# Care and Usage of your Perkins Brailler

Presented by Alan Thorpe for the Braillists Foundation, Tuesday 15 March 2022

## What Is a Perkins?

The Perkins Brailler is like a typewriter for braille. It weighs about 6 kg.

## Types of Perkins Brailler

This handout refers to the Classic Perkins Brailler. Other types include:

* Electric: no longer available in the UK, uses electricity to reduce the pressure required on the keys
* Unimanual: a Classic Brailler modified so that the left hand side of the cell can be engaged first, then the right hand side or the space bar causes the cell to be brailled and the carriage to advance
* Next Generation: made from plastic casing and only accepts up to A4 paper, not easy to service
* Smart: a Next Generation brailler with a display screen and speech output

In addition, extension keys can be purchased to reduce the pressure required to press the keys.

There have been minor variations in the construction of the Classic Brailler over time, most notably changes to the paper rollers and the roller knobs. It is likely that an older Classic Brailler will outlive a newer one.

## Orientation

There are nine keys. From left to right, they are: new line, dot 3, dot 2, dot 1, space, dot 4, dot 5, dot 6, backspace. The space bar is shaped like a print letter t, the braille keys are long and thin, and the new line and backspace keys are circular and located slightly higher up.

Above the keys is the carriage/thumb slide which moves across the page from left to right. To return to the left, simply push it and it will click once for each cell. To advance to the right, press down on the right hand side.

On the top centre of the machine is the carrying handle.

Behind the carrying handle, at the extreme left and right, are two paper release levers sometimes called arms or ears, for operating the paper clamp (which locks paper in place). They also operate the paper check, which is located inside the Perkins and prevents paper from rolling in too far. The release levers sometimes have a round ball attached to them.

Between the levers are two rollers, between which paper is inserted. The bottom roller is made of rubber and the top one is made of metal. If the metal roller has eleven rubber rings on it, they are placed at every sixth braille cell with two spares at either end; if there are teeth, these are at every braille cell.

At either side of the machine is a roller knob for rolling paper in and out.

Behind the rollers is the embossing head, which is connected to the carriage and moves from left to right across the page.

In the back left hand corner is the paper stop, a thumb screw which is used to adjust the binding margin (distance between the paper edge and the first braille cell).

At the back of the machine is a long slot, with a margin adjustment at each end. The right margin is attached to a bell which rings six cells before reaching the margin. The margin adjustments are attached to lugs located near the paper rollers.

On the bottom of the machine is a fibre board to protect the mechanics, and rubber feet on each corner.

## Inserting Paper

1. With the paper release levers in the down position, roll the roller knobs as far away from you as possible until they lock into place. Roll them back towards you to ensure they are completely locked.
2. Left the paper release levers.
3. Slide a sheet of paper between the two rollers. Push it until you encounter resistance, then slide it to the left until it reaches the paper stop. This should ensure that it is inserted straight.
4. Drop the paper release levers.
5. Roll the roller knobs towards you until they do not roll any further. The top of the page should be roughly level with the embossing head.
6. Press the new line button once to lock the rollers in place and ensure that the paper is rolled in by a whole number of lines (I.E. the first press may only represent a fraction of a line).

N.B. the Perkins is optimised for paper measuring 11.5×11 inches. Paper which is wider than 11.5 inches cannot be accommodated. To accommodate paper which is narrower than 11.5 inches (e.g. A4), the right margin *only* should be adjusted to ensure that the carriage cannot extend beyond the end of the line.

The Perkins can accommodate paper which is longer than 11 inches, up to at least 13 inches and perhaps even a little longer. The full length of A4 paper can therefore be utilised.

## Adjusting the Margins

The margin adjustments on the back are comprised of a fixed top part and a sprung round bottom part. Squeeze these together to move the margin.

For optimum results, place the carriage where you would like the margin to be set, then move the margin until it reaches the carriage. Afterwards, move the carriage left and right a couple of times to ensure the margin has locked into place at the correct cell. You may find you need to finely adjust it further by one or two cells.

The right margin should be used to account for smaller paper sizes, such as A4 or index cards. Never use the left margin for this purpose – paper should always be inserted so that it is aligned with the left hand side of the Perkins.

The left margin may be used to ensure proper alignment of columns in a table, or to ensure that braille is only produced on the right hand side of a greetings card for example.

## Storage

Store the Perkins with the rubber feet on the ground, or as appropriate in a case.

Keep the Perkins covered when not in use. There are Perkins dust covers, but anything will work – a towel, pillow case etc. This is to stop dust and dirt etc from entering the machine. Guide dog hair is surprisingly common.

You can further prevent dust by leaving a sheet of paper in the machine, to cover up the hole where the rollers are. This will also prevent larger debris such as pens, rubbers etc from being inserted in it.

The carriage should be stored at the right hand end of the machine as this is where there is least tension in the main spring.

Store away from direct sunlight to protect the rubber.

Store away from the rain to prevent contamination of the lubrication.

## Wooden Case

A wooden case was historically available for the Perkins. To use this, there are two cylindrical rubber bungs towards the front – slide these to the extreme left and right of the case to insert the Perkins, then slide towards the centre to lock the Perkins in place. Reverse this process to remove the Perkins from the case.

## Trouble Shooting

If paper does not roll into the Perkins correctly (I.E. it comes out of the front), twist the roller knobs away from you until they do not move any further, then try re-inserting the paper. If this does not solve the problem, the roller drum may be misaligned or not connected properly and the machine may require servicing.

If paper partially rolls into the Perkins but the rollers stop rolling before the paper is fully inserted, ensure the paper has been inserted straight. If it has, gently lift the paper release levers, roll the paper through one turn of the rollers, then drop the release levers. This is a particular issue with paper which has been hole punched; in the long term, you may experience better results by adjusting the paper stop or rolling paper in with the holes on the top, bottom or right instead of on the left.

If paper rolls into the Perkins correctly but immediately springs out again, press the new line button to lock the rollers in place. Alternatively, firmly strike either roller knob a couple of times to increase the resistance of the rollers.

Similarly, if the rollers are too tight, grip the roller knobs firmly and pull them apart.

If paper continues to roll into the Perkins beyond the top of the page, ensure the paper release levers are in the down position. If they are, the paper check mechanism is malfunctioning and your Perkins requires servicing.

If the carriage does not move easily across the page, or you find you are able to braille more quickly than the carriage can move, the mechanism may need to be lubricated. Sent the machine in for servicing if you are not comfortable doing this yourself.

If keys are stuck in the down position, firmly push the carriage towards the left hand side, and/or press on the right hand side of the carriage as though moving it to the right.

If the new line or backspace keys press down but do not work, the scissor mechanism which operates internally has seized up and should be lubricated. Send the Perkins in for servicing if you are not comfortable doing this yourself.

If keys are wabbly, this often means a spring has broken and a service will be required.

If you encounter shadow dots (I.E. dots appear where they should not), or dots are regularly missing, an adjustment of the embossing head is usually required. If dots are missing, there may be an issue with one of the stylus pins in the embossing head. A service is required in both cases.

If the bell fails to ring, or the carriage stops before the bell is struck, the lever which controls the bell is stuck. This is on the back of the embossing head and can be gently unstuck. If you are uncomfortable doing this, send the Perkins in to be serviced.

If paper does not stay properly aligned in the Perkins, e.g. a new line does not represent a full new line or braille does not stay straight, this is most likely either because the top roller has no O rings remaining, or the clamp springs are worn out. In either case the Perkins will need to be serviced.

## Servicing

This should be undertaken only when needed. There is usually no need for regular servicing.

There are videos on Youtube showing how to undertake a basic service. This involves taking off, in order, the bottom, the top, the back, the front apron (under the keys) and the key cover. It is not necessary to remove the sides.

Thoroughly clean off existing lubricant, which is probably very dusty, and re-apply new. You should use clock and watch or sewing machine oil for this, as thin as possible. Do *not* use WD40! This is good at removing old lubricant but should not be used as replacement lubricant. It uses acetone to thin it out, and once this evaporates, the thick oil which remains attracts dust extremely quickly and potentially causes more problems in the long term than it solves in the short term.

If you would like to send your Perkins away to be serviced, it can be posted using the Articles for the Blind scheme but do *not* send it in its wooden case, as it is too heavy. Instead, use a strong cardboard box that is approximately 2 inches wider than the Perkins. Package it so that the roller knobs are properly protected as these are the most vulnerable parts. Do *not* put shredded paper directly inside your machine – if this is your only option, put the paper in a plastic bag.

## Contact Details

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A basic service costs £30. Repair costs depend on parts.

The turnaround time is typically a week.