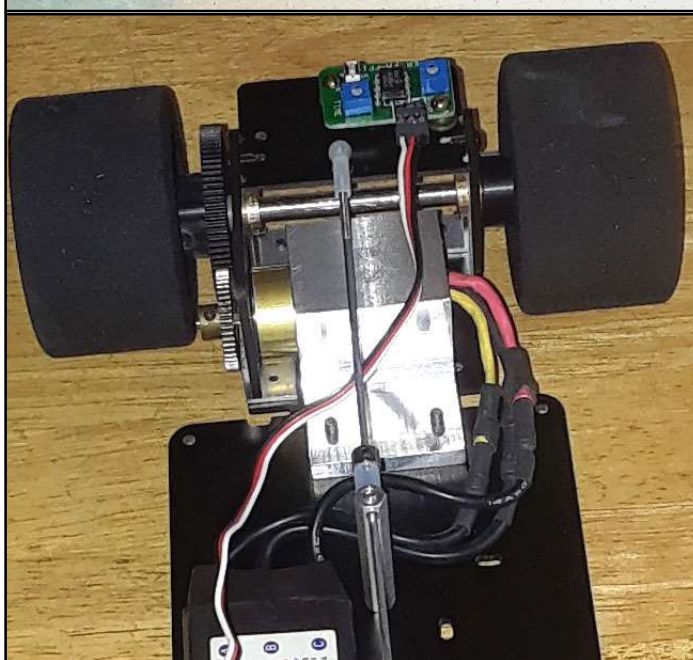
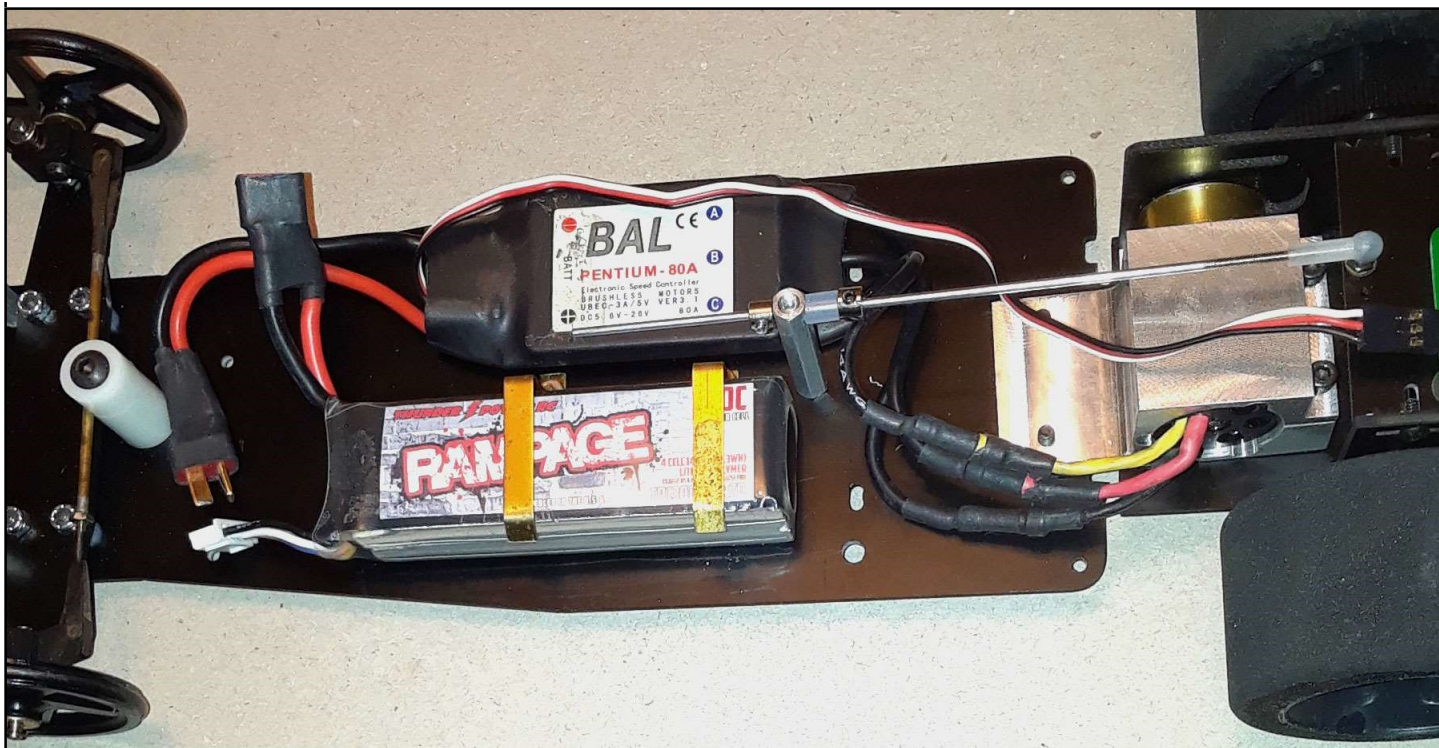
The car has a 30 amp ESC (Electronic Speed Control) and custom timer with a five second ramp up from 30% to 100%. Gears used are 80/27 producing a gear ratio of 2.96 to 1. The weight ready to run is 2 lbs. 2 oz.

Lowel Shirey is building a similar car with a different-gear ratio, timer, and ESC (next page).



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Lowell Shirey's Car



This car is also built from an RJ Speed Pro Stock kit. The motor is an Ammo 24-45-3790kv brushless in-runner. The ESC is a BAL 80 amp and the timer is a Brodak. The battery is a four-cell, Rampage Lithium Polymer.

Gears are 48-pitch with a ratio of 1.6 to 1. The body shown is a temporary measure to speed getting it ready to put on the track. The pan handle bridle wasn't installed when these pictures were taken.



# You're Invited To The New Historical Mite Class Races



Bring your Rodzys, McCoys, Ohlssons, and Thimbledromes for fun and competition where anyone can win.

Here's why: We add weight to winning cars to give others a chance and lots more fun.

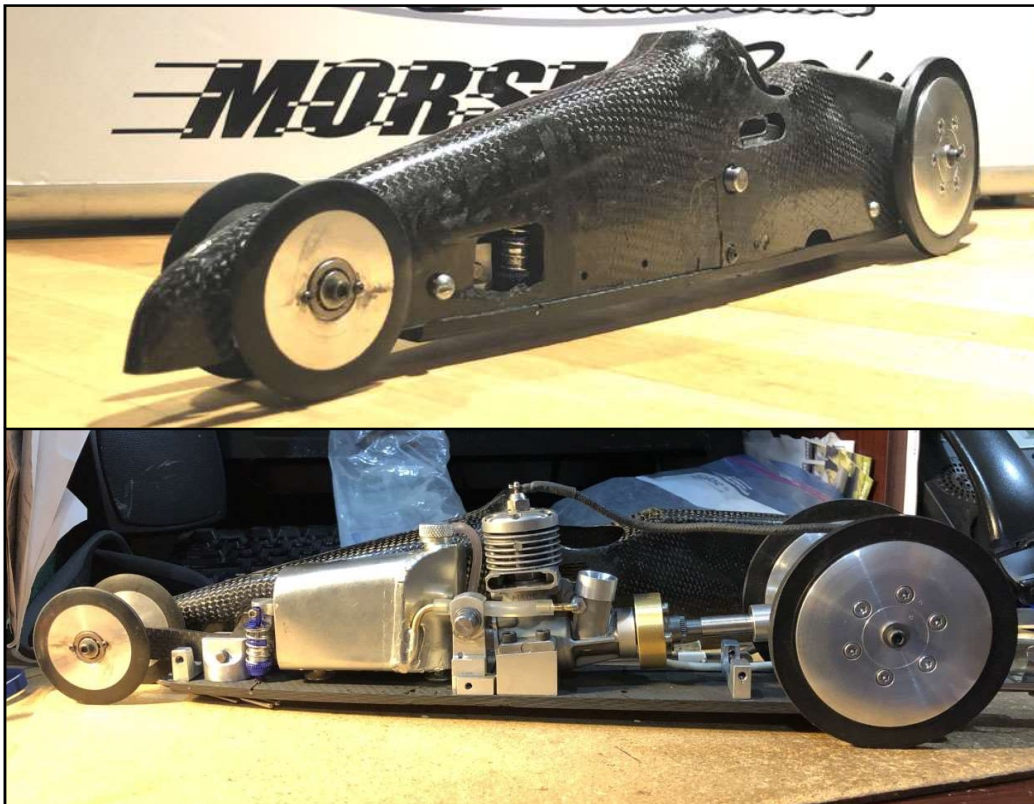
Come to the Whittier Narrows track and see how we do it.

Thousands of them are sitting on shelves on display.

These cars are inexpensive on Ebay and other sales sites on the internet.

**We can help you get them running, so bring yours to the next scheduled event.**

**Now Available, the Morse/Hamill Prototype Mite for Engines Up To .21.**



For more Information, contact Steve Morse at: [Trackit@hotmail.com](mailto:Trackit@hotmail.com)  
or phone at: 310-920-7000

Be sure to put "Tether Car" in the subject line.

## Something To Do When The Race Tracks Are Closed

By Charlie Hamill

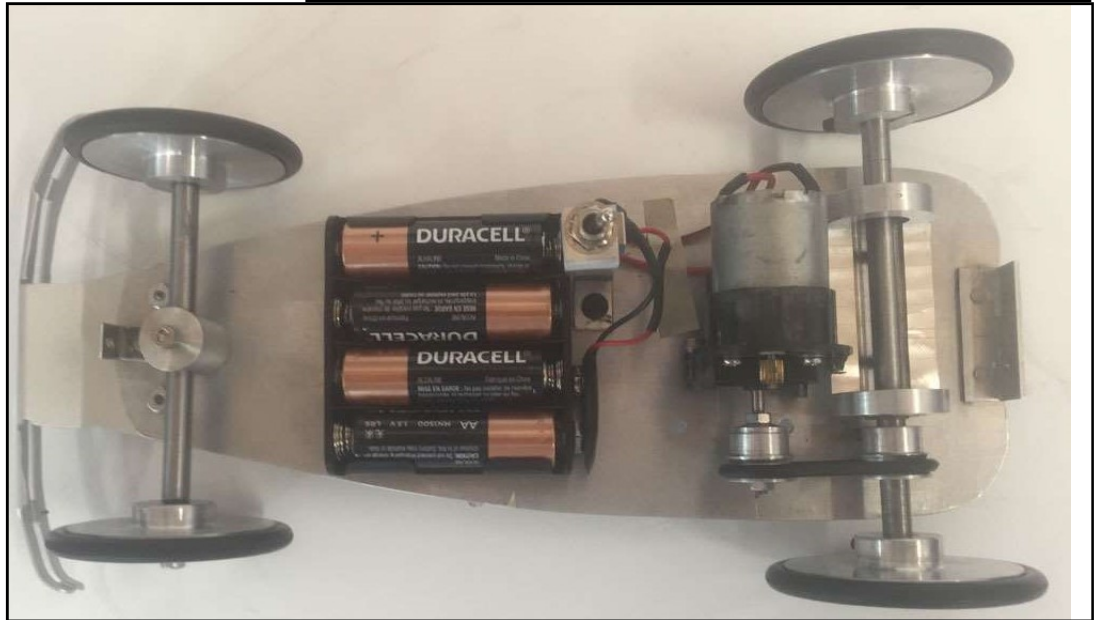
Over the years I have built many small electric cars for the children of our nieces and nephews-- They can run around in a circle in the driveway, but now that the youngest of the children are headed to college I have slowed down on making those types of cars.

I started this one about three weeks ago and after taking two steps forward and one step back (old age) it is finally done.

We have a small pylon that sits on the ground with a 10 foot wire. We run the car around and Stuart and I think we are at the track.

The car started out as a 1950's Nylint push car and I used the body, windshield, and bumper.-The rest is home made. The wheels are turned from aluminum rod with "O" ring tires and the motor was found in the junk box. It runs around pretty well and looks good, too.

Below are a couple of EDF (Electric Ducted Fan) cars that I built for patio running about 15 years ago. The



one car is a Buddy L body shell. Both are powered by small EDF motors and batteries.



## **A View From The Outside**

*By Paul Geders*

Though I'm not a current AMRCA member, I've attended several races at Anderson with Ron Hesskamp and Walt Wilson and have had exposure to the sport and some of its issues.

The allowance of 2.4GHz radios is an excellent idea to help advance the sport of electric tether car racing. Currently, we have to have an electronic control board, like the Arduino, and it requires programming skills to get it to work correctly...How many individuals wanting to get into electric tether car racing have the skills to do that?

Again, for nitro powered tether cars you need deep pockets. If you don't have a machine shop, or access to one (that can cost a lot of money), it pretty much eliminates an awful lot of individuals from even entering the sport. I look at Nitro tether car racing on a scale with top fuel drag racing...it costs a lot of money. That is what has kept me out of the sport. It reminds me of when I raced three different classes of nitro-powered racing boats (tunnel hull, V-bottom, and hydroplane)...I spent a fortune on them, AND every time I ran them it was followed by complete teardowns of engines, shafts, etc. I eventually dropped the sport because of the cost involved.

There are so many opportunities to grow the sport of tether car racing, IF the rules would allow the use of a radio control throttle system for electric cars. Also, a radio control system allows dynamic braking as is done on electric R/C cars of all types. They just apply power to the motor in the opposite direction, basically using the motor as a brake. If you want to stop, this will do it! The new classes are restricted by the nitro class car dimensions relative to wheel base, weight, etc.

I feel counting cells to determine the power level in a class could become a cheater's paradise! You need to measure the output of the batteries at the point of connection to the ESC. Maybe consider an unlimited class where anything goes...and cable requirements have to be considered as the weights MAY be a limiting factor if we stick to the current maximum weight limits.

Just a few thoughts that hit me from my perspective...there will always be naysayers, etc., but, move electric tether car racing forward. If there's enough interest, maybe companies like TRAXXAS may get involved and provide relatively inexpensive ready to run cars!

## **The Last Word**

*By Walt Wilson, Editor*

I've been holding off on publishing this issue of Model Race Car News, hoping that I could announce the opening of at least some tracks for the 2020 season. The onset of the Corona Virus and Covid 19 has hampered most, if not all tether car racing throughout the world. This winter and spring have been an opportunity to update old cars and create new cars or find other

ways to keep busy and involved.

One of the major attractions that tether cars have had to offer are the sounds and thrills of fine engines turning from about 20,000 rpm to upwards of 30,000 rpm. Few other model-related experiences will ever surpass that. Unfortunately, the cost and availability of such engines has become prohibitive in many cases and has threatened the future potential of our sport.

The acceptance of new AMRCA classes for electric cars has opened new horizons for innovation and development. Four distinctly different types of cars can now run competitively against others with similar speed potentials.

As I understand it, FEMA and the WMCR leaders have yet to formulate comprehensive rules for electric cars in their venues, even though some cars are being developed and run in countries other than the U. S. A.

An opinion expressed by one of their members would simply have single open wheel and closed wheel classes with a designated motor, ESC, and battery to be used by all. Unfortunately, in my opinion this idea would severely limit the potential for innovation and experimentation in the electric field.

There are literally hundreds of possible combinations of electronic components available for aircraft and R/C car uses that can be adapted for our needs. The field is wide open. Let's keep it that way, within safety constraints, until the best setups are discovered and developed.

Mike Baldwin has been experimenting and running Electric Ducted Fan cars for several years with very good results. The late Roger and George Phillips were pioneers in this field, first with the "Voltswagen", and then with versions of the "Vector", with amazing results. Kevin Wells developed a more cost-friendly WMCR-type car that regularly runs in the 200 mph range. I built the "Kiss Special" (Keep It Simple Stupid) for modest cost which is an AMRCA Class IX-A-E car. So far it's run in a similar speed range as other Class IX cars, but it's still very much in the experimental stage, with few opportunities to test it.

Bill Siry converted an R/C car for tether car racing and now, Mike Baldwin and Lowell Shirey have built similar cars. I understand others in the Anderson area may also be going in that direction.

Electric powered R/C cars and planes have been around for a number of years and have shown some amazing results. Now, new classes of cars, mostly with less intense speed potentials, can be developed for a whole new venue of tether cars. I'm anxious to see what comes to the tracks next.

Electric cars make noise, too.

Many thanks to Paul Geders for the Watt Hour charts on the next two pages.

Stay tuned.



# AMRCA Watt Hour (Wh) Table for Electric Tether Cars

**mAh/1000) x 3.7V x number of cells = Watt Hours (Wh).**

mAh /1000 X 3.7			Watt Hours (Wh) per number of cells									
			No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells
			1	2	3	4	5	6	7	8	9	10
500	0.5	1.85	1.85	3.70	5.55	7.40	9.25	11.10	12.95	14.80	16.65	18.50
600	0.6	2.22	2.22	4.44	6.66	8.88	11.10	13.32	15.54	17.76	19.98	22.20
700	0.7	2.59	2.59	5.18	7.77	10.36	12.95	15.54	18.13	20.72	23.31	25.90
800	0.8	2.96	2.96	5.92	8.88	11.84	14.80	17.76	20.72	23.68	26.64	29.60
900	0.9	3.33	3.33	6.66	9.99	13.32	16.65	19.98	23.31	26.64	29.97	33.30
1000	1	3.70	3.70	7.40	11.10	14.80	18.50	22.20	25.90	29.60	33.30	37.00
1100	1.1	4.07	4.07	8.14	12.21	16.28	20.35	24.42	28.49	32.56	36.63	40.70
1200	1.2	4.44	4.44	8.88	13.32	17.76	22.20	26.64	31.08	35.52	39.96	44.40
1300	1.3	4.81	4.81	9.62	14.43	19.24	24.05	28.86	33.67	38.48	43.29	48.10
1400	1.4	5.18	5.18	10.36	15.54	20.72	25.90	31.08	36.26	41.44	46.62	51.80
1500	1.5	5.55	5.55	11.10	16.65	22.20	27.75	33.30	38.85	44.40	49.95	55.50
1600	1.6	5.92	5.92	11.84	17.76	23.68	29.60	35.52	41.44	47.36	53.28	59.20
1700	1.7	6.29	6.29	12.58	18.87	25.16	31.45	37.74	44.03	50.32	56.61	62.90
1800	1.8	6.66	6.66	13.32	19.98	26.64	33.30	39.96	46.62	53.28	59.94	66.60
1900	1.9	7.03	7.03	14.06	21.09	28.12	35.15	42.18	49.21	56.24	63.27	70.30
2000	2	7.40	7.40	14.80	22.20	29.60	37.00	44.40	51.80	59.20	66.60	74.00
2100	2.1	7.77	7.77	15.54	23.31	31.08	38.85	46.62	54.39	62.16	69.93	77.70
2200	2.2	8.14	8.14	16.28	24.42	32.56	40.70	48.84	56.98	65.12	73.26	81.40
2300	2.3	8.51	8.51	17.02	25.53	34.04	42.55	51.06	59.57	68.08	76.59	85.10
2400	2.4	8.88	8.88	17.76	26.64	35.52	44.40	53.28	62.16	71.04	79.92	88.80
2500	2.5	9.25	9.25	18.50	27.75	37.00	46.25	55.50	64.75	74.00	83.25	92.50
2600	2.6	9.62	9.62	19.24	28.86	38.48	48.10	57.72	67.34	76.96	86.58	96.20
2700	2.7	9.99	9.99	19.98	29.97	39.96	49.95	59.94	69.93	79.92	89.91	99.90
2800	2.8	10.36	10.36	20.72	31.08	41.44	51.80	62.16	72.52	82.88	93.24	103.60
2900	2.9	10.73	10.73	21.46	32.19	42.92	53.65	64.38	75.11	85.84	96.57	107.30
3000	3	11.10	11.10	22.20	33.30	44.40	55.50	66.60	77.70	88.80	99.90	111.00
3100	3.1	11.47	11.47	22.94	34.41	45.88	57.35	68.82	80.29	91.76	103.23	114.70
3200	3.2	11.84	11.84	23.68	35.52	47.36	59.20	71.04	82.88	94.72	106.56	118.40
3300	3.3	12.21	12.21	24.42	36.63	48.84	61.05	73.26	85.47	97.68	109.89	122.10
3400	3.4	12.58	12.58	25.16	37.74	50.32	62.90	75.48	88.06	100.64	113.22	125.80
3500	3.5	12.95	12.95	25.90	38.85	51.80	64.75	77.70	90.65	103.60	116.55	129.50
3600	3.6	13.32	13.32	26.64	39.96	53.28	66.60	79.92	93.24	106.56	119.88	133.20
3700	3.7	13.69	13.69	27.38	41.07	54.76	68.45	82.14	95.83	109.52	123.21	136.90
3800	3.8	14.06	14.06	28.12	42.18	56.24	70.30	84.36	98.42	112.48	126.54	140.60
3900	3.9	14.43	14.43	28.86	43.29	57.72	72.15	86.58	101.01	115.44	129.87	144.30
4000	4	14.80	14.80	29.60	44.40	59.20	74.00	88.80	103.60	118.40	133.20	148.00
4100	4.1	15.17	15.17	30.34	45.51	60.68	75.85	91.02	106.19	121.36	136.53	151.70
4200	4.2	15.54	15.54	31.08	46.62	62.16	77.70	93.24	108.78	124.32	139.86	155.40
4300	4.3	15.91	15.91	31.82	47.73	63.64	79.55	95.46	111.37	127.28	143.19	159.10
4400	4.4	16.28	16.28	32.56	48.84	65.12	81.40	97.68	113.96	130.24	146.52	162.80
4500	4.5	16.65	16.65	33.30	49.95	66.60	83.25	99.90	116.55	133.20	149.85	166.50
4600	4.6	17.02	17.02	34.04	51.06	68.08	85.10	102.12	119.14	136.16	153.18	170.20
4700	4.7	17.39	17.39	34.78	52.17	69.56	86.95	104.34	121.73	139.12	156.51	173.90
4800	4.8	17.76	17.76	35.52	53.28	71.04	88.80	106.56	124.32	142.08	159.84	177.60
4900	4.9	18.13	18.13	36.26	54.39	72.52	90.65	108.78	126.91	145.04	163.17	181.30
5000	5	18.50	18.50	37.00	55.50	74.00	92.50	111.00	129.50	148.00	166.50	185.00



40 Wh Maximum by cell count to mAh  
 60 Wh Maximum by cell count to mAh  
 80 Wh Maximum by cell count to mAh

For example: 3600 mAh 3 Cell Battery, or 2700 mAh 4 Cell Battery, etc.  
 For example: 4000 mAh 4 Cell Battery, or 3200 mAh 5 Cell Battery, etc.  
 For example: 4300 mAh 5 Cell Battery, or 3600 mAh 6 Cell Battery, etc.

*Our thanks to Paul Geders for the above chart.*

*(Continued on the next page)*

# AMRCA Watt Hour (Wh) Table for Electric Tether Cars

**mAh/1000) x 4.2V (Fully Charged) x number of cells = Watt Hours (Wh).**

			Watt Hours (Wh) per number of cells									
			No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells	No. of Cells
mAh	/1000	X 4.2	1	2	3	4	5	6	7	8	9	10
500	0.5	2.10	2.10	4.20	6.30	8.40	10.50	12.60	14.70	16.80	18.90	21.00
600	0.6	2.52	2.52	5.04	7.56	10.08	12.60	15.12	17.64	20.16	22.68	25.20
700	0.7	2.94	2.94	5.88	8.82	11.76	14.70	17.64	20.58	23.52	26.46	29.40
800	0.8	3.36	3.36	6.72	10.08	13.44	16.80	20.16	23.52	26.88	30.24	33.60
900	0.9	3.78	3.78	7.56	11.34	15.12	18.90	22.68	26.46	30.24	34.02	37.80
1000	1	4.20	4.20	8.40	12.60	16.80	21.00	25.20	29.40	33.60	37.80	42.00
1100	1.1	4.62	4.62	9.24	13.86	18.48	23.10	27.72	32.34	36.96	41.58	46.20
1200	1.2	5.04	5.04	10.08	15.12	20.16	25.20	30.24	35.28	40.32	45.36	50.40
1300	1.3	5.46	5.46	10.92	16.38	21.84	27.30	32.76	38.22	43.68	49.14	54.60
1400	1.4	5.88	5.88	11.76	17.64	23.52	29.40	35.28	41.16	47.04	52.92	58.80
1500	1.5	6.30	6.30	12.60	18.90	25.20	31.50	37.80	44.10	50.40	56.70	63.00
1600	1.6	6.72	6.72	13.44	20.16	26.88	33.60	40.32	47.04	53.76	60.48	67.20
1700	1.7	7.14	7.14	14.28	21.42	28.56	35.70	42.84	49.98	57.12	64.26	71.40
1800	1.8	7.56	7.56	15.12	22.68	30.24	37.80	45.36	52.92	60.48	68.04	75.60
1900	1.9	7.98	7.98	15.96	23.94	31.92	39.90	47.88	55.86	63.84	71.82	79.80
2000	2	8.40	8.40	16.80	25.20	33.60	42.00	50.40	58.80	67.20	75.60	84.00
2100	2.1	8.82	8.82	17.64	26.46	35.28	44.10	52.92	61.74	70.56	79.38	88.20
2200	2.2	9.24	9.24	18.48	27.72	36.96	46.20	55.44	64.68	73.92	83.16	92.40
2300	2.3	9.66	9.66	19.32	28.98	38.64	48.30	57.96	67.62	77.28	86.94	96.60
2400	2.4	10.08	10.08	20.16	30.24	40.32	50.40	60.48	70.56	80.64	90.72	100.80
2500	2.5	10.50	10.50	21.00	31.50	42.00	52.50	63.00	73.50	84.00	94.50	105.00
2600	2.6	10.92	10.92	21.84	32.76	43.68	54.60	65.52	76.44	87.36	98.28	109.20
2700	2.7	11.34	11.34	22.68	34.02	45.36	56.70	68.04	79.38	90.72	102.06	113.40
2800	2.8	11.76	11.76	23.52	35.28	47.04	58.80	70.56	82.32	94.08	105.84	117.60
2900	2.9	12.18	12.18	24.36	36.54	48.72	60.90	73.08	85.26	97.44	109.62	121.80
3000	3	12.60	12.60	25.20	37.80	50.40	63.00	75.60	88.20	100.80	113.40	126.00
3100	3.1	13.02	13.02	26.04	39.06	52.08	65.10	78.12	91.14	104.16	117.18	130.20
3200	3.2	13.44	13.44	26.88	40.32	53.76	67.20	80.64	94.08	107.52	120.96	134.40
3300	3.3	13.86	13.86	27.72	41.58	55.44	69.30	83.16	97.02	110.88	124.74	138.60
3400	3.4	14.28	14.28	28.56	42.84	57.12	71.40	85.68	99.96	114.24	128.52	142.80
3500	3.5	14.70	14.70	29.40	44.10	58.80	73.50	88.20	102.90	117.60	132.30	147.00
3600	3.6	15.12	15.12	30.24	45.36	60.48	75.60	90.72	105.84	120.96	136.08	151.20
3700	3.7	15.54	15.54	31.08	46.62	62.16	77.70	93.24	108.78	124.32	139.86	155.40
3800	3.8	15.96	15.96	31.92	47.88	63.84	79.80	95.76	111.72	127.68	143.64	159.60
3900	3.9	16.38	16.38	32.76	49.14	65.52	81.90	98.28	114.66	131.04	147.42	163.80
4000	4	16.80	16.80	33.60	50.40	67.20	84.00	100.80	117.60	134.40	151.20	168.00
4100	4.1	17.22	17.22	34.44	51.66	68.88	86.10	103.32	120.54	137.76	154.98	172.20
4200	4.2	17.64	17.64	35.28	52.92	70.56	88.20	105.84	123.48	141.12	158.76	176.40
4300	4.3	18.06	18.06	36.12	54.18	72.24	90.30	108.36	126.42	144.48	162.54	180.60
4400	4.4	18.48	18.48	36.96	55.44	73.92	92.40	110.88	129.36	147.84	166.32	184.80
4500	4.5	18.90	18.90	37.80	56.70	75.60	94.50	113.40	132.30	151.20	170.10	189.00
4600	4.6	19.32	19.32	38.64	57.96	77.28	96.60	115.92	135.24	154.56	173.88	193.20
4700	4.7	19.74	19.74	39.48	59.22	78.96	98.70	118.44	138.18	157.92	177.66	197.40
4800	4.8	20.16	20.16	40.32	60.48	80.64	100.80	120.96	141.12	161.28	181.44	201.60
4900	4.9	20.58	20.58	41.16	61.74	82.32	102.90	123.48	144.06	164.64	185.22	205.80
5000	5	21.00	21.00	42.00	63.00	84.00	105.00	126.00	147.00	168.00	189.00	210.00

- 40 Wh Maximum by cell count to mAh
- 60 Wh Maximum by cell count to mAh
- 80 Wh Maximum by cell count to mAh

For example: 4700 mAh 2 Cell Battery, or 3100 mAh 3 Cell Battery, etc.  
 For example: 4700 mAh 3 Cell Battery, or 3500 mAh 4 Cell Battery, etc.  
 For example: 4700 mAh 4 Cell Battery, or 3800 mAh 5 Cell Battery, etc.

*Our thanks to Paul Geders for the above chart.*