

# The "Clipper" paddles

**Designed by Verner Blindheim, LA5YNA - 2004**

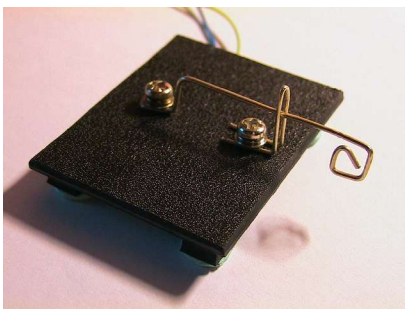
Could this be the *Ultimate Simple Lowcost Homebrew Portable Paddle?*

This "adventure" started when one guy talked on QRP-L, about the "*Ultimate Simple Lowcost Homebrew Portable Paddle*". I started to think about the criteria for such a paddle and decided to make an attempt to design one.

I was not a licensed ham then but was practicing morse. So I thought it would be nice to design a simple single lever paddle to take on my boat or on camping trips. I wanted this design to be the "*Ultimate Simple Lowcost Homebrew Portable Paddle*".

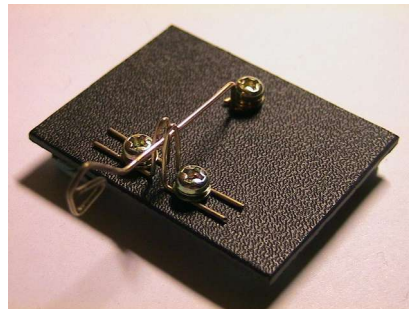
But to find building material that anyone would find, where very difficult. One of the goals was to use material that would be available to many people at little or no cost. I made several attempts with different material. I kept simplifying the design. I tried to use pianowire used for model building, but later used small wires from inside an umbrella. This again led to the paper clips, and the "Clipper" was born. After the first single lever paddle I made a sideswiper and completed the series with the dual paddle.

First of all: If you normally slap your paddles all over your desk, then look elsewhere. These paddles need finger tip control and a light touch. And because they are so small they can be difficult to operate if your fingers and hands are big.



## Clipper SS

Sideswiper, double speed key or cootie key, single fixed contact point. Paddle runs inside contact point. Made of two small paperclips.



## Clipper SP

Single Paddle, two adjustable contact points. Made of three small paperclips.



## Clipper DP

Dual Paddle, single fixed contact point. Made of three small paperclips.

## General

All the paddles must have some kind of rigid base. Plastic, plywood or something like that. Thicker wood can be used but then you may have to attach the wires on top of the base and that is not as neat. It could be mounted on a conductive base but then some parts must be isolated from the base.

It is could also be possible to mount the paddle inside or on a base that could be held in one hand and operated with the thumb and index finger of the same hand, for single hand pedestrian operation.

If you are going to use the paddle on a desk it must either be fixed to the desk or as I prefer, stuck on using "blue tack". ("Blue tack" or "poster gum" or what ever it is called, is a chewing gum like substance that can be used to stick things to almost any non greasy surface. I get it from book or office supply stores.)

Some form of legs/pads must be used to get some clearance for the screws/nuts and wires on the underside of the base.

## Parts

### Base

Plastic or plywood. Suitable plastic can be found as panels in old monitors, computers, printers, tv's and other electrical equipment with flat surfaces. It needs to be about 3 mm thick.

### PaperClips

For all paddles/handles I use 30mm long paperclips with brass look (Golden). The wire is 1mm thick. For the contacts on the SS and SP I use parts of 25mm paperclips. These wires are 0.8mm thick. The DP has one single contact point made of 1mm thick wire from an 30mm paperclip.



Some of the wire I tried had very bad contact ability. So keep in mind that not all wires makes good contact when used for some time. I have tried different types of wire but found that this type of clips made the best contact, at least good for heavy use for several weeks.

My paperclips are marked "Swedish TOP GEM CLIPS BINDERS."

### Screws/Nuts

I use screws from old electronic equipment, usually used to hold down the circuit boards. They have a nice golden colour tone and look good with the golden paperclips. On the underside of the base I use nuts from my local hardware store.

### Feet

I use feet from old keyboards, monitor stands, TV's and so on. Go through your junk boxes and I'm sure you'll find something. I cut the feet to about 6x6mm. The feet does not need to be rubber because we need to use "Blue Tack" to fix the paddles to the desk anyway.

### Cable

Cables with plugs can be found on old walkman style headphones. Even new headphones / ear buds for a couple of dollars, is often cheaper than getting a cable and plug separately. Check your "one dollar" store. Or maybe you can use the cable from an old computer mouse, and attach a new plug. I now prefer to buy extension cable with a plug at each end. They are cheap and light, and saves soldering the plug.

## Building

### Bases

#### Clipper SS

Cut out the base. I used 50x40mm but you can go much smaller. Drill two holes at the shortest centre line. The holes need to be about 20-25mm apart. The size need to fit the screws you are using. I use 3 mm holes and M3 screws.

#### Clipper SP and DP

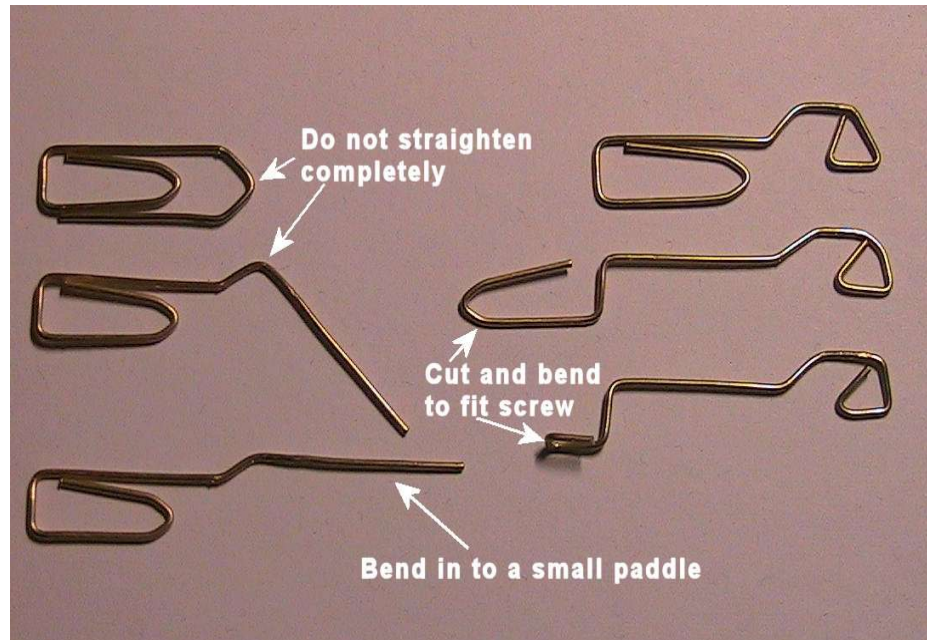
Same dimensions as the SS, but three holes. Same distance between the holes on front/back, but the two holes on the same side need about 10-15mm between them. This spacing also adjusts the width between the paddles on the DP. These two holes are for the contacts on the SP and for the paddles on the DP. You can convert between the to paddle types in a matter of minutes. And remember: The SP can be used as a sideswiper by connecting the contacts together.



### Paddles

All paddles are the same, made the same way. But you may use thin or thick paperclips as you prefer. I use thick (1. mm) wire for all my paddles.

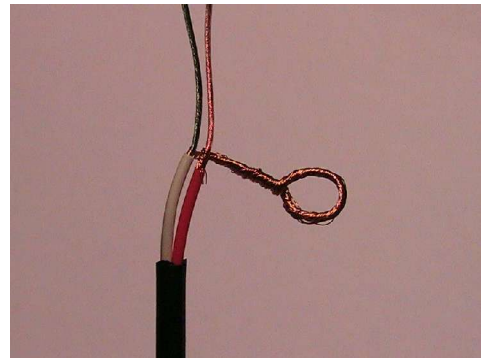
Start with a 30mm clip and straighten it like the photo. I use needle nose pliers for that. Try not to make marks on the wire. Be gentle while bending, Try to do it in several small stages to “ease” the bend out of the wire. It is important not to take out the sharpest bend completely, because you will weaken the wire and it can break at that point.



### Preparing the Cable

The cables can be attached to the screws by some means of cable terminals, but I just make loops on the wire by folding the bare wire over itself to make a bend. Then twist the bend to form a nice small loop which I then solder to get a nice solid loop to fit the screw. This step saves a lot of time when adjusting because the wire don't fall off as would if you try to just tuck the wires under the nuts.

In stead of using cable clamps to hold the wire against the base, just use a drop of glue. This is more than enough to support the paddles because the weight of the paddles are only about 10-20 grams without the cable.



### Screwing them together

Screw the paddle(s) and contact point(s) on lightly at first. Attach the wires and tighten the nuts so the paddle can be adjusted.

The feet is glued to the underside. Then add a little “blue tack” to keep them on the operating surface.

### Adjustment

On the DP, tighten the screws while holding the paddles against the contacts. Then bend the paddle slightly outwards at the fixing point. This provides a very small gap and nice action using a light touch. On the SP with the adjustable contact points, I tighten the screws first, then I press the contacts towards the paddle with needle nose pliers.

The SS is adjusted by either squeezing the contact points together with pliers, or prising them apart with a screwdriver. The SS needs a large spacing to make the pauses between the elements long enough. There are, of course, endless possibilities to make personal adjustments.

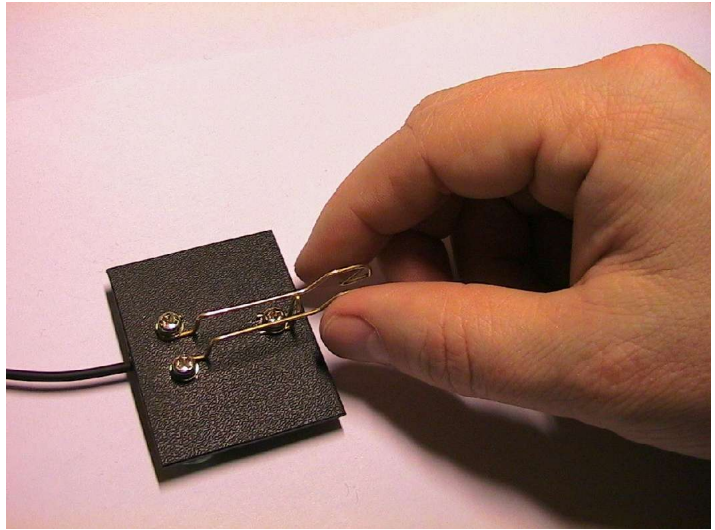


## Usage

I rest my whole underarm on the desk, letting my hand rest as I would hold a pen. My thumb and index finger is then placed close to the finger pads. This gives me a good starting position for operating the paddles.

The paddles should be perfect for QRP and QRPP rigs, and I'm sure they will be fine for Spartan sprints and backpacking too.

At least they are very well suitable to use as a cheap paddle for CWCom or Morsemail. These are software for sending morse code over the Internet.



They are simple, cheap, lightweight and easy to make.

In other words: *"The Ultimate Simple Lowcost Homebrew Portable Paddle"*. Here presented as a sideswiper, single lever paddle and dual lever paddle.

Make one tonight!

And e-mail me at [verbli@yahoo.no](mailto:verbli@yahoo.no) to tell me about it.

I want to thank the nice people on CwCom Morsenet1 Ch 100 for their support.

Have fun!

**Verner Blindheim**  
**LA5YNA**



Clippers in front of my Kent paddle