

EDITOR'S NOTE: People new to paddling in the arid west will find that the procedures for human waste disposal here are much more stringent than they are in places where organic matter rots quickly.

An article for paddlers about handling this issue in our environment was published in the Summer, 2014 *Mountain Paddler* (22-1b).

In this latest article you'll find expanded specs and more thorough construction information from Harold Christopher, with helpful pictures of the process and photos of the parts. Following that are some other, related points about waste disposal in the West.

# HUMAN WASTE DISPOSAL: CONTAINERS, PART II

## GOVERNMENT AGENCIES' REQUIREMENTS APPEAR INCONSISTENT:

- The Bureau of Land Management specifies 4 inches of height in 3 inch diameter tube per person per day for solid waste storage. Doing the math  $V = \pi * r^2 * h = 3.14159 * 2.25 * 4 = 28.25$  cubic inches, which rounds to 30 inches<sup>3</sup>/day. You can find their requirements and how to build a container on their website: <http://www.blm.gov/or/resources/recreation/rogue/portable-toilets-kayak.php>
- The National Park Service requirements aren't as clear. They don't seem to have a capacity suggestion: <https://www.nps.gov/cany/planyourvisit/rivertoilets.htm>. Harold found the 40 inches<sup>3</sup>/day figure from a paddling website.

## CHART WITH BOTH SETS OF SPECS, FROM HAROLD:

Diameter in Inches	BLM or NPS	Number of Days if 4"	Number of Days if 8"	Number of Days if 12"	Number of Days if 16"	Number of Days if 20"	Number of Days if 24"	Number of Days if 28"
3	BLM	0.9	1.8	2.8	3.7	4.7	5.6	6.5
3	NPS	0.7	1.4	2.1	2.8	3.5	4.2	4.9
4	BLM	1.6	3.3	5	6.7	8.3	10	11.7
4	NPS	1.2	2.5	3.7	5	6.2	7.5	8.7
6	BLM	3.7	7.5	11.3	15	18.8	22.6	26.3
6	NPS	2.8	5.6	8.4	11.3	14.1	16.9	19.7
8	BLM	6.7	13.4	20.1	26.8	33.5	40.2	46.9
8	NPS	5	10	15	20.1	25.1	30.1	35.1

## HAROLD ON TUBE CONSTRUCTION:

"Making a tube with one end glued shut is pretty simple. I got the PVC pipe from ReSource in Boulder for 25 cents a foot. I had the contact cement and I got everything else at Lowe's. The total cost for a tube was about \$10. I've found a better solution for opening and closing it. [See the red caps on the next page.]

"Although I couldn't find it through the NPS, a paddling website said that they say you need 40 cubic inches per person per day. The tubes I've made are 4 inches in diameter and about 20 inches long, or about 250 cubic inches, so they're good for about six NPS days, or more than eight BLM days.

"If you've got your tools and work area ready to go, it really only takes about 15 minutes to make each one."

## THE PROCESS



1. Secure the tube to the miter saw assembly with a cam strap; it snugs the cylinder down even better than a vice.



2. Cut the PVC pipe with a fine-toothed saw and sand off the rough edges.



3. Put the cap in place dry and wrap painter's tape around the tube above it, to mark the tube and protect it from the cement. Remove the cap for Step 4.



4. Paint on the primer and then the second part of the 2-part contact glue as the product directs. Put the cap in place; the bond will harden almost instantly.

## THE PARTS



E



F



G



H



I

- E. Two-part glue for PVC pipe
- F. Glue-on permanent end cap
- G. Glue-on female threaded part with its removable screw cap
- H. Side view of a compression cap that doesn't require a threaded fitting
- I. Top view of the compression cap that snugs down with its wing nut

## MISCELLANEOUS RELATED MATTERS

- The BLM website's directions suggest using a BAYONET HOOK on one end of a waste tube. Is that just a strange name for a cap that has an attachment filament so it won't get separated from its tube? That would be a good idea, but they do cost more than the regular screw tops.
- Another point is whether the WING NUT CLOSURE on the red lid will poke or catch on things. Stay tuned to learn how they worked out from the people who will be using these stoppers.



Illustration from the BLM website



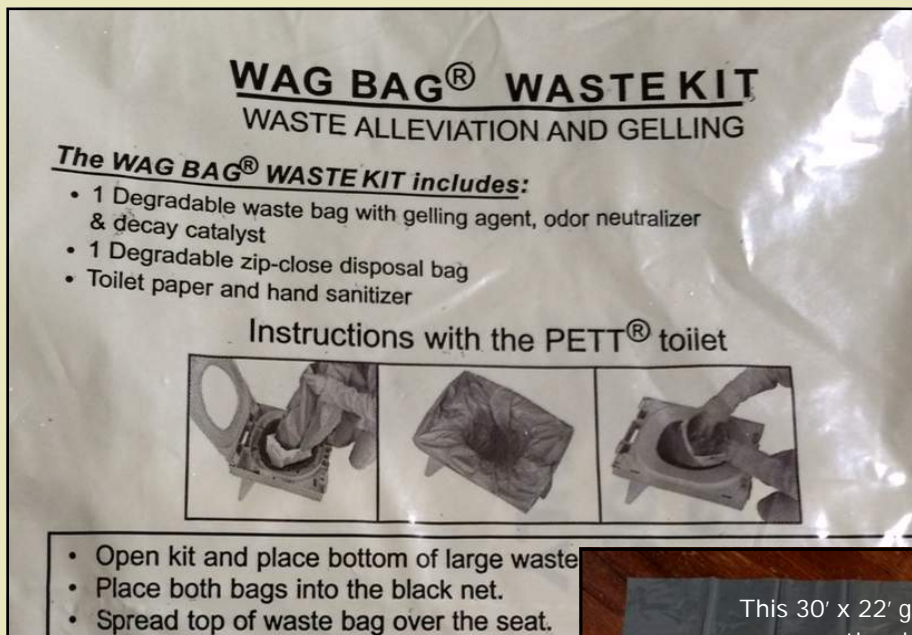
Bayonet Hook

## RELATED MATTERS, CONT.

- Tim Fletcher commissioned a FLEECE COVER for his boom tube to keep the PVC from scratching his new boat. It probably makes the tube easier to carry, and could even hold a Ziploc bag of supplies. His is day-glow orange.
- Some people use WAG BAGS [for Waste Alleviation and Gelling] and then store those bags in their tubes. That protects the thin bags from critters, contains the smells for happier companions, and keeps their tubes cleaner. However, although wag bags previously came in two sizes, the only ones available now seem to be designed for use with a portable toilet seat; they contain so much extra plastic that they might fill up a waste tube lots faster than the design specs would suggest.



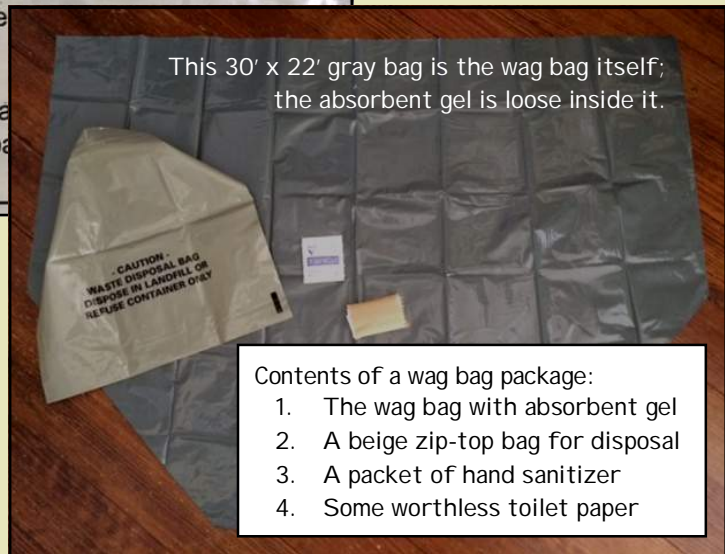
Tim's waste tube



FYI: The Wag Bag company is now called Clean Waste, to distinguish it from firms selling baggies for dog doo.

Their products are available directly from their website, other on-line sources, or local outdoor gear stores like REI.

A wag bag's exterior package, with pictures to illustrate how to use it with a toilet seat frame.



This 30' x 22' gray bag is the wag bag itself; the absorbent gel is loose inside it.

- Contents of a wag bag package:
1. The wag bag with absorbent gel
  2. A beige zip-top bag for disposal
  3. A packet of hand sanitizer
  4. Some worthless toilet paper

## ANOTHER RELATED ISSUE

- LIQUID WASTE: The recommendation for disposing of urine while camping near western rivers or lakes in desert country is, "Pee in the water." For those of us used to walking 200 feet from a water source to take a leak this feels strange. The reasoning is that here it's better to dilute urine in a river or lake than leave it on the rocks or sand because in this environment it won't get washed away by frequent rains, and popular campsites and shorelines may develop a nasty urine odor.

We've heard people say, "On rivers, men go upstream and women go downstream." Maybe that's easy to remember because men urinate standing *up*, but most of us have never seen paddlers in a mixed group do anything but look for a tree or rock and hope for the best. Probably it's something we should start to practice when we are on a river.

Some female paddlers use a variety of containers as chamber pots, others carry a funnel-like device, which is the only way to go when wearing a dry suit. Women new to desert camping can google "female funnels for urine" and find a wealth of products. Final reassuring thoughts: spray skirts provide some modesty and other female kayakers are useful sources of advice.

EDITOR'S RANT: No matter where you are or how you handle it, for crying out loud, pack out your toilet paper, every time! Finding a private nook with other people's "Kleenex" left behind is disgusting.

Any sport carries with it risks, and it is everyone's responsibility to understand those risks and decide whether they are prepared to accept them before undertaking an activity.

RMSKC wants everyone to paddle safely: take lessons to improve your boat control and rescue techniques, and own and use the proper equipment for the water temperature and possible changes in weather.

Kayaking is no different; it can be dangerous if not done in a safe manner and should never be undertaken without proper training, experience on the water with more capable paddlers and the correct use of safety equipment.

Because of this, the Rocky Mountain Sea Kayaking Club cannot accept responsibility for any injury or accident which may occur as a result of articles, advice or images published in its publications or on its Facebook page or website.

RMSKC is serious about monitoring risks and paddling safely, and we have another warning:

Kayaking is addictive and is a leading cause of good health, mental wellbeing and meaningful relationships with friends, family and nature. Paddlers may experience cravings and emotional highs after brief exposure. Continued exposure can cause multiple boat purchases and reduced garage space. Prolonged use may result in heightened fitness and environmental awareness and appreciation.

Roughly paraphrased from Paddling's *Buyer's Guide*, 2016