



# Hitchcock Meets Live Chroma Key

Andy Ciddor reports from

Australia as Melbourne

Theatre Company adapt

*North by Northwest* for

the stage . . .

Australia - If it's not remembered for anything else, the early 21st century will be characterised as a time when stories were tirelessly re-tasked between genres. Stage productions were adapted to become films, which themselves were later adapted to become stage productions; rock albums became films; films became television series and vice versa; twitter feeds became stage plays; films became rock albums; everything became a computer game; random rock songs were tenuously linked by implausible plots to become musicals, which were then adapted to become films - and so on.

In the midst of this genre-bending mayhem it could only have been expected that Melbourne Theatre Company would take Alfred Hitchcock's screen thriller *North by Northwest* with its 2000 miles of adrenalin-fuelled chases by plane, train and automobile, and adapt it to the drama stage. After all, since time immemorial theatrical productions have used as little as a pool of light, a stool, a wooden box and a canvas and chicken-wire rock to stand in for every possible location from the Hindu Kush to the Scottish Highlands or the mountains of the moon. Surely it wouldn't be too much of a stretch to carry off with a multi-purpose set, an ensemble cast and famously well-stocked wardrobe and props departments. But of course, it didn't quite happen that way.

Director Simon Phillips is known for his quirky (some say strange) approach to the script, and never was this more apparent than in his staging of Carolyn Burns' theatrical adaptation of the screenplay. With her interest in the machinations of politics, Burns set out to make it an almost-menacing comedy-thriller like the film, but in Simon Phillips' irreverent hands, through the literal use of live chroma key

(ie. blue/green-screen or colour-separation overlay) it lurches well into farce territory by the climax.

The set for the production had dual rear-projection walls with minimal separation. The downstage French-action wall was a metal-framed grid backed with Plexiglas LED colour-changing sheeting suitable for rear projection. Some parts of the grid-frame were practical doorways and windows. Behind this was a flown, full-width Gerriets Optitrans rear-projection screen. Upstage of these rear walls were a flown pair of Panasonic PT-DZ21KE projectors (20,000 ANSI lumen, 1920x1200 pixel, 3xDLP), fitted with short-throw (0.3:1) lenses to give full-width coverage. The two rear walls were sufficiently close that only a minor remapping tweak was required for sharp projection on either surface.

Where this production differed from most others was that the backdrops for the outdoor action scenes were projected live images of scale models animated by members of the dozen-strong ensemble cast, one of whom was a trained puppeteer. To achieve such live-action effects as a crop-duster biplane flying below head-height across the stage then crashing into a fully-laden fuel-tanker which then explodes, is something that even mega-musicals like *Miss Saigon* would struggle to achieve. Yet a model aircraft on a stick, a toy truck and a disposable cigarette-lighter, aided by clever sound design and a decent sound system, brought it off to devastating effect. Devastating laughter that is.

As the pace and suspense of the story ramp up, so too do the increasingly high-camp model hi-jinx. In the famous scene from the movie that was filmed against the giant stone faces on Mount Rushmore in South Dakota, the parts of the carved Presidential faces are played by actors who appear chronically unable to remain stony-faced or comprehend the gravitas of their roles.

The model work video sequences were not pre-recorded. They weren't even performed in a backstage video booth. In the style of German dramatist Bertold Brecht, who wanted everyone to see the workings of his plays, the two chroma key video booths, one either side of the main acting area, were well-lit and in full sight of the audience. On many occasions the audience was torn between engaging with the stage action and watching the outlandish goings-on in the chroma key booths.

For reasons possibly only understood by the director, the chroma key booths used different colour backgrounds; the prompt side booth was red and the OP was blue. Although any saturated colour can be used for keying, the general view is that red is difficult, blue is problematic and green is sometimes workable.

Each booth was pretty thoroughly lit to avoid shadows on keyed objects. In addition to five ETC Source Four LED profiles and a healthy collection of venerable CCT Minuette 650W fresnel spots, strips of high-output white LED were used as camera fill to minimise shadows, while strips of red or blue LED were used to boost colour levels on the backgrounds.

The booths were equipped with a semi-pro Canon XA25 CMOS HD camcorder mounted on a Manfrotto geared head, sending SDI video to the Qlab control

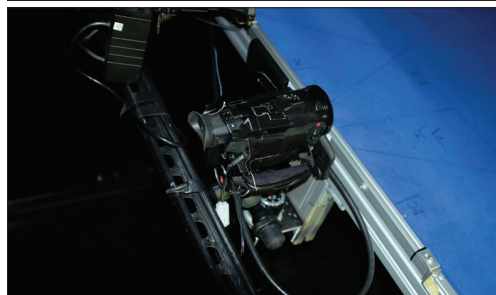
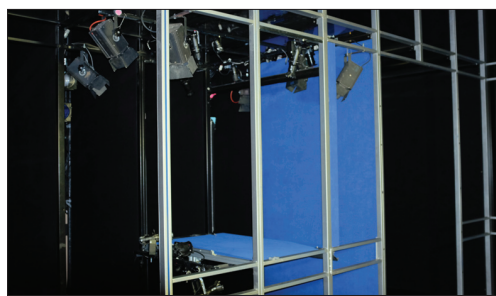
system on the PS perch position. There, using Quartz Compositor, it was sliced, diced, keyed and composited by the hard-worked AV operator before its 50m journey to the projectors as DVI over fibre. Being both live and significantly-processed, great attention was given to minimising video latency.

Whilst chroma key has been around since the early days of colour television, making it work reliably remains a black art practised by the lighting illuminati in conspiracy with zen-master technical directors. Making it work in live production hasn't been practiced in broadcast since the invention of the fast-roll VTR, but I seem to recall that it required the ritual sacrifice of chickens and the invocation of the spirit of John Logie Baird.

Nevertheless, this production dared to use live chroma key with gay abandon, and the MTC team pulled it off with great aplomb, whilst constantly riding camera levels, keyer thresholds and keyer sensitivity. Any odd bits of keyer breakup and chroma noise mostly happened at moments of high drama where the audience were distracted and falling out of their chairs anyway . . .

*The production ran to sold-out houses and will see a reprise season in early 2016.*

**Melbourne Theatre Company:**  
> [mtc.com.au](http://mtc.com.au)



The OP side 'blue' booth & a close-up of the camera.

The camera and LED strip footlights in the Prompt side 'red' booth.

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us raise our game again in 2015**

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everyone for 2016!**

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