

**FOURWHEELING ACADEMY**

**GOODYEAR MT/Rs**



By Harry Lewellyn

Without a doubt, our most common field failure is tires. My first recommendation to anyone just starting is get rid of the OEM tires. At a minimum, you need a light truck (LT) or a load range C tire. However, there's something even better! Look for 3-ply sidewalls like the Goodyear MT/R has.

Scrutinize the 3-ply thing with critical Coyote thinking. A 3-ply rating is not the same as three actual plies. I feel "ratings" are a marketing gimmick, whereas actual plies are the real thing. On our tours and classes, tires with 3-ply sidewalls get fewer flats than others.

**GOODYEAR MT/R**

Goodyear's introduction of the MT/R started with a bang at a rock crawling championship. Of five extreme MT/R-equipped 4Xs reaching the finals, four finished in the top five. That's pretty impressive! What's the secret?

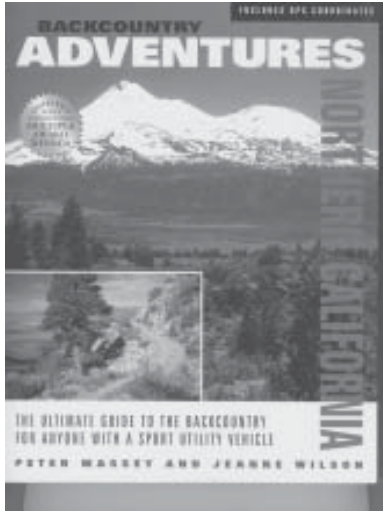
**SILICA**

Silica improves tire life, durability, traction and reduces rolling resistance, but it's expensive. Prior to the '90s, for the most part, very few tires used it.

See **MTR/p3**

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# Backcountry Adventures, No. Cal



By Harry Lewellyn

Swagman Publishing is doing it right! As reported last issue, its *BACKCOUNTRY ADVENTURES, SOUTHERN CALIFORNIA*, book is the best I've ever seen, and the good news is that it's part of a series. This review is on, *BACKCOUNTRY ADVENTURES, NORTHERN CALIFORNIA* by Peter Massey and Jenne Wilson (ISBN 1-930193-0804). As with the Southern California book, the large format (8½" x 11" and 635 pages) is complete beyond compare!

Repeating from the first review, "Before You Go," as the authors call the first section (they do not use chapter numbers), talks about using the book, why and how to use 4WD, equipment to carry and ends with a distance chart for northern California. What's of special interest to me is that they not only classify how hard a trail is or isn't

(*Difficulty Rating*), but also give it *Scenic* and *Remoteness Ratings*, all defined in "Before You Go."

Section two, "Along the Trail," provides people, places, history, flora, fauna and geological information. It's exactly my kind of reading: Brief little bites, with interesting details, but not so much that it eats into your travel time and trail appreciation.

The next three sections divide the trips into three regions: "High Sierra," "Northern Sierra" and "North Coast." 152 trails, about 50 per region, keep you on the move from the Oregon Border to just south of Independence on Highway 395.

A two-page overview map at the start of each trip section provides a big picture trail location reference, with a number and trail name index on the left. With this, you can zero right in on each trail's general location.

Each trail opens with a *Summary*, including: Starting Point; Finishing Point; Total Mileage; Unpaved Mileage; Driving Time; Elevation Range; Usually Open; Best Time to Travel; Difficulty Rating; Scenic Rating; Remoteness Rating. It then elaborates on *Special Attractions*, *History*, *Description*, *Current Road Information* (source) and *Map References*. The lengthy, detailed *Route Directions*, with GPS readings from start to finish and all critical intersections, tell me each trail was well researched and prerun. By using blue ink beneath the black, you have trail directions in the reverse direction. They also solved my map orien-

# From the Coyote

Jenna and I got married on the November Copper Canyon tour at the finish in Alamos, Sonora, Mexico. Marshall Chapman, MD, performed the ceremony, Bill Wilkinson and Kim Pollock braided our rings from copper wire, all the gals participated as bride's maids, and the trimmings were supplied, Mexican style. Thanks to all of them for helping us finally make the leap. See "What's New," on the website for photos, courtesy, Norm Taylor.

This is the second notice re **Hot Springs Mountain** skills class through Rancho Santiago College [(714) 480-7390] on June 21 and 22, 2003.

See the last paragraph in the plastic wrap article (page 7). With your ideas, we can share many great innovations. Let's hear yours!



tation dilemma for my "where to go" book by orienting the maps both vertically and horizontally, sometimes across two pages. You get the biggest map possible for each trail. Once you catch onto the color-coded info, it's a breeze to use. Pictures along the way bring it all to life before you leave home. Great book! The "Professor of Offroad" gives it an A+!

Use the information in the first paragraph to purchase a copy at most book and 4WD stores or call Swagman directly at (800) 660-5107.



The ECO4WD newsletter is published every other month. Subscriptions are \$14 for six issues. January through September features the Coyote's technical articles. The 40-page November-December *Bonus Issue* is the only issue that contains advertising. Contact ECO4WD for advertising rates or to receive a free *Bonus Issue*. Bulk copies are also available. For *Newsletter Reprints* on selected topics and back issue orders, see page 10. Back issues are \$3.00 each.

We encourage the submission of articles and photographs for publication and reserve the right to edit them. Submissions are only returned when accompanied by a stamped, self-addressed envelope.

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ECO4WD is committed to passive appreciation of Mother Nature and ecological backcountry travel on unpaved roads.

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MTR, from page 1

## DURAWALL

The Goodyear MT/R uses silica sidewall compounds in combination with three polyester plies and a unique tread design. Goodyear calls that Durawall.

Rick Russell (Sidekick Off Road) got a couple of sets before Durawall had a name. His test tires showed an oval like in Figure 2, but no content. And test 'em he did!

Stoddard Valley, California is about as tough on tires as it gets. A typical 180 vehicle High Desert Roundup yields 50 to 60 flats. Rick went to Stoddard with Bob Burmeister of B & W Wheels with a tire killing, sidewall splitting vengeance: man vs. tire. The tires won. Even in steep downhills, and steering for sharp rocks, the tires survived.

Big Red, also known as the tire killing champion of the west, runs them, too. On our Truckhaven prerun, I inspected his sidewalls for damage and found none. And although I don't typically do that many black diamonds, mine are still flawlessly perfect and I'm running the whites out. I'm impressed!

## TRACTION

"... MT/Rs aggressive open tread design and notched sidewalls convey unbridled traction. Performance notwithstanding, people will be attracted to this tire based solely on its raw, brute looks," past light truck marketing manager, Ron Wells said when the MT/R was first introduced. I've seen them work at rock crawling championships. You can see the difference.

Maximum traction is achieved by block and blade edges in the tread. The working shoulder design provides 300 percent more edge laterally for straightline traction and 240 percent more circumferential edges for side traction than its predecessor, the MT.

## CONCLUSION

Regarding the open tread design noise, yes, I slightly hear it, but feel it's little compromise for the increased durability. Three-ply sidewalls are the only way to go. MT/Rs enhance this with Durawall. Try them.



*Figure 1 Surprisingly quiet, the MT/R tread continually proves its worth by outperforming all other tires at rock crawling championships.*



*Figure 2 Silica compounds in the sidewall make the MT/R Durawall very tough!*



*Figure 3 When you see the MT/R on the tire, you are assured of 3-ply sidewalls.*

# FOURWHEELING ACADEMY

## CV BOOT REPAIR

By Harry Lewellyn

Constant velocity (CV) boots are a pain to replace – even using split boots. So what do you do when one fails in the field? I'll offer a couple of suggestions, all of which were tested. Mickey Mouse prevails, but I do whatever it takes *ta getchaback*.

### WAIT

The one big reason to wait is to have it professionally replaced or at least until you have the proper tools and obviously, the replacement part. Besides, this approach is pretty painless and waiting may not be as bad as you might first think!

### CONTAMINATION

My big concern was that contamination (dirt) would enter the boot and make its way to the CV joint. The balls and races of a CV joint are under great force when 4WD is engaged and the terrain is taxing. Dirt will only add to ruining the expensive joint, but consider these thoughts.

When you are not in 4WD, the CV joint more or less just loafs along. Drive force pressures don't exist. Further, if grease is leaking out, primarily due to centrifugal force, it's very unlikely dirt will enter. The hole or tear, if not too large, is filled with leaking grease thus plugging the flawed rubber.

The downside is that the leaking grease gets everywhere, primarily the

suspension and wheel cavity, and makes an ugly mess.

### CONTAIN THE GREASE

To minimize grease loss, dirt entry and the mess, temporarily wrap the boot with plastic stretch wrap (see page 7 for more on that).

Since the plastic wrap stretches and sticks to itself, that was not too hard. First, wrap in the "keep it on" direction. For example, the left front wheel turns counterclockwise when going forward, so you want to wrap clockwise. To some degree, this has a tendency to keep the plastic wrap on. Make several wraps. The first should be centered on the peak ensuring that the edges reach the valleys on both sides.

Then I took a precaution. I could picture the valleys of the boot trying to climb to the peaks, hastening repair failure. To prevent this, I gave the valleys a couple of wraps of black electrical tape locking everything in place (not shown). A couple of spins down the freeway proved this held better than expected — perfectly.

### PATCH IT

I'm a strong fan of GOOP®, a flexible, waterproof, contact adhesive and sealant. It comes in a tube. There is Plumbers GOOP®, Marine GOOP®,

Household GOOP® and who knows how many others. I carry Household GOOP®. It has innumerable uses, including patching CV boots, as this shows.

Clean the hole or tear and surrounding area with rubbing alcohol, then slightly roughen the area with sandpaper or a wire brush. I used a cotton swap to clean inside the failure. Mine was a 1/2" long slit at the boot, mold seam.

Next, I flexed the boot so the slit was slightly opened and swabbed a little GOOP® at these edges. Don't worry about the stuff hurting the CV joint, for at the pressures involved, the GOOP® literally doesn't exist!

I then surrounded the slit with more GOOP®. I went about 1/2" around in all directions. Apply a relatively thin, 1/16" or so layer. My fear was that too much would add mass to the patch and it would fly off at highway speeds. Too thin might tear the patch with turns and suspension flex. I wanted a flexible, strong layer, but not too massive.

This approach was tested on the January Death Valley tour and the Truckhaven prerun. It held until replaced.

GOOP® is great stuff! I've used it on my inflatable, tents and tarps, shoes and too many other things to mention.



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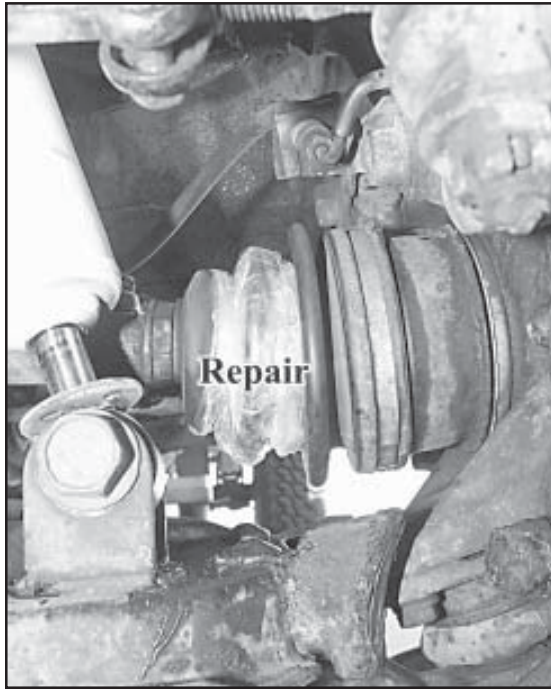


Figure 1 The plastic wrap repair prior to taping the valleys.

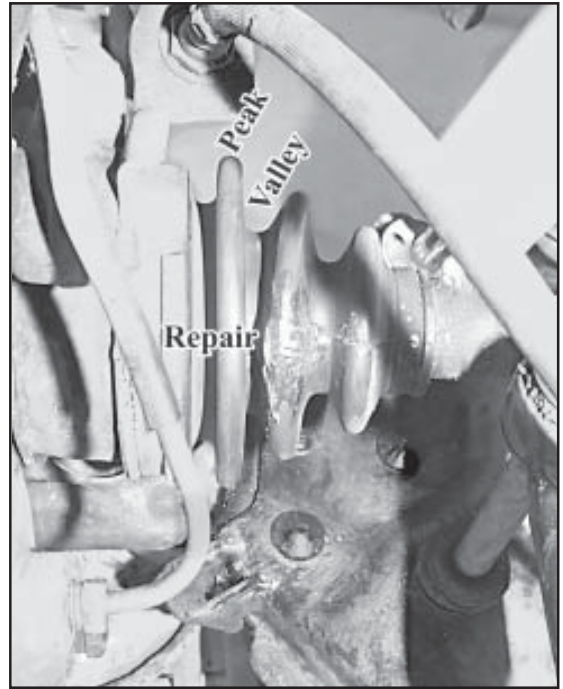


Figure 2 The GOOP® repair with peaks and valleys identified..

# PHASES OF THE MOON

By Harry Lewellyn

I had to ask and my studious friend, Ed Hooper, provided the answer. You get the answer in the next issue, and just to make it fun, I'll reward the first correct answer.

## PHASES OF THE MOON

Check any calendar that shows the phases of the moon. Typically, it shows the full and new moons with a full circle. The new moon's circle is usually filled solid. There are also two half circle "moons" shown. One represents the first quarter and the other shows the last quarter. Also note that one shows the right side of the circle and the other, the opposite half. Looking south, these coincide with what you would see in the sky. The first quarter has the right half showing and the left half represents the last quarter.

## QUESTION

If a *full circle* represents a full (or new) moon, then why do they use a *half circle* to represent the first (or last) *quarter*? Shouldn't it be a quarter circle?

## REWARD

The first correct answer, by any means (mail, email or fax), will get a free year's subscription to the newsletter.

## MORE

If you like this kind of thing, let me know and I'll make it a regular thing in the newsletter.



MARCH 2003						
						1
2	●	3	4	5	6	7
NEW MOON						8
9	◐	10	11	12	13	14
	FIRST QTR					15
16	◑	17	18	19	20	21
			LAST QTR			22
23	○	24	25	26	27	28
	FULL MOON					29
30	31					

# FOURWHEELING ACADEMY

## THE ICE AGE IS OVER™

By Harry Lewellyn

Per the title, FridgeFreeze claims the ice age is over. You'll never need ice again if you own one of these little babies!

It's a multi-voltage refrigerator/freezer unit. First glance reveals quality throughout. Detailed inspection proves it's also well engineered. This article adds FridgeFreeze to the January 2001 article on portable refrigerators.

### DESCRIPTION

Various size units ranging from 35 to 60 liters operate on 12/24 volts DC (VDC) and 110 volts AC (VAC). The newest 22-liter model does not operate on 110 VAC. All are of the same basic design.

### HARDWARE

Regarding the hardware, marine quality aluminum (some anodized), along with stainless steel, brass and ABS plastic are used throughout. Electrical switches, plugs and the compressor-ON LED reflect marine-environment thinking, too. The hinge is stainless steel and the latch is a work of art, not to mention the stainless lid, limit-travel cable and beefy rubber lid seal. Solid aluminum handles are built for years of service.

They are rated at 1,000 pounds each. You just get a feeling of quality the minute you lay eyes on one.

### POWER SAVING FEATURES

The biggest innovation and power saver has to do with the condenser – the part that gets rid of the heat taken out of the cold storage area. FridgeFreeze uses most of the outer case for this, thus eliminating the need for a power-hungry cooling fan blowing over a buried conventional radiator-looking thingy. It also uses two to three inches of polyurethane foam insulation in contrast to one to one and one-half inches in competing brands. The fast cool down switch zips you down to your desired temperature faster than the run mode. The run mode draws less current and is thereby easier on the battery.

### FUNCTIONAL FEATURES

The control panel is well laid out with only one (personal preference) drawback. I'd like to see the power cables connections (both AC and DC) come out on the bottom instead of on top. Otherwise, everything is right where you need it, including fuses, thermostat, AC

vs. DC power selection switch, fast cool down switch and the compressor ON LED. There are also other subtle layout features that impressed me like the "normal run switch position being down. If this one gets accidentally hit, you'd definitely want it to go to the lesser power consumption position, as it does.

The inside is well thought out, too. The entire interior is one smooth sealed unit simplifying cleaning. Cooling takes place at the bottom, so with the addition of a thermal barrier (supplied), the bottom serves as a freezer and above as your refrigerator. A half-volume, rubber-coated basket makes it easy to pack and access the entire storage area. They also come with a double-AA flashlight and holder on the inside of the lid. If nothing else, the batteries will last forever stored in the cold. I liked how quietly it ran, too.

As with many other commercially available units, FridgeFreeze uses a Danfoss compressor. Danfoss couples a brushless, sealed DC motor with an exotic electronic temperature-compensated motor control system that is the starting point for the low power drain.

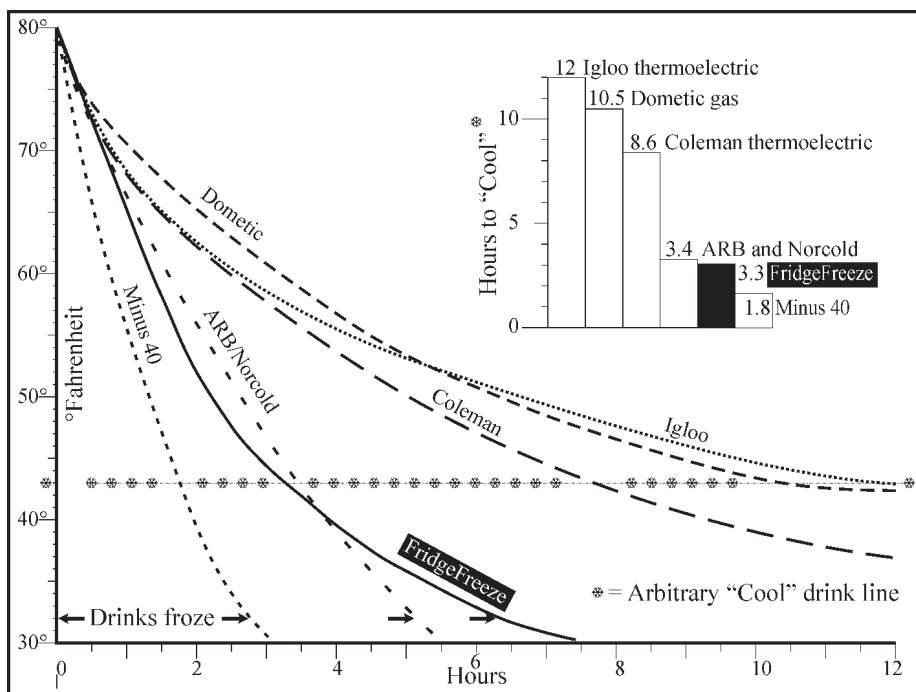
### TEST RESULTS

I found the advertised power consumption for the 35-liter unit tested to be accurate. The figure compares the FridgeFreeze cool down time with the other units tested in 2001. Depending on your flair, both a graph and bar chart present the same information. "Cool" was arbitrarily defined as when a "control" six-pack, in the center of the cold storage area reaches 43° F. As you can see, FridgeFreeze is second to only the Minus 40.

Send \$3.00 for a special refrigerator/ice chest newsletter reprint that completely describes the test methods and results. It also offers some hints on doubling ice life.

### SUMMARY

FridgeFreeze is the most well thought out and manufactured portable refrigerator I've tested. The "made in America" company is located at 5343 Banks St., San Diego, CA 92110 or telephone (619) 220-6003. [www.FridgeFreeze.com](http://www.FridgeFreeze.com) works, too.



# FOURWHEELING ACADEMY

## PLASTIC WRAP

By Harry Lewellyn

Our backcountry creativity is only limited by our imagination. Blaine Johnson's imagination came up with this one. He spends lots of time on the black diamonds ([www.justadrock.com](http://www.justadrock.com)). This leads to carrying a broad range of spares, but what do you do about the parts rusting and the messy ones you remove? Blaine uses plastic wrap!

### PLASTIC WRAP

I suppose you can use what's in the kitchen box, but there is something a little better. Use stretchable packaging plastic wrap. You know, the stuff that holds pallets stacked high with goods together.

Most stationary stores like Office Depot or Staples carry the material you want. This article is written around a 5-inch wide roll.

### WRAPPING

The primary trick is don't be stingy. Use lots! Secondly, right from the start, stretch it as you wrap. This material has two holding mechanisms: electrostatic and mechanical (stretch). Stretch holds better than depending on electrostatic attraction. This is unpredictable and changes.

Immediately, as you start to wrap, start pulling it tight. Think of each wrap as an independent, bonding layer. In addition, this conforms to part irregularities and makes for a tighter package.

Multiple layers also add a little padding to an otherwise sharp part. The stuff is surprisingly tough.

And if you're like me (a belt and suspenders guy), you can lock the end of the plastic wrap with duct tape. I also double over the end of the duct tape a little (half an inch or less) to give me an easy "removal" tab. The plastic wrap is most easily removed by rolling it off. If you're not concerned with your knife or the packaged goods, you can cut the plastic wrap off the part.

### APPLICATIONS

They are unlimited. Waiting to be used for this story, my first application was at home. I had changed my kitchen faucet and wanted to save the old one, but it had so many loose parts, I almost tossed it.

Enter plastic wrap. I found I could bundle the parts together, wrap them in a single package, and have one nice unit to store away (most likely forever).

Next came the CV boot failure. Page 4 has more on that. As ridiculous and ugly as it was, the plastic wrap approach worked!

My Explorer used to regularly go through front wheel bearings. I always carried them dry, in a large plastic jar. Not too bad, but it was bulky and always ended up greasy when used to store the bad parts for the trip home and analysis.

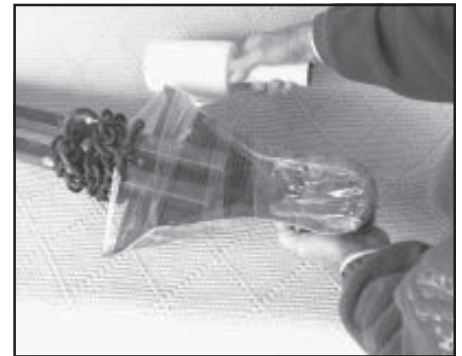


Figure 1 Wrapping is easy using the roll's handle.

Blaine offers that he not only wraps his spares, but also greases 'em before he wraps 'em. That way, when field failure speaks, the part is ready to use. And don't let size influence your thinking. He wraps axles, steering knuckles, and everything he carries. I wrapped my emergency tow bar for the test.

### CALL FOR IDEAS

Thank you, Blaine, for sharing your solution to an ongoing problem. Do you have a unique idea or suggestion? Pass it along to the ol' Coyote and you may see your name in print and on our website.

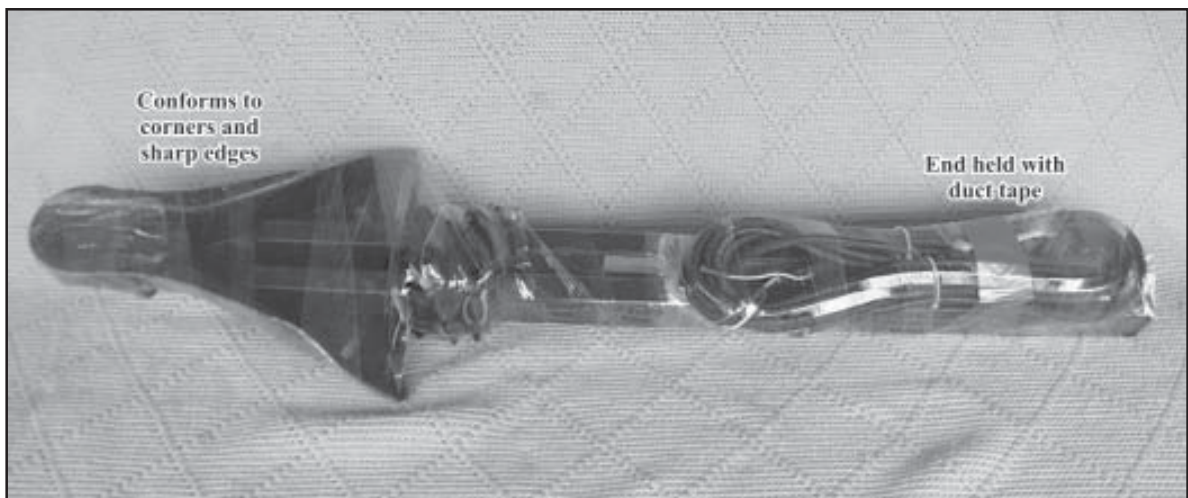


Figure 2 Everything for the tow bar is in one, neat package.

# 2003 Coming Events

EVENT	DATE	REMARKS <small>(See Bonus Issue N/L /p# for more info)</small>
Lunch in Lucerne	March 1	High desert tour — Low range not required!
ABDNHA Navigation class	March 1	Backcountry navigation class in Borrego Springs
ABDNHA 4WD class	March 2	Discovering 4WD class in Borrego Springs
Baja Whales & Rock Art (H)	March 7 to 13	Great intro to Baja, Mexico—open to all vehicles! /p25
Borrego Boondoggle (H)	March 21 to 23	Three good days of CA badlands adventures /p25
Lucerne Sand Session (C)	April 5 to 6	Sand dune driving practice in CA high desert /p26
Mojave Expedition	April 12 (Sat.)	Explore mountains and valleys of the Western Mojave /p26
Bonus Trip with Roger Vargo	April 13 (Sun.)	TBA: Ridgecrest/Mojave/Jawbone area /p26
Copper Canyon (H)	April 18 to 29	A driving vacation through Mexico's backcountry /p27
Moose Anderson Days	April 26 to 27	Clean-up and fun at BLM Jawbone Station, CA (see p 34)
San Felipe Sand Blast (H)	May 16 to 19	Sand driving and local excursions /p27
Piute Passage (C)	June 7 to 8	Historic California tour /p28
Arrowhead Brunch	June 8	Easy back way into CA's San Bernardino mountains /p28
Hot Spring Mountain	June 21 to 22	Rancho Santiago College class (714) 480-7390
Land of Volcanoes (C/H)	June 21 to 23	Geologic California tour /p29
Hot Spring Mountain (C)	June 28 to 29	<b>Resurrected!</b> 2 skills-improving days at Los Coyotes /p29
Fat Hill Fandango (H)	July 19 to 21	Historic California/Ghost town tour /p30
Rubicon Rendezvous (C)	August 14 to 17	Camping roughie in Tahoe, CA /p30
Monache Meandering (C)	August 16 to 18	Historic California tour /p31
Arrowhead Brunch	September 7	Easy back way into CA's San Bernardino mountains /p28

(C) = Camping trip

(H) = Hotel-based trip



= Schedule subject to change

## Tire Deflators



Easy to use, adjustable, automatic tire deflators. Start with as little as 6 PSI pressure difference.

Four per pack. See page 10 to order

## No-Loss Valve Caps



Never loose a valve cap again! Easy to install. Holds air in the tire with or without a core!

Four per pack. See page 10 to order

## TRAIL TIP

### JACKING TIPS

*Flats are inevitable and changing to the spare, off highway, has complications! Page 285 of SHIFTING Into 4WD offers this and more:*

The owner's manual typically tells where to place the jack. In any case, I recommend using a platform as already illustrated. This adds stability and keeps it from sinking into the ground.

The first thing you're likely to discover is that the jack won't fit under the 4X at the flat tire. Here's another one of those things that's too simple to teach and best told with another example.



War Story

Man has flat on rocky road. No one's jack fits under his 4X. Man and crew spend 45 minutes digging rock to get the jack under the suspension. Finally, success!

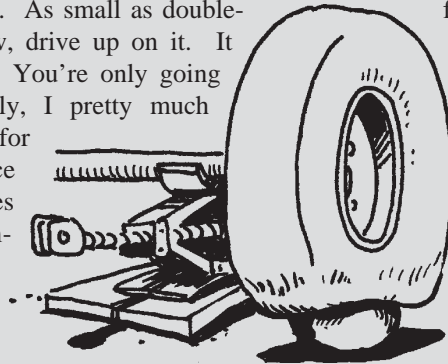
Coyote thinking dictates there is always an alternative. I've done it a hundred times. Find an appropriate rock and place it just in front or back of the flat tire. As small as double-will do. Now, drive up on it. It won't hurt the flat! You're only going to move a foot or two! Actually, I pretty much dard practice for easier to place 4X and requires the flat com-ground!



Tip

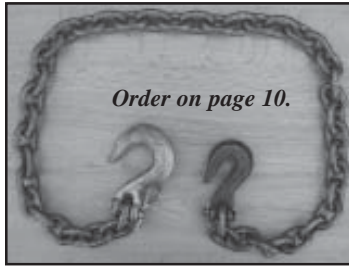
fist-size won't

to move a foot or make this a stand-all flats. It's now the less jacking to get pletely off the



# COYOTE CHAIN

*Your buddy is stuck.  
You are free, but you can't connect...*



Order on page 10.

**The Coyote Chain is your solution!**

Attach the **slide hook** (left) directly to the 4X frame or use it as a choker to cinch up on anything, including the downed tree blocking your trail.

Loop the **grab hook** (right) back and attach to any chain link. Both clevis hooks are easily removable, leading to endless recovery and repair uses. Includes 3' of welded, transport, heavy duty 5/16" chain.

*Don't travel the backcountry without one!*

## 12V HEAVY DUTY INFLATOR TRUCKAIR



- Fan-cooled motor runs nonstop for 8 hours
- Runs 200° F cooler than standard compressors
- Extra long 13 ½' power cord
- 47 cubic feet per hour air flow
- Rugged carry case that stores all components
- Made in USA; 7 year warranty!

**Order on page 10.**

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MATCHED FOR THE PRICE!**

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*This unique, 7/8 inch diameter, double braid, nylon towline is 30-feet long and has spliced eyes that all but eliminate sewn-in eye failure. The round, 28,500 lbs strong line is more knot friendly and still stretches 12.3% more than conventional flat, yellow yank straps.*

*Order rope with or without a large vinyl storage bag on page 10.*



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TUBELESS TIRE REPAIR!**



**PERMANENT REPAIR:** Road heat vulcanizes the plug through a patented repair process. It will not flow under heat or pressure. You make the repair once and it conforms to the shape of the puncture and outlasts the tire.

**SIMPLICITY:** The first 100% self-vulcanizing rubber-fibre material, *Safety Seal* uses no messy cement. With the patented insert tool, tires can be plugged in minutes, *on the car*, with little effort.

**SAFETY SEAL** is made from the same ingredients as the tire itself. It is 21 plies of high-grade synthetic fiber completely embedded in a super-sealing vulcanizeable rubber composition. Each yarn is individually coated and then twisted into a durable plug.

*Kit comes with a durable 8" x 12" x 3" plastic case, pictorial instructions and 60 plugs.*

**Order on page 10.**

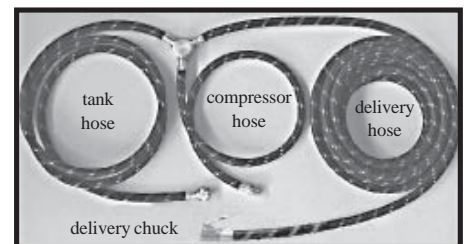
# Coyote AIR ROBBER

**UNLIMITED AIR:** With an AR, you have air with or without a compressor.

**SIMPLE TO USE:** Connect the AR's screw-on valve stem chuck to any inflated tire. Use the custom lock chuck at the other end to air up.

**INNOVATIVE DESIGN:** Connect a compressor to the valve stem at the end of the 3-way manifold and you continuously replenish the source-tire while you fill the others.

**QUALITY CONSTRUCTION:** The AR is 22-feet long, has brass fittings, including a screw-on chuck, a valve stem and a new lock chuck. **Order on page 10.**





# NEWSLETTER REPRINTS

The ECO4WD newsletter runs the gamut! It presents places to go, driving techniques and theory, new products, the class and tour schedule, and more. Back issues (\$3.00 each) and reprints bring you up to speed on past matters and selected topics. Use this form to identify which reprints you want to order, then simply attach it to the order blank below. Order specific back issues by making a note on this form. *\* indicates revised format.*

- \*CB RADIOS — 9 articles on principles, selecting, operating, SSB, spares, antennas, SWR ..... \$5.00
- COMPONENTS — Diffs, auto vs. manual trans, front ends, shock absorbers, brake fluid, batteries, gas cans ..... \$6.00
- \*COPPER CANYON — 8 articles on trips, history and topo maps of Mexico's *Barranca del Cobre* ..... \$6.00
- \*DRIVING — 4WD features, net moving force, driving hills, sand, starting in gear, winching, waterproofing ..... \$6.00
- FIRST AID — Kit, snakes, hypothermia, killer bees, water, dehydration, poison oak, skin secrets, backache ..... \$5.00
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