

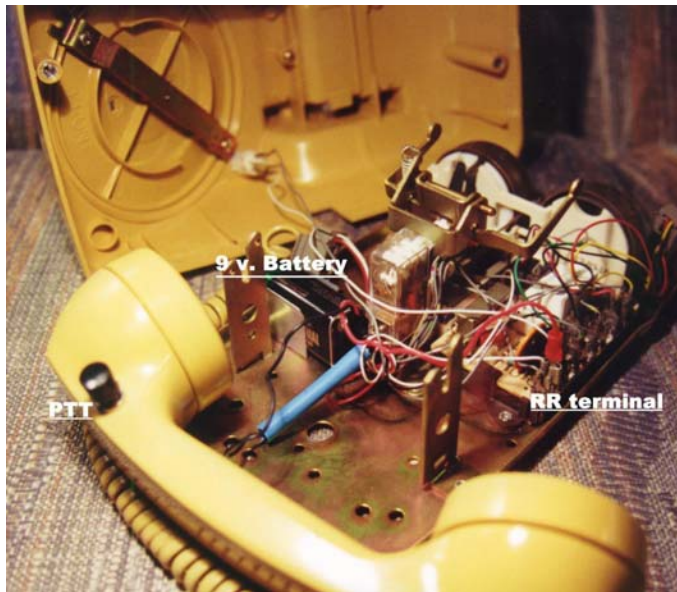
# Cheap Field Telephone

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I recently purchased a desk telephone at a swap meet for \$2 US. It is the type of phone that is used as an extension phone (no dialing capability) at hotels or businesses. It has a bell type ringer and a neon light that flashes when the line is ringing. I was hoping that it would be a suitable candidate for use as a surface phone on a field telephone network. My starting reference was the article by John Halleck, in *SPELEONICS* 12, on cave rescue telephones.

After inspecting my purchase, I found that it was in perfect working order. A connection to one of my old Army field phones rang the bell, lighted the light, and listened very well. The only problem was the talk power was not what I had hoped for. Not bad for a \$2 US purchase.

The next area of investigation centered around getting battery power and a push to talk switch, like the real field phone. This would make my find into a useful instrument. With no schematic, I tried different points with a battery. The point marked RR (with a red wire) was the sweet spot. With the battery attached, the phone talked and listened just as well as the 'real' field phone. The battery was supplying power to the microphone element. A 1.5 volt battery did not give enough volume, so I used a 9 volt transistor battery. This gave the same volume on both desk and field phones. I installed a push to talk switch in the handset. The wires to the switch interrupt the red wire at the microphone element. Now, pushing the switch places the battery in the circuit allowing operation like the regular field phone and only draws current from the battery when the switch is engaged. The addition of screw terminals on the back of the phone (to the red and green line connections inside - not shown in photos) allow direct line connection without using the delicate flat phone wire and jack.



The only drawback is the lack of a ringing generator. This makes the phone unsuitable for a primary surface element. There always seems to be more than one person that wants to listen and speak on the surface, so this phone will be used as a cheap second extension to the primary phone. It is, of course, less rugged than the military style phone and would not be a good choice for underground.

The lack of a ringing generator will be solved (shortly) by the addition of a magneto style generator available on the surplus market. Surplus Sales ([www.surplussales.com](http://www.surplussales.com)) has the push lever generators from the TA-1/PT type sound powered phone for \$20 US. While this is ten times more than I paid for the start of this project, it will be worthwhile to free up one of the rugged (and more expensive) phones for underground use. Surplus sales also advertises the hand crank type of ringing generator for \$45 US each.