

Product Sources and Organizations

Here are the sources for the products that were used in our evaluation. Other mountain bike trailers and racks are available and may be equally suitable. The listing below does not constitute an official endorsement by the USDA Forest Service.

Blackburn Racks

Blackburn Designs
Route 136 East
Rantoul, IL 61866
Ph: 800-456-2355

B.O.B. Yak and Coz Trailers

B.O.B.
3641 Sacramento Drive #3
San Luis Obispo, CA 93401
Ph: (805) 541-2554 or 800-893-2447
E-mail: bobinc@callamer.com
Web site: <http://www.callamer.com/bobinc>

Burley Piccolo and Moose Rack

Burley Design Cooperative
4020 Stewart Road
Eugene, OR 97402
Ph: (541) 687-1644 or 800-311-5294
Fax: (541) 687-0436
E-mail: burley@burley.com

Wheelee Pac Dog

Innovation Sports, Inc.
7 Chrysler
Irvine, CA 92618
Ph: 800-222-4284
E-mail: sales1@isports.com

International Mountain Bicycling Association (IMBA)

IMBA
P.O. Box 7578
Boulder, CO 80306
Ph: (303) 545-9011
E-mail: imba@aol.com
Web site: <http://www.imba.com>

About the Author

Brian Vachowski has been a Project Leader specializing in recreation, trails, and wilderness projects at MTDC since 1993. He received a bachelor of science degree in forestry from the University of Massachusetts

in 1974, and a master of science degree in outdoor recreation from Utah State University in 1976. Brian has worked for the Nez Perce, Bighorn, Winema, and Routt National Forests in recreation, wilderness, lands,

planning, rural community assistance, special uses, fire, and timber positions. Before coming to MTDC he was an assistant staff officer for wilderness and recreation on the Nez Perce National Forest.

Appendix A—Job Hazard Analyses for Riding Mountain Bicycles and for Trailers

USDA - Forest Service	1. Identify Job or Project to be Analyzed	2. Location	3. Unit
	MOUNTAIN BIKE RIDING	Seward Ranger District	(Chugach NF)
JOB HAZARD ANALYSIS	4. Name of Analyst Stephen Hmurciak	5. Job Title of Analyst Trail Crew Leader	6. Date Prepared 8/92
	7. Hazards	8. Actions to Eliminate Hazards (Specify safe work procedures and personal protective equipment)	
Mechanical Failure		Before each ride check tire pressure & tightness of wheels, adjust brakes & bounce to listen for rattles. Keep a thorough monthly & yearly maintenance schedule.	
Vibrations causing circulation problems		Wear padded or gel gloves; use a gel seat cover; use a bike with front suspension when riding on trails; don't grip handlebars extremely tightly.	
Falls		Wear helmet and gloves; ride slowly & carefully observe the trail ahead; tie up loose pant legs; walk bike when trail becomes too rough or obscured by brush or grass.	
Endos (head first over the handlebars)		Always wear helmet; apply pressure evenly to front & rear brakes; don't attempt to jump over abrupt obstacles like waterbars and open drains; ride slowly and observantly.	
Surprise encounters with other trail users		Ride slowly; ring bell when approaching a blind corner; slow way down or get off and walk when passing hikers or other cyclists; get off to downhill side for horses.	
Bears and wildlife encounters		Watch for wildlife crossing trail; carry pepper spray mounted on handlebars or bike frame; ring bell in high risk bear areas and on blind corners.	
Serious Injuries		Carry a radio and first aid kit; sign out at office or let someone know where you are going.	
Hypothermia		Wear less clothing when riding uphill and more when riding downhill; wear raingear and wind protection when needed.	
Dehydration		Carry lots of water and drink frequently.	
Sore rear end, clothing getting caught in chain, too much sweating.		Wear padded bike pants, don't use pants with loose pant legs, wear synthetic clothing for riding mtn. bikes.	
Head and Face Injuries		Wear helmet and goggles or shatterproof sunglasses; watch for overhanging branches and brush; avoid going over the handlebars head first.	
Hazards of carrying loads		Make sure paniers are secure and not in way of wheels or feet; loads on racks should be lashed tightly and not stick out the sides; cover all sharp tool edges; don't wear backpack while riding; keep weight balanced.	
9. Approved By	10. Title	11. Date	

USDA -Forest Service	1. Identify Job or Project to be Analyzed	2. Location	3. Unit
JOB HAZARD ANALYSIS	Trailer with a Mountain Bike	Various Trails on SRD	Seward Ranger District
	4. Name of Analyst	5. Job Title of Analyst	6. Date Prepared
	Irene B. Lindquist	Forest Technician	7/9/97
	7. Hazards	8. Actions to Eliminate Hazards (Specify safe work procedures and personal protective equipment)	
	Falls From bike due to pulling a trailer which makes travel on a bike more unstable. Falls due to the trailer not tracking behind the bike on corners	Wear protective helmet, walk the bike when it's difficult to steer. Walk the bike and trailer around tight corners. Carry first aid kit.	
	Loss of braking ability due to loaded trailer pushing the mountain bike, especially down hills.	Don't load the trailer too heavy if you are traveling a trail w/many hills. Check brake pads before you go & take extra brake pads with you to replace worn pads.	
	Physical exertion leading to loss of fluids, fatigue, and heat exhaustion. Mountain bike riding on the trails is a physically demanding activity in itself, add the weight of a trailer and you have an even more physically demanding task.	Since mountain biking and pulling a trailer on the trails is a physically demanding activity, be sure only people who are in excellent physical condition who have good coordination ride the bikes with trailers. Drink lots of fluids before, during, and after your trip, and replace lost electrolytes with drinks such as Gatoraide Sports Drinks. Carry a water filter.	
	Breakdowns of trailer and or bike.	Carry items to help you repair a breakdown. See list of suggested mtn. bike parts in the Trails Dept. Also carry a few items to help in repair of trailer hitch, such as pins, wire, etc.	
	People unfamiliar with bikes and trailers.	Review hazard analysis on mountain bike riding with an experienced trail rider. Experience trailering with light (20 lbs) loads. Keep trailer load under 40 lbs Only trailer on well maintained Mountain Bike trails.	

Appendix B—Kurt Loheit's Tool Holder (Fits B.O.B. Yak Trailer)

List of materials for the tool holder:

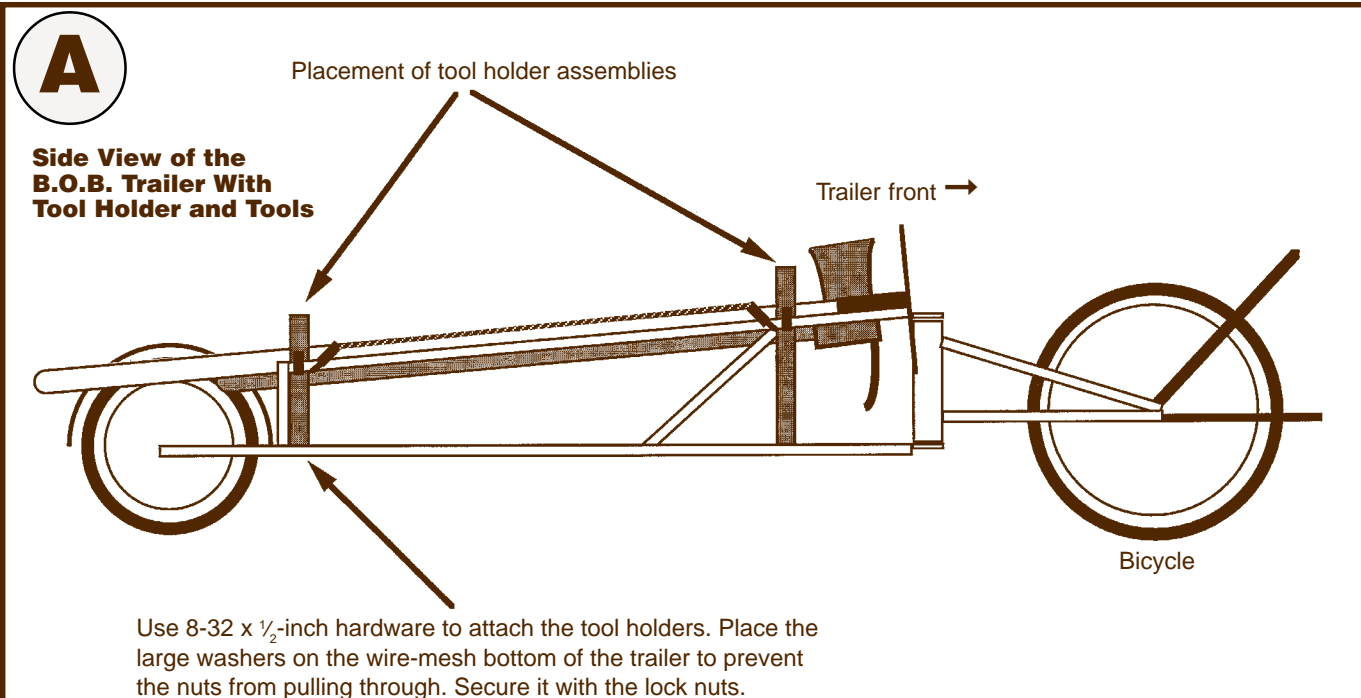
- 1 each — $13\frac{7}{8} \times 5\frac{3}{4} \times \frac{5}{8}$ -inch polyethylene sheet or equivalent
- 1 each — $15\frac{3}{4} \times 6 \times \frac{5}{8}$ -inch polyethylene sheet or equivalent
- 2 each — $9\frac{1}{2} \times \frac{3}{4} \times \frac{3}{4}$ -inch C-channel aluminum
- 2 each — $13\frac{1}{4} \times \frac{3}{4} \times \frac{3}{4}$ -inch C-channel aluminum
- 4 each — $1\frac{1}{2} \times \frac{1}{2}$ -inch steel angle brackets
- 12 each — No. 8 $\times \frac{5}{8}$ -inch self-tapping screws
- 16 each — No. 8 $\times \frac{3}{8}$ -inch bolts
- 16 each — No. 8 large-diameter washers
- 16 each — No. 8 nylon lock nuts
- 4 each — Cable clamps, $\frac{5}{8}$ -inch diameter (metal preferred)

List of tools:

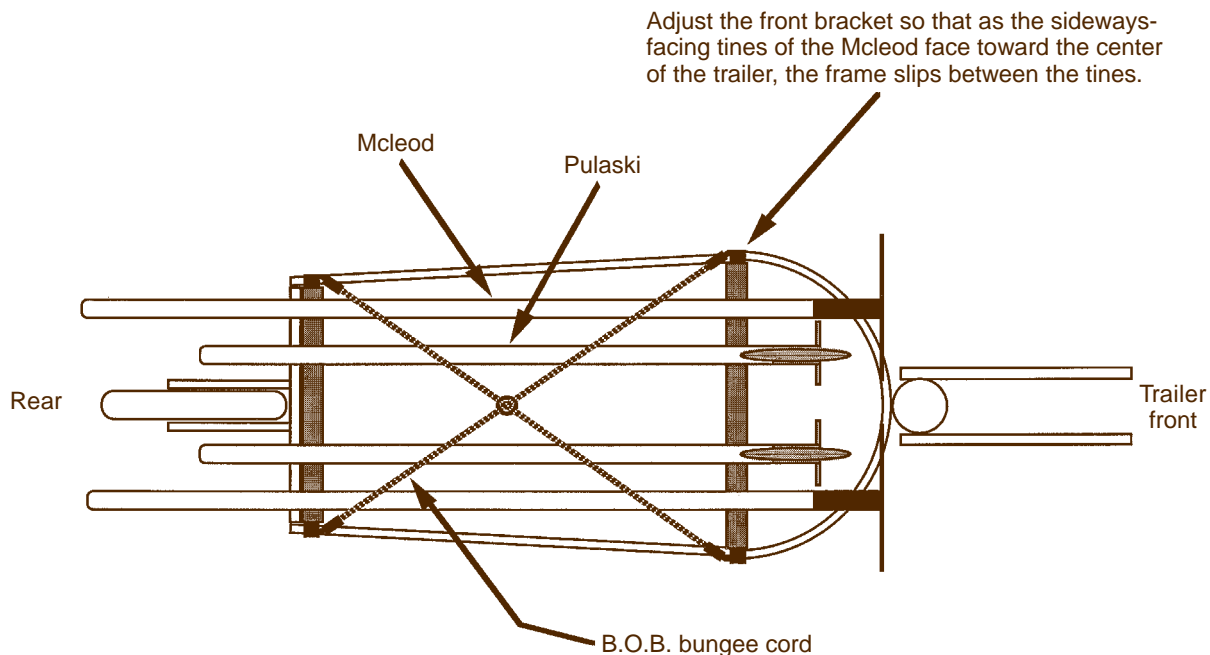
- $1\frac{1}{8}$ -inch-diameter hole saw
- $1\frac{1}{2}$ -inch-diameter hole saw
- Hacksaw
- Screwdriver
- Wrench
- Hand drill with No. 8 clearance drill, and No. 8 tap drill bits

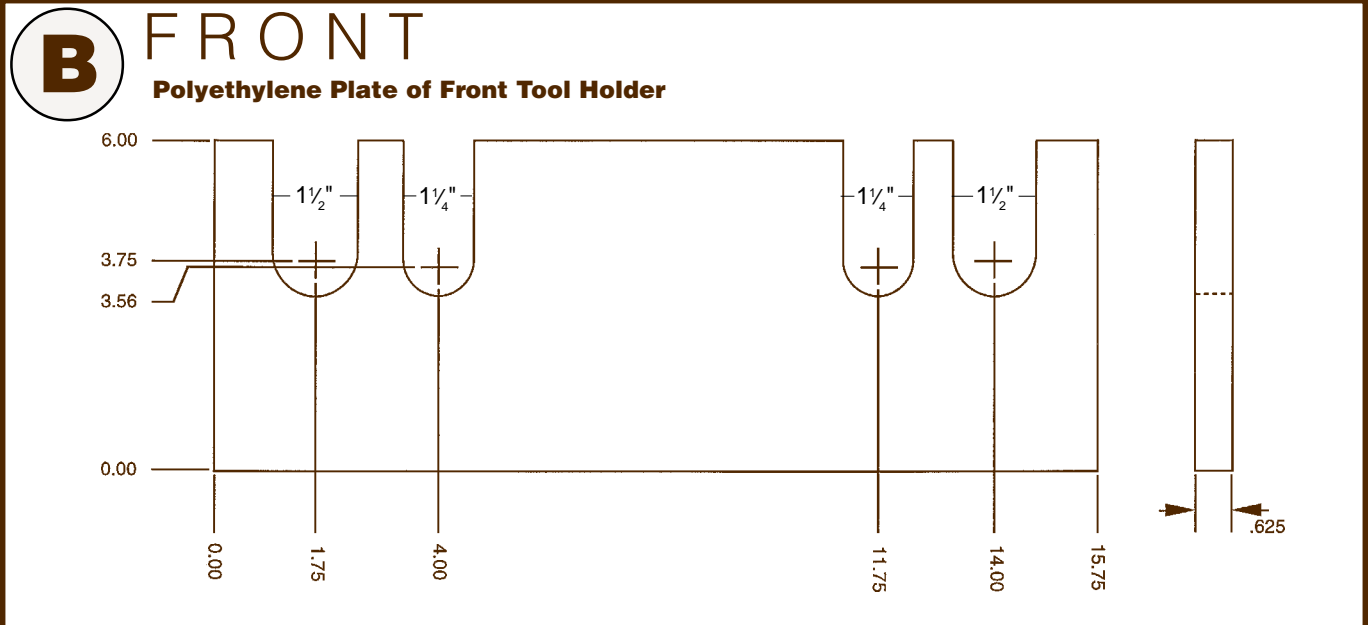
Assembly:

- Side and elevation drawings of the trailer and assembled tool holder are shown in Drawing A.
- Start by fabricating the tool holder plates (Drawings B and C). The widths may vary from trailer to trailer, so all parts should be fitted before the final assembly.
- Cut the aluminum C-channel into the specified lengths.
- Attach the C-channel to the plates using the self-tapping screws.
- Drill the clearance holes for the screws going into the C-channel that will hold the angle brackets to the tool plates. Use the No. 8 tap drill and drill only $\frac{1}{8}$ - to $\frac{1}{4}$ -inch deep.
- Attach the angle brackets to the C-channel using the No. 8 bolts and lock nuts.
- Once the tool holders are assembled, fit them onto the trailer. Place a McLeod in the holders to adjust the front holder so that the McLeod tines straddle the trailer frame. (The rear holder sits all the way to the back of the trailer.)
- Now mark the C-channel for the location of the cable clamps.
- Attach the clamps around the trailer frame and screw them into the tool holder.
- Attach the angle brackets to the trailer, inserting the No. 8 bolts through the brackets and the mesh bottom of the trailer. Use the large-diameter washers with lock nuts.
- Now the tools can be placed in their slots and secured with the 4-point bungee supplied with the trailer.

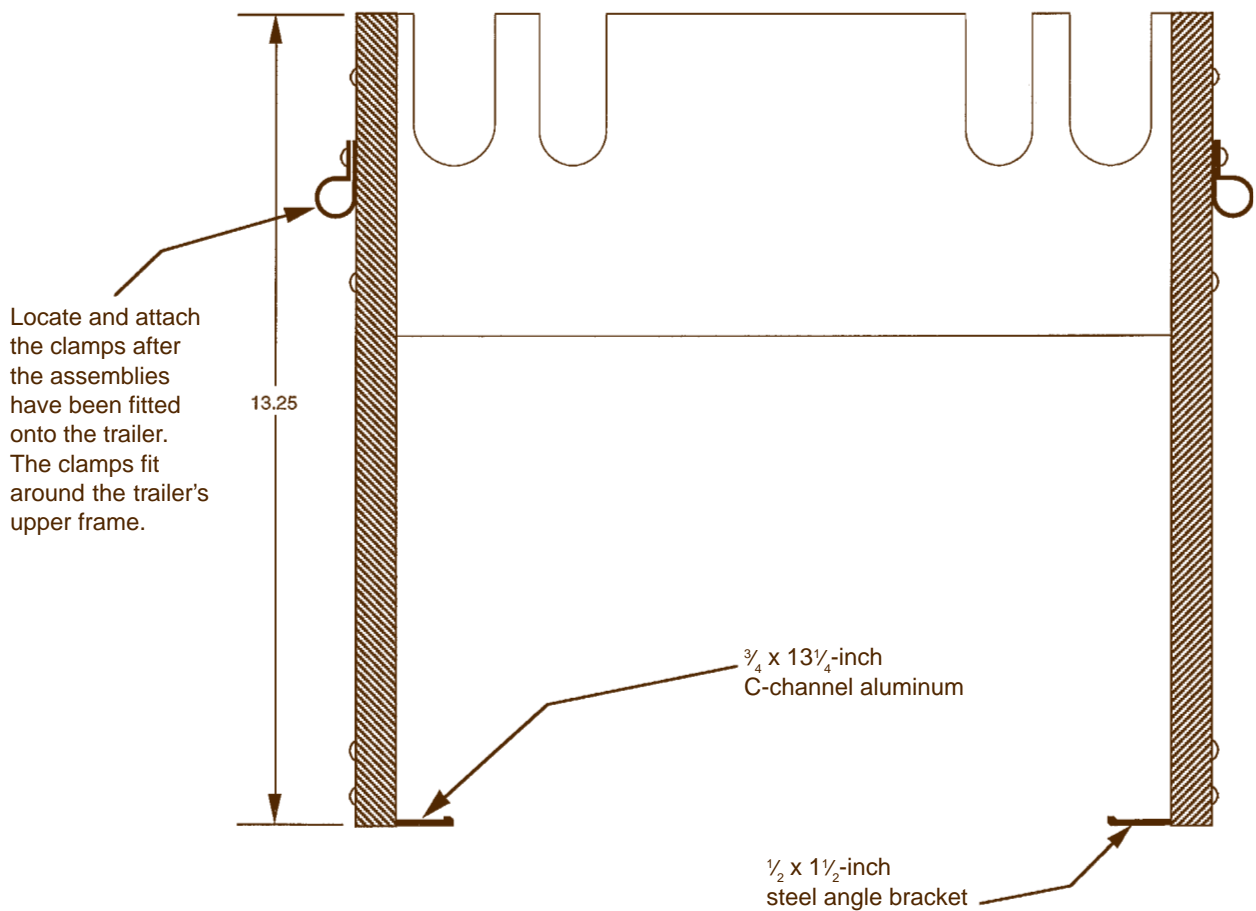


Top View of the B.O.B. Trailer With Tool Holder and Tools

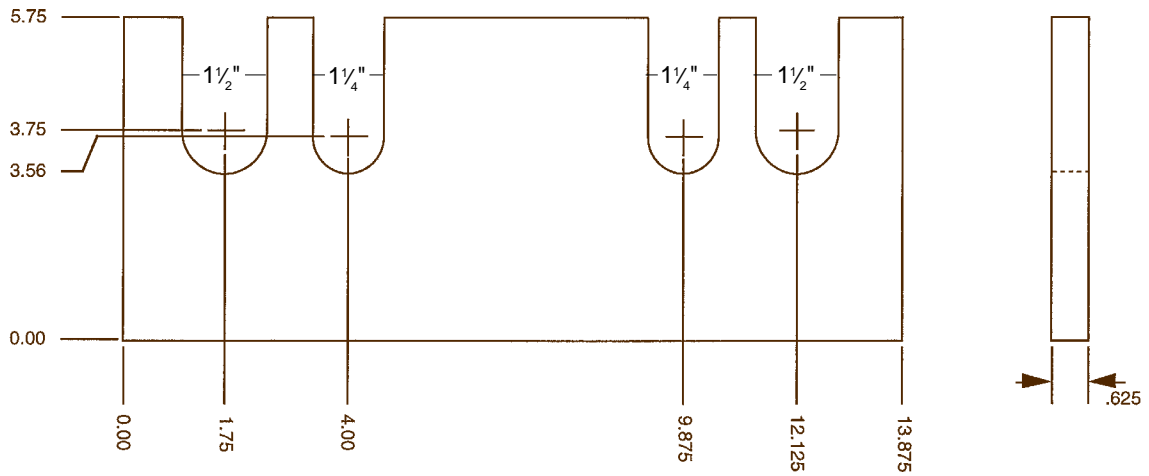




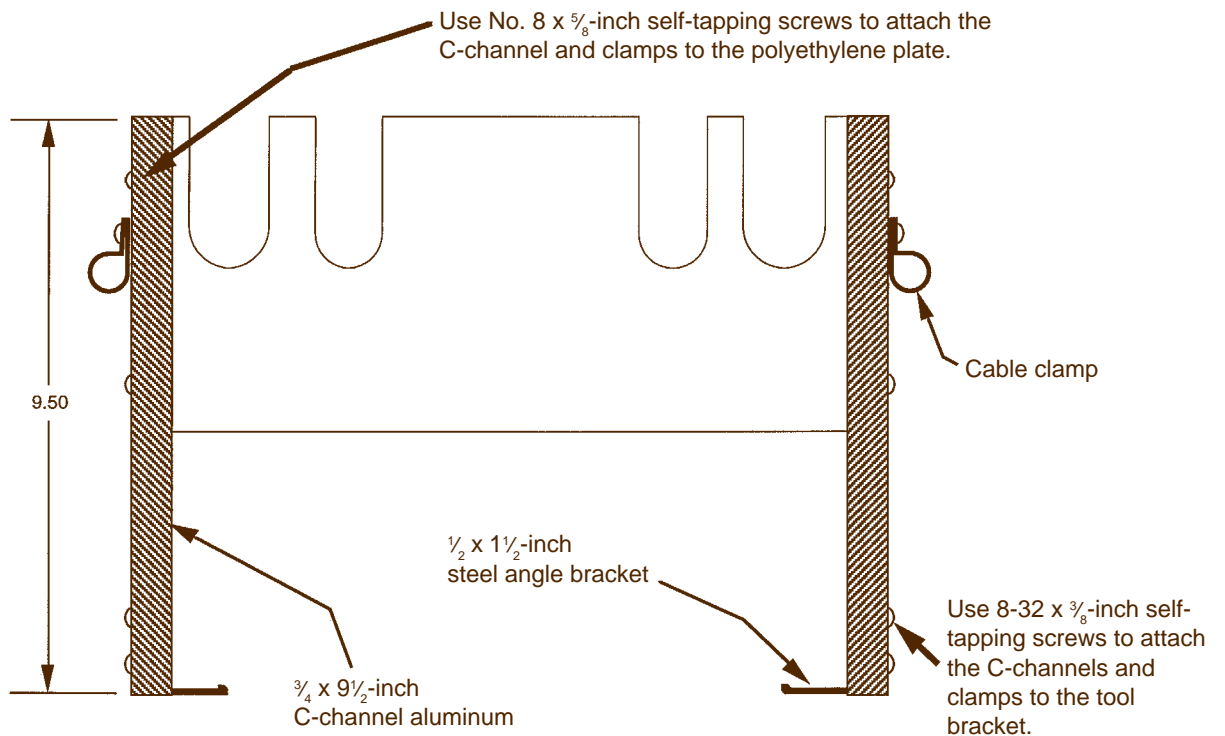
Assembled Front Tool Holder



C REAR
Polyethylene Plate of Rear Tool Holder



Assembled Rear Tool Holder



Library Card

Vachowski, Brian. 1998. Tech. Rep. 9823-2812-MTDC. Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula Technology and Development Center. 21 electronic p.

Describes how trail crews using mountain bikes have doubled production while logging out deadfall from trails on the Seward Ranger District. Shows a design for a bicycle-mounted chain saw carrier, and evaluates several single-wheeled bicycle trailers. Construction plans for a trailer tool holder and product sources are included.

Keywords: bicycle trailers, mountain bicycles, trail equipment, trail maintenance.

Additional single copies of this document may be ordered from:

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Building 1, Fort Missoula
Missoula, MT 59804-7294
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IBM: pubs/wo,mtdc
E-mail: pubs/wo_mtdc@fs.fed.us

An electronic copy of this document is available on the Forest Service's FSWeb intranet at:

<http://fsweb.mtdc.wo.fs.fed.us>

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