MODEL-MAKING TECHNIQUES

HISTORY OF THE COURSE

I have been running this course for the past three years, following a request from Rose Bruford College that I offer a professional model-making course to be included in their summer courses programme. Demand for the course has been very positive (usually leading to extra courses being arranged each summer) and although it will continue to be hosted by Rose Bruford during these months I now also offer the course at other times 'on demand' at an arts centre in Deptford, close to my studios.

OVERALL APPROACH

My emphasis is on materials and techniques applicable to theatre model-making, architectural and exhibition model-making, and scenic model-making for film. During each session materials will be introduced by means of samples, finished examples will be examined, and technical possibilities discussed. Practical demonstrations and exercises involving these materials and methods will then form the basis of each day. Apart from this materials-based emphasis, there will be a certain focus on 'achieving realism' in models, as opposed to the purified abstractions favoured in architectural or some product model-making. But people working in those fields will benefit from learning about a different approach, and in any case there will be some opportunity to fit the content of the 5 days to individual needs.

My assumption is that what people really want is 'know-how' and as much of it as possible, rather than waste too much course time practising things that can be better done at home. However, just listening and looking for a whole five days is tedious ..and no way to really learn!.. so a balance is struck between selected information, illustrative examples, practical demonstration and 'hands-on' exercises. Each day will also include an element of choice .. that is, although some exercises will be necessary for all, to be followed up on the next day, others can be chosen from a list. Participants will be given prepared worksheets and lists of essential information each day, including advice on tools and suppliers. The course provides not only the opportunity to take advantage of my knowledge and experience, and experiment with a variety of materials and techniques both traditional and new, but just as important is the contact with others. Although the course is intensive there is ample opportunity during the five days to get to know others from a variety of backgrounds, and to compare experiences and aims. To this end a programmed feature of the course is the short group discussion, towards the end of each day, of a typical making 'challenge'.. a different one each day. Participants are asked prior to the course if they can suggest examples from past experience of tasks which they've found particularly difficult ..or successfully overcome!

The course acknowledges the fact that for most designers or makers model-making is a sporadic (not a continuous) exercise and that few can afford a dedicated studio with an arsenal of machine tools. The materials and techniques covered are, as far as possible, amongst the simplest and most accessible.

DURATION

The present format of the course is as a five-day block, Monday-Friday. Each day should start at 10.00 and finish at 5.00, but if there is a group consensus on taking advantage of off-peak Travelcards this can be 10.30-5.30. The lunchbreak is usually 1.00-2.00.

DAILY SCHEDULE

Day One: Construction in card, wood and plastics

Introductions. Summary of course aims and schedule for the week.

'What makes good model-making?' discussion.

Sample materials pack: basic properties of foamed PVC, styrene strip and sheet, paper and card (mountboard, Finnboard, stencil paper etc.), wood strip and sheet (birch ply, ramin, obeche, lime), foamboard.

Showing prepared examples: house facades and constructions in PVC and styrene; furniture in styrene, stencil paper and wood; doors and panelling in sheet wood; step constructions

General construction guidelines: planning and foresight; 'thinking in planes and building in layers'; using try square and guide blocks; other essential tools; how to cut effectively; properties of different glues; customised tools; using a mitre guide; cutting curves and circles.

Practical exercises (participants choose one or more of the following): making a 1:25 chair in PVC cutouts; making a sofa in PVC and Kapafoam; an intricate window using paper template method; a set of steps in mountboard; making a chair or table in stencil paper.

Group discussion of suggested model-making issue.

Day Two: Working with metals

'When does it become necessary to work in metal?' Metal-effect finishes/

metal v plastic. Cladding in thin metal. Making armatures for figures and trees.

Uses of different forms of metal: brass rod and shim; welded wire mesh; impression mesh; aluminium, 'florist's' and piano wire. Simple methods of etching shapes in metal. Painting metal.

Showing prepared examples: figure armatures; brass furniture; wire mesh tree forms; brass-etch tree and plant forms

Demonstrations: how to cut metal with the scalpel; materials and techniques for effective soldering. Butt, lap and spot joints. Making soldering 'jigs'.

Practical exercises (participants complete the first and then one or more of the following): making a small-scale flexible figure armature in brass; a tree armature using welded wire mesh; preparing a design on brass for etching.

Group discussion of suggested model-making issue.

Day Three: Shaping and modelling

Recapping on previous two days: starting with flat construction then building up or 'pulling out'.

'How to achieve a form if it can't be simply assembled from flat sheet or strip?' The difference between 'shaping' and 'modelling'. Using armatures, templates and formers. Using adaptable ready-mades or found forms.

Sample materials for shaping and modelling: basic properties of rigid foams (styrofoam, polyurethane foam, Kapafoam), types of Plastazote, soft modelling materials (plasticine, Milliput putty, Super Sculpey polymer clay), liquid materials for 'relief painting'.

Showing prepared examples: furniture using foam and relief decoration; architectural and organic forms in foam; model figures in polymer clay.

General shaping and modelling guidelines: creating a bath shape in foam using templates; more complicated shapes; modelling in stages with Sculpey; modelling tools; using a heat gun; flexible forms in Plastazote; making plasticine more durable; simulating curtains and fabrics.

Practical exercises (participants complete the first and then one or more of the following): modelling a small flat form in Sculpey or foam for casting; modelling a figure in Sculpey on the completed brass armature; constructing and shaping a piece of foam furniture; a bathtub template in Kapafoam; carving and shaping styrofoam; decorative relief painting.

Group discussion of suggested model-making issue.

Day Four: Methods of mould-making and casting

'When is casting necessary or useful?' The range of casting possibilities.

General mould-making and casting guidelines: undercutting; interdependency

of prototype, mould and casting materials; sealing and release agents; 1-part and 2-part moulds; building mould walls.

Properties of mould-making and casting materials: silicone rubber, re-meltable vinyl, latex, polyurethane resin, casting plaster, plaster/polymer. Press-moulding in polymer clay.

Showing prepared examples: chairs and doors cast in polyurethane resin; repeated decorative features; rock formations cast in plaster; press-moulded forms; latex 'skin' moulds and casts.

Practical exercises (participants complete the first and then one or more of the following): making a small mould in silicone rubber (using prototype modelled the previous day); making a mould using re-meltable vinyl; casting in plaster or plaster/polymer; making a foam 'skin' mould and casting in latex (e.g. brickwork, cobbles and roof-tile effects); press-moulding forms in Sculpey.

Group discussion of suggested model-making issue.

Day Five: Surfacing and painting

Personal preferences for creating surfaces e.g. building up, breaking down, cladding or scattering. Attention to scale. Importance of good visual references. Making tests and keeping samples. How to prevent materials warping.

Sample materials for textural surfaces: texture media (polyfilla, Idenden, CrystalGel, acrylic texture pastes), Kapa-line foam, special papers (vinyl wallpaper, sandpaper, decorative and embossed papers), scatter materials (granulated cork, sand and grit, vermiculite, etc.)

Surfacing and painting guidelines: methods of making brickwork effects and other tools for embossing foam; staining floorboards and panelling; simulating wood; simulating earth and grass; preparing surfaces for gluing/scattering; simulating water and reflective surfaces; acrylic v enamel for painting; making gouache more versatile; using inks, pigments and dyes; dry-brushing and weathering techniques; tinting using pencil/white spirit; using digital image programmes (e.g. creating scaled wallpaper).

Practical exercise: participants use the materials to hand and the techniques explained to create a collection of textural samples to be included in a sample book.

Final review of the week's work.

DAVID NEAT