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The spectacle of realism: special effects at Ealing Studios, 1940-45

Keywords: Ealing Studios; special effects; Second World War; British cinema, film history;

Abstract

This article presents a revisionist account of Ealing Studios' production practices by focusing on the role that special effects techniques played in the creation of the studio's documentary-realist filmmaking aesthetic. Ealing is traditionally described as finding its wartime purpose by combining documentary-realist and mainstream film narrative techniques, a style claimed to echo through British cinema in decades to come. Yet at the heart of the studio's 'realistic' wartime narratives such as *San Demetrio, London* (1943) and *The Bells Go Down* (1943) lies a complex set of 'special effects' techniques – understood here as an umbrella term that covers miniatures, matte paintings and back projection. A challenge to existing understanding of special effects, which are claimed to foreground generic enjoyment and visual spectacle, the article explores a series of case studies where realism and authenticity becomes the purported aim of such illusionistic activity.

In 1940, British cameraman and technician Roy Kellino was asked by Michael Balcon, the head of Ealing Studios, to create a model department that would help deliver the range of special effects required at the studio. Reflecting on this in 1943, Kellino discusses how he had to overhaul the existing resources at Ealing, bringing in new approaches and employees to create substantial working models of the military aircraft and transport vehicles needed for Ealing's wartime films:

> As each picture is finished, the models that have been used on it are returned to the shops for repair and so are ready for future use […] not only were our costs lowered but the standard of our work was raised. By retaining the same personnel in all departments from picture to picture our efficiency grew […] Chippies, electricians and grips alike contributed to the finished production.[1]

While his focus on camaraderie, craftsmanship, and efficiency may recall traditional accounts of Ealing's collaborative cottage industry approach to filmmaking, Kellino's account makes visible the studio's regular use of illusionistic special effects, an aspect of production that challenges the Ealing legacy of low-budget, restrained, and documentary-realist production.[2] Using the case study of Ealing Studios' wartime use of special effects, we will demonstrate that the invisibility of such work within histories of Ealing can be seen as part of a larger absence of special effects work in histories of British cinema and beyond.

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[1] Roy Kellino, 'The Photographing of Models', *The Cine-Technician*, vol. 44, no. 9 (1943), p. 98.

[2] John Ellis, 'Made in Ealing', *Screen*, vol. 16, no. 1 (1975), pp. 78–127; George Perry, *Forever Ealing* (London: Pavilion Books Limited, 1981); Charles Barr, *Ealing Studios* (3rd edition) (Moffat: Cameron & Hollis, 1998).

By presenting a revisionist history of Ealing that uncovers the contributions of technicians such as Kellino, the article offers a series of key interventions. It develops recent reassessments of Ealing Studios through its return to archival and textual evidence that queries existing grand narratives of the studio.[3] Secondly, it offers a contrasting case study to dominant histories of special effects cinema, which are dominated by specific genres and attitudes around visual spectacle and narrative. Finally, it considers the way special effects have been written out of British film history more broadly, despite the potent evidence such effects could add to recurring critical debates on realism and spectacle in British cinema, and despite the potent legacy of British-produced effects sequences from *The Thief of Bagdad* (Ludwig Berger, Michael Powell and Tim Whelan, 1940) or *A Matter of Life and Death* (Michael Powell and Emeric Pressburger, 1946).[4] The last two decades may been called 'the era of the cinema of effects', but we want to use this article to argue there has never been an era of film history that was not highly dependent on special effects, and the technicians who created them.[5] While Ealing is linked to a specific critical discourse around realism, we posit many studios and films would benefit from a similar reappraisal.

Discussions of special effects in cinema tend to conclude that effects-based technologies have altered the presence of visual spectacle in narrative filmmaking. Beginning

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[3] Mark Duguid, Lee Freeman, Keith M. Johnston, and Melanie Williams (eds.) *Ealing Revisited* (London: Palgrave McMillan, 2012).

[4] The most obvious legacy of such films is on the 'movie brat' generation of the 1970s. For example: Martin Scorsese and Francis Ford Coppola talk about the impact of *The Thief of Baghdad* on their careers (and those of Steven Spielberg and George Lucas) in their director commentaries on Criterion Collection's 2012 Blu-Ray release of the film; while Scorsese lists 3 of The Archers' films (*A Matter of Life and Death / Stairway to Heaven*, *The Red Shoes* (Michael Powell and Emeric Pressburger, 1948), and *The Tales of Hoffman* (Michael Powell and Emeric Pressburger, 1951) in his 'top 85' films list (Rick Tetzeli, 'Martin Scorsese's Film School: The 85 Films You Need to See to Know Anything About Film', *Fast Company* (24 February 2012, https://www.fastcompany.com/1679472/martin-scorseses-film-school-the-85-films-you-need-to-see-to-know-anything-about-film (accessed 12 June 2017);

[5] Sean Cubitt, 'Digital filming and special effects', in Dan Harries (ed.), *The New Media Book* (London: British Film Institute, 2002), p. 27.

with the role of 'trick' photographic effects in the earliest cinema of attractions, such accounts link Méliès' 'growing arsenal of special effects (the stop-action camera, model work, use of miniatures, double exposures, primitive matting, and filtered photography)' to the 'mechanical monsters… scale models, back-projection, mirror-shots and stop-frame animation' of *Metropolis* (Fritz Lang, 1927), and the 'stop motion photography… miniature Kong' and rear projection of *King Kong* (Merian C. Cooper and Ernest B. Schoedsack, 1933).[6] These historical examples fuel and influence later developments in key genres, most notably science fiction, fantasy, and blockbusters. Such an historical arc is also clearly reliant on the development of the technologies that underpin the effects – from stop motion to motion control to computer generated imagery (CGI) – and the different claims that have been made around the spectacular and illusionistic contribution of those technologies.

Ealing's use of special effects, particularly within the wartime productions that form the core of the article's case study, does not sit easily within an academic history of special effects which highlights tricks and visual spectacle. It is, therefore, worth pausing to consider the implications of that narrative, not least what it might elide within film history. Work on special effects tends to focus on the genres and films where such effects are heralded (notably science fiction and fantasy), rather than on the 'ninety per cent of… feature productions' that historically utilised these techniques for narrative and visually spectacular purposes.[7] As a key genre here, science fiction's alleged combination and display of reality and fantasy recurs

[6] J.P. Telotte, 'Film, 1895-1950', in Mark Bould, Andrew M. Butler, Adam Roberts and Sherryl Vint (eds.), *The Routledge Companion to Science Fiction* (London: Routledge, 2009), p. 43; Thomas Elsaesser, *Metropolis* (2nd edition) (Basingstoke: Palgrave Macmillan, 2012), p.37; Jack Williamson, '*King Kong*: A Parable of Progress', in Karen Haber (ed.), *Kong Unbound: The Cultural Impact, Pop Mythos, and Scientific Plausibility of a Cinematic Legend* (New York: Simon & Schuster, 2005), p. 89; Patricia D. Netzley, *Encyclopaedia of Movie Special Effects*, (Arizona: The Oryx Press, 2000)

[7] 'Super Miniature Astounds', *International Photography*, vol. 5, no. 7 (August 1933), p. 25.

in broader discussions about the history and development of audio-visual technologies.[8] For example, earlier claims that sound and colour were driven by a realist agenda have been challenged, as the 'desire for magic has driven technological developments as intensely as any quest for the real'.[9] While Méliès and the science fiction film remain key touchstones here, less overt forms of special effect have also been discussed, with the balance of the real and the illusory seen as key to processes such as optical printing or rear projection.[10] Balance and harmony are key phrases in such accounts, with effects fitting in with or blending into other non-effects footage. Yet the lack of academic work that assesses the role and impact of special effects also suggests an ongoing uncertainty around recognition and definition of 'the sheer range and diversity of techniques covered under the banner term "special effects"'.[11] Such definitional issues highlight those aspects of production that are identified as 'special' or '*not* special', with academics urged to adopt specific terminology around phases of production: *construction* (production, pre-visualisation, imaginary), *screen appearance* (diegetic, filmic, narrational, visual) and *discursive* (cultural, appreciation, remembrance).[12] Focusing specifically here on the first two aspects of that framework, our historical study of Ealing's wartime films will demonstrate the value of such a holistic overview.

The uncertainty and absence of work around special effects processes becomes particularly clear when turning to the role that special effects techniques and technicians have played within studies of British film history. While effects work may permeate British films,

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[8] For a more comprehensive narrative that traces effects from Victorian magic shows and scientific lectures to the introduction of CGI, see Michelle Pierson *Special Effects: Still in Search of Wonder* (New York: Columbia University Press, 2002)
[9] Philip Hayward and Tana Wollen, 'Introduction: Surpassing the Real', in Hayward and Wollen (eds.) *Future Visions: New Technologies of the Screen* (London: British Film Institute, 1993), p. 2.
[10] Cubitt, 'Digital filming and special effects', p. 19.
[11] Bob Rehak, Dan North, and Michael S. Duffy, 'Introduction', in North, Rehak and Duffy (eds.) *Special Effects: New Histories / Theories / Contexts* (London: BFI Palgrave Macmillan. 2015), p. 3.
[12] Rehak, North, and Duffy, 'Introduction', p. 8.

its historical development remains largely invisible within academia, echoing the absence of other artistic-technical jobs and technician figures within British cinema history.[13] However, we would argue that unlike the editors and set designers in such studies, special effects are doubly-elided. The processes themselves are uncelebrated (unless negatively attributed) and under-researched, and the craft or technical skills behind them are unknown. This article, then, offers one avenue to reclaiming some of this work through a specific historical case study.

British cinema history offers key reference points that mirror the special effects narrative highlighted above. The pioneer work of Cecil Hepworth and R. W Paul around trick photography and visual effects; director Alfred Hitchcock's use of the 'Schüfftan Process' (a combination of models, mirrors and live action) in *Blackmail* (Alfred Hitchcock, 1929) and *The Man Who Knew Too Much* (Alfred Hitchcock, 1934)[14]; the fantastic sets and models of *Things to Come* (William Cameron Menzies, 1936); or the Rank Organisation's trial of the cost-saving process Independent Frame, which utilised rear projection, mattes and effects.[15] Across the first fifty years of British production, however, artistic design and film cinematography are highlighted over the often unwieldy term 'special effects'. The output of the Rank Organisation and the 'prestige' productions filmed at Denham and Pinewood Studios during the 1940s has received particular interest in this respect, with specific commentary on special effects and optical processes used in films by production team 'The

[13] Laurie N. Ede, *British Film Design: A History* (London: I.B Tauris & Co Ltd, 2010); Martin Stollery, 'Technicians of the unknown cinema: British critical discourse and the analysis of collaboration in film production', *Film History* vol. 21, no. 4 (2009), pp. 373-393.
[14] Katharina Loew, 'Magic Mirrors: The Schüfftan Process', in North, Rehak and and Duffy (eds.) *Special Effects: New Histories / Theories / Contexts*, pp. 70-72.
[15] Wheeler Winston Dixon, 'The Doubled Image: Montgomery Tully's Boys in Brown and the Independent Frame Process', *Film Criticism* vol. 16, no. 1/2 (1991/92) p. 19.

Archers' such as *The Life and Death of Colonel Blimp* (Michael Powell and Emeric Pressburger, 1943) and *A Matter of Life and Death* (1946).

Laurie Ede has described how the large stage at Denham was used for spectacular set pieces including the £3,000 celestial stairway featured in *A Matter of Life and Death*, with '106 steps, each 20 feet wide and powered in conveyor belt fashion by a 12 h.p motor'. [16] However, whilst Ede discusses colossal set designs and the mechanics behind such operations, there is little on the relationship with specific special effects techniques such as miniatures, optical work, and matte paintings. Pam Cook's analysis of *I Know Where I'm Going* (Michael Powell and Emeric Pressburger, 1945) offers a strong consideration of the combination of special effects with a range of camera techniques to create a specific aesthetic effect for the film: 'the dream-like ambience… achieved largely through using special photographic effects… the use of remarkably subtle rear projection, but also through superimposition, and patterns of light and dark'.[17] Her discussion of the film's special effects as a source of 'the hallucinatory quality that establishes this Scotland as Joan's fantasy projection' situates that work within the established fantastic effects model discussed in relation to science fiction above.[18] However, while citing the 'Denham special effects team', they remain invisible and nameless technicians, unlike the specific identification of cinematographer Edwin Hiller or David Rawnsley, head of Rank's art department.[19]

The absence of commentary on special effects personnel and techniques offers one possible reason for a lack of work around the influence and legacy of British special effects

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[16] Ede, *British Film Design: A History*, p. 52.
[17] Pam Cook, *I Know Where I'm Going!* (London: British Film Institute, 2002), pp. 16-17.
[18] Cook, *I Know Where I'm Going!,* p. 36.
[19] While Ealing and Denham created their own teams, it is not currently clear whether all major studios and production companies had the same policy. There is evidence that not all studio systems operated in this way, with UFA in Germany not having a special department, but hiring in staff for larger budget films that required effects, such as *Metropolis* (Elsaesser, *Metropolis*)

production.[20] A second, related, issue may be around succinct and clear definition of responsibilities. One route into a consideration of special effects within the British context is offered by existing work on film design, a field that has close ties with special effects teams and departments. Set designers and camera technicians would work with such teams to create effects such as rear projection or matte paintings. Indeed, one of the technicians within Ealing Studios' art department has claimed 'back in those days we didn't have special effects, there was no such thing really. Special effects were mostly run by the art department'.[21] While that reiterates the methodological challenge to be able to recognise and define what special effects were within the historical moment of the 1940s, either in production terms or in broader discourse, we believe it also confirms that British cinema history is 'fertile ground' to explore 'the film technicians' creativity… the power wielded by technicians, as well as the more subtle forms of influence they may bring to bear'.[22] Influenced by this recent work, our intention here is to combine historical production documents and the textual evidence of the films to 'illuminate the creative function of the film technician' within the specific practices of Ealing Studios.[23]

Case Study: Ealing Studios in wartime

Ealing Studios was chosen for this study because of its status as a model of British film production in the war and immediate post-war era. Ealing has been described as 'trying to

[20] John Brosnan's *Movie Magic: The story of special effects in the cinema* (London: MacDonald & Jane's, 1974) repeats the broad historical narrative discussed above but also contains a chapter on the history of British special effects work. It offers the only discussion of this legacy, largely told through the perspective of Cliff Richardson and Wally Veever.

[21] Norman Dorme, quoted in Robert Sellers, *The Secret Life of Ealing Studios* (London: Aurum Press Ltd., 2015), p. 130.

[22] Stollery, 'Technicians of the unknown cinema', p. 377-79.

[23] Laurie Ede, 'Art in Context: British Film Design of the 1940s', in James Chapman, Mark Glancy, and Sue Harper (eds.), *The New Film History: Sources, Methods, Approaches* (Basingstoke: Palgrave Macmillan, 2009), p. 77.

assimilate the lessons of documentary into feature production, as a way of bringing a necessary realism into their treatment of war'; as being the apogee of the 'merger… between the 1930s documentarists and the mainstream commercial industry'; and creating films that covered 'the central themes of the cinema of the 'forties'.[24] While we note that a case study of one studio cannot stand for the whole of the British film industry in the 1940s, where 'films were produced in different ways, on widely varying budgets, for specific markets and audiences' we would argue that Ealing's place in the hierarchy of the British industry at that time, and in academic understandings of the importance of 1940s British film production in the decades since, make it an ideal place to begin to scope out the role that special effects played in British cinema.[25]

Studies of Ealing impose a now-familiar documentary-led heritage on academic understandings of the studio with discussions on visual style and genre focused on realism.[26] The weight of that heritage is still felt, even in the more revisionist recent collection *Ealing Revisited* where new perspectives on issues of representation, aesthetics, design and technology are set in contrast to the dominant documentary-realist approach forged in wartime production.[27] While building on existing precedent for challenging the dominance of documentary realist aims at Ealing, it is claimed that Ealing's 'tales of dreamers and fantasists are all located firmly in realistic settings with solid points of references', a suggestion that even the more fantastic films *The Halfway House* (Basil Dearden, 1944) and

[24] Penelope Houston, *Went the Day Well?* (London: British Film Institute, 1992), p 9; Connelly, *The Red Shoes*, p. 12; Barr, *Ealing Studios*, p. 10.
[25] Ede, 'Art in Context', p. 75.
[26] Ellis, 'Made in Ealing'; Barr, *Ealing Studios*; Perry, *Forever Ealing*; Sue Harper and Vincent Porter provide discussion on the visual style of later Ealing output in *British Cinema of the 1950s: The Decline of Deference*, (Oxford: Oxford University Press, 2003), pp.57-73.
[27] Duguid et al. (eds.), *Ealing Revisited*.

Dead of Night (Alberto Cavalcanti, Charles Crichton, Basil Dearden and Robert Hamer, 1945) don't stray too far from Ealing's idea of reality.[28]

Ealing's desire to produce special effects ran hand-in-hand with its wartime creation of a documentary-realist purpose. As seen below, Ealing's use of fantastic visual techniques resembles Botting's description: hiding special effects in plain sight, as a recreation (simulation) of the real rather than presenting the fantastic visual spectacle of science fiction and fantasy genres. In that sense, Ealing's 1940s technique appears to match broader understandings of special effects decades later, where 'the illusion of the real has had to be made more convincing and the spectacular has had to be made more "realistic"'.[29] If science fiction film effects favoured the combination of the spectacular with the real, then this article offers a case study where the potential spectacle of special effects was instead marshalled to create a convincing verisimilitude.

Part of that approach may simply have been financial. Ealing offered a modest and constrained approach to studio production, housing three main stages of about 8,000 square feet each (in comparison to Denham's two stages at 35,000 sq. ft.) alongside editing and publicity departments. Strict budgets and tight shooting schedules (intended at five films per year, each receiving an average of ten weeks on the studio floor) meant that productions often overlapped, creating a small-scale cooperative approach that influenced the feel and 'shape' of the films.[30] Ealing wartime production budgets are given below (Table 1) and suggest that an average production budget was around £38,000, considerably lower than the effects-heavy films discussed above: *King Kong* is estimated to have cost between $517,000 and $680,000

[28] Julian Petley, 'The Lost Continent', in Charles Barr (ed.), *All Our Yesterdays: 90 Years of British Cinema*, (London: British Film Institute, 1986), pp. 98-119; Josephine Botting, '"Who'll Pay for Reality? Ealing, Dreams and Fantasy', in Duguid et al. (eds.), *Ealing Revisited*, p. 177.
[29] Hayward and Wollen, 'Introduction: Surpassing the Real', p. 2.
[30] Ellis, 'Made at Ealing', p. 90.

(at a time when $200,000 was a more standard cost[31]); while *I Know Where I'm Going* spent £40,000 on the Corryvrackan whirlpool sequence alone.[32] Based on those estimated production budgets, then, Ealing appears to have delivered its special effects at a vastly reduced budget.[33] While that should not be seen as a reflection on the quality of the effects work being produced at Ealing (or indeed on other more budget-conscious British productions), it does speak to broader ideas around the firm emphasis Ealing Studios placed on financial control. We would argue that it is within that vision of Ealing in wartime – restrained and fiscally prudent, home to a coherent creative community, developing a new documentary-inspired aesthetic – that we can best understand and explore its parallel development and reliance on special effects techniques and technologies.

Table 1: Estimate of Ealing wartime budgets

Film	Release Date[34]	Estimated Budget
Ships with Wings	November 1941	£59,302[35]
The Big Blockade	January 1942	£17,496[36]
Nine Men	January 1943	£20,000[37]
The Bells Go Down	April 1943	£30,782[38]

[31] Cynthia Erb, *Tracking King Kong: A Hollywood Icon in World Culture* (Detroit: Wayne State University Press, 1998), p. 41.
[32] Cook, *I Know Where I'm Going!* p. 69. For a full description of how this sequence was shot, see: Alfred Junge, 'The Rational Application of Special Processes to Film Production', *British Kinematograph*, vol. 19, no. 3 (1951), pp.74-75.
[33] These production budgets are from original production documents available in The Michael and Aileen Balcon Papers. While these budgets are clearly estimates rather than the final amount spent on each film, they remain suggestive of Ealing's more frugal approach and desire for low costs.
[34] Release dates are taken from the comprehensive Filmography in Duguid et al. (eds), *Ealing Revisited*, pp. 255-281.
[35] '"Ships with Wings" [budget]', The Michael and Aileen Balcon Papers, MEB-1224
[36] '"Blockade" [budget]', The Michael and Aileen Balcon Papers, MEB-1226
[37] Perry, *Forever Ealing*, p. 72; Andrew Roberts, 'The People's War: The Making of Ealing', in Duguid et al. (eds.) *Ealing Revisited*, p. 49.
[38] '"The Bells Go Down" [budget]', The Michael and Aileen Balcon Papers, MEB-1253

Undercover / Chetnik	July 1943	£93,369[39]
San Demetrio, London	December 1943	£39,291[40]
The Halfway House	April 1944	£27,635[41]
For Those in Peril	June 1944	£15,572[42]

Methodology

Nineteen of Ealing's thirty-one wartime features contain specific special effects techniques such as back projection and miniature/model work.[43] Our understanding of 'wartime feature' here is strictly chronological, from *Cheer Boys Cheer* (Walter Forde, released September 1939) to *Dead of Night* (released September 1945). The majority of these features deal with contemporary depictions of wartime life in Britain, or in Britain's armed services, including the studio's first foray into military narratives such as the oft-derided *Ships with Wings* (Sergei Nolbandov, 1941), home front stories such as *The Bells Go Down* (Basil Dearden, 1943) and *My Learned Friend* (Basil Dearden and Will Hay, 1943), and the later fantasy narratives *The Halfway House* and *Dead of Night*. The number of films and prominence of the effects suggest this was a particularly potent moment in Ealing's adoption of special effects, and one that ran parallel to Ealing's identification and initiation of a

[39] '"Chetnik" [budget]', The Michael and Aileen Balcon Papers, MEB-1229
[40] '"San Demetrio" [budget]', The Michael and Aileen Balcon Papers, MEB-1259
[41] '"Half-Way House" [budget]', The Michael and Aileen Balcon Papers, MEB-1255
[42] '"For Those in Peril" [budget]', The Michael and Aileen Balcon Papers, MEB-1254
[43] Identified in Keith M. Johnston, 'What is the Great Ealing Film Challenge?' *The Huffington Post* http://www.huffingtonpost.co.uk/dr-keith-m-johnston/great-ealing-film-challenge_b_1091968.html (Accessed August 5 2016); Film Studies for Free, 'The Great Ealing Film Challenge' http://filmstudiesforfree.blogspot.co.uk/2012/08/the-great-ealing-film-challenge-by.html (Accessed August 5 2016)

documentary-realist principle, adopting ideas of authenticity and verisimilitude in filmmaking in order to create a run of wartime features. That correlation offered a strong case study to explore how special effects processes were marshalled in the service of the documentary-realist filmmaking tradition that dominated British cinema of the 1940s.[44]

Traditional sources such as industry-focused publications *Kinematograph Weekly*, *International Photography* and *The Cine-Technician*, and documents from the Michael and Aileen Balcon special collection, were enhanced by original floor plans and production drawings for Ealing films which revealed additional details of how and where special effects were being placed within production design and studio space. This insight into *Ships with Wings* and *The Halfway House*, particularly, added to our analysis of how special effects could contribute to the 'visual style of a film… to make judgements about visual style… that are historically appropriate.'[45] A project like this cannot claim to be comprehensive, particularly given the relative invisibility of many of the special effects team who worked at Ealing. However, the analysis below offers a fuller understanding of the effects teams formed at Ealing in 1940, the recruitment and roles of key individuals, and the contributions they made to the realist agenda of Ealing's wartime films. This was a team that created a small cottage industry of 'light and magic' in an unassuming stage at the back of Ealing Studios. Alongside Roy Kellino and Cliff Richardson, it included such unheralded names as Norman Ough, Douglas Woolsey, Lionel Banes, Sydney Pearson, E. Hague, and Wally Dolbear.

These technicians worked across all of Ealing's wartime features, although their specific contribution is not always obvious from individual film credits. While the titles of a

[44] Andrew Higson, '"Britain's Outstanding Contribution to the Film": The Documentary-Realist Tradition', in Charles Barr (ed.), *All Our Yesterdays*, pp. 72-97.
[45] James Chapman, Mark Glancy, and Sue Harper, 'Introduction', in Chapman, Glancy and Harper (eds.), *The New Film History*, p. 8.

later Ealing film such as *Scott of the Antarctic* (Charles Frend, 1948) specifically differentiate between 'Art Director', 'Special Effects Art Director', and 'Special Effects', most of Ealing's wartime features simply listed 'Effects' or 'Special Effects' alongside Art Direction and Photography.[46] Starting with *Convoy* (Penrose Tennyson, 1940), Woolsey and Ough were specifically identified under 'Effects', while in fourteen films from *Sailors Three* (Walter Forde, 1940) to *Dead of Night*, 'Special Effects' would become the dominant term. This not only suggests that Ealing had quickly adopted recognised industry terminology to describe these processes, but it contradicts Norman Dorme's earlier statement that such work was contained within the art department.[47] Such ambiguity underscores the challenges involved when analysing historical meanings attached to creative and artistic terms. However, given that range of fourteen films where there is a precise 'Effects' credit, the case study films explored below begin to construct a taxonomy of the substantial range of effects work on display in Ealing's films. We briefly discuss these techniques before moving on to specific case studies that demonstrate how Ealing used these techniques within their wartime films.

Ealing's Special Effects

Three years after Ealing created its model department, Roy Kellino said that 'it would be hard not to find a production out of Ealing Studios that has not had some help from the model department'.[48] That department produced all of the visual effects work undertaken at Ealing, working partly out of a 79ft x 61ft (diameter) model stage, which featured 'a permanent tank that was something like five feet high which [was] used a lot for the whacking great models

[46] The 'Special Effects Art Director' for *Scott of the Antarctic* was Jim Morahan; 'Special Effects' covers the team of Richard Dendy, Norman Ough, Geoffrey Dickinson and Sydney Pearson; the Art Director is Arne Åkermark.
[47] 'Visit to Ealing Studios', *British Kinematography*, vol. 17, no. 1 (1950), p. 1.
[48] Kellino, 'The Photographing of Models', p. 98.

we had to build'.[49] Models and miniatures could be combined with live action through the use of matte paintings, travelling mattes, glass shots[50] and painted 'cut-outs', pioneered in America during the early 1900s, and still used by Ealing into the 1950s.[51] The matte process involved a team of artists painting additional effects such as moving clouds, water or smoke to a pre-photographed scene with the intention of creating a composite whole. Travelling matte provided a stage on from this process whereby the matte object could change shape and / or position from frame to frame, representing the same movement as the object in the final film.[52] Equipment, materials and specialist handling required for such techniques was deemed expensive but far less than the costs of transporting cast and crew to film on location. Back projection constituted another common technique employed by British studios, used to project moving or static backgrounds on to translucent screens located behind the artistes:

> normally used for passing scenery, as seen through the windows of trains or cars. More difficult is static back projection in which the foreground setting is stationary, e.g. a scene in an office in which buildings or moving traffic can be seen through the window… the slightest unsteadiness of projection would give the game away and the result would be unacceptance.[53]

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[49] Lindsay Anderson, *Making a Film: The Story of Secret People* (London: George Allen and Unwin Ltd., 1952), p. 217; Tony Rimmington, quoted in Sellors, *The Secret Life of Ealing Studios*, p. 131.

[50] Created by placing a piece of glass in front of a stationary camera with artistic background that has clear areas for live action filming to look like a 'real' environment.

[51] M.J. Morahan, 'Modern Trends in Art Direction', *British Kinematograph*, vol. 18, no. 3 (1951), p.81.

[52] An example of the travelling matte 'split beam' process can be seen during the Eiffel Tower spiral staircase sequence in *The Lavender Hill Mob* (1951). The split-beam process was developed 'by using special lighting during filming to make it easier to separate the live action form its background', Netzley, *Encyclopedia of Movie Special Effects*, p.221.

[53] Baynham Honri, 'The Film Studio: The Development of Equipment and Operation', *British Kinematograph*, vol. 22, no. 3 (1953), p.83.

Fig. 1: *The Halfway House* production plans highlight the relationship between set design and back projection, here creating the effect of a train carriage moving through the countryside. Reference images by author of uncatalogued collections prior to conservation treatment, used with permission from the BFI National Archive.

That stress on not 'giving the game away', or undermining the desired verisimilitude, underlines Ealing's desire to achieve a level of artificiality that offered an acceptable realism for audiences. Yet, whilst the importance of back projection as an aesthetic and financial tool for the British film industry cannot be underestimated, it could also be unpopular: Alfred Davis, the chief projectionist at Gainsborough Studios, noted back projection was 'a very sketchy affair' to which studio personnel developed an 'intense dislike'; while Ealing's Robert Hamer described back projection sequences on *San Demetrio, London* as 'monotonous and trying for director and cast… an endless series of interruptions… [which] enfeeble the concentration of everyone… I cannot believe that this long practised and comparatively simple process need be operated on a system of perpetual trial and error'.[54] This suggestion of problems with back projection will thus be considered across the wartime films studied below.

Well-established techniques, such processes allowed technicians to 'combine our efforts with natural backgrounds. Model planes flying against real skies, model ships in real sea, and real artistes seen against model backgrounds'.[55] This emphasis on maintaining a 'realist' aesthetic clearly resonates with other contemporary and subsequent descriptions of Ealing productions, but it underlines the important combinatory role that effects teams were

[54] Alfred Davis, 'What's Wrong with B.P?' *The Cine-Technician,* vol. 11, no. 53 (March-April 1945), p.32; Robert Hamer, 'Robert Hamer to Michael Balcon', 17 June 1943, The Michael and Aileen Balcon Papers, MEB-1259.
[55] Kellino, 'The Photographing of Materials', p. 98.

responsible for in a period when 'filming on location became unfeasible'.[56] Historically, miniature production has been crucial in creating 'landscapes, buildings, entre cities, train wreck scenes, floods, fires [and] earthquakes' and Ealing clearly used models and miniatures as part of its desire to construct believable locations and landscapes, and create authentic reproductions of warships, military aircraft and other vehicles.[57]

While Ealing's use of such techniques may have been intended to create realism, at a distance of seven decades, we have a limited capacity to identify what would have counted as 'realistic' to a 1940s audience member (notwithstanding the fact that there would not have been one dominant understanding of that term). As has been noted, 'The photographic realism of any age assumes quaintness or distance as soon as "improvements" achieve fresh immediacy: our notions of the "real" are changed by the "realisms" which supercede each other to represent it.'[58] Our intention here is not to make claims for a film to be more or less realistic, but to try and assess how Ealing used these techniques in combination with surrounding live action sequences to contribute to Ealing's developing idea around what documentary-realist filmmaking could achieve.

Creating Combat

> [A] retrograde step in every respect… acts of extravagant self-sacrifice by yah-yah Fleet Air Arm officers are *represented by yards of substandard model work*. Balcon was furious with his son for suggesting that the special effects shots were achieved with the use of Dinky toys: perhaps this small remark also helped to enshrine documentary realism as the studio's guiding principle.[59]

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[56] Brosnan, *Movie Magic*, p. 90.
[57] 'Miniatures', *International Photographer*, vol. 9, no. 6 (July 1937), p. 23.
[58] Hayward and Wollen, 'Introduction: Surpassing the Real', p. 2.
[59] Matthew Sweet, *Shepperton Babylon: The Lost Worlds of British Cinema* (London: Faber and Faber, 2005), p. 178 - emphasis added.

Ships with Wings has been seen as a pivotal point in Michael Balcon's decision to insist on realist approaches within Ealing's filmmaking. The film follows disgraced Lt. Dick Stacey (John Clements) who redeems himself (and the British Fleet Air Arm) with an act of personal heroism and sacrifice. Critics of the film (including Winston Churchill) bemoaned the lack of wartime realism in favour of melodrama, with Balcon stating 'there was some departure from that principle [of realism], and the story was too heavily fictionalised'.[60] Balcon's much-celebrated 1943 speech urging British filmmakers to depart from 'tinsel' and 'cheap romances' in preference for a more documentary realist approach may also echo his feelings on this specific film.[61] If the above claim from Sweet is accurate, then the quality of the special effects shots may have played a key role in Balcon's declarations on the film. Yet this rejection of *Ships with Wings* and its effects work has been partially challenged through the analysis of Mass Observation reports on the film, and this section will argue that its maligned reputation in terms of Ealing's special effects abilities is equally misunderstood, perhaps unfairly wrapped up in the mythologisation of Balcon's quest for realism.[62]

Fig. 2. *Ships with Wings* production plans show the creation of a mock-up plane and cockpit, with panoramic painted backdrop behind. Reference images by author of uncatalogued collections prior to conservation treatment, used with permission from the BFI National Archive.

The evidence from production files and design speaks clearly of the special effects team's desire to recreate authentic military aircraft and naval vessels of the period, with many based on actual ships serving in the fleet. The British aircraft carrier Ark Royal 'starred' in

[60] Michael Balcon, *Michael Balcon Presents… A Lifetime of Films* (London: Hutchinson, 1969), pp. 133-134.
[61] Robert Murphy, *Realism and Tinsel: Cinema and Society in Britain, 1939-45* (London: Routledge, 1992), p. 39.
[62] Jeffrey Richards and Dorothy Sheridan, *Mass Observation at the Movies* (London: Routledge and Regan Paul, 1987), pp. 364-380.

the film as the 'Invincible' through the use of extensive location footage and model work. Production drawings show detailed scale designs of the bridge and on-board equipment such as control panels and engine room, with notes stating the Ark Royal / Invincible bridge set was 'to be fixed on a wheeled, rocking rostrum' to replicate the motion of the waves.[63] Sketches outline how scale models of naval ships would be filmed inside a water tank, including a torpedo attack sequence and the construction of a Greek island and the rocky headlands surrounding a dam. The close attention to detail is evidenced further by drawings of allied and enemy aircraft including intricate close-up designs of the German engineered Junker tail unit and throttle to be used as reference points by the model team. At this stage, Ealing's special effects team was composed of Kellino, Richardson, and Woolsey, with experienced craftsmen drafted in to create models from the original designs. Such a figure was Norman A. Ough, a Cornish artist who designed scale models of naval vessels for the Military of Defence during the war. It was Ough's skilled workmanship that produced the scale model of the Ark Royal that appears in *Ships with Wings*. 25ft in length and weighing ½ tonnes, the model had a long post-film life, being displayed across the UK as part of the 1942 'Warship Week Campaign'.[64]

The film's opening scene, featuring the launch of the Invincible, is also its first attempt to create an authentic montage of different filming techniques. The film cuts from documentary footage of workers removing wooden supports and cheering the launch, to model shots of the bulk of the ship as it launches (with a series of dockyard cranes down both sides), to stage-bound images of the naval officials at the launch party (which also includes back projection shots of the dockyards). It is arguably a moment of spectacle similar to the genre-specific effects sequences discussed earlier, and a clear sign that the ship will play a

[63] *Ships with Wings* production sketch, Ealing Studio Design collection, British Film Institute.
[64] 'Showmanship Abroad', *Motion Picture Herald*, vol. 148. No. 2, (July 11 1942), p. 49.

significant role in the continuing narrative. The quick pace of the montage supports the different techniques despite the clear difference in film stock and scale involved and offers a smoother combination than some of the later model sequences.

In the first half of the film, however, it is the back projection effects that feel most artificial, with jarring sequences of actors walking in front of projected live action images (largely planes on runways), offering little or no depth of field between the two planes of action. The combination of models, live action and practical effects can be found throughout, but the final twenty minute attack on the Italian-German stronghold at Panteria is heavily reliant on that balance of techniques. Both Panteria and the island Pamos are models, built in the water tank, and shown in establishing shots or with planes flying over them: while both can feel static, they successfully convey the location of the drama. Indeed, there is no live action footage of Panteria except the interior of buildings or plane cockpits, so the entire sequence (bombing raid, plane dogfight and Stacey's final dam-busting sacrifice) relies on the models to convey its scale and layout: details that are intrinsic to the final act of the narrative. As such, *Ships with Wings* confirms an earlier notion that special effects sequences are there to find 'a better or otherwise impossible angle to further the completeness of the story [and] the only possible solution to get the desired effect'.[65] Without such sequences, this story could not be fully visualised.

Fig. 3. Detail of a miniature shot of two ships (the *Mayflower* and the *Conti di Cavour*) and an exploding jetty, set up in Ealing's water tank. Reference images by author of uncatalogued collections prior to conservation treatment, used with permission from the BFI National Archive.

[65] Willis O'Brien, 'Miniature Effects Shots', *International Photographer*, vol. 5, no. 4 (May 1933), p. 39.

The aesthetic balance struck in the opening launch sequence is less effective here, largely due to the reliance of the models to deliver almost every beat of the action. In the first bombing raid of Panteria, for example, the only live action shots are occasional cockpit views of the pilots and short documentary clips of planes swooping down. Everything else, the dockyards, German ships, building, airfields, dam, torpedoes launching from planes, is conveyed through models and miniatures. Such shots remain strong throughout, with sharp editing never lingering on shots for too long: although there are two shots that offer a point-of-view as a plane skims down towards the water to fire a torpedo, a pause in editing that underlines the detail of the model work. As the sequence progresses, however, the aesthetic strength of the effects does waver: the bombing of the Invincible's airstrip requires extensive model work of the destroyed deck and the planes as they attempt to land; while lines of German tanks and other vehicles are less convincing miniatures, particularly when washed away during the final destruction of the dam.

Given that focus on authentic pre-production design, the varied achievements in models and miniature work, and the potent (if not consistent) aesthetic combination of those models, back projection, live action and documentary images, the evidence of the film doesn't immediately suggest the film deserves its critical reputation. A Mass Observation report noted that audience response was mixed, if largely positive, more likely to highlight the 'unrealistic' plotline and characters, and the 'imposed' love story narrative.[66] Individual comments on special effects ranged from 'You couldn't see that any of them were models' to 'there is a bit too much model work in it. It's too obvious.'[67] Despite Sweet's claim, we would argue that Ealing's decision to adopt a more realistic approach to its wartime films had

[66] Richards and Sheridan, *Mass Observation at the Movies*, pp. 377-78.
[67] Ibid., p. 369, 372.

more to do with concerns over the melodramatic nature of *Ships with Wings* than audience reaction to variable effects work.

Indeed, the evidence of Ealing's wartime mode of production between 1941 and 1944 suggests that Ealing's effects department went from strength to strength. One lesson that may have been learned after *Ships with Wings* was to avoid a narrative reliance on effects such as the Panteria attack, and to focus instead on achieving a montage of live action, effects work, and documentary footage. That balance clearly informs effects work in *The Big Blockade* (Charles Frend, 1942) and *Undercover* (Sergei Nolbandov, 1943), for example, although three central narrative events in *San Demetrio, London* are reliant on effects in a more overt fashion. As with *Ships with Wings,* advance publicity for this film promoted Ealing's effects teams' desire for 'authenticity of detail… accurate down to the tiniest detail' in miniature work and set design.[68] Those models are crucial in the opening introduction of the ship, through key battle sequences, to the moment the lashed together ship reaches the coast of Ireland: while the sequence where the Jervis Bay cruiser is sunk by enemy fire and shells explode on the deck of the *San Demetrio* offers an echo of the larger role played by model work in *Ships with Wings*. A refined version of the earlier approach, this film combines effects as a crucial third component alongside live action set and documentary footage. The back projection that Hamer complained so bitterly about is jarring, partly due to its use in night time sequences, but also because it is a constant presence as the crew drift in the lifeboat, not able to be subsumed within a montage-based approach as the effects were.[69]

The realistic aesthetic and narrative direction of Ealing's wartime dramas is, therefore, reliant on the combination of models, miniatures, set design, back projection, and

[68] 'Hay Film in Final Stages', *Kinematograph Weekly* vol. 314, no. 1877 (April 8 1943), p. 34A.
[69] Hamer, 'Robert Hamer to Michael Balcon', MEB-1259.

practical effects developed by Kellino and his effects team. While there is a honing of skills evident between the productions of *Ships with Wings* and *San Demetrio London*, we would argue that the perceived success (or otherwise) of the special effects work is due to the narrative and characterisation that underpinned both films as much as the quality or dominance of the effects work. As Ealing developed other, less combat-focused, films through the wartime years, the effects team would continue to demonstrate the vital role they served in Ealing's projection of Britain.

Contemporary Wartime

Ealing's clearest statement of intent to combine dramatic narrative, documentary realism and special effects techniques comes in its depiction of contemporary life in *The Bells Go Down*. Released in April 1943 (eighteen months after the effects-heavy *Ships with Wings*) *The Bells Go Down* offers a concrete example of Ealing's continued commitment to the use of special effects within more realist-led productions. The blend of techniques found here is not dissimilar to *Ships with Wings* or *San Demetrio, London*, but there is a visible confidence to the film's potent combination of live action, back projection and model work to provide its story of the Auxiliary Fire Brigade, a confidence underpinned by the continued success of Kellino and Richardson within the studio.

The film's effects can be divided into practical (physical fires and smoke in the background of studio-shot scenes), miniatures (several long sequences and establishing shots of fire-fighting rely on models of streets, firefighters, fire trucks and buildings), and back projection (relied upon as a low cost solution and as protection for key actors such as Tommy Trinder and James Mason). The use of model shots is particularly important, placed within the visual narrative for establishing shots, depth of field, and action that would be impossible to create within both the limited budget and resources of the studio. Some of these are

nuanced effects to enhance the background of shots: models of factories and chimneys are visible behind the window of the men's barracks, and work to extend the image beyond the studio set. Elsewhere, the models enhance character point-of-view shots, most notably when the camera gazes up a long, thin, swaying (miniature) ladder that stretches up towards the fires blazing from (miniature) buildings.

The film contains six significant fire-fighting sequences, each utilising a combination of these techniques, but here we focus on the fire at the 'Sundura Fabrics' building (which occurs around 57 minutes into the film). It opens with a bravura camera movement around a model set that establishes the scale of this fire and nearby buildings and dockland warehouses. Lasting around twenty seconds, the camera pans around the ladder that sits near the centre of the screen, with fire trucks, small figures, and water spraying out of hoses onto the factories, with the night-time sky behind. While the model figures are clearly static, the camera pushes into the scene revealing more ladders reaching up to the building, more firemen and hoses, more practical fire effects bursting out of the warehouse. For the narrative, this immediately gives scale to the operation, particularly as the need to save these warehouses will become a key story point. Cutting away from the establishing model shot, the sequence follows a pattern established through the film: back projection sequences where the stars are framed against a pre-filmed backdrop of firemen struggling with hoses; the cast on studio sets with full-size fire trucks and more controlled practical effects of smoke, fire and water. Cut into these sequences are more model shots: firemen at the top of the ladders spraying water onto a burning roof, or the ladder moving around the model. In these sequences, 'realism' is constructed through the interplay of back projection ('real' images of firefighters at work), live action stars on set (or against back projected sequences), practical effects, and model work as described above. Clearly placed at the centre of the aesthetic recreation of this world, the special effects team offer a skilful balance of techniques.

Such work wasn't restricted to *The Bells Go Down* or even dramatic films of contemporary life. *My Learned Friend* features many of the same techniques, including an effects-centred narrative set piece and a similar desire to blend effects within live action through careful editing.[70] The bulk of the film relies on one technique (cost-effective back projection during driving sequences), until the final act requires the special effects team to create a comic chase sequence across the face of Big Ben. The use of national monuments in special effects history has been linked to moments where 'animators, production designers, and computer engineers worked in unison to create a sense of contiguity between the space of the "real" national monument and the space of the imagined change to which it is subjected.'.[71] In the science fiction film's combination of known and unknown – such as the flying saucers that buzz Washington in *Earth vs. the Flying Saucers* (Fred F. Sears, 1956) – the special effect remains a spectacular addition. We would argue that the combination of real footage and special effect in *My Learned Friend* is not to highlight the fantastic addition but to enhance the comic verisimilitude of the sequence. There is no single shot that highlights the effects work but, again, a montage of complementary techniques: model shots of Big Ben (exterior and interior), back projection shots of Westminster Bridge, and a key model-based moment where the clock hand breaks and three models of the lead characters hang off it. In all instances, these images are intercut with live action footage, enhancing the quicker pace required for the chase, but also the requirement for reaction shots from the cast.

Alongside *The Next of Kin* (Thorold Dickinson, 1942) and *The Goose Steps Out* (Will Hay and Basil Dearden, 1942), Ealing's contemporary drama and comedy films continued to showcase the special effects techniques that lay at the heart of the studio's financial and aesthetic restraint. While that tradition would continue post-war, with films such as *Frieda*

[70] *My Learned Friend* is set pre-war but was filmed and released in 1943.
[71] Banks, 'Monumental Fictions: National Monument as a Science Fiction Space', pp. 144-145.

(Basil Dearden, 1947) and *Train of Events* (Sidney Cole, Charles Crichton and Basil Dearden, 1949) reliant on the same combination of model work, back projection, and live action footage, the last eighteen months of wartime production saw Ealing engage in films with a fantasy or supernatural bent: *The Halfway House*, *They Came to a City* (Basil Dearden, 1944) and *Dead of Night*. Yet, unlike a contemporaneous film such as *Blithe Spirit* (David Lean, 1945), these Ealing films resist the generic expectation of overt display of effects, employing instead a careful placement of such techniques.

Fantasy Narratives

> [*Dead of Night*] in no way depends for its thrills on trick photography or special effects, but instead demands concise dialogue, powerful acting and a unique sense of direction.[72]

Kinematograph Weekly's assessment of *Dead of Night* identifies a common theme across the three films considered in this section. While the wartime and contemporary films discussed above demonstrated a balance of effects and other techniques, these fantasy films are much more selective about the display of optical effects, miniature shots and back projection. Unlike *The Bells Go Down*'s reliance on such effects work throughout its narrative, or the marshalling of those techniques for specific sequences (as in the comic ending of *My Learned Friend*), these films pull back from foregrounding overt effects work. While it is tempting to link this to Ealing's broader realist strategy, painting the studio as reluctant to fully commit to a fantastic use of special effects, the evidence of the films suggests this may have more to do with the tone of Ealing's fantastic excursions.

[72] 'Horror Stories At Ealing', *Kinematograph Weekly*, vol. 337, no. 1976 (March 1 1945), p. 32.

Fig. 4. A full layout of the floor plan for *The Halfway House*, including model work for sheds and painted backdrops seen through the inn's windows. Reference images by author of uncatalogued collections prior to conservation treatment, used with permission from the BFI National Archive.

The Halfway House, a melodramatic tale of a ghostly inn that draws in a cast of characters damaged by the war, provides a pertinent example of this approach. The film applies specific optical tricks, camera positioning, and back projection to set up its supernatural tale. Production notes detail the delays in filming Mervyn and Glynis Johns' ethereal innkeepers to ensure they did not cast a shadow in any scene.[73] Equally, each character's separate journey to the inn is captured through studio-bound back projection, and the inn appears as though through a haze, optically shimmering into place in a previously empty landscape. Utilising these techniques highlights both the dreamlike nature of the trip (and the central location) and the narrative's interest in the uncertainty of vision: the Ealing film paralleling themes identified in *I Know Where I'm Going*, albeit on a much slimmer budget.[74] Model work is largely restricted to background shots (outbuildings, walls and landscape visible through the physical set, often in soft focus in the rear of shot), and miniatures are sparingly deployed (a brief waterfall sequence is the most obvious example), at least until the final bombing and destruction of the inn is visualised through scale models and pyrotechnics. This final effects display is not, however, a moment of effects-driven catharsis over which the film lingers (in the manner of *I Know Where I'm Going!,* the science fiction examples discussed earlier, or even similar moments in *The Bells Go Down*), but a brief transitional sequence through which each character passes, as they depart for new and

[73] '"The Halfway House" Production Schedule', The Michael and Aileen Balcon Papers, MEB-1255
[74] Cook, *I Know Where I'm Going*!

renewed lives. As such, the placement of effects throughout the film is illustrative and thematic, narratively precise rather than visually spectacular in their own right.

Ealing's muted approach to visualising this supernatural narrative was partly noted by one critic who complained 'the ghosts are photographed without such elaborate camera angles as was the case in *Thunder Rock*.'[75] Although the comparison with the earlier Boulting Brothers film was clearly intended as a criticism, this can be seen instead as a crucial identification of Ealing's more nuanced and conservative approach to fantastic narratives and special effects. The use of effects to enhance performance and set design (as seen in *The Halfway House*) is also central to *They Came to a City*. Once again focusing on a series of disparate characters who have a life-changing experience through their interactions with a fantasy landscape, the film's central conceit – that the characters each see their own version of this futuristic city –lacks any on-screen visual expression. While the film shows us Michael Relph's impressive modernist city walls, the studio 'wisely shied away from trying to visualise Utopia'.[76] The depiction of other futuristic metropolises, from Fritz Lang's titular version, through *Just Imagine* (David Butler, 1930) or *Things to Come*, demonstrates that the use of special effects to crystallise a vision of the future had already become a dominant approach. Ealing's subversion of this tendency was likely more practical and budgetary-minded than a deliberate policy, but its use of brief optical effects throughout *They Came to a City* underlines again the nuanced approach the studio took when dealing with narratives where other studios or producers might have prioritised and promoted the special effects work.

The final film in this period is also Ealing's most famous supernatural film, and one where optical effects, miniatures, and set design remain in constant dialogue. *Dead of Night*

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[75] 'The Halfway House', *Monthly Film Bulletin*, vol. 11, no. 122 (February 1944), p. 13.
[76] Botting, 'Who'll Pay for Reality?', p. 181

stands, then, as a fascinating compendium of Ealing's special effects and art departments at the end of wartime: 'Hearse Driver' uses back projection in its initial race crash sequence, and miniature work to create both the street outside the hospital where racing driver Hugh (Anthony Baird) recovers and the striking bus crash he avoids at the end of that story due to a premonition; 'The Haunted Mirror' creates 'an entire set beyond the mirror' for the gothic vision that obsesses Peter (Ralph Michael)[77]; while 'Golfing Story' features both optical printing and a compressed air prop to suggest a ghostly presence moving a golf ball, and further optical work to make the spectral Larry (Naunton Wayne) appear within the frame (and, later, to make George (Basil Radford) disappear).[78] As with the other Ealing fantasy films, the effects do not add spectacular visuals that stand alone as a unique attraction, but include them within a montage of techniques that, when used together, create the unsettling atmosphere of this portmanteau film.

Conclusion

Andrew Higson has claimed that wartime British films such as those produced at Ealing contain a tension 'between the documentary and narrative modes… certain sequences depend entirely on montage construction… [while others] depend on the classical narrative editing strategies of moving from establishing shot to point of view shot, particularly through shot/reverse shot structures.'[79] What is overlooked in that description, however, is the role that special effects played within both montage and shot/reverse shot structure. In Ealing's deployment of this approach, the use of effects such as back projection and miniatures helped

77 Sellors, *The Secret Life of Ealing Studios*, p. 77
78 'Horror Stories at Ealing', *Kinematograph Weekly*, vol. 337, no. 1976 (March 1 1945), p. 32.
79 Higson, '"Britain's Outstanding Contribution to the Film": The Documentary-Realist Tradition', p. 86.

construct 'the studio's characteristic (if by no means all-pervading) low-key naturalism'.[80] While there may be little in Ealing's wartime films to rival the epic special effects of *Things to Come* or *I Know Where I'm Going*, it is clear that films such as *The Bells Go Down, San Demetrio, London* and *My Learned Friend* are underpinned by similar effects techniques.

What is also clear is the debt such wartime films owe to the largely unsung special effects department established and developed at Ealing. Like many of the effects they produced, such technicians remain largely invisible within existing criticism, leaving few traces in contemporary records of British film production. Yet this department was responsible for creating what could not be realistically filmed or staged, with individuals such as Cliff Richardson regarded as 'the man who would attempt anything'.[81] From aerial dogfights and naval battles to London bombings and fire-fighting, Ealing's 'realist' approach relied heavily on the fantastic creation of models (and their pyrotechnic destruction), alongside an extensive use of back projection, matte images, and optical printing techniques. We would argue that the evidence of the Ealing films identified through this article presents a compelling need to reassess a range of wartime British films for which a documentary aesthetic has been claimed. That aesthetic, based around the combination of documentary and narrative traditions, cannot account for the full experience of these films unless these special effects are included.[82] As seen through the article, effects played a crucial narrative role in montage and continuity editing, created expansive establishing shots where it was physically difficult to film (or where locations simply did not exist), used back projection to place actors within specific group shots (often at the heart of narrative action), and could create otherwise

[80] Mark Duguid and Katy McGahan, 'From Tinsel to Realism and Back Again: Balcon, Ealing and Documentary', in Duguid et al. (eds.), *Ealing Revisited*, p. 68.
[81] Brosnan, *Movie Magic*, p.90.
[82] Higson, '"Britain's Outstanding Contribution to the Film": The Documentary-Realist Tradition', p. 86.

impossible point of view shots up smoke-wreathed ladders, vertiginous drops down towards London landmarks, or into a range of fantasy landscapes.

As Ealing moved from a wartime footing to more expansive post-war productions across multiple genres and styles, its effects team continued to expand, contributing to films as diverse as *The Lavender Hill Mob* (Charles Crichton, 1951), *The Cruel Sea* (Charles Frend, 1953), *Meet Mr Lucifer* (Anthony Pélissier, 1953), *The Ship that Died of Shame* (Basil Dearden, 1955), and *The Night My Number Came Up* (Leslie Norman, 1956), up until the studio's demise in the late 1950s. While the post-Ealing exploits of everyone on that special effects team are largely unknown (underlining again the invisible nature of such figures), its ghostly presence was still felt by a fledgling two-man special effects team from the BBC who toured the now-empty studio when the Corporation took it over in 1955:

> in a store room we found a horde of miniature trains and railway equipment... made to scale with every detail a perfect replica of their full-sized counterparts… Searching around we found several packing cases that contained scale models and submarines… model street facades which were so real that by closing one eye we could see how they would have appeared to the camera; the detail was amazing but, of course, with the resultant image enlarged on the cinema screen many hundreds of times such attention to detail was essential.[83]

Ultimately consigned to a skip (before Bernard Wilkie and his colleague could rescue it), the physical remnants of the Ealing special effects team were rendered as ephemeral as the piecemeal records, often leaving only the films behind as evidence. As we have demonstrated here, however, that team helped consolidate Ealing Studios' position at the heart of the British film industry from 1940 until the company's demise in the late 1950s, and their

[83] Bernard Wilkie, *A Peculiar Effect on the BBC* (Reigate: Miwk Publishing, 2015), p.139.

contribution to its realist documentary ‘projection of Britain’ deserves to be recognised and celebrated.

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