

EMI 2001 and Vinten HP419 pedestal
by Bernard Newnham

This is a 1/12 scale model of the camera/ped combination used by the BBC and others from the mid-1960s through to the late eighties. BBC Television Centre was equipped with these in all eight main production studios and a huge number of now classic tv programmes were made with them. Cameramen regarded the EMI 2001 as the perfect cameraman's camera, because of its size and flexibilty. The zoom is inside the camera rather than stuck on the front, giving a short distance from operator to subject. The Vinten 419 ped was a world wide standard, used by tv companies everywhere - and probably still is, somewhere.

Building tools

Glue - your choice. After much testing I mostly used superglue, in this case Hafix liquid. It's horrible if you get it on your fingers, but dries very quickly on photographic paper. Pritt stick, UHU or other glue are also possibilities. Test on a spare piece first.
Scissors, sharp scalpel, wood pieces for folding, round things for forming.
Matchsticks
Wire - I used 1.5mm installation cable. The steering rods and hydraulic pipe are just the copper and the panning handle uses the copper and the insulation. Something else similar could also be used.
Grey and black markers, grey and matt black paint. Lots of parts have white edges that will benefit from a rub with a grey or black marker pen.
419 peds were Vinten grey, but most had parts changed during maintenance, so as long as the actual part - a gas cylinder for instance - is all the same grey, it'll look authentic.

General

This isn't a quick half hour build. It's quite fiddly, but the result is very rewarding. It's built mostly in 240gm shiny photographic paper, which seems to be light enough to work easily whilst being heavy enough to hold its shape – though strengthening is required here and there.

Make the cutouts (mostly circles) whilst the section is still on the main sheet, it's much easier.

It's best to shape the paper before gluing, whether it be curved or folded. Most folds can be best done between two pieces of wood held together, though some of the tabs can be lightly scored. Make all the folds in a piece before any gluing, even if you have to flatten to make other folds. Round things should be formed around cylinders that are smaller than the final size and allowed to unroll a bit. All the round sections are butt joined using spare white paper as joiners. Complete the shape before gluing.

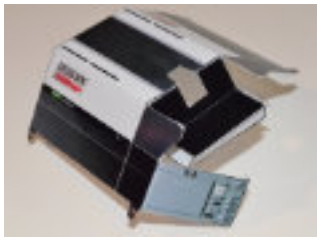
First thing - strengthening column

Bill Vinten didn't need this bit, but this model does, and no-one will see it. It will run right up through the model and hold it solid and vertical.

Take a piece of ordinary A4 printing paper and fold the end of one narrow side over as short as possible – likely 5mm or less. Put on a dab of glue, then roll the sheet up tightly, adding glue at intervals. When it's all rolled, seal the end with glue. When it's dry, press and roll it into an even cylinder, which will be about 10mm in diameter. Cut to 135mm long. Each part of the ped is built on this hidden column, which runs up into the camera.

EMI 2001 Camera

Read through the instructions first



Make all folds in 1,3 and 4. There's no fold marker along the top edges of the camera, just follow the line from the front.

Glue inners 2 to the inside of the viewfinder carrier and trim to fit.

Glue in 3, the inside top rear of the camera - see picture - folding the tabs backwards into the body. For the moment leave one side unglued to facilitate fitting 4.



Glue 4 into position. This fits the cutout in the top of the camera and the similar cutout in part 3. EMI designed the viewfinder to retract, and this is where the end of the viewfinder CRT would fit when retracted. BBC cameras were modified quite early on, as it turned out that the viewfinder didn't need to be retracted. This is the version modelled here.

Glue the rest of the camera main body into position. Take great care with the four lifting handle ends sticking downwards. They'll be stronger when the base is in, but at this point they're quite delicate.

5 - Camera base. Cut the round hole. Glue in, black side down. The tabs go up inside, and the backs of the retracted carrying handles go down and glue to the outer pieces. You could glue pieces of black painted cocktail stick across between the ends to simulate the actual handles and give more strength.



6 - The main bulk of the viewfinder. Fold and glue into a box shape. You need to really bend the folds! Don't worry about white edges, you can fix them when the glue is dry.

7 - This is the top of the viewfinder. It's fiddly, and there's a second copy on page 3. Cut the two lines so that the triangular wings can fold down. Now fold everything away from you to make a box shape with sloping front and the two big tabs underneath - see picture. The folded down wing section is where the viewfinder CRT end is on the real thing, and would fit in the slot on non-modified cameras.



8 - The inside of the viewfinder hood and the viewfinder screen. Bend the three folds towards you, then glue the piece to the back of of part 7. The screen should hang clear at right angles. Now glue the whole unit on top of 6 with the screen in place at the back next to the controls. Make sure it's centred on top of 6. Glue the end with the three tabs into the the folded wing section to make the CTR tail end at the front of the viewfinder, and glue the end tab to the front of 6. Glue the completed unit to the top rear of the camera



9, 9a - The focus knob. This ought to be a cylinder, but at this scale that's very difficult with just paper. Fold the three legs of 9 up into a triangular prism shape. The centre will be the outer end of the knob. Bend each of the arrow pieces 9a across the middle to about 120°, then glue the three pieces together to form a three pointed star. Put the completed star down the slots in 9 with the pointed bits down. Glue them in so that the ends stick out. Now fold the tabbed end over and glue. When dry glue the tabbed end to the camera.



10 - Cable box, with the auxiliary talkback socket and mains power. Fold and glue, then glue to the left rear of the camera with the base along the bottom of the camera and the rear along the white line.

11 - Lens hood. Cut out the circle. Fold and glue tabs to make the unit. The outer tabs fold at 90° to form the front edge of lens hood. Paint the inside black, then glue in 12, the lens. Glue the complete piece to the front of the camera.

13 - Viewfinder friction knobs. Glue back to back in pairs, then glue on the outside of the viewfinder carrier.



14 - Shot card holder. This is a real shot card, from a Dr Who series called Meglos from 1980. Fold and glue backwards down the middle, then glue the tab inside the left of the viewfinder carrier.

15 - Cue light. Fold light into a triangular prism, then fold in top. Glue to black disc, then glue that in place on the
top of the camera.

The Vinten 419 pedestal

Start from the bottom of the ped and work upwards. There will be a number of white edges, and I used a Windsor and Newton grey Promarker from Hobbycraft to dim them down. Any gaps can be filled with Blu Tack on the inside of the model.

Cut out all the round holes and the steering ring slots whilst still on the sheet

Part

A Cut the round hole first, then cut out the part and fold the tabs downward.

B Cut out all three pieces, then shape as shown to fit A. There are tiny dots to show where the two bends go. The cable guard (line and dots) goes at the bottom. Flatten A and B gently, then glue the tabs at the ends of A to the centre tops of the Bs, making sure there's no gap. Once dry, bend everything again and glue the other tabs on A to B. When all is dry, make three white paper strengtheners about 20mm by 8mm. Bend half way, and glue inside the inner corner joins as high up as possible, so that the inner Vs are solid.

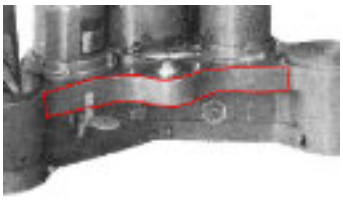


C Another hidden strengthener. Cut out the part and fold the tabs downward. This goes up inside part B with the tabs lowest and along the base. "T here" shows which way round. This will hold the strengthening column vertical.



D,E The visible top of the rolling base. Cut the round hole first, then cut out the part and fold the tabs downward. Shape and glue the three chain guards E to the tabs - see right. Fill any gaps with Blu Tack. When dry, glue D to the top of A. Glue parts AA, BB, CC - slightly oversized ends - into position. Darken white edges.

Drop the strengthener column down through the holes and glue in place, making sure it's vertical.



F Column first stage. Roll this round a pen or other similar size cylinder so that it's tighter than the final size. Cut out and curve a suitable piece of spare paper for the joiner. Stick joiner to one end, allow to dry and stick to the other end to form the cylinder. Once dry shape properly to a circle. Fold the tabs in and cut them to length so that the part drops over the hidden column. Note in the picture where the Vinten logo goes.



G Column first stage top ring. Glue to the top of F

H,J,K Telescoping column sections. Fit as F, with rings L, M in position. K glues directly to the strengthening column.

Steering linkage - N, P, two round rods, one square. I made the round rods from 1.5mm installation cable, and the square rod from a matchstick.

N The lower part of the steering linkage. You're going to need eight of these. Cut this one out and glue it to a piece of spare white paper. Allow to dry, then do the same again till you have a block eight high. Paint the edge grey. When all dry, make a hole down through where the black dot is, deep enough to hold the lower steering link rod. Don't glue down yet.

P Make a hole for the matchstick where the black mark is. Cut out both parts and glue together - see picture. When dry f ll with Blu Tack. Make the three sections of the linkage - two round rods, the lower one 20mm, upper 35mm, and the matchstick piece 25mm. Paint all grey. Glue lower rod into N, then push up in to P in the centre of the arc. Push the matchstick through P, then glue the other rod to the top. The total length above P should be 50mm.

Q Steering ring. Cut out all the white parts, then glue the two sections back to back. Make a hole for the upper steering link where the black dot is on the underside. I added the black plastic outer from a piece of car wiring to make the ring 3D.

R,S Balancing weight tray. Cut out white hole in S, shape R into a circle, then glue to the underside of S, aligning the weights in the tray. Glue to the top of Q. Once dry, the unit can be dropped on to the top of the column.

Now attach the steering linkage. Note that P is offset on the column.

T, U The tiller. Cut a slot into the round section of T, then curve the main part into a conic section.

Butt join using a white paper tab. When dry, shape properly. Fold the circular piece down horizontal and glue in place. Glue the two parts of U back to back, then drop into the slot in T.

I replaced U with some pieces of installation cable painted grey for this build.

Glue the unit onto D as marked.







V,W Gas and hydraulic oil cylinders. The oil cylinder W is slightly shorter than the others.
There are two ways of doing this -
1) First roll the “teeth” down so that they curve easily. Next, roll the cylinders and butt join as usual.
To join the teeth over into the dome shape you need to create a ball to fit the inside of the cylinder. I tore up some newspaper and damped it. I rubbed on some Pritt and rolled it up into a ball, then put some more paper round the outside to make a smooth surface. Allow to dry and roll into smooth ball.
Turn the cylinder upside down and tamp down the teeth into a dome shape. Now put the ball inside and glue the teeth to the ball to make a dome.
2) Cut off the “teeth” and make up cylinders. Fill with Blu tack and paint. The results are tidier but not so “purist”.

Put a rim of glue around the inside base of the cylinders and glue down to part D. The hydraulic cylinder goes nearest the tiller.

X The hydraulic cylinder has a copper pipe running from the top and down into the base casting. It’s covered by a cast shape. I’ve modelled this with two shapes X and a piece of 1.5mm copper wire. Curve the wire to shape and glue the two shapes either side at the top. Paint if wished. Glue the unit to the top of the cylinder and run the wire down to the casting

DD This is the spare weights tray. Cut out and make a pile ten high, then paint the sides grey. Glue to D

Y Panning Head
Cut out circle, make folds, and glue the black inside sections to the outside. Make cutouts in the inside to match outside. Fold and glue, then push on to the top of the ped. The camera is slightly panned down.

Z Panning Handle - leave this till the camera is complete and on the column, though not glued.
Glue Z2 over the right end of Z1, and cut slots along the two black lines. I used installation cable again for the inner. Cut a length as per the template, then strip the end as shown. Roll the paper outside round it and glue, leaving the slotted end unglued. Bend the wire so that the stripped end will go inside the head and the centre of the slotted section goes outside the attachment screw. Bend to a satisfactory shape and glue the stripped end inside the head.



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I’m selling these for charity, so please don’t rip them of .