WA Coastal & Marine

WORLD WAR II ALLIED CONVOY AND MERCHANT SHIPPING HERITAGE IN SCOTLAND

ASSESSMENT STUDY REPORT

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Stephen Lancaster carried out the analysis and compiled this report. Graham Scott provided the benefit of his considerable experience in dealing with shipwreck records. Kitty Brandon prepared the illustrations and the project was managed for Wessex Archaeology by Candy Hatherley. Quality Assurance was conducted by Antony Firth.

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WORLD WAR II ALLIED CONVOY AND MERCHANT SHIPPING HERITAGE IN SCOTLAND

Contents

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WORLD WAR II ALLIED CONVOY AND MERCHANT SHIPPING HERITAGE IN SCOTLAND

ASSESSMENT STUDY REPORT

1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 The importance of maritime trade to the British economy has a long history. The British Isles ceased to be self-sufficient in food during the 18th century. This growing reliance on overseas products led directly to the rise of large scale commerce based on mercantile shipping. The proceeds of this commerce effectively funded the industrial revolution in Britain. The rise of industrial manufacturing also relied heavily on merchant shipping, both around the coasts of Britain and overseas to obtain and move raw materials and to transport manufactured goods to markets across the world.

1.1.2 As such, in times of war Britain was the target of military strategies which aimed to cut off vital supplies and to a lesser degree deny access to markets. The first systematic attempt was the Continental System promulgated by Napoleon in the Berlin Decree of 1806 which had only relatively minor effects of Britain. By contrast German attacks during World War I on merchant shipping travelling to and from Britain, and particularly across the Atlantic, were effective and required the adoption of a variety of solutions, the most important being the adoption of convoys.

1.1.3 The experience of World War I was to prove valuable to British military planners. At the beginning of World War II the Admiralty had the basic elements of the system in place that would take the Allies through the war (Milner 2003). The convoy system was, in essence, in operation from the beginning of the war. The cornerstone of the system was the use of convoys of merchant vessels escorted by naval vessels, generally smaller naval vessels in the form of destroyers and other more specialist ships, and where possible supported by air cover. This system underwent many adaptations in response to strategic and tactical changes, varying environments of operation and changes in technology, but its essence remained throughout the war.

1.1.4 The importance of ensuring sufficient supplies of food, raw materials and military supplies is difficult to overstate. Winston Churchill claimed that the 'U-boat peril' was the only thing that had frightened him. The importance of maintaining supplies by sea is further underlined by the level of resources committed to the organisation and protection of merchant shipping. This included the special development of escort vessels, such as corvettes, frigates and escort carriers, and the large scale use made of intercepted German transmissions, including resources required to decrypt such messages.

1.1.5 Attitudes towards the physical remains of World War II have changed since the end of the war, notably over the last two decades. Many of the relics of the war were removed as inconveniences, some of the anti-invasion sites being removed even before the end of the war, or have been demolished during redevelopment of derelict sites. An appreciation of the value of later historic archaeology has been growing, and the realisation that many of the physical remains of World War II had already been lost to redevelopment and the natural processes consequent on

dereliction has led to moves to record many of the features associated with the war. The main programme of recording was the Defence of Britain Project, initiated by the Council for British Archaeology (CBA) in the mid 1990's (see below).

1.1.6 The contrast between the rapidly adapting nature of the specifics of the convoy system of World War II with the broader basic aspects of the system is in part reflected in the cultural heritage of the merchant shipping of World War II and its defence. Basic archaeological asset types, for example shipwrecks, coastal batteries, anti-aircraft positions, remain the same throughout the period of World War II, much of the basic geographical distribution of the associated remains broadly similar over the period, as the same military installations were used for different functions over the duration of the war. But specific patterns of asset distribution e.g. vessels lost to U-Boat attack versus those lost to aerial attack, or the specific numbers or types of buildings at base facilities will reflect changing patterns of activity.

1.1.7 At the same time as this change in perception of the physical remains of World War II, and perhaps partly connected to it, commemoration of World War II has in recent years become a more important concern in society at large. In particular, groups who have not previously received much public recognition are now doing so. This trend can be noted from the late 1990's, with a contingent of 'Bevin Boys (conscripted miners) marching with armed forces veterans on Armistice Day ceremonies. It could be argued that there has been a perception that the Merchant Navy seamen are another such group, and this is reflected in the more recent erection of monuments to Merchant Navy seamen who lost their lives in service, one at Dover and one at the Port of Leith in Edinburgh. A monument to the Arctic Convoys of World War II was erected near Loch Ewe in 1999.

1.1.8 The physical remains relating to the merchant shipping and its protection have an intrinsic value as historical assets, but also serve as a means of commemoration. Unlike purpose built memorials, such remains require interpretation in order to act fully as a memorial, as well as to fulfil their role as historic assets through providing information and education.

1.1.9 The commemorative aspects of physical remains differ from more formal types of memorial. They can be linked to more specific aspects of the past, both in terms of local associations and connections with particular activities, campaigns and operations. This quality, combined with a sense of connection with people in the past that viewing and moving through such sites can engender can create a more immediate and stronger experience than more formal types of memorial. Information for both educational and commemorative purposes can take a number of forms, include the creation of interpretation boards, specialised museums and visitor centres, and outreach through talks, school visits, guided walks and publications.

1.1.10 As with more formal, purpose built, memorials, the physical remains can perform a role with respect to both the remembrance of the dead and the preservation/protection of their remains. In the case of allied merchant shipping in World War II and its protection, the most obvious sites of this type are ship wrecks and aircraft wrecks, many of which are graves. Even where sites are not graves, or may not even have seen serious combat activity, as is often the case with some of the coastal infrastructure associated with the convoys in Scotland, such sites can play a role in memorialising the dead.

1.1.11 This 'absent memorialisation' is particularly the case for maritime casualties, as the final resting place of many of those lost at sea is unknown, or largely inaccessible.

The numbers of casualties, in terms of both ships and men, were high: over 30, 000 seamen on British merchant vessels lost their lives during the war, and over 2,400 British registered vessels were sunk (Bennet & Bennet 1999).

1.1.12 The broad categories of cultural heritage assets associated with the World War II convoys and their protection can be broken down into the following basic categories:

- Shipwrecks (including naval vessels, naval auxiliary vessels and merchant vessels);
- Aircraft wrecks;
- Marine infrastructure (e.g. boom defences);
- Coastal infrastructure (e.g. Coastal Command airfields).

1.2 AIMS AND OBJECTIVES

1.2.1 The key aim of this study is to outline the cultural heritage assets associated with merchant shipping in World War II and its protection, especially the convoy system. The different asset classes that might be associated with this have been researched and are understood to differing degrees. The specific objectives of this study reflect these differences.

1.2.2 The objectives of this study are:

- To briefly analyse the shipwreck records from World War II with regard to merchant shipping and its protection, using the database generated by the *Characterising Scotland's Marine Archaeological Resource project* (**CSMAR**) undertaken by Wessex Archaeology in 2011.
- To briefly analyse the aircraft wreck records from the CSMAR database and a 10% sample of the aircraft casualty records from Canmore
- To outline potentially relevant coastal infrastructure assets in Canmore and identify clusters for further study.

1.3 SCOPE OF REPORT

Study Area

1.3.1 The offshore study area comprises Scotland's territorial waters (0-12 nautical miles) and the exclusive economic zone (up to 200 nautical miles from the coast).

1.3.2 The onshore cultural heritage assets that are included within the study tend to be on or near the coast. Given the highly indented nature of the Scottish coastline and the role played by military aircraft in the protection of shipping and thus the association of inland airfields, however, sites involved in the protection of merchant shipping in can be almost anywhere in Scotland. The onshore study area is therefore potentially the whole of Scotland, but effectively will be delimited thematically (see below). The only area excluded from study has been Scapa Flow as separate studies are being undertaken by the Orkney Landscape Project, and by WA Coastal & Marine on behalf of Historic Scotland in fulfilment of their duties under the PWA 1973.

Convoy routes and historical background

1.3.3 Organising convoy routes was a major logistical undertaking which needed to be flexible and responsive to changing conditions and needs. Major convoy routes changed occasionally and subsidiary ports on routes frequently changed. There were also constant variations in terms of ships joining and leaving convoys at different points. Therefore, although a number of basic routes can be defined, the details of these routes were variable throughout the war.

The North Atlantic Route

1.3.4 Perhaps the most famous of the convoy routes was that across the North Atlantic. The convoys initially sailed between Liverpool and Halifax, Nova Scotia. After the USA joined the war New York was often the main port on the western end of the route. The Clyde became an important element of this route, particularly as many ports in southern England, particularly London and Portsmouth, were badly affected by German bombing from late 1940.

1.3.5 Despite a large shipbuilding industry, Glasgow was not a busy port by British standards of the time (Lavery 2001). The number of dockers was insufficient to handle the much increased levels of cargo and many dockworkers from southern England were moved to the area to cope with the incoming cargoes. Wharf space was also an issue, particularly for larger ships, so an innovative system of transfer to smaller vessels was instituted (Macintyre 1956). To allow the marshalling of merchant vessels, previously unused berthing areas were designated in the Firth of Clyde: in the Holy Loch, Loch Long and the Gare Loch.

1.3.6 Although less vulnerable to aircraft attack than London and Portsmouth, the Clyde was subject to bombing, which was as much aimed at attacking shipbuilding facilities as ports. Clydebank, a major shipbuilding centre, was particularly heavily bombed by Scottish standards (Harvie 1998). The Clydeside shipbuilding industry made a significant contribution to the merchant shipping effort in terms of construction of replacement shipping, and to the protection of merchant shipping through the construction of destroyers, building over 40 during the war.

1.3.7 The responsibility for the safety of shipping in the eastern part of the Atlantic belonged to the Western Approaches Command of the Royal Navy. Initially combined with another command, this became a separate command region in 1941, at which time the main base of operations was moved from Plymouth to Liverpool. Other sub-commands were established, including one at Greenock. The Western Approaches Command controlled the warships that undertook convoy escort and anti-submarine duties. These included the Clyde Escort Force, which was assigned berths near Greenock.

1.3.8 Loch Ewe, in Wester Ross, was used as a marshalling point for convoy vessels on the Atlantic and Arctic route to Russia (see below). The loch may have played a role in the articulation of two major convoy routes and the movement of war materials from the USA and Canada to the USSR.

1.3.9 Facilities for the reception of merchant convoy vessels were also constructed from 1941 on Loch Ryan, near the modern port of Stranraer. These were built as a relief port in the event of serious disruption to the main west coast ports, potentially a serious problem during the heaviest period of bombing of Liverpool during1940/41. Although never used as a relief port the Loch Ryan facilities were used for military

transport of material and troops, in particular acting as the landing point from 1942 for American troops who were to serve in Europe and North Africa (Laverty 2001).

The Arctic Route

1.3.10 The majority of the Arctic convoys ran to the cities of Murmansk and Archangel in Russia from Iceland. Only four of the earlier series (codenamed PQ going to Russia and QP on return from Russia) left from Scotland: PQ 14 and 15 from Oban and PQ 11 and 18 from Loch Ewe (Hughes 2001, Chadwick 1996). The following series of convoys to Murmansk and Archangel, (codename JW on the way to Russia and RA on the return), all left from Loch Ewe, until the end of 1944. Shortly after this the improved war situation allowed the facilities at Loch Ewe to be run down, and the remaining convoys sailed to and from the Clyde (Kemp 1993).

Routes around Britain

1.3.11 There were a number of coastal convoy systems in operation around Britain. One of these was the route around the north of Scotland between the Forth/Methil and the Clyde/Oban/Loch Ewe (codenamed EN and WN). This route undoubtedly played an important role in the articulation of the various other convoy routes, particularly in terms of the distribution of imported goods around Britain, but also in terms of the transfer of specific vessels between routes, as well as personnel. Despite this little is known about this convoy route and it does not appear to have a separate history published. It is only briefly mentioned in the one history dedicated to the coastal convoys (Hewitt 2008).

1.3.12 More information is readily available about the FS/FN coastal convoys that ran along the east coast, between Methil/the Forth and Southend-on-Sea. These convoys ran throughout the war, mainly transporting coal from the coalfields of Fife and the north east of England to the main centres of demand in southern England. This route was defined by a 'war channel' that notionally stretched from the parallel of Scapa Flow to Harwich. The channel was divided into three lanes: the closest inshore was a shallow water channel for small vessels sailing independently of the convoys. The south bound vessels passed along the outermost lane, delineated by the buoys marking the edge of the East Coast Mine Barrage. The north bound vessels passed along a lane in the middle of the other two.

1.3.13 The East Coast Mine Barrage was a huge minefield, consisting of contact mines tethered to float at or close to the surface that were designed to act as a deterrent to enemy surface shipping. Because such minefields might affect civil shipping from any nation, international treaties obliged that the position of such minefields had to be declared. At least parts of the barrage also had accompanying 'deep' minefields. These consisted of contact mines tethered at a sufficient depth not to impact on surface vessels, but to pose a threat to submarines. These minefields did not have to be declared. (Hewitt 2008). The edge of the minefield was marked by buoys. In English waters these were maintained by tenders operated by the Trinity House, the navigational authority for England and Wales. It seems likely that this responsibility was undertaken by the Northern Lighthouse Board in Scottish waters, though no reference to this is easily available.

Other routes

1.3.14 Other routes were also followed, by merchant vessels sailing independently and in convoy. Routes included crossing the North Sea (generally before the fall of Norway

in 1940), sailing to West Africa, the Mediterranean theatre and India, the latter having to avoid passing through the Mediterranean to Suez for much of the war.

1.3.15 In addition, large scale movements of personnel and material to various theatres of war were also conducted, both from the same ports as the main merchant shipping routes and from sites specifically requisitioned or built.

Protection of the routes

1.3.16 The principal threats to the merchant shipping were the German Navy (the *Kriegsmarine*) and the German Airforce (the *Luftwaffe*). Although other Axis powers forces were a threat in other parts of the world, it was German forces that formed the sole effective threat to shipping in Scottish waters. The precise nature of the threat varied over time. Sometimes this reflected changes in the capabilities of both sides in the battles around the convoys, such as the *Kriegsmarine's* move from operating in or close to British coastal waters in 1939 and early 1940, which reflected both the availability of U-boats with longer operational ranges and increasing availability of escort vessels and aircraft to the Royal Navy in the regions immediately west of Britain. On other occasions wider changes were reflected, such as the move to more U-boat operations in the North Sea in late 1944 and 1945 occasioned by the loss of the French Atlantic ports to Allied control soon after the Normandy landings.

1.3.17 The protection of merchant shipping by sea was provided primarily through the use of close escort vessels, initially destroyers and corvettes. Corvettes were later replaced by larger and more sea-worthy frigates. Some of the air cover for convoys were provided on other escorting vessels. Initially from summer 1941 catapult armed merchantmen (CAM ships) that could carry a single fighter aircraft, superceded from mid 1942 onwards by merchant aircraft carriers (merchant bulk vessels such as tanker adapted to act as small aircraft carriers, and escort carriers, small aircraft carriers purpose designed for convoy escort duties. Later in the war support groups were formed that could pursue enemy submarines if encountered near a convoy, leaving the close escort to its principle purpose of protecting the merchant vessels. These groups were based under specific commands tasked with protection of merchant shipping. Larger warships, particularly cruisers, would occasionally be assigned either to escort duties if attack by enemy surface vessels was expected. Battleships were not directly involved in convoy protection, but might be deployed as 'deep cover' in the northern North Sea or north east Atlantic if German surface raiders were thought likely to be active.

1.3.18 The protection of merchant shipping by air was divided: most aircraft flying from ships were under Fleet Air Arm control, although there were exceptions, with some catapult armed merchant vessels carrying RAF aircraft and personnel. Shore based aircraft protecting vessels could be under either RAF Coastal Command (generally longer range aircraft on anti-submarine duties) or RAF Fighter Command (generally aircraft protecting vessels in coastal waters against air attack).

1.3.19 Protection of merchant shipping from the shore was relatively limited in Scotland: there were no long range coastal artillery installations, in contrast with the coast along the English Channel. A small number of coastal batteries are known, but these were mainly intended for the protection of ports and coastal positions from assault rather than the protection of shipping. Various early warning and observer activities could be included in this category, which would include radar stations and mine observer posts.

2 METHODOLOGY

Shipwrecks

2.1.1 The CSMAR database was searched and filtered for relevant shipwreck entries, and these were placed in a spreadsheet. The relevance of entries was ascertained by checking dates and vessel types (e.g. fishing vessels or warships not engaged in convoy protection were excluded. Where possible entries were enhanced. This mainly took the form of refining loss causes, and assigning a likely convoy route to each entry. Where possible a convoy code has been assigned; this has only been possible in a small number of cases (see below). It should be noted that the CSMAR database only included located wreck records from the National Inventory. It does not include casualties. More up to date UKHO data that might identify some additional wrecks have not been consulted for reasons of time.

Aircraft

2.1.2 For aircraft records the CSMAR database was searched for relevant entries and these were placed in the spreadsheet, in a separate worksheet. As with shipwrecks, the main criteria of relevance were loss date and aircraft type. The number of records of located aircraft wrecks was considered to be too small to give a clear picture of the sorts of aircraft remains that potentially remain to be discovered. In order to be able to characterise the type of aircraft that may be in Scottish Waters and attempt to assess whether they are connected to the convoys a sample of the maritime aircraft casualty records in Canmore that were of the right period were also examined. There are just over 800 such records in Canmore. A 10% sample of these records provides a representative set of records that should allow a fuller characterisation of the aircraft that might have been involved it the protection of merchant shipping during World War II.

2.1.3 The shipwreck and aircraft data from the CSMAR was then re-checked against a number of secondary sources: *Off Scotland: A Comprehensive Record of Maritime and Aviation Losses in Scottish Waters* (Whittaker 1998), *Shipwrecks of the Forth* (Baird 1993), *Shipwrecks of the West of Scotland (Baird 1995), The Wrecks of the North of Scotland* (Baird 2003) and Volume 4 of *Shipwreck Index of the British Isles* (Larn and Larn 1998).

Coastal infrastructure

2.1.4 The records for coastal infrastructure required a somewhat different approach. The remains in this asset type reflect the integrated nature of the military systems that Britain employed and the diverse nature of the threats faced. Many assets cannot easily be assigned purely to the organisation and protection of merchant shipping as the majority appeared to have had multiple functions. In addition, due to the changes in military strategy and disposition of forces throughout the war the primary functions of many of the structures and sites changed a number of times.

2.1.5 The use made of non-military sites for wartime purposes, such as the requisitioning of hotels for headquarters buildings, was common. Short-term changes in a structure's function are not generally recorded in Canmore and may only be uncovered by referring to local histories, or in some areas the SMR/HER.

2.1.6 The RCAHMS thesaurus has been searched to identify site types in Canmore that may be relevant to the World War II merchant shipping. Numbers of potentially relevant entries and concentrations of records in particular areas have been noted.

3 RESULTS

3.1 SHIPWRECK RECORDS

3.1.1 A total of 126 relevant wreck records were identified in the CSMAR database. These vessel types may be characterised as follows: 13 naval vessels (including 6 u-boats), 89 merchant vessels and 24 naval auxiliary vessels. Naval auxiliary vessels are a very wide ranging category, including minelayers and sweepers, an oiler and all the requisitioned vessels, irrespective of their precise role in the war effort. A wide variety of vessels were requisitioned by the Royal Navy, often trawlers and drifters, but including other types such as yachts and tugs. Many of the requisitioned vessels, especially the fishing vessels, were initially used for mine sweeping, but a variety of other tasks, including armed escort, checking neutral vessels for contraband, lightering and rescue were undertaken. A single record that was not a war time loss is HMS Ludlow. Although this vessel was sunk as a practice target after the end of the war, it was a destroyer with a lengthy service as a convoy escort and has been included on this basis.

3.1.2 There have been no specific archaeological studies undertaken of convoy vessels in British waters. This is unsurprising as the trend towards the creation and study of large scale sets of data (with good positional data for wrecks) is still relatively recent. Moreover the academic study of historically recent sunken vessels is rare, it appears that most information is assumed to be available in documentary sources.

3.1.3

Year of Loss / Loss Cause	1939	1940	1941	1942	1943	1944	1945	Total
Mined		11			2			13
Bombed, aircraft		10	16	2				28
Torpedoed, Submarine	5	14				1	4	24
Shelled, Submarine						1		1
Torpedoed, Aircraft		3						3
Collided		7	6	2	2			17
Stranded	3	7	3	7	1	1	1	23
Foundered		1	3				1	5
Fire/Explosion		3		1	3			7

Scuttled				3			1	4

Table 1:- Causes and date distribution of loss

The date distribution of losses reflect a number of trends:-

- The drop off in losses to aircraft attacks from 1941 reflect changes in Luftwaffe deployments. Changes in German deployment patterns reflect the increasing demands which the Luftwaffe experienced, with units being required for operation in the North African/Mediterranean theatres of war. The entry of the USSR into the war against Germany would have hugely increased the demands, and a large reduction in the losses of British ships to aircraft attack is noted at this date (Grove 1997). In addition, Luftwaffe units based in Norway would have probably changed targets to the Arctic convoys to Russia, meaning that the losses to aircraft attack did not actually immediately diminish, but simply occurred outside of Scottish waters.

- Further drops in losses to bombing can be attributed to a number of factors: improvements in anti-aircraft protection for shipping and establishment of control of the skies over the British coast by the RAF.

- The changes in the numbers of losses to U-boat attack also reflect changes in patterns of German and Allied activity. The concentration of losses in 1939-1940 reflects a period when effective protection against submarine attack had yet to be developed, particularly in terms of air cover. The development of such protection, together with an increase in the number of available escort vessels was an important aspect of driving the U-boat campaign out into the Atlantic. It should also be noted that in the earliest stages of the war a significant proportion of the Kreigsmarine's submarines were only capable of operation in coastal waters.

- As the war progressed a higher proportion of U-boats were oceanic designs, allowing the Germans to operate outside of Scottish waters: in contrast to the number wrecks recorded in Scottish waters, the peak numbers of sinkings by U-boats recorded overall occur in 1941 to 1942 (Grove 1997).

- The smaller peak in losses in 1945 to U-boat attack reflects a later aspect of the war on merchant shipping, when U-boats were rarely operating in the Atlantic as the combined efforts of the allied navies and airforces had made such operations too dangerous, forcing the U-boats back to operating in coastal waters. The loss of bases in France in 1944 also forced U-boats to operate from Norwegian bases, causing them to concentrate on operations in the northern North Sea and the passages north of Scotland to the Atlantic and Arctic (Milner 2003).

- The loss causes also reflect a difference with the situation in English waters. There are no losses attributed to surface vessels. Attacks by surface forces, particularly the light coastal forces in the form of E-boats were a significant cause of loss in English waters. These vessels were not based within realistic operational range of Scottish waters.

3.1.4 Comparison of the CSMAR figures for losses to non-military causes, such as strandings and collisions, with those for peace time periods, reveals that losses to these causes rose considerably during the war (WA 2011). Also, the time distribution of these loses is slightly more even, although it does tail off somewhat in

the later part of the war. Analysis in terms of geographical distribution of these losses probably holds the key to this pattern (see Table 2 below).

Region of Loss / Loss Cause	East	North	Southwest	West
Mined	10			3
Bombed, aircraft	20	6		2
Torpedoed, Submarine	11	6	1	4
Shelled, Submarine				1
Torpedoed, Aircraft	2			
Collided	3	2	6	2
Stranded	1	6	3	16
Foundered	3	1		
Fire/Explosion	1	2	2	2
Scuttled	1			3
Unknown	2		1	

Table 2: Regional Distribution of Causes of Loss

The distribution of losses by region essentially shows the effects of distance from German held air and naval bases, with much higher losses in East Scotland. The ratios of military losses to non-military losses make this even clearer: 43:11 for East Scotland, 1:1 for North Scotland, 1:7 for Southwest Scotland and 34:13 for West Scotland.

3.1.5 As noted above, comparison of the figures for losses to non-military causes, such as strandings and collisions, with those for peace time periods reveals that losses to these causes rose considerably in the war. It is noticeable that losses to stranding in particular are lower in the East Scotland region and higher in the West Scotland region. Collisions are highest in the Southwest Scotland region.

3.1.6 These patterns probably reflect the effects of sailing under war time conditions. Most navigational aids were switched off for the duration of the war, making sailing

through navigationally challenging areas difficult. In addition, some of the routes would have been new to many of the masters of the ships sailing: the contrast in numbers of losses to stranding between East Scotland and West Scotland probably result from this. Routes for the coastal convoys running from Methil and the Forth to London would have been familiar to many ships masters of the colliers that made up the mainstay of that route. The effective closing of the ports of the south and east of England, especially London and Southampton which were heavily constrained by the effects of German bombing, meant that many vessels were routed to the Clyde (Milner 2003). In addition the 'north about' convoys from the Forth and Methil to the Clyde, which entailed more ships moving round the west coast of Scotland, meaning many ships masters were sailing through waters they were unfamiliar with, and in the case of the Clyde, potentially crowded. These conditions would have led to the increase in losses through stranding and, in the case of the Clyde, collisions.

3.2 AIRCRAFT WRECK RECORDS

3.2.1 There are only 26 records of located aircraft wreck records in Canmore, and thus the CSMAR. Of these 11 records are identified to aircraft type, all dating to the period 1939 – 45 (WA 2011). Of these records it is worth noting that only one aircraft is German; the rest are allied models.

3.2.2 Aircraft wrecks appear in all the regions, with particular concentrations in the Moray Firth and the Firth of Clyde. This probably reflects the broad reality of allied aircraft operations over Scottish waters during World War II. The aircraft wreck assets appear to represent the type of aircraft involved in a variety of maritime operations rather than all aircraft operations: in the main the wrecks are seaplanes, dive bombers and marine adapted variants.

3.2.3 There are a much higher number of aircraft 'casualty' records in Canmore. These are all records for losses with no precise location for the wreck and constitute a further 597 records of aircraft losses. A brief examination of a random sample of 10% of these records dated 1939 – 45 gives some further indication of the types of aircraft wrecks that might be found in Scotland's waters and the associations these may have with the protection of merchant shipping. The data generally provides information on the aircraft type, the unit to which it belongs, the date of loss and some information on the cause of loss, though this can be very general.

3.2.4 The aircraft casualty records in Canmore appear to be largely derived from the work of Whittaker (1998). As Whittaker does not record the sources used in individual cases, it is difficult to evaluate the reliability of these records, though the notes at the beginning of the book do give a limited indication of the type of records that have been consulted.

3.2.5 All but one of the records apply to allied aircraft. The single exception is for a Junkers 88, the only aircraft lost to hostile action in Scottish Waters. All other losses are either accidental or as the result of anti-aircraft practice where the losses appear to be aircraft flown as drones (5 records), these latter losses having no direct relevance to convoy protection.

3.2.6 The majority of the losses being the result of accidents reflects the general hazards of flying operations. An additional problem that faced seaplanes, one of the mainstays of long-range anti-submarine patrols, was that of stability and safe mooring: a number of the losses identified in the sample of casualties were of seaplanes that had capsized or foundered at their moorings, often as a result of bad weather. Such capsizings would have been relatively low energy events in

comparison to crashes, and as such wrecks are likely to be in better condition. The pattern of losses may also reflect the role Scotland played as a training area for both the RAF and the Fleet Air Arm. A number of the RAF units that incurred losses are listed as training units. Although the FAA units are not specifically listed as training units it would appear that the principle use of most of the FAA shore establishments were as training and maintenance bases (Wragg 2001).

3.2.7 It is difficult to clearly see a direct association with convoys within these losses. However losses due to accidents may still have occurred during shipping protection and anti-submarine duties. Further study to identity the RAF squadron to which the aircraft belonged to would indicate the nature of the operation during which an aircraft was lost, and therefore whether it was likely to be involved in the protection of merchant shipping.

3.2.8 Losses during transfers to aircraft carriers are also recorded. Although carrier borne aircraft would have been involved in a variety of duties, historical records would allow the reconstruction of the likely operations, in particular through identifying specific carriers and FAA squadrons and their operations at the time of loss and therefore whether such losses were involved in operations for convoy protection.

3.2.9 Another source that might be of value in assessing the aviation aspect of the protection of merchant shipping are the records of the Air Sea Rescue service. Turning this information into usable information requires considerable input, beyond the scope of this initial study, but this type of information has already been used with some degree of success for the waters around southern and eastern England (WA 2008).

3.3 COASTAL AND AVIATION INFRASTRUCTURE

3.3.1 The physical remains of WWII defence related structures have been extensively studied in Britain in the Defence of Britain project undertaken from 1995-2002. This study generated a significant archive that is accessible through the Archaeological Data Service, and a set of reports: 'Twentieth Century Fortifications in the United Kingdom' (Redfern 1993).

3.3.2 The range of sites types covered by the report is rather limited, those which may relate to the protection of merchant shipping being limited to anti-aircraft batteries, coastal artillery batteries and radar sites. No airfields are listed, nor are any of the ancillary structures associated with these sites. These reports however do include useful information on the specific units deployed to the various sites and the earliest and latest mentions in documentary evidence.

3.3.3 The Defence of Britain work has been further supplemented in Scotland by the surveys undertaken for a report on 20th century defences commissioned by Historic Scotland (Guy 1992-99 – see RCAHMS MS 810). These reports are organised on the local authority regions in use 1973-1996 and are arranged by OS map sheet. They include a wider range of site types, including ancillary structures. It is unclear if all regions were surveyed as RCAHMS only holds reports for the former Grampian, Strathclyde, Highland, Lothian and Central Regions, and for the Island Areas of Orkney and Shetland. Some elements may still be missing. An example might be mine-watching posts: these were posts in coastal areas which were used to watch for the aerial laying of mines by enemy aircraft, and to report their approximate position for minesweeping (Hewitt 2008). The structures involved were often relatively small and are not necessarily easily distinguished. None are mentioned in the surveys, or in Canmore.

3.3.4 The surveys did not cover marine sites, so that infrastructure such as interception loops or mooring sites associated with convoy activity were not included. Some of these elements have been noted in Canmore, but have not been targeted as part of a systematic survey effort.

3.3.5 The results of both sets of reports have been incorporated into Canmore. Some additional sites and supporting material, particularly in the form of photographs, are also held in Canmore. The local authority SMRs/HERs have not been examined in detail but may hold further sites not located within Canmore.

3.3.6 There are issues concerning the usefulness of the Defense of Britain and the Guy surveys in relation to the heritage of the convoy systems and the general protection of merchant shipping in World War II. As the report emphasis is on defence there are very few entries that relate to other wartime activities. In particular, naval infrastructure that was involved in the organisation and defence of merchant shipping is not mentioned. Conversely there are a considerable number of sites included in these surveys that had no connection with the protection of merchant shipping. Some of these can be easily filtered out as the Defence of Britain project had a high-level classification of site types as 'anti-invasion' or 'non-anti-invasion'. In other cases more detailed work will be required to unravel which sites are relevant to the study of the organisation and protection of merchant shipping in WWII.

3.3.7 The Defence of Britain and Guy reports contain no records of civilian sites that were requisitioned, a fact which may leave considerable gaps in the understanding of how sites operated unless other sources are consulted (see below). Moreover, both reports contain few, if any, listings for airfield sites.

3.3.8 Canmore does list airfields and related infrastructure forms. Secondary historical sources (e.g. Wragg 2001) are also available that would be of value in identifying facilities closely connected with the protection of shipping.

3.3.9 Entries in the reports are generally very concise and there is no attempt to provide a coherent overview of the function of interrelated sets of sites. The overviews that are presented are based on different site types, e.g. different types of anti-aircraft battery sites. In particular, areas involved in the marshalling of convoys would have been large, and there is a need to understand the sites in terms of combined operational land- and seascapes.

3.3.10 Sites or site complexes having multiple and changing functions throughout the war have been alluded to above. It is possible to identify areas where there are likely to have been concentrations of sites that had some relation to the management and protection of merchant shipping. It may also be possible to draw connections between different physical elements of these complex systems.

3.3.11 These potential areas of concentrations of sites relate to ports and anchorages, particularly in areas used for the marshalling of convoys and the loading and unloading of vessels. These are listed below. Most locations have been mentioned above in the description of convoy routes. Places which have not been described have a brief note concerning their significance.

- The Clyde, including:
    - Holy Loch
    - Loch Long

- Gareloch/Faslane
- Greenock

- Oban
- Tobermory Bay – escort vessel 'working up' (intensive familiarisation and training).
- Loch Ewe
- Methil
- The Forth, including
  - Rosyth
  - Port Edgar/South Queensferry – minesweeper and patrol vessel training
  - Inchkeith – defences for the Forth Approaches
  - Incholm - defences for the Forth Approaches

3.3.12 It should also be possible to identify types of sites with dispersed distributions that made a contribution to this particular aspect of the war. With additional research it should be possible to identify specific sites. These site types are most likely to be those associated with observation/early warning and aviation. Canmore uses a thesaurus of site types. This thesaurus has been filtered for terms that may be of use in identifying sites connected to the organisation and protection of merchant shipping (See Table 3 below). In the process of compiling the table a number of other terms relating to military activities have been checked and found to be unlikely to provide sufficient information.

Thesaurus Term	**No. of Canmore Entries**	**Concentrated/Dispersed**
Airfield	121	D
Barrage Balloon Site	125	C + D
Bomb Store	34	C + D
Boom Defence	11	C
Coastal Battery (20th Century)	115	C + D
Coastal Defence Site	2	C + D
Concrete Platform	19	C + D

Degaussing Station	4	C
Gun Emplacement	131	C
Military Headquarters	23	C + D
Naval Establishment	7	C
Observations Post	182	C + D
Operations Block	26	C + D
Radar Site	32	D
Radar Station	89	D
Seaplane Base	22	C + D

Table 3: RCAHMS Thesaurus terms for potentially convoy related site types.

4 SOURCES

4.1 HISTORICAL SOURCES

4.1.1 The principle information for the convoy systems in WWII is historical rather than archaeological. It had been suggested that there is a relative paucity of documentary evidence concerning the terrestrial physical remains of the World War II military activity in Britain, but research undertaken as part of the Defence of Britain project has overturned this argument (Redfern 1998). Although this section will concentrate on readily available secondary sources, the importance of primary sources with regard to particular questions that have not been addressed in the historical literature should be borne in mind.

4.1.2 The amount and quality of historical research concerning merchant shipping in World War II is quite variable according to the precise topic under consideration. In particular, different convoy routes have attracted very different levels of interest from historians.

4.1.3 The amount of published work on the convoys can be ranked by route. The 'Battle for the Atlantic', i.e. the convoys through the North Atlantic, appears to have generated the most publications, followed by the Arctic convoys to Russia (e.g. Milner 2003, Kemp 1993). By contrast a single book dedicated to the coastal convoys around Britain (Hewitt 2008) which only really covers the English section of the east coast convoys and, to a lesser extent, the English Channel convoys. There is yet to be a dedicated historical study of the World War II convoys in Scottish waters, either in terms of the coastal convoys or the of the role played by Scottish ports in the international convoy routes. Other aspects of the convoy system are rarely mentioned including coastal and shore based support systems and training.

4.1.4 Additional information on various aspects of the protection of merchant shipping may be found in the official histories and accounts, most particularly the account produced by the Naval Historical Branch (Grove 1997). These may have been fairly comprehensive but they are now relatively dated as many were completed prior to the declassification of a wide range of documentation released in the 1970's (Bennet and Bennet 1999). In addition a further selection of documents have been

declassified more recently, particularly with many more being released after the elapse of the 50 years for which many documents had been routinely embargoed, leading to a further tranche of records becoming available in the 1990's. It is therefore likely that many aspects of the subject may be more readily researched than has previously been the case.

4.1.5 The existence of local histories which provide convoy related information appears to be relatively uneven and can be difficult to locate. These histories can be useful in providing insights into the actual operations and how these relate to the surviving physical remains. They can also be valuable in providing information on elements that are no longer extant, particularly by providing maps of site complexes, such as that drawn up for Loch Ewe (Chadwick 1996). They can also include evidence not in Canmore or the Defence of Britain reports such as the use of requisitioned civilian buildings. These pieces of evidence are key to understanding the organisation of the system. An example would be the requisitioning of the Station Hotel in Oban for the headquarters of local Royal Navy operations, which would have included co-ordination of merchant shipping in the area and anti-submarine patrols (Hughes 2001). The quality of data in local histories is highly variable, and is often lacking in detail.

4.1.6 Two further sets of resources are the listings contained in the web sites www.uboat.net and www.convoyweb.org.uk . Although the usual caveats that apply to internet sources broadly apply here, it should be noted that the convoy web site is based on the research by Arnold Hague, a noted naval historian who specialised in the convoy system of World War II and published a number of works on the subject.

4.2 MUSEUMS

4.2.1 Museums with the potential for relevant holdings are given below:

- National Museum of Flight, East Fortune Airfield, East Lothian
- Oban War and Peace Museum
- Scottish Maritime Museum, Irvine
- Riverside Museum, Glasgow
- Russian Arctic Convoy Museum

The Russian Arctic Convoy Museum does not currently exist. A registered charity has been set up to fund raise and to administer a project to set up the museum near Loch Ewe. A book on the Arctic convoys is currently being researched.

5 CONCLUSIONS

5.1.1 Considerable resources exist for studying the physical remains relating to the organisation and protection of merchant shipping in World War II. There do however appear to be a number of gaps in the historical account of the organisation and protection of merchant shipping in World War II including:

- poor to non-existent coverage of coastal routes around Scotland, weak coverage of routes outside of the North Atlantic and Arctic;

- The operation of shore based facilities, pertaining to both the maritime infrastructure but also of the aerial protection of coastal convoys;
- The articulation of different convoy routes;
- The role of shipping moving independently.

5.1.2 The known archaeological record of remains related to convoys in Scotland is substantial. There are however a number of gaps within the site records and published material:

- Due to the difficulty of identifying and recording shipwreck sites 500 located wreck sites cannot currently be ruled out as being unconnected to convoy activity.
- The proportion of marine archaeological sites that have been located relative to the number of known losses: this means that a significant number of shipwreck and aircraft wrecks relating to the WWII convoys may be unlocated.
- The emphasis on coastal defensive structures has left other elements, such as facilities for ship handling and airfields relatively under reported.
- Recording has tended to be at the level of individual sites or site elements: complexes or landscapes have not been studied as operational areas or as part of operational systems.
- Connections between shipwrecks and aircraft wrecks and the on-shore archaeology remain unexplored.
- It is possible that for similar reasons a small number of other marine cultural heritage assets relating to either vessel handling or defence and monitoring (such as interception loop remains) may also be unrecorded.

5.1.3 The quality of the preservation of onshore archaeological material relating to the merchant shipping in World War II will be greatest in areas that have undergone least development. It is likely that the complex of sites at Loch Ewe will be better preserved than those around the Forth or Clyde Firths.

6 RECOMMENDATIONS

6.1.1 There is considerable scope for further work on the subject of the organisation and protection of merchant shipping in World War II. Many aspects of understanding the system in detail in terms of how it worked in Scottish waters and ports are essentially historical rather than archaeological issues.

6.1.2 Other aspects, particularly those that involve understanding the spatial aspects of the system are amenable to archaeological approaches. Surveying and recording of the physical remains associated with the organisation and protection of merchant shipping would allow a fuller understanding of spatial relationships between different site elements and different sites to be formed. Such information would form a valuable comparison with the 'official' record of sites, which may not fully reflect the reality of the creation of such sites or changes of a site during its period of use and

will not reflect changes after a site went out of use. More specific aspects of the use of archaeological approaches are given in the recommendations.

6.1.3 Given the commemorative aspect of the archaeology it is recommended that further work on the subject involves a strong outreach/community component.

6.1.4 A general consideration with respect to all shipwreck sites is the high proportion of located wrecks with no further information. It is likely that various groups of sea-users, particularly recreational divers, are likely to hold considerably more information on many of these sites. Any project seeking to enhance the record of shipwreck archaeology in Scottish waters, irrespective of period or theme should seek to engage with sea-users, and specifically recreational divers, in order to access the information these groups may have.

6.1.5 The areas of potential concentrations of sites could be the subject of a combined desk-based and survey study seeking to;

- understand the surviving on-shore monuments as a landscape,
- assess condition of the on-shore monuments,
- establish connections with the relevant shipwreck sites through data on routes,
- establish connections with relevant aviation sites, both wrecks and airfields, through data on relevant Coastal Command and Fighter Command operations, combined with ASR records.

6.1.6 The complex of sites at Loch Ewe probably allows the best opportunity for the first study. As a relatively undeveloped area, survival of archaeological remains is probably better than the other concentrations of sites in Scotland. The limited range of functions fulfilled by the anchorage should make understanding how the complex worked an easier task. Loch Ewe also has appears to have a local community that is interested in the sites, including local historians. The area is also already a locus of commemorative activities concerning the Arctic convoys. A detailed study could link to current the commemoration project, and enhance the educational aspect through interpretation boards, material for touring of the sites and public talks. Spatial data and data concerning the condition of the sites that would assist in management could also be generated.

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