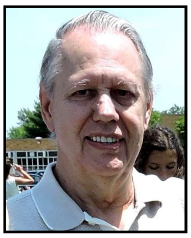
American Miniature Racing Car Association
Member, World Organization for Model Car Racing
MODEL RACE CAR NEWS
Established 1940 Summer, 2015

A.M.R.C.A. NATIONALS OCT. 1, 2, 3



President's Notes
By Roger Phillips, President

We are excited that our tether racing season in underway now at all three of our tracks. Of course, for the guys out on the sunny West Coast, there is barely a glitch in their racing schedule, but for others, the snow has finally disappeared and the track surface has thawed.

Aside from the seemingly countless number of doctor visits that come with old age, George and I have spent most of our off time working out the design of our "entry level" Deuce Coupe electric. This will be a relatively low cost, easy to run car for beginners. It will not be fast like the Vectors, but will provide a car to get started in tether racing.

One of the fiberglass bodies for the new electric entry-level car the Phillips brothers are developing.

We recently had 20 bodies made, and are working on the mechanical and electronic components now. We hope to test the first car in a couple of months.

With a little luck, George and I hope to make a trip to California in another month or so to test, and deliver a couple of Vectors that are being finished up for customers.

I'm sure that everyone who has worked on their cars, or built new ones is anxious to see the results of their efforts, so go fast, have fun, and be safe!

Secretarial Notes
By J. Phil McDonald

I do believe, finally Winter may be over! Racing season has returned to the U.S. East of the Rockies!

The A.M.R.C.A. membership stands at 148. Of that number, 106 members have paid their 2015 A.M.R.C.A. dues. and 42 members are delinquent. On June 1st, those past members who have not paid their A.M.R.C.A. dues since 2013 will be dropped from the current membership and moved into the past member file.

The A.M.R.C.A. treasury stands at $8,376.40. That sounds like a lot of money, but not when you consider that the A.M.R.C.A. prints and mails a newsletter three to four times a year, pays for two million dollar insurance coverage for our members, and helps with a $500 donation to the local club hosting the Nationals each year. It obviously will not buy new timing systems for the three tracks. The current timing systems being used in Europe, and also in Australia, cost approximately $6800 each. We keep inching up our membership fee, trying to balance our needs against the fact that each time dues are raised....we lose some members.

Graciously, several members make donations to the A.M.R.C.A. each year. This is much appreciated but still makes us realize that we don't have the funds to accomplish some of the things around the tracks that we would like to see happen.

Enough beating you over the head..... The Nationals are coming! The event will be held Thursday, Friday and Saturday, October 1, 2, and 3, with a day of practice on Wednesday, September 30, of that week. Don't miss the "Big One"! It's your chance to set that new record and take home the gold. More information will be available as plans are firmed up.

Well, that's about it from the Secretary's corner. Support your local track and enjoy racing this summer. Hope to see you at the Nats!

2015 CLASS III Rules Changes:

SAFETY:

Safety inspection (Loose fasteners/parts, sharp tail skid, cracks or binding) of each car at every race is mandatory.

Every new manufactured car presented for competition will be required to submit a certificate/letter of compliance from the foundry verifying pan casting material, and subsequent heat treated (if appropriate for casting material used) state of pan casting. Older cars that have provenance and/or a known history of running in the custom class will not require verification of pan material compliance.

All older cars (no pan casting verification) will be required to follow a one time, two (2) run safety qualifying procedure and re-inspected for safety after each run:

1st run limited to 120 MPH. Car re-inspected

2nd run limited to 150 MPH. Car re-inspected

Cars must successfully pass both qualifying runs without any safety inspection failures to become eligible for competition.

Billet pans (tub type) allowed with verification of material and heat treated state.

No slab (flat plate pan) type cars allowed.

All fasteners for high stress areas should be grade 8 or higher. No stainless fasteners allowed in high stress areas, which include: panhandle, engine mount, gearbox mount and front axle mount.

Panhandle suggested materials are 316 stainless streamlined flying wire or 4130 alloy steel. No lightening holes or milled slots allowed. Panhandles require two (2) 10-32 grade 8 or higher mounting screws.

Rear axles must be free of rotating score marks, axle/hub and gears should run true to visual inspection. Suggested rear axle materials are H-13, S-7 Air hardening or Oil hardening Tool steels.

Front axles and components must be properly designed and manufactured. Suggested axle materials are: 316 flying wire. 316 stainless steel, O-1, 4130 steel, tempered spring steel and titanium.

Tail skid material should be 316 stainless or carbon steel streamlined flying wire or music wire. All tail skids to be rigidly mounted with quality graded fasteners.

CLASS III-A: OPEN

Any custom type car, examples as follows: (But not limited to) 1234 Car, Rouse, Fox, Fryco, Ed, Ed Hap, Kuebler, Davis, Flynt, and Tucci Terror. World Class conversions will not be allowed.

Any engine combination allowed. Engine shall not exceed .61 ci. No tuned pipes. Constant volume "mini pipe" allowed. Transitional area approximately 1 inch from end of engine exhaust boss allowed.

Wheels must be outside the main pan. No wheel fairings or deflectors allowed. Entire diameter of front and rear tires shall be visible from the top and side of the car.

Pan-handle allowed. Maximum width 1". No sharp corners (radius) in stepped transition area where pan handle meets the pan.

Front suspension allowed.

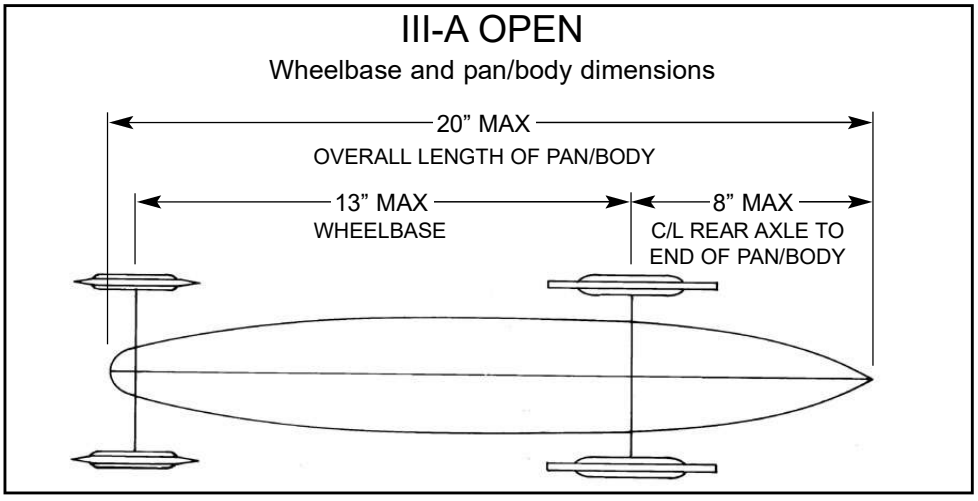
Rigid rear axle (No rear suspension) with conventional type gearbox. Rear axle bearings must be outside (straddle) the ring gear and hub. No radical axle bearing offset. Gearbox such as 1234 with mild offset allowed.

Wheelbase 13 inches maximum. No minimum tread width.

Overall pan/body length, 20 inches maximum.

Length from centerline of rear axle to back of pan/body 8 inches maximum.

Weight limit 6.9 Lbs. (3130 gms.)



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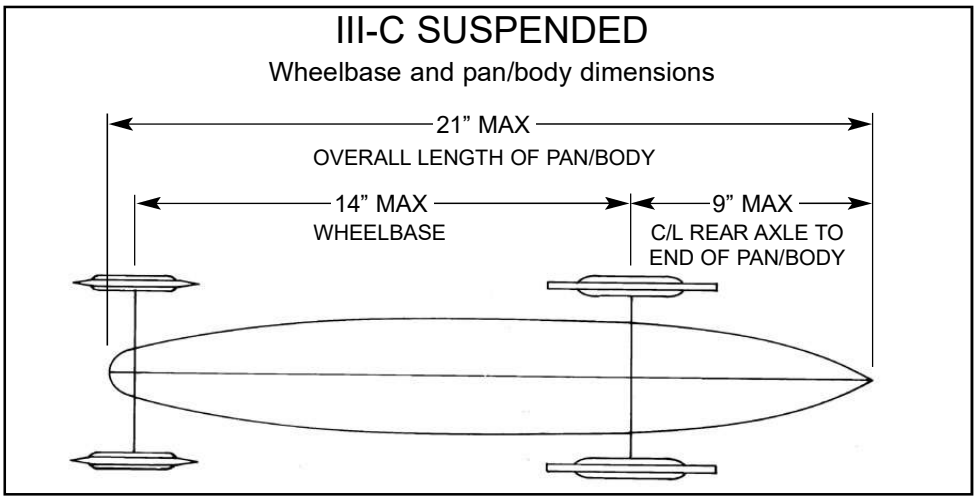
CLASS III-C: SUSPENDED

Any custom type car, examples as follows: (But not limited to) Fryco MK VII, Eagle.
World Class conversions will not be allowed.
Any engine combination allowed. Engine shall not exceed .61 ci. No tuned pipes. Constant volume "mini pipe" allowed. Transitional area approximately 1 inch from end of engine exhaust boss allowed.
Wheels must be outside the main pan. No wheel fairings or deflectors allowed. Entire diameter of front and rear tires shall be visible from the top and side of the car.
Pan-handle allowed. Maximum width 1". No sharp corners (radius) in stepped transition area where the pan handle meets the pan.
Front and rear suspension allowed.
Suspended conventional type gearbox. Rear axle bearings must be outside (straddle) the ring gear and hub. No bearing offset.
Wheelbase 14 inches maximum. No minimum tread width.
Overall pan/body length, 21 inches maximum.
Length from centerline of rear axle to back of pan/body 9 inches maximum.
Weight limit 6.9 Lbs. (3130 gms.)



CLASS III-B: SIDE EXHAUST

Any custom type car, examples as follows: (But not limited to)
1234 Car, Rouse, Fox, Fryco, Ed, Ed Hap, Kuebler, Davis, Flynt, and Tucci Terror. World Class conversions will not be allowed.
Engine limited to Dooling 61, Yellow Jacket, Super Tigre, Rossi Speed, McCoy, Webra or custom. (Side exhaust only) or reproductions manufactured abroad. Engines may have any modification. Engine shall not exceed .61 ci.
Piston must have a baffle tall enough so that when set at bottom dead center no part of the intake port is visible through the exhaust opening. Allowances will be made for erosion to the top of the baffle, So long as the variation in height is due to erosion caused by racing (melted edge). Simulated or intentional modification to stock baffle height is not allowed. The baffle must direct gasses towards the head of the engine.
No Schneurle porting. No modern internal conversions, (ABC sleeve/piston). Magnetos allowed. 12" Maximum wheelbase. No minimum tread width. Wheels must be outside the main pan. No wheel fairings or deflectors allowed. Entire diameter of front and rear tires shall be visible from the top and side of the car. Pan-handle allowed.
Weight limit 6.9 Lbs.

CLASS 5-C: UNLIMITED UNPIPED (Formerly Custom unlimited)

Any car (World Class conversions allowed), any engine combination allowed. Engine shall not exceed .61 ci. No tuned pipes. Constant volume "mini pipe" allowed. Transitional area approximately 1 inch from end of engine exhaust boss allowed. New cars must provide some form of verification as to the quality of the pan casting. No minimum tread width. 18" Maximum wheelbase. Wheels must be outside the main pan. No wheel fairings or deflectors allowed. Entire diameter of front and rear tires shall be visible from the top and side of the car. Pan-handle allowed. Weight limit 6.9 Lbs.

Inside the Two-Cycle Engine (Part 2)

By Glenn Lee

There's more to a miniature power plant than meets the eye.

Porting: The biggest problem of scavenging two-cycle engines is to separate the exhaust residue and the incoming fresh charge. In most engines, the exhaust port opens slightly ahead of the bypass port. The rapid rush of the exhaust gases from the cylinder can cause the pressure in the cylinder to drop below atmospheric, and the resulting vacuum can draw part of the exhaust back into the cylinder.

If the exhaust port opens too soon, part of the incoming fresh charge can be lost out the exhaust. The pressure in the cylinder is very high during combustion, and very little time is required to let these gases out when the exhaust port opens. The crankcase pressure, however, is very low, on the order of six pounds per square inch. This low pressure cannot force the fresh charge into the cylinder very fast, so the bypass ports must be raised or widened to improve performance.

The exhaust port must open before the bypass port, so it must be raised along with the bypass port. The portion of the wall given to porting must be subtracted from the working stroke. So, the height of the ports must be matched to the rpm range at which the engine will be run and also to the burning rate of the fuel used. Racing engines using high nitro content fuels have very high, wide ports, while stunt or sport engines have much lower ports. Port opening periods are usually noted as so many degrees of crankshaft rotation. This is "exhaust timing" and "bypassing timing." For speed engines the best exhaust timing has been found to be near 140 degrees, which means that the piston starts to uncover the exhaust opening when the crankshaft is 70 degrees from bottom dead center and closes when the crankshaft is 70 degrees past bottom dead center. Bypass timing varies from 120 to 130 degrees. The Super Tigre engines have symmetrical timing, the exhaust and bypass open simultaneously. The high pressure of the exhaust gases holds the fresh charge in the crankcase until the majority of the exhaust has gone out the exhaust port and pressure in the cylinder has been reduced below that of the crankcase. This gives the same effect as opening the exhaust port before the bypass yet allows a higher, larger bypass port to be used.

To improve scavenging in the cylinder, the main factors are time and the amount of fresh charge that you can get in. At 24,000 rpm, the bypass port is open for less than 1/1000 of a second. This is not enough time to allow a fresh charge to travel from the lower part of the crankcase all the way up into the cylinder. The top of the bypass chamber in the crankcase must be large enough to store a charge until the piston opens the port, letting the charge into the cylinder quite quickly.

Crankcase passages must be as large as possible to allow unrestricted flow of gases. On the other hand, this reduces crankcase pumping efficiency and can be detrimental to high speed performance. It has been found that the best solution to this problem is to "pack" the crankcase as much as possible, yet leave a large chamber right next to the bypass ports. Some engines, notably the Dooling, have transfer passages cut through the wall of the piston to allow the charge to travel into short, curved bypass passages. This also allows fresh charges to cool the inside of the piston a little better.

One of the greatest improvements in engine design in the last years has been the metallurgy of the sleeve-piston combination. The leaded steel sleeve and hardened cast iron piston is hard to beat, although chrome plating is still being experimentally used. A chrome plated sleeve is almost a necessity for top performance from a ringed, aluminum piston engine since friction is very high between aluminum and steel.

Pistons:: Pistons, whether iron or aluminum, must be as stiff as possible to minimize warping and heat distortion. The best pistons have annular rings inside just above or below the wrist pin holes which aid in keeping them round. This greatly increases the cost of manufacture, but is usually necessary for high performance.

Even with a properly designed and manufactured engine, proper break-in of the sleeve and piston is required. Many attempts have been made to minimize or eliminate break-in running, but few methods are successful. For best performance, both the cylinder and the piston should be as round as possible and have the proper clearance to start with. Lapping the piston in its sleeve with some kind of abrasive compound usually results in a ruined engine since softer parts of the sleeve get cut deeper than harder areas. Also, the harder piston will force the abrasive into the soft metal of the sleeve; it does not get washed out, and will most likely cut too much clearance during the first runs.

Heating of the piston is not uniform during running, since intensely hot combustion gases heat the top causing it to expand more than the rest of the piston. The metal near the top of a lapped piston must be worn away to allow for this expansion before peak performance can be reached and maximum nitro fuel can be used. The worn away metal will add up to several thousandths of an inch off the diameter. Some of it can be ground away before running, but it is easy to grind too much unless you really know what you are doing. The piston also develops a bulge on the hotter exhaust side which must be worn away. Larger engines have used asymmetrical "earn-turned" pistons where this metal was ground away before assembly. It again is very difficult to grind the proper amount from a piston of the size we use.

The two stroke engines run very hot, and air cooling is usually uneven and inadequate. The main cooling is from the fresh air and fuel coming into the crankcase. Most high performance engines use a "hanger" type cylinder sleeve supported only by the lip at the top. The aluminum crankcase expands more than the sleeve, and even though it may expand unevenly, it does not squeeze the sleeve out of shape. Warped cases or warped sleeves are usually the greatest detriments to engine performance.

The importance of proper break-in cannot be overemphasized.

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Engines on the bench should be run at or slightly above the rpm that they will operate at in the air. A smaller diameter, lower pitch prop allows the engine to be run at operating rpm with a rich needle valve setting. The excess fuel mixture keeps the engine cool and lubricated to prevent tight parts from seizing.

One other aspect of proper break-in has to do with the instability of some piston materials. Hardened cast iron is unstable and will actually grow in dimension when it is heat cycled. This growth can be as much as .001" per inch of diameter. As an engine is run, the piston is heated and cooled during every stroke, resulting in a slow growth. This growth, however slight, must be worn away, and the engine is not broken in until the piston has stabilized. The time required for this varies according to the heat treatment and the alloy and can be several hours of high rpm running.

Head Design: Various head shapes are shown in Fig. 4. The classic domed piston and hemispherical or matched combustion chamber has almost totally been replaced by fiat top pistons and "squish band" heads. The squish band is a circular band that fits very close to the piston at top dead center, and "squishes" the trapped charge into a central combustion chamber. The diameter of the chamber is usually about 65% of the bore diameter, and the depth is varied to give the correct compression ratio. A variation of the squish band head is the "trench" head, where the combustion chamber is a trench milled straight across, leaving wide squish flats on each side.

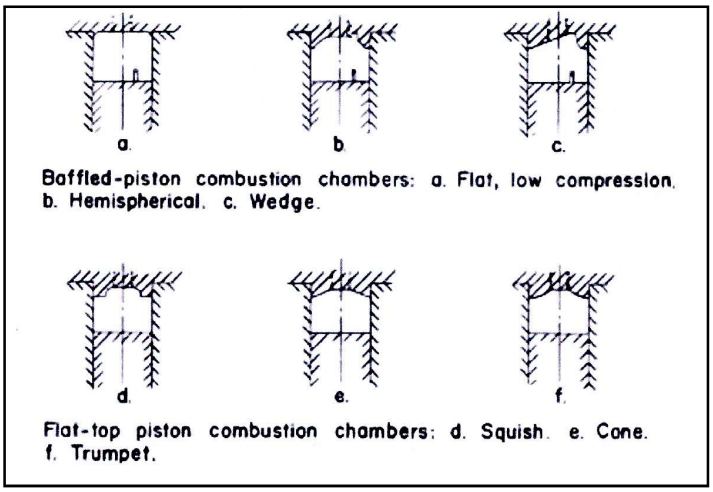

Figure 4.

If the squish band is too close to the piston, a hydraulic lock can occur. That is, part of the fuel charge cannot get squished out of the way in time and is trapped. Extreme compression ratios result in the squish areas, and the result is erratic running and broken conrods. One way to relieve this problem is to give the squish band a slight angle relative to the piston; three degrees seems to work.

Squish band heads do have an effect on the allowable nitro content of racing fuels. Nitro contents as high as 70 and 80 % have been used without detonation.

Many other head shapes have been tried, such as the trumpet head in the "Rattler" engines, but compression ratio seems to make a bigger difference than head shape. Compression ratios as high as 18 to one have been used, but few glow plugs will stand up to such punishment. The compression ratio must be matched not only to your fuel, but to the weather as well. Test running and test flying is the only way to find the proper combinations.

Air Intake: So far, we have talked about cylinder-piston combinations and head shapes, but we must also have an efficient means of getting fuel and air into the engine.

The simplest method of air induction is the "side port" system where the intake port is uncovered by the piston skirt when the piston nears the top of its stroke. A pipe leads from the needle valve to the port, and when the port is opened by the piston skirt, the vacuum in the crankcase draws in the fresh charge. Many model engines have been built this way, but better results are obtained by rotary valves.

Some engines have been built using reed valves. These are simply a one-way valve formed by flat, thin, spring steel or beryllium copper reeds. When the piston goes up, negative pressure opens the reed allowing the fresh charge to come in, and when the piston starts down the reed closes. Disadvantages to this system are that the intake timing cannot be controlled, and the engine can also run in either direction.

The best, yet most complicated and most expensive system is the rotary valve. There are several types, but all of them use a rotary shaft or disk to open and close the air intake hole at the proper time. The simplest rotary valve is the hole through the crankshaft that valves the fuel and air into the crankcase through a port in the main bearing. One advantage to this system is the oil mist cooling of the crankshaft and bearings. The disadvantage is that the crankcase compression cannot be very high with the large hole in the crankshaft. Oversize bearings must also be used.

The rear rotary valve is a disk or drum that is rotated by the crankpin. A large segment of the disk is cut away to allow passage of fuel and air, and opens and closes the intake port as it is rotated. Different manufactures use different intake timing, but usually the valve opens after the crankshaft has rotated 35 to 45 degrees past bottom dead center and closes near 45 degrees after top dead center.

Much has been written on hop-up procedures where techniques are stressed on polishing all air passages, but this can sometimes give a reduction of performance. Oil from the fuel will stick to a highly polished surface while it can be swept away from a rougher surface. If it sticks and piles up in the bypass, the result will be a smaller passage for air flow. Any gain from polishing is usually from the removal of metal, giving a larger passage.

I hope this article has explained a few of the principles of two-cycle engines without antagonizing anyone. I have purposely neglected such things as superchargers or tuned systems. Most engine designs are many years old, but there should be room for more development of the basic systems. Titanium pistons, for example, do not work, but bushed titanium conrods are already being used. Such metals as beryllium and single crystal iron must be tried for pistons or sleeves. Much experimental work is left.

THE 2015 SABBATINI COLLECTO

By Charlie Hamill

Every year, in March, the Tether Car enthusiasts in the Western U.S. mark their calendars to attend the Sabbatini Tether Car Collecto in Fresno, California. This was the 23rd year of this event and, as usual, it was a great success. Most of the out-of-town visitors stay at the same hotel and the meet actually starts in the parking lot as everyone arrives and unloads their cars. This year, I sold a tether car two minutes after I opened the trunk of my car. Many of the visitors display cars, engines, and parts in their rooms and the crowd wanders through the hotel looking for that elusive bargain.

We had a large group at the tables near the swimming pool watching Stuart Hamill run his electric-powered belly tank tether car on the patio and Gary Barnes running his steam-powered boat in the pool.

Friday night is the traditional dinner at the hotel and Rod Sabbatini sets up tables to display some of the cars. After dinner there is a show and tell when people get up and talk about their cars.

Part of the tether car display in the Sabbatini garage.

The Sabbatini table at the swap meet.

After dinner, the highlight of the evening is a trip to the Sabbatini workshop, just a few blocks away. It is something you have to see to believe.

The Sabbatini Offy-powered Kurtis Kraft midget.

Some cars and other items on a swap table.

Besides a collection of hundreds of tether cars, engines and model airplanes, the family has full-size classic and race cars, including Corvettes, a Ferrari, sand rails, hot rods, and a polished aluminum Offy-powered midget,

Saturday morning, at 8:00 A.M., the swap meet opens at the VFW hall. This year, there were 50 tables filled with tether cars, parts, and just about everything you might need or want. It is a morning of wheeling and dealing for that item you just have to have.

We all want to thank Rod Sabbatini and his family for their hard work in making this meet the success that it is.

Hope to see you all next year!

Racing Results

February 2, Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
WMCR 10cc					
1	S. Hamill	Duran	Eagle	202.548	325.969
AMRCA 3A					
1	S. Hamill	Kuebler	Eagle	143.430	230.828
AMRCA 4					
1	B. Mivelez	MMM	McCoy	95.327	153.414
AMRCA 9A					
1	R. Hughes	MMM	Rossi	125.741	202.361
2	C. Hamill	MMM	Picco	N.T.	0.000
AMRCA E-1 Electric					
1	C. Hamill	Hamill		101.753	163.756

February 15, Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
WMCR 10 cc					
1	D. Lundegard	Duran	Eagle	198.134	318.866
AMRCA 3A					
1	S. Hamill	Ellis	Eagle	NT	0.000
AMRCA 5B					
1	S. Hamill	Duran	Eagle	181.481	292.066
AMRCA 6B					
1	S. Hamill	Buddy-L	Picco	90.755	146.056
AMRCA 9A					
1	R. Hughes	MMM	Rossi	86.029	138.451
AMRCA Electric E-1					
1	K. Wells			134.334	216.190

March 1, 2015 Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
AMRCA 5B					
1	S. Hamill	Duran	Eagle	177.478	285.624
AMRCA 6C					
1	M. Hibbert	M/H	OPS	113.504	182.667
AMRCA 9B					
1	M. Ziegert	MMM	Nelson	NT	0.000
AMRCA 10B					
1	G. Howey	K&G	Rossi	138.579	223.021
2	G. Howey	Joe Ellis	Picco	117.449	189.016
AMRCA Electric E-1					
1	K. Wells			146.416	235.633

March 16, Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
WMCR 10cc					
1	S. Hamill	EGE/H	Eagle	198.415	319.318
WMCR 2.5cc					
1	R. Democh	Sepp	Picco	NT	0.000
AMRCA 3A					
1	R. Democh	1234	Picco	158.648	255.316
2	S. Hamill	Kuebler	Eagle	124.219	199.911
AMRCA 4					
1	M. Hibbert	Invader	McCoy	105.287	169.443
AMRCA 6B					
1	M. Ziegert	MMM	Nelson	NT	0.000
AMRCA 7C					
1	F. Fisher	Martin	McCoy	NT	0.000

March 16, Whittier Narrows, CA (Continued)

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
AMRCA 9A					
1	R. Hughes	MMM	Rossi	126.857	204.000
2	R. Graybill	K&G	OS	118.156	190.154
AMRCA 9B					
1	M. Ziegert	MMM	Nelson	134.625	216.658
AMRCA E1					
1	C. Hamill			107.992	173.796

April 12, Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
WMCR 10 cc					
1	D. Lundegard	Duran	Eagle	195.982	315.402
2	S. Hamill		Eagle	189.635	305.188
WMCR 1.5 cc					
1	R. Democh	Kapu	Kapu	NT	0.000
AMRCA 2A					
1	F. Fisher	Arrow	Dooling	107.267	172.63
AMRCA 3A					
1	F. Fisher	Frypan IV	OPS	82.751	133.175
AMRCA 6B					
1	J. Okel	MMM	Nelson	113.677	182.945
AMRCA 7C					
1	J. Okel	Kuebler	McCoy	NT	0.000
AMRCA 7D					
1	J. Okel	RWP	Dooling	NT	0.000
AMRCA 9A					
1	M. Ziegert	MMM	Nelson	120.020	193.153
2	R. Graybill	K&G	OS	119.075	191.633
AMRCA 9B					
1	M. Ziegert	MMM	Nelson	130.989	210.798
2	J. Okel	MMM	Rossi	123.916	199.423
3	J. Okel	MMM	Rossi	106.806	171.888
AMRCA 10B					
1	G. Howey	K&G	OPS	134.577	216.581
Electric E1					
1	K. Wells			146.916	236.438
2	R. Graybill			107.061	172.298

May 3, 2015 - Whittier Narrows, CA

Place	*Name*	*Car/Build*	*Engine*	*MPH*	*KmH*
WMCR 10 cc					
1	D. Lundegard	Duran	Eagle	193.206	310.935
2	S. Hamill	Ellis G.E.	Eagle	NT	0.000
3	S. Hamill	Duran	Eagle	NT	0.000
4	J. O'Donnell	Picco	Picco	NT	0.000
AMRCA 3A					
1	G. Howey	Kuebler	Eagle	NT	0.000
2	S. Hamill	Ellis	Picco	NT	0.000
AMRCA 9A					
1	R. Hughes	MMM	Rossi	119.648	192.555
2	C. Hamill	MMM	Picco	NT	0.000
3	R. Hughes	FWD	Rossi	NT	0.000
WMCR 10B					
1	G. Howey	K&G	OPS	NT	0.000
Electric E-1					
1	K. Wells			152.775	245.868
2	C. Hamill			NT	0.000

2015 Brisbane, Australia, International Results

By Scott Clydesdale

Speeds across most classes were high, with a world record in Class III (3.5cc, A Grade), two Australian records, and a British record falling during the event.

Many thanks to Lachlan and Ian who put in a fantastic effort in timing every car that ran during the day, and also to the wives and girlfriends who did a marvellous job catering for the event.

Good luck to all competing in the upcoming Sydney International!

The results from the Brisbane International tether car event are on the next page.

Times They Are A'Changin'

By Tom Pearson

Our society has drastically changed but this has been going on for many years. Prior to about 1930, entertaining was in the home, hence pianos, player pianos for those who could not play and C-Melody saxaphones which could play right off piano music without the need to transpose keys. Then along came radio and home entertainment changed to listening. Fortunately while listening you could also do other things like puzzles, build model airplanes, cars, boats etc. The modeling thing boomed when people finally had some spare money late in the 1930's and continued up until about 1950 with the introduction of TV which commanded your attention so that that was all you could do - just watch. At that time modeling took a nose dive - tether and rail race cars practically up and died with over 400 USA tracks closing due to lack of interest. Unfortunately some of the racers themselves contributed to people quitting as it took a difficult to obtain Custom Proto car to be minimally competitive. There was no general market anymore at the local hobby shops so being able to buy a car and have fun went away and so did those guys who used to run the Matthews, Pacemakers, McCoys and Dooling cars.

A big number of tracks were located in industrial towns where the locals had both the mechanical talents and need for something to do. Detroit had two tracks into the early 1960s for example. Indy had two tracks and nearby Anderson, Lafayette, and New Castle each had a track All are gone now except Anderson though, with some work, New Castle could run again if there was any interest.

When I was a youth I went to a model plane contest every weekend from May through October, mostly flying C/L speed. That all tailed off by the mid-1950s.

Times change and not necessarily for the better! Mechanically much of the population is inept today and it is not going to get any better. The recent model glow engine makers' ranks are thinning as this is happening all over the world. Fox and many other engine lines are all going by the way. Even O.S. is now having some of their engines built under contract in China.

The Last Word

By Walt Wilson

Racing is in my blood. I've been involved in many kinds of racing and automotive competition throughout my life and, once again, tether cars are a comfortable fit. Since becoming active again, I've stirred up interest in at least one of my R/C flying friends. When looking for a car to buy, a top of the line car was a big chunk to bite off for a beginner whose nearest track was more than 300 miles away. The cars on Ebay were, for the most part, static models, antiques, overpriced, junk, or a combination of the above. There were a few cars that had possibilities, but they were of unknown condition and the final "sniper" bidding beat him out. Eventually, with John Ellis's help, he found a good car for an acceptable price. He's now bought a second car and, as of this writing, plans to go to Anderson on June 6 for his first race.

His difficulty in finding a car has lead me to believe this newsletter and the sport could benefit from regular "For Sale" and "Wanted" columns, so I'm instituting them with this issue. If you want to sell, trade, give away, or want to get a car, engine, or parts, send me the info at **rallyo@att.net** and I'll post it. AMRCA has a wide variety of competitive classes, so who knows what's out there gathering dust that could be returned to active duty. Please limit your ads to no more than two or three items per person.

FOR SALE OR TRADE

If you have a car, engine, parts, or other tether car equipment you want to sell or trade, send me the info. Walt Wilson, e-mail at: rallyo@att.net

WANTED

If you need a car, engine, or other tether car related stuff, send me the info at the above e-mail address

Joe Morris's FTL WMCR Class V car and Lowell Shirey's Class 9A Hot Rod at Anderson, Indiana.

Race Schedule for 2015

Whittier Narrows Schedule	Anderson Schedule
Jun. 7 & 21.	Jun. 6 & 7.
Jul. 12 & 26.	Jul. 11 & 12.
Aug. 9 & 23.	Aug. 1.
Sep. 30 Nationals Practice.	Sep. 19 & 20.
Oct. 1-2-3 Nationals Racing.	Oct. 10 & 11.
Oct. 11 & 25.	
Nov. 8 & 22.	**Seaford, New York Schedule**
Dec. 6.	TBD, watch the AMRCA.com website

2015 Brisbane International

Final Results

Class	No.	Country	Driver	Car / Engine	Nominated	Round 1			Round 2			Difference	Nom.	Place
					(km/hr)	Time (sec)	MPH	km/hr	Time (sec)	MPH	km/hr	(km/hr)	Place	
10 cc A Grade	**Q12**	**AUS**	**Rob Buckley**	**Dmitriev/Picco**	-	**5.297**	**211.150**	**339.814**	**NT**	-	-	-	-	**1***
(Class V)	1511	SUI	Paul-Otto Ströbel	Picco/Picco 8th Ed.	-	NT	-	-	5.309	210.673	339.046	-	-	2
	N13	AUS	Carol James	James/Picco	-	5.397	207.238	333.518	5.417	206.473	332.287	-	-	3
	Q2	AUS	John Walker	Dmitriev/Picco	-	5.410	206.740	332.717	7.986	140.053	225.394	-	-	4
	N3	AUS	David James	James/Picco	-	5.416	206.511	332.348	5.461	204.809	329.609	-	-	5
	N33	AUS	Margaret James	James/Picco	-	5.470	204.472	329.067	5.451	205.185	330.214	-	-	6
	Q7A	AUS	Tony Peacock	Dmitriev/Picco	-	5.546	201.671	324.558	NT	-	-	-	-	7
	Q17	AUS	Scott Clydesdale	FTL/Picco	-	5.592	200.012	321.888	5.589	200.119	322.061	-	-	8
	Q21	AUS	Ron Clydesdale	Dmitriev/Picco	-	5.602	199.654	321.313	5.634	198.520	319.488	-	-	9
	1389	SUI	Michael Schmutz	Schmutz/Picco 8th Ed.	-	6.001	186.380	299.950	NT	-	-	-	-	10
	Q7P	AUS	Tony Peacock	James/Picco	-	5.614	199.228	320.627	5.579	200.478	322.638	-	-	-
	1591	EST	Tõnu Sepp	Picco/Picco/8th Ed.	-	NT	-	-	NT	-	-	-	-	-
	Q41	AUS	Alan Telfer	FTL/Picco	-	NT	-	-	NT	-	-	-	-	-
	Q11	AUS	David Chadwick	Chadwick/Picco	-	NT	-	-	NT	-	-	-	-	-
	Q9	AUS	Wayne Burns	FTL/Picco	-	NT	-	-	NT	-	-	-	-	-
	Q5	AUS	David Chadwick	Dmitriev/D	-	NT	-	-	NT	-	-	-	-	-
5 cc A Grade	1200	EST	Tõnu Sepp	Sepp/Novarossi	-	NT	-	-	5.844	191.387	308.008	-	-	1
(Class IV)	Q2	AUS	John Walker	AV/AV	-	10.223	109.406	176.073	7.230	154.698	248.962	-	-	2
	Q5A	AUS	David Chadwick	Chadwick/Pedro	-	10.388	107.669	173.276	NT	-	-	-	-	3
	Q6	AUS	Doug Harding	Harding/Vos S/Tigre	-	11.246	99.454	160.056	NT	-	-	-	-	4
	1500	EST	Tõnu Sepp	Sepp/Novarossi	-	12.436	89.938	144.741	NT	-	-	-	-	-
	Q9	AUS	Wayne Burns	Sepp/Novarossi	-	NT	-	-	-	-	-	-	-	-
	Q5	AUS	David Chadwick	AV/AV	-	NT	-	-	NT	-	-	-	-	-
3.5 cc A Grade	**1151**	**EST**	**Mart Sepp**	**Sepp/Novarossi**	-	**6.073**	**184.170**	**296.393**	-	-	-	-	-	**1****
(Class III)	NZ27	NZL	Chris Kennedy	Sepp/Novarossi	-	6.320	176.972	284.810	6.376	175.418	282.308	-	-	2
	1526	**UK**	**Oliver Monk**	**Sepp/Novarossi**	-	**8.715**	**128.338**	**206.540**	**6.553**	**170.680**	**274.683**	-	-	**3*****
	Q9	AUS	Wayne Burns	Stelling/Novarossi	-	NT	-	-	7.208	155.170	249.722	-	-	4
	Q6	AUS	Doug Harding	Harding/CMB	-	8.159	137.084	220.615	8.044	139.043	223.769	-	-	5
	1579	EST	Mart Sepp	Sepp/Novarossi	-	NT	-	-	10.010	111.735	179.820	-	-	-
FEMA 3B	951	EST	Mart Sepp	Sepp/Novarossi	-	6.693	167.109	268.937	NT		-	-	-	1
2.5 cc A Grade	1404	UK	Oliver Monk	Sepp D/Picco / GADO	-	7.771	143.928	231.630	7.395	151.246	243.407	-	-	1
(Class II)	Q23	AUS	Mark Stanbury	Pfefferle/Picco	-	NT	-	-	11.540	151.246	155.979	-	-	2
	Q21	AUS	Ron Clydesdale	Denneler/Picco	-	NT	-	-	13.842	80.802	130.039	-	-	3
1.5 cc A Grade	1419	UK	Debby Monk	RL-1/Afa	-	9.581	116.737	187.871	NT	-	-	-	-	1
(Class I)	5302	UK	Aaron Monk	Xtra/Kapu	-	NT	-	-	14.283	78.307	126.023	-	-	2
	1564	UK	Aaron Monk	EBM/Kapu	-	NT	-	-	NT	-	-	-	-	-
10 cc C Grade	**Q17**	**AUS**	**Scott Clydesdale**	**Chadwick/Picco**	**265**	**6.751**	**165.682**	**266.627**	-	-	-	**1.627**	-	**1******
	Q21	AUS	Ron Clydesdale	Chadwick/Picco	259	7.080	157.983	254.237	NT	-	-	4.763	10	2
	Q8	AUS	Brian Hunter	Cobcroft Fox/OPS	228	7.913	141.352	227.473	NT	-	-	0.527	3	3
	Q41	AUS	Alan Telfer	Cobcroft Fox/OPS	208	8.047	138.998	223.685	8.237	135.792	218.526	10.526	-	4
	Q41	AUS	Alan Telfer	Dooling Arrow/Dooling	160	10.839	103.193	166.066	10.991	101.767	163.770	3.770	7	-
	Q41	AUS	Alan Telfer	Dooling F/Hornet	142	12.212	91.592	147.396	NT	-	-	5.396	-	-
5 cc B Grade	Q7	AUS	Tony Peacock	Denneler/OPS	225.5	8.147	137.292	220.940	8.275	135.168	217.522	4.560	9	1
	Q99	AUS	Eddie Mitchell	Burns/LRP	195	9.359	119.513	192.328	9.265	120.725	194.279	0.721	4	2
	Q14	AUS	Lachlan Doyle	Sepetauc/OS25	174	10.214	109.508	176.228	10.372	107.840	173.544	0.456	-	3
3.5 cc M Class	Q17	AUS	Scott Clydesdale	Clydesdale/Go	199	8.920	125.394	201.793	9.080	123.184	198.237	0.763	5	1
	Q4	AUS	Geoff Offer	Offer/Nova Rossi	198	9.048	123.620	198.938	9.043	123.688	199.048	0.938	6	2
	Q2	AUS	John Walker	Hot Rod/Picco	188	9.376	119.296	191.979	NT	-	-	3.979	8	3
	Q251A	AUS	Graeme Walker	Walker/Go	187	9.425	118.676	190.981	9.647	115.945	186.586	0.414	-	4
	Q8	AUS	Brian Hunter	Hunter Hot Rod/OS	181	10.007	111.774	179.874	9.847	113.589	182.796	1.126	-	5
	NZ007	NZL	Chris Kennedy	Hot Rod/OPS	164	10.132	110.394	177.654	10.442	107.117	172.380	8.380	12	6
	Q23G	AUS	Mark Stanbury	Hot Rod/Go	174	NT	-	-	10.708	104.456	168.098	5.902	11	7
	Q14	AUS	Lachlan Doyle	Hot Rod/Irvine	161	11.401	98.107	157.880	11.192	99.939	160.829	0.171	1*****	8
	Q17X	AUS	Scott Clydesdale	Clydesdale/Go	193	9.477	118.024	189.933	NT	-	-	3.067	-	-
	Q4A	AUS	Geoff Offer	Offer/Go	190	10.263	108.985	175.387	10.019	111.639	179.658	10.342	-	-
	Q251	AUS	Graeme Walker	Hot Rod/OS	172	10.479	106.739	171.772	10.528	106.242	170.972	0.228	2	-
	Q10C	AUS	Mark Stanbury	Hot Rod/Nova Rex	165.5	12.229	91.464	147.191	12.844	87.085	140.143	18.309	-	-
	Q9	AUS	Wayne Burns	Burns/Nova Rossi	190	NT	-	-	-	-	-	-	-	-

Notes:

*New Australian Record for Rob Buckley in Class V (10 cc A Grade) at 339.814 km/hr

**New World Record for Mart Sepp in Class III (3.5 cc A Grade) at 296.393 km/hr

***New British Record for Oliver Monk in Class III (3.5 cc A Grade) at 274.683 km/hr

****New Australian Record for Scott Clydesdale in 10 cc C Grade at 266.627 km/hr

*****Nominated Speed event was won by Lachlan Doyle with a difference of 0.171 km/hr.

R.B. MACHINE

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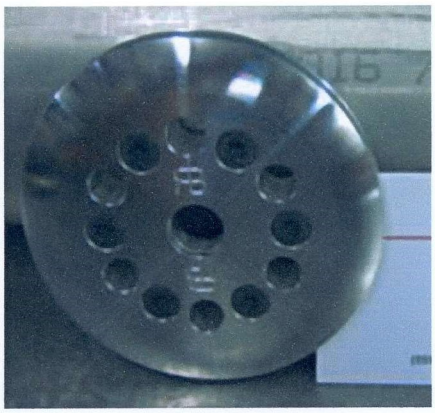

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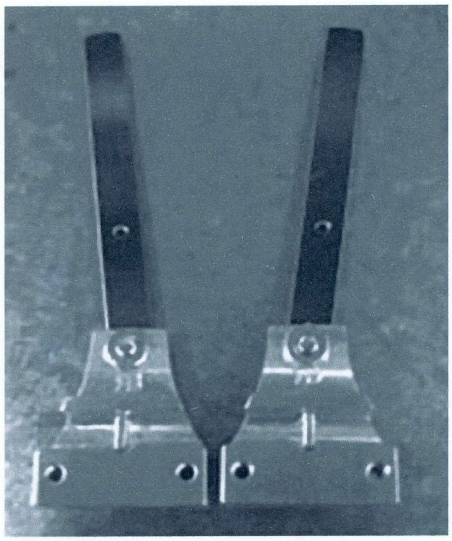

Fuel Shut Off Valves $50 - Reversible

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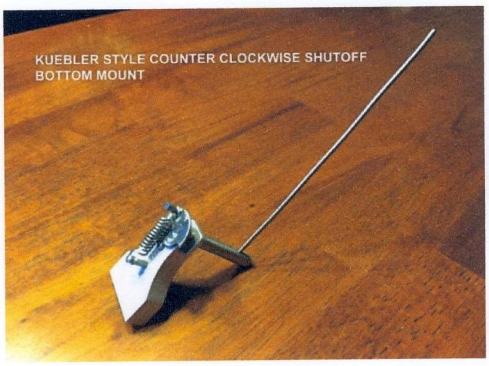
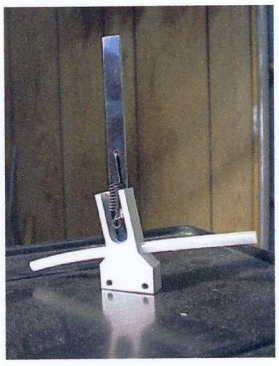


Horizontal Shutoff Valves

AMRCA LOGO FRONT LISCENSE PLATE

AMRCA Logo Plates



Vertical Shutoff Valves

John Sanderson's

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Reproduction - Restoration Parts

A-7000 - ARROW CHASSIS PAN

This is a new, high quality pan for building a new Arrow, or replacing a broken or butchered pan. Cast out of virgin, 356, hardened, aluminum, using a match plate pattern, resulting in a correctly-sized part. It is a stock Dooling form, uses original tubular-style front axle, with the two wire bridle "ears". An Arrow logo is debossed below the fuel tank to identify this as my quality reproduction. All pans are numbered & copyrighted. The casting is glass beaded, then machined. There has never been as good a reproduction as this, all you have to do is drill and tap holes, to mount the engine of your choice.

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The Pour

Arrow stock chassis pan
NOW, Only $125

A-7100 - Arrow Fiberglass or Clear Polycarbonate Body

New professional tooling made from a perfected (no hollows) old stock, uncut, original body, produced in a matched mold, as original. Quality fiberglass cloth with epoxy resin, Smooth on the inside as original- no crude, rough, & raw hand laid glass. This is the best body ever in produced, better quality than the original Dooling!

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A-7501

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A-7801

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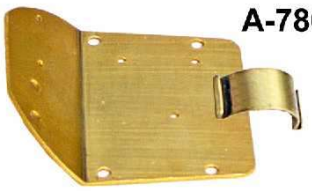

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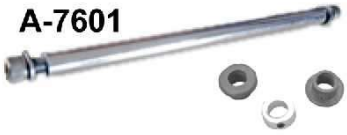

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Active Speed Records AMRCA Division November 23, 2014

Class	Name	Speed	Car/Builder	Engine	Track	Date
Class I MANUFACTURED (Arrow)						
1	Tonnie Pegue	142.86	Arrow	Yellow Jacket	W.N.	6/18/1972
Class II A: MANUFACTURED MODIFIED (Arrow Open)						
2A	Ken Phillips	151.26	Arrow	RAM-OPS	W.N.	8/22/1981
Class II B: MANUFACTURED MODIFIED (Arrow Side Exhaust)						
2B	Ted Dodd	149.50	Arrow	Yellow Jacket	W.N.	8/26/1972
Class III A: CUSTOM (Open)						
3A	Stuart Hamill	176.582	Keubler / Ellis	Eagle	N.Y.	9/4/2014
Class III B: CUSTOM (Side Exhaust)						
3B	Roy Torrey	164.23	1234	Yellow Jacket	W.N.	8/25/1972
Class III C: CUSTOM (Fully Suspended)						
3C	Diane Ellis	173.245	Eagle / Ellis	Eagle	N.Y	8/18/2011
Class IV MANUFACTURED PROTO - B GRADE (Baffled Piston)						
4	Bob Jaquez	136.216	Railton	Rossi	W.N.	8/7/2002
Class V A: EXPERIMENTAL (Open)						
5A	Roy Torrey	180.72	Frypan Mk4	OPS	And.	8/23/1980
Class V B: EXPERIMENTAL (Unlimited)						
5B	Jack Boudakian	188.705	No. Cal. Special	Picco	W.N.	2/17/1996
Class V C: EXPERIMENTAL (Unpiped)						
5C	Dave Lundegard	191.322	FTL / Torrey	Eagle	W.N.	2/5/2012
Class VI MITES MODIFIED (A=.12, B=.15, C=.21, D= .29)						
6A	Charles Hamill	93.377	RWP	Picco 12	N.Y.	9/4/2008
6B	Jonah Regh	124.757	MMM Roadster	Nelson 15	And.	8/21/2010
6C	Mark Hibbert	120.098	MH Special	OPS 21	W.N.	5/18/2014
6D	Steve Morse	121.824	Frypan Mk8/Ellis	Serio 28	N.Y.	9/4/2008
Class VII MITES STOCK (A=.09, B=.15, C=.19, D= .29)						
7A	-					
7B	Rich Democh	102.678	Kuebler/Ellis	Torpedo 15	W.N.	9/8/2007
7C	-					
7D	John Carlson	129.81	D+C	Dooling 29	N.C.	9/30/1962
ClassVIII SPURGEAR						
8	Ken Reiser	146.10	Borden	Dooling	N.C.	9/11/1966
Class IX MODERN NOSTALGIA (A=.46, B=.60)						
9A	Tom Pearson	137.776	MMM Indy/McDonald	Rossi 46	N.Y.	8/18/2011
9B	J. P. McDonald	156.169	FCDC	Nova Rossi 60	And.	9/20/2014
Class X Front Intake - Custom or Proto Open (A=.46, B=.60)						
10A	Lee Foldenauer	147.275	K&G Arrow	OS 46 FX	And.	9/20/2014
10B	Bob Oge	158.144	Wanda	Nova Rossi 60	And.	8/24/2013

Tracks: And. = Anderson, IN N.C. = New Castle, IN W.N. = Whittier Narrows, CA N.Y. = Seaford, NY

AMRCA
2015 NATIONALS

HOSTED BY MEMBERS OF THE V.M.R.C.A

PRE-REGISTRATION

$25.00 PER CAR (DEADLINE IS AUGUST 25TH)

PLEASE SEND ALL PRE-REGISTRATION ENTRIES TO:

HAMILLCAR@VERIZON.NET (BEFORE THE DEADLINE)

ENTRY FEES WILL BE COLLECTED AT THE TRACK

ALL WORLD CLASS AND AMRCA CLASSES ARE ELIGIBLE

3 CARS MUST BE ENTERED TO MAKE A CLASS ELIGIBLE FOR AWARDS

RACE SCHEDULE

REGISTRATION AND TECH INSPECTION: SEPT. 30

PRACTICE TIME: SEPT. 30: 10 A.M. - 4 P.M.

OFFICIAL HEATS: OCT .1-2-3: 10 A.M. - 4 P.M.

WELCOME BANQUET DINNER AT STUART HAMILL'S HOUSE

FRIDAY OCT. 2

AWARDS -TRACKSIDE ON OCT. 3

ACCOMODATIONS:

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PHONE: 626-350-9588

$109.00 PER WEEKDAY NITE (RAMADA ONLY)--MENTION AMRCA WHEN BOOKING

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Anderson, Indiana, May 17 Race

By J. Phil Mc Donald

The MMRCA held it's opening race of the 2015 season the weekend of May 16 and 17. In attendance on Saturday were Dave Ferguson, Lee Foldenauer, Tom Pearson, Lowell Shirey, Joe Morris and myself. When arriving at the track Saturday morning, radar showed an approaching storm front, so a decision was made to pass on Saturday's running and hope for better weather on Sunday. We retired to the official MMRCA headquarters (Scampy's Bar and Grill) to make plans for the next day. We were shortly greeted with the predicted rain.

In attendance on Sunday were Mike Baldwin, Tom Pearson, Bob Oge, Joe Morris, Lowell Shirey and myself. The Anderson track made it through the winter better than it has in past seasons. There were a few places needing repair in the transition between the horsing strip and the racing surface but the track was fully runable.

We ran from noon til 5:00 P.M. Some had better results than others. It's always such a struggle that first race of the season after six months of inactivity.

Mike Baldwin had built a new electric car powered by a ducted fan and hoped for a personal best of breaking 100 mph. Mike's car ran the first time and rewarded him with a new personal best of just over 114 mph. You talk about elated!!

Joe Morris took the honors in WCMR Class V running over 165 mph. You should have seen the look on Joe's face.

Thus ended the opening race of the 2015 season on the Anderson track. Next race is June 6 and 7. Hope to see you there.

May 17, Anderson, Indiana

Place	Name	Car/Build	Engine	MPH	KmH
9A					
-	Jphil McDonald	Watson		NT	0.000
-	Lowell Shirey	K&G		NT	0.000
10A					
1	Bob Oge	K&G Arrow		126.957	204.320
WMCR V					
1	Joe Morris	FTL		165.441	266.255
2	Bob Oge	RH10		150.477	242.171
Electric					
1	Mike Baldwin	#5		114.620	184.466

For more information about Tether Car Racing, schedule updates, or how to contact officers, visit our web site at: AMRCA.com

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Walt Wilson, Newsletter Editor
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St. Charles, MO 63301-0131