CARVE YOUR OWN PIPE
A brief instructions manual
Materials:

briar block, pre-drilled, with mouthpiece *
wood stains in different colours*
linseed oil varnish*
bee’s wax*
shellack polish* or other undercoating
express or super glue (cyano-acrylate-based)

Tools and aids

vice (or screw clamps with pieces of squared timber)
small saw (small metal frame-saw with wood-cutting blade)
rasp (flat/round)
flat file (medium grid)
round file (tapered, Ø appr. 10 mm, medium grid)
sanding paper or better sanding twill* (grid 100 - 180 (240) - 400)
a piece of dowel-wood (Ø 10mm, appr. 20 cm)
electric hobby drill with drills 8, 9 or 10 mm
svivel holder for mounting electric drills (for buffing/polishing)
wooden grab-handle with tapered conic end*
a wine or champagne cork
pointed spatula (or pointed kitchen knife)
medium size soft paint brush
pipe cleaners*
dry soft cloth
spirit lamp or hot-air paint stripper or hair dryer
buffing and polishing reels and wax*

Items marked with * are available from DAN PIPE’s assortment (either main catalogue or hobby catalogue). The remaining articles are either already present in your household tool box or can be bought in any hardware store or Do-It-Yourself market.
The love of pipes and tobacco is a hobby that addresses many of our senses. Our tongue tastes the flavours of the various tobaccos in a smoking blend, our nose sniffs the tobacco's bouquet and the curling smoke in the air, our eyes revel in swinging pipe shapes and expressive briar grains, and our hands grip firmly or smoothly to sense the artistically sculptured natural grown briarwood. A growing number of pipesmokers do no longer find enough satisfaction in this more contemplative attitude - they want to live their „artistic bent“ and create and shape pipes after their own inspiration. And it was this longing for creativity that has lead us to occupy ourselves intensively with this topic. In the meantime, we can offer a fairly wide range of materials and articles for hobby pipemakers including, of course, an instruction manual to help you make your first steps successfully.

The first step is always the most difficult when we break new ground, but with some patience and a portion of talent and skill you can well manage to create a useable and well-tasting piece of smoking equipment. And even if your first work cannot stand comparison with the beautiful well-balanced shapes in your pipe collection, do not be discouraged - at your second attempt you will find shaping much easier having got acquainted with the material and having gained some experience in how to craft it. And even if you probably do not intend to become a professional pipemaker, always remember that even the most famous pipemaking artists have only reached the peak of skill after many years of permanent practice.

In any case we wish you a lot of fun and good luck with your new creative hobby. Just study this our little instructions leaflet carefully and follow the advice and hints given, and nothing should stand in the way of your success. And should you ever get stuck with problems in the course of your work, do not hesitate to ask us for help and advice.
Blocks for the pipe production are cut from the burly briarwood root, they are roughly divided into **plateau blocks** with the root’s natural grown bark and more or less close straight or flame grain, and into **standard blocks** with a varying mixture mixed of bird’s eye and flame grain. These briar blocks are available in various shapes and sizes (plateau blocks only) from DAN PIPE’s main catalogue and the special „Hobby Catalogue“. This instruction will describe the making of a medium bent pipe from a „standard block“ with a drilling angle of 60°.

**How to design the pipe shape**

Before we start planning, we must be aware of the position of the block’s bore holes which we have to take into account when carving the block, and draw some auxiliary lines on the sides of the block:

1.) Over the virtual centre of the block we draw two lines crosswise on the top face of the block and continue the lines on all sides of the block right to the bottom.

![Fig. 1](image1.png)

2.) Parallel to the middle lines draw new lines across the top and all sides of the block to mark the width of the tobacco hole.

![Fig. 2](image2.png)

3.) We measure the depth of the tobacco hole and transfer this measure to the sides of the block. If a vernier calliper with depth ruler is not at hand, you can also stick a pencil into the tobacco hole and mark its depth with your finger.

![Fig. 3](image3.png)

4.) Beginning from the mouthpiece we draw the middle axis of the pipe stem and then mark the position of the smokehole (Fig. 4). For that, we turn off the mouthpiece and stick a straight pipe cleaner into the smokehole right down into the tobacco hole. Following the free end of the pipe cleaner we then draw
a line on stem and block sides to mark the position of the smokehole. This step is most important when making bent pipes, because here the smokehole crosses the middle line of the stem in a more or less acute angle and therefore lies shifted upwards in the area where we will later carve the crook between bowl and stem. Inexperienced beginners often carve the crook too deep and, with the smokehole lying open, end up with a spoiled pipe.

Having completed the auxiliary lines, we transfer the contours of the block and the auxiliary lines to a sheet of squared paper. To be able to draw your pipe’s shape silhouette as often as necessary you should make some copies of this basic sketch (photo copies or carbon copies). When drawing the outline of the pipe you want to make it is important to give the bowl sufficiently strong walls. This goes especially for the bottom part and also for the back wall pointing towards stem and mouthpiece. A thickness of 10mm should not be fallen below (it is better to plan generously and to be able to reduce thickness when carving the pipe than to risk ending up with “wafer-thin” walls). The outline of the pipe is then re-transferred to both sides of the block. This can be done very easily if you copy your shape sketch, cut it out and glue it to both block sides. These preparations completed, we can really go to work.

**How to shape the pipe bowl**

At first, we fix the block with one side face up in a vice or with screw clamps. Exactly on the spot of the future crook between bowl and stem we drill a hole of 8, 9 or 10mm exactly vertical right through the whole block to make the shaping of this area easier and to avoid carving too deep later on (see above).

Then we clamp the block with the top side upwards and start cutting off the front and rear edges (mind the crook) of the block with a small saw along the sketched lines. After having clamped the block bottom up, we continue to saw off the bottom edge (avoid using too much pressure when clamping the top of the block). Now that the „silhouette“ of the pipe is roughly cut, we can trim the edges by cutting off wood diagonally piece by piece and gradually approach the final shape of our pipe bowl.
Take care not to remove too much wood with each single cut but to cut some more times in smaller steps. Once cut off, the wood cannot be replaced.

Those who do not have a vice to work with can easily make do with a pair of screw clamps and a square piece of hard wood (beech or oak) of approximately 4 x 6 x 15 cm in size. This log is firmly fixed to the edge of a table with one of the clamps to create a rectangular base where you can freely fix the briar block with the second screw clamp (fig. 5 and 6).

Now that we have roughly cut the pipe’s shape (comparing it to our sketch from time to time) we carry on shaping the bowl with a rasp and medium grid files. To round the upper half of the bowl we clamp the bowl by its bottom and evenly slide rasp or file over the wood in curved moves. To work on the cheeks and the bottom of the bowl we stick the bowl top down on the round tapered grab handle. This handle is best fixed diagonally in our vice or clamps so we can turn the bowl’s position from time to time and reach all parts of it. The bowl should fit tightly on the handle, but never too tight. Should the fit be too tight, we can taper the handle down with a file. Should it be too loose, we can either shorten the conic end a bit or wrap a sheet of paper, cloth or adhesive tape around its end until we reached a tight fit.

The crook or bend between bowl and stem is then worked out with a round tapered file of medium grid. If no round file is at hand, you can very well help yourself with a piece of sanding paper or twill wrapped around a wooden stick (10mm dowell-wood or other not too flexible material of that size).
It is up to you whether you leave the mouthpiece on the pipe stem or take it off while working the bowl. It might sometimes be in your way, but on the other hand, if left on the pipe it can help you avoid to spoil the stem’s stern edge with dents. **The stem is worked with the mouthpiece fit and exactly aligned.** To achieve a fine smoothly levelled outline we best file and paper stem and mouthpiece at the same time. We only use a medium or finer grid flat file and sanding paper or twill (can be stiffened with a base of flat wood). The rasp would create deep furrows and might even leave cracks in the stem’s edge which can only be papered out again with a high loss of material (thin walls always bear the risk of splits). Try to always work stem and mouthpiece in long diagonal and at the same time curved strokes to achieve the best possible round shape of stem and mouthpiece.

After the shaping of the pipe bowl is finished we go over to smooth out the wood. Starting with the rough grid 100 sanding paper we gradually take off remaining furrows, dents or small elevations and continue with medium rough grid 180 paper to end up with grid 400 for a really smooth finish. With all papering steps we leave the mouthpiece on the pipe to be able to work both parts evenly and equally. For really good results we highly recommend the „barber method“: you fix one end of a strip of sanding twill (appr. 40 x 4 cm) in your vice or with a clamp and hold the other end with your hand. With your other hand you strike the pipe bowl or stem over the strip with more or less gentle pressure and at the same time turn it to and fro to follow the bowl’s curves. With the strip held under high tension you can also paper flat parts like the bowl top, and with a strip already worn a little and held loosely you can also smooth out the bend between bowl and stem.

**How to bend the mouthpiece**
Standard blocks from our assortment (with 30° or 60° angle) are already mounted with a bent mouthpiece. Plateau blocks, however only come with a straight mouthpiece that has to be bent according to the pipe’s shape. The mouthpiece material (ebonite or acrylic sheet) can be made flexible by carefully warming it. It can then be bent and will remain in the new shape as it cools down. The flame of a spirit lamp (or a candle) serves really well for this task, you can also use an upright-standing hot-air paint stripper if available. Make sure to have a piece of soft cloth or shammy leather and a bowl of cold water
at hand before you start this procedure. We leave the mouthpiece stuck in the pipe stem with the bit end aligned parallel to the bowl top. A pipe cleaner is inserted in the mouthpiece bit (thick end first with conic cleaners) to keep the smokehole open while bending the mouthpiece (without the cleaner it might be squeezed and later obstruct the pipe's draught abilities). Then we hold the area to be bent over the flame permanently turning and moving it to keep the material from getting too hot and to avoid burning the thin edges. As soon as the material has become flexible, we grab the mouthpiece between thumb and first finger (with a piece of cloth or leather as a heat protector) and gently bend it to the shape desired. We hold it in this position for a while and then dip it into a bowl of cold water to support its solidification. If necessary and not satisfied with the first go, this procedure can be repeated. And should you, despite all care, have slightly burnt the mouthpiece edges, you can pare those spots down later with medium and fine grid sanding paper.

How to handle flaws and wood defects
You have been really lucky if no spots or larger impurities in the wood have come to light in the course of shaping and smoothing your pipe. But, briar being a natural grown material that has been exposed to all sorts of weather, heat and cold during its growth, their occurrence has always to be reckoned with. Small dark spots should be left untouched, they can easily be hidden in the grain's dost and lines after the pipe has been treated with colour stains. The attempt to paper them away might only result in making them larger and more visible, as would trying to fill them up (which would require widening the holes for an optimum fit of the filling material).

Larger flaws can be filled with the help of extra fast hardening „Express Glue“ (cyano-acrylate-based). Dark remainders of briar bark must be picked out with a sharp needle and the cavity be blown out to remove dust. Then we give a small drop of „Express Glue“ into the hole and immediately paper the spot extensively with medium or fine grid sanding twill. The glue will collect and blend with the briar dust in the cavity which will be completely filled by repeating this procedure several times.

Our „Pipe flaw filler“ the use of which is shown in our video film is no longer available. But even really large flaws can be filled using the „Express Glue“. 
At first, you collect some briar dust produced by firmly rubbing a remaining piece of briar across a strip of rough grid 100 sanding twill. Lay a pointed spatula or old pen knife ready, then drip a good quantity of „Express Glue“ into the cavity to be filled. Put down the briarwood dust pinchwise into the cavity and firmly work it into the glue with the tip of the knife. Repeat this procedure until the cavity is filled and the blend of glue and dust slightly piles up slightly larger than the original hole. Let the „briar cement“ harden for several hours before you can paper down and smooth out the remainders of the filling material as described on the previous page.

The use of briar pegs is an interesting and very effective variation, not least because they can later be coloured together with the complete bowl (unlike the fillings made with „Express Glue“). This method is best suitable for flaws of nearly round shape or slits. Round shape flaws should be drilled out exactly round not exceeding a diameter of 5mm to a depth of 3 - 4 mm, slits worked with a sharp knife tip to smooth out the edges. For the pegs we use remainders of the briar cut off in the beginning of our work. To produce round pegs we roughly round a fairly long piece of briar and gradually paper it down to exactly round and slightly tapered shape for a tight fit in the cavity. An electric drill can be of great help: fix the roughly rounded piece of briar in the chuck, let the machine spin and shape the wood with a small strip of grid 100 sanding twill. When the peg fits properly, drip some „Express Glue“ into the cavity and on the peg end and stick the peg firmly into the hole. Let the glue harden for an hour or two before you cut off the surplus of the peg and paper it down. To fill slit-shaped cavities we proceed accordingly, only preparing a blade- or wedge-shaped piece of briar to be fit and glued into the cavity.

How to colour the briar bowl
If the result of our artistic work has turned out to be nearly or completely free of flaws we can very well do without additional colouring and only give the pipe a nice wax polished finish as described later. In most cases though, more or less impurities in the briar require some kind of camouflage. Contrast staining has proven to be very effective and to create an attractive appearance by impressively intensifying the briars own grain. DAN PIPE offers you an assortment of 12 different colour stains as used by professional pipemakers. They are easy to apply and have always produced attractive results.
After the final papering we wipe the pipe bowl with a wet cloth and let it dry again. This will open the pores and let the colour stains thoroughly soak into the wood. The mouthpiece is left on the pipe to prevent stains from dripping into the stem (and to have a handle to hold the pipe). We recommend to also shut the tobacco hole with a cork. The undercoat stain (plain black or dark brown or a blend of dark brown and dark red) is then generously put on with a soft water colour brush or with a bent-over pipe cleaner two or three times. After the stain has dried (appr. 1/2 hour) we paper the whole pipe bowl again superficially with fine grid 400 sanding paper until the briar grain comes out clearly on the light coloured background. Should the contrast still be too dull we can repeat the complete moistening, staining and papering process.

Then we wipe off remainders of papering dust with a wet cloth and let the wood dry for a while. Before we can apply the top colour we should lay a piece of clean cloth out ready. The colour stain is put on several times as described above, but the surplus should at every go be wiped off immediately with the cloth (this will also take off the „dirty looking“ blend of stains on the surface). Let the stain dry for 10 or 15 minutes before applying the next layer and then let it dry for several hours before putting on a sealing or coating varnish. For dark coloured pipes we recommend the use of black stain for the first and walnut and/or dark mahogany for the second colouring. For lighter coloured pipes we have achieved fine results with brown and/or dark red for the first and orange, „ocker“ (light brown) or gold for the second colouring.

**How to seal the wood**

To prevent the colour stains to be rubbed off (and to leave stains in your hands) and to intensify the briar grain once more the bowl is treated with oil, wax, varnish or thinned-down nitro lacquer. We will describe three variations.

**Linseed oil varnish** contains resins that oxidize and harden in the air, it has therefor been used (and still is) for sealing and undercoating raw wood. First we shut the tobacco hole with a cork, then we apply the varnish generously with a clean brush or e bent-over pipe cleaner to let it soak into the wood for appr. 1 hour. Then we rub off the remaining varnish thoroughly with a piece of soft cloth and remove the cork from the tobacco hole. The linseed oil varnish then has to be left to harden for 8 to 10 days, best with the bowl loosely put over
a wooden stick fixed upright in the vice or with a clamp. The bowl surface will then be mat, but can be polished as described later if not to our liking.

**Bee’s wax** is applied to the wood in a heated liquid state, it will soak into the wood deeply without blocking the pores. The pipe bowl itself must be heated to achieve better wax penetration. This can be done in a kitchen oven at appr. 50° C temperature (in this case we must take off the mouthpiece!!) or with a hairdryer or hot-air paint stripper. In the meantime we have melted the bee’s wax in a small pot (on a small hotplate or a teapot warmer) and can then apply it to the heated bowl (again shut with a cork) with a bent-over pipe cleaner. The wax will quickly cool and harden but can always be melted again with our hair dryer to let it soak well into the wood. Finally we rub the pipe still warm with a soft cloth to remove all wax surplus. Bee’s wax is not suitable for the use as undercoating for a polished finish.

**Shellack varnish or polish** serves very well as an undercoating for a wax polished finish but can also be used to only seal the wood for a mat finish. In our Hobby Catalogue we offer high quality flakes of shellack to be dissolved in heated spirit (Best.Nr. 1385-3). The shellack varnish (diluted with a dash of spirit if necessary) is generously put on with a soft water colour brush or a bent-over pipe cleaner and the surplus immediately wiped off gently with a soft clean cloth (do not rub too hard as the varnish will dissolve the colour stain a little). The varnish should be put on two or three times and then left to dry and harden for several hours before it is grip-proof and ready to serve as undercoating for a wax polished finish.

**How to polish pipe bowl and mouthpiece**
Best results in buffing and polishing bowls and mouthpieces of pipes can be achieved when using our „DAN PIPE Polier-Set“ (polishing kit). It was developed by our pipe working staff for the use with a customary hobby drill to give bowls and mouthpieces of your pipes a professional high shine.

The „DAN PIPE Polier-Set“ contains two medium soft cloth polishing reels with a special carrier shaft and two blocks of wax polish, the brown wax is used for pre-polishing both mouthpieces and bowls, the light grey wax is used for the final high shine polish of mouthpieces.
The hobby drill is horizontally fixed to a firm base (work-bench or tabletop) in a swivel holder (available in most hardware or Do-It-Yourself stores) with the chuck sticking out to the right reaching over the edges of the table. Fix the assembled reel and shaft to the drill chuck and make sure the spinning direction is adjusted to the right (downwards and towards your body).

At first, we should take some precautions to avoid damage to bowl and mouthpiece. The mouthpiece is left aligned on the pipe to avoid rounding off the edges. To protect the colour stain on the stem we wrap it tightly with some layers of cello-tape. Then we let the cloth reel spin at 2500 - 3000 r.p.m. and apply polishing wax by pressing the brown wax block firmly against the edge of the reel. Then we grip the pipe firmly and, permanently turning it in our hands, press the mouthpiece against the spinning reel. Apply wax again from time to time: it is the wax that does the polishing, not the cloth. And besides, it keeps the reel from wearing off too soon. When all remaining scratches and dull spots are taken off, we can remove the cello-tape and polish stem and bowl with reduced pressure taking care not to remove too much of the stain.

For the high gloss polish of the mouthpiece, we change the reel and take the block of light grey coloured wax to proceed as described above (there is no need to again cover the stem). Before we finish, we can reduce the spinning speed (no problem on electronic-control drills) to make the reel a little softer, so we can wipe it over the pipe more gently for a better buffing result.

For a proper wax polish to pipe bowls a special wax and an extra buffing reel are needed, both items are available from our Hobby Catalogue assortment: Buffing reel: Best.Nr. 6507-2  -  Carnauba Wax: Best.Nr. 1380-3

For a wax polished finish, the reel has to spin with lower speed (1400 r.p.m.) to keep it soft and smooth. The wax is applied as described above, the pipe bowl pressed to the spinning reel firmly at first to rub the wax onto the pipe bowl, then very gently to spread it out into a shiny layer of wax on the bowl.

Well, our pipe is now completely finished and can be „put into operation“. Before you do, blow out the remainders of dust in bowl and mouthpiece, pull some pipe cleaners through the smokeholes. I hope you will be successful with your first steps in pipemaking and will enjoy smoking your first creation.