REPLICATING HISTORIC VESSELS

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SUMMARY

This paper discusses the varying approaches to vessel replication. It examines the circumstances within which replica vessels have been and are being constructed, sets out the terminologies which National Historic Ships UK has adopted in the publication *Conserving Historic Vessels* in order to differentiate between the types of replica, and probes how a better understanding of replication can in turn lead to a deeper appreciation of the issues pertaining to the conservation of historic vessels. The motivations behind various replica projects are considered and the range of factors such as operational needs, availability of materials, limitations in skills, and lack of verifiable information which can lead to compromises in design and construction. All this provides the context within which the Replica List has been developed as a complementary source of information to the National Register of Historic Vessels (NRHV), the National Archive of Historic Vessels (NAHV) and the Overseas Watch List (OWL), which form the bedrock of the information which National Historic Ships holds and publishes through its web site. The new Replica List provides a growing over-view of the replicas to be found across the UK for the purposes of research at all levels, public interest, filming enquiries, charters and crewing opportunities, as well as promoting the traditional skills involved in building, maintaining, and operating these vessels.

1. INTRODUCTION

When in 2007 the (then) Advisory Committee on National Historic Ships began to shape the content for its seminal publication *Conserving Historic Vessels* there was lively debate on the matter of whether or not to address the knotty matters surrounding replicas. An argument against was that the role of this body was to record and support vessels which are demonstrably "historic" through meeting the criteria set down in our registration processes, which amongst other things require the vessel to be over 50 years old, with its historic fabric substantially complete. To bring replicas into play in the publication and in our recording activities in some form would (it was argued) only serve to confuse and dilute the significance of the "real thing". I have never been comfortable with this stance. For one thing the border differentiating replicas from reconstructions (especially when the latter takes an extreme form) has been indistinct and requires careful definition. Furthermore, to engage with issues around reconstruction (addressed in an earlier paper by my colleague Hannah Cunliffe) whilst setting aside consideration of what defines a replica, is to only look at one side of the coin. In his article in Classic Boat for May 2011, Richard Titchenor considers the respective roles of conservation and replication, instancing the extreme and excellent reconstruction of the smack *Pioneer* against the plethora of high-quality replica pilot cutters which now abound. We all know the "grandfather's axe" syndrome which raises legitimate questions as to what may be considered original over the life of a vessel which has undergone many years of maintenance and refit, and which therefore may well have very little material remaining from the time she was built. I have always been fascinated by the notion of a hull being split longitudinally, with both halves then the subject of a reconstruction programme. Can the concept of an original vessel survive this process, and if so which is the original, which the copy? There may not be an answer, even within the Aristotelian definitions applied to Theseus' ship within which the philosopher identified originality as being expressed through the survival of the original cause for the design; use of materials; method of construction, and capacity to undertake the original purpose. These strictures could be as well applied to replicas as to original vessels.

Therefore the importance of bringing replicas within the orbit of our publication became palpable. By coming to the problem of conservation definitions from the direction of new-build we believe we are contributing to an understanding in the difference and value of both, and perhaps getting nearer to achieving clarity on where extreme reconstruction ends and replication begins.

Does the distinction really matter? In my view the answer has to be "yes" at a range of levels. There is cultural, aesthetic and historic value in knowing the origins of things: people feel cheated when they find that something deemed to be original turns out not to be so. At a time when grants play a major part in protecting our heritage, funders need to be confident of the material status of the project in which they are being asked to invest. I can think of many projects where grantors who as a matter of policy do not fund replicas believe they are funding a conservation programme when in reality they are financing new-build. Whether this arises from genuine misunderstanding between project and funder or self-delusion (by either or both parties), no one is helped in this situation. Funders remain in blissful ignorance, only to be pilloried by those in the know, or later discover that their investment has been misdirected, whilst disenchantment and frustration lies with those with similar projects which have not been so blessed. At the same time there are reasons why in certain circumstances creating a replica is the right thing to do Clarity here is essential not least because there is a need to explain all this to a public which values "the real thing".

2. DEFINITIONS

It is common practice to use the term 'replica' as a catch-all on the assumption that all replicas are the same and that there is no need to differentiate. Those visiting Bristol's Floating Harbour and looking for somewhere interesting to dine may well be to be pointed towards the "tall ship" or "tall ship replica" lying alongside Broad Quay which

serves as a restaurant and bar. This vessel has an over-size and lumpen welded mild steel hull, deck houses built specifically for restaurant and club use, under-sized stumpy tubular steel masts with no running and little standing rigging and which have plainly never seen sails, and what appears to be a scaffold pole for a bowsprit. It is a perfectly fine place to eat and drink, with a great atmosphere, but "tall ship" it certainly is not. At the other extreme, the Swedish initiative to build the replica *Eric Nordval* has been rigorously researched and painstakingly implemented: it does not take an expert eye to appreciate the care and attention to detail that is the hall mark of this exemplar project. To use the same nomenclature for two such markedly different vessels is clearly nonsense. So we set ourselves to task of producing definitions for the various levels of replication which can be readily recognised, understood and applied to the vessels being evaluated.

In order to ensure the there is a common understanding on the parameters within which all are working, National Historic Ships UK has set out the following umbrella definition for replication:

"Replication means starting from scratch to build a copy of a vessel and can be defined at various levels of detail and accuracy"

This definition puts blue water between replication and extreme reconstruction (with the possible exception of hull replication – see **2.2** below), wherein starting from scratch" indicates that the replicated vessel, or part of that vessel, has no elements of an earlier vessel within it. The detail and accuracy employed in building from scratch determines where within the replication spectrum a vessel will lie. In turn these will be determined by the amount of information available when researching and setting up the project, the use to which the replica will be put (will it be operational, and if so will it be used for its original purpose or that acquired over the vessel's lifetime), and ultimately the motivation behind building it. The drivers behind a film producer will be very different from those informing a maritime archaeologist.

2.1 TRUE REPLICA

True Replicas set the bench mark for accuracy and require that the replica is an exact and complete reproduction of the original vessel. The motivation for such an enterprise might be that no original examples remain, or that what does survive is so rare, delicate, or incomplete that it should be conserved as a reference point. Minor elements may have to be the subject of surmise –for example the design of rope fenders or lesser decorative details such as a tiller handle carving. Apart from that, a true replica demonstrably must be a faithful copy of the original, something only achieved through the highest level of research based on indisputable documentation, having an original as a 'quarry' for information, or both. The materials used (timber, cordage, fixings, and where originally fitted, sails) must be those employed in the original. If the motivation behind the project is to understand all the forces bearing down on the builders of the original (which is to be found mainly in archaeologically-based projects) the vessel must also be built using the same technologies and techniques as those available to the builder. The bar for such vessels is set high and consequently, even where the latter constraint is not appropriate, true replicas are as rare as hens' teeth.

I struggle to think of a large true replica in the UK, although there are some excellent examples of such craft within small work-boats: the Dee salmon boat *Arthur* built in Chester for the Merseyside Maritime Museum in 1980, and the replica of the last surviving Lyme Bay 'lerret' *Vera*, built at the Lyme Regis Boat Building Academy are good examples of UK true replicas. Internationally, true replicas are equally rare. However one prime example of a large vessel which fits the bill springs to mind is the Swedish paddle steamer *Eric Nordvall.*

2.2 HULL REPLICA

Frequently a hull will survive in some form, or there are good hull lines and general arrangements plans, but no extant masts spars, rigging, or sail plans to mirror them. In theses cases there may be sufficient information to build a faithful hull replica, with a notional rig based on what evidence can be called upon. Hull replicas may also arise when the original hull has been exhausted over time, the builders' plans are available, and original cabin fittings, engines etc. survive which can be installed into a new hull built to the original specification. Hull replication is the one instance where confusion between replication and reconstruction might arise, the vessel's hull form being the basis for the whole vessel. Contentiously, the Heritage Lottery Fund (HLF) has given a grant to the *Medway Queen* to build a new riveted hull and superstructure to original design specification into which surviving fittings and the engines can be placed, whilst at the same time having a policy of not funding replicas. Under the policy, logic would dictate that HLF would have funded the conservation and reconstruction of fittings and engine, but left it to others to fund the replication of the hull. I will return to this issue later in the paper.

2.3 OPERATIONAL REPLICA

An operational replica is a vessel which has followed all the strictures placed on a true replica, but with adaptations to meet clearly defined operational needs. Adaptations (which must be kept to the minimum consistent with operational needs) may include national and international safety requirements, or internal changes in the light of specific functions. Where the vessel concerned is operating on inland or estuarial waters, and perhaps carrying a limited number of non-crew, adaptations may be limited to matters such as additional guard rails and life saving

equipment. Sea-going operational replicas face much greater stringencies which can materially alter the nature of the vessel. In such cases, it may be more economic, and certainly more honest, to build a 'representation' (see **2.5**) rather than attempt to cling on to something which is just not achievable.

An excellent example of a carefully defined operational replica is the Australian-built *Endeavour.*

2.3 HYPOTHESIS

A Hypothesis is a vessel where the historical and technical information available is sufficient to allow a vessel to be built which reflects the original and can test theories, but is not at the level which can guarantee a faithful recreation. Sources of such information include archaeological excavations; tomb paintings and reliefs; manuscripts; votive models; contemporary accounts and illustrations (paintings, drawings, photographs); and in some cases the survival of similar craft. Those advocating a hypothetical replica must be able to demonstrate that the project has been the subject of rigorous research and disciplined analysis in order that the resultant vessel can stand forensic scrutiny. Such projects will by their very nature require changes in direction along the way as information is not definitive and experimentation based on what is known will undoubtedly come into play.

Of all the forms of replication, Hypotheses offer perhaps the greatest potential for extending learning. They test theories, give indications of how vessels handled, and in extreme cases such as *Kontiki, Brendan* and the Greek trireme *Olympias* can show what such vessels are capable of doing (whilst, I hasten to add, not necessarily proving theories).

2.4 OPERATIONAL HYPOTHESIS

Hypotheses operate within the given constraints of their perceived design. An Operational Hypothesis has been the subject of considered research from limited information to determine the form and characteristics of the chosen vessel as closely as possible, but (as with an operational replica) has been adopted to meet challenging operational demands (such as extended sea voyages requiring full modern navigational equipment, engines and other modern equipment). A good example of an operational hypothesis is *Matthew,* designed by Colin Mudie, in which he called on records which were able to indicate capacity with accuracy (50 tuns), crew numbers (which suggested the kind of rig employed), and the known characteristics of vessels of this period from documentation and contemporary models. All these sources helped Colin to define the vessel's design.

2.5 REPRESENTATIONS

Vessels which are representations draw on the known features of a certain vessel or types of vessel but might or might not take on the appearance of a specific craft. Some research may have been done (often from secondary sources) but the emphasis is on overall impression, not accuracy. Construction often includes modern materials and techniques and cosmetic additions – for example mock rivets on a welded steel hull, and the hull form or volume may be changed to give more room, comfort or to accommodate a very different use from that asked of the original.

The intentions underpinning representations are critical to the outcomes. There are excellent representations of historic vessels for the nostalgia market – for example steam and motor launches built to traditional appearance using modern materials, engines and fittings. Representations are often used for filming, where the costs of researching and building a true replica or hypothesis plainly would be entirely inappropriate (although one would hope that the representation does indeed reasonably represent that which it is supposed to reflect). Representations can be seen in the form of many of the trip boats in the UK (there is a remarkable "Mississippi stern wheeler" to be seen plying the Thames, and in providing entertainment and catering opportunities – as in the "tall ship" in Bristol to which I referred early on in this paper.

3. WHERE DOES ALL THIS GET US?

What I have set down in this paper may be deemed to be all well and good, but considered as sounding brass, signifying nothing. Are these definitions of any practical use?

3.1 THE HISTORIC SHIPS SECTOR

The motivation behind publishing *Understanding Historic Vessels* was to bring clarity and rigour into how we in the UK (and those abroad who wish to adopt our analysis for their circumstances) approach the conservation and long-term sustainability of the historic vessels in these island nations. Of equal importance to the sector is where replicas lie within the conservation continuum.

Firstly, the boundaries between conservation and replication processes need to be understood, especially where the project may demand extreme reconstruction

Secondly, depending upon the nature of the project under consideration, those involved may decide that a more appropriate approach to achieve their aims might be to conserve the vessel concerned by stabilising the original at, or close to, its existing physical state and to build an appropriate replica instead. There are several reasons why this route might be adopted, for example: where the

objective behind the project is to make the vessel operational, which would demand such changes that the significance of the vessel would be severely compromised; where the original vessel is of marked fragility; or where conservation becomes so intrusive that it threatens extensive intervention and/or the significant loss of original material. The debate around the approach to the conservation of *Cutty Sark* is instructive here.

3.2 THE ROLE OF FUNDING AGENCIES

National Historic Ships UK is frequently approached by potential funding agencies to advise on historic vessel conservation projects. The boundaries between conservation and replication and the relative merits of the two approaches are often not readily understood. This can have a variety of impacts. There are times when funding agencies deem replication projects to be conservation ones, and fund on that basis, sometimes thereby acting against their own policies. In some instances the light has subsequently dawned; in others this has not been the case – or certainly not openly admitted. There have been instances where conservation grants have been awarded in circumstances where the ensuing project has seen considerable and significant loss of original material and where an integrated conservation stabilisation approach allied to the creation of an appropriate replica would have better served the project's and funder's aims.

Crucially, some projects do not get off the stocks due to policies which do not take into account the positive value to be derived from a well thought through replication project. We are in continuing dialogue with funders including HLF (which has a declared policy not to fund replicas) on this issue. As noted earlier in this paper, hypothesis projects in particular can lead to significant leaps in understanding. The recent Egyptian Boat project, predicated on tomb reliefs and illustrations, has produced an immense amount of invaluable information on Mediterranean craft of the period, extending from indications that the builders must have caulked the hulls (something which the tomb images suggested was not done), to how well these vessels sailed. Similarly, building the Greek trireme *Olympia* has shown the problems around working triple banks of oars, and helped researchers to ask further and much better informed questions in the search to find out exactly how these vessels worked.

It is my hope that funders will look again at their policies in the light of the potential which replicas can bring, in order to recognise the times when projects fundamentally should be replication-led, and to see the circumstances when replication projects have the capacity to meet funders objectives in ways that conservation projects cannot.

3.3 PUBLIC UNDERSTANDING

Throughout the UK the numbers of visitors to heritage sites has grown exponentially (witness the growth in National Trust membership from just over 2 million people in 2001 to 4 million in 2012) and with that has come a much greater appreciation of what conserving and managing our heritage means. Whilst there is widespread acceptance of theme parks and similar attractions, many who go to them also encounter heritage sites, buildings and landscapes and have the ability to differentiate between what is real and what is contrived. There can be no doubt that authenticity is something which visitors look for (not least for the evocativeness that stems from places and objects with an intrinsic connection to past times and lives), and which when proven to be false, creates disenchantment and disappointment.

At the same time, audiences are sophisticated enough to understand that there are times when the authentic has to protected and substitutes made: no one expects to be able to handle the crown jewels (due to their value) or Magna Carta (due its extreme fragility) but welcome being in close quarters with and being able to handle replicas as reasonable substitutes. Visitors to the Viking Centre in Roskilde, Denmark are perfectly comfortable with the differentiation between the recovered Viking long-ships in the museum and the operating replicas in the sound alongside which the museum sits. So can it be here.

4 CONCLUDING REMARKS

Replication is viewed by some in the historic ships sector as an Arthur Daly-type world in which vessels of indifferent quality (at best) are engaged in activities which should be the preserve of historic vessels, or indeed not carried out at all. Undoubtedly this can be the case and I am sure we called all share experiences in the matter. However, this is far from always being so and this paper has sought to show that properly understood, replication has a valued part to play within the historic ship world, especially when it comes to learning or relearning construction and operating techniques and how they can be applied across historic vessels and replicas alike. Recently I was visited by colleagues from the *Eric Nordvall* project who were explaining the excitements of learning how to handle a paddle steamer with paddle wheels placed within paddle boxes integrated into the hull. Apparently it gets quite challenging and the tendency for the ship to head towards the nearest quay wall has led to heart-stopping moments. Although the last thing anyone would want to do would be to damage such a fine vessel as *Eric Nordvall*, there is some leeway when it comes to placing an operating replica in an exposed situation. No one would want to experiment with a historic ship if understanding of handling or engine characteristics of that particular vessel has been lost over time. Had the decision been made to return *Cutty Sark* to sailing condition, apart from the consequent loss of virtually all of her historic material in the process of rebuilding her to operational standards, what

would the world have made of things if she went down while at sea? Tragic though the loss of any ship is – especially of course when lives are lost too (as with the replica HMS *Bounty* due to hurricane Sandy), exposing a national treasure such as this clipper to the vagaries of the weather would be like hanging a Turner painting in a marquee during a storm and hoping the tent does not leak. Placing a replica of *Cutty Sark* (notwithstanding the human issues involved) in a position of danger would be, in heritage protection terms, a different matter.

It is my contention that defining the various replication processes, understanding what flows from each one, and examining the resultant potential can bring identifiable benefits for historic vessels; the proponents of replicas; funding institutions, and the public at large. Replicas form part of the historic vessel seascape. I look forward to growing the UK Replica List on our website, and to seeing it widely used to the benefit of the replicas on it, and to the vessels on our historic registers. I also look forward to changes in how funders perceive replica projects and, from that shift of mind set, to seeing a growth in investment in the rejuvenation of traditional skills (both to build and operate these vessels), and in initiatives which will help develop our understanding of so many aspects of historic vessels which presently remain as mysteries to us. Present and future technologies can still gain from a better insight in how things were done in the past.

5. REFERENCES

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6 AUTHOR'S BIOGRAPHY

Martyn Heighton is Director of National Historic Ships UK and chairs its Council of Experts. His maritime career started in 1978, leading the Merseyside Maritime Museum project in the Albert Dock Liverpool from pre-planning through phased opening of the buildings, quaysides and docks until 1985, when he was appointed by Bristol to run the city's cultural and leisure services. There he developed the Floating Harbour as a destination, initiated the *Matthew* project, and hosted the UK's first International Festival of the Sea. In 1997 he was appointed Chief Executive of the Mary Rose Trust, laying the groundwork for the new museum which is due to open next year. In 2001 he joined the management board of the National Trust where amongst other matters he led the successful bid to purchase Tyntesfield in Somerset, home to the Gibbs family which owned the ss Great Britain for most of its working life. Martyn led the Trusts national programme for the Year of the Sea 2005, and subsequently was project director for the South West's Brunel 200th Anniversary celebrations in 2006.

Martyn has held many external positions including the HLF South East Regional Committee and membership of the HLF Expert Panel. At present he is Vice-Chair of ss Great Britain, chairs the Bristol Old Vic Theatre's Buildings Committee, is a trustee on the new HMS Victory Preservation Company, is on the Council of the Society for Nautical Research, and was recently elected to the Worshipful Company of Shipwrights