Making Stop-motion Content

A step-by-step insider's guide

A+C Studios

Contents

01
Introduction

At A+C Studios, we have been creating stop-motion commercials for over 15 years. We collaborate and co-create with brands such as LEGO, TK Maxx, British Airways and Cadbury, and agencies including Ogilvy, BBDO, Havas, Publicis and many others.

Stop-motion can have a reputation for being expensive to produce and extremely time-consuming but this isn't necessarily true! So we've written this guide to help agency staff and in-house teams understand the production process of creating a commercial with stop-motion animation.

So what is stop-motion? Stop-motion is an animation technique that captures images one frame at a time. One second of footage is achieved by capturing 25 individual still frames. In each still frame, objects or puppets are moved incrementally by an animator. When played back in rapid succession, the frames create the illusion of motion. Stop-motion animation should always be produced within a controllable studio environment.

Stop-motion animation is a beautiful, tactile medium that can be used to bring products to life, as well as tell emotive stories with puppet characters. It's perfect for both narrative and promoting new products and services, and we believe it helps people connect with their inner child.

Experience has taught us that stop-motion is incredibly effective in advertising. There are several styles we've used to show this: claymation, paper-craft, tabletop and pixilation (animating human beings). There really is so much scope, with near-limitless possibilities.

02
Budgeting

There is a common myth and misconception that stop-motion is the most expensive form of animation, with many assuming that computer-generated (CG)animation is cheaper. But in reality, for advertising, stop-motion is no more costly than CG and other forms of animation.

As with all forms of production, different variables and required outcomes will always dictate cost, and stop-motion is no different. With CG animation, objects such as branded products, food items or toys must all be created digitally. With stop motion, we can use the real items, straight off the shelf - so we can avoid all the additional time spent re-creating them on a computer.

Certainly, there are many factors to consider for stop-motion animation, which can and do affect the budget. For example, an animation with complex elements such as puppets will be a lot more expensive than an animation involving a simple item like a can or item of clothing. It's only when you take into account all the different components that you get a grasp of what your idea might actually cost.

When budgeting for stop-motion, depending on the duration, it can be very roughly priced per second or minute. Of course, this can only be done with a brief, which should include the number of puppets or characters, props, sets, and levels of complexity. Tabletop animations that include a camera in a rostrum position facing vertically down onto a desk will be considerably cheaper than a whole cast of puppets due to the work and time needed to create them.

03
Scheduling

Stop-motion can be a time-consuming process, however with careful planning, a production can be completed within weeks from script to screen.

A stop-motion schedule, like with live-action shooting, will begin with pre-production, then the production/shoot and finally post-production. Depending on the production; puppet and set building can add a considerable amount of time to the schedule, making timelines front end loaded with lots of work in pre-production.

Every stop-motion production should be carefully scheduled to make sure each part of the production process has time for the crew to complete all tasks as well as have time for client approvals. Schedules are essential to ensure deadlines are always met and the timeline is kept on track throughout.

A schedule should show work-in-progress updates, opportunities for feedback and amendments, while also allowing time for client review and feedback. If your production schedule is tight, don't worry - stop-motion is still possible. Where time is short, we'll just need to double up on our animation stages and animators, if the budget allows.

Consolidated feedback throughout production is crucial. This helps to maintain workflow and avoid scheduling conflicts, delays and additional charges. The amount of feedback rounds at each stage depends on the schedule and budget agreed at the start of the project.

04
Creative Development

Once treatments have been chosen, the commercial has been awarded and PiBs signed (where applicable), pre-production normally begins with a creative kick-off meeting.

At the meeting the brief and client requirements are laid out and everyone is aligned on what needs to be created. At this point it is good to explain as much as possible about audience and messaging to get the tone and aims for the animation perfectly aligned with the brand.

It's fine at this point to have a fully formed script or, alternatively our in-house team can use the information gained from the kick-off meeting to tailor a script and creative that will be suited to both your brief and required style of animation.

05
Design

With a concept agreed, the next stage of production always includes a design stage.

Design assets for a stop-motion commercial include character designs, set designs, as well as simple keyframes and rough illustrations of the mechanics of the shoot.

It's always helpful to provide any visual references of the desired style direction. Examples of previous work or mood boards of what is needed really help to shape the design. If you are more restricted and have existing artwork, this can be adapted or developed for stop-motion, within brand guidelines.

Throughout the design stage it is always recommended to have key milestones for approval. Having creative teams and clients lined up for this is key to keeping on schedule. Once all designs have been approved and signed off by the client, they become a blueprint for the model making team. When model-making begins, it's important to mention that at this stage of the pre-production process, any changes will seriously impact the schedule and budget.

06
Storyboard

As with live-action production, the storyboarding stage helps us plan out the actions and timings for a stop-motion commercial. A storyboard is created to give a rough visual representation of the script, illustrating how the film will unfold shot by shot, as well as giving an idea on camera movements and character performance in the frame and shot choices (close-up, mid-shot, wide etc).

A well-defined storyboard ensures all parties can visualise, discuss and agree on key shots and scenes. It also allows for any changes to be made before shooting begins, as unlike live-action, stop-motion doesn't usually afford the luxury of shooting a scene in multiple ways. It's important to review the storyboard carefully and ensure everyone is on the same page.

Once a storyboard is locked, it becomes the main point of reference for the crew on the rest of the production. The choices made in the storyboard will dictate lighting, camera angles, scale, and rigging, so limiting changes after this point is crucial.

As an example, if in a storyboard we only see characters from the waist up, it's likely that to reduce unnecessary model making and production time, only the top half of the puppets will be made. So, a last minute request for a tap dancing scene, for example, during animation would be difficult to fulfil. This would require a full body model to be created, which needs more time and more budget.

07
Animatic

The next step of the production process, to help assure there are no surprises down the road is to make an animatic. An animatic is a video version of the storyboard, using the storyboard imagery to illustrate in real-time what the final commercial will look like. Animatics provide a clear representation of timing and pacing, camera movements and transitions as well as sound and music choices. Guide Voice Overs can also be used at this stage, prior to final recording with chosen voice talent.

With an animatic, you get a clear overview of what the finished film will look like. This stage in the production process is a great opportunity to correct or change any aspects that aren't working without the expense or time-consuming process of making changes during the final shoot. Animatics are also ideal to submit to Clearcast for approval for broadcasting.

Check out a range of animatics for animated commercials HERE

08
Product Shoot

A popular stop-motion style for commercials is product animation, which is often created on a tabletop. Bringing products to life with the magic of stop-motion is a great way of advertising a new or iconic product, and it can be used for TVC campaigns as well as on social media channels.

For product animation, it is recommended that all featured products are sent to the studio well in advance of the shoot and an exact date should be agreed in the schedule, as it is likely that a rigger will have to prepare the item(s) in various ways for animation. Prep can include rigging the product to secure it to the set, adapting the product for animation, or something simple like applying dulling spray to reduce on-set reflections. It may sound obvious but before sending your 'hero' product, it is really important for you to tell us what labels should appear on screen and whether any elements of the product need to be removed. Often clients require a "vanity pack", which is not an off the shelf label. This loses small text and unneeded details, meaning a clearer label for the shoot.

Always send plenty of product (we generally will agree the amount required at pre-production stage) and check that your product arrives in perfect condition as dents, scratches and imperfections will not look good on screen and need extra work in post-production.

Check out examples of stop-motion product animations HERE

09
Puppets

For stop-motion animation that includes characters, puppets will need to be created by a team of skilled model-makers. Each puppet requires a number of stages to be completed before they are ready for a shoot.

The first step once a character has been designed is to have an armature designed and built. An armature is the puppet's skeleton which, just like our bones, helps to support the puppet and make sure it can hold key positions. An armature is normally made from steel ball and socket joints or in some cases twisted wire.

Once its armature is complete, a puppet's body mass is normally made from foam rubber which is the soft foam you normally find in cushions. Once the rough body shape is carved from the foam, it is then attached to the armature. A team of fabricators then make teeny, tiny clothes in the same way a seamstress would, but on a micro scale. Once the clothing is made, there are hands and heads to construct which can be achieved via a number of approaches depending on the design.

10
Sets

For product and character animations, a set will always need to be created on which to shoot the subject(s). The most basic set is a roll of coloured paper known as a colourama. Colouramas are simple and quick to set-up and come in a range of colours.

For more detailed sets, whether they are full scale interiors or miniature sets similar to a dolls house, these will all need building by a team of model makers. Detailed sets will always need to take into account the animation actions, camera framing and any camera movement. Due to the small scale of most sets for puppets, everything will need to be built by hand, so a team of model makers will need to create the sets, props, furniture and any other elements over a number of weeks.

11
PPM & Pre-shoot

As with all live action shoots, a PPM and sometimes a pre-PPM is carried out before a single frame is taken. This is the last chance to iron out any confusion on animation or other elements during the shoot. During these meetings, the agency and client are given a run-through of the animation director's approach and how the shoot schedule will be coordinated. Puppets and other models are discussed and any other notes are logged for the animation team.

During shoots, a live-link offers clients and agency teams the chance to watch live progress of the animation shoot daily as it happens. Visiting an animation shoot is always exciting and we welcome studio visits, but be aware that stop-motion is not a spectator sport - a second of animation sometimes takes hours to complete!

With everyone agreeing on the approach and the models, and sets ready to go, it's time to get everything in place in the studio. Once in position, the camera, lighting and motion-control are ready to begin. Before a frame is captured it is always advised to have the first frame approved by the agency and client for lighting, framing and other general points before the shoot begins.

12
Shoot

Once the studio is set, the animation shoot is ready to begin. A stop-motion set experience is very similar to a photographic stills session and live-action studio shoot. It's important that the lighting is completely controlled. The main action will normally take place on a stage, which is the base on which the miniature set or colourama will sit.

Surrounding the stage will be a stills camera, computer tower and monitors, as well as all the lighting equipment. Everything that isn't animatable on set is then glued or tied down so it doesn't get moved or knocked during the shoot.

One second of animation equates to 25 still frames needed to be captured. A 30 second commercial then requires 750 individual frames to be taken. Depending on the complexities of the shoot, an animator can capture between 2 seconds and 10 seconds a day.

One thing to speed up production time is to shoot simultaneously with multiple animators working at once. This does mean having duplicate sets, puppets and props, which will mean additional time in pre-production.

Post-pandemic, it is the norm for shoots to have a live-link which clients and agency staff can log in and out of throughout the day. Daily rushes and production meetings can also be shared, for client involvement into the process at agency request.

Another element which can be planned into a production to give an insight is a behind-the-scenes film. If discussed at the beginning of a production, the whole process can be captured by our production team, showcasing the design, model-making and shoot with timelapses. This makes for great additional content which can be shared across channels along with the main campaign.

13
Clean-up & VFX

To create the magic of stop-motion, quite often an animator will use rigging and various other animation techniques to enable items to fly by themselves or transform. This rigging is usually visible and will be captured in-frame during the shoot so needs removing during post-production during a phase known as clean-up. This involves compositors digitally painting out the rigs frame by frame to create the illusion of a prop or puppet being supported by itself.

At this point, other compositing and visual effects (VFX) can be added, such as additional facial features onto puppets, and elements like rain or fire. All of these processes really help bring another layer of life to the stop-motion animation. The amount of clean-up and VFX required on a project varies but can be sped up by multiple digital artists working at once.

Check out examples of stop-motion VFX breakdowns HERE
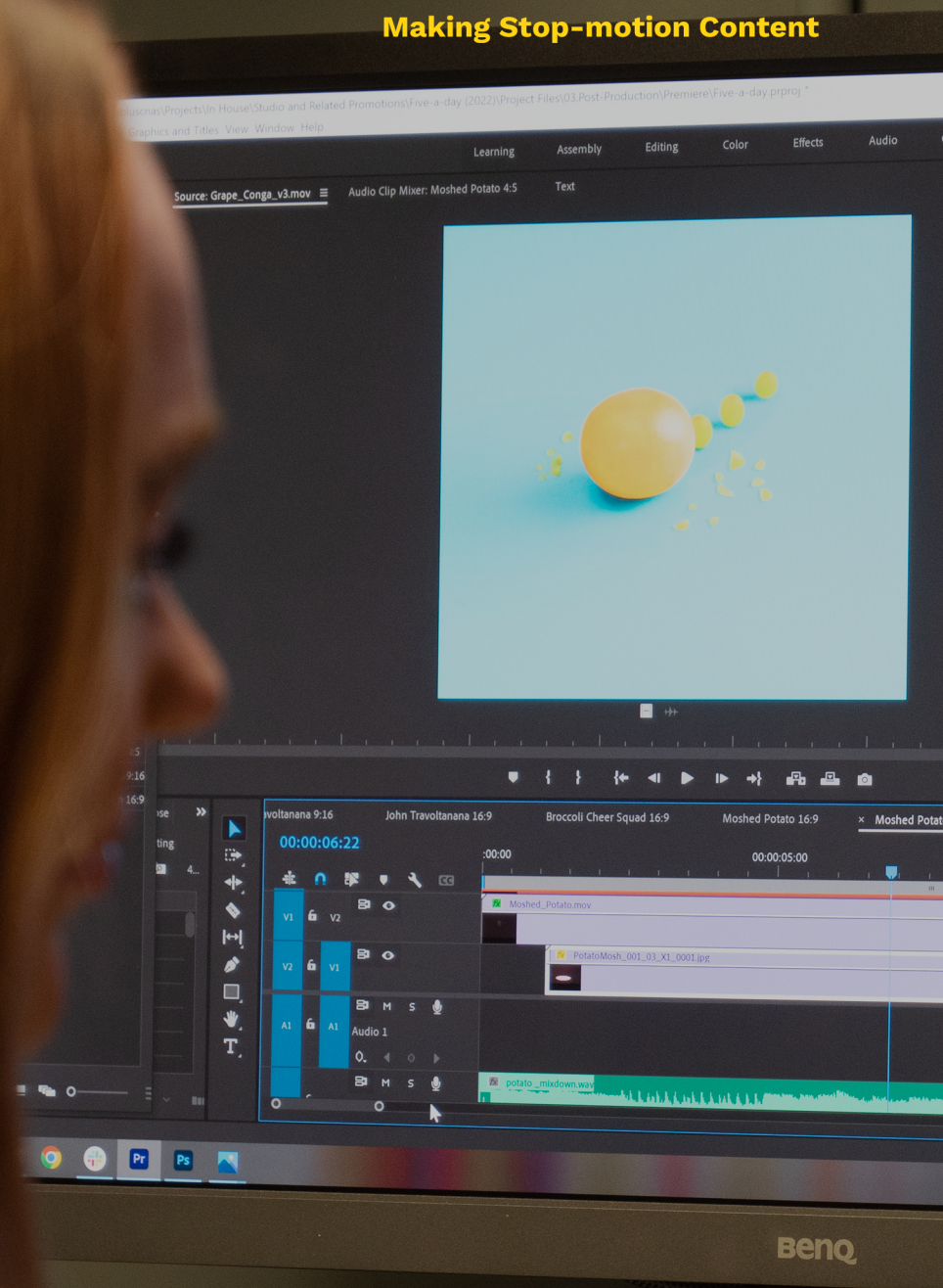
14
Edit & Sound

Once all visual effects have been completed and signed off by the agency and client, an editor will then begin cutting together the shots of the commercial. This is a part which differs from live-action production as it is very rare to have multiple versions of a take to choose from or multiple camera angles to work with. When editing stop-motion, we normally use over 95% of shot footage, so we don't normally expect a lengthy edit session selecting takes.

During the edit it is commonplace for titles, voiceover, music, sound effects (SFX) and subtitles to be added. These can be completed by the production company or a post house production partner.

Once the picture edit is locked, the final step is the colour grade. The grade enables the post team to set the overall look and feel of the commercial through tone and temperature.

For feedback during the edit, a collaboration tool which helps with post-production is Frame.io. This helps with tracking feedback for changes, any comments and even has a helpful tool to draw on the video edit to highlight any points visually.

15
Delivery

The file format for final delivery is always dictated by the platform and will be included in the PiBs. The files will be digitally transferred to the agency, including all versions, clean without graphics and other sound elements if requested. Should a client have specific delivery requirements, make sure to highlight this as early in the production process as possible.

With today's content hungry audiences, versioning is a key element to get the most value out of every shoot, so creating a number of different ratio versions of the final film to use across social media channels is often required.

The traditional TV widescreen format of 16:9 is now equalled with requests for tall 9:16 format for Insta-stories and reels along with TikTok. Square 1:1 and 4:5 ratio for Facebook and LinkedIn are also very popular. It is recommended to advise on these formats before shooting to make sure the appropriate framing is considered to meet all desired ratios.

16
About A+C

A+C Studios is an animation production company specialising in stop-motion animation.

We are a team of animators, storytellers, technicians and makers; combining handcrafted traditional techniques with the latest digital technology to create animated content.

Every one of our team has a passion for stop-motion animation, reaching for the highest quality with every frame. The magic of this craft is convincing, compelling and captivating, we hope that through working with us you will feel that too.

17
Glossary

Armature
The puppet's internal skeleton. Most often made from ball-jointed metal rods or flexible wire, the armature keeps the puppet upright and enables it to be posed frame-by-frame for animation.

DOP
Director of Photography. Responsible for the setting the camera and lighting on any given shot to create the right look and feel for the animation. Decides the camera angle, focal distance and lighting conditions.

Double exposure
Taking two photographs for every frame of the animation. This could be for a number of different reasons, mostly relating to compositing different elements in post-production (for example, layering different lighting conditions, smoke, atmosphere etc.)

Frame
One single photo taken. A steady succession of individual frames played back rapidly one after the other create the illusion of movement.

Framerate
The speed at which frames are played back in order to create smooth motion. 25 frames-per-second is typical, but the different framerates achieve different effects. A low framerate creates a 'choppy' feel to the animation, whereas a higher framerate is excellent for a smoother feeling with fast action.

LAV
Live Action Video. A piece of live-action reference footage recorded before animation begins which helps the animator with the timing and performance of the character during the shoot. Usually consisting of actors portraying the puppet characters for any given scene, but could also be of animals, vehicles or machinery, depending on what needs to be shot.

Lip sync
The process of matching the animated character's mouth up with pre-recorded spoken dialogue or sounds. Each frame of animation requires one of several mouth shapes or 'phonemes' which differ depending on the type of sound being made.

Moco
Motion control. A pre-programmed piece of kit which allows a camera to be moved throughout a scene. The move can be played back identically an unlimited number of times. Using a piece of motion control kit can create more dynamic shots by utilising the moving camera.

Tie-down
A method of keeping a puppet character stable on set (particularly if on one leg or off balance) which screws into the base of the foot and extends downward through the set where it is fastened on the underside. Achieves the same role as a rig, but is more invisible

18
Glossary

Plate
A frame taken of the plain set without the puppet in it, often under different lighting conditions. This aids in the post-production process, specifically with rig-removal.

Practicals
On set lighting in which the source of the light is part of the scene, most commonly a lamp, torch or light bulb. Differs from off camera lighting which illuminates the overall scene but whose source is not visible.

Puppet
The fully finished and dressed character which appears on-screen. Has an internal armature.

Rig
Something which helps support the weight of the puppet or props on set and helps facilitate smooth motion, usually a jointed system of metal rods or flexible wire. The rig supports the puppet or props in mid air when they need to defy gravity, or prevents them falling over when they are not balanced.

Rig-removal
The post-production process of removing the rig from the scene so it is invisible in the final delivery.

Authors

Nikki Hildesley - Producer

Nikki Hildesley has been a leading senior Producer for over 20 years involved with live action, moving image and animation and recognised by awards such as D&AD. Her wide experience ranges from indie music videos to high end stage graphics with Elton John in Las Vegas and across industries from children's toys to corporate financial services. For the last few years she has been applying her expertise at A+C, whilst continuing to pursue her personal passion of child and young adult development and learning of science.

Dan Richards - Director

Dan Richards, A+C Studios' stop-motion animation director was 12 years old when he made his first stop motion animation. Little more than a decade later, he graduated from the prestigious Bristol School of Animation, going straight to work at Aardman Animations on the animated film Wallace & Gromit: The Curse of the Were-Rabbit. After the film wrapped, Dan decided to set up on his own. A+C Studios was born. Dan still works closely on every project; leading the storytelling process from conception, scripting and storyboarding, model making through to animation and of course to the final cut.

19
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