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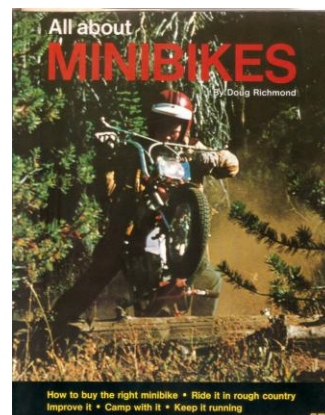


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The first book I ever read on mini bikes back in 1973. I got it at the Library. I bought the kids a mini bike for Christmas several years ago, [Sarah loved riding](#) and I got back into mini bikes. Hence, the name of our FaceBook page and Website... "All About Mini Bikes" thought you might get the connection. Thanks for your patronage in our hobby and feel free to write us anytime at Przyojski@Yahoo.Com

Your Mini Bike Friends,

Dan & Sarah



MINI BIKE

GUIDE

Steen's & Honda's
Hot Mini-Cycles

Unbelievable,
Unrideable Mini-Bike

Mini-Enduro Bolt-On Mods

Heath Kit

Build a Mini-Trailer

Design Awards

SEPTEMBER 1971 / 75¢
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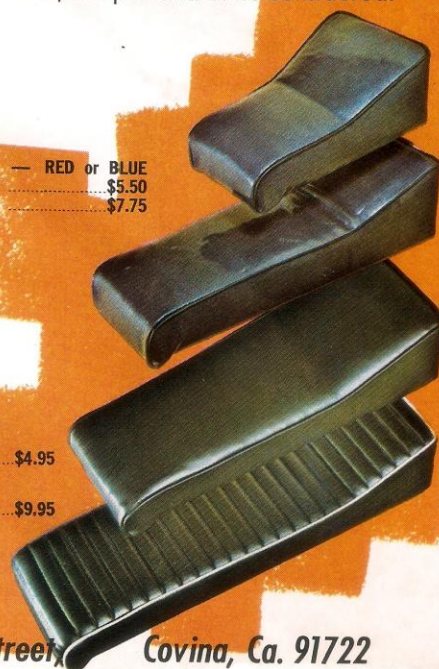


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MINI BIKE GUIDE / 3

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Gentlemen: Please send information on how I can receive a Broncco Mini Bike Kit.

editorial

HOW YOU, TOO, CAN GET A MINI-BIKE.

One of the most persistent questions readers ask is, "Can you persuade my parents to let me have a mini-bike?" The answer, very simply, is no. There is no way in which MBG can have as much influence on your parents as you can yourself. We can, however, give you a few pointers as to how you might smooth the pathway of transition from a spectator to a happy-as-a-fox-in-a-chicken-coop mini-bike owner.

You probably already tried the frontal attack. You know the sort of thing. "Aw, come on, Dad, let me have a mini-bike." Or something like that. Repeated endlessly, day-after-day, week-after-week. Until finally Dad gets sick-and-tired of hearing it and you either get a mini-bike or a sore head.

Let's suppose you haven't reached the sore head stage yet. But neither is the dripping of the water wearing away the stone. You are getting kind of desperate and you'd run away from home except that that wouldn't get you a mini-bike either. So it's time to take a deep breath, back off a little, and take another look at the situation.

The chances are, your parents won't let you have a mini-bike because they are scared of the consequences. The consequences are probably somewhat nebulous in their minds but involve bodily harm to you; the possibility of trouble with the law; the chances that you will not look after the machine (thoroughly borne out by previous experience); and the damage done to their bank balance at a time when things are not too easy for anybody. So what to do?

The thing is, you have to find a better reason for having a mini-bike than just the mere fact that you want one. Ideally, these reasons should be powerful and logical enough to overcome most of your parents' objections.

What we suggest is that you write a list of reasons why the world would be a better place if you had a two-wheeled vehicle of your own. You could just talk to your parents about these reasons but there appears to be something magical, in the minds of parents, in something *written* by their offspring. Besides which, something spoken can be dismissed very easily, while something written can be brought out and displayed time-and-time again. Each time you bring out this list, your parents will be reminded of how much you want that machine. So much, in fact, that you sat down and wrote something without actually being nagged into it.

Naturally, your folks are very concerned about what kind of a person you will turn out to be. They have heard much about how the youth of today is going to the dogs in a hurry. The question in the back of their minds is, do you have a canine potentiality? Just as naturally, you know for certain that being in a kennel with the rest of the pack is not your bag. However, you do know lots of people at your school who seem to be candidates for big trouble. Now, you should explain to your parents that most of these youngsters are headed for trouble because of boredom. And there is absolutely no way that you could be bored if you had a mini-bike. Right? When you write down your plea for mobility, use your own wording but this line of argument can be very effective. You can back it up by pointing out that a mini-bike does not merely occupy your time while you are riding but that maintaining it will involve a good deal of time. Of course, you want to be honest about this, don't you? So you have to recognize that you will not be spending 100% of your time on the mini-bike but that it will provide a major hobby for you.

Okay, says Dad, perhaps the mini-bike will keep you out of the kind of trouble that your friends are heading towards, but will it turn out to be just another means for getting into different trouble? He has in mind the kind of hassles that some mini-bikers are having with the law enforcement people. So your arguments have to take recognition of this issue.

It is true that mini-bikers who want to stay legal do not have freedom to go wherever they want to, whenever they want to. Because of this, riding sessions often have to be planned ahead of time. But this can have its positive side if going mini-biking involves other members of the family, such as your father or mother, to provide transportation. Your family is going to get some of that "togetherness" that most authorities tell us is lacking in today's domestic life. This missing aspect of family life is one of the reasons for family problems. You have to convince your folks that you will not use your mini-bike illegally and, most important, you've got to mean it. If this means that dad'll have to drive you to the better riding spots, what

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MINI BIKE GUIDE

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AMERICA'S FIRST
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letters

PORE LIL' DOGGIE

I live in Fairfax County, Virginia. A few days ago the mini-bike riders in my county suffered a great loss. Actually it was an accident that could have happened to anybody. A boy was riding his mini-bike in front of the home of William L. Durrer, Police Chief of Fairfax County. The rider ran over the Chief's pet chihuahua and broke its leg. Riding mini-bikes on the sidewalk wasn't against the law at that time, but the next day they passed an ordinance, partly at Durrer's request, banning mini-bikes on sidewalks, parks, and school grounds. We can only ride on private property. I think it was more Durrer's fault for letting the dog run loose and I think there should be an ordinance against that instead. I feel they should give us places just to ride mini-bikes. I want your advice on riding at the Good Shepherd Church because wouldn't it be legal if we have the Father's or Priest's consent?

Dave Yost
Alexandria, Virginia

Staffers at MBG own dogs, love the critters and know how an owner feels when they are hurt. However, our animals are never allowed to roam the streets alone and there are more reasons for this than the remote hazards of mini-bikes. This is not to say that we go along with your contention that the Police Chief was responsible for the anti-mini-biking laws. Even such a high law enforcement officer would have difficulty getting laws passed in one day. On the other hand, his experience may have a decided effect on how thoroughly the law is enforced. Let's hope he is a reasonable man with sons of his own. Churches are privately owned and provided that you have permission to ride, and are not interfering with other people, we don't see how the law can affect you on church property. You are dead right about the need for local authorities to encourage mini-biking by providing places for young people to run. Besides, it might save some other dog from a broken leg. If you still have communications with the Police Chief or the local authorities, ask them to write for a report on YMCA activities in the mini-bike field to: Western Center Consultants, 9400 Culver Blvd., Culver City, Calif. 90230, enclosing \$2.50. The report is called "Pilot Study Findings".

BREAK FOR PA. MINI-BIKERS

Here in Pennsylvania, we mini-bikers got a good break. The Traffic Commission announced, recently, that mini-bikes could be ridden on trails, hills, beaches, and woods. But not on highways. So we took to the woods.

Before we went to the woods, we asked a State policeman if we could ride there and he said that we could. While we were riding in the woods, another policeman stopped my friend and I. He said that we couldn't ride here. He asked me who gave us permission and we showed him the article in the paper. We also told him that the first policeman told us we could. He then told us that other policemen could not give us permission.

He said the reason we couldn't ride there was because other kids rode through a farmer's cornfield (across from the trail) and the farmer complained.

Why do some kids have to ruin it for everybody else? We all could have been riding there if it wasn't for those idiots.

Robert Bear,
Philadelphia, Pa.

It may be tough to do but about the only way we're going to prevent a few "idiots" from ruining all our fun is to control them ourselves. We've all seen riders, from time to time, doing something that is obviously going to make non-riders up-tight, including making too much noise and dust. Nobody likes to have do-gooders breathing down their necks and usually we just shake our heads and get on about our business. But it is our fun these people are, eventually, going to ruin so we have to go up to them, as reasonably as possible, and ask them not to make fools of themselves. The best way is to ask them to join in your activities, presuming that you are not, also, causing a fuss. Glad to hear that Pennsylvania authorities are taking a sensible attitude towards mini-biking. One bad-tempered policeman isn't too bad. Just walk away until things cool down a little—there's always another day.

BISMARCK RIGHT FOR TENN.

You've got a great thing going with MBG! I was reading the June issue with the article on the Bismark II. Where can I write to get some info on it? It's just what I've been looking for since, in Ten-

nessee, to get a license if you're between 14 & 16, your bike has to have an engine that is 5 hp or under.

Luke Montgomery III
Nashville, Tenn.

Didn't know they permitted 14-year-olds to hold a license in Tennessee. Bet there are plenty of mini-bikers who wished their states had similar laws. You're lucky. The address you're seeking is: U. S. Bismarck, 1423 Park Ave., Anaheim, California 92801.

BUILDER SPEAKS OUT

Concerning your article entitled "Mini Dragster" by Jim Gilbert (June 1971). I thought you might be interested to know that your information was incorrect.

I was the originator and owner of that bike! Bob Meli and myself worked together on the design. I turned this bike over to Ron's Mini Cycle in November 1970 to sell for me on consignment.

I have talked with the present owner and verified that it is one and the same bike.

I originally put the bike together hoping to race it. Shortly after it was completed an emergency forced me to sell it. At no time did Ron's Mini Cycle have anything to do with building the bike, except to show it to prospective customers after its completion.

Roy E. Smith
Cerritos, California

Seems we goofed in translating the story as told by Ron Stewart to Jim Gilbert as edited (butchered, Gilbert claims) by MBG. Roy was the builder and he didn't do all that work just to have the machine sit in somebody's window, as we implied. It was designed to run at local drag strips—a real working machine. However, the economic recession got in the way before it could be campaigned. Bob Meli, readers may recall, was the guy who built the twin-engined dragster featured in the July 1970 issue.

GREAT IDEA?

I've got a great idea for your magazine. Why don't you have a classified advertisement section where readers can sell, swap, or buy mini-bikes and parts. There are a lot of kids in our area wanting to sell their old machines so that they can buy new ones and there are a lot of other kids wanting a cheap ma-

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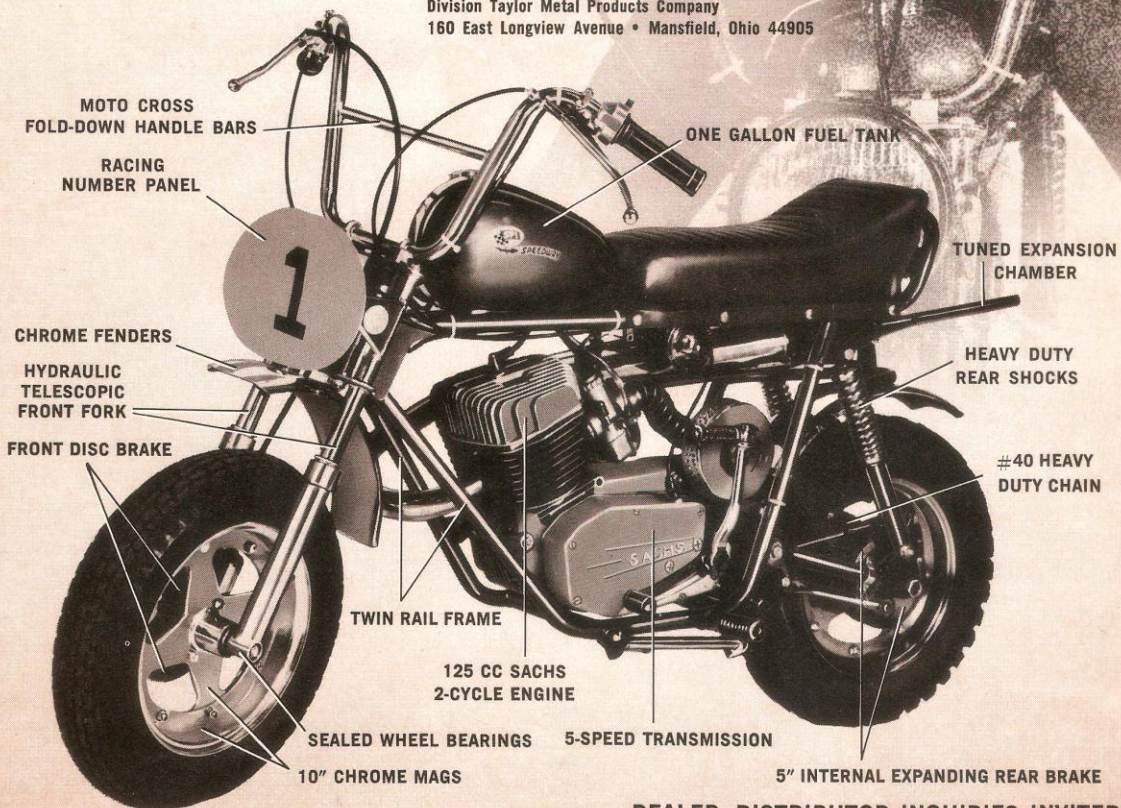
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MINI-BIKE GUIDE / 7

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HPE Industries of Canada Limited
210 Snidercroft Road, Concord, Ontario, Canada, (416) 889-6781

LETTERS

Continued from page 6

chine to get started with. Trouble is, getting the two together. MBG could do it. Something like my ad below, which you don't have to print unless you get this section started.

"For sale: Honda mini-Trail 50, good condition, \$130. Older 5 hp 4-cycle Clinton, oversize piston, really excellent condition, \$15."

John Rouse,
1020 Woodheath,
Kalamazoo, Michigan 99001

We think this is an enterprising way to get some free advertising, John, but as many other readers have written with the same suggestion, we'll go along with it, this time only, so that we can explain why it isn't such a great idea. It's on your head, though. You're going to get letters from Alaska to Puerto Rico and it serves you right. If you don't answer them all, we hope your next mini-bike gets a flat tire. And that's the reason why a classified section wouldn't work in MBG. It's an international publication and what you, and the others who have made the same suggestion, want is local advertising. Why don't you get your local mini-bike and motorcycle dealers to put up bulletin boards where you could pin post-cards—a sort of community swap meet. Your dealers should be happy to do it, if they haven't already, because it will bring people into their stores.

NO 25¢ BROCHURES IN ALASKA

Having been a reader of your magazine for a while, as well as other publications along these lines, I can no longer restrain a comment about some of your advertisers. To wit, those ads which are trying to sell their products by "selling" their booklets first. I am talking about those ads that end "send 50¢ or 25¢ for complete information or booklet or etc."

It seems to me that getting their product over to the public is their responsibility and should be done at their own expense, just as the more reputable companies do. What kind of fly-by-night outfit thinks that it can charge the public for information about their product they are trying to sell you?

I don't know about the rest of the world, but up here in Alaska this type of garbage "turns us off". I simply ignore those products at once. I will not accept the old excuse of "this just covers handling and postage". I would feel rather silly charging my prospective cus-

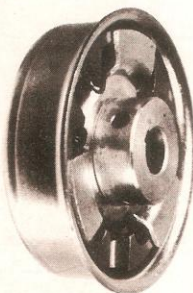
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MINIBIKE HEADQUARTERS

LARGEST SELECTION OF MINIBIKE PARTS & ACCESSORIES IN THE U.S.



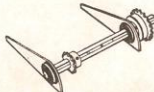
- A. BIG BEAR SCRAMBLER**
Complete ready to run with 3 HP Briggs (as illustrated) **\$169.95**
With 5 HP Briggs **\$189.95**



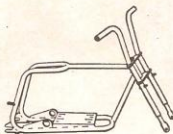
- B. BIG BEAR SCRAMBLER KIT** (not shown)
Contains everything (except engine and engine accessories) required to complete mini-bike. All fine components (illustrated) ready for installation. Even includes chain from jackshaft to engine! **\$99.50**



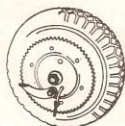
- C. CLUTCH SPECIALISTS!**
LARGEST STOCK CLUTCHES
Super, long lasting steel shoes. Replacement for every engine — 5/8 or 3/4 bore. No. 35 or No. 41 chain. Smooth engagement — no fade — Flexo discount prices prevail. **\$13.95**



- D. NAUGAHYDE SEAT**
Fits all minibikes... finest material over firm rebounded latex... size: 14 x 7"... contoured for comfort and safety **\$7.95**



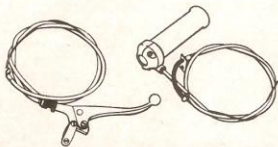
- E. MINIBIKE JACKSHAFT ASSEMBLY**
With snap ring, keyed entire length. Complete with bearing holders. Sealed Prec. Bearings, keys. 10 & 15 tooth sprockets and locking collar set screw **\$9.50**



- F. MINIBIKE FRAME & FORK ASSEMBLY**
Rugged, jig-welded tubular frame... superbly engineered spring suspension **\$28.00**



- G. MINIBIKE REAR WHEEL ASSEMBLY**
Finest components available! Go-power aluminum split rim wheel with super 12 1/2" nobby tire and tube, internal expansion machined English motorcycle brake, 60 tooth sprocket, axle, spacers, flex-lock nuts. Assembled **\$29.95**
Matching Front Wheel Assembly only **\$14.50**



- H. 2 QT. (1/2 GAL.) CHROMED TANK**
Complete with shut-off valve, cap, mounting straps and fuel lines. **\$7.95**
As above - unchromed **\$5.95**

- I. MOTORCYCLE BRAKE CONTROL** (left)
With built-in adjuster, 6" lever has ball end. Top quality. Complete with in and out cables, cable stop. 4, 5 or 6 ft. lengths **\$5.95**

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TECH TIPS

BLACK WIDOW STRIKES

Q: Last week a crack developed in the carburetor on my Rupp Roadster. I called up the dealer and asked if it was under warranty. Just my luck, my warranty was up two weeks before. I didn't want to spend my money on the same carburetion (diaphragm) so I asked the dealer if he had the carb shown in the May 1971 test on the Black Widow but he said "No". Do you know how I can obtain this carb.

Gary Bonavith
Oradoll, N.J.

A: The carburetor should come under the engine warranty—did you check that to see if it was expired? We don't know what you mean by "a crack in the carburetor"—are you sure that it wasn't just a defective gasket? The Dell Orto carburetor can be purchased from Rupp Manufacturing and since that is the make of your machine, we suggest you write to them. It sounds to us as though you had one of those uncooperative dealers that crop up now and then—they seem to think you owe them a living without their putting out some work to earn it. We are getting pretty fed up with such people. If the Rupp dealer doesn't know what's in the Rupp line, then he darn well ought not be a dealer. Write to Rupp directly and tell them we said so.

WHAT'S WITH TWO-SPEEDS?

Q: What will give the best performance for power and speed—torque converter or a two speed transmission?

Jon Falter
Tilden, Neb.

A: Before torque converters came upon the scene, a two-speed automatic transmission was the way to go. Now they are out of date in a straight performance comparison with torque converters. However, two-speeds cost a whole lot less and, if your demands are not particularly high, they can provide much better performance than a single-speed centrifugal clutch for very little more.

IN THE CLUTCH

Q: I was just re-reading my November '70 issue of Mini-Bike Guide when I ran across your story of a mini clutch. Is the mini clutch for sale now and if so how much? Would it involve any welding and cutting to adapt it to my Taco 99? Does it need frequent oiling, and what is the life expectancy of the unit before rebuilding is required?

Gary Orr
San Leandro, Ca. 94578

A: Gary Products imports this clutch from England for industrial applications and may have some available. However, it has been found that installation does, in fact, require considerable modifications, for most machines. If you are really handy with tools and a hand-operated clutch is what you must have, this one is among the best. It is not a job that should be undertaken lightly. The Gary products clutch is a dry clutch and does not require oil except on the bearing surfaces. Life expectancy depends on how you use or abuse the product, like everything else.

ALL THE THINGS...

Q: I'm new to mini-biking and I don't understand what is meant by: Transmission, clutch operation, ratio range, finish, traction. If you could explain these just a little it would be a great help to me.

Thomas Hayden
Forest Hills, N.Y.

A: One day we are going to do a story entitled "All the things you ever wanted to know about mini-biking and were afraid to ask" because we are convinced that there are a large number of new mini-bikers out there who are wandering around in a fog of confusion. You, Tom, have the courage to ask some simple questions and therein lies the path towards true knowledge. A transmission is a device to transmit the turning power of an engine (torque) to the driving (rear) wheel. In point of fact, all the components required to do this, no mat-

ter what system is used, is the transmission but commonly it means the part of the transmission nearest the engine (gear box; torque converter; centrifugal clutch and so on). Clutch operation separates the engine from, or engages it with, the transmission. This is so that the machine can stand still even while the engine is running. "Ratio range" is an involved subject but, put very simply, it is the difference between high gear and low gear. At any given engine speed (revolutions per minute) the rear wheel will make fewer turns in low gear than it will in high gear for the same length of time. This means that in low gear, the engine is not working so hard. Finish is the way the machine is painted and made to look nice. Traction refers to the amount of grip the tire has on the terrain in which it finds itself.

SEVEN HORSE HOP-UP

Q: I have a Powell Phantom with a seven horse Tecumseh engine. Would it be okay to put a full-race cam in it? Would it do any harm to my engine? Where could I get one? I would also like to know if a Mukini carb would work on my Tecumseh. And where could I get one.

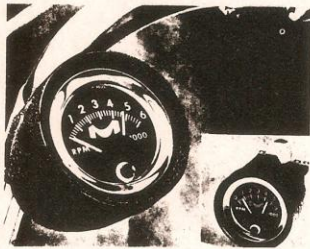
Mike Baker
Chino, Ca.

A: As far as we know, there is no hot cam for the 7 hp Teke and, if there were one available, you'd run the normal risk of engine damage encountered in any modification job. We doubt that merely installing a hot cam would cause you any immediate problems. In absence of hop-up items for this engine, you will get increased performance by cleaning out all the intake and exhaust passages, relieving the intake and exhaust ports, and, of course, detaching the governor. There are many Mukini carbs and we do not know which one you are referring to. In any case, some sort of manifold adaptor will be required. If you can get it to fit, it'll work just fine. Your local

Continued on page 68

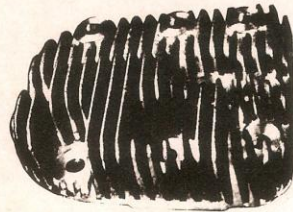
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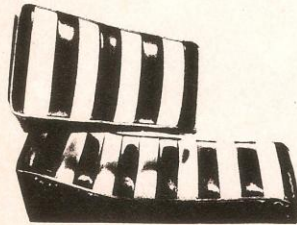


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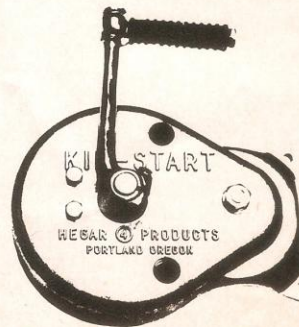
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MINI-BIKE GUIDE / 11



380 PRIZES

Including 11 Kawasakis—in Revell's 1st Annual Motorcycle Model Contest.

**Win the recognition—and the prize!—your model-building skill deserves.
See your Revell dealer and get started today.**

(Many dealers are staging local contests. Win all kinds of trophies, ribbons, and prizes in your own neighborhood.)

Grand Prize—for Best Bike Model: Kawasaki Mach III 500 cc, world's fastest production cycle, shown on opposite page. PLUS Kawasaki racing jacket. PLUS Bell R-T motorcycle helmet.

Special Prize—for Best Model Photo: Kawasaki MB-1 Mini Bike. PLUS Bell R-T helmet.

PLUS all these prizes in 3 classes (Street/Custom, Off-the-Road, and Racing models):

3 First Prizes, Age 14 or over—3 Kawasaki G3-TR 100 cc Trail Bikes. PLUS Bell R-T helmets.

3 First Prizes, Age 13 or under—3 Kawasaki MT-1 75 cc Mini Trail Bikes. PLUS Bell R-T helmets.

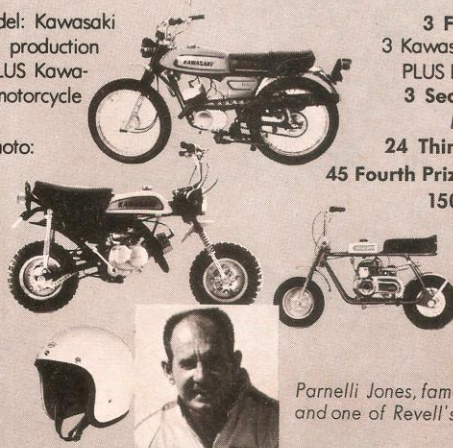
3 Second Prizes—3 Kawasaki MB-1 Mini Bikes. PLUS Bell R-T helmets.

24 Third Prizes—24 Bell R-T helmets.

45 Fourth Prizes—45 Kawasaki racing jackets.

150 Fifth Prizes—75 subscriptions to Car Model & 75 subscriptions to Model Car Science magazines.

150 Sixth Prizes—150 packets of helmet safety stickers.



Parnelli Jones, famed racing driver and one of Revell's judges.

OFFICIAL RULES **Eligibility of Contestants:** This contest is open to all USA and Canada residents, regardless of age or sex, who are Amateur Model Builders.

An Amateur Model Builder is defined as one who does not work for a model magazine or model manufacturer, or derive any portion of his livelihood from building model kits. Employees of Revell, Inc., and members of their families are not eligible.

Eligibility of Models: Contest is open to any 1/8" scale plastic model motorcycle constructed from a kit now on the market, regardless of manufacturer. Basic engine must be from an existing plastic model motorcycle kit. Other parts may be of any material.

Method of Entry: For preliminary judging, model builder must submit from 1 to 4 photos (color or black-and-white, any size, each identified with entrant's name and address) of each entry. Also:

Model builder must submit a description of each entry. Description of the model's features is to be no more than 50 words, typed or printed on plain white paper, along with a completed entry form or the following information typed or printed:

Entrant's name and address including zip code; entrant's age as of January 31, 1972 (closing date of the contest); and class entered—one of the following:

Class A—Street/Custom: Stock, custom, and modified street machines; 2 or 3-wheelers.

Class B—Off-the-Road: Stock and competitive off-road bikes, scramblers, dirt racers, desert bikes, Motocross machines.

Class C—Racing: Drag racers, road racers, TT machines,

flat trackers, Bonneville & land speed record bikes, any bike raced over a predetermined course.

For final judging for Kawasaki motorcycle prizes, the models themselves will be required. Revell, Inc., will notify finalists when and how to send models for final judging. Keep models in good condition!

Submitting Entries: Photographs (with entrant's name and address) and description (with entrant's name and address, age, and class A, B, or C designation) of each model entered, must be sent to: Revell Motorcycle Contest, 4223 Glencoe Ave., Venice, CA 90291.

A model builder may enter more than one model, but must enclose the photographs and description of each model in a separate envelope.

Contest closes January 31, 1972. Entries received after that date become eligible for the 2nd Annual Motorcycle Model Contest. All entries (photographs and descriptions) become the property of Revell, Inc., and none can be returned.

Judging: Decisions of these judges are final: Parnelli Jones, Bob Braverman (editor, Cycle Guide Magazine), Joe Parkhurst (publisher, Cycle World), Brick Price (editor, Cycle Mechanics Magazine), and Don Ernst (Revell Auto Products Manager and Race Driver).

Workmanship, detailing, originality of design, paint and decal work, authenticity/feasibility, and special parts or materials will be judged.

General: Contest is subject to local, state, and federal laws and is void where prohibited. Tax liability is the responsibility of winners. No substitute prizes nor cash equivalents will be given. In accepting awards, winners grant Revell, Inc., the right to publicize and promote their winning of awards.

Don't forget to include 1 to 4 photos and a 50 word description of your model! Good luck.

**ENTER
NOW**



Print your name _____

Street Address _____

City _____

State _____

Zip Code _____

Your Age as of
January 31, 1972 _____

Class you are entering—check one

☐ (A—Street/
Custom)

☐ (B—
Off-Road)

☐ (C—
Racing)

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MINI-BIKE GUIDE / 13

LETTERS

Continued from page 9

tomers for information about my lodge. If they are too cheap to give you the information, then it follows that they are too cheap to "give" you a good product.

I own three mini's, an ATV, two snow-machines, three boats, and two motor-cycles. I have yet to be charged for any information about them. Perhaps that is why I bought them in the first place.

Sam-Joe Townsend
Pedro Bay Lodge
Alaska

Like a harpoon to the heart of the matter. We don't like to argue with somebody who sounds so—how shall we put it—determined (read "tough"), but we imagine economics plays a major part in this brochure question. We have to admit that your argument has passed through our minds, many times, but how would the manufacturers sort out the serious inquiries from people just wasting their time, if they didn't make a small charge for information. In your business, Sam-Joe, it would be unusual for an inquiry not to be serious but you should see the mail stacked to the ceiling from just one ad in MBG.

NOMINIBIKITIS STRIKES AGAIN

There is a lot of a certain disease going around lately. There are no non-profit organizations getting free air time for public presentation of the disease. There is no institute developing cures and, although it is in epidemic proportions, it is disregarded by the vast majority of people. The disease doesn't even have a formal name, so let me coin one: Nominibikitis. This disease affects City Councils, County Commissioners, Controllers, Legislators, and any other public official in varying degrees and it's always fatal to their intellect.

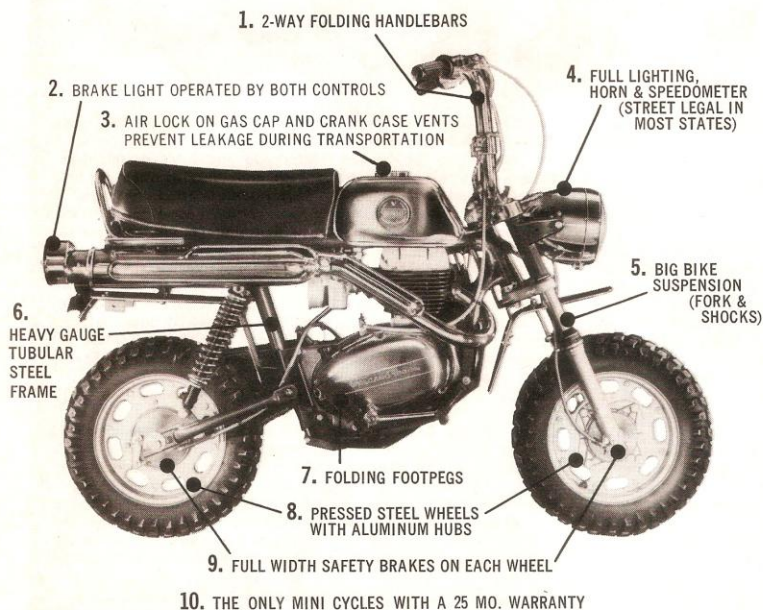
Let me cite one example. I have contacted the County Commissioners of Beaver County, Pennsylvania, about putting in a track-trail center in Brady's Run Park. We presented some of the figures about the great good that mini-bikes can do for youth (presented in your story about the YMCA). We showed that the mini-bike of today is accident-prone only in the hands of an incapable rider. We showed new safety features, new designs, we even went so far as to design a complete mini-bike complex. But, all we got was the cold shoulder. As I talked (as representative), I could see the icicles growing on the windows. We had a bad case of Nominibikitis on our hands.

We still do, and we need help. We have contacted Rupp Industries to find out about factory support of the project, but have not, as yet, gotten a reply. We have contacted the area YMCA, but action is slow. So, we would like to know if any of your readers would like to help. We are located in Western Pennsylvania and have quite a few mini-bikers, with many more starters if we only had a regular place to ride. I hope that you will respond to this letter or turn the problem over to your readers so that they can give some suggestions. We're at the point of being desperate. (The we I am referring to is Mini-Bike/Beaver County.) We need help to conquer the dread disease Nominibikitis. Unfortunately, medical science can't find a cure. We have to.

Leonard Feldman
1308 Sixth Ave.
Beaver Falls,
Pennsylvania 15010

What more can we add to this heart-breaking appeal for a cure to a fun-killing disease, except our own personal recommendation that our industry get behind people like Len—particularly local dealers and distributors.

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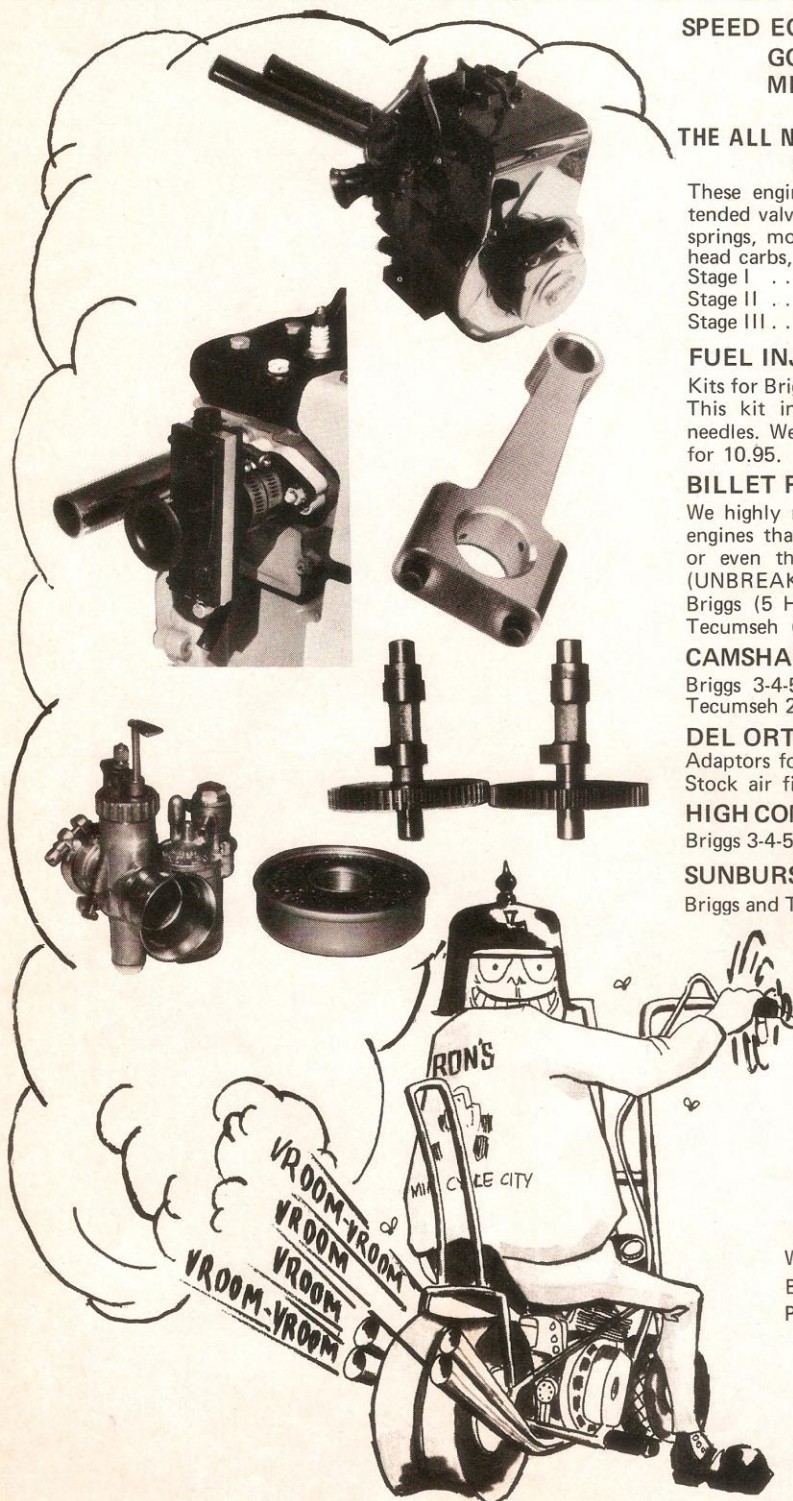
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MINI-BIKE GUIDE / 15

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C.A.T.-99 Asymmetric Torque Converter is the same unit described at top of this column, with exception of mounting kit. TC-88 Torque Converter—the popular one—provides direct-drive bikes with both rugged power and passing speed.



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LETTERS

Continued from page 14

ROKON ROARS

In your April, 1971, issue, you answered a request from Patrick J. Tyson in regards to our product, the Trail-Breaker. You referred to it as an "off-beat" machine and wondered why any of your readers would be interested in it.

My conclusion is that the only reason you would make such a conclusion is perhaps you don't really know very much about our product. My only purpose here is to pass on information that I think will certainly enlighten you about all three of our models.

Further, I would like to mention that perhaps many more of your readers may be interested in these products and wouldn't you be doing the right thing if you gave them the opportunity to decide for themselves what interests them.

Nate Cyr
Rokon Inc.,
Keene, New Hampshire

On the contrary, Mr. Cyr, we are well acquainted with your machine (we seldom make comments about machines we are not familiar with). In fact, our editor was the guy who took the picture, used for a long time in your promotional pieces, of the machine and rider flying through the air. Several times we had the opportunity to ride the Trail-Blazer and each time were thoroughly impressed with it. However, even you have to admit that it is "off-beat" if, by this phrase, you mean unusual. There is nothing else like it, or even remotely resembling it. It was not our intention to bruise anybody's pride. We wished, simply, to express our amazement at the wide interests of our readers. You've got a great product, so hang in there.

MINI-BIKE PEN-PALS

Any teenagers from 16-20 interested in having mini-biking pen pals around the country should write to me. Just send name, address, age and main interests. If possible include a small photo for possible use on a printed pen pal list if enough respond.

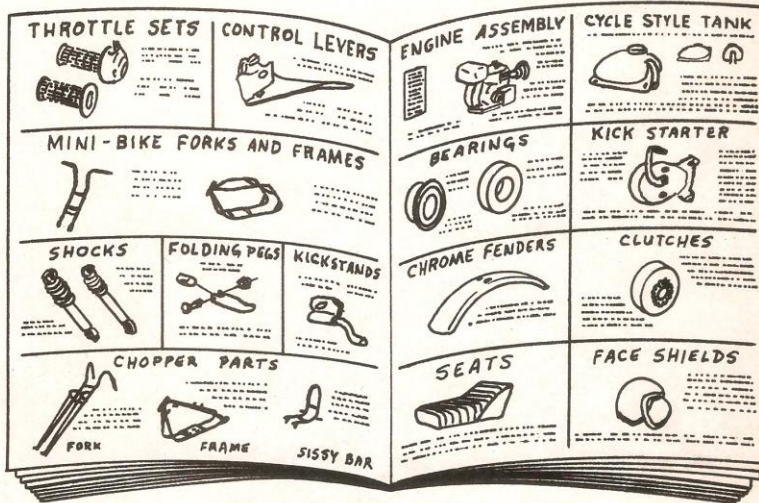
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TURNED-ON!

Thanks for turning me onto torque converters. The Comet bolt-on T.C. unit is probably the best thing I'll ever do for my four horse machine. You should see the wheelies I can pull, now.

Keith Briar,
Berkeley, California
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EDITORIAL

Continued from page 4

the heck, TV is a waste of time, anyway. You can buttress your arguments by pointing out that you wouldn't want to risk losing your mini-bike by acting foolishly. This kind of grounding, easy for your parents to apply if you do something wrong, would be a fate worse than death.

Going on with this "family togetherness" theme, you might point out that mini-biking is more fun when it is done as a group. Many families have found the new mobility in open areas that we

all crave by taking to mini-bikes and motorcycles. The biggest hang-up in this type of arrangement is usually Mom, but with a little persistence, and a few visits to the local mini-bike dealer, she can be made to see how simple it is to operate a mini-bike. Point out to her that it is no more difficult than the bicycle she used to ride to school. And make sure you get her a machine (to start with) that does not require gear shifts and clutch operation. Many a mother has started out with fear and trepidation, only to wind up as the family's most enthusiastic two-wheeler.

Right about this time the economic

monster is going to rear its ugly head. Not only are you asking Dad to open his pocketbook to the extent of a mini-bike for yourself, but you are also indicating that all members of the family should have their machines. You can point out that you can get two or three mini-bikes for the cost of an average motorcycle and that some mini-bikes are powerful enough even for Dad. However, Dad may not be contemplating the purchase of a motorcycle either. So some other approach has to be found.

You might suggest that your paper route income will help towards the purchase of your own machine (and if you don't have a paper route, get one). If there are other youngsters in the family, you might start working together as a team, mowing lawns or such, as a means of getting some income. As a family project the money can go into a "mini-bike fund" to be opened separately at the family bank. This gives everybody in the family something to strive for. But don't get impatient. The thing won't happen overnight, if money is the biggest hang-up. But if you persist and, most important, your parents see that you are persisting, then the happy day will come much sooner than you might imagine.

It is most important that you stay loose while all this is going on. Don't anger your folks by continual argument so that they are inclined to lower the boom on the whole project. It's a delicate balancing act and you may not be up to it. Just remember, a wrong word at the wrong time can blow the whole thing. However, if everybody in the family gets behind the project you will be surprised how many of the little frictions that used to bug you will disappear and a new feeling of working together will be apparent.

Now, how about this question of safety. Mom and Dad have to be convinced that you are not going to go out and break your neck at the first opportunity. You might point out that you have no suicidal tendencies and, being their son, you are more likely to assume their careful habits than otherwise. You can also point to the powerful weapon that they will have, once again, in taking the mini-bike away from you if you use it recklessly. In fact, to prove that you are serious about this, you might work up a sliding scale of punishments for various offenses. These might include being unable to use the machine for a month if you are caught riding it illegally; one week-end's grounding for riding recklessly; one week-end trip cancelled if your grades at school start to fall off;

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and a few hours on the sidelines for not making up your bed. If everybody understands the rules beforehand there should be no whining or complaining when they are imposed.

Your folks are almost certain to be partially persuaded by this new leverage you are offering. You may still not have convinced them about this question of safety and so you must cover the helmet-boots-and-long-pants bit and never be caught without them. You might also point out that somebody you know fell off his bicycle and broke his leg, another guy broke an arm playing football at school, while still another friend fractured his foot stepping off a curb. Make all these disasters factual and your arguments will be stronger. Remember that life is full of knocks of varying degrees of hardness and you might as well get used to them early in your life.

One of the arguments against mini-bikes involves the lack of handy riding areas. However, this can be turned into a favorable point during the "great debate". Find out from your friends who have mini-bikes where they ride and how often they ride. Find out, too, if their parents ride when the families head out to the countryside for riding sessions. If you can find only one or two families who use their mini-bikes together, you are doing fine. Now you can say to your folks, "Joe Doaks down the street goes mini-biking with his family and his mother and father have asked us to go along with them next time they go." The prospect of social activities involved with mini-biking is one that should be appealing and it certainly works in mini-bike clubs where the parents are involved.

Perhaps your Dad is a busy man and doesn't relish the thought of spending many hours keeping your mini-bike in running order or, perhaps, he is not mechanically-inclined in the first place. You can tell him that one day, probably in the not-too-distant-future, you are going to be a car owner like he is. With the cost of car repairs going up every week, being able to look after your own machine is a definite advantage. Most mini-bikes are relatively simple in design yet the maintenance principles are directly applicable to just about any machine. Once you have learned to maintain and do minor repairs on your mini-bike you should be able to tackle most jobs on a car. You can point out that several of your friends own mini-bikes and you plan on spending some of your spare time together, working on the machines to get them in good order for the week-ends. In this regard, MBG can be

of considerable help and the idea of your reading something besides comic books may be an additional advantage in your arguments.

Probably it would be impossible for us to cover all the various objections that parents can raise. Some of them can be very ingenious. However, we think that you will see what we mean. Owning a mini-bike is a definite advantage for young people in the process of growing up. This has been proved in some very difficult cases by the YMCA and other groups. There will be problems in owning a mini-bike, let's face it, and buying the machine will not be the only ex-

pense. However, if you look at the family budget, no doubt there are many things that cost just as much to maintain and give less of a return, such as movies and candy and stuff like that. Your parents may be convinced that life with a mini-bike will be more difficult. What you have to do is to show them that the reverse is true. That a mini-bike can work to the betterment of the whole family unit. □



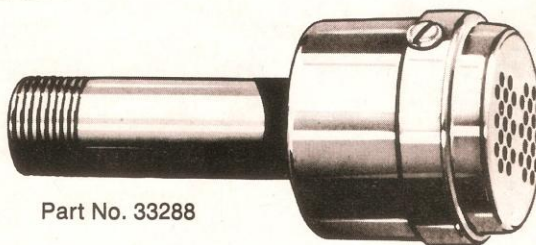
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HONDA SL70

First full-scale mini-cycle from "big daddy"

By BOB SANFORD

This year, American Honda will market somewhere between 600,000 and 800,000 motorcycles. In other words, over half—about 54 percent—of all the two-wheeled vehicles sold in this country will have the word "Honda" written across the gas tank. Which, in some respects, is rather amazing. Especially considering that the company sold about 200 bikes when it first arrived on the American scene a little more than 10 years ago. At that time BSA-Triumph reigned supreme in American motorcycle sales, selling a phenomenal 20,000 units a year to us colonials. But times and tastes have indeed changed. And Honda has been both the cause and effect of much of this change.

Right off the bat, the company saw—and *encouraged*—the trend of Americans toward reasonably quick, lightweight street machines. Most importantly, they created a revolutionary change in attitude, making motorcycle riding respectable. Then, when the multitude of bike riding Americans became more sophisticated in the ways and the world of two-wheeling, they introduced their fantastic Superbike, the 750cc Honda Four. A little earlier, they saw the tremendous youth market spring into existence and produced a line of mini-bikes capable of satiating a variety of tastes.

And now, ladies and gentlemen, the Mini-Cycle Era has dawned. Mr. Honda is right there, trying to get a piece of the action. Contrary to many trends of the past, the company did not arrive first. But, after testing their initial entry into the field—the Honda SL 70 (not to be confused with the earlier LT 70)—we feel that they did arrive with much of the most.

Like Yamaha's Mini-Enduro (a com-





MINI
BIKE
TEST



parison is almost inevitable), the Honda SL 70 is, for all intents and purposes, a miniaturized replica of the company's bigger Street Scrambler line, in Honda's case, the SL 100, 125, 175, and 350. With the exception of a few things, such as instruments, the bike looks very much like the bigger SL's, including paint, frame design and fuel tank shape. From a distance, you might understandably mistake the little bike for an SL 350. Of course, there is a slight difference in the engine and its characteristics. It is either a very small motorcycle or a large mini-cycle.

And like most other Honda SL's, the SL 70 can be generally described as a very reliable, reasonably comfortable, fairly powerful (for class) machine, that does its job very well. It will undoubtedly provide many hours of trouble-free, off-road, riding pleasure for its owner(s).

The double loop frame is essentially the same as the bigger versions, made entirely of tubular metal, and displaying the qualities of sound geometric design and rugged strength. A thick, tubular backbone arches its way downward from the steering head to the crossmember where the swinging arm is attached. Folding, spring loaded footpegs, with the traditional Honda rubber sleeves, are bolted onto the sides of the two cradle tubes and seem to be well located for both standing and sitting. The fuel tank and fenders are metal and display the attractive SL contours. Side cover plates, which incidentally must be removed to get at the 6-volt battery, are plastic but seem durable. We have heard tales of them vibrating loose on the bigger models, but did not encounter this problem with our test machine.

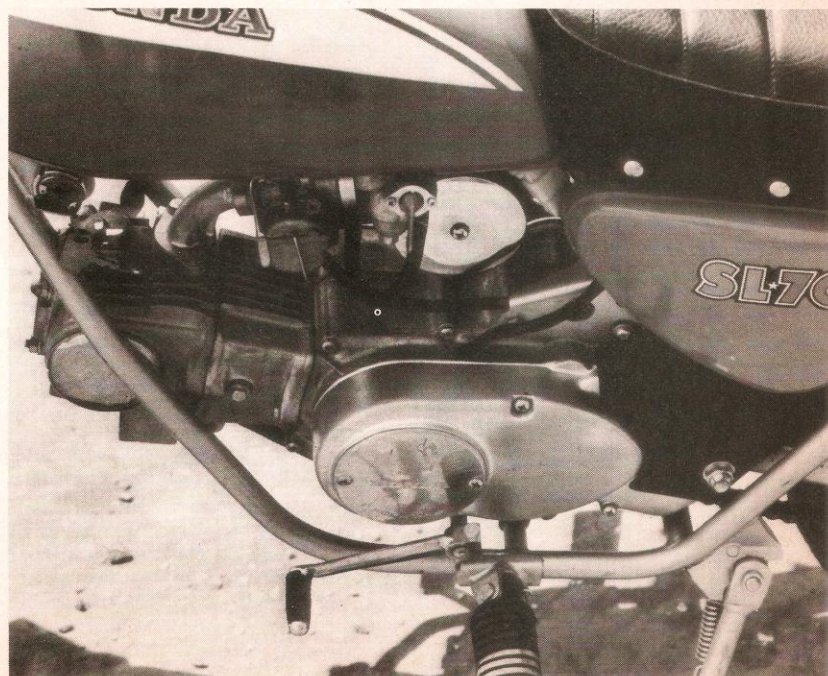
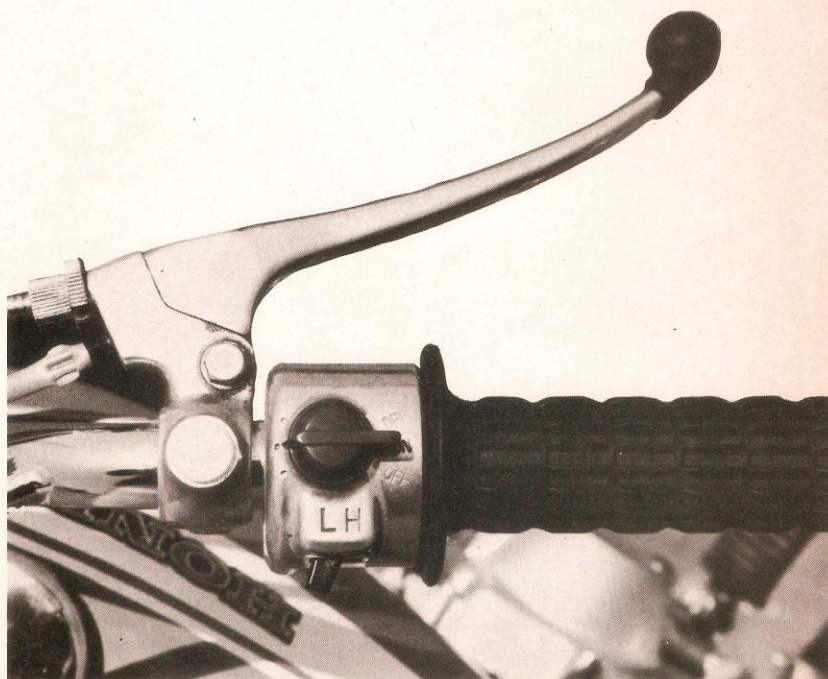
The handlebars are sufficiently straight

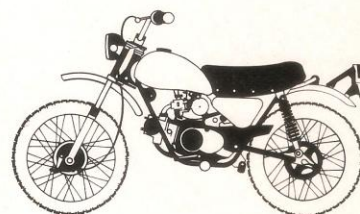
for off-road use and are securely clamped to the triple crown. Honda's two-way kill switch is also used on this model and located on the right side of the bars. Although this is an effective way of stopping the engine, our particular preference is still with the hold-down button system. Also on the right side of the bars is the headlight beam-selector switch, with positions for off, high and low. In the absence of the normal high beam indicator in the speedometer (since there is no speedo, a mistake, we feel), Honda has mounted a red indicator light forward of the center of the handlebars. Hand grips and levers have, as usual with Honda, excellent positioning, with the clutch operated by the left hand lever and the front brake engaged with the right hand. However, we wish they would get away from using cast aluminum levers. Dirt bikes get dumped, it's as simple as that, and aluminum levers are too brittle.

The SL 70 comes with a 2.50 x 16 tire on the front and a 2.75 x 14 on the rear. Both are knobbies and, in conjunction with the two-inch size differential, provide an excellent off-road combination.

The engine is a four-stroke single that displaces 72cc, while producing a claimed five horsepower at 8,000 rpm. Somehow, that figure seemed a bit high to us. The little single has a 47mm bore and a 41.4mm stroke (1.85 x 1.63 in.). Compression ratio is given at 8.8.

A four-speed transmission is used in the SL 70, with low at the bottom and the next three upward. Neutral, which we continually had trouble finding, is supposedly located between first and second gear. Shifting, like finding neutral, is not one of this bike's best features, something that is not unusual for





HONDA SL70

Manufacturer: American Honda, 100 W. Alondra, Gardena, Calif 92647.

ENGINE

Engine type	Four stroke, single
Bore	47mm
Stroke	41.4mm
Displacement	72cc
Horsepower @ rpm	5.0 @ 8000
Compression ratio	8.8:1
Ignition	Battery
Fuel capacity	1.3 gallons

TRANSMISSION

Transmission type	4 speed
Clutch	Multi disc
Final drive	Chain
Gear Ratios, Overall	
1st	2.692
2nd	1.824
3rd	1.300
4th	0.958

CHASSIS

Frame type	Double loop
Suspension	
Front	Telescopic fork
Rear	Swing arm
Brakes	Internal expanding
Tire size	
Front	2.50 x 16
Rear	2.75 x 14
Wheelbase	43.3 inches
Overall length	66.5 inches
Ground clearance	9 inches
Seat height	
Dry weight	137.8 pounds

PRICE AS TESTED **\$395.00**

cycle market in a big, fairly impressive way. The SL 70 will sell for around \$395, which doesn't make it exactly a steal. But they will undoubtedly sell. In fact, a friend of ours, Tom Cosgrove, owner of Pacific Coast Honda in Lomita, Calif., sold six in one day and is currently backordered. "I believe," he told us, "that the SL 70 is going to break all sales records." And he just could be right. □

Honda motorcycles. When it gets a mind to, the gear shift lever (left side) can be down right stubborn, and will totally disregard foot commands (no matter how spastic they become). There are times, even, when three or four tons of pressure would probably not convince the lever to move.

Basically, though, we found the power unit and transmission to be more than satisfactory in comparison with other mini-cycles. It was not the gutsiest machine we had ever ridden, but neither was it the weakest. The consensus of opinion was that it would hold its own in moderate terrain but would not stand much of a chance in some of the hairier sections of our deserts and forests, unless some modification work was done. This is a distinct possibility since this engine has lots of potential. In true Honda manner, the machine is reliable. Like its bigger brothers, it tends to be a bit cold-blooded, but once it's going, it will go and go and go and go.

Handling, too, was more than satisfactory. Honda has, over the years, developed a set of front forks that work quite nicely in the rough stuff, although the set on our test bike seemed just a tad stiff. The company, however, hasn't "arrived" yet with decent rear shocks, as those mounted on the SL 70 continued to display the same bad characteristics of their bigger predecessors.

Two additional things should be noted on the positive side of things: First, the bike has an impressively silent muffling system, and, second, the dimensions of the bike make it ideal for any youngster. These two things we feel are of extreme importance to any prospective buyer.

So in the final analysis, we must say that Honda has indeed cracked the mini-

Sometimes
you find them
by accident
but this one
was planned

THE UNRIDEABLE MINI-BIKE

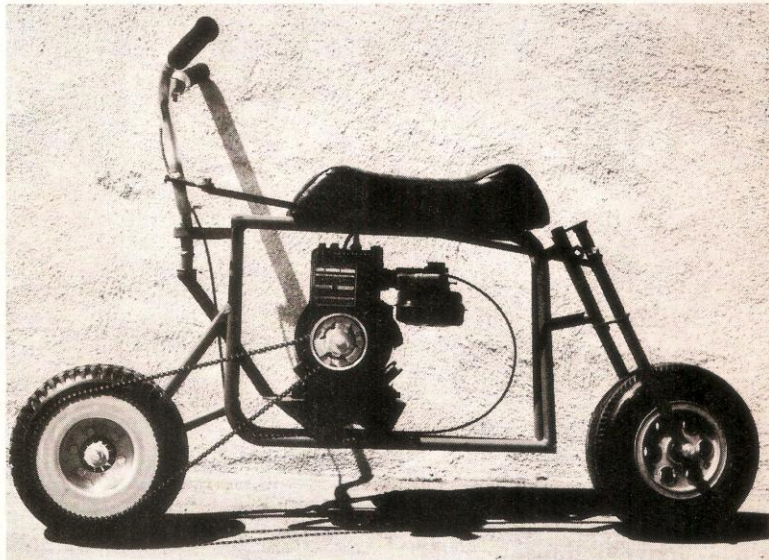
By JIM GILBERT

One of the toughest things to accomplish in the publishing game is a refreshing change of pace. After all, there are only so many mini-bike engines you can hop-up. Just about every one of them follows time-honored hot rodding procedures. It all gets a little repetitious after a while. So the better part of us get blasé around here from time to time, and the search for something different and unique becomes very important.

Editor Pat Mackie came through with the latest bit of craziness, and we think it'll flip you out, too. As a matter of fact, this is the world premiere of "The Unrideable" mini-bike! Sound like change of pace enough for you?

It was for us.

But let's start at the beginning. The idea started when PJM was reading a copy of the *Bicycle Journal*, just keeping abreast of what was going on in the one-manpower/two-wheeled world. He came across an article on an unrideable bicycle built by Bendix. Among other things, it was a design project to determine what factors contributed to a bicycle's stability. Most of us don't think very much about it, but there's a definite science to two-wheeled vehicle design. Just any combination won't work. On a few occasions, MBG has commented on a bike or two which have missed the boat in the handling department—and not intentionally, but by an



inadequate understanding of the principles behind steering and frame design. There are lots of factors involved, and they all have to work together.

Well, it seems that Bendix Motor Components Division designers realized this, too. They juggled the factors and then built a bike that could not be ridden. In a converse sort of reasoning, the object was to show how easy the ordinary bicycle is to ride by having a bicycle

which no one could ride. They've apparently proven their point because no one has been able to ride the bike for more than two feet without crashing.

It doesn't take a genius to imagine the thoughts going through PJ's mind as he read about this. Quick as a fox, and about as sly, he was on Father Bell's money-maker. He outlined his plan to MBG's famous Contributing Editor (me) and a fellow by the name of Ron Stew-

art of Ron's Mini Cycle City in Huntington Beach, California.

Mackie's plan was simple: Build an unrideable mini-bike and see if the same thing works like the bicycle. The project became known as "The Unrideable".

It didn't take long for Stewart to get in the spirit of things. He thought the whole thing would be a blast so he settled down to figuring out how to go about it. Several sessions were involved before the final design was determined.

The parts came from his shop's huge supply of "junk" and, in a frenzy of Sunday afternoon activity (often the only time he has to devote to pet projects), he whipped together the basket case shown on these pages. In essence, it is a motorized adaptation of the bicycle built by Bendix, but Stewart managed to make his personal contributions even to that.

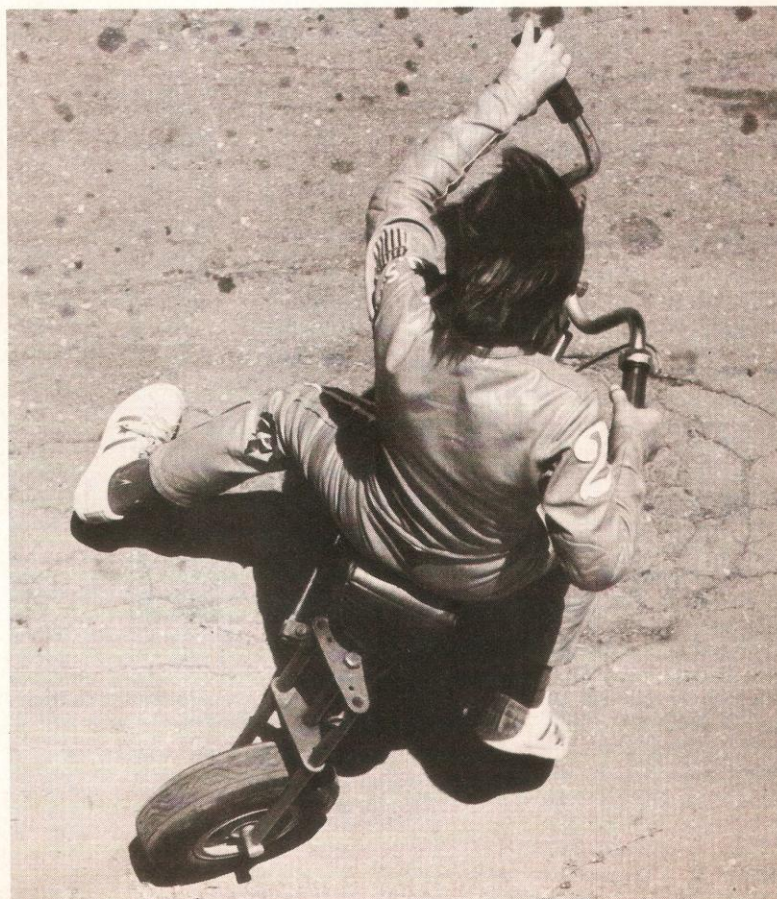
"The Unrideable" is the weirdest thing you've ever seen. At first glance, it could be mistaken for a conventional mini-bike—by someone who has never seen one before. But to the knowledgeable mini-biker it will look like a design nightmare.

Ron started with a double cradle frame section of 7/8-inch seamed tubing. It's tied together in the rear with a cross brace, and a standard engine mount on the bottom. A two hp Briggs & Stratton engine is mounted on that with the weight bias being slightly forward and a Zebra mini-bike seat is mounted on top of the cradle. That section of the bike was the easiest.

Now it starts to get tricky.

The front end of the bike has Zebra handlebars. These terminate in a bearing cup welded to a brace bar which slants rearward inside the double cradle frame and is welded to the engine plate. A piece of strap iron is wrapped around the handlebars and welded to the frame to give strength to the bars. About one-third up the bars, a fabricated steel drag link is bolted to a drag link tab welded to the bars left side. This drag link runs to the rear forks, but more about that later.

The front wheel is a Rupp C500 rear wheel—it does get confusing, but stay with us—which is mounted with a 70-tooth sprocket. *The front wheel does not steer.* It is stationary in terms of turning directions. *It becomes the drive wheel.* It is attached to the frame with a triangulated bracing and solid axle which addresses the wheel from the right side (due to the sprocket on the left side). There is no front or rear suspension as there is no need for it, since nobody can ride this machine.





The rear end of the bike looks like the front end of a normal bike, minus the handlebars. This is the steering end of the bike. A set of conventional non-sprung forks mount a Bonanza front wheel (6-inch 4.10/3.50 tires on both front and rear), and is attached to the rear of the frame at two positions. The drag link from the handlebars is attached to a tab welded to the forks. The forks, as you can see from the pictures, have a rearward rake.

That, roughly, is what the bike is all about. There is no suspension and there are no brakes.

"Brakes aren't needed," says Ron, "because no one can get going fast enough to use them. Besides, they'd really foul things up," he adds. Indeed they probably would, and there are enough built-in problems in trying to ride "The Unrideable" without adding any more.

It's a tricky piece of equipment, and Sneaky Stewart has made sure that the job of riding this machine is tough. He has made it as stiff as possible. With no "give" or flex in the chassis, the rider will over-react to any situation.

The front and rear fork rake angles are extreme. The front is about 60 degrees, the rear about 70 degrees, and this causes additional over-reaction. The front fork, if it were re-mounted in the conventional position, would extend out front of the bike like a springer fork on a chopper. And you know how stable they are!

The front wheel is offset to the left about two inches. This is to accommo-

date the No. 35 chain driving from a 12-tooth Horstman steel clutch, but the offset also manages to louse up front end geometry as well.

We told Stewart that making the steer a little sloppy, on top of everything else, seemed a little like dirty pool, and he agreed. But he didn't change it.

All these things aside, the biggest reason why this bike cannot be ridden is that the steering is reversed and in the rear. Basically, this is like the steering on a boat.

It's a complete mind blower. Turn the bars to the right, and the rear wheel steers to the left. Anticipate a left turn, setting up with body weight and all that, and the bike goes right out from underneath you because the wheel has turned to the right. It requires an entirely new riding approach. This is very hard to come by because it is not just new, it is *unnatural*!

So you can see that this bike is a unique challenge. No rider has met it yet, although plenty have tried.

Any number of people have tried to ride "The Unrideable" including this writer. The arbitrary challenge was set at ten yards. That is, a successful ride would be at least ten yards long. The bike can be ridden a few feet, but as soon as steering corrections must be made, the fun starts.

The engine starts easily and idles smoothly. There are no foot pegs, but the feet can be placed on the frame. Most riders keep their feet out to the sides, barely inches off the ground. There're a couple reasons for this. One

is to spread the weight out to the sides for better distribution and lower center of gravity. The other is that all attempts end in failure and it's best to be prepared for the fall.

Power is turned on after both wheels of the bike are lined up in a straight line. This is essential because the bike will go in the direction of the rear wheel. It's instant disaster to angle the rear wheel. The bike won't even go two feet.

With the wheels straight, power is eased on and the feet carefully lifted from the ground. The "Unrideable" moves slowly forward in a straight line, the rider shifting body weight to keep balanced. A few brief feet and the bike has a tendency to start to the right. The natural impulse is to correct for the drift (speed is all of one or two mph at this point) by turning the wheel to the left to keep the bike in a straight line. This simply turns the rear wheel further to the right.

Additionally, the rider's weight will be shifted in the opposite direction of the turned handlebars. In this case, the bars are turned to the left to straighten out the bike, and the weight would be shifted to the right. Since the direction of the bike is to the right, and the rear wheel is turned to the right, and the weight goes to the right, the bike falls out from beneath the rider because he loses his balance. It's more frustrating than Instant Insanity.

So, the rider tries again, having figured this trick out. "The Unrideable" starts to the right, the rider thinks and forces himself to turn the handlebars in the opposite direction he wants to go. In this case, he wants to go left to keep in a straight line, so he'll turn the bars to the right which will turn the rear wheel to the left. This sounds simple enough, but with many riders it may take hours to get the brain to reject the normal tendency to turn the bars left (instead of right) and correct the bike. If the rider can do this once and get the bike back in a straight line, he still won't get very far because the bike is so stiff he'll likely over-correct and start veering to the left. Strangely enough, the human brain won't react quickly enough to repeat the reverse (turn left to go right) maneuver, and the feet will go down and nullify the riding attempt.

Okay, let's suppose there's a rider out there who can do the reverse maneuver. He still has to train his body to shift weight in the opposite direction in which he is performing the reverse turning maneuver. If he can do that, and no

Continued on page 62

HEATH HILLTOPPER

One of the first, and biggest, kit makers presents new design

It seems a heck of a long time since we first ran into a mini-bike from Heath Co. Like nearly everything that Heath makes, this machine was a kit. It was one of the first mini-bikes we tested and we can well remember our delight in discovering the two-speed on the Boonie Bike. It was the first time we had tried out a mini-bike with more than one gear ratio.

We remember, with nostalgia, taking the Boonie Bike to a California beach and running it through the surf—just like in the TV advertising. Happy days—we produced MBG only once every two months and had lots of time to fool around. By today's standards, the old Boonie Bike was a pretty simple piece of machinery but, with the unfailing accuracy of hindsight, it seems obvious that Heath had really started something.

It was the fore-runner of the still-growing family of trail machines, up to, and including, three wheelers.

Good as the Boonie Bike was (and is), events have overtaken the original design. Today's trail machines are a far cry from those of a few years ago. Heath did very well with the Boonie Bike and it is natural that they would wish to consolidate their share of the market with a machine that meets today's demands.

So comes the Hilltopper. If the name seems vaguely familiar it is, perhaps, because you read the test in the previous issue of MBG on the Terra Products' machines, one of which bore the same name. However, there is no relationship between the Terra Products' machine and Heath's—except that both companies seem to be facing the “now-

we've-got-it, what-are-we-going-to-call-it” problem. Motorcycle manufacturers long ago started to call a line of machines by a name and the individual models by a number. Maybe the mini-bike industry will soon go the same way.

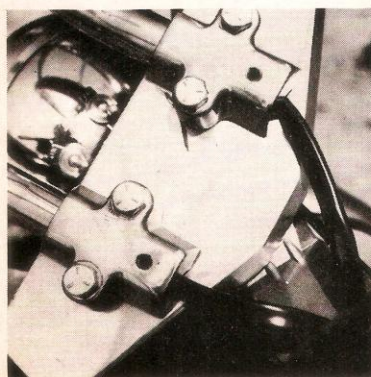
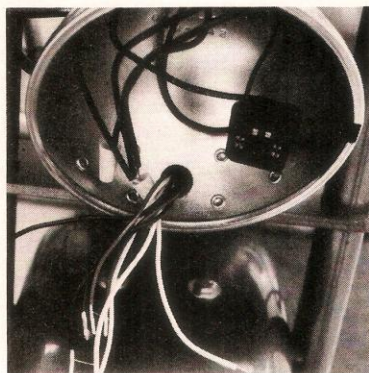
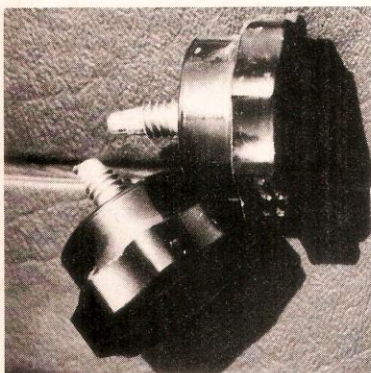
But, back to the Hilltopper. This, too, is a kit. And, of course, MBG's test has to include the building of the machine. It would not be entirely accurate to present a test of the Hilltopper as though it was a fully completed machine. There is no way a reader can buy this machine except as a kit.

So, a kit it is. It arrived in a big box and was, simply a mass of bits and pieces. When Heath says they sell a kit, they mean they sell a kit. Most so-called kits are simply sub-assemblies that have to be joined together to make the complete bike—not so much different from the way you receive many so-called machines. You know, with the front end disassembled and so on. However, the Heath kit had only the engine pre-assembled and bolted into the frame (bolting it into the frame, we suspect, is more a shipping convenience for Heath than a kindly gesture towards the customer).

Our kit was sent with all the goodies, naturally, including the lighting kit. You'll get some idea of what we mean by “bits and pieces” when we tell you that even the brake stop-light switches came disassembled. This mass of parts is pretty intimidating at first but if the builder remains calm, and follows the step-by-step instructions, the chances are that he will come out of it with the minimum of new gray hairs.

We recall heaping words of praise upon Heath's instructions that came with the Boonie Bike. As befits America's largest kit manufacturer, they were concise, logical and in precise order. However, with the introduction of the more complicated Hilltopper, the instructions have gotten a little less concise. We have a feeling that certain steps in the procedure were written with tongue in cheek. For instance, it would take a well-greased eel, assisted by a reincarnated Houdini, to successfully install the footpegs. In other words, it just can't be done the way Heath suggests. This really is no big deal except that solid mounting of the footpegs is important—you don't want them coming loose in use. Necessity being the mother of invention, the builder finds a way to mount them firmly but there seems to be no reason for making the job tougher than it need be.

What is even more frustrating is the



MINI BIKE TEST



need to go back over work you have already done, to do some step that comes further up the line. Such was the case in installation of the lighting kit. The wires for the ignition kill switch and the brake light switches (front and rear) are part of the optional lighting kit (included with the test machine) and their installation is ignored until after the ignition kill switch wire has been threaded through the left handlebar and the handlebars mounted. This means that the handlebars have to be de-mounted and the threading job repeated on the left hand side. It would have been more efficient to do the threading job only once.

Don't let our minor criticisms create the wrong impression. By and large, the construction of the Heath Hilltopper is a simple, if time consuming, job. The machine itself incorporates most of the up-to-date innovations of current mini-bike design—and a few that are rare. Since it is Heath's policy to ship an almost completely disassembled kit, it is obvious that its construction would take longer than, say, the previous Boonie Bike. We have become used to the more sophisticated machines on the market, these days, but after plowing through this construction job we have a better understanding of why they cost so much more.

And, let us state very definitely, at this point, the end product is worth the effort. The Hilltopper ranks among the best of trail machines. However, another factor must also be faced right about here. The price of the Hilltopper shows a really steep jump over the previous Boonie Bike model. Nearly 66 per cent over the standard price of the Boonie Bike and even more when the current \$20 discount is taken into consideration (incidentally, this makes the Boonie Bike a real bargain).

Of course, price is not the only way to judge a bargain. Many a "bargain" machine gets a different reputation when it falls apart inside a few months. The price jump in the Hilltopper is steep but it does buy a lot of goodies. For instance, reasonably efficient telescopic front suspension; a good torque converter; stout No. 40 chain; Tecumseh five horse, alternator-equipped, engine; spark arrestor/muffler; front internal expansion brake and jackshaft-mounted band brake; ignition kill button; and, the first time we have seen this on a mini-bike, a rear suspension that is truly adjustable for stiffness.

In addition, there is no comparison between the styling of the two Heath machines—with its frame-mounted gas

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AllAboutMiniBikes.Com

tank, great big seat, unusual handlebar mounting arrangement and gold paint job, the Hilltopper is about as good-looking as this type of trail machine can be without getting to look like a weak-kneed sissy.

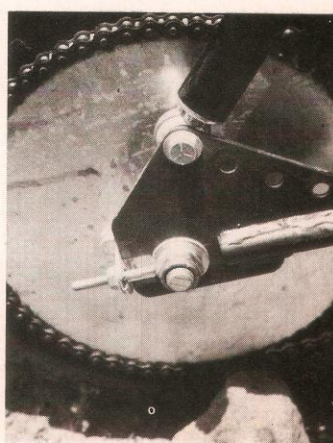
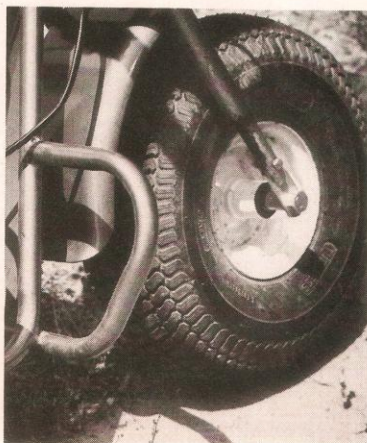
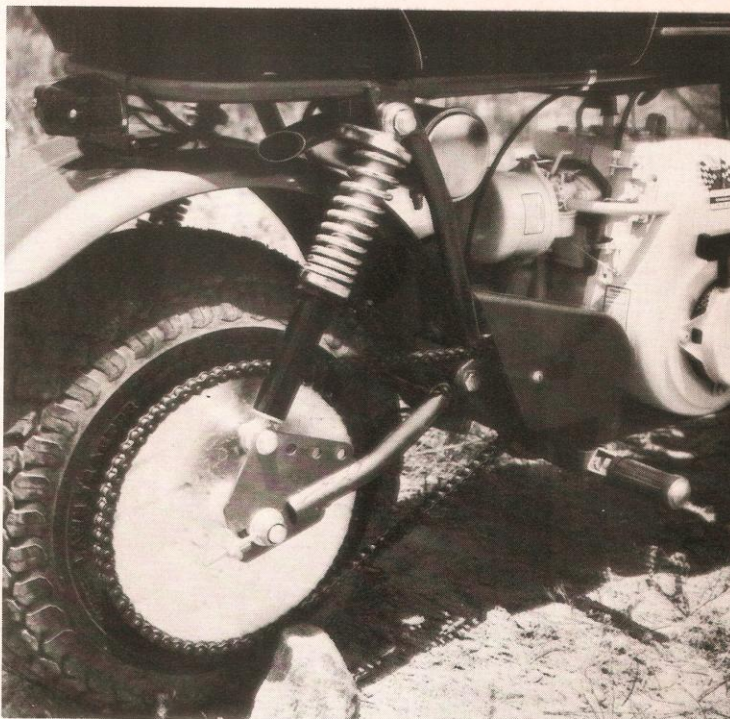
Our test machine had the standard features that made the Boonie Bike so attractive, including the fat, 18-inch diameter, 8-inch wide rear tire that stops at practically nothing. The 16-inch diameter, 4-inch rounded profile front tire is about as large as it could be without adversely affecting steering.

With the relatively large diameter of the rear wheel, the relatively low gear ratio of 7:1 at the top end, still provides a good turn of speed—around 32 mph. At the low end, the ratio reaches about 22:1 which is low enough to pull just about any hill the rider has enough courage to tackle. And, of course, the torque converter makes available any gear ratio in between for whatever the trail conditions call for. We think the gear ratios on the Hilltopper are just about right for this type of machine.

Basic design for the frame is the double loop type with the upper rails forming a loop behind the seat. About the most remarkable thing in the frame design is the loop ahead of the engine that is designed to protect the engine, and the rider we suppose, in the event of a spill or hitting a large rock. The only problem is this guard is likely to increase the chances of the accident it is intended to protect against. With the loop hanging out there to the side, there is a strong likelihood of getting hung up on the first rock or branch to come the rider's way. Then, when he falls over, as he undoubtedly will in such a case, the guard will help protect the engine and his legs—so we can't really say that it won't work.

It is likely that the frame we received was one of the first on the production line and we presume that the guy in charge of the welding "squirt gun" was also new to the job. At least, the spatters and bits of weld material hanging around would indicate this. The weld job is strong enough, it just doesn't look too professional.

Despite these flaws, the overall fit and design of the machine is excellent. Sintered bronze bushings are provided in the steering head and in the swinging arm pivot point (this latter wear point is often ignored by mini-bike manufacturers) and the wheels have sealed ball bearings. Front suspension is purely mechanical, that is to say, it follows standard mini-bike practice in using springs without dampening or return rate con-



trol. Yet it works as well as non-hydraulic suspension can work and this is due to the length of the springs—giving about 1½ to 2-inches of travel.

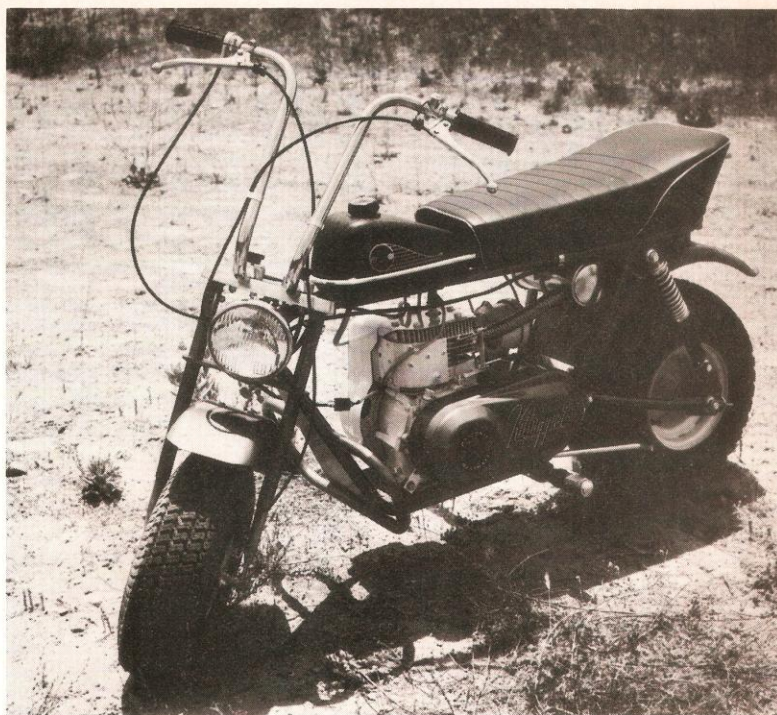
The rear suspension was interesting for the simple fact that it was adjustable for stiffness. This feature was provided by drilling the lower shock absorber mounting bracket with four graduated holes. By shifting the shock absorber up or down, forward or backward, between these mounting points, the degree of stiffness can be varied. In point of fact, we had the shock at its softest mounting point during our test and found the ride just about right.

Power for the Hilltopper comes from the five horse Tecumseh four stroke engine. This has long been the workhorse of the "heavy-duty set" although we have doubts as to whether the increase in power over the four horse model is worth the weight penalty that has to be paid. Still, for serious boonie work it is chugging power that counts and not, necessarily, nimble lightfootedness.

This engine drives through the new style Comet symmetrical torque converter and this unit seems to show considerable improvement over the old model. It seems less likely to get hung up in one or another gear range and is more responsive to changing trail conditions. The major change seems to be in the engine-mounted pulley that now comes in two separate sections instead of having both sheaves mounted on a common hub. We are not sure what the technical reasons are for this change. Comet usually stays on top of us with their design changes but this time they must have been asleep. Anyway, it seems to work. Mounted on the jackshaft is a nine-tooth, No. 40 chain, sprocket driving to a 64-tooth rear sprocket. The large diameter (10½-inches) of such a No. 40 chain sprocket is accommodated by the big-diameter rear wheel and still allows plenty of ground clearance.

Carburetor on the Hilltopper's engine is the standard Tecumseh float bowl unit but the exhaust is a really efficient spark arrestor/muffler of definitely unstock design. The muffler's relatively large chamber mounts under the seat and the exhaust pipe exits safely behind the shock absorber, between the fender and the seat. A nice arrangement.

With our test machine came a full lighting kit, complete with stop/rear light. The location of the headlight and the rear light was the most sensible we have seen on any mini-bike. The headlight was well tucked in between the upper and lower crown plate. Despite



the fact that this position made it difficult to get at the control switches, it also provided the maximum protection. The rear light was protected by the overhang of the seat and the rear fender. Although it has this going for it, and although manufacturers tell us that lights are a good selling point, we doubt that the lighting kit was worth all the additional work that had to be done by the builder. Had it not been for the lighting kit, we could have saved a lot of time.

Deadlines being what they are, we had to rush through the construction of the Hilltopper and, perhaps, if we had been able to take our time we would not have been irritated by the sections requiring concentration.

Another part of the kit that seemed unnecessarily complicated, to us, was the mounting of the handlebars. Some engineer sat down and really spent a great deal of time trying to figure out how to overcome all the criticisms of handlebar design in mini-bikes. The solution he came up with, and the amount of tooling that it required, must have cost Heath a small fortune. We wish we could say it was money well spent.

The front forks go together just like the standard front forks on a mini-bike, with the upper crown plate made from heavy gauge steel. On top of this goes an aluminum casting "cover plate" with indentations to receive the ends of the

handlebars. These indentations act like the lower sections of a pillow block and the ends of the handlebars are then capped with the upper sections. The cap bolts go right through the cover plate and the upper crown plate, thus holding the whole thing in place.

Neither the ends of the handlebars nor the caps are serrated to help hold the 'bars in position so a plastic knobbed screw is used to poke an unthreaded end through a hole in the end of the 'bars. Sort of like a pin except that the screw does not pass all the way through the handlebars, it just pokes its nose through.

We have no idea why such a complicated method was used to do a relatively simple job. It would be okay if it worked, but it doesn't. We assume it was partly to get something approximating the "Honda look". Somebody should have told Heath that the Honda mini-bike handlebars are one of the weakness design points of that machine and the wise manufacturer would use it as a how-not-to-do-it guide. As it happens, the Heath handlebars don't even have Honda's single advantage—easy foldability. And the screw that pokes its nose through the 'bars to hold them in place, gets it bitten off if the average rider throws his weight on the foot-long leverage provided by these ape-hangers.

We can live with almost any other

Continued on page 65

TECHNICAL REPORT

YAMAHA MINI-ENDURO BOLT-ON MODS

Some are
go-fast
others are
just useful

By JIM GILBERT

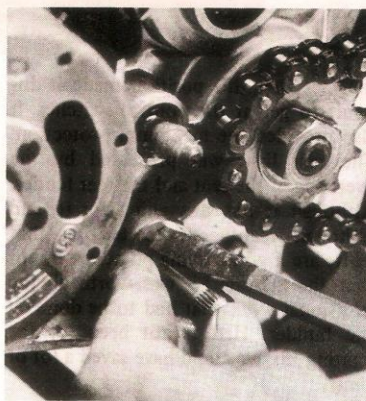
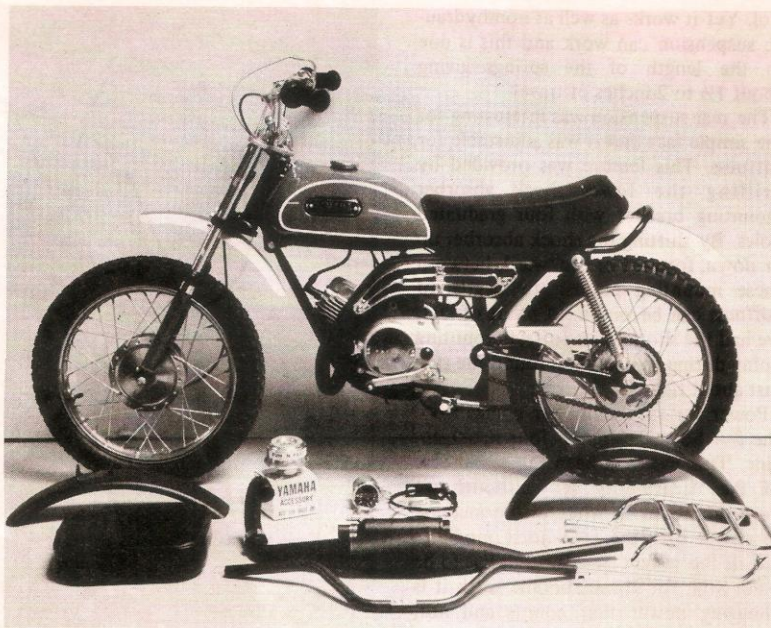
Flash! The Yamaha Mini-Enduro is one of the most popular mini-cycles to hit the market. Not really surprising, we're sure, because MBG has already gone on record as a fan of the Mini-Enduro. Again it should be no surprise to learn they are selling faster than dealers can deliver them. It's to be expected.

If there is a surprise associated with the Mini-Enduro, considering its popularity, it is that there are so few accessories manufactured to complement it. There seems to be quite a few expansion chambers around, some good and some not so good. (Including one from a manufacturer who said of his expansion chamber, "I don't care whether it works or not. Just so long as it makes a lot of noise and sounds like it does." Naturally he is not represented in this story.)

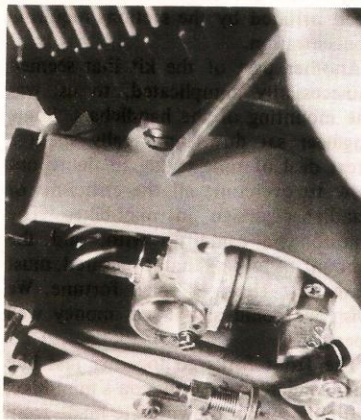
It took a lot of searching and hassling to accumulate the products used for this article. That isn't to say that the independent manufacturers gave us trouble; on the contrary, they were most helpful. But it took plenty of digging to turn the parts up. However, no sacrifice is too great for the good readers of MBG, as it says in the small print. . .

The object of this project was to utilize as many bolt-on modifications as we could. This meant that we could not aim our work at one specific end, like making an all-out racing bike, or modifying it for the dirt or whatever. All we wanted to do was install the components and evaluate them as best we could.

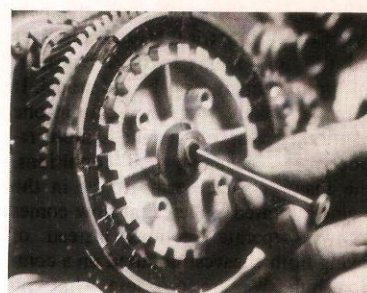
On top of this, we discovered that two components (air cleaners and expansion



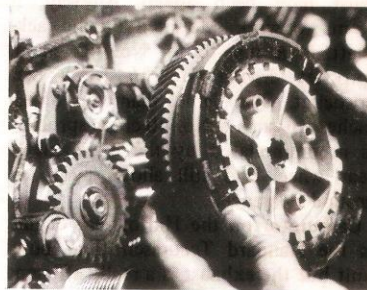
A. Yamaha Mini Enduro shift shaft lever is popped off after shift lever is removed and cover bolts removed.



B. Remove the rubber plug located at side of case; then insert screwdriver to loosen the carburetor.



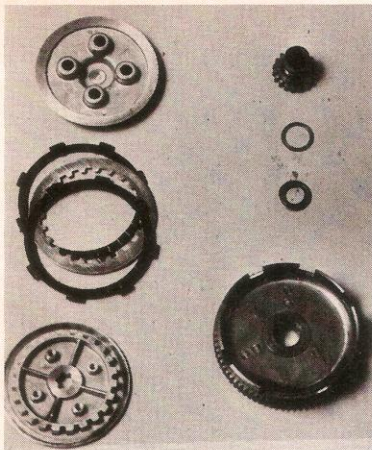
C. After removing cover & breaking loose case remove all hoses, oil pump line (plug with pencil) & clutch screws. Pop off the clutch plate.



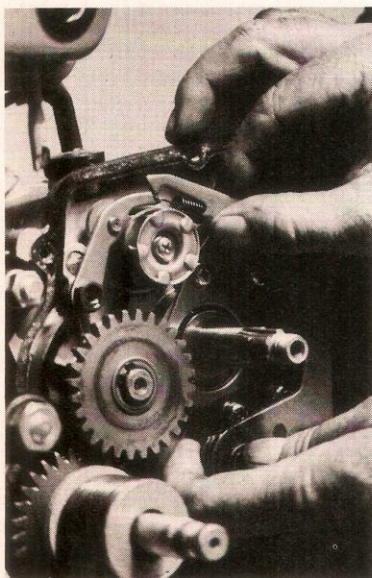
D. "Lock" is removed with chisel & hammer. Clutch comes off in one piece (but it won't go back in that order).

chambers) were produced by more than one company. So we had to install both for effect, then change over to the other product line and try them out. Busy work.

So we loaded up all the parts (elsewhere is a listing of the component, price and manufacturer's name and address) and a brand new Mini-Enduro,



E. Order in which clutch assembly should be reinstalled: Start at top left, work straight down, then move to top right & work down.

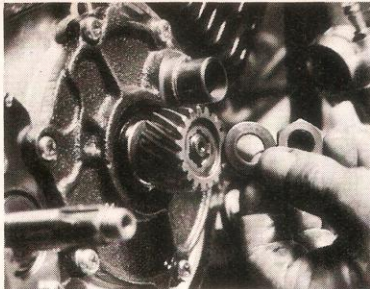


F. Yamaha Mini Enduro gear shift lever is next picked up carefully with the hand and lifted off.

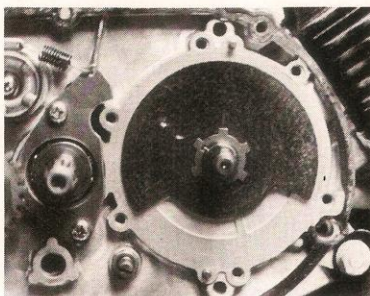
and headed for a Yamaha specialist. He happens to be Bill Butler, a former Yammy dealer, and the head man behind Fun and Fast, 18143 Napa, Northridge, California.

He's genial, cooperative and describes himself as a "natural-born fiddler who manages to make money at it." He welcomed the opportunity to be handed a box of miscellaneous parts and told: "Do it." He did.

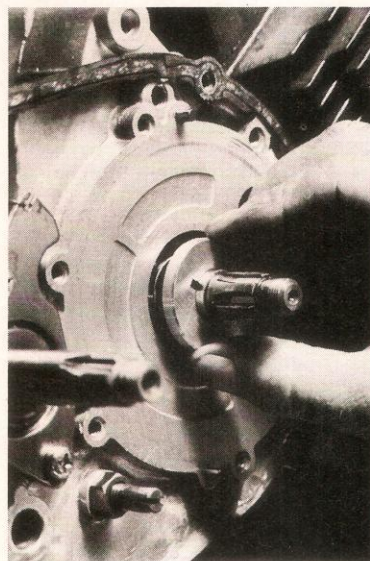
There's no particular sequence to the work. We just took the parts as they came and installed them. We guesstimate that the same job would take about one Saturday's work for the guy with a mechanical aptitude and the proper Metric tools. A lot less for those



G. The stock Yamaha rotary valve is pictured here after the valve cover and bolts have been removed. It is a fibrous substance.



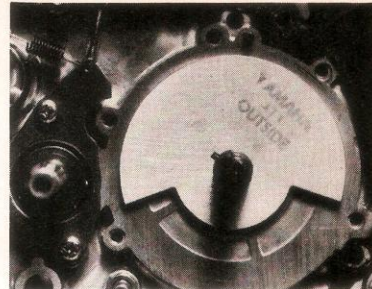
H. New spacer is installed behind the position for the new rotary valve. It provides the correct clearance.



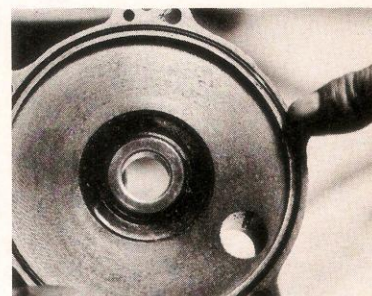
I. Fun 'n Fast rotary valve must be mounted with the outside showing clearly. The valve simply slips on.

who are particularly handy and experienced.

We made one major change to the engine which should increase the power without jeopardizing "normal" performance: The installation of Bill's Fun and Fast Rotary Valve. This was the biggest job and requires the most mechanical work.



J. The "O" ring on the Yamaha Mini Enduro valve cover must be seated properly or the engine will suck-in oil.



K. This is what engine should look like after the rotary valve installation, but before the clutch goes back on.

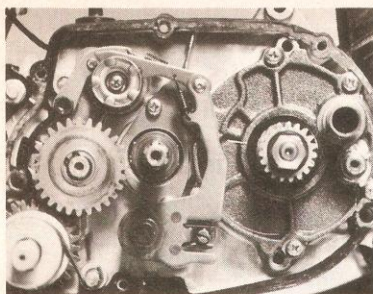
But the first stage was the simple installation of the plastic replacement fenders made by K&N Engineering. The front unit required unbolting the stock Yamaha fender, sizing it up with the lighter plastic fender for mounting hole alignment, and then drilling $\frac{1}{4}$ -inch holes. The fender was then bolted into position.

The rear fender required popping the seat off (it has a snap pin for the job), and then duplicating the alignment, drilling and remounting.

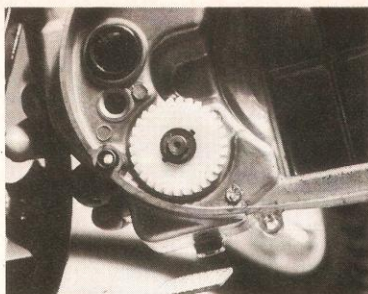
The two fenders are lighter than the stock units and look good. There is nothing difficult to the job other than insuring that the mounting holes are properly placed. Being flexible, they are less likely to be damaged in a fall than are the rigid steel stock units.

An accessory rack by Triple A Accessories was installed. This necessitated changing the rear fender mounting bolts to longer units, at least $\frac{1}{2}$ -inch or 15mm in length. The top shock mounting bolts are loosened, and the rack is simply slipped in and tightened up. The rack can be used to haul equipment, a useful advantage, or a buddy seat can be easily bolted in place. If the buddy seat is to be used, it will be necessary to install an extra set of footpegs.

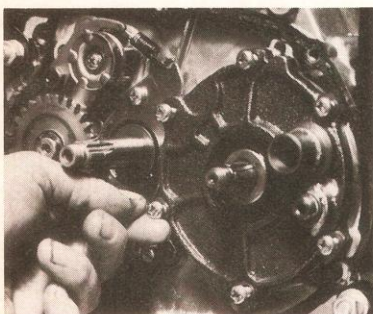
We wanted to replace the stock bars with a nice set from K&N but the stock Yammy has the controls welded to the



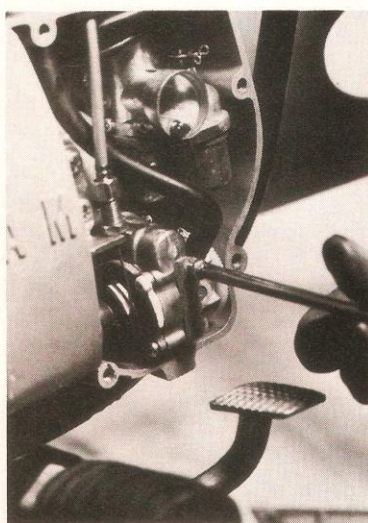
L. Button-it-up by carefully securing each of the phillips screws—then replace the rotary valve cover.



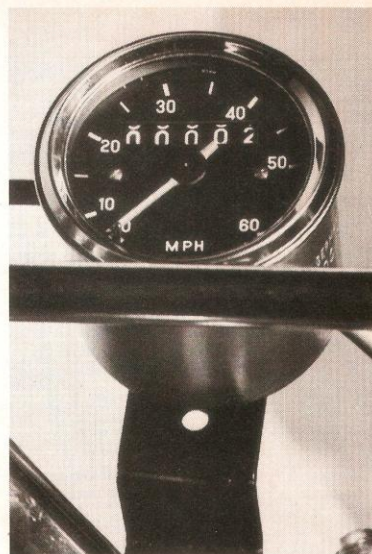
N. Bleed oil pump and lines to remove all the air bubbles. If not done the engine could be damaged from lack of lubrication.



M. The teflon gear inside the case must be meshed when replacing the case or it will suffer broken teeth.



O. Bleed oil pump & lines to remove air bubbles. If not, engine could be damaged from lack of lubrication.



handlebars. We didn't have another set of controls, so we didn't try the installations. Too bad Yamaha welds those controls, it makes a relatively inexpensive job more costly. However, people who are concerned enough to swap handlebars will probably want to change over from the stock "pot metal" levers to steel units.

We installed one of the new VDO speedometers and it was a snap to install. There was only one problem: The sending unit is attached to the wheel on the left side and the spacer must have 3/16-inch removed from it for the sender to fit. Do not, under any circumstances, splay the forks to slip this unit in as front end handling will be greatly affected. Cut down the spacer for an easy fit.

The sending unit itself has a spoke on it which makes contact with the spokes of the wheel. Each revolution of the wheel turns this arm and this is sent to the speedo. The instrument is mounted in a convenient bracket provided by VDO, and is attached to the sending unit with a flexible cable of the proper length. It works very well (not surprising as the German VDO instruments are among the best made) and is recommended for the serious rider who needs instrumentation. Incidentally, VDO is producing speedo's for most popular mini-bikes.



Finally, we get to the complicated part with the installation of the rotary valve. It's complicated in that you have to poke into the engine, and there is a good chance you might get some of the tiny parts lost if you do not exercise caution. We suggest a shop manual, several tins or boxes to put the parts in, and a good memory for the order in which the parts are removed.

The first sequence entails tearing down the engine so the rotary valve can be removed and replaced. The following tools are required: hammer; chisel; Phillips screwdriver; one large, one small screwdriver; one 13mm, one 19mm socket; and an Impak-driver (or strong wrists) with Phillips head.

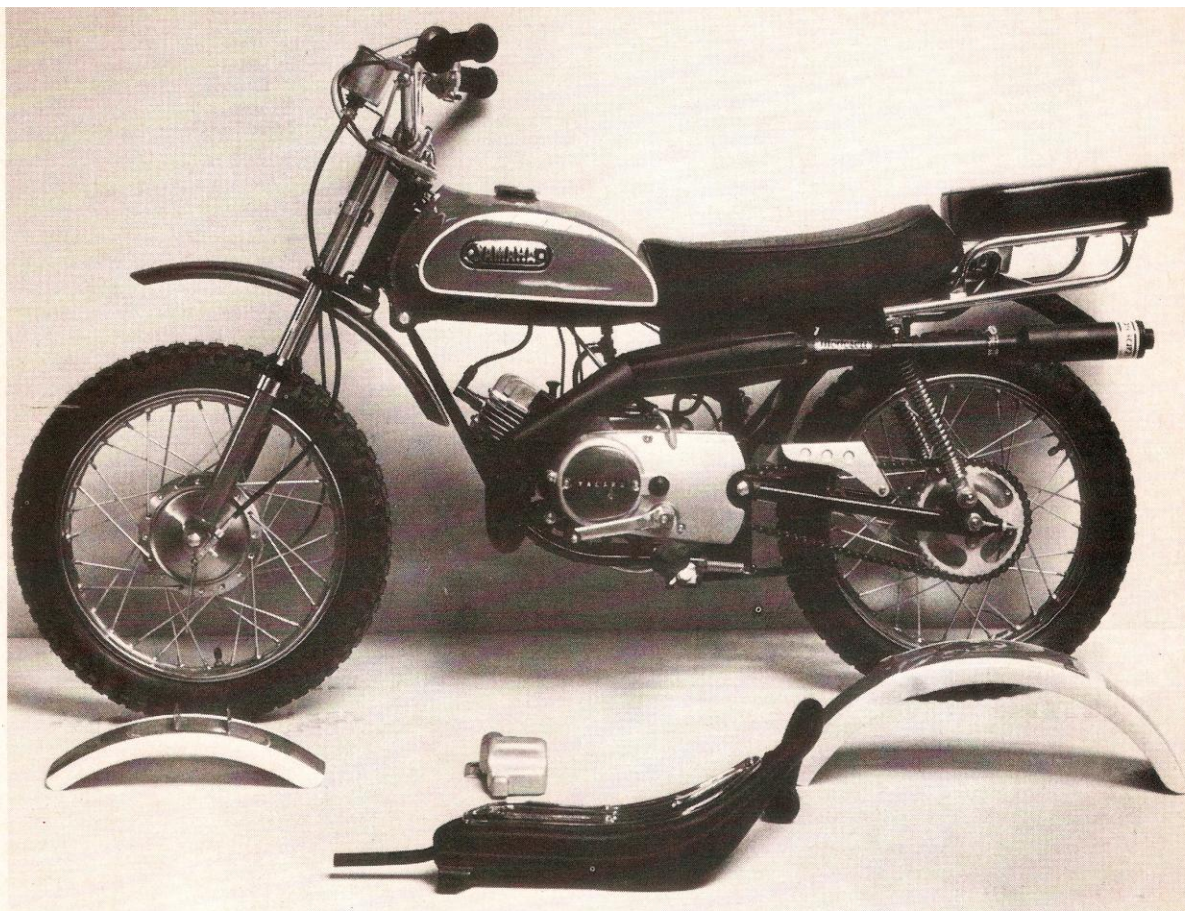
To disassemble the Mini-Enduro engine, pop off the gear change lever, then remove all bolts from the cover. With the cover removed, pop off the shift shaft clip with a screwdriver. Then drain all oil from the engine.

Then go to the other side of the engine and remove the kick starter lever. Unbolt the cover plate. At the front of the engine is a little rubber plug. Remove it and insert a screwdriver in the hole to loosen the carburetor.

All air cleaner hoses should be disconnected at this point. A small stub of a pencil works very well to block oil leakage from oil tank lines. Stuff the pencil in the line and stop the oil flow.

Next remove the carburetor, then the air cleaner. Discard the cleaner because a new one will be installed in its place, one which will probably give you an additional two horses anyway. Then remove the oil pump line that feeds the engine from the pump.

Gently rap on the case with the ham-



mer. It should easily come off.

Then you have an imposing looking clutch assembly staring you in the face. This will all probably come off in one-piece, but it won't go back that way. Pay attention how the pieces fit.

The four clutch screws are removed, the springs coming off with them. Pop off the clutch plate and slip out the center clutch pushrod. A chisel and hammer is used to gently loosen the remaining assembly. It will all come off in your hand.

Then the spring-loaded shifter shaft is picked up with a finger and lifted off. Then the nut and washer are removed.

This reveals the rotary valve cover, or at least makes it possible to get to it. Earlier models have flathead screws which were countersunk, but the newer Mini-Enduros have recesses on the cover to permit the shift shaft lever proper clearance (we're not positive they call it a shift shaft lever, but shift shaft sounds groovy, so we're using it).

With the cover removed, the rotary valve is exposed. It has changed in its composition from the earliest models,

but it is still some form of fibrous material. It has a tendency to get very hot and can disintegrate if the engine is run at full poke for a long time. The Fun and Fast Rotary Valve is aluminum with different timing, and won't be damaged with hard running.

The old spacer is not used so discard it. Be sure there is adequate clearance and the new valve rotates freely. Also, it is absolutely essential that the valve be installed with the side marked "OUTSIDE" facing you. The engine will hardly run if you put it in backwards, and you'll have to disassemble it all over again.

Okay, first step is to install the new rotary valve and spacer and tighten into position. The O-ring on the rotary valve cover must be checked to insure it is properly installed, otherwise oil can be sucked in. The cover is then replaced, and the shift shaft lever slipped back into place. Then the clutch is reinstalled. There's a photo in this sequence to show the proper order of the clutch reinstallation. A note here about the clutch spring bolts: They are very fragile

and must be tightened carefully or they will snap. Also, the washers in the clutch must be replaced exactly as they were removed, or the clutch will not function at all.

When the cover is replaced, care must be taken to insure the Teflon gear is properly meshed or it will chip and break.

A cardinal rule to follow here (and in all mechanical jobs) is to check that everything functions as it should as the job goes along. This will prevent you from having to disassemble the components again later on.

The carburetor is modified with a change of jets and needles. Actually, a Yamaha YG-1 jet replaces the Mini-Enduro model. The stock JT-1 jets have a selection of only three, the YG-1 gives a wide variation so that proper jetting can be determined for each area and use. Additionally, the JT-1 stocker won't give enough gas for the new rotary valve. The carb needle is also changed to match the YG-1 jetting.

Before the engine is buttoned up, the

Continued on page 59

THEY SHOW THE WAY IN SAN JOSE

*fairgrounds race
program leads up to
ten-day event*

Story by Judy Erlandson
Pictures by John Erlandson

At the Santa Clara County Fairgrounds in California, the flag falls every Sunday and an average of 60 to 80 mini-bikers begin competition for the day. But the weekly mini-bike events in San Jose are more than just another race program—it's a family way of life.

Most races are open to boys and girls ages 7 to 20, but an Old Man's Race and a Powder Puff race for the ladies are recent and popular additions to the regular race schedule. These events provide a few laughs and a lot of excitement to the 400 to 500 spectators who attend the races weekly.

Mini Bike World-Wide Racing Association, the organization responsible for the Santa Clara Fairgrounds racing program, had 150 riding members after only three months of operation. Weekly races average 60 to 80 riders, and our

first major racing event, the Bay Area Championship Race, was held on Sunday, June 6th.

Mom is often the pit "man" for her family. Sandy Alves, for instance, is every bit as handy with a screwdriver as her husband, Tony. In this case, necessity was the mother of Sandy's skill because both their sons—Scott, aged 9, and Tony Jr., aged 11—race weekly and dad is a race official. If all goes well and mom isn't needed to bandage a scraped knee or tighten a bolt, Sandy enters, and often wins, the ladies race. Tony Sr. usually takes a short break from his officiating duties to take his chances in the Old Man's competition, so it's a rare weekend that this whole family doesn't get to race and take home a trophy or two.

Another racing family is the Gary



MAKING IT THROUGH - While a couple of competitors battle it out, No. 106, Robby Balga sneaks by as smooth as silk

Andres family. Each week they make the 50-mile drive from San Bruno so that son Larry, aged 7 and one of the sharpest junior hot-shoes in the area, can race. Larry's mounts include both his own Yamaha and his sponsored Kawasaki in the class III, 7-11 races. Young Larry comes by his racing talent naturally. Both his father and his grandfather have been racing for some time. Grandfather races locally with a novice rating and father Gary races his own Yamaha 250 at the professional track at Hayward, Calif. Both of them, however, take the time to be on hand Sundays to provide Larry with advice and encouragement. His mom and his sister are always on deck for their respective halves of the Powder Puff race and 10-year-old Carla Jean often doubles as a trophy girl.

Another local race mother was a professional dancer until just recently. But she looks right at home dancing around the pits helping her 14-year-old son, Vince Fazzari, get his Hodaka-engined mini-cycle ready for the class IV race. Vince is a consistently good rider and often wins.

Even Bob Scheid, a former San Jose cycle shop owner who now runs and promotes the races, gets a hand from his children. They help out at the admission gate, polish trophies, register the riders and even find a few minutes here and there to enter a race.

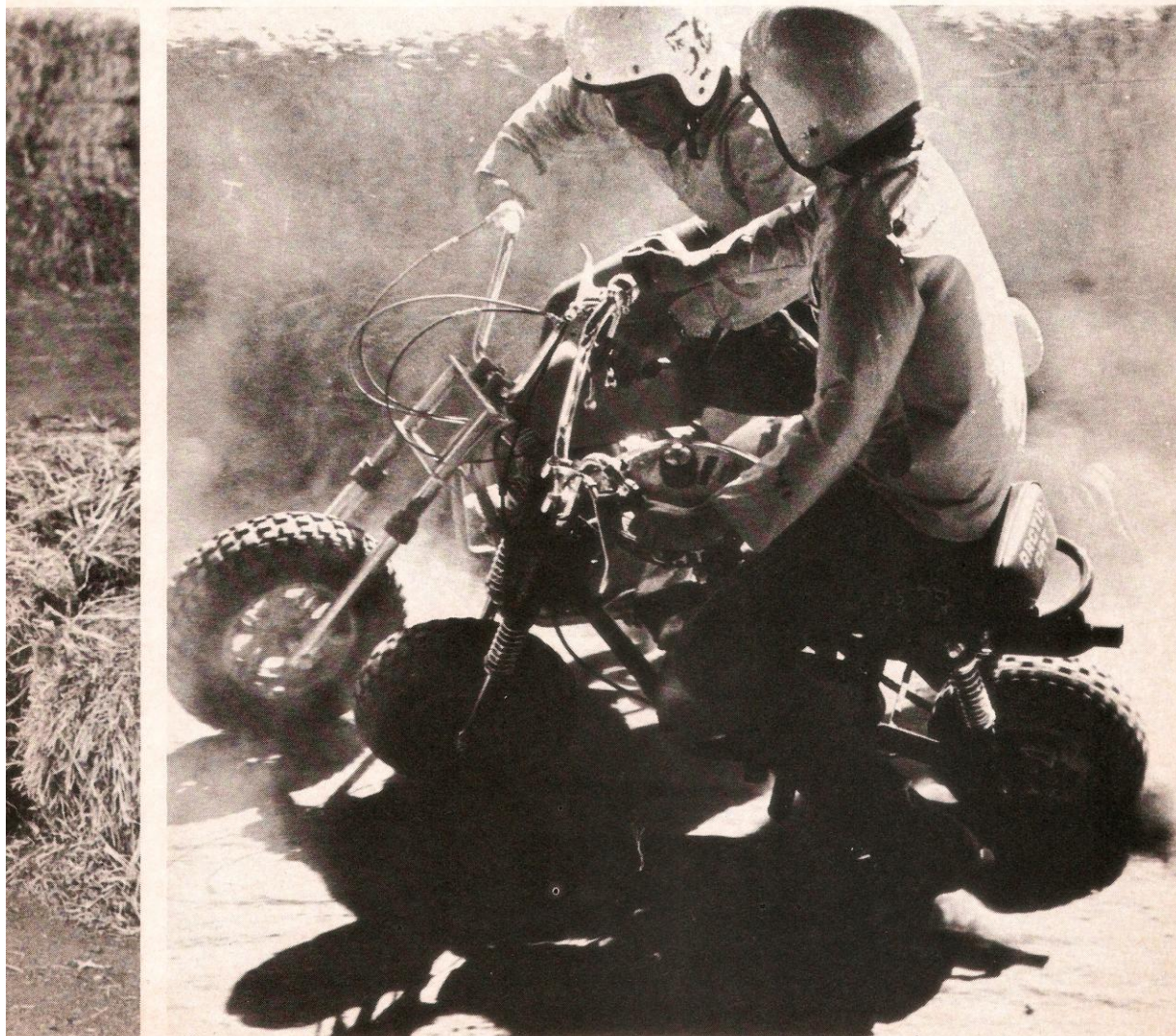
Keen rivalries have sprung up over the last couple of months as the riders develop more confidence and skill each week. One of the sharpest of these is between 7-year-old Larry Andres and his arch rival, Robbie Balga of Sunny-

vale. The boys have similar machines for both of the classes they enter. Each has a personal Yamaha Mini-Enduro and both are sponsored by Cancilla Karts on a Kawasaki. It's something else to watch these two battle it out on the track. What they may lack in size, they more than make up for in skill and determination.

During the Championships, Larry and Robbie tied for points going into the first race. In the second heat of the main event they swapped the lead back and forth until about the 6th lap when Robbie landed in the hay bales. He jumped back onto his bike to find himself in last place yet he still managed to come in second less than half a lap behind Larry.

The intense rivalry that takes place

Continued on page 68



MIX-UP - Randy Pacheco on his Chrysler-powered Artic Cat mixes it up with Mike Key as excitement gains the upper

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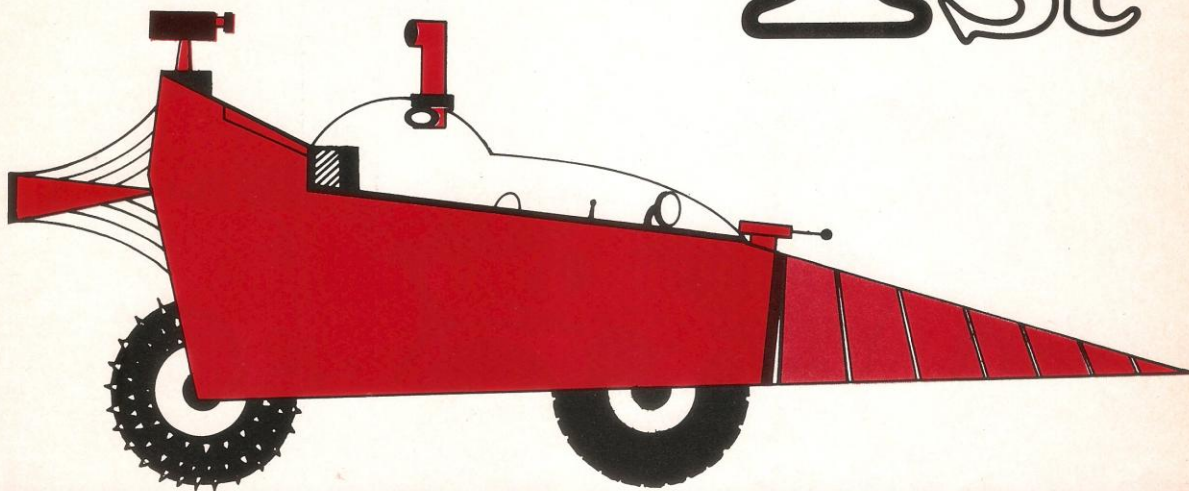
-
- L. Laser beam projector
 M. TV camera for recording action
 N. Collapsible, quarter-turn, steering wheel
 O. Miniaturized computer control panel
 P. Ejection charge and parachute pack
 Q. Thirty day survival kit
 R. Periscope to sweep rear sections

DESIGN

What surprised us, was the freaky, far-out, stuff that our readers came up with. We didn't know what to expect when we asked readers to "let your imagination roam free" and send in "weird and wonderful" mini-bike designs. We promised \$15 for each one published and that may have had something to do with the flood of replies. But we had no warning, there was no

We mean, you'd have to be a little crazy to come up with some of this stuff. Or maybe we've just become stodgy with old-age. Anyway, one thing's for certain—a psychologist would have a field day with these drawings. But don't worry guys. Every entry was micro-filmed before it was destroyed. All the information was put on a micro-dot and the editor now carries it around under his contact lenses. What the

1st



AWARD

enemy doesn't know is that one of his eyes is glass—actually a super magnifying glass so that he can read the Design Award entries at any time, even while sleeping. Fortunately, enemy agents who have seen him giggling in his sleep have assumed that he was having a pleasant dream about out-dragging a Honda 750 with a Teke-engined mini-bike. But if they ever find out he doesn't wear contact lenses, we'll be in serious trouble.

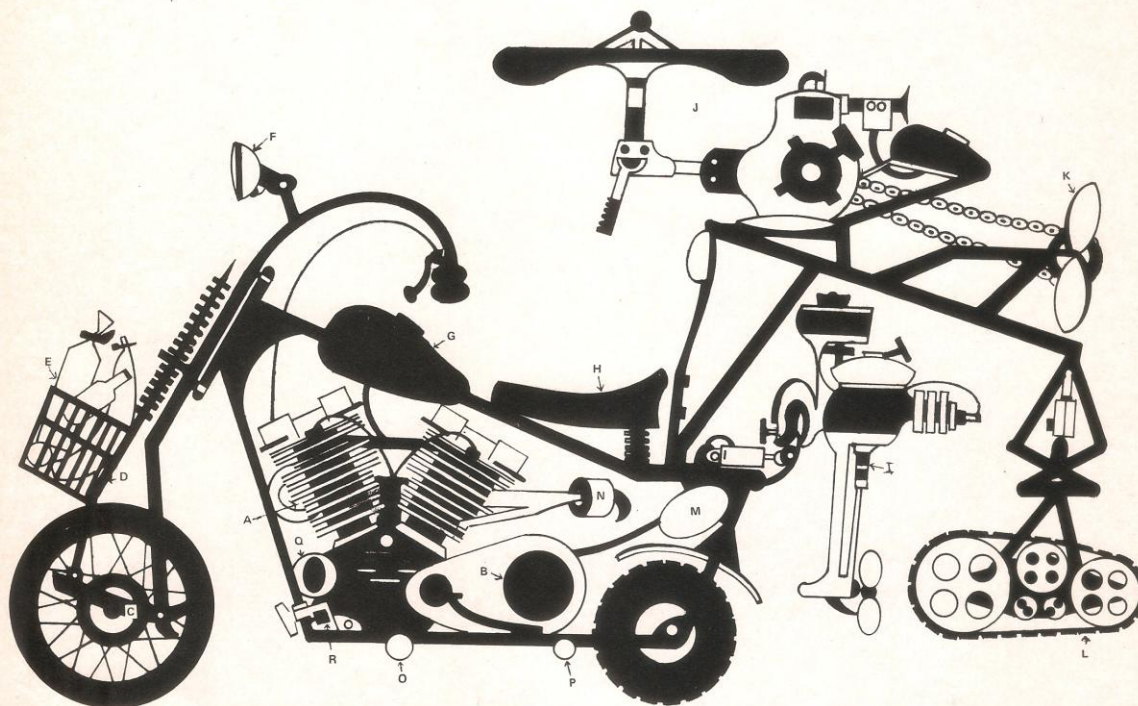
What were we saying? Oh, yeah, all those other guys out there are nuts.

Like, would you believe an entry called a "Burning Bike" submitted by Gary Abell of New Rochelle, N.Y. What makes it worse, everything was made of sticks of dynamite and rockets—and it was all burning, yet. Pow!

The strange thing about it all, is the tremendous creativity of the entries.

Yet, in many cases, there would be a similarity in ideas from people who live at opposite ends of the country. Something like 80 per cent of the entries were basically choppers, if they were basically anything. Shades of Peter Fonda? And everywhere there were laser guns of various sizes and shapes. What's the laser bit, guys? And how about grenade throwers? Flame throwers? And all over the place, tank tracks. Pretty aggressive stuff.

Some of the guys came up with en-



2nd

tirely new approaches. Like the entry from Guyton Thorne of New Canaan, Connecticut. He had a "super up-hill bike" with a seat that was horizontal when the machine was climbing a hill. Great! But what happens when he turns around to come down? The seat's upright. Got to hope for nothing but up-slopes. Guyton also had a camper bike but Bennett Leadford of Soing Air

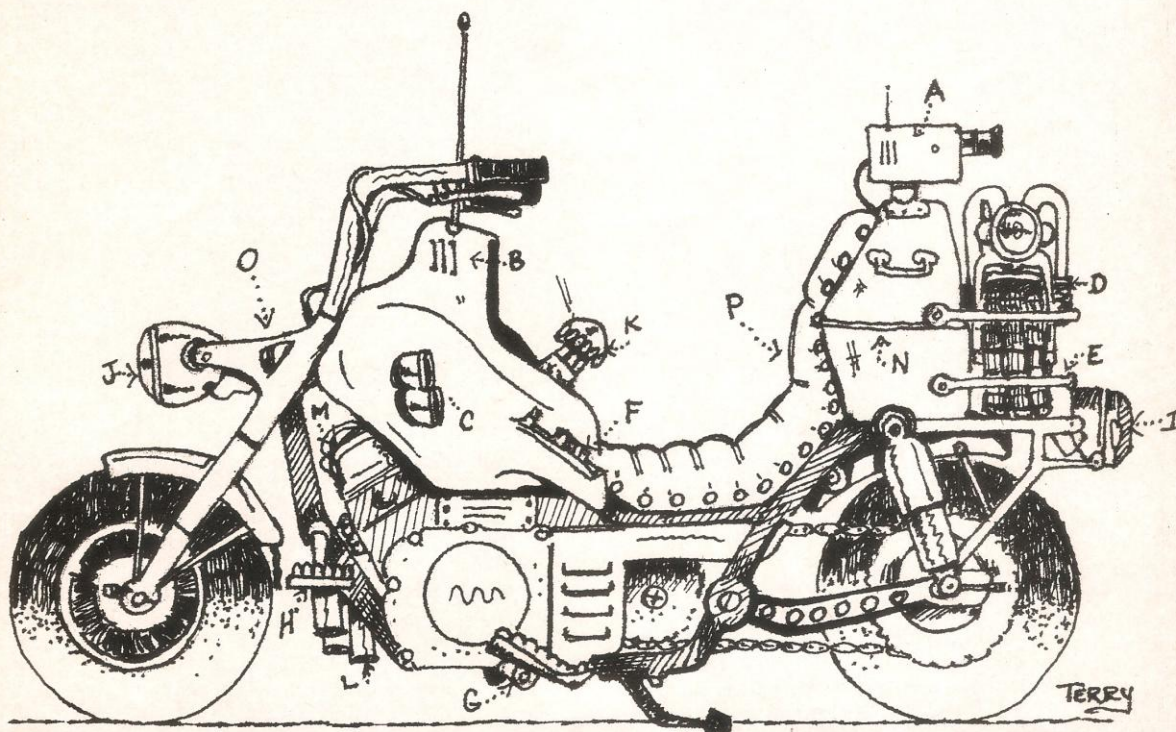
Force Base, Maine, came up with a better one. Bennett's "sportsman's dream" included a canoe, loaded with all kinds of gear, mounted over an umbrella that covered an electrical razor; flare gun; rider; and 30 hp engine. Naturally, a woods bike is not complete without a mechanically-operated axe and buzz saw.

Faced with this kind of thing, we had a hard time deciding which designs would win awards. Originally, we had intended to publish the best one of the

- A. Twin overhead valve Teke engines
- B. Custom calibrated dual torque converter
- C. Snow ski or surf board
- D. Oil dampened leading link front end
- E. Supplies for a week
- F. Red and white flashing searchlight
- G. Ten gallon fuel tank
- H. Springer seat with salami inside
- I. Long shaft outboard motor for sea operations
- J. Independently powered helicopter unit
- K. Propellor for flying power
- L. Retractable tank track for marshes
- M. Super quiet muffler for sneaking around
- N. Loud pipe for scaring the opposition
- O. My foot pegs
- P. My girl friend's foot pegs
- Q. Electric starter
- R. Sand dispenser for slippery conditions

bunch, not thinking that we would get so many good entries. So, we weeded them down to three and could go no further. So \$15 checks are on their way to Terry Chaine, 4414 Randolph St., Bell, Calif. 90201 (his drawing was so well done that tech artist Mike Mishich wouldn't try improving it and that, actually, is a major reason for the award

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3rd

- A. TV camera scans rear traffic
- B. Television set receives camera's image
- C. Instruments, oil and amp gauges
- D. Fold-down Honda Z50 mini-bike
- E. Mini-bike carrier
- F. Push buttons control TV transmission and built-in radio, etc
- G. Foot rest
- H. Frisco bar with foot rest
- I. Extra large tail light
- J. Quartz headlight
- K. Gas cap
- L. Exhaust pipes
- M. Chevy V-8 engine
- N. Fiberglass caddy for storing mini-bike parts
- O. High intensity light used only in super-darkness
- P. Soft leather seat with built-in vibrator

going to Terry); Ken Speiser, 13 Beam Place, Haledon, New Jersey 07908; and Jason Brown, R.R. No. 6, Woodstock, Ontario, Canada.

Fortunately for the MBG staff, there was this strange sameness to many of the entries, despite their imaginative execution. So we pulled a sneaky. All the machines that looked as though they were primarily designed to wipe out the human race, got wiped out. Ken's laser

beam rifle nearly disqualified him but the rest of the design was well thought out and you could use a laser beam to cut a hole in a fence—right? Anyway, getting rid of the fire-breathing tanks thinned out the ranks somewhat, making our task easier.

A serious word now. It's the kind of response we received to our little design award thing that really makes us dig our readers. To everybody who took time to carefully draw a machine adding everything to it that their imagination would allow; and to everybody who got it in the neck for goofing up on their homework as a result; and to everybody who wrote long letters of explanation even though their mothers can't get them, no way, to write to their rich aunts, to all these people—thanks. □

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COLEMAN SPORT 5.30

**Camping equipment manufacturer
turns quality production to mini-cycles**

The Coleman Company is best known for products other than mini-bikes. From time immemorial, it seems, the Coleman lantern has been the favorite of campers. From that small beginning has sprung a large line of camping equipment that has a reputation for quality. On the other hand, if you wish for a bargain, that is to say cheap price, it is best to shop elsewhere than with a Coleman dealer. This holds true now that Coleman has expanded its line of products into the recreational vehicle field.

First products in this line were the camping trailers, then followed the snowmobiles, and the latest "sports vehicles" are two models of mini-bikes. These are the Sport 5.3 and the Sport 2.4. As you probably guessed, the figures stand for the horsepower rating of these two machines.

The making of these two machines took about two years. Before Coleman got around to designing their mini-bikes, they did one of the most comprehensive studies of the mini-bike field MBG has seen. Then came a long period of product design followed by extensive testing. Throughout this period MBG had answered questions from the Coleman people as best we could and waited impatiently for the results. Finally word filtered down that the Coleman machines were ready for a test.

Our test machine was delivered by Coleman's local representative (Coleman's mini-cycles will be sold through their Sports Vehicle division and not through the normal camping equipment dealers, except where control can be kept of the servicing situation). The ma-

chine delivered to MBG was, of course, the Sport 5.3 as this is the more spunky of the two. However, except for the engine details, the two machines are identical in design. Coleman is famous for standing behind their products, and the two mini-cycles carry six-month warranties, about the best warranties available—which may be one reason that Coleman products are not cheap.

Both machines have 50cc two-stroke Sachs engines with the sporty model driving through a five-speed gear box. The tamer Sport 2.4 drives through a two-speed automatic transmission. Although we did not test the less powerful machine, from previous experience with this mill we can guess that the lack of power would be frustrating for an experienced rider, especially when mounted in a frame of this sophistication. However, we are sure that there will be many people who will appreciate its mildness while in the learning stages. In any case, both engines are well known for their reliability and should prove to have good longevity.

Our test machine had the cast iron version of this Sachs engine with the designation "50S". There is a somewhat lighter version using an aluminum cylinder with big "sun-burst" fins and a slightly larger carb. The 50S has an 18mm single slide Bing carb while the 50SA has a 19mm unit. However, the power rating, 5.3 hp, is the same for both machines, and the cast iron engine promises somewhat better reliability. The crankshaft has three roller bearings, giving some idea of the engine's potential longevity. The engine is piston

ported, meaning that the piston opens and closes the intake port and no rotary or reed valve is used. Most of today's motorcycle engines are "over-square" with the bore being greater than the stroke, but the Sachs 50S is a "long-stroke" engine with the stroke being greater than the bore.

The transmission is equipped with a multiple disc wet clutch, three discs running in an oil bath, and seems to do an excellent job with the minimum of slippage. Primary transmission is by the standard helical gears and the gear box itself features straight cut gears of the type used in racing transmissions. The gear ratio spread seems about right, except for the first gear. This gear is so low as to be nearly useless, at least for a mini-cycle with relatively small diameter wheels. It would be a different story for a large-wheeled motorcycle. First gear ratio is 4.6:1 and then it jumps all the way to 2.7:1 for second. From there it goes in reasonably close ratios to third, 1.95:1; fourth, 1.5:1; and fifth, 1.33:1. Even if we consign the first gear to climbing the Matterhorn only, we are still left with four good ratios, more than enough. Shift pattern was one down and the rest, snick, snick, snick, all the way up.

We were struck, once again, with the lack of standardization in the mini-bike/motorcycle business when we came across the kick starter on the left hand side. We had become used to the Japanese method of mounting the starter on the right side, then along comes this German-made engine to upset the apple cart. Ah, well! We can take solace in the



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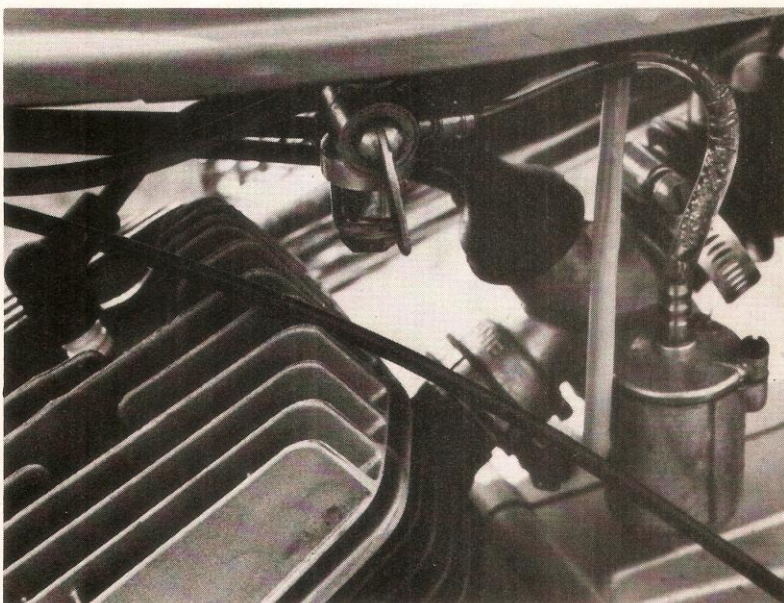
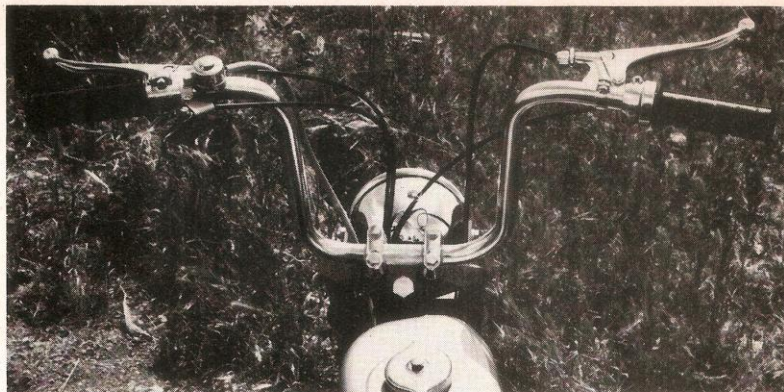


fact that it was easy to start and not at all cold-blooded—the choke seemed like an unnecessary appendage in California's climate.

Dealing with the power package we come, inevitably, to the muffler. We wish, for Coleman's sake, that we didn't have to—we're sorry about that, guys. It is an understatement to call it large—it is really huge. It stretches clear past the back of the machine and sticks out to the side like the exhaust of an antique touring car. No attempt has been made to get it tucked in to complement the otherwise sleek lines of the machine. The engine dimensions are quite small and the exhaust could easily have gone through the center of the machine, below the seat, except that, in the way is a clumsy air-filter chamber that badly needs re-designing, anyway. To make matters even worse, the muffler was hung out, a farther inch or so, on a bracket mounted on the upper shock mount, the widest part of the machine.

Although the muffler was well heat-shielded, that long pipe rubbing against the legs when riding was definitely uncomfortable, to say the least. The redeeming feature of this exhaust was the fact that it did a good job of muffling—which is the least it could do, considering its size.

For the rest, we have very few complaints. Frame design is single backbone, double loop engine cradle—a design that



has proved itself in trail applications. The single backbone member is joined at the upper shock mounting bracket to a seat bearing loop that runs around the seat, well out to the rear, to provide a handy-dandy lifting handle. At the bottom of the engine cradle loop are two transverse tubes that take the place of a skid plate and provide mounting points for the engine. The upper mounting brackets for the rear shocks double as triangulating gussets, and the engine cradle is also gusseted where it meets the stout steering head.

Mechanically sprung forks provide the front suspension with the lower legs telescoping into the upper legs. Springs that run the full length of the forks give a fairly soft spring rate (travel is about 1½-inches) and the return rate is dampened by a tight-fitting slide area. Crown plates are heavy gauge stamped steel, and the whole job seems able to withstand anything that most mini-bikers will throw at it. Ball bearings are pro-

vided, top and bottom, on the steering pin.

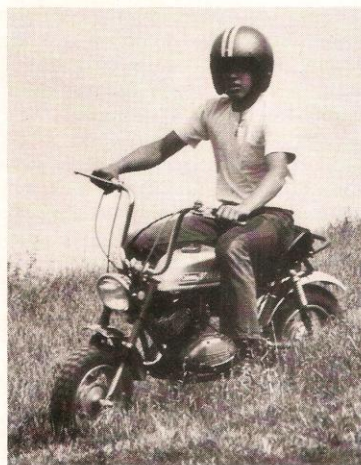
Three cheers for Coleman's handlebars and their mounting. The handlebars are formed from a single piece of tubing that does not tend to bend with the breeze—in fact we couldn't get them to flex, no matter how we pulled and tugged. The mounts are the pillow block type, and the handlebars are deeply serrated to provide a brake when Fatso throws his weight against them. They never budged.

The handlebar controls are really first class. The front brake lever (right side) and the clutch lever (left side) are six-inch, knobbed for safety, pressed steel units that fare much better in a spill than cast aluminum levers. There are cable adjustment screws provided on both levers. A small lever mounted near the clutch lever operates the choke. This little feature is much appreciated. Groping around below the gas tank, seeking to get the choke off when the



engine has warmed up, is not recommended for anybody unless they are wearing gloves to protect against burns. The electrical control cluster, incorporating the light control; a horn button (but no horn, thank goodness); and the ignition kill switch; is mounted on the right hand side.

We wish we could be as complimentary about the rear brake control. This is a foot lever located on the right hand side, pivoting through the rear engine mount bracket. When we first saw a prototype of this machine, it had a rod running back from the foot lever to the brake, but the rod tended to rub against the swinging arm pivot point. We pointed out that a good bounce on the rear wheel could put a crimp in the rod that might prove fatal to its operation. Instead of changing their design slightly to overcome this problem, they simply went to a cable that, of course, easily bends around the swinging arm pivot point. With Coleman's concern for quality, we can only assume that the designer did not know that the cable will have a relatively short life span in this application. The foot can apply much more leverage than the wrist. Compounding this problem is the fact that



the rear brake cable is the lowest component on the machine and is likely to get tangled up with rocks and branches on the least provocation.

This can easily be corrected and then everything will be just dandy in the braking department. The Coleman brakes are really sturdy and in operation are among the best we have come across.

Rear suspension is via swinging arms



with shock absorbers providing the cushioning. The length of the swinging arm (about 11½-inches, depending on the position of the axle in the chain tension adjustment slots) provides good leverage on the shock absorbers and a moderately soft ride. It is probably just as well that there is not an excessive amount of travel at the rear since the pivot point for the swinging arm is well behind the engine-mounted final drive sprocket. This means that the chain would tighten and loosen quite noticeably as the differing radius came into play if there was a good deal of up-and-down motion at the rear wheel. We experienced no problem in this regard so we could be accused of being a little too fussy.

In any case, keeping the proper tension on the chain should be a pleasure with this machine. Eye-bolts are provided on the rear axles and are anchored to tabs at the end of the axle-mounting bracket. This bracket, incidentally, has a closed end so there is no way of losing a wheel due to a loose axle bolt. To get the wheel off, the axle must be slid out completely and that is hardly likely to go unnoticed by the rider.

Wheels on the Sport 5.3 (as they are on the smaller machine) are 10-inch wire spoked with chromed rims. This style has become quite the thing for mini-cycles but the Coleman wheels, with the brakes hub-mounted, are particularly pleasing. The wheels are shod, front and rear, with 16½-inch diameter, semi-knobby, rounded profile tires. Over the tires are mounted highly polished chrome fenders, front and rear.

Lights! Are they cosmetic or functional, or a little of both? For better or worse, they are very much there on the

Coleman machines and, if you've got to have them, you might as well have good ones like these. In addition, the machines are equipped with reflectors and license brackets—with the obvious implications. For puttering around between the camp site and the local grocery store, we suppose a licensed Sport 5.3 makes sense but we are still convinced that it would be inviting trouble to use it in real traffic.

The one-gallon, silver-painted, steel gas tank is nicely blended into the seat line. The seat is nicely tailored naugahyde covering deep foam rubber and is press-studded to the seat plate and seat loop. This means it can be easily lifted, a space scooped out of the foam rubber, and a flat tool kit carried around at all times. Another big improvement over current practice is the spring-loaded kick stand with its wide foot to prevent it from sinking into the soft stuff.

We were quite impressed with our inspection of the Sport 5.3 and after we got it all buttoned together again, we were ready to tackle the trail test. As it turned out, this machine got well used by several staffers as they took it out on various assignments as personal transportation or "camera machine" or some other excuse. After this kind of abuse (nobody around here seems inclined to even oil a chain after they've used one of the test machines) the Sport 5.3 was sadly in need of a tune-up. However, nearly everything else was still hanging together (some sort of miracle). The heat shield had worked loose one of its screws (the rider on that occasion took the trouble to fix the shield, more as a

protection for himself than anything else) and some of the rubber peg coverings had seen better days. But, on the whole, the test machine more than proved its reliability.

On the day of the test the Sport 5.3 still had the sheen of newness. Everything worked fine and nothing rattled. Starting the machine was a breeze, just a kick or two and the thing was purring nicely. And it was this way everytime thereafter, even now when it is so badly out of tune.

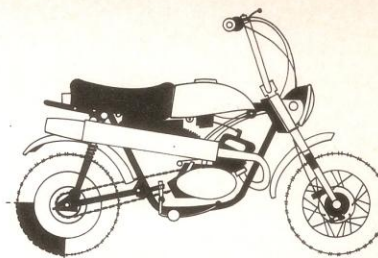
Our first reaction to the gear box was one of bewilderment. The thing was geared so low in first that we thought the clutch was slipping. We soon learned differently when we got into second and the engine came on like gang busters. After that we used the first gear to get started only when pointed up a hill. Second was fine for most other starting situations. We could see that the first gear would be useful when trying to climb an exceptionally steep hill, and it's nice to have it just for that purpose, but for normal riding it is not needed on the Sport 5.3.

However, the other four gears came in very useful. On most machines, if you lost one gear ratio, you'd be out of luck. On the Sport 5.3, you can keep first in reserve and never really miss it since you've got four other gear ratios to choose from. With a tad of clutch slippage, the test machine moved out quite smartly in second. We never got the machine into fifth as we were testing only on the trail and the speeds in fourth were plenty hairy enough. We'd estimate top speed around 45 to 50 mph, although Coleman never gets around to mentioning this in their promotional literature. On some of the machines shown in their brochure it is possible to detect a speedometer, but our machine was not so equipped—maybe they didn't want to scare us.

Once in its best power bank (it really doesn't start pulling until 3,000 rpm and maximum horsepower comes in at 7,000 rpm) this machine was no slouch in any ratio. We have a feeling that the addition of an expansion chamber would turn this machine into a competitive tiger (with, perhaps, a bigger carb and different jetting).

As we suspected, the biggest complaint during the test concerned the muffler location. Nobody liked it. It didn't exactly prevent the rider from standing on the pegs, but he would know it was there all the time he was off the seat.

Which was a shame since the peg/seat/handlebar relationship was just about ideal for tackling the really rugged boon-



SPORT 5.30

Manufacturer: Coleman Sports Vehicles Div., Somerset, Pennsylvania 15501

ENGINE

Engine type	Sachs single, two-stroke
Bore	38mm
Stroke	44mm
Displacement	49cc
Horsepower @ rpm	5.3 @ 7500
Compression ratio	9.8:1
Carb	Bing 18mm
Ignition	Flywheel magneto
Lubrication	Oil mist
Fuel capacity	1 gallon
Fuel requirement	25:1. Gas:oil

TRANSMISSION

Transmission type	Five speed gear box
Primary drive	Helical gears
Clutch type	Wet disc
Final drive	No. 420 chain
Gear ratios	
1st	4.6:1
2nd	2.73:1
3rd	1.93:1
4th	1.50:1
5th	1.33:1

CHASSIS

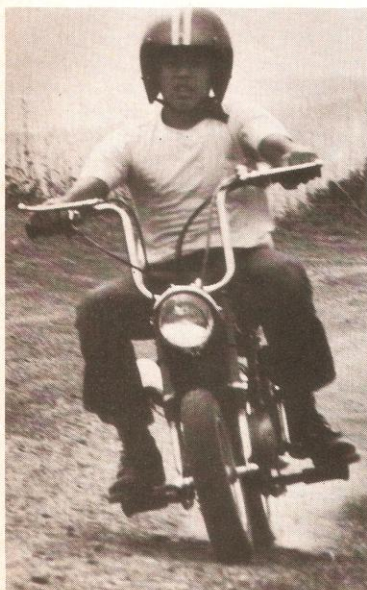
Frame type	Single backbone double engine cradle
Wheelbase	40-inches
Overall length	57-inches
Suspension	
Front	Telescopic forks
Rear	Swinging arm
Wheels	10-inch wire spokes
Tires,	
Front	16-in. diam., semi-knobby
Rear	16-in. diam., semi-knobby
Brake(s)	
Front and rear	internal expansion
Ground clearance	6-inches
Seat height	27-inches
Handlebar height	26-inches
Dry weight	115 lbs.

PRICE AS TESTED \$369.00

nies. Slow-speed, trials-like, riding was a snap and maneuvers on the side of the hill were undertaken with ease—up, down, round and about. At high speed on the trail, we felt that the suspension was a little too stiff for comfortable, sit-down, riding although there was a nice balance, fore and aft.

At these high speeds the machine displayed a remarkable amount of stability, taking glancing blows against rocks without any tendency to throw the rider for a loop. Recovery over jumps

Continued on page 64



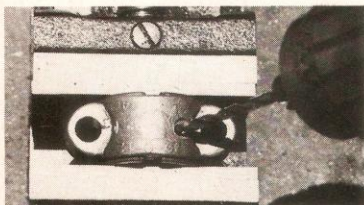
DRILLING FOR

Oil

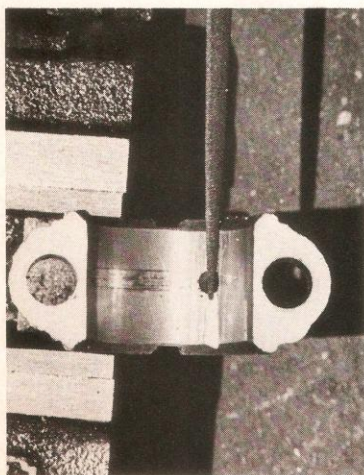
By JIM GILBERT

From time to time, we get letters detailing technical tips which have worked for readers. One such, from Robert Campbell in Heath, Ohio, crossed our desk the other day. We felt it was worth following up because it came on the heels of our tech series on the Tecumseh.

The letter reads as follows:
"After reading the June edition on Tweaking the Teke, I felt I had to write.



CAP - Con rod cap is drilled at angle to flow oil from splashers into journal.



NOTCH - Inside of con rod cap is notched with file to spread oil across the journal.

The Teke has too small a rod journal to carry away the heat that is built up and the inefficient oiling system, on models up to 5 hp, is not equal to the job. My 1947 Cushman had a similar dipper on the rod, but the rod cap was drilled so the oil could scoop up the dipper and onto the journal face. Following this practice I have drilled all my Teke rods on the side that scoops. The scooping direction can be determined by turning the engine over with the side plate off. To help funnel the oil, I start the hole with a 3/16" drill bit, then finish with an 1/8" bit.

Then I lay the cap down and take a file on edge and notch across the face of the cap where the hole comes through. This makes a ditch for oil to lay in while the crank is on the up stroke, and to lube it as it comes around.

I haven't lost any modified rods yet."

Well, we appreciate Campbell's experience and the fact he took the time to write us, but we have some reservations. This would be a good idea, simple to perform, and could save many Teke owners some money, but its basic value is for stock engines.

If the engine is relatively stock, the Campbell modifications will, indeed, work well. This simple operation will provide increased lubrication on the rod journal and will probably help prevent seizure from friction caused by lack of oil. But if the engine is further modified to produce a greater amount of horsepower (and we've previously pointed out how removing the governor will give at least three more horses), the Campbell modification could be a definite weak point.

Why?

Because drilling a hole into the rod cap

may weaken what already is the weakest link in the Tecumseh chain. It isn't entirely a matter of lubrication or heat build-up. It's also a matter of structural strength. The stock rod is sufficient for "stock operation" (which, after all, is what it was designed for) but increased power and much higher rpm will cause the rod to let go. It simply was never intended for racing stresses. The Tecumseh is primarily an industrial engine and it serves that purpose well.

Campbell's suggestion is good but we would modify it by making the oilway no bigger than 1/16" and channeling the oil towards the oilway with a countersunk bit, used with discretion. Also, we would avoid filing a notch across the face of the cap as this seems to offer a starting point for fractures. In any case, a good, clean, oil should work its way around sufficiently well with the oilway providing a flow path.

So here's where we stand on this Tech Tip:

1) We've photographed the job for you to follow if you want to do it for your stock Tecumseh. It will provide better oiling, and will reduce heat build-up.

2) If the Tecumseh is to be used for racing, or if additional power-producing modifications are made to the engine, the drilled stock conrod cap is merely a compromise between cost and reliability. A vast amount of racing experience in a great number of different engines has proven that special racing con rods provide the reliability edge that often makes the difference between winning and losing.

We'll leave it up to you. Do as you think best for your particular use. But be careful about major surgery on the conrod cap. □



AllAboutMiniBikes.Com

MINI BIKE TEST

by Bob Sanford

STEEN'S F100

**With a name
like a jet fighter,
it has similar
characteristics**

Assuming that I had a son or daughter between the ages of nine and, say, 16 who was seriously interested in off-road competition riding and/or hard core cow trailing; and assuming I wanted the best small machine available for this type of riding; and assuming that I had \$395 to spend for such a machine; then I would undoubtedly end up with a Steen's Mini Motocross in my garage. There is little doubt in this tester's mind that this bike is head and shoulders above most of its mini-cycle competitors that we have tested so far. It is in fact, in a class by itself.

Steen's Mini Motocross is actually an out-of-the-crate, miniaturized, off-road racing motorcycle. Contrary to most such attempts, it has, somehow, managed to hold onto the favorable characteristics of its larger counterparts. It's powerful. It's a superb handler. It's excellently suspended. It's comfortable. And it's easy to ride.

Essentially, Steen's has drawn on their years of experience in the motorcycle industry to assemble a bike that uses some of the, if not MOST of the, very best dirt bike components available throughout the world. From Italian front forks, to English handlebars, to Japanese tires, to an American frame, to an American-designed/Japanese-built engine.

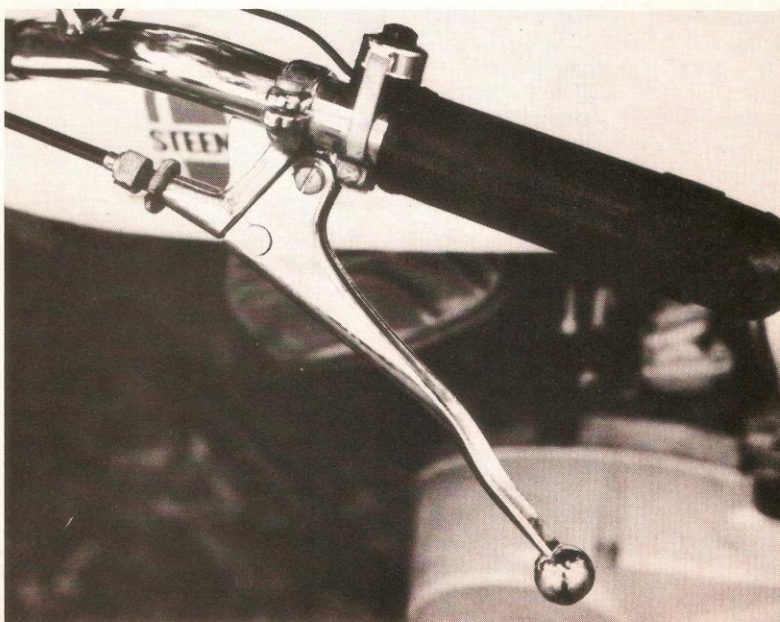
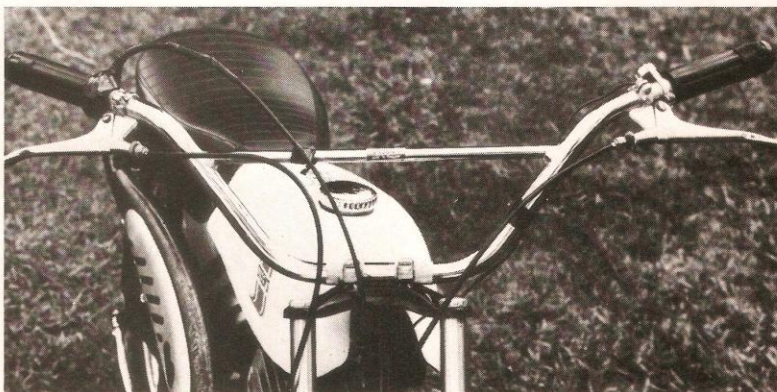
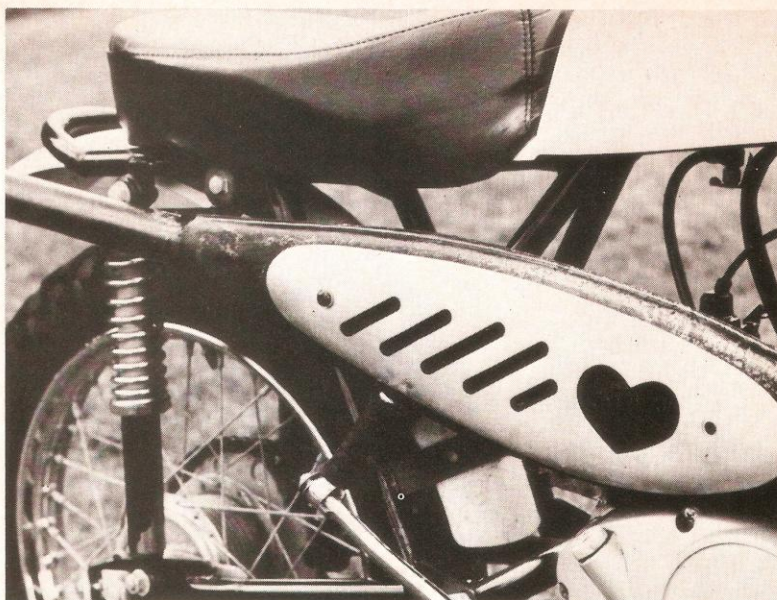


For starters, the bike is powered by a 100cc Hodaka engine, a power unit that has been proven time-after-time, race-after-race, over the most horrendous off-road terrain. For a number of years now, Hodaka engineers have been testing their machinery on the deserts near Athena, Ore., literally riding bikes to the point of destruction. The purpose is to pinpoint potential areas of weakness, as well as discovering potential areas of strength and reliability. And they have done their job well. Furthermore, the Hodaka motorcycle has consistently found its way into the lightweight winner's circle in motocross, desert competition and even enduros. And now

this same engine has been made available to Steen's for use in their Mini Motocross.

The 98cc, port timed two-stroke produces an honest 9.8 horsepower at 7500 rpm and is capable of delivering a more-than-adequate supply of torque, power and speed throughout the five gears. All moving parts in the engine and transmission, incidentally, are carried on ball or needle bearings, a fact that adds life and reliability to the power plant. A 20mm Mikuni handles the carburetion, while a standard Hodaka air cleaner (foam-type and washable) takes care of the breathing chores.

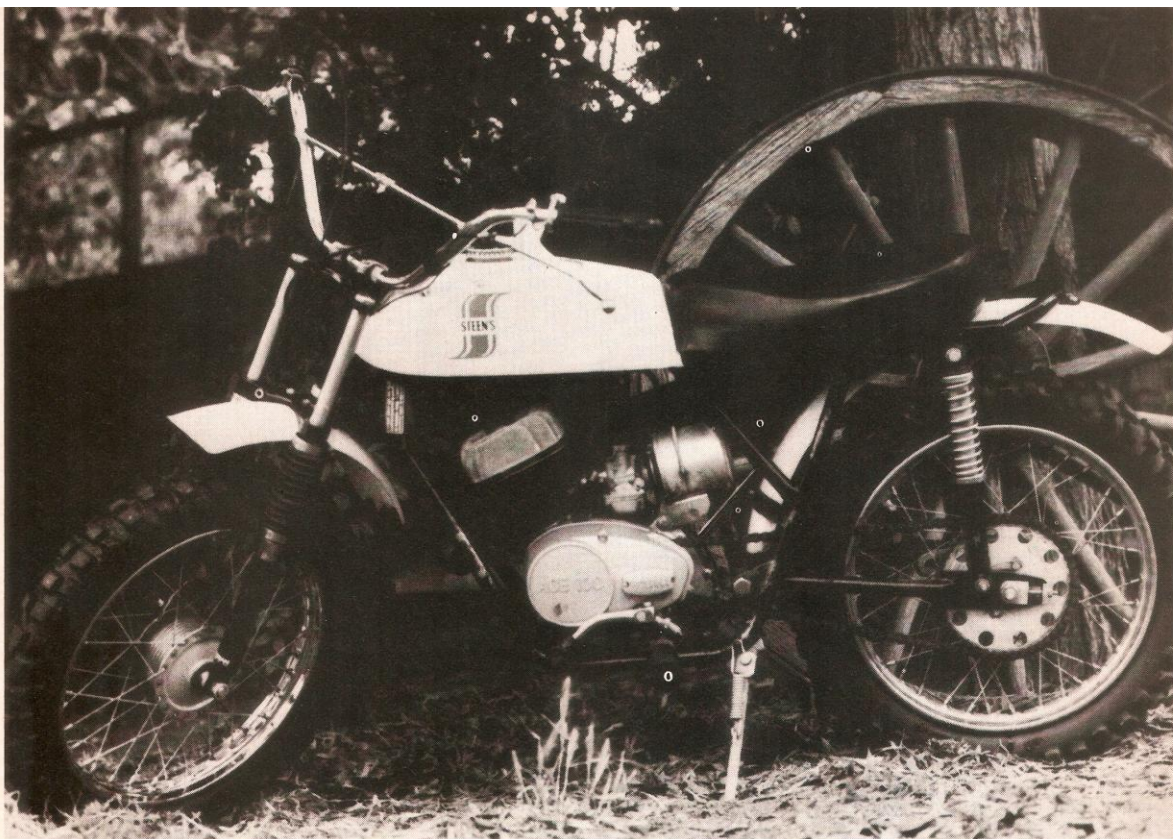
Our test bike was equipped with a



tuned Hooker expansion chamber, featuring a baffling device built into the stinger. This exhaust system is an option that will set you back about \$36 (the bike is normally delivered with an unbaffled Steen's expansion chamber). Although not quite as noiseless as a sewing machine, the Hooker did reduce a lot of the ring-a-ding-ding normally associated with an expansion chamber-equipped Hodaka engine. The chamber is well-mounted and does not cause burns for the rider, or otherwise interfere, when standing in the rough. The easy-to-use kickstarter (two to three cranks, usually) is also located well away from the rider's right calf. This will be a welcomed change for those with experience on certain Japanese dirt bikes.

The left side gear change lever (one up, four down) is easy to engage and produces smooth and positive shifts. All shifting, we might mention, can be accomplished without removing your foot from the peg, and gearing seems quite proper, with ratios beginning at 3.5:1 and ending at 1:1;

The frame of the Mini Motocross is actually built by Steen's (Alhambra, Calif.) and obviously incorporates much of the geometry used in the famous



Rickman frames, which the company imports from England. Made of tubular metal, the chassis is a seemingly durable, double cradle affair, held together by a series of very neat, precise welds. The engine is bolted in four places on the two tubular cross members that run between the underside of the cradles. The frame is painted black and compliments the well-designed, six-quart capacity, white fiberglass gas tank, not to mention the white, highly pliable, plastic front and rear fenders.

The suspension system again reflects more of Steen's import genius. There is an honest-to-god set of Ceriani forks (not "Ceriani-type" but the real thing) in the front and Sebac Fulgore shocks on the rear. Neal East, a Steen's executive, told us that the company had received some complaints about the forks being "a bit soft," especially for heavier riders. With this in mind, they have since produced a "Fork Kit" (retail \$3.95) which will beef up front end resistance considerably. The kit, incidentally, had been installed on our test bike (which is just as well since I am one of the aforementioned heavier riders). East also said that his company is in the process of developing a leading link

front suspension system which should be optionally available in the near future.

Both front and rear wheels are shod with 3.50 x 16 Inoue knobbies, which are fine for the job, although several people who rode the bike felt that a slightly larger front wheel might have been an improvement. Metisse scrambler-type handlebars are used, a choice that can hardly be faulted. They are considered to be—and obviously are—among the world's best for off-road riding.

However, the method of securing the handlebars gave rise to one of our few criticisms. In essence, the two clamps do not hold the bars in place. Not for long, at least. We were forced to stop and tighten the clamp nuts after each half-hour or so of riding, and it was our feeling that Steen's could, without much difficulty, develop a better system for holding the bars in place. A minor point, to be sure.

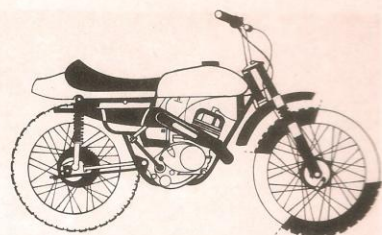
Hand grips, at first glimpse, are somewhat reminiscent of what you might find on a 1953 Huffy bicycle. Nevertheless, the smooth, rounded end grips are comfortable and we did not notice too much hand slippage. Clutch and brake

levers are well located, easy to use and—we found after a few spills—quite indestructible. Both the clutch and front brake can be adjusted from the base of their respective levers. And to add frosting to the cake, a kill button is conveniently placed on the upper left side of the bars.

The seat is adequately thick and adequately long, with vinyl covering over a hunk of foam rubber. Surprisingly, seat height is just at 25 inches, making it not much taller than the average mini-bike. Rubber covered, folded footpegs are located about dead center and are dandy for Sunday riding.

As mentioned earlier, the combination of components and design used by Steen's in constructing their Mini Moto-cross has resulted in one of the best riding and handling small bikes on the market today. Like any other superior piece of two-wheeled equipment, this bike seems to have a mind of its own in that the amount of front-end trail encourages stability. Just the least bit of coaxing, however, will get it to deftly react to terrain irregularities.

Suspension, frame construction and weight distribution are the primary keys to the bike's excellent handling charac-



F100 MINI-MOTOCROSS

Manufacturer: Steen's Inc., 1635 West Valley Blvd., Alhambra, California 91803

ENGINE

Engine Type	Hodaka, two-stroke single cylinder
Bore	50mm
Stroke	50mm
Displacement	98cc
Horsepower @rpm	9.8 @ 7500
Compression ratio	10:1
Carburetor	Mikuni 20mm
Ignition	Flywheel magneto
Lubrication	Fuel/oil mix, 20:1 ratio
Fuel capacity	6 quarts

TRANSMISSION

Transmission type	5 speed, constant mesh
Clutch	Wet, multi disc
Final drive	#40 chain
Gear Ratios, overall	
1st	3.5
2nd	2.14
3rd	1.5
4th	1.19
5th	1

CHASSIS

Frame type	Double loop
Suspension	
Front	Ceriani telescopic fork
Rear	Swing arm, shock absorbers
Brakes	
Front & Rear	Internal expanding
Tire Sizes	
Front	3.00 x 16 knobby
Rear	3.00 x 16 knobby
Ground clearance	9 inches
Seat height	25 inches
Curb weight	125 pounds

PRICE AS TESTED \$395.50

teristics. Ceriani's, of course, are the best yet developed by two-wheeled man and the addition of the Fork Kit has, for our weights, eliminated any irregularities previously found in the front suspension unit. However, the average mini-biker should try out the stock forks before ordering the Fork Kit because it is far more common to find too-stiff front suspensions. The rear shocks also seem to do their job well, although we have heard complaints of "stiffness" from lighter riders. The frame construction and weight distribution are also apparently right on target. Jumps, cornering, riding through deep sand and battling with some not-so-small rocks were all taken in stride. It's

sort of a matter of staying on board and letting the bike do the rest.

And power is plentiful and quick to respond. There was very little that the 100cc engine and the slick 5-speed transmission couldn't master, including miles of sandy hoop-de-dooos and steep, rocky hills. We did find out, it should be mentioned, that the Mini Motocross tends to be water shy. The slightest splash would almost be sure to drown the engine. This, of course, is easily remedied with some elementary waterproofing. But on dry, reasonable terrain and with a lightweight rider, the bike should have no problems at all in approaching the 60 mph category.

In addition to all of its fine perform-

ance characteristics, one of the strongest selling points of this bike is its size. After all, how many superior and competitive off-road machines do you know of that can be safely handled by a five-foot tall, 85 pound, youngster? Very damn few, right? But Steen's Mini Motocross is certainly one, if not the very best, of the handful now being manufactured. Even though it is also one of the most expensive, it is probably worth it. Furthermore, Steen's has established an extensive dealer network, especially throughout the Western U.S. According to Neal East, the company will "supply whatever develops as the demand." And we will be very surprised of there isn't a heck of a demand for the supply. □

SOLUTIONS TO THE WHERE-SHALL-I-PUT-IT DILEMMA

**Don't look now
but you're being
followed**

The do-it-yourself trailer, for those who do not have a machine shop in their basement, has been designed with two main objectives in mind. Ease of construction and low cost. If you can operate a drill you can probably build this project without any trouble. Total cost of parts (less wheels) was \$10.00. Everything but the wheels was bought at the local hardware store.

First you will need to choose an axle. We used a 36-inch piece of 3/4" threaded rod, since we had an extra pair of wheels with bearings having 3/4"

bore. If you have 5/8" bores in your bearings, there is also threaded rod that comes in that size.

If you do not own an old set of wheels, and are planning on getting a set especially for the trailer, we recommend the 3/4" axle size which is, naturally, a little stronger. If you are planning on threading your own axle don't use pipe thread because it has a taper to it which prevents nuts from fitting easily. The rod I bought cost \$2.12 and happened to be cold rolled, which means that it is relatively strong.

When you have decided on an axle, you will need a way to fasten it to the tongue of the trailer. For lack of a better idea I used a "T" fitting for 1/2" pipe. File out the threads and it will just fit over the 3/4" threaded piece. The next step is to center the "T" fitting and drill a hole through both the fitting and the axle. A pair of 3/4" nuts will hold the fitting to the center of the axle until the job is finished.

If you are using a 5/8" axle there will be considerably more play between the fitting and the axle, and I would suggest using two bolts instead of one, although a little play in this area is not critical. The hole should be large enough to fit a small stove bolt. I used a 3/16" x 1 1/2" bolt with lock washers to prevent it from working loose. If you wind up with a loose fit you can tighten down on the two nuts you used to hold the "T" fitting in place. This will take up the slack.

The next step is to put stop nuts on the axle for the wheels. To determine where this nut is going to go, you will need to fit the wheels and bearings on the axle, making sure to leave enough room for two nuts on the outside of the wheel. Once you have got this nut positioned, tighten another nut onto it. This will hold it while drilling a hole through the first nut and the axle. This time insert a cotter pin through the hole and bend the ears back with a pair of pliers. (Ed. Note: Subsequent experience may prove the advisability of leaving the locking nut in place as the cotter pin



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may not have enough bearing surface.)

If you haven't already done so, now is the time to grease the bearings on your wheels. Since my wheels have Timken bearings I usually use STP to grease them. It seems to stick to the bearing surface better than conventional greases. Azusa Engineering who supplied the tires, rims and bearings, also recommends the use of STP with Timken bearings. Needle bearings have the advantage of more bearing surface as compared to usual ball bearings. You are now ready to put your wheels on the axle. Make sure that the two outer nuts are locked tightly together so you don't lose a wheel.

The tongue of the trailer is made from 1/2" pipe, 18-inches long and threaded at both ends, or at least at one end. This piece of pipe threads into the "T" fitting on the axle. Remember when filing out the threads in this "T" fitting, only file the threads on the axle portion. The tongue should be screwed in tightly but

it isn't necessary to use a pipe wrench.

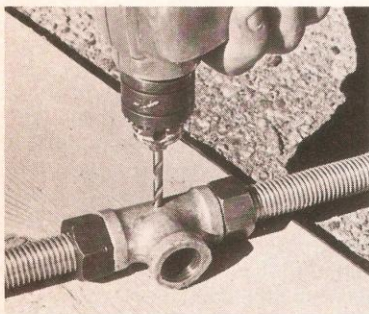
The next item you will need is a piece of 3/16" sheet steel 6-inches long and an inch wide. Drill a 9/16" hole in one end of this piece of metal. The hole should be large enough to hold a 1/2" bolt without binding. Fasten this metal to the end of the tongue with "U" clamps, letting the end with the hole in it extend out over the end of the tongue. Tighten this assembly as tight as you can get it without bending the metal strip. You are now finished with the frame of the trailer. Check to make sure that the wheels move freely and that the lock nuts are on tightly.

The next step is to make your trailer bed. All it consists of is a wooden box. It can be any size as long as it will fit between the wheels and is strong. Hooks can be fastened to the side to secure gear inside the box. A good coat of paint will keep the wood from warping and splitting.

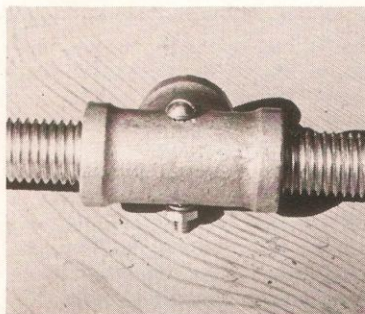
Turn the trailer bed upside down and

attach the trailer frame on it. The bed is fastened on with "U" bolts so holes must be drilled in the bed for the clamps to fit through the bottom and around the axle. I used one clamp for each side of the axle and one clamp for the tongue. Spacers must be used under the "U" clamps since the "T" fitting has a bigger diameter than the axle. It is best to drill holes in the spacers and put the "U" clamps through them as well as through the bed so that they cannot fall out. I made my spacers from strips of wood but metal or rubber would have done just as well and rubber might help in dampening vibrations. When you have inserted the "U" clamps in place, tighten the nuts carefully, using wide washers, so that the wood on the bed does not split.

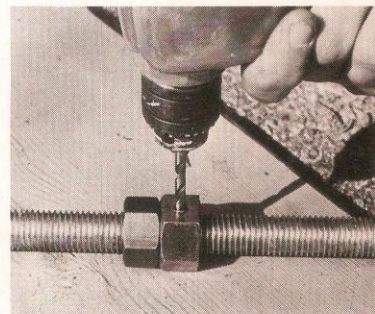
The last step is to make the trailer hitch. All mini-bikes are different, so it is impossible to make a hitch that will fit them all. Since this trailer is to be used on the trail, and most of the newer



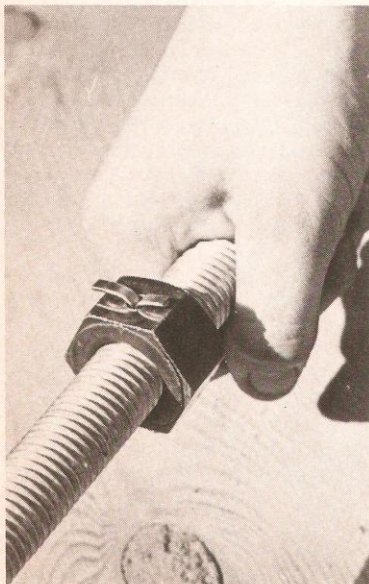
A. Threaded bar stock was used for the axle and a T fitting pinned in place.



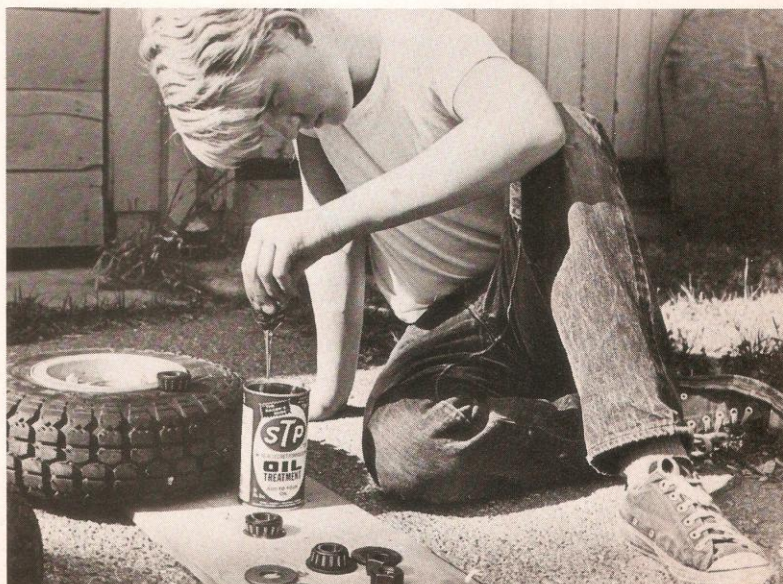
B. Showing the through bolted T fitting in place on the center of the axle.



C. Inboard stop nut that maintains position of wheel is drilled for cotter pin.



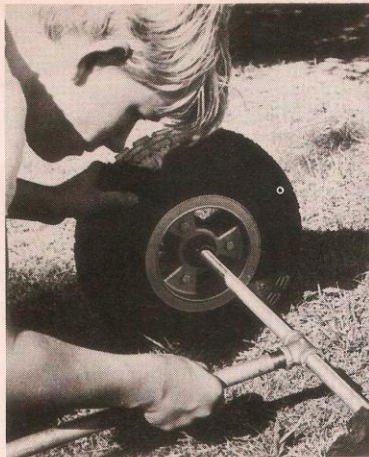
D. Showing cotter pin in place - alternative method would leave locking nut in place.



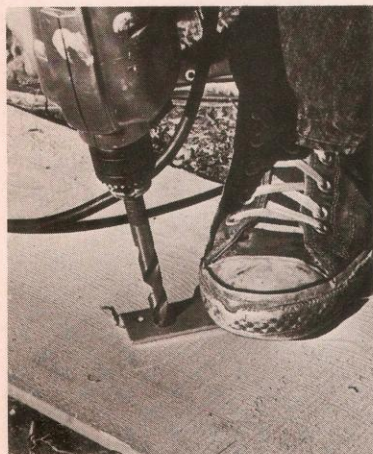
E. Tapered roller bearings are used in new Azusa wheel (and coated with anti-friction STP) but one of the advantages of this trailer is that any old wheels will do.



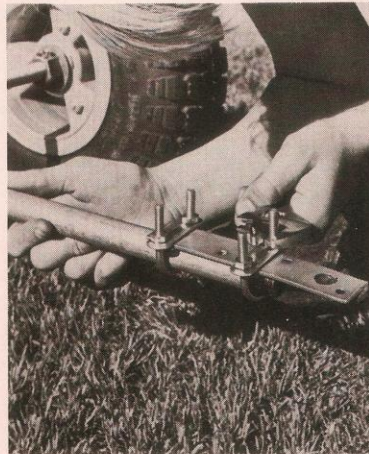
F. Wheel is double-nutted to lock it into place on the end of the axle.



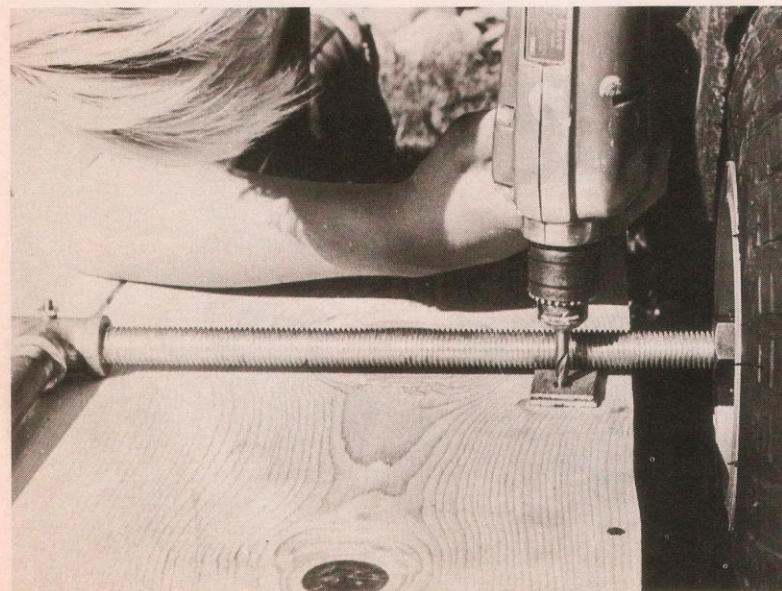
G. Trailer tongue is threaded into T fitting on the axle. Shot shows wheel in place.



H. Bracket for attaching trailer to the mini-bike is drilled for mounting bolt.



I. Bracket is held to tongue of trailer by U-bolts but alternative method is possible.

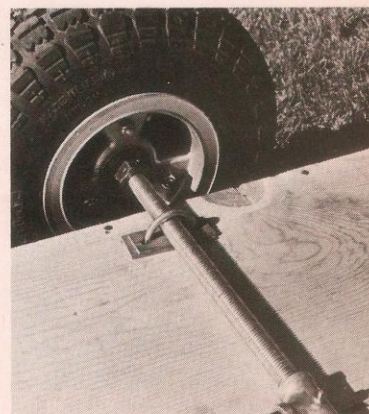


J. Bed of the trailer is carefully drilled for U-bolts with the frame in position. It is best to mark out this position beforehand with a pencil and T-square.

trail bikes have rear suspension, it seemed logical to make a hitch that could be fastened to the rear shocks or springs. To do this I used two pieces of galvanized metal 36 inches long, 1-inch wide, 3/16" thick.

The first strip was cut in two, leaving two 18-inch pieces. At each end I drilled two 3/8" holes. Two or three holes in the end of each piece should leave plenty of room for adjustment, and these holes should be placed about 1/2" apart. These two pieces are the braces for the hitch. The other metal strip should be drilled in its center using the 9/16" drill bit. Then measure out 5 inches from this hole and make a half twist in the metal strip, using two crescent wrenches. Do the same on the other side of the hole. Now make a 90 degree bend in each twist with the crescent wrenches and your metal strip should look like the bracket in the pictures.

Bolt holes for attachment to the lower mounts of the shock absorbers should



K. Pads are used under U-bolts to allow for extra thickness of the T fitting.



L. Bed of trailer is simply a sturdy box and care should be taken not to over-tighten bolts.

be drilled at the ends to this strip. The two 18-inch braces are attached between the hitch and the upper shock bolts. Remember, when you sit on the bike the hitch is going to be forced down so adjust it about an inch high. Do not tighten the shock bolts on the bike so tight that the hitch locks the suspension in place. Also, keep in mind that if you tighten the 1/2" hitch bolt too tightly, the trailer will not be able to turn freely and may bend the hitch. Half the outside diameter of the tires will be your approximate ground clearance. That is, with a 14-inch tire, ground clearance for the trailer will be a little less than 7 inches.

After the trailer was assembled, it was taken for a short test drive. It proved moderately successful, considering the price and simplicity of design. As expected, the ride of the trailer was a bit bouncy, both loaded and unloaded, due to the lack of suspension. This points up the need for lashing hooks. However,

when tire pressures were decreased to about 5 lbs., bouncing was kept to a minimum. As for cornering, stopping and accelerating, the trailer performed outstandingly, no doubt due to its light weight, 35 lbs.

The trailer can easily be carried in a car, whether in the trunk or in the back seat. It can be made even smaller by disassembly—takes about 5 minutes.

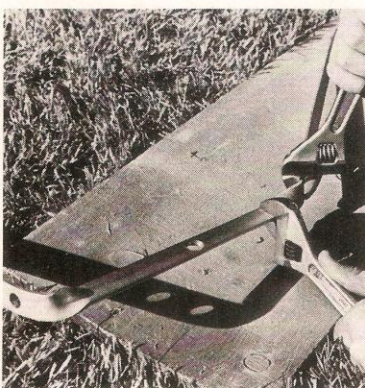
I have always been a great fan of the mini-bike camping machine and hope that the practice of packing into the backwoods on a trail bike is not lost. This article may be of help to the mini-biker who can't get enough gear on his bike to allow him to stay out more than a few hours. And it may help free mini-bikers of the need to "get back in time for supper". □

EDITORIAL NOTE: In the August '71 issue of MBG, Jim Bonell talked about his "deluxe" trailer, constructed for his own purposes. The more sophisticated machine had a hitch arrangement that seems more useful, to us, than the method used here, although, as Jim explains, his main purpose was to design a simple trailer that everybody can build. He has, indeed, done this but the reader might consider using the advantages of the deluxe hitch before settling on the one explained here.

Our concern is for what will happen when the rider dumps it. Will the trailer roll over or will it hold the mini-bike upright. It depends. However, we think it would be relatively simple to put a right hand bend in the strap between the hitch and the trailer, drill a hole through the strap so that it slips over the tongue of the trailer, and then double lock-nut it in so that the strap can rotate freely. Not perfect, but a solution to the problem.



M. Braces for trailer hitch are drilled to mount on the upper shock absorber bolt.



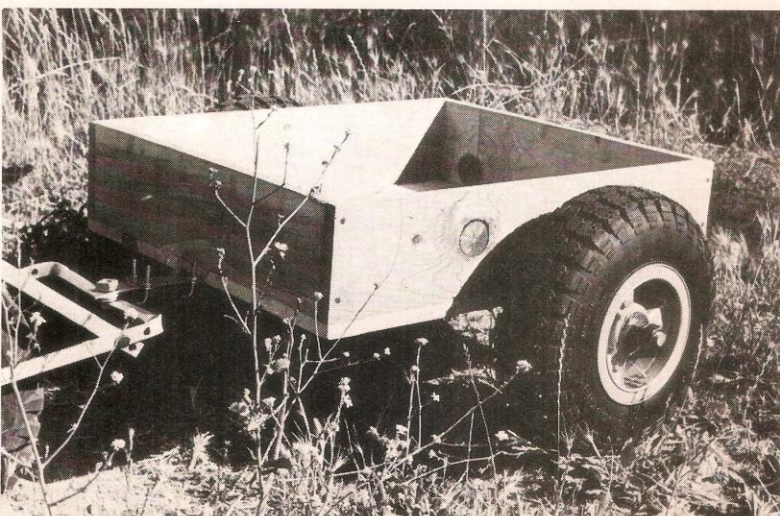
O. Hitch is drilled to accept bolt and then the metal is twisted to provide proper angles.



P. Hitch is mounted on lower shock absorber bolts - trail machines will have suspension.



Q. Brace runs from upper shock mount to back of trailer hitch.



R. Completed job. Trailer is useful but last month's suspended unit was less jouncy on the trail. Hitch bracket could be mounted on threaded end of tongue to allow for twisting action.

ULTRA CRAFT DUSTDEVIL

MBG IMPRESSION

A chopper, yes; a dog no!

We have an inherent thing against "chopper" mini-bikes. We don't, in general principle, like them. That is why we used to get Thurgood to test them and why we don't test them at all, now. We just can't take them seriously and, after a brief boom in popularity, it appears that most of our readers don't either.

But, once in a while, somebody appears on the scene who is obviously not a phoney trying to turn a fast buck while the going is good. Dave Clark is such a person. Dave runs Ultra Craft Recreation Vehicles and is so obviously hung up on the concept of producing a "good" chopper, that we had to stop and listen to him. We're glad we listened because he did, indeed, have a good chopper.

Dave is a former aerospace engineer so he knows something about what makes mechanical things tick. He is also a two-wheel nut from way back. With all his talents and sincerity, he appeared a little like Don Quixote, tilting at Windmills, as we tried to tell him that the time of the chopper had come and gone. But he is a stubborn man and he insisted we give his machine a try. So we capitulated.

Actually, the manufacturer of the Super Dustdevil does not like to hear his machine called a chopper. He says this has bad overtones. He prefers to call them "grand touring machines". The object seems to be a chopper (sorry about that, Dave) that steers itself while providing the rider with armchair comfort.

We hate to admit it but the Dustdevil comes pretty close to this ideal. Hence; grand touring machine. But we are more concerned with trail abilities since we do not plan to do any grand touring on a mini-bike, even if it does steer itself. We thought Dave would quail at the thought of trail bashing with his dressed-up, fancy-Dan, machines but he displayed nothing but confidence. We were not so sure.

Anyway, we gave the Dustdevil the



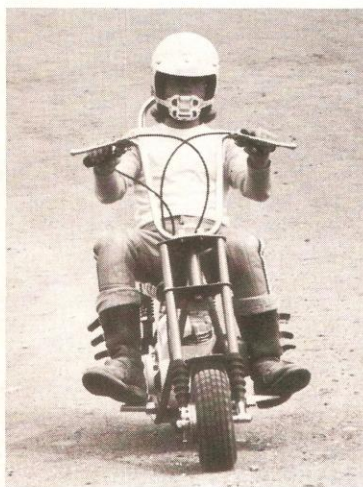
once over, before we took off for the boonies. It employs a double loop frame, like most mini-bike choppers, except that the test machine used better material and was obviously much beefier than most of its kin. For instance, at the steering head, a major stress point for this type of machine, there are three support areas. At the top of the forks, which are raked out at about 40 degrees, are chromed "ape-hanger" handlebars. All the details around here display a concern for quality. The bars are securely mounted in pillow blocks; the grips are the best soft rubber type; brake control levers (yes, there is both a front and rear internal expansion brake) are pressed steel with knobbed ends and cable adjustment screws; and the chrome job is excellent. The front forks are telescopic and do, in fact, give quite



a good deal of suspension. The five-inch split-rim aluminum wheel on the front carries a fat Carlisle tire and is surmounted by a chromed fender that is attached to the lower fork legs, thus maintaining the same fender/tire clearance at all times.

The extravagantly upholstered, red and white naugahyde seat is suspended by two shock absorbers and hinged on the triangular frame just behind the tank. Behind the seat is the MBG-hated chromed sissy bar. The tank is deeply metalflaked, as is the rest of the bike, and holds the best part of a gallon. The clutch guard picks up this metalflake theme in fiberglass. Rear wheel is a six-inch split-rim unit with sealed ball bearings and is mounted by a rounded profile Carlisle tire.

Power comes from a four horse Tecumseh four-stroke and drives through a Comet torque converter. This power train, by itself, is enough to make the Dustdevil stand out from the crowd. The engine sits on rubber anti-vibration mounts on an inclined engine mount plate that gives room for the rear pulley of the torque converter, besides adding to the styling. Final drive is No. 420 roller chain and even some of the hairy-

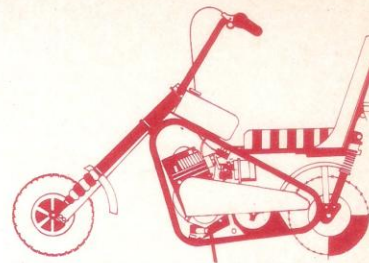


chested trail machines have not caught up with this innovation, yet. Chain tension remains constant through a spring-loaded tensioner. Carburetion is through Tecumseh's stock float bowl set-up but the exhaust gets out through a spark arrestor/muffler, proving that Dave Clark was not kidding about riding in the rough.

The Teke engine is alternator-equipped and one model in the Ultra Craft line comes complete with lights. On all models there is an ignition kill switch.

Loaded with features, right? But how does it handle? We were skeptical to begin with and we still do not think that choppers will ever make it as trail machines. However, the Dustdevil handled a heck of a lot better than we ever suspected that it could. There was, as Dave Clark promised, a real feeling of stability yet it was not too difficult to maneuver the thing around.

It was as powerful as all get out and the gear ratios provided by the torque converter made it a potential hill climb-



DUSTDEVIL

Manufacturer: Ultra Craft Recreation Vehicles, 3320 East Ave. Q, Palmdale, Calif. 93550

ENGINE:

Engine type Tecumseh four-stroke
Bore 2-5/8"
Stroke 1-15/16"
Displacement 10.5 cu. in.
Horsepower @ rpm 4 @ 3,600
Compression ratio N/A
Carb Float Bowl
Ignition Flywheel magneto
Lubrication Splash
Fuel capacity 3 quarts
Fuel requirement Regular

TRANSMISSION

Transmission type Torque converter
Primary drive V-belt
Clutch type Automatic centrifugal
Final drive No. 420 chain
Gear Ratios Variable between 4.16:1 in high and 13.3:1 in low

CHASSIS

Frame Type Double loop
Wheelbase 42-inches
Overall length 57½-inches
Suspension,
Front Telescopic forks
Rear Suspended seat
Wheels
Front 5-in.
Rear 6-in.
Tires,
Front 12-in. universals
Rear 13½-in. universals
Brake(s)
Front & rear internal expansion
Ground clearance 3½-inches
Seat height 20-inches
Handlebar height 38-inches
Dry weight 108 lbs.

PRICE AS TESTED \$254.95

er—just so long as you didn't try to deviate from a straight line or get to leaning back in the seat.

From a quality point of view, the Dustdevil cannot be faulted, and it has some features that could be copied by trail machine manufacturers. In fact, we keep asking ourselves, what would happen if Dave Clark turned all his abilities into doing something worthwhile, like making a *real* mini-bike or mini-cycle? If having a chopper (sorry, we meant to say, grand touring machine) is still your bag, you couldn't do better than the Ultra Craft line of machines, even though they do cost quite a good deal of bread. □

YAMAHA MINI-ENDURO MODS

Continued from page 35

oil pump is bled to allow air to escape. Then the engine is refilled with oil, and the engine is finished.

We next installed the new Fun and Fast air cleaner, although others are available. A simple, screw-on job, it is less restrictive, will provide smoother air flow and, therefore, better response.

The last job was the installation of an expansion chamber from K&N. As we said before there were several pipes to choose from but K&N has two models, a downswept unit that increases top-end power and an upswept unit with the emphasis on low-end power (no pipe has equal benefits over the entire range). For our "sample bike" we selected the low-end pipe since it is our belief that most mini-bikers need low-end torque rather than top-end speed. The K&N pipe bolts onto the side of the machine or the bottom, depending on the unit, and at the manifold ring. Installation was simplicity itself.

The noise from the Mini-Enduro's expansion chamber was beyond all proportion to its size. We are on an anti-noise kick at MBG ("they'll" kill us stone dead unless we get a little hush) although we are not adverse to power. So we installed a Bassani silencer on the stringer and you wouldn't have believed the difference unless you heard it. In fact, we slipped the silencer off and on a couple of times just to make sure that we weren't kidding ourselves—it was like suddenly closing a door on a noisy party. Yet the Bassani silencer is a straight-through, glass-packed, unit so it can't adversely effect power very much, if at all.

That completed the job. The "new" Mini-Enduro looked pretty good, although we would have gone further with the job had this been our own machine. Performance was enhanced on the low-end by the expansion chamber and air cleaner, while the high-end benefited by the racing rotary valve. This makes a noticeable difference from the mid-range on up to the top. The rev range was increased from the stock approximately nine thou., up to somewhere around 12,000 rpm.

With a little time and patience, there are now enough bolt-on mods. for the Mini-Enduro to produce a machine suited for any particular application. The results are pleasing and worth the price if you want a machine that reflects your individualism and gives more power.

And that's usually the case. □

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MBG MISCELLANY

MOTOCROSS LEATHER GLOVES

Trackstar Products has available at most dealers their new Champion Moto-Cross leather gloves. Made from tough yet soft leather cowhide, and stitched throughout with nylon thread, these seamless gloves offer maximum protection for road or trail riding as



well as for racing or motocross competition. Heavy natural rubber strips are securely sewn to each finger.

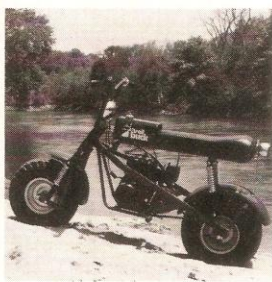
Price \$9.95 pair, sizes, S, M, L, X-L. If not available from your local dealer order from Trackstar Products, Inc. Dept. MBG-9, P.O. Box 314, Flora Park, N.Y. 11002.

BUILD-IT-YOURSELF TRAILER

Penny Pincher is the name dubbed this bike trailer from International Racing Designs. Available in any stage of completion, weld together kits start at \$89.80 and include three runners, cross bracing, axle, hubs, coupler, tire and tie down loops, a loading ramp plus complete instructions. Weld it yourself or have the manufacturer do it for you. Kits are also available for springs, fenders, lights and wiring. \$1.00 will get you the complete trailer catalog describing the various options in detail. Order from International Racing Designs, Dept. MBG-9, 1441 West 190th St., Gardena, Ca 90247.

PACESETTER'S NEW TRAIL BUCK

The people at Cascade, Iowa, makers of the popular Trail Ram back-woods bike, have introduced a new companion model known as the Trail Buck (naturally). Designed to haul two people almost anywhere, the Buck sports a large 18" 9:50 rear tire coupled with the 7 HP Tecumseh engine and torque converter. If snow is your thing, then there is also a ski attachment for the front wheel making the Trail Buck a year-round joy. The Pacesetter people state the Buck will climb a 45° hill without straining and is designed for ease of operation for young or adult riders. The vehicle is also licensable in most states. For full details, write to Pacesetter Enterprises, Dept. MBG-9, P.O. Box 309, Cascade, Iowa 52033.



WHEEL-LY ALL SEASON ATV

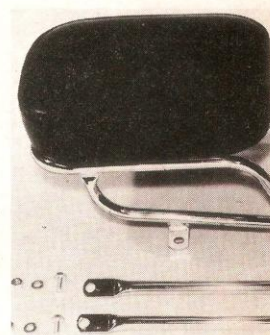
Snow, sand, mud—any terrain—is home base for the new Wheel-ly 3-wheeler from Milstead Industries. Priced less than most snowmobiles, the Wheel-ly joins the fast-growing all-terrain field with 5-horse Briggs & Stratton power pushing the vehicle to a top speed of 30 MPH, according to the manufacturer. Wheel-ly's ground-hugging low center of gravity is 6-inches from the frame, 5-1/2 inches from the sprocket. The builder states that the machine scored high in its initial workout and subsequent road tests, handling the soft, wet Oregon turf with ease.

Wheel-ly 500 Sport model is 71" overall, 46" wide with a curb weight of 110 pounds. The 500 Sport is built for more solid terrains, with a front tire measuring 5.3" x 15" diameter. Milstead's 500 Brute model, built on the same basic frame, has 11.5" x 20" front tires for softer terrain. Both machines are driven by a torque converter type V-belt drive with variable shift. Body is fiberglass. Options such as roll bar, ski, trailer hitch and buddy bar are available. Write for more information to Milstead Industries, Dept. MBG-9, 1073 Terry St., Eugene, Ore 97402.



MINIBIKE BUDDY SEAT-RACK COMBO

Just about everywhere you see minibike riders, you probably see twice as many people as there are minibikes. This is not so unusual, as it always seems to be twice as much fun with a friend along. However, the friend usually winds up plastering himself to the back of the bike owner, without visible means of support other than sheer determination to hang on. Most minibikes simply don't have seating room for more than one youngster, however, Triple A Accessories, Gardena, California manufacturer has a solution. Their buddy seat combo is made for the two-up fun of minibikes, and provides a safe, strong seat for a friend. The seat is made of tough naugahyde, with firm foam rubber padding to assure comfort in rough terrain. The gleaming chrome rack forms support for the seat. When you don't need the seat for a second rider, you can remove the pad and use the rack to carry your bedroll or etc. for that overniter trip. Available for Yamaha Mini-Enduro, Honda Z-50 and CT-70 Minibikes for only \$23.90. Available at dealers all over the U.S. and Canada.



MTD'S 1971 TRAIL BIKES FEATURE NEW SUSPENSIONS ON TOP MODELS

MTD Products Inc., large Cleveland-based manufacturer, has introduced a completely new line of eight trail bikes for 1971. The popular "600" Series at the top of the line features newly-designed suspension on both front and rear. "An exclusive leading link suspension for the front wheel coupled with a 'swing arm' rear suspension cushions shocks more evenly and promotes better trail hugging qualities," stated Richard C. Armstrong, Recreational Vehicles Sales Manager. "All units, with the exception of our '100' series, are equipped with torque converters for a smooth transfer of power with maximum efficiency," he added. "There are models available with 2½, 3, 3½ and 4 horsepower."

All 1971 MTD trail bikes are equipped with U.S.D.A. engine exhaust spark arresting mufflers, qualifying them for use in National Parks.

In addition to manufacturing a complete line of trail bikes, MTD Products Inc. is the nation's largest producer of power lawn and garden equipment including walking mowers, riders, snow throwers, compact tractors and rotary tillers. It is also one of the leaders in production of bicycles, snowmobiles, wagons and velocipedes.

Write for brochure to MTD Products Inc., Dept. MBG-9, 5389 W. 130th St., Cleveland, Ohio 44111.



G.E.M. INTRODUCES MINI-BIKE HIGH-PERFORMANCE PARTS LINE

A new high-performance cylinder head has been introduced for the 4 HP Tecumseh engine, one of the most popular power plants in the mini-bike field.

Developed by G.E.M. Products, Inc., the head is the first item in a new line of mini-bike performance parts from this established maker of similar 2-cycle engine accessories for the motorcycle, snowmobile and go-kart fields.

The new head, according to the maker, increases engine compression, provides better cooling from additional fin area, and promotes more efficient combustion as the result of improvements in chamber configuration. It is made of precision cast and machined, high-strength aluminum.

Retail price is \$17.95. For further information, write concerning Part No. G5200, to G.E.M. Products, Inc., Dept. MBG-9, 496 E. St. Charles Rd., Carol Stream, Ill. 60187.



KLOTZ CHAIN AND CLUTCH LUBE

Klotz Special Performance Products of Fort Wayne, Indiana, now offers a high performance lubricant for chains, clutches and torque converters on mini-bikes, motorcycles, snowmobiles, karts, and all-terrain vehicles. Klotz Chain and Clutch Lube is designed to penetrate and lubricate roller chains, sprockets, clutches, torque converters, bogey wheels and roller bearings. This Klotz product comes in an 8 oz. plastic applicator bottle containing a combination of high temperature lubricants with graphite dispersions to cut friction, plus an added tackiness agent to keep the lubricant from flying off of hot spinning surfaces.

It eliminates rust; relieves stiff chain links, and continues to lubricate long after it dries. It allows clutches to travel freely for greater low-end torque with higher top speed gear ratio. Made for dry or sealed type clutches and performs well under any weather conditions. \$1.00 per 8 oz. bottle.

Write for more information to Klotz Special Formula Products, Dept. MBG-9, Box 1343 Fort Wayne, Ind. 46801.

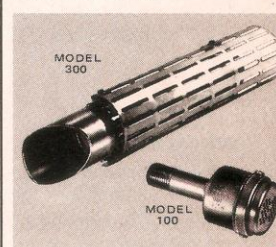


SPARK ARRESTER MUFFLER

Good news for the trail rider and for his budget is Tecumseh Product's Spark Arrester muffler. Available from Tecumseh Authorized Dealers, the model 100 has a suggested list price of \$4.95. This United States Forest Service approved spark arrester muffler boasts, easy do-it-yourself installation, and gleaming chrome plated finish. The model 100 and model 300 can be installed on any of the thousands of Tecumseh Mini Bike engines currently in use. Disassembles quickly for screen inspection or replacement by removing two screws. Replacement screens can be purchased at a suggested list price of \$1.75 from your local Tecumseh dealer.

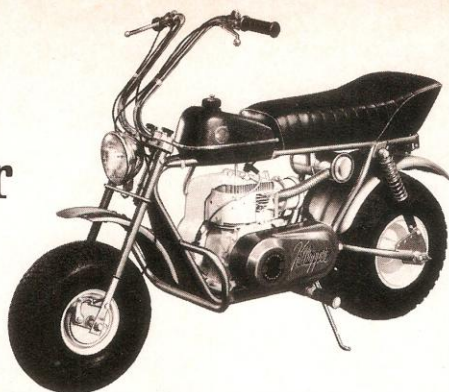
Tecumseh's Spark Arrester muffler is offered in the model 300 configuration for the real cool biker or rather the biker who wants a real cool leg. The heat shield, muffler and bracket are all in gleaming nickel plate, adding that long lean look to any Tecumseh engine power bike.

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UNRIDEABLE MINI BIKE

Continued from page 27

one has been able to yet, he still has to have all the brain waves working to prevent over-correction regardless the turning direction, and still cope with the sloppy steering.

Listen guys, it just can't be done.

But don't take my word for it. We tested the bike with as many different riders as possible, and they all attested to the claim. As a matter of fact, it has been absolutely no problem whatsoever in getting riders for this bike. Everyone who has heard of it or seen it has to give it a try. There have been talented young mini-bikers like Ron's sponsored rider Gene Woods, or Ron himself, or casual visitors to Ron's shop, and even (blush, blush) magazine writers. No one has yet mastered it, or even successfully completed ten yards in a straight line.

Even the pros can't cut it. "The Unrideable" has been a personal challenge to two of the top motorcycle racers in the country: U.S. National Class A Speedway Champion Rick Woods (older brother to Gene), and last year's National Speedway Points Winner "Wild" Bill Cody.

A word of explanation about speedway racing. In the U.S. it is centered in California but international speedway is the most popular form of motorcycle racing in England, Scotland, New Zealand, Australia. It ranks second to motocross in Russia, Poland, Sweden, Czechoslovakia and a few other European countries. It is a unique form of racing with 500cc fuel-burning engines producing instant power. Brakes aren't used, and the 50 hp, 180 pound bikes are designed to go through the dirt turns sideways. It is only in a side-thrusting attitude that these bikes handle correctly. They are murder in a straight line.

Well, all this is to point out that a top speedway rider must unlearn all of his previous motorcycle riding style to be able to properly negotiate a speedway track. It takes courage and skill to learn to turn on 50 horses to get the bike sideways to slow it down!

So both Woods and Cody are no strangers to uniquely-handling, contrary motorcycles. They've adapted themselves to Speedway, so it is conceivable that they could do the same with "The Unrideable." Certainly, they have sufficient confidence that their bodies will react correctly when their brain says "no."

To make it short, neither has yet ridden it successfully. Woods has tried repeatedly, often every day for at least an

hour. He probably has more time on the bike than anyone else. No go. He can't do it.

In fact, Woods says: "If you can ever learn to ride it, you'll never ride a normal motorcycle again."

"Wild" William simply says: "It's blowing my mind!" End of comment.

Strangely enough, inexperienced riders seem to get the best results. Those with the least to unlearn can achieve the better distances. I've managed about eight yards (further than most, double blush, blush). This was the result of a combination of things: First, the bike seemed to want to turn right less than previous runs: Second, it was after failing miserably for more than an hour on the bike: Thirdly, sheer willpower and concentration enabled me to counteract the balance problem and force my reactions to be opposite of what they should be: And finally, I somehow got my weight balanced at the best position (I still don't know where and couldn't repeat it again).

Wow, folks, eight whole yards! But ten yards is the challenge.

After trying to ride the bike for more than an hour, I had to leave. I got into my little VW and proceeded to scare myself witless. The car seemed to wander all over the road. I had a marked

tendency to over-correct each time I turned or changed lanes. I continually felt the rear end about to slide out. Of course, it didn't, it was just my mind playing tricks. A couple of times these experiences caused me to feel as if I were experiencing vertigo or motion sickness. My mind had difficulty coping with these reactions, and the body responded by shooting adrenalin into my system.

It was only after I had stopped the car (and didn't drive for at least a couple of hours) that it all went away. It was very strange, a lot like the feeling one gets when they wear glasses or corrective lenses for the first time (you feel taller than you are, and things seem strange because the brain is readjusting from the previously incorrect vision back to a perfect 20/20). Or maybe the feeling is like the first time you touch land after a long ocean voyage: You're momentarily confused because the land isn't moving like the boat was; they call it "land legs" and "sea legs."

Anyway, as Cody says, it's a mind blower.

The basic problem is one of balance. On the normal mini-bike, centrifugal force contributes to the rider's balance but, on this bike, it works against the rider. The poor rider really can't fight it.

It's unrideable and that's that!

What next for the bike? No one is yet sure. Ron is investigating the legal aspects of patenting or licensing it. It might make a great concession business. It is highly likely that the bike will be used (perhaps with one or two sister machines) as a half-time challenge at professional motorcycle races. It would be a tremendous crowd pleaser, but we're not so certain that some of the riders will be willing to try it if my disorientation is any criteria. After all, they've got to have their head straight for the racing, and midway through a 90 mph slide is no place to suddenly get motion sickness. But perhaps my experience was unique, and it won't bother the pros.

Chances are someone will put up a few bucks as an incentive to the riders, say \$100 to the first man who can ride it 10 yards. But that really isn't necessary because the bike is such a challenge in itself. Racers love challenges and will do anything to accept them.

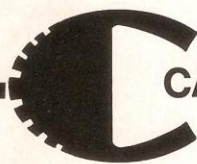
Imagine telling AMA Grand National Champion Gene Romero that he can't ride this mini-bike. If you escape with your life, you know he will give it a try.

"Hey, Gene. Have I got a bike for you! But we don't call it unrideable for nothing. . . ." □

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MINI-BIKE GUIDE / 63

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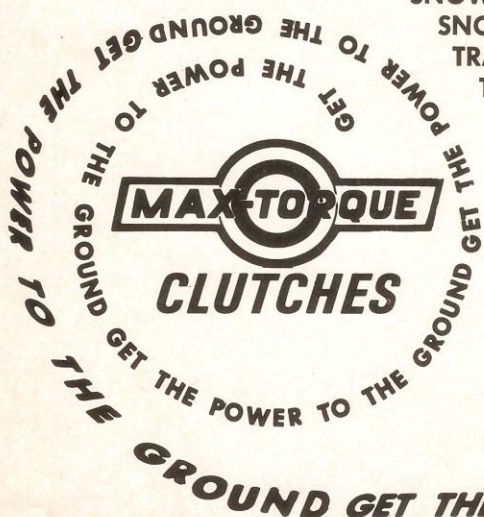
Continued from page 46

was easy and immediate. This stability is attributable to the large rake to the front forks and the resulting amount of trail, about 2½-inches. Also, the degree of rake was just about right for making full use of the telescopic front forks—the front wheel hit the trail obstacles as they came up and not after they were almost underneath.

Braking was excellent and we could detect no fading after a number of high speed stops. We have a reservation about the durability of the rear brake, as we said before, but it did not give us any trouble during the test.

We were somewhat surprised, considering Coleman's camping orientation, that their machines were not better set up, with racks and so on, for this type of use. But all in all, Coleman proved that they not only know how to make good lanterns, but can also tackle two-wheelers with success (with the exception of muffler design). There are still some things to be learned from experience, like how to make better rubber coverings for the foot pegs, but it is difficult to fault the quality of our test machine. It looks as though they should have no worries about their six-month warranty.

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HEATH HILLTOPPER

Continued from page 31

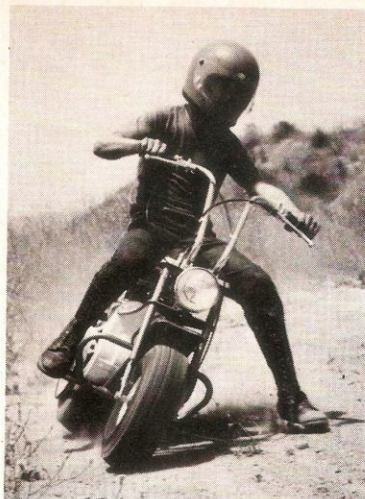
fault on a mini-bike but one thing that is inexcusable, and downright dangerous, is a handlebar mounting system that is insecure. We are sure that Heath, with its very fine reputation on the line, will not waste time in correcting this problem.

On the other hand, the brakes on the Hilltopper were excellent. The front brake even had the actuating lever on the drum pointed upwards, clear of the ground, a design feature we have been urging on manufacturers, without noticeable success, for some time. We have expressed doubts about band brakes being mounted on jackshafts because of the possibility of chain failure. However, Heath has done much to eliminate that worry with the really hefty chain they use. In addition, it has been pointed out to us that the braking force is multiplied from the jackshaft to the rear sprocket by the final drive ratio—in the case of the Hilltopper, by seven times. This is a major advantage for mini-bikers, many of whom lack much wrist power.

Mounted over the out-sized tires on the test machine were stamped steel fenders, front and rear, that looked as though they should keep the rider nice and dry and, at the same time, ward off all flying rocks. For further protection, a mud shield is welded between the forward down tubes. On the power take-off side of the engine there is a full coverage, stamped steel, clutch guard and on the other side there is a chain guard wrapped around the jackshaft sprocket. Finishing off the machine is a chrome striped, matt black, gas tank with a not altogether unpleasing shape, and a huge, softly upholstered, seat—built-for-two.

The deadline (point of no return) was rapidly approaching but we finally were finished and ready for testing. We had along for our testing one of California's hottest young riders, Rick Hendrickson. At the time of the test, Rick was preparing to take to the road with his pit boss/dad to tackle the best riders of the Mid-West. A friend on a Yamaha 175 came along to pace the Hilltopper and to point the way to challenging terrain. The two riders went off together to give Rick an opportunity to become used to the machine. From the test crew's vantage point it seemed as though the motorcycle was having a rough time maintaining its position of "showing the way".

It was soon evident that the Hilltopper

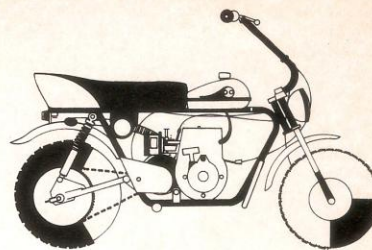


was easy to handle, despite the fact that it is no lightweight (at 160 pounds). Heath had avoided the heavy steering that is a drawback with many trail machines by keeping the front end rake fairly minimal. This reduces trail to about one inch, just enough to prevent the steering from becoming "twitchy" when it is combined with the natural stability of the fat tires. Steering, in fact, seemed just about right so long as the tire pressure is maintained at, or above, the recommended 10 psi. Any softer and the front end gets a mind of its own.

The only disadvantage of the reduced front end rake seemed to be in not making full use of the suspension. The front forks would have been more willing workers if they could have met the trail shocks at a better angle. But for a lesson in rear suspension, you couldn't do better than sit on that fat, comfy, seat. For the type of terrain that this machine is designed to tackle, the rear suspension was like riding on cloud nine. Positively sinful.

Despite the cushy ride, control was excellent at all rates of speed. Slow speed riding, in particular, was a revelation since that extremely low gear ratio might have led one to expect snatching engagement, something not wanted on the trail. Whatever they did to the torque converter was good since the machine would start to roll very gradually and would maintain a nice, steady, slow speed, with no unexpected surges, for as long as needed. This characteristic is much more important in a trail machine than neck-snapping acceleration.

However, this machine is no slouch. It'll get out there and move and keep climbing well above a safe trail speed, even with a heavy rider aboard. Esti-



HEATH HILLTOPPER

Manufacturer: Heath Co., Benton Harbor, Mich.

ENGINE

Engine type	Tecumseh four-stroke
Bore	2-5/8"
Stroke	2 1/4"
Displacement	12.2 cu. in. (200cc)
Horsepower @ rpm	5 @ 3,600
Compression ratio	N/A
Carb	Float bowl
Ignition	Flywheel ignition
Lubrication	Splash
Fuel capacity	1 gallon
Fuel requirement	Regular

TRANSMISSION

Transmission type	Comet torque converter
Primary drive	V-belt
Clutch type	Automatic centrifugal
Final drive	No. 40 chain
Gear ratios	Constantly variable from 7:1 high to 22:1 low

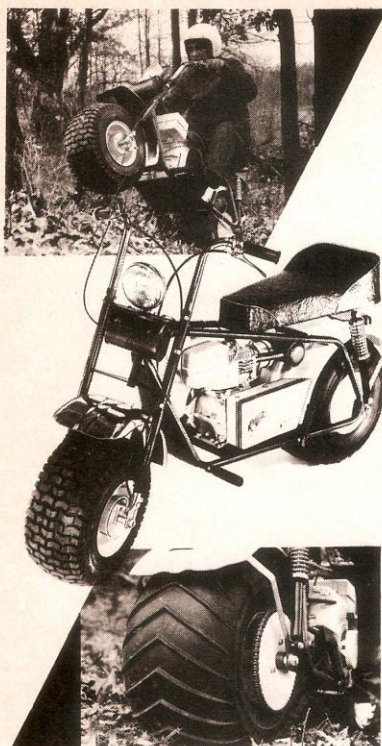
CHASSIS

Frame type	Double loop
Wheelbase	44-inches
Overall length	61-inches
Suspension,	
Front	Telescopic forks
Rear	Swinging arm
Wheels,	
Front	6-inches
Rear	8-inches
Tires,	
Front	18-in. diam., 8-in. tread
Rear	16-in. diam., 4-in. thread
Brakes,	
Front	Internal expansion
Rear	Band
Ground clearance	7 1/2-inches
Seat height	27 1/2-inches
Handlebar height	38-inches
Dry weight	160 pounds

PRICE AS TESTED \$329.95

mated top speed was around 30 mph, more than enough. But it was the slow speed power of this machine that was most impressive. It humbled all the hills it was pointed at except one that had to be taken really slow because of obstacles and turned out to be too loose to get a good bite, even with these tires.

Despite our reservations about the handlebars mounting (our major criticism) and our impatience with some of the construction details, the Hilltopper proved itself to be just that, a hill topper. In detail there is room for improvement but in general the Hilltopper is a great trail machine. □



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MOVIE REVIEW

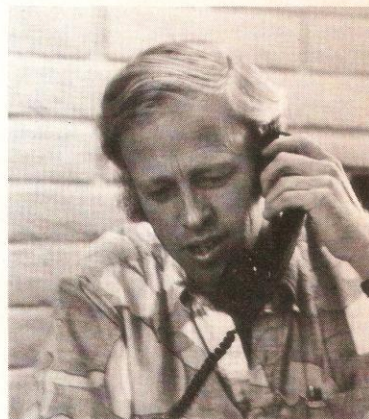
ON ANY SUNDAY — Two-Wheel Gunfighters

Ed. Note:

Good ol' MBG is herewith about to scoop the field. We present the first complete review of the new Bruce Brown motorcycling documentary, *On Any Sunday*. All the other magazines have seen only a 16-minute "teaser" of the film, but MBG infiltrated one of its illustrious creative talents into the Bruce Brown fold, namely our incredible Contributing Editor, Jim Gilbert. It is untrue that Gilbert is being considered for a job with J. Edgar's bunch. Nevertheless, the FBI could take some lessons on how he managed to convince the BB crowd that he could be of some service to them. (He has never been that successful with us, but that's another story. . . .) Anyway, there are wild rumors that some of his writing has actually been used by Brown. We find that difficult to believe. On the other hand, we know his fluent writing was used in a press kit that explained the motorcycling sport and its participants to be given non-motorcycling film reviewers. Since Gilbert doesn't know anything about motorcycling, and neither did some of these reviewers, it all seemed to work out. If the following seems dull, it's because Gilbert's sunglasses kept falling down in front of his mouth, he was continually interrupted by his butler and maid, and the manicurist kept curling his nails. He likes them natural, even if he isn't. This whole thing seems to have gone to his head. Naturally.

Bruce Brown made his fame and fortune with a block buster film in surfing entitled *The Endless Summer*. It was the sixth in a series of surfing films and he took a gigantic gamble with it: he risked \$50,000 of his own money to put the film on the big movie screen of the theatrical circuit. Until then, all of his films had been shown on the lecture circuit at schools and the like. The gamble paid off and Bruce was suddenly famous and rich.

What for an encore? What better than a film about one of Brown's other pastimes: motorcycling. He arranged financial backing from another famous motorcyclist/film personality, Steve McQueen, and assembled a team of talented film-makers to begin a two-year job of capturing the entire sport. 'Twas no small chore.



BRUCE BROWN

On Any Sunday was distilled from over 150 hours of film (and that's a heck of a lot of celluloid) into a compact, comprehensive, view of the two-wheeled scene. Highlighting the film are three themes tracing the motorcycling prowess of a trio of talented throttle twisters: McQueen; Mert Lawwill as he attempts to retain his AMA Grand National Championship; and Malcolm Smith as he accepts any torturous challenge flung at him.

Using these personalities, Brown admirably captures the behind-the-scenes drama of racing competition.

The AMA rider-grinder is shown as never before. The racing calendar encompasses over 100,000 miles of travel just to make the race dates, and *On Any Sunday* shows the highlights of the season through the experiences of Lawwill. Nothing can quite compare with seeing these brave professionals sliding sideways at 130 mph.

Malcolm Smith, one of the best long distance racers, shows another aspect of competition: the guy who does it for the love of the sport. He's shown in desert races, the Elsinore GP, and winning the coveted Gold Medal at the International Six Day Trials in Spain.

McQueen's talented riding is no cop-out. He is good! And he amply illustrates it with a tenth place finish in the Elsinore through-the-streets GP. Very good considering there were 1,500 riders starting the event. (If you think he is in motorcycle racing as a publicity gimmick, you should stand at the top of Saddleback Park's "Matterhorn" hill climb and look over the hump. But

don't fall off. McQueen's name is on the plaque containing the short list of people who have made it.)

But there is much, much more to *On Any Sunday*. Briefly, the cameras swing from California desert racing, to the top motocross events, Bonneville speed trials, a hillclimb, Grand Prix road racing, sidecars, ice racing (you won't believe that!), drag racing, TT, short track, enduro, trials, and Class A Speedway.

The Nationals at Saddleback were the focal point for Brown's forage into mini-bikes. (His kids are avid riders, by the way.) Because of the multitude of different events covered, Brown unfortunately was unable to fully explain or discuss each type of competition. He readily admits it. And the sequence on mini-bikes is no exception. But it's the action which really tells the story, and there's plenty of that!

The only other segment dealing with mini-bikes features Jeff Ward. In Southern California, there is a burgeoning growth in Class A Speedway racing. Part of the program every week is a mini-bike match race between some of the top SoCal riders (Jeff, Davey Carlson, Gene Woods, Guy Erickson and others). Jeff is the undisputed Champ of the short 1/5th-mile oval. He's so good that they make him start 70 yards behind the other riders, and he still manages to beat them. Well, it seems that the Scottish Speedway Champion, Bert Harkins, was in town. Young Jeff, a Scot himself, decided a match race on Honda 50s would be ideal to determine the fastest Scot in town (Jackie Stewart wasn't around). *On Any Sunday* captured this race on film, showing Jeff doing his all. Unfortunately, he over-cooked it in the first turn while in the lead on the next-to-last lap, and lost, but it was all good fun and worth seeing.

On Any Sunday is probably the best full-length motorcycling documentary ever made. It attacks a difficult job, showing the entire spectrum of riding. There is something for everyone if

you're a bike freak. Brown's unique humor and free-flow style is supplemented with wild camera graphics, fabulous action shots, and rare insight into what competition is all about. There is a slight tendency to be less than serious about certain aspects of racing, ignoring them in some cases (racing fatalities, for example). But *On Any Sunday* is fair about noise pollution and riding curtailments. Bruce does not make a propaganda piece out of his film. He shows motorcycling as it is, and lets the viewer make his own decision.

When the first rough-cut version was screened at Bruce's production office, two outstanding sequences were indelibly imprinted upon my mind. One was a slow-motion study of Lawwill's face as he awaited the start of a very important race. The unflinching, cool professionalism of this man vividly translated what racing was all about, and what it takes to make a man a racer.

There have been books on this subject, but Brown communicated it in a ten-second sequence as no writer could. He secretly confesses that this was his intention. No words are necessary. It's like a gun-fight. You know what is going through his mind.

The second sequence ends the film. It's a ballet on wheels, beautifully photographed on a beach. It's McQueen, Mert and Malcolm just riding. It's goofing-off, falling-down, good fun and it probably is the best way to show what motorcycling is all about. Again, there are no words necessary to describe it. The feeling is there. And it's a perfect finish to an enjoyable movie.

You won't go wrong in seeing *On Any Sunday*. It's the kind of film that should have been made a long time ago, but it took a real enthusiast, a rider, to honestly show what it is like "out there". It's a family film, great to show your parents the sport—if they don't already know.

Like Bruce would say, "Do it!" You won't be sorry.

Jim Gilbert

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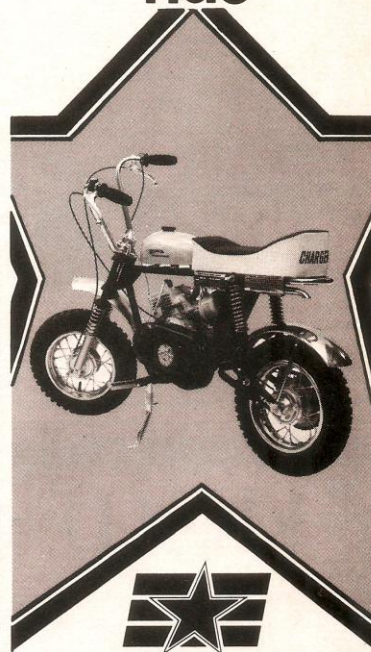
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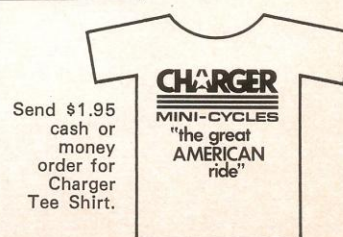
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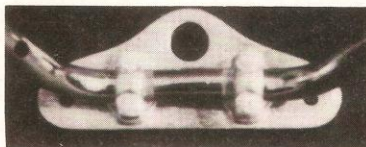
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TECH TIPS

Continued from page 10

motorcycle dealers should help you find the carburetor and offer some advice on making it fit your machine (if you take it with you so that they can view the situation).

MUFFED IT AGAIN

Q: In reply to one of your readers' letters you wrote that a muffler increases performance. You're wrong! The only mufflers that have ever helped performance are on two-cycle snowmobile engines. We've tried many mufflers and straight pipes and the straight pipes have worked better. We have a mini-bike club up here (believe it or not) which has ten members. We are trying to get a track going but we don't have enough backing or money.

Randy Williams
Willmar, Minn. 56201

A: The question of performance loss due to mufflers is one that has not been satisfactorily answered, as yet. It is true that many mufflers reduce performance but these are usually badly designed units. We had cause to put a muffler on an expansion chamber-equipped Yamaha Mini-Enduro recently and at the same time that the noise was tamed, everybody on our staff agreed that performance had improved. You are wrong if you think there is a definite negative or positive answer to this situation (and if performance is increased for snowmobile engines, there is no logic in saying it will not be improved on other engines). What is much more important than any niggardly argument about power loss or gain is the stark fact that the whole thing becomes academic unless we reduce our noise pollution. We will simply be legislated out of existence. What will it matter, then, if we gained a fraction of a horsepower by not using mufflers—back in the good old days when there was such a thing as mufflers?

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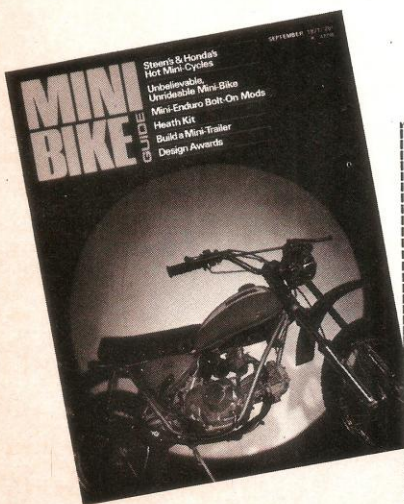
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There's no better way to go!



by RON BLACK

By the time you read this, both International Karting Federation Nationals will be history for the 1971 season. Truly, magazine people live weird lives! We must live our days working three months ahead of the calendar. As I write, there are those who are frantically wrenching on sundry equipment for their assault upon the Enduro Nationals. However, by the time you lay eyeballs upon the copy, that race will be history, as will the Sprint Nationals.

For the enduros, there are great consuming worries and rumors on the West Coast. Will the expected stiff challenge from those Eastern hotshoes finally materialize, or will the Californians do it again? Will the Indy track surface be rougher this year than it was last? Will the expected number of participants show up (maybe this year we'll top the 800 entry mark)? Will Darryl Domes be able to hold off the B Open competition for an unprecedented third year in a row? Will the Rupp team cure their huge tire chunking problem that did them in last year? Will the Akkerman team solve the nitro-upchucked engine problem they ran into last year? oh, the list is endless!

Does all of this sound familiar in a way? It probably does, because these kinds of rumors are so much a part of any really big race, such as the Indianapolis 500. But this is the I.K.F. Enduro Nationals, held at Indianapolis Raceway Park. Do not, though, assume that, because this is karting, the feeling—that aura of determination and close competition—is any different than it is in the really "Big Time". It's all there just like at the Indy 500, but this background isn't "color" written up in every hometown newspaper from the wire service dispatch. No, but it's there anyway.

And next month about this time the Sprint racers will be getting all "het up" to trek to Camden, Ohio, where the competitive air, along with the exhaust fumes, gets thicker. Three heats, each a

whole new race, the pressure to qualify well, the really tight wheel-to-wheel dicing at every corner, the smaller, more congested pits . . . it all adds up to real (read that "serious") racing by any standard. The "Big Time" holds no exclusives on really good racing.

SPEAKING OF GOOD RACING . . .

did you know there are a few places where karts race on dirt tracks? These guys are really a ball to watch, and as far as being good, exciting and spectacular racing, there isn't much better fare to be found than you find with karts on a dirt track. However, dirt racers are in such a minority that most people have never seen articles or any kind of publicity about them. One such group of "Dirt Racers" is the Pro Kart Club in South Gate, California.

They run on several dirt tracks in the L.A. area, but their "home" track is Trojan Raceway in South Gate. The racing action on the quarter-mile oval is something to behold. In fact, the dual karts usually wind up holding the overall lap record over sprint cars, midgets, bikes or any and all comers. The rip-roaring, power-sliding, bumping and dodging action made famous by the midgets is still alive and exciting fans on Saturday nights at Trojan.

You've missed something vital if you have never seen karts dirt-tracking through the turns in a snarling pack. They are not only fun to watch, but they *try* to put on a show to boot. Some of the karts have wings like super-modified type cars, and lends some glamor and "color" to the action. Joe Sikaneder has a beautiful dual machine that Bob Meli built. This thing has small wings on the rear, and carries dual tires on the outside rear (for better traction and handling) making the kart a "five-wheeler".

Along this line, Allen Fife has come up with an enclosed body over his dirt tracker, reasoning that the increased

body panel area will help to provide space for paint and color. It is well known that the spectators will identify with the colors of a machine to pick their favorite. The "body" is merely very light sheet metal over tubing, and clamped to the kart. A roll bar was bolted into the whole thing as were seat belts because Allen built it with an enclosed roof. He rejected the "roadster" style (open top) because he wanted to keep his machine different (in the spectators' eyes) than Micro midgets, or even midgets.

When I saw the machine, it reminded me of some of the small "commuter cars" that the automakers come up with from time to time. It was kinda different looking, to be sure, but not unpleasant. Some of the dirt karters are interested because of the better "color" aspects for providing a show for the spectators.

There are even people from other tracks, such as Ascot and Corona, interested in the show that these karters put on while doing the kind of racing they love best. However, there is one thing that these track promoters would like if they do run, and that is to change the name to Junior Modifieds.

The general public just doesn't and won't believe that anything with a name like "KART" could provide a high speed, exciting racing show. I guess you don't have to be "Big Time" to have good racing. But you have to have a "Big Time" name to sell it to a paying customer.

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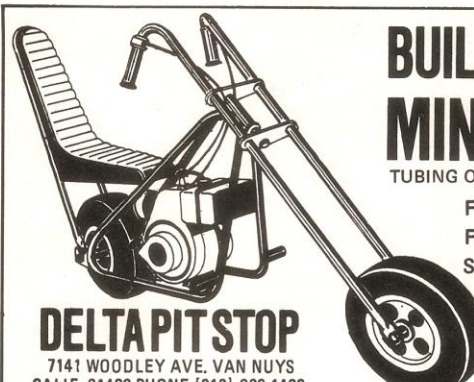
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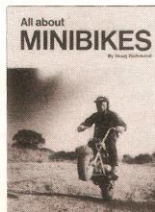
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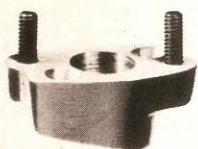
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SAN JOSE

Continued from page 37

between these two ends when the checkered flag falls. This good feeling of camaraderie is evident as everybody puts in a lot of effort to make these races a success. Many of the local cycle shop owners sponsor boys, donate trophies and help the youngsters and their parents in the pits.

All the races were action-packed but the most exciting heat of Championships was fought in the class IV, 12 to 15 age group, 6 hp and up. Randy Pacheco, on his Arctic Cat, and Mike Key, a Bonanza/Hodaka mounted rider. There was so much dispute about the outcome of the heat, and the application of one of the rules, that a special grudge race was set up. Mike retained his first place win by winning this sudden death match.

Another race expected to be close was the class II, 6 hp and up, age group 16 and over. Bill Clark, a new favorite, did less well on his Arctic Cat than the crowd expected. He was hurt in practice the night before, so the expected battle between Mike and 18-year-old Steve Bisordi, often a winner, did not materialize. The race ended with Steve taking a comfortable first; Bill and his bad leg finishing third.

The one disappointment of the day was that the current overall point leader, Richard Luddorff, a class III, 12 to 15 age group rider, who has amassed 15 points to date, was unable to make the race.

Twelve-year-old Pat Souza, of San Jose, in the fifth main event, class II, had an easy win having lapped all but one rider. Another Souza, Hank, who is no relation to Pat, had been a first place winner for three previous consecutive weekends. However, he tangled his cycle with Robbie Balgas in the Championship main and lost his accustomed spot at the head of the pack.

With the riders doing as well as they have been, and with the potential that has been displayed in San Jose, it is to be hoped that some local riders will provide a serious challenge to the Southern California hot-shoes.

THE WINNERS!

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II	Tony Alves	11	Hodaka
III 7-11 #1	Larry Andres	7	Kawasaki
III 7-11 #2	Paul Balfour	10	Yamaha
III 12-15 #1	John Travis	14	Hodaka
III 12-15 #2	Pat Souza	12	Gemini
IV 12-15 #1	Vince Fazzari	14	Hodaka
IV 12-15 #2	Mike Key	15	Hodaka
II 16 & over	Steve Bisordi	18	Hodaka

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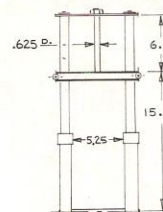
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TO THE AIR POLLUTION
PROBLEM? CHECK
YOUR OIL.

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LOW... YOU SAVED
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NATURALLY



LOOKIT 'ER NOW -
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POP!
WAP POP! POP! WAP

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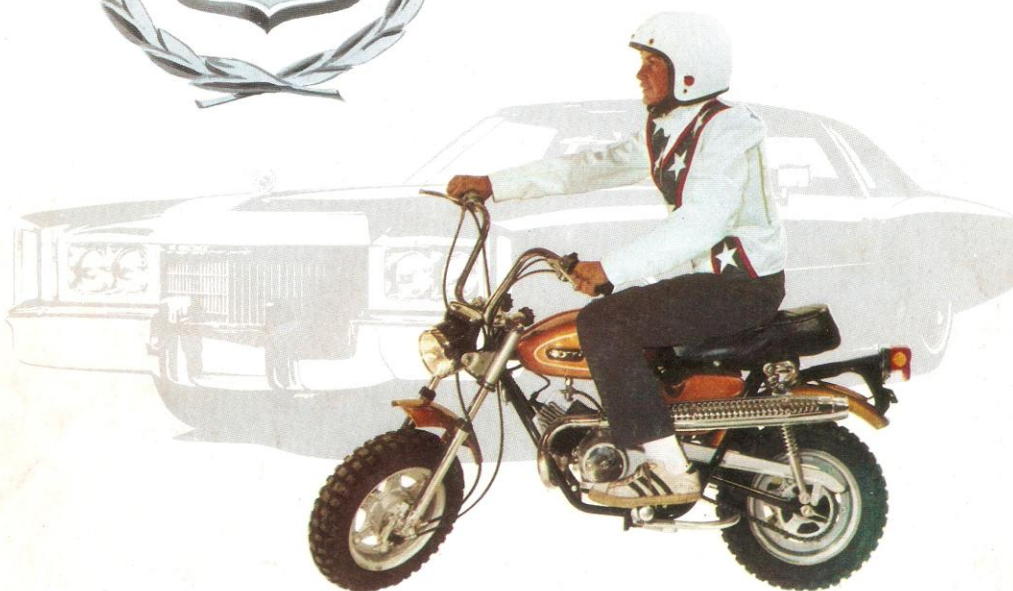
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“The Cadillac of Mini Bikes...”

This is an exact quote from the Mini Bike Guide Magazine editors after they extensively tested the new Gemini 80cc bike... the following are some additional quotes “...it’s whisper quiet, quality built... (the engine) has almost unlimited potential tucked away—and is incredibly flexible, and the gear box just snick-snick snickered all day long without a trace of trouble... the suspension proved an area of much enthusiasm... in braking tests from 30 m.p.h., we stopped in a straight line between 18 and 20 feet everytime...” and the editors concluded “...it’s sporty in the bargain”. We think the editors have told the Gemini 80cc story better than we could and we like the identification.



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Sarah's first ride on a mini bike (Honda QA50) with a transmission

<https://www.youtube.com/watch?v=RiHh-Obvtg>

Build Your Own Mini Bike Video...

<https://www.youtube.com/watch?v=lr9M3GCQF-U&t=225s>



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Original Plans from "Boy's Life Magazine" 40 years ago.

You might have to explain to a young person what this is. But if you grew up in the 1950s, '60s, or '70s – you saw this exact Mini Bike all over America. It was frequently constructed by kids working with their Dad. It usually had a lawnmower motor on the Mini Bike and made a lot of noise as it screamed down the block. But it was COOL!

I did some research back in the 1990s and actually found the guy who created these plans. These exact plans were the ones sold in Boy's Life Magazine for 40 years. Yes, THIS is the Mini Bike you remember seeing and loving as a kid.

Please take a moment to look at the image up close. You can get a good idea of how this is built. It wouldn't be much work to make one of your own, especially when you have the FULL ORIGINAL PLANS.

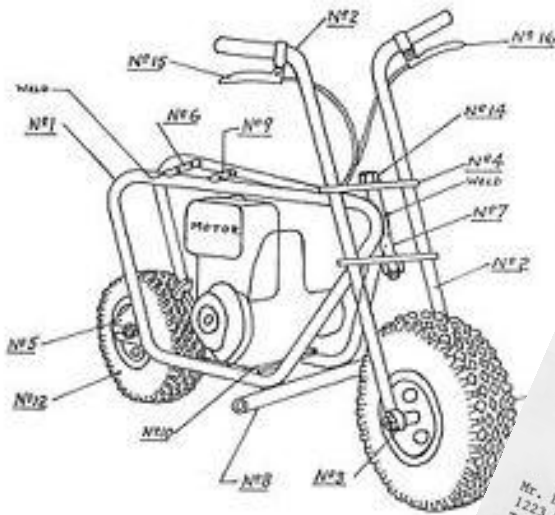
You can modify the plans to the size you want just like we did on the pictured MiniBike!

Take a trip back in time. Or simply share an important part of Americana with your kids or grand kids. Back when having a Mini Bike was the most fun a kid could have.

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VINTAGE JB RACING AD FROM 1974

Popular 1970's Ad From MiniCycle Magazine

This is a clean copy of the JB Racers ad that was in the Aug/September 1974 MiniCycle magazine, NOT the original, ad copy. It was an ad that was two pages when you opened up the magazine. I had the center crease photo shopped color filled in because the original ad is on two pages. Suitable for framing. Would look great in your den or garage. Ad will be shipped in a tube so there will NOT be a fold. P.S. THE WATERMARK IS NOT ON THE COPY YOU WILL RECEIVE. Thank you, Dan. <http://www.allaboutminibikes.com/jb-racer-ad.html>

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J&B Racers are based on three of Honda's best...the CR-125; the XR-75; and the MR-50. But, aside from their excellent handling characteristics, the J&B Racers have little in common with the stock machines.
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The J&B Racers are not toys. They are full-house racing machines, track-developed by the J&B racing team (Brad Dutoit, Jeff Ward, Dave Carlson and Brian Myerscough) and dyno-refined by the J&B tech crew. With the right rider, J&B Racers are winning machines. The record proves it.

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