Section M Modifications

Over the years, Vanguard V-twins have become the favorite engine for “modernizing” and boosting King Midget Power. Many troublesome installations have been done, but a lot of progress has been made. Let’s start with early ones.

MY KING MIDGET STORY

M-1 Installing a Vanguard *by Max Leppert*

In 1969 I was 15 years old and reading *Popular Mechanics*. I came across a postage stamp-sized ad and dreamed of driving my very own King Midget. Well, my bubble was popped when Dad said, "When you're 16, a real car you shall have–no toy cars for you." Father knows best.

So the dream got shelved for 25 years.

One day in 1994 I was driving past a Long John Silver's. Lo and behold a real honest to God King Midget I did see; complete with hand-brushed yellow paint and rags stuffed in the holes in the floor. It was on the back of a truck, and I asked the fellow if it was for sale. No luck. He did put me in touch with some very informative folks, but they couldn't find me a King Midget I could afford.

As fate would have it, a friend told me about this odd little car he knew of that had been sitting in a shed for 20 years. Well you guessed it—it was a King Midget—a 1959 (or what was left of it), and it was only eight miles from my home.

Well, I parted with 700 bucks and drug it home. When I started tearing it apart, 1 was startled at what I found under the paint; aluminum siding, hundreds of pop rivets, and gallons of body putty.

After seven months of constant reconstruction, it finally had an entirely new hand-formed body, folding windshield, fender skirts, lots of chrome, wooden doors and dash board plus orange paint.

Still I wasn't satisfied, so six months later I installed a 16 hp Vanguard engine, Comet clutch/transmission, dual exhausts and a steering stabilizer. I have won about 15 trophies and plaques so far and have gone to many Midget meets.

At last the 15 year-old in me is happy!

Max is a subscriber from Pennsylvania, and I'm sorry I don't have a picture of his car. I've seen it, and it looks terrific.

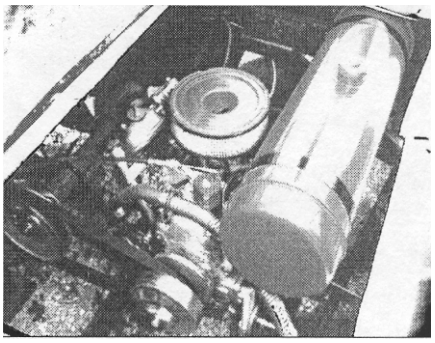
Some of you have inquired about installing more powerful engines in King Midgets, so I asked Max for details on his installation. Here is his reply in his own words. RJV

I made an adapter plate out of 1/4 inch plate, drilled to the engine bolt pattern, and the original Wisconsin cradle bolt pattern. Nothing was cut, welded or drilled on the original cradle. I dropped in a 16 hp Vanguard *(an OHV V2 made by Briggs & Stratton. Ed.)*, Comet Clutch, 20-tooth sprocket, eliminated the governor, and used a Chevy gas pedal and cable. I installed a VW steering stabilizer and VW dual exhaust, which increased power and sounds unbelievable. *(believe it—I've heard it! Ed.)*

I wrote to the fellow you have mentioned *(Robin Cole, from Washington, who has unacceptable torque steer with a 14 horse installation. Ed.)* I suggested that he must have either a bent, cracked or completely out-of-square suspension cradle to have this severe problem. Originally, with the Wisconsin engine and 14 tooth sprocket, I had some torque steer, but very mild. With the Vanguard conversion and 20 tooth sprocket plus stabilizer, I have no torque steer at all and no shimmy. I've had it up to 65 MPH, and can cruise at 50 with no problems.

1 recently built a '59 Midget for Red Troyer of Sugar Creek, Ohio. I put in the same basic setup as mine, except his has 18 hp and a 22 tooth sprocket. Again, no torque steer problems of any kind. This car runs like a raped ape! I have driven it up to 75 mph with no problems. Scary, isn't it?

Yep, that's scary Max! I've talked with several guys who have done conversions, and the consensus seems to be that the virtue of more power lies primarily in hill climbing potential. My'64, which was converted to the 12 hp Kohler, will run about 45 on the level, but is a hazard to traffic on hills. Most of us agree that speeds in excess of about 50 mph are pretty risky in a car with such a lightweight front end. I talked to one guy who put a 750 Honda in his King Midget, and drove it 100 mph. Of course, he also replaced the running gear with underpinnings -from a BMW Isetta 600, but still, that's real scary!



This is a photo I took at the Wisconsin Jamboree of a Vanguard Conversion (not Max's, but this may have been Red Troyer's car—I forget). Note how nicely the Vanguard fits into the space where the Wisconsin used to live, even leaving room for the gas tank, despite being about twice as powerful. And it weighs about the same, too.

Max apologized for his writing, but I think he did just great. Send me your story, and share it with the rest of us. RJV □

Note: Both of those early conversions Max did are still running fine, and he's done more. Bob V.

M. Modifications

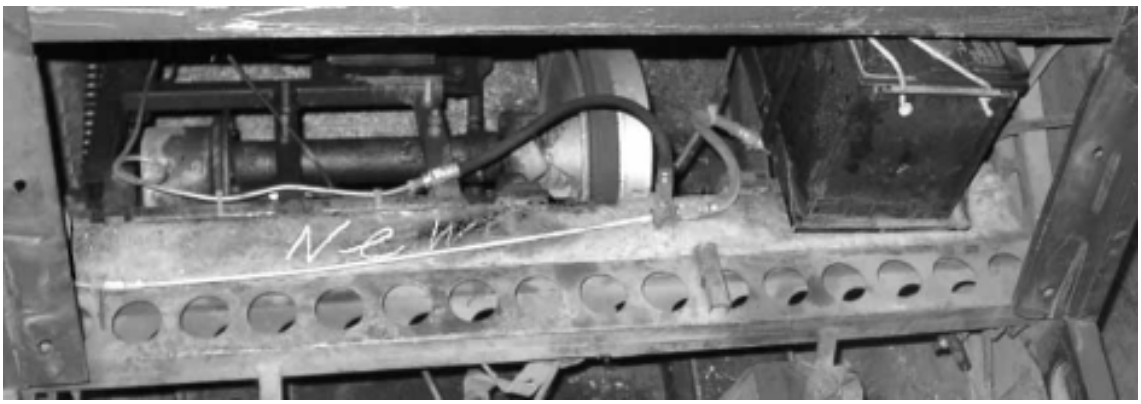
M-2 Rotton Robin Rites Bak

If you have communicated with Robin Cole (aka Christopher Robin) on the KM web site, you'll know that spelling was not his favorite class. He's a wizard with tools though and he's done fascinating things with his King Midget. Not to mention his "sweet, wonderful, adorable, marvelous, cute, brave, courageous, and bold Isetta" and his "horrible, miserable, guaranteed-to-break-when-you-need-it-most, that perverted excuse for anything, the Daihatsu trimobile" pickup, all of which are painted metallic reddish-purple. Robin drives his cars and works on them.

A few years back, he put a 16 horse Kohler under the hood of his Midget. It had serious torque-steer and we corresponded about causes and fixes. I didn't know much about KM mechanicals then and I still don't. There are dozens of shade-tree mechanics across the land, all trying to solve the same King Midget problems by themselves. This newsletter tries to build bridges across that gap.

Last winter Scot Wilson was working on his transmission article and I contacted Robin, "I'm interested to know more about the trailing arm suspension adaptation you made. Why is that superior to the standard KM setup? My guess: It is very common for the main cross member to fail—it fatigues and cracks where the sub-assembly attaches. I have three examples myself. If that connection fails or the rubber in the other links is bad, I can see why that would cause torque-steer."

Robin replied, "My cross member was good and I put in new bushings." Well, so much for *my* theory.



The photo above- shows the new 4X4 square tubing cross-member, welded to the back of the original. A pair of pillow blocks are welded to each end of this heavy beam. From those pivots, triangular trailing arms head for the rear. These trailing links utilize upgraded shocks and springs. The ends of the trailing links are held in position by a pair of sway bars visible in the photo below.

This is a quite different setup than the original design but looks very functional. Robin says it is.

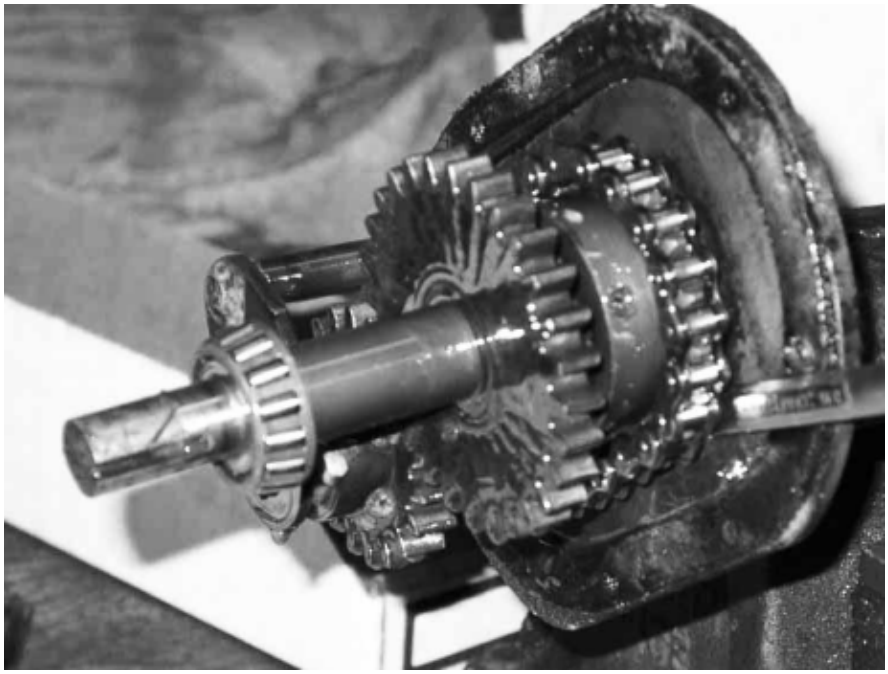
Robin has a lot of experience with variable drives and advised Fred Perry on his successful installation. Following are some of his comments on the Comets:

The Comet [94] setup has a great deal more useful power transfer than the original drive. It starts out with a 3 to 1 advantage, and ends up at a 1.1 to 1 overdrive. The clutch was rated at 40 hp but I have put 60 hp against it and it worked out great. With the old setup my Isetta could blow it away. With the new setup and a 16 hp engine the Isetta can't touch it in any way shape or form. Might I add that my Isetta has big valves and a Mikune carb. For an Isetta, it runs. With a 10 hp Wisconsin engine the old drive could make 34 mph. It would break the top of the piston off if it hit 35 mph. In Post Falls they still talk of the two drunks who pushed a small car all the way back home, a distance of 12 miles. (I was sober after 5 miles, sometime I will tell you about that). With the new drive and an 8 hp Kohler it could make 40. With the new drive and the 16 hp Kohler, it hits 59. I am going to change the chain to no.520, an oiled O-ring type. Dirt bikes use it because it doesn't stretch. The no. 40 with this new engine is stretching like salt water taffy. I am also going to gear it up, as it is it digs trenches about 3 inches deep and 5 inches wide when it is on dirt or gravel. With the new drive and the 8 hp engine it went through the quarter mile in 33.20 seconds (the Isetta does it in 28.22 seconds) I haven't had a chance to race the new engine.

Robin had problems with his transmission jumping out of gear, and sent a bunch of photos and description of how he fixed it. His efforts revolved around a Taiwanese mill drill he affectionately calls Muck Schuk Toy Rong Fu (left) and a lathe named Muck Schuk Toy Wea Yi. The exact processes he went through involved machining new gears, shafts, and a whole bunch of other

M. Modifications

stuff that I don't pretend to understand. "If Da Vinci was alive, he would have a milling machine," says Robin. Anyway, here's a picture of his completed transmission innards.



After Scot Wilson's transmission article came out, Robin sent these comments.

That trans on [the last] page 14, I use one like it just about every day. If you get a chance take a look at a John Deere 200 series lawn and tractor. Mine is a 210 and my buddy's is a 214, they both have it. JD calls it a Variastat, They put it in front of a Peerless 4 speed. Works great. That's how they get 28 forward speeds and 7 reverse. My 210 is a 10 hp and the 214 is 14 hp.

On a related subject, a long time ago a friend had a car a DAF; it had the dual CVT set up. Didn't work all that well but you must also realize that this was over 35 years ago. The DAF had a 600 cc engine with a standard clutch. The clutch drove a shaft back to the torque converters (CVT's) through a 90-degree set of bevel gears. If you look in old foreign car books you will find this old girl. It was interesting but not real good. The Comet unit is far superior to those old things. I don't think they had a torque sensing unit like Comet or any of the snowmobile units in use today."

I was not aware of the John Deere transmission, but have seen it on other garden tractors. Scot Wilson sent me diagrams of the Dutch DAF's transmission—one of the early installations using double CVT's for a differential. Subaru has used a CVT, and the biggest user is Honda, an option on their Civics. I read recently that BMW is going to offer a CVT that will be available as six-speed "manual" shift. That's the sort of thing I envisioned for Midget Motors back in 1966, though I'm sure the new units are a tad more sophisticated.

Like the rest of us, Robin finds mechanical work a bit bloody.

About 7 weeks ago I offered my left index finger as a sacrifice to the god of stupidity. I had my King on the rack [and] was taking out the Trans. Managed to pull the King off the

rack and got my finger between it and the rack. Got real lucky, it should be perfect in about another four months.

As far as I know, Robin was the only northern subscriber to attend the Microcar and Minicar meet in Eugene, Oregon. Several members of the Arcane Auto Club went up and said it was great. Robin says:

Didn't get the chance to finish up the King, so I it at home. Took the Isetta to the Eugene. There were six, not one King Midget! Getting there was interesting too. The Jimmy lost its odometer after about 100 miles and trip odometer after 320 miles. Stopped to get gas and noticed liquid on the Isetta. Turned out to be tranny fluid, oh joy. When I was about 25 miles from Eugene the "service engine soon" light came on and it started to run like trash.

The meet was great and little old Buglet [Isetta] worked very well. Buglet was the high point of my trip and the GMC was the low point; had to limp the Jimmy back to Newman Lake; made it! Really wish I had more time and been able to take the King.

Rotton Robin, aka The Butcher of Moab □

M. Modifications

M-3 Power to the Midgets *by Bob Vahsholtz*

We published a piece by Max Leppert on engine conversions six years ago in King Midgets West *Number Six responding to requests for such information. Requests have continued and we've sought experienced expertise to publish in these pages, and we've found some.*

At the Springfield Jamboree, Paul Gerhardt and Richard Katterhenry made a great presentation on engine/transmission conversions and I took notes. I summarized those notes and sent them to Paul and Richard for comments and corrections. Dave Stults asked for a copy to publish in King Midget News *and I sent the completed draft to him. I also sent it to several of you who have experience in such matters for comments and additions. And I dug through my files for information. Put it all together and we wound up with a lot of stuff. Too much for one article. The following is the first of three parts on this topic.*

Oxymoron: **King Midget power.**

Midget Motors' ads proclaimed the world's lowest cost sports car and extolled its performance. But let's face it. Our dinky cars are *slow*, until you come to a hill. Climbing that hill, *real* slow is the word that comes to mind. Going downhill, oh joy! A whiff of wind in your face.

All that was not so bad decades ago but in today's frenetic traffic, your KM risks becoming an SUV's speed bump.

Power and transmission options available today are beyond the dreams of Claud Dry and Dale Orcutt. It is possible, even fairly easy, to update your power train to cope with today's realities. But should you do it?

Glenn Anderson says, "For me, the beauty of the car IS that it is under-powered but so successful. Why does everything have to be so darn fast? Maybe its the Amish in me, but I take great pleasure in S L O W ! [S]omeone has to stand up for factory power." It's worth noting however, that Glenn's son Tom is thinking of dropping a bigger engine into his `67. I guess when you're buzzing around the campus, priorities are different.

Our opinion here at KMM is similar to Glenn's, and well expressed by our Eastern

Editor: "I sort of lean toward the original preservation of Kings, as well as treating them for what they are; a small antique car unsuitable for daily driving on today's highways.

"Quite a few cars are found missing drive trains. The logical and least costly method of getting them back on the road is a new power plant. Engines in the 16 – 20 hp range seem to produce the desired results of having a car that will maintain current highway speeds and climb hills. Remember the King Midget's brakes, suspension, and frame are primitive by any standard. Even with upgrades, the KM in a minor collision—say at 20 mph with a small car like a Geo Metro—would more than likely be destroyed and the occupants badly injured. So have fun with your KM and be careful! Here at KMM we practice the freedom to allow all to express their thoughts and views. These are mine, let's hear yours! Hal"

And by golly, we do hear yours! Here's Robin Cole, AKA Rotten Robin, the Butcher of Moab: "[Originally my Wisconsin powered King Midget] would take off in low, at seven mph it would start to shift. The ratchet noise was unbelievably loud when it hit eight mph, when it was through shifting, and would struggle up to 19 mph. From there it roared up to 34 mph. If I let it go any faster it would break the top of its piston off; didn't hurt anything else, just the piston.

"My KM has gone through many changes. With the new [Comet] drive and the 16 h.p. Kohler it hits 59. Think what would have happened if KM could have gone on, can you imagine a KM with 12 cubic inch, twin cylinder, double overhead cam, five valve per cylinder, fuel injected, liquid cooled, 20 hp with a constant velocity tranny (like my precious Comet 94). And an aero-dynamically shaped body, six inches of travel in its suspension, and a fine interior like some of the best luxury cars?"

Robin and many other subscribers struggled through their conversions. Most, like Robin, wound up pleased with the results, but also like Robin, went through a painful learning curve along the way. We're going to try to make things a little easier for those just now wondering what to do about powering up.

Let's start off by agreeing that there is no single right answer to this power challenge. The right power for your King Midget is a tradeoff between authenticity, drivability, safety, cost and personal preference. Fortunately, the Club has always smiled on freedom for each of us to do his or her own thing and nobody sticks their nose up in the air because you did something "wrong." The idea is to have fun. That was the Midget Motors idea and we hope it will always continue to be.

Let's look at some options you might consider for your car:

Keep it Stock Consider this: only about 5,000 King Midgets were ever built. Perhaps a thousand survive and while more keep turning up, others are moldering away in fields or as parts cars. Of those still on the road, it appears that the vast majority have been modified in styling, mechanicals or both. Authentically restored or original cars are rare breeds. As Glenn notes, the beauty of this car is that it thumbed its homely little nose at Detroit and did so successfully. So what's the sense in trying to turn this sow's ear into a silk purse? It's going to be a lumpy silk purse at best.

As Hal notes though, restoration options can be limited. Where do you get a Wisconsin or Kohler engine with a long crank? Or Midget Motors clutches? One source: a fair

number of such units are available from those yanking the slow bits out of their cars to gain power. And parts for overhauling those engines and transmissions can still be found. Just by careful tuning and maintenance, your original car can provide "like-new" performance for the years ahead.

Consider using a smaller drive sprocket, which was always a Midget Motors option. By using a drive sprocket with 20 percent fewer teeth, I lost about five mph in top speed but gained acceleration oomph on the hills where my car was the greatest peril to traffic.

Most of us use our King Midgets in parades, hauling the grandkids and participating in events with others of our ilk. For such purposes you don't need much power. And in the years ahead, your investment will likely become increasingly rare and valuable. Hey, did I mention this is the lowest cost restoration option?

Give it a Tweak For those traditionalists who fall short of being purist, there are other options. Install a new engine of comparable appearance and output to the original. My `64 has a Kohler 12 upgrade, as does Nelson and Nancy Gnepper's. Fred Perry and Robin Cole (in his first upgrade) installed upgraded one-lungers and found some benefits. Because of the shorter crank, they used a Comet transmission, which is more efficient. Also today's engines are lighter. This combination improves performance while the Midget Motors tradition is at least saluted.

Also worth considering is hopping your existing engine. Lee Seats says Lakota Racing specializes in cranking more power out of small engines. They're in Carrollton, Ohio 44615. You can email them at lakota@raex.com or call 330-627-7255. Lee says be patient—they're busy.

Here's another little trick you might consider. Let's say you're going on a hilly drive or worried about making it up the High Street Hill in Athens. Put an idler on the belt to your starter/generator and work out a method to loosen it when needed. The generator is said to sop up 1 ¼ horsepower, about 10 percent of your Kohler's output. Poor man's overdrive!

Vanguard Power Many, perhaps most, KM owners get mighty tired of putting around at speeds that were way slow fifty years ago. Scot Wilson plans to drive his through the hills and Lee Seats has driven his 1,800 miles since last spring's restoration. With such use, more power makes a lot of sense. And these little cars are very light in weight, so a modest boost in power and efficiency translates into a wallop on the road. Put a little power in your King and it starts to deliver the driving fun the boys from Athens promised years ago.

The most popular conversion is the 16 hp Briggs & Stratton Vanguard overhead valve V twin with Comet 44 transmission. Robin Cole says this engine is a Japanese Daihatsu design, and it's certainly a spunky little guy. Compared to a current B&S 11 hp one-lunger, the Vanguard gets 45% more hp from 20% more displacement and weighs seven percent less. Paul Gerhardt says you save about a hundred pounds compared to the original power train; something like 15% knocked off the vehicle weight.

Let's turn to the matter of cost. Paul Gerhardt and Richard Katterhenry have done numerous installations and agree that those wanting to hire professional help for a complete conversion should think in terms of around $2,500, materials and labor. Others

such as Max Leppert and Alan Conley have done conversions and while I don't know just what they charge, they do professional quality work. A lower cost alternative is to do the work yourself. Details on that option next issue.

Comparable Engines While the Vanguard is very popular, there are many good alternatives. Kohler has nice V twins, as does Honda. Lee Seats has an Onan opposed twin that makes a neat installation, and that one has the advantage of apparently being the engine Midget Motors was planning to use in the upgraded car Dry and Orcutt were prototyping in the early sixties. Alan Conley has done a number of conversions using Tecumseh engines that seem to work out well. The engine Robin Cole finally settled on is a 16 horse Kohler which delivers 59 mph. He says his hopped up Isetta "can't touch it in any way shape or form. [I]t digs trenches about three inches deep and five inches wide when it is on the dirt or gravel." I have a '67 KM with an 18 hp Cushman OMC opposed twin, three-speed trans-mission and differential.

Go For The Big Time Then there are those who want to pour the power to their King Midgets. It has been my observation that people of this ilk don't really want to get wild and crazy in a tiny car. They build their King Midgets, as most hotrodders do, mainly to show what can be done with a basic little car. Such folks have lots of options. A popular choice is 18 to 23 hp Vanguards that are still quite compact and deliver tons of power.

Honda is the world's largest maker of internal combustion engines and viewed by many as the best. A Honda V-twin is comparable in weight to the Vanguard and at a given horsepower, develops about 12% more torque, according to Scot Wilson. Paul Gerhardt points out that parts are not so readily available and it's probably safe to say they'll be more expensive. The engines are. Still everyone agrees Honda builds good engines and they offer a wide range of choices up to 24 hp.

It is important to note that these larger engines should be fitted with the Comet 94 transmission rather than the 44. The 44 is only rated to about 16 hp. A Honda 24 with Comet 94 is said to be capable of an honest 75 mph—faster than the gods of speed ever intended King Midgets to go.

Carl Callaway is happy with his hot Kohler 22, which he fitted with cast iron brakes, special wide wheels and tires and a host of other refinements.

There have been Crosley, VW and a variety of motorcycle engines installed in KMs. How long can it be before someone slips in a 50 pound-50 hp Rotax?

A Very Important Caveat In considering upping the power of your King Midget, there's a lot more involved than plunking in a powerful engine. These cars were not designed to handle significantly more power than Midget Motors installed. More power can be a safety factor on today's roads, but it can also be hazardous to life and limb. Next issue, we'll talk about details involved in a good conversion. □

M. Modifications

M-4 Power to the Midgets *Part Two* *by Bob V.*

A hundred years ago, a couple of guys named Wilbur and Orville Wright dreamed of flying and set out to build an airplane, and they did it. Their craft weighed 750 pounds, was powered by an engine weighing 179 pounds that produced 12 horsepower, and the darned thing flew.

Fifty years ago, a couple of guys named Claud Dry and Dale Orcutt who dreamed of flying and had each built an airplane, were building little cars. Their King Midgets weighed 750 pounds and were powered by engines with about the same power to weight ratio as the one used by the Wright brothers. King Midgets, as we all know, do not fly. Where's the progress?

Well, there's a big difference. The Wright brothers looked world-wide for a powerful lightweight engine and finally had to build their own. It was a masterpiece of advanced engine technology. Dry and Orcutt sought to build the world's lowest priced car and had to work with power available to suit a budget. There were lighter and more powerful engines to be had, but most were purpose-built for motorcycles or other specialty uses. They would have been more expensive, harder to adapt and a pain to repair. Wisconsin and Kohler engines were good, inexpensive products that were in mass production with parts readily available everywhere.

That's a huge difference in approach. The core of the Midget Motors concept was efficient production on a very small scale. Try your hand at that sometime!

About 25 years ago, I designed a "wide-van," a small motor home having a fiberglass body on a Detroit chassis. I was amazed to find that the tiny factory we were working with could produce and sell those hand-lay-up bodies and compete with the giants in Detroit and their mass production. But such opportunities are scarce, requiring unique circumstances. Midget Motors found and exploited such an opportunity, bless them. It would be too much to expect them to also innovate in power plants.

In the past 50 years, the engine technology breakthroughs promised in the pages of the *Popular* magazines have not blossomed, but progress on internal combustion engines has been steady. Today, you can buy snowmobile and ultralight engines of great efficiency. But if Dry and Orcutt were still building King Midgets, they'd probably choose the Vanguard, a popular and cost-effective engine with service available everywhere.

Assuming you choose to go Vanguard, let's explore some of the details of utilizing this engine in your King Midget.

The Vanguard is small and light, fitting nicely into the existing KM engine cradle. There's an oil filter that gets in the way a bit, but it can be removed for a better fit, you can mount the engine high enough for it to clear and still be replaceable, or buy one of B&S' alternate oil filter adapters.

The electrical system needs changing to adapt to the two-cylinder engine. Paul Gerhardt has found the simplest method is to install a new relay. He uses Echlin part number AR272, connecting the original coil wire to the terminal marked 85 on the new relay. Hook the 86 and 87A terminals to ground and the 30 terminal to the magneto's kill wire.

This will wire the relay into a normally closed position. When you turn on the key, you'll energize the new relay and take the magnetos off ground. There's a wiring diagram on the relay's housing.

For 12-volt KMs, the rest of the wiring can remain standard. If yours is a six-volt car, this might be a good time to consider upgrading to 12. When installing a new engine having its own starter and generator, upgrading involves mainly changing all the light bulbs and the battery. If any of you can shed more light on this, let us know.

Placing the engine in its cradle is easy. Getting it properly aligned is crucial, if you are to attain the transmission's potential 90% efficiency. It's best to start by installing the driven Comet pulley on the input shaft of the KM transmission. The Comet pulley is wider than the original KM unit. To effectively "extend" it, drill a 5/16-inch hole into the center of the transmission shaft, tap it to 3/8-inch and bolt the Comet pulley on with a 3/8 inch tap screw of appropriate length. Then work out the placement of the engine so that the belt can run perfectly true, at right angles to both pulleys. If you mess this up, you'll lose power and wear out belts.

Comet makes a wide range of transmissions. The #44 uses a 3/4 inch belt and is popular. It can handle up to 18 hp. The #94 uses a one-inch belt, will take up to 30 hp and costs about $125 more. Avoid the #500. It uses a 7/8 inch belt that's hard to find.

A vital step too often overlooked is the belt tensioner, which on Wisconsin powered KMs is not satisfactory with Comet drives. Replace it with a half-inch rigid rod to prevent the engine cradle from moving while the Comet clutch is shifting. The tensioner used on Kohler engines is OK as is. You want a combination of belt length and tensioner adjustment that leaves the belt snug at idle, so that it starts to engage as soon as you rev the engine. This will ensure that you get the full range of drive ratios available from the transmission and also make for smooth starts.

All this requires that you have the right length and width belt for your Comet drive, and they can be hard to find. Dayco is said to be the best source, cross-referenced with Comet. You can find Dayco on the Internet.

A doctor who owns a KM called the other day with a problem. He'd had his Comet installed by a mechanic who claimed great skill in the matter. When "completed" the car could barely make 10 mph! The Doc called Paul Gerhardt to try and find out what was wrong with his car. Paul asked, "Doctor, did you ever have any luck treating patients who described their symptoms over the phone?"

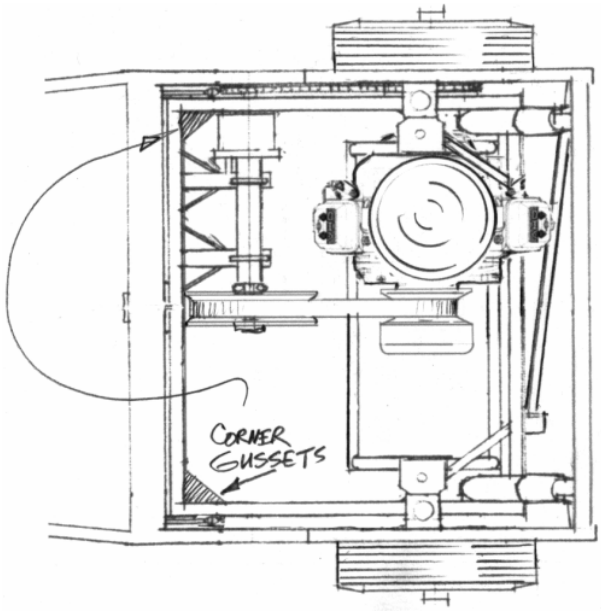
Paul needed to see the car to ascertain what might be the problem. The lesson here—an important one—is, while the conversion process is fairly simple, there are many things that can go wrong. I've seen several cars that ran worse after conversion than before. We can't cover all the problems and solutions in this article, so if you do your own conversion, be prepared for some setbacks. If you learn some handy helper tricks, send them along and we'll publish them.

The King Midget drive train was built to handle 12 horsepower or thereabouts, though some parts are overbuilt and some are marginal. The #40 drive chain used on Wisconsin engines is an example in the "marginal" category. Even though that chain is rated to handle something like 20 hp in this application, it's worth noting that Midget Motors

M. Modifications

switched to #50 chain when upgrading to the 12 hp Kohler. They probably had a reason. People like Robin Cole report the #40 "stretches like salt-water taffy" when used with a larger engine.

Another alternative is to use a high-performance #40 chain available from motorcycle shops. If you switch to #50 chain, you will have to change both the drive and driven sprockets. Drive sprockets are available from W.W. Grainger and I believe Midget Motors Supply has the popular sizes. I believe they also have the driven sprockets, or Paul Gerhardt can make one up for you.



This sketch shows the general location of the engine, transmission and gussets.

Another weak spot is the suspension cradle. When your Vanguard's torque is applied through the transmission, it wants to rack that suspension cradle, which can lead to cracks at the corners. Paul Gerhardt and Richard Katterhenry advise it's best to weld gussets on each corner to beef them up. Robin Cole designed and built a whole new setup.

The forward/reverse transmission has proven quite sturdy—a good thing as replacements are hard to come by (I have a spare if you really need it). Alan Conley has suggested it's a good idea to move the left grease zerk of the transmission further to the left. Its designed location can leave the outer end of the shaft too dry and put grease into the transmission itself—not a good idea.

Vanguard engines are widely available and while the list price is north of a thousand dollars, new ones can be bought retail for less than $1,000. One source suggested by Electra Pedersen is:

Small Engine Warehouse
2347 South 800 East,
Dunkirk, Indiana 47336
800-321-6725
www.smallenginewarehouse.com

They have a huge selection of these and other engines and can also supply Comet transmissions. Electra and Scot Wilson have both suggested the Surplus Center in Lincoln, Nebraska (800-488-3407) as a good source of engines. Electra cautions that engines having a tapered shaft require adding a $25 adapter or purchasing a special Comet 44 transmission designed for that shaft.

Here's a rough estimate of the materials cost for a basic conversion:

16 hp Vanguard Engine	$1,000
Comet 44C Clutches and Belt	300
Chain, Sprockets, Relay & Misc.	200
Total	$1,500

Not included in the above is any allowance for labor. Also excluded are many other upgrades to suspension, brakes and the like which we'll be talking about in the next issue. It's possible to do a conversion for much less, given a lucky break on finding a used engine or the like. Spending a whole lot more is much easier, for instance, if you choose a more powerful engine, Comet 94 transmission, expert installation and a bunch of goodies to go with it.

For those who find the Vanguard still lacking in pep, Electra Pedersen forwarded a tip on boosting its power. Advance the timing about 10 degrees. To do that, cut away the left half of the flywheel key down to the level of the shaft (about a tenth of an inch), allowing the flywheel to rotate 10 more degrees. Hold it there and tighten the flywheel nut to 125 Ft/Lbs. torque. This requires a flywheel puller and a strap wrench. The modification is said to make the engine start easier and improve acceleration.

Scot Wilson wonders why Briggs didn't do that if it's OK. He has three concerns. First, the engine could ping under load if the advance is too great. Second, the additional energy could cause overheating, and finally, that key would have to be very solid—you don't want it coming loose.

Electra posed those concerns to his source, a Cushman guy named Jim Fredrick. Excerpts from Jim's response:

"It does work and provides just a bit more acceleration in a tightly controlled zero to 50 mph run. I did not see any appreciable difference in the wide open speed. Briggs does not do this because the engine is intended to run all day at a speed of approximately 3200 rpm and at that steady speed there would be no advantage. No difference noted in the starting. I suspect the advance is quite modest on this engine, so it surely will not harm it. Cushman did exactly the same thing with their OMC stationary engine when they adapted it to the Silver Eagle."

Before undertaking your upgrade, you'd do well to think through the entire process along with other restoration work your car may require. Unless you're made of money, you may not find it wise to invest more in your King Midget than your heirs will deem it worth. If, on the other hand, you want to drive this little gem on today's highways beyond the parade route, an extra dollop of power can make the experience a lot more fun.

If you get stuck with a problem, don't call us here at KMM, as we've not done these conversions ourselves. If you call one of the experts we've quoted, be a good sport and pay him for his time. They won their expertise in the school of hard knocks and we

should all be grateful for their sharing what they've learned.

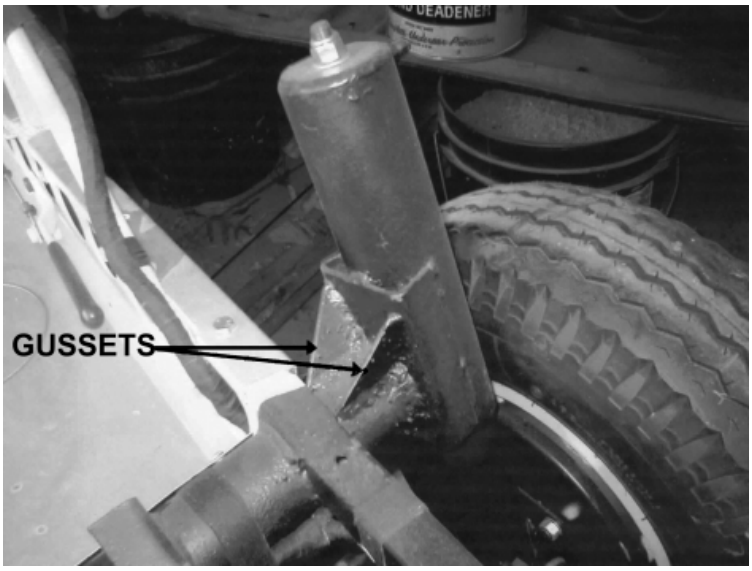
As noted in the last issue, there are many engine options out there. The Midgets That Might Have Been article on page eight and nine suggests one option Midget Motors might have considered. Claud told me they wanted to produce their own and had some of the tooling.

We know their 1960s prototype had an 18 hp Onan hooked to their patented three-speed automatic transmission. That engine, available in 13 or 18 hp versions, might have been a good choice. Lee Seats has his running like a top. The one pictured here is the second Onan installation by John White. Look at that neat muffler he made! □

M-5 Power to the Midgets III *By BobV., with Lots of Help*

Many of us who dreamed for 30 or 40 years of owning a King Midget are disappointed when we first get a chance to drive one. Especially if encountering a hill. Compared with "regular" cars of their day, the little suckers were weak. Up against today's vehicles, they're anemic. Thus, the common quest for power. The past two articles in this series talked of adding power. Now let's look at converting that power into performance.

Summarizing the effects of goosing KMs, John White says, "I guess if one thing needs emphasized, I would say to use common sense!! These cars are not designed for 60 mph+ speeds! You hit the right defect in the road and someone is going to be hurting. They were meant for 40-45 mph." Important point! Your extra power is going to push all kinds of limits, some of which you can't anticipate. Best play it safe. Use that power to get you safely up the hills—not past other cars.



John White recommends adding gussets to where the front shock towers weld onto the round tubing on the front cross member as shown above. Model 2 and early model 3s do not have the bar from the top of the tube to the frame as later cars did, and it's wise to add them.

A common first step in upgrading handling is to install a steering damper. This is a sort of "shock absorber" on the steering arm that dampens the road shock and helps keep that skitterish front end under control. You can salvage one from an old VW in a junkyard, buy one from J.C. Whitney, or contact the source mentioned in KMM #23. For a typical installation, see KMW #19 or KME #8.

For a different approach, stick a Crosley front end under your KM as Barry Seel did a few years ago. Barry says it worked well and the size is about right.

If you want a good, proven King Midget front end though, you need the setup Richard Pryer is building. I asked Marlene Gossman to tell us how Richard got into doing those front ends. She reports:

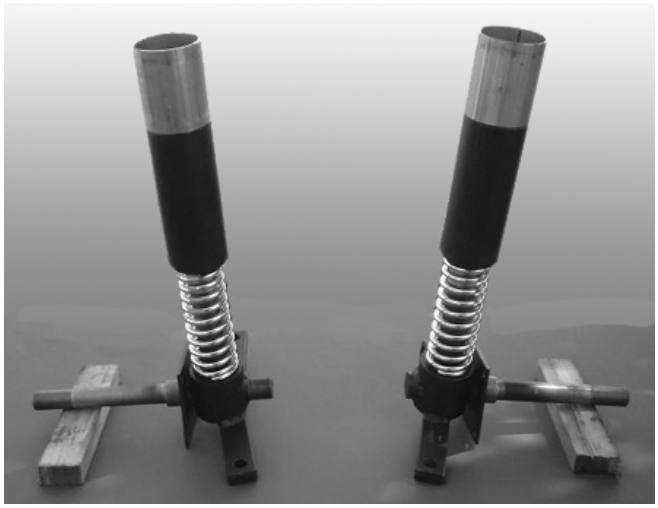
When [Dick] bought his first KM, the front end was very loose and that was with the

original Wisconsin 9.2 engine. He overhauled that engine, had the clutches relined, bought new front end parts from [Alan] Conley, and did all the things to restore it to original condition, but still was not satisfied with the way the car handled. Then he installed a new 18 HP Kohler engine, put in a torque converter, differential and disc brakes, but the car still wandered all over the road. While talking with other KM owners, he discovered ALMOST ALL of them were having the same problem; and some even said it had always been a problem, so he decided to try and do something about it.

He looked for something that could be adapted to fit in the existing front end tubes, but not finding anything to fit; he decided to make his own using steel tubing and oil-light bushings so no lubrication is necessary. When parked there is no oil dripping. Another year was spent looking for the right spring to make it work. After many trial and error attempts he finally found the right combination and was satisfied with the results. The ride is a little stiffer, but the play in the front end has been completely removed and the car handles so nice. We tell people that it will ride and handle more like a sports car now.

Dick has cast iron hubs on his car and made the suspensions with one inch axles; but for those who want to stay with the original hubs and wheels; he is now also making them with ¾ inch axles. Welding fixtures have been made so they all come out the same. They were made over the original front ends so none of the caster or camber has been changed. He discovered that no two KMs are the same so sometimes minor adjustments have to be made; but they are no problem, even for the non-mechanic. The toe-in should be reset.

So far, since the 2003 Jamboree, about 20 sets have been purchased and all buyers have said the cars handle so much better. Dick is very happy to hear those reports; as many hours have been spent trying to find a solution to the problem. Now we just say, "HAPPY MOTORING"!



Lee Seats says his Pryer front end is the "best thing you can do to improve drivability" of your KM.

Richard Pryer himself speaks of the installation and how it works:

The action is in the unit: both steering and suspension. There is a one-inch rod going up through the unit which works in oil light bushings. This requires no oil and eliminates oil

drips on the driveway or road. Steering is 100% tight (no play). This replaces the existing spring and lower tube completely.

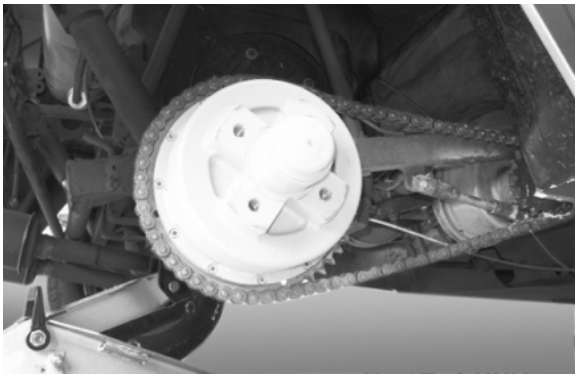
To install: remove nut at top of existing spring, loosen adjustment clamp and remove lower tube and spring, shove this unit in as far as it will go; then tighten the existing adjustment clamp as much as possible, to hold unit securely. Toe-in must be reset. Caster and camber remain the same as existing unit.

Available with one-inch axles for cast iron brake drums or ¾ inch axles for use with existing wheels and brake drums.

Cost is $235.00 for either set, plus shipping and handling. You may call Richard at 419-634-2004. After the first week of October call Florida 352-568-2231, or marlenegossman@aol.com.

Note: Dick Pryer no longer builds these, but Paul Gerhardt has continued to offer essentially the same setup. Bob V.

Vitally important to high-powered King Midgets is the ability to stop the little buggers. Paul Gerhardt uses standard brakes but suggests reversing them and putting the larger wheel cylinders on the front brakes. Good tuning of the existing brakes helps but, if you're dropping 16 horses or more into the engine compartment, you might feel safer with better stopping power.



I posted a question on the Yahoo site asking if there was a way to fix brakes that drag intermittently. Carl responded, "Yes Bob. Get rid of them and install brakes from Northern Hydraulics." They do make a neat installation, but you need new wheels and all.

Richard Pryer and Carl Callaway are two people who have upgraded to cast iron brake drums from Northern Hydraulic. This is a significant upgrade both in terms of braking performance and effort, so undertake it only if you're prepared to see it through. Here's Carl's story of his conversion—first before the installation:

I have been doing some R&D with a guy I know that has a specialty machine shop. We are putting better brakes on the KM and going to put 10-inch mag wheels from a golf cart all the way around. It is going to be quite an improvement to the braking and hopefully to the handling, to say nothing of the looks of the nice wheels and tires.

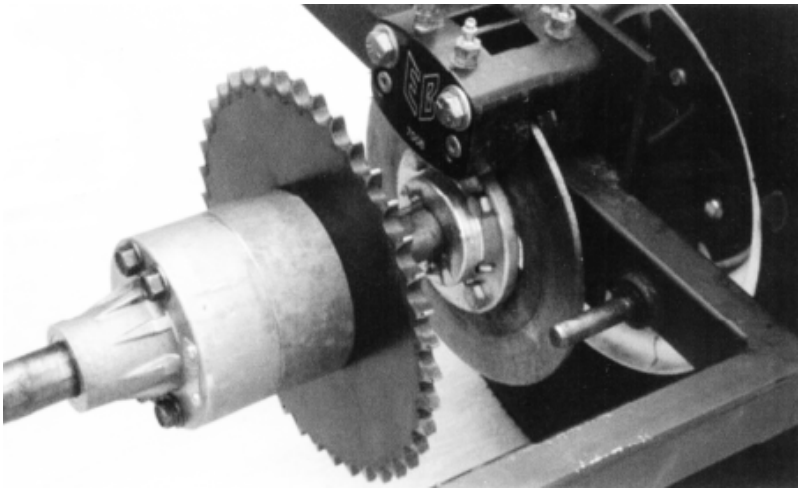
I plan to have all the KMs I have converted to this type of brake system. I discovered the brake system available at Northern Hydraulic Co. in Dallas. It takes some machine work

to adapt the brake drums to the 3/4 inch axle of the KM but it is going to work just fine when we get it all done. The back system is also going to take some machine work on the rear drums to adapt the chain sprocket to them but that is not insurmountable. I'm using the '59 I bought from Oklahoma as a test bed for the R&D on the brakes and drive sprocket.

And then after the installation was completed, Carl wrote:

About the brakes I installed on the '59? They are 7-inch hydraulic drum brakes. I had to have some backing plate adaptors made at a specialty machine shop that I know of and had them manufacture a sprocket adaptor for the right rear drum for the size 50 chain I installed when I had the 22 horsepower Kohler engine installed. The adaptor is machined and welded to the brake drum and then the sprocket is attached to the adaptor by Allan head machine screws. It turned out really nice. There is one drawback that I have not addressed about the brakes. There is not a provision for an emergency brake. I am looking at a couple of different ideas. The reason I haven't done anything about it as of yet is that Texas doesn't require an emergency brake on vehicles prior to 1960.

There are a few options. One is a hydraulic check valve in the rear brake system, but if you have an emergency brake here in Texas, you can't have that kind of brake because of the possibility of losing brake pressure to the brakes and then have a runaway vehicle. So right now I just use a piece of cedar 4x4 as a chock. That is not so bad here because the terrain is relatively flat, but I suspect up north an emergency brake is essential. One thing that could be done is remove the emergency brake hardware off the KM brakes and install it on the Northern brakes. It would take a little manufacturing, but it could be done without too many problems.



Pryer's differential and rear disk brakes.

The rear suspension is better able to handle increased power than the front, but be sure it's in good shape. John White salutes the engine cradle gussets sketched in the last issue and suggests you check the main crossmember carefully to be sure it's in good shape. He has seen, and I have too, frames where that crossmember behind the seat is cracked where the center suspension is attached. The crack may be buried and hard to see unless you have your car stripped to the frame. This is an inherent weak spot and it's a good idea to reinforce it even if it's not cracked.

Robin Cole built a brand new set of trailing arms to suspend his KM's rear end. Paul Gerhardt has built one too, and my Cushman King has a set that use the original shock tubes. Various shock tubes from motorcycles, etc. have been adapted to improve rear suspension but I don't know of any that have proven outstanding.

One-wheel drive can be a significant limitation. Though it requires quite a bit of work, several people including Richard Pryer have installed differentials. Richard Katterhenry says the Comet is a good unit, and suggests avoiding the Peerless—it's trouble-prone.

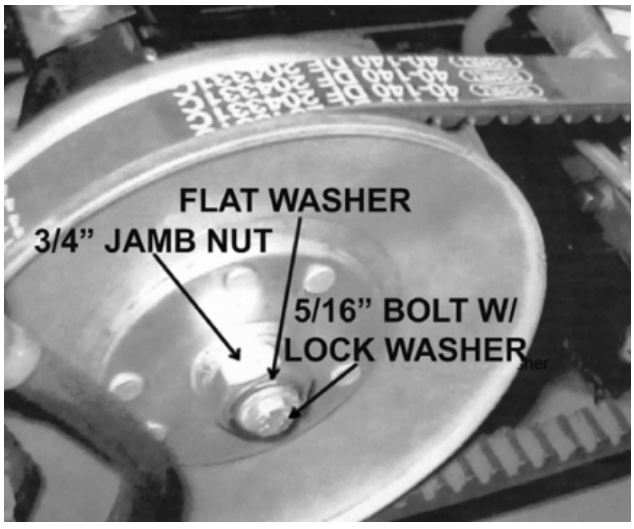
So that's our series on power, but I'm sure it's not the end of the discussion. As you've seen, there are a lot of opinions out there and I've noticed that a lot more of the installations being done are successful than used to be the case. Keep sending us your own findings and hints. We'll publish them for the benefit of all.

Feedback on Engine Installation

When installing an engine, John White says, "I laid a framing square along the tranny U-bolts and drew a line back on the engine cradle, this helps to square the engine with the transmission. Also if adding a Comet Clutch on the early Model 2 transmission without the three adjustable bolts for your outer bearing you still need to use a nut. This is because your input shaft bearings' end play is adjusted by how tight you tighten the nut. With the driven Comet Clutch installed on the shaft it still gives you room for a thin nut.

Also on the Comet brand belts a chart is provided that gives center-to-center distance for adjusting your belt tension.

If anyone needs some help or questions about putting in a motor, I'd be glad to help with advice if I can. They can e-mail me at white5415@msn.com.



The nut extends a little past the end of the shaft. To lock the nut I drilled the end of the shaft and tapped it for a 5/16 inch bolt. Use a heavy washer under the bolt and tighten up against the nut. I used a ¾ inch jamb nut for the nut. I like to use a 5/16" tapped hole in the end of the tranny shaft; this leaves a bit more meat on the keyed side of the shaft. □

M. Modifications

M-6 LETTERS: The Chinese Vibrator

Bob: Just got my Chonda [Chinese imitation Honda] started. Damn! Vibrates! I don't suppose you have a secret for engine mounts or something? Sterling Kelley

No, but I'm a little surprised. Neither Gert nor I noticed any vibration out of the ordinary with our Chonda's. New motor mounts on the suspension cradle might help. While I've had no conversations on the matter, I've thought from time to time that the adjusting rod sort of defeats the purpose of the engine cradle, and wondered if isolation might be better achieved perhaps by a pair of short stiff springs, one on each side of the bracket, and then cinch a nut against each spring. That adjusting rod was designed for the two-speed tranny, and it requires very tight belts. The Comet, not nearly so much, I'm thinking. That being the case, perhaps the rod could be further isolated by drilling out the mounting bracket and placing a rubber grommet or washer inside the hole (on the rod) with a larger rubber block on each side. I remain, however, a bit puzzled by your Chonda vibration. You're sure right about the changed characteristics of the car with Chonda and Comet. It is my opinion however, that in addition to other benefits, the repowered setup is also smoother running than stock. Perhaps your expectations are unduly influenced by some of the fine motorcars in your fleet and experience? These, dear friend, are King Midgets and they are designed to make vibrators obsolete. We're getting in a little above my pay grade so I'm bringing good buddy Gert Gehlhaar into the conversation. Whatcha think, Gert?

Bob: This subject has been dear to my heart and I have been studying it for a while because I have the same problem with my '58 KM M3 with the 14 hp Harbor Freight Predator engine. I have a vibration at idle and when engine is under load. The vibration stops at high RPM when the engine is just cruising or when letting off the gas.

I am guessing the Chonda engine weight to HP ratio would be quite different from Wisconsin or Kohler. These engines have a smaller and lighter flywheel than the heavy flywheel of the Kohler or Wisconsin has. Heavy flywheels tend to absorb and reduce vibrations.

These engine cylinders are at an angle while the Kohler and Wisconsin are straight upright engines. Upright engine vibration is vertical while the Predator engines produce horizontal and vertical vibration that can be felt through thecar from front to rear.

The KM's two belt-driven clutches are made to be very tight and absorb vibrations; the Comet clutches use a loose belt.

The belts are tightened with a solid rod that goes from the cars cross member to the engine cradle and that transmits vibrations.

Using the Comet clutch with the belt being loose can cause some vibrations.

The adjustment rod from frame to engine cradle is mounted solid—this is most likely one of the biggest causes of additional vibrations

Rubber donuts on the engine cradle are old and hard and mounting bolt tightened too much. So my thinking is that more vibrations are developed by these engines due to the smaller/lighter flywheel, engine cylinders not being upright but at an angle, comet clutch

with loose belt and the adjustment rod being mounted solid to frame and engine cradle and finally the donuts supporting the engine cradle are hard and bolts torqued too tight.

Here are some suggestions to reduce the vibrations:

Loosen the nuts that hold the engine cradle so the rubber donuts can move—this has helped mine some. (I am still considering replacing the rubber donuts with new ones but have not done this yet.)

My next step is to isolate the belt adjusting rod from the frame and engine cradle using rubber washers. I have made these rubber bushings but have not installed them yet. They are made out of rubber hose that are cut to 3/4" lengths and four of these will be used. I will slip these over the rod on each side of the rod and nut. I think shock absorber rubber bushing would also work.

The other item I am looking at installing is rubber bushings under the engine mounting bolts. I will let you know how things are going and what works and what does not. Gert Gehlhaar

See there Sterling? A whole new and informed slant on the question. Gert has told me much of this, but ... I forget. My M2 does not seem to exhibit such challenges, but then, perhaps I'm less picky. I think it runs as smooth as my Kohler, and I've not tried a V12.

Here's a follow-up from Gert:

Bob, Believe it or not I actually got some time to work on the '58 KM and did some of the things that I have been wanting to do to reduce some of the vibrations after having installed the 14 hp Predator engine. Here are the things I have done and my impression of the results:

- Loosened the nuts on the engine cradle so that it would float more freely and then secured with cotter keys. I believe this helped reduce vibration reduction at idle and slow speed—the car was much smoother.
- Loosened Comet Clutch and belt tension—which helped reduce vibration and the car accelerated much smoother from a stop.
- Put rubber insulator washers on each side of the rod that adjusts belt tightening. I used four rubber washers and four metal washers and then tightened up the nuts to where the rod was almost floating, but not too loose (with the Comet belt being looser than before). A lot of work in test fitting and installing, removing, installing 'til things were right. Parts were cheap and Home Depot had everything I needed.

Vibrations have been reduced by about 50% and are very good at idle, good at low speed, but still present at heavy acceleration. Between 30 and 35 mph with heavy throttle, I still get a vibration that goes away at 40 mph and start cruising.

One other problem that I think is causing some of the vibrations is actually coming from the tires. They're terribly out of round and balancing doesn't solve that problem I think I need to order me a new set for the '58 KM. Gert

Gert seems to know what he is talking about! Thanks a bunch. I'm on it! Sterling □

M. Modifications

M-7 LETTERS: Vibration

Here's another follow-up on vibration from John White II.

Bob: Most all single cylinder engines are going to have some vibration. Pretty hard to balance it out. Even the Wisconsin and Kohler have vibration at idle. On an M2 with a Wisconsin mounted and no bodywork on it, you can see the frame bouncing up and down slightly when it is idling. On the early M2 the engine cradle is solidly welded to the frame. Later they mounted the engine cradle on metal springs with a rubber washer between the engine cradle and frame. Even then the metal bolts of the engine cradle pass through the holes in the tube behind the seat and in the rear corners at the back, so vibration is transmitted to the frame anyway. I believe the springs were more for allowing a bit of give and take for keeping the belts tight without stressing the frame.

When you install the bolts and tighten up the adjuster at the back of the engine cradle to tighten the belt, you actually push the front mounts of the engine cradle and the rear mounts are actually pulling down the engine cradle against the springs.

On the Model 3 Wisconsin-type engine cradles, much of the vibration is transmitted through the adjuster for your belts at the front of the engine cradle. On these you have an adjustable metal rod with a spring to keep tension on the belts as the rear suspension moves up and down.

This, of course, is made worse when installing the Comet, because you need a solid mounting that holds the distance between the driver and driven pulleys. On the original Kohler the setup was a little better; they used a hard rubber donut between the front of the engine cradle and frame on the adjuster.

Probably the best tip is, *don't try to idle the engine down real low on these single cylinder engines*. On the originals, idle it so it is just below engagement of the low speed clutch. On cars with Comets the idle can be a bit higher, maybe 800 rpm or so. The Comets don't engage 'til 1600-1800 rpm anyway.

As for the turnbuckle changing adjustment, install a nut on each end to lock it once it is adjusted. This will keep it from unscrewing. Might be able to get away with a single nut on one side or not. One thread is right hand (easy) the other side is a left hand thread (might be harder to find a nut). **John White II** □

Note: Most of the preceding information has focused on modifying King Midgets mechanicals. Most of us can't resist the opportunities to "improve" the original design a little bit along the way. I wish we could all preserve our King Midgets as built, but I was tempted into sin myself, as shown by the following article. Bob V.

M-8 A Deluxe King Midget that Might Have Been *by Bob V.*

We don't know a whole lot about Claud Dry and Dale Orcutt, but we do know two things. They liked to fish and they were ferocious cost-cutters. They weighed every nickel of cost that went into building their cars. The same went for their factory, their work-force, office overhead and marketing.

It was that attention to cost that enabled them to build a little car for half the price of Detroit's cheapest offering and still make a profit—and do it at laughably low volume.

I'll bet they weren't that tight when it came to fishing. How about it, Pat. Did your dad use a bamboo pole or buy himself some quality fishing gear?

One downside to such a focus on cost was a weakness in marketing. When Joe Stehlin bought Midget Motors, he bet the farm on marketing and lost. The Company lurched from too little emphasis on marketing to too much. I believe Claud and Dale could have benefited from Joe's expertise, as a third member of their team, especially if he'd arrived a few years earlier. As owner, with a pile of debt, Joe was overwhelmed.

Readers of this series are aware of my belief that Midget Motors targeted a perceived market for very cheap cars, while the bulk of their customers bought the product for the same reason we do—it was unique, cute and fun.

During the design phase of the Model 3, I was unable to get a clear sense of where the product was targeted. The ads and catalogs spoke of the fun aspect, yet the car itself was almost embarrassingly bare bones.

If Joe or I or someone else had convinced Claud and Dale to shift their gaze from offering "strippers" (in some years, even fenders were optional!) to jazzing up the basic car, I believe they'd have found more buyers.

I'm not talking about a bigger or more powerful car; in fact a better foundation than the Model 3 would have been an updated version of the Model 2 along the lines of the proposal shown in number 17 and 18 of this series. A large part of the King Midget's charm is its tiny size.

Neither am I talking about wasting money. I believe the proposed package would have sold briskly at an option price of $100, and would have increased Midget Motors' profit per car by about 25%. That would have made the bottom line look a lot better, enabling Claud and Dale to afford much better fishing tackle.

Previous options such as dual wipers and luggage rack would remain options, in order to keep the base price of the deluxe model down and have those items available for either model. Following is a list of the features that would be included on the deluxe model:

A chrome strip down the side
Wheel discs
Whitewall tires
Polished bumpers
Wood two-piece dashboard
Deluxe upholstery
Fitted tonneau cover

The chrome strip would have been a simple snap-on item as was commonly available in those days.

The wheel discs would have been spun and polished aluminum, easily fabricated by Midget Motors with no tooling cost.

Midget Motors brochures noted that the bumpers could be polished, but so far as I

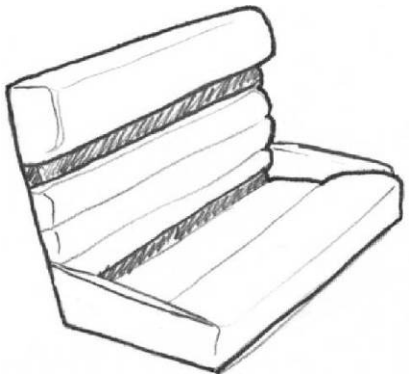
M. Modifications

know, the factory never offered the service. It would have added a lot of "look" for negligible cost.

Standard dashboards were pressed hardboard. This model would feature two pieces of birch. The instruments would be mounted in a stained piece recessed behind a piece having a natural finish.

Early Model 2s were upholstered at the factory, taking a slab of foam, a piece of plywood, a length of vinyl upholstery and applying a staple gun. The result was pretty grim. When they managed to hire a blind man to do the upholstery in Dale's basement, quality went way up. That guy also made tops. I believe he should have focused on the tops and kept the seats in the plant. By proper attention to folding and stapling, a satisfactory base-upholstery should have been attainable.

To illustrate, my car below (prototype? pastotype?) features deluxe upholstery done without any sewing, based on the sketch left.



You can see a bit of it in the photo, the concept in the sketch inset, and you'll be more impressed if you sit in it at St. Charles.

See you there! □

Note: I was wrong about the fishing. Only Claud like to fish, but over the years, that seat has proven mighty comfortable and it still looks great. The photo is recent. Bob V.

M-9 Making a Good Little Car Better *Photos and story by Al Good*

When Claud Dry and Dale Orcutt produced the cute, little and somewhat ugly King Midget, it was just the thing for its day; designed to be practical, cost effective, and low maintenance transportation. It fit the needs of many workers as a frugal way to get around town and to and from work. It was a time when the "Big Three" American nameplates were just retooling from the long war effort.

In its rawest original form, it came up lacking essentials that we take for granted these days. With materials very scarce, the partners used the bare necessities to keep a low price on a quality product.

When Ruthie and I got our King Midget, it became painfully clear that some of the

simple pleasures of driving were missing. Conveniences like cup holders, radio, and glove box were the first things missed by either myself or my lovely wife. I remember asking, "Where do you keep the registration and insurance cards?" and, "Where's the radio?"

It's hard to forget our first outing to the local store in the KM. We had just a few small bags but there was nowhere to put them. Today, folks seldom go anywhere without a cup of coffee or soda, and there was *no* place to secure it.

While attending the 2008 KM Jam in Coshocton, I took a close look at other cars and saw that a lot of them have many conveniences and amenities added. In this article, I'm not talking about power and steering issues ... just those little conveniences that we all miss. In my humble opinion, these items enhance the drivability and enjoyment value of the car.

I found it most interesting to see how other owners' inventiveness addressed these inconveniences and overcame them with simple and beautiful solutions. Afternoon breaks between events provided time to leisurely inspect the cars parked at the fairgrounds and see little nuances in the way people have enhanced their rides.

Improvements included little things like a bumper rack that held an ice chest ... or did it just serve as a trunk like the one on a Model A Ford?

The simple wood luggage rack on the engine lid affording a place to tie down small cargo.

There was the owner who improved the dash by adding a glove box and radio. And then there was the yellow Midget with the cross tubes mounted under the floorboards as reinforced jack pads.

Or maybe that cross tube is to support a sagging belly pan! Ed.

Another car had a beautiful chrome gimbled cup holder adapted from a boat accessory.

There were also the little accessories that just make the car look better, like chrome hood ornaments, side trims and nameplates. I loved the creative paint jobs that showed thought and skill by the owner.

One particular car was trimmed to remind you of a 1955 Chevy .... and it looked so appropriate with the shape of the KM's rear fenders.

And how about those aluminum channels added to

Richard Pryer's doors to accept plastic side curtain inserts? Let's also not forget all the beautiful chrome hubcaps. Some of the cars even displayed GPS systems!

A number of cars sported running boards. How cool is that? In the opinion of this writer, none of the above amenities detracts from or adversely affects the integrity of the little cars. Hats off to all the owners for making such a strong effort to preserve the King Midget car, making it more attractive and more fun to drive and show to our communities at large.

Dry and Orcutt probably never considered such amenities as necessities to the pleasure of driving. However, I believe that they would be amazed and probably pleased to see the way their cars have been lovingly and creatively cared for over the years. Who knows, maybe they would have even laughed, had they attended one of today's King Midget Jams.

The Coshocton Jam was wonderful. The cars were beautiful in their own way, and I was able to glean so many ideas to make my own car better and more fun to drive and show. □