The Rus Pump

Martin L. Price

Wayne DeYoung in Haiti writes about a pump that he is sure will interest our network. It was used in a water well project by Dan Cook and others in Haiti. Wayne believes that it has phenomenal value for many gardening situations along rivers or ponds or where a hand dug well is available. His letter was written about the time that EDN-37 was in the mail. This issue reviewed How To Build a Rus Pump and other appropriate technology brochures offered by World Vision of Australia. It appears that Wayne is describing this same pump. So here is a timely testimonial.

"Dan is doing a gardening project where water is the main limitation. They dug a 45 foot deep well at 50¢ a foot, only to find that pumps were outrageously priced, especially now with the United Nations embargo. Then he heard that the Reeves in Gonaive had made a pump from PVC pipe. He bought about 50 feet each of 1¼ and ¾ inch pipe for US $50." Wayne then describes how homemade foot valves were attached to the bottom of each string of pipe and the ¾ inch string fitted inside the larger one. [ED: a "string of pipe" refers to a series of pieces of pipe connected to make a long section.] "By pumping the ¾ inch pipe up and down it pumps water beautifully, at least 5 gallon a minute."

Our own appreciation for this design was heightened last summer. Merrill Esch, who was studying at ECHO in preparation for work in Honduras, built a Rus pump for ECHO from the Australian design. It is unbelievably simple to build. The only part that might be difficult for some would be making the hardwood valve. Merrill even simplified that by using a 2 inch long piece of bamboo. Note that if the inside pipe is extra long, water can be lifted quite a distance. The bottom section of the Rus pump lifts water by suction, perhaps 6 meters (18 feet), then pushes it the rest of the way.

World Vision Australia and Rus have kindly given us permission to print details of the design. SEE FIGURE 1. In looking at the review in EDN 37-5 I find that the ordering address for the origional brochure is missing. The complete set of brochures (Rus Pump, Making a Hydraulic Ram, Digging a Tube Well and Making Ferro Cement Water Tanks) is available from to World Vision of Australia for A$5 (about US $3.75). Write World Vision, G.P.O. Box 399 C, Melbourne, Australia 3001.

FIGURE 1. Design for the Rus pump, courtesy of World Vision Australia and Rus Alit. NOTES FROM ECHO'S EXPERIENCE WITH THE RUS PUMP BUILT BY MERRILL: (1) SELECTING A PIECE OF BAMBOO OF THE APPROPRIATE DIAMETER IS EASIER THAN MAKING A HOLLOW HARDWOOD CYLINDER. (2) RUBBER FLAPS MADE FROM INNERTUBES ARE NOT THICK ENOUGH. CUT THEM FROM TIRES AS THE

BULLETIN SAYS. (3) PVC PIPE OFTEN COMES WITH ONE END ENLARGED SO THAT THE NEXT PIECE WILL FIT INTO IT. MERRILL FOUND THAT USING THIS ENLARGED END FOR THE UPPER VALVE MADE JUST THE RIGHT FIT INSIDE THE LARGER PIPE. HE JUST FORCED THE BAMBOO INTO THE END AND DID NOT NEED TO MAKE ANY SPECIAL FITTINGS. NOTE, HOWEVER, THAT WE HAVE NOT USED THE PUMP UNDER FIELD CONDITIONS.

http://edn.link/zc9wx3