

The wrecks of Franklin's ships *Erebus* and *Terror*; their likely location and the cause of failure of previous search expeditions

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Introduction

In May 1845 Sir John Franklin left England in command of two Royal Navy ships, *Erebus* and *Terror*. The expedition's mission was to sail first to Greenland and then into Lancaster Sound in the eastern Arctic, after which it would continue west in search of a route to Alaska and hence discover the elusive Northwest Passage. But in September 1846 both ships became trapped in the ice in Larsen Sound, to the north of King William Island. Sir John Franklin died the following June of unknown causes. A year later, on 22 April 1848, both crews abandoned their ships and headed south on foot. On 26 April, after making landfall at Victory Point at the northwestern extremity of King William Island, the expedition's remaining 105 men continued south, following the coast. Their destination was most likely a Hudson Bay Company trading post far to the south on the North American mainland. Tragically, it was too great a distance for them.

The loss of the Franklin Expedition has been described as the Victorian equivalent of the Challenger's space shuttle disaster.¹ It remains the Arctic's worst maritime disaster, and it initiated the largest search and rescue effort in history. Thirty-eight expeditions in the second half of the nineteenth century attempted to determine what had become of Franklin's men and ships, all to no avail.²

Where and when?

The first hard evidence of the fate of Franklin's men came during the 1857–9 Fox Expedition, led by Captain Francis L. McClintock aboard the auxiliary-steamer yacht *Fox*. It was a private expedition sponsored by Franklin's widow, Lady Jane Franklin.³ The expedition's second-in-command, Lt William R. Hobson, discovered the Franklin Expedition's landfall camp at Victory Point on King William Island. There Hobson and his men found a large stone cairn, inside which was an empty food tin containing what has become known as the 'Victory Point letter.'

The document provided a number of important details, including major dates, such as when the ships became fixed in the ice and when Franklin died. It also reported that, including Franklin, twenty-four individuals had perished before the remaining men abandoned their two ships. In addition the note stated the group's destination as the Fish River and the date, 26 April, they headed out for it from Victory Point. Most importantly, the Victory Point letter lists the

¹ Glen M. Stein, *Scattered Memories & Frozen Bones: Revealing a Sailor of the Franklin Expedition, 1845–48*, 2007.

² W. Gillies Ross, 'The Admiralty & the Franklin Search', *Polar Record*, 40 (215) 2004, pp. 289–301.

³ Glen M. Stein, loc. cit.

geographical co-ordinates of the *Erebus* and *Terror* at the time they were abandoned: 70.5° North by 98.23° West. This last known position of Franklin's ships lies approximately 25 km north of King William Island.

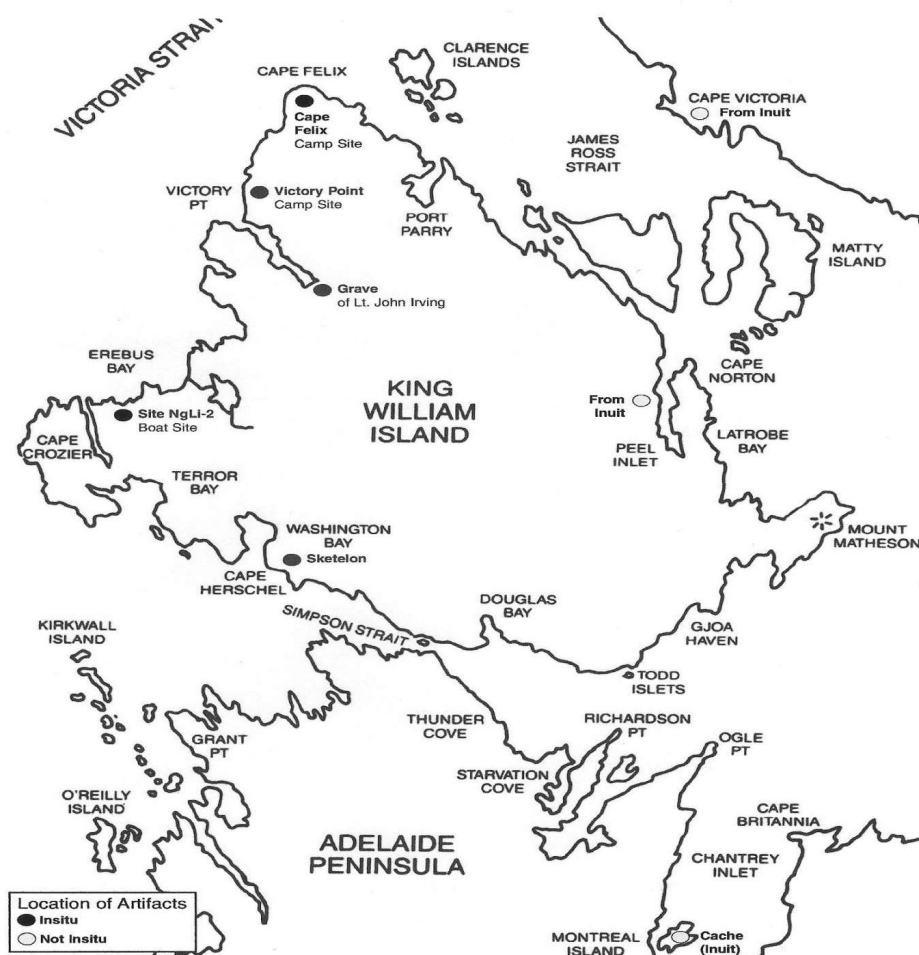


Figure 1. King William Island, showing the location of artefacts discovered so far.

The men

Hobson's team followed a trail of debris left behind by Franklin's men southward along the western shore of King William Island. At a position east of today's Cape Crozier they named 'The Boat Place' they found a ship's boat lashed to a sled.⁴ The remains of several men were found lying around the boat, and inside it were two skeletons.

⁴ *Harpers Weekly*, 20 Oct. 1850, p. 690.

Beginning in the summer of 1992, several scientific expeditions were undertaken at the Boat Place.⁵ A number of artefacts representing a ship's boat were collected, including iron and copper nails, pieces of wood and other objects. Artefacts representing personal affects included a clay pipe fragment, buttons, shoe leather and pieces of fabric. Nearly 400 human bones and bone fragments were collected, representing a minimum of eleven individuals.

Of the 129 members of the Franklin Expedition the remains of only four have been positively identified. Three of these were found buried at Beechey Island where both the *Erebus* and *Terror* spent their first winter in the Arctic. The grave of the fourth Franklin crewman, Lt John Irving, RN, was found on King William Island during the 1878–80 expedition lead by US Cavalry lieutenant Frederick Schwatka.⁶ Further human remains, believed to be those of Franklin's men, and artefacts have been found at other sites along the western shore of King William Island and to the south on the mainland.⁷



Figure 2. HMS *Terror* (from George Back, *Narrative of an Expedition in HMS Terror, undertaken with a view to Geographic Discovery on the Arctic Shores, in the Years 1836-7*, London, 1838).

The artefacts

The ship's boat found at the Boat Place by Hobson was filled with an apparently bizarre collection of items, including a copy of the book *The Vicar of Wakefield*, abandoned clothing and boots, toiletries, tea, 70 kg of chocolate and all sorts of other gear.⁸ Eventually some of these

⁵ Anne Keenleyside, Margaret Bertulli & Henry Fricke, 'The Final Days of the Franklin Expedition: New Skeletal Evidence', *Arctic*, 50, 1, March 1997, pp. 36–46.

⁶ Stein, 'Scattered Memories & Frozen Bones: Revealing a Sailor of the Franklin Expedition, 1845–48'.

⁷ Ross, 'The Admiralty & the Franklin Search...'

⁸ David Murphy, *The Arctic Fox: Francis Leopold McClintock, Discoverer of the Fate of Franklin*, Toronto, 2004.

found their way back to Great Britain's main repository of Franklin relics, the National Maritime Museum (NMM) in Greenwich. These artefacts, most of which have not been on public display in years, have been largely overlooked during the past 150 years by Franklin researchers and searchers.

The ships

Each was a three-masted wooden bomb vessel constructed to be armed with heavy mortars. As a result they were heavily built and well suited to Arctic exploration. Prior to their last voyage, *Erebus* and *Terror* had both sailed to Antarctica and back without incident. In preparation for the Franklin Expedition, both vessels had been specially overhauled. Each was equipped with a steam locomotive engine that had been modified to drive a shaft and propeller. Both the *Erebus* and *Terror* were equipped with nine ship's boats each, ranging in size from 30 feet (10 m) to 12 feet (4 m) in length.⁹

The Inuit

Most historians agree that Franklin's men did not come into contact with the Inuit, the indigenous people of the Arctic, until they came ashore on King William Island. No Inuit lived there permanently prior to the twentieth century. However, since the 1850s the loss of the Franklin Expedition has become part of the oral history of the Inuit across the entire Arctic, and many stories of encounters between them and Franklin's men have developed over the years and become part of the Franklin legend. Anecdotal evidence indicates that several small groups of Inuit came in contact with certain members of the Franklin Expedition while they were still alive. Other Inuit were the first to find physical evidence of the sailors' fate, their remains and affects, after the Englishmen had died, most likely, of starvation, exposure, or both.¹⁰

In 1854 Dr John Rae, a surveyor for the Hudson's Bay Company, met an Inuit hunter near Pelly Bay, on the east coast of King William Island, who was wearing pieces of a Royal Navy officer's cap. The hunter said that a large group of 'Ka-bloo-nans' (white men) had died of starvation several winters before while dragging a boat far to the west. Gradually Rae realized that these were the last of Franklin's men. When in Repulse Bay, located much further to the southeast, he met more Inuit who traded with him a trove of artefacts, including a silver plate, broken chronometers and astronomical instruments, and even one of Sir John Franklin's medals, a Guelphic Order of Hanover.

The search so far

A number of private and government efforts and expeditions attempted to locate the shipwrecks of the *Erebus* and *Terror* during the latter half of the twentieth century and first decade of the twenty-first. Most of these focused on locations along or off the northwest shore of the Adelaide Peninsula. Several underwater remote sensing surveys, carried out over several years, have

⁹ Ship's plan. National Maritime Museum, Greenwich, United Kingdom.

¹⁰ Russell A. Potter, 'John Rae', *Article Profiles*, 40, pp. 78-9 & 'Sir John Franklin: his Life and Afterlife', 1996, www.ric.edu/rpotter/franklife.html

focused on the waters off O Reilly Island and Kirkwall Island. No evidence of either Franklin shipwreck has ever been found. The various search efforts included the participation of a number of different federal government agencies, including, but not limited to Parks Canada, the Canadian Coast Guard and the Canadian Forces. No systematic underwater survey of Larsen Sound, north of King William Island, has ever been conducted.

They knew where they were and what they were doing

Some historians have theorized that the members of the Franklin expedition were driven mad by lead poisoning and, as a result, were incapable of thinking clearly. However, recent research by UK researcher William Battersby suggests that while Franklin's men may have been made ill by consuming food from metal tins of the period, they were, on the contrary, capable of functioning at a high mental level.¹¹ Franklin's crew were all experienced Arctic seamen handpicked by the Royal Navy for the expedition. They included men like Francis Crozier, captain of the *Terror*, who only a few years before had served under Sir James Ross as the captain of the *Erebus* on a successful expedition to Antarctica.

The Victory Point letter, believed to be mostly written by James Fitzjames, captain of the *Erebus* during the Franklin Expedition, accurately reported the location of the cairn in which it was found at Victory Point.¹⁵ If this location is accurate, it is also reasonable to assume that the final coordinates given for both *Erebus* and *Terror*, north of King William Island, are also correct.

Boat Place artefacts

Many of the artefacts recovered at The Boat Place by members of the Fox Expedition were handed over, first to the Royal Navy and, in turn, to the National Maritime Museum (NMM) at Greenwich. Today, they make up the largest part of the NMM's small collection of Franklin artefacts. The artefacts were held in permanent storage and not on public display until 2008 when the present author and his colleague William Battersby requested to study them. Prior to this, the accepted academic view was that the artefacts were useless junk thrown randomly into a lifeboat and dragged across the Arctic by a bunch of madmen who had succumbed to lead poisoning.¹²

On examination, it was clear that the artefacts were not junk but rather 'survival gear' that Franklin's men planned to use in their attempt to find rescue to the south. In fact, many of the items had been modified before both companies had abandoned their ships.

One example is a hunting knife and sheaf: a table knife that had been sharpened and fitted into a makeshift sheaf made from a shortened marine's bayonet scabbard that could be fitted to a man's belt. Other examples were several small bags of gunshot made from the fingers of a man's leather glove. These would have been much more convenient to use in the field when it came to loading a musket rifle. Other artefacts confirmed what the finders observed at the Boat Place. Captain McClintock wrote in his report to the British Admiralty that the ship's boat found by his

¹¹ William Battersby, 'Identification of the Probable Source of the Lead Poisoning Observed in Members of the Franklin Expedition', *Journal of the Hakluyt Society*, Sept. 2008.

¹² PROCOM press release, 'Long Forgotten Relics Tell of Franklin's Fate', 28 Jan. 2008.

men had been modified and equipped for use in a river, as compared to use at sea. It had a weather-cloth nine inches tall, which was battened down all around the gunwale and was fitted with iron stanchions as oar locks.¹³ The iron stanchions were recovered and are part of the NMM's collection of Franklin artefacts.

There is also a paddle made from the modified oar of a ship's boat. In addition, a number of repair items were found inside, intended for mending the boat's home-made sail. A 'sailor's palm' was found along with sail cloth patches, scissors and yarn. Clearly, Franklin's men developed a plan to head south and prepared for it by outfitting themselves as best they could with what they had aboard *Erebus* and *Terror*. As I stated in the press release, 'Long Forgotten Relics Tell of Franklin's Fate' (28 Jan. 2008), someone had gone to a lot of trouble to make such items as an aid to their survival. They are not the articles, or actions, of madmen.



Figure 3. The discovery of the ship's boat (from *Harpers Weekly*, 20 October 1850.)

What other shipwrecks tell us

Other artefacts recovered by Franklin searchers and Arctic explorers over the years make up the rest of the NMM's Franklin Artefacts Collection, the majority of which were recovered along the western shore of King William Island. Most are very small in size, such as bits and pieces of metal or china. Only a few small pieces of wood have been recovered. No ship's timbers or wreckage has ever been reported, either by white explorers or Inuit, along the shores of King William Island or in the waters surrounding it.¹⁴

Typically, when a ship founders it leaves behind a great deal of wreckage or debris. The same is true when a ship is crushed in sea ice. Many a wooden sailing vessel succumbed to such a fate, both in the Arctic and Antarctic, during the nineteenth and early twentieth centuries. For example, in 1914 the Antarctic explorer Sir Ernest Shackleton lost his ship *Endurance* to pack

¹³ Murphy, *The Arctic Fox*.

¹⁴ Anecdotal evidence given by Inuit hunter and outdoorsman David Nanook of Taloyoak, Nunavut, Sept. 2009.

ice 135 km from the Antarctic continent. There was considerable debris left behind at the surface after it sank.¹⁵

The fact that so little ship's debris has been encountered suggests that both *Erebus* and *Terror* were intact when they sank and were likely remain that way on the bottom. The same happened to HMS *Breadalbane*, which sank in 1853. A Royal Navy ship, it was part of a Franklin rescue mission when it, too, was destroyed by ice. In the twentieth century, many historians and archaeologists speculated that nothing would remain of the shipwreck on the seafloor. But in 1980 it was discovered by a private expedition, sponsored in part by *National Geographic* magazine, lying upright on the bottom in 100 metres of water off Beechey Island in Lancaster Sound. The *Breadalbane* was in a remarkable state of preservation. Its masts were upright and its main deck was intact. Several artefacts were removed from the wreck by deep divers, including the ship's wheel in near perfect condition.¹⁶ The water's depth and temperature were attributed to being the main reasons for the shipwreck's remarkable state of preservation. Very little light penetrates to such a depth and because of this, and the extreme cold, the rate of decay is much slower than in more southerly latitudes.

What the Inuit tell us

In 1854, John Rae was the first white explorer to learn the fate of some of Franklin's men from the Inuit. Given the physical and anecdotal evidence, there is no doubt that some Inuit came into contact with some of Franklin's men as they attempted to reach the Fish River. This is not to say that those Inuit who said that they had encountered one or both of Franklin's ships lied or were in error, but rather they were not understood properly by white explorers. The majority of the ships sent to the Arctic by the Royal Navy to look for the Franklin Expedition did not have interpreters aboard. If the Admiralty had provided Inuit interpreters for their ships, a number of them would, most certainly, have been directed to the scene of the Franklin disaster.¹⁷

White explorers in the nineteenth and early twentieth centuries encountered many Inuit across the central Arctic who reported seeing 'umiaq'. Umiaq is the word in Inuktitut, the Inuit language, most commonly used to describe a boat, *not* a ship.¹⁸ The word is still in use today. A number of Inuit 'boat' sightings were reported on or off the western and southern shores of King William Island. Several of these coincide with locales where Franklin's men, or their remains, were found, such as The Boat Place.

Most certainly, the boat seen by the Inuit was a ship's boat from either the *Erebus* or *Terror* and not the converted warships themselves, as alleged by some Franklin searchers. As noted earlier, both of the Franklin ships each carried nine ship's boats, all of various sizes. This would explain the location of some sightings that were too shallow for *Erebus* and *Terror*, such as at Chantrey Inlet in the estuary of the Fish River. Both Inuit and white explorers reported seeing a ship's mast protruding from the water there.¹⁹ What they observed had to be a ship's

¹⁵ www.coolantarctica.com/Antarctica%20fact%20file/History/antarctic_ships/endurance.htm

¹⁶ Joe MacInnis, 'The Land That Devours Ships', CBC, Toronto, 1985.

¹⁷ Ross, 'The Admiralty & the Franklin Search'.

¹⁸ David Woodman, *Unraveling the Franklin Mystery: Inuit Testimony*, Toronto, 1989.

¹⁹ Ross, 'The Admiralty & the Franklin Search...'

boat, modified with the addition of a small sail, which some of Franklin's men intended to use on the Fish River.

Ships refitted

Both of Franklin's ships had seen many years of service in the Royal Navy. They had been designed and built to support large-bore mortars weighing three tons each. Such ships needed to withstand the punishment of the big mortars' powerful recoil. As a result, *Erebus* and *Terror* were well suited for polar exploration. Put simply, they were stronger than other similarly sized Navy sailing ships of the period. They also had large holds which would be needed to carry the huge amount of ship's stores that would be required for a long Arctic voyage. The Franklin Expedition was provisioned to last three years without resupply, and this could be stretched to five years if need be.

In preparation for the Franklin Expedition, the thickness of each ship's deck was doubled and its hull double planked. Both ships' bows were also clad in thick steel plate.²⁰ But, unlike other sailing vessels of the day, neither ship had its hull sheaved with thin copper sheeting. Before the development of anti-fouling paint, sheet copper was used to minimize the build up of marine growth on a ship's hull. Organisms such as barnacles increased a ship's drag, slowing it down, and worms bored holes in a wooden ship's hull, compromising its integrity, especially in warm waters.

The British Admiralty felt that installing copper sheathing on either *Erebus* or *Terror* was an unnecessary expense, as was reported in a newspaper article of the day:

The decks of the *Erebus* and *Terror* are constructed on the diagonal principle, and about twenty feet on each side of the bows has been cased with strong sheet iron. There is not any copper sheathing on either of the vessels, as no danger is to be apprehended from the attacks of shellfish or barnacles, the ice soon clearing them from incumbrances of that description.

(*The Times*, London, 26 April 1845)

Although *Erebus* and *Terror* had no copper sheathing, some or all of their ship's boats would have. Ship's boats were interchangeable on Royal Navy vessels and would have been put aboard as required. Examples of ship's boats from the period can be found aboard Lord Nelson's flagship, HMS *Victory*, now a floating museum. As an extra precaution the Admiralty equipped both of Franklin's ships with enough ship's boats to accommodate every crewman in the event that both vessels were destroyed or had to be abandoned.²¹

The entire Franklin Company would likely have needed ten ship's boats to sail up the Fish River to the nearest Hudson's Bay post, more than 500 km to the south. Researcher William Battersby noted that Royal Navy sailors of the period typically lived aboard ship in 'messes' (social groups) of six to eight men each. He speculates that the dozen or so tent rings found at the

²⁰ Ship's plan. National Maritime Museum, Greenwich, United Kingdom.

²¹ Martin W. Sandler, *Resolute: The Epic Search for the Northwest Passage & John Franklin, and the Discovery of the Queen's Ghost Ship*, New York, 2006.

group's first camp on King William Island, at Victory Point, supports this number.²² With a total company of 105 men, this would have made for an individual mess of about nine men. Each mess would likely have had its own boat. Some of the larger ship's boats, such as the whalers, were likely manned by two messes. Much has been made about the presence of small pieces of sheet copper found at locations along the shores of King William Island. Most of these have been attributed to being from either of Franklin's ships and not from one of their boats.

Steam engines

Erebus and *Terror* were also each equipped with a 20 hp steam locomotive engine. Each ship could manage a speed of four knots under steam power alone.²³ The 'Copperknob' engine installed was designed by Edward Bury and was popular on early English railways because its bar-frame construction made it relatively light. Each engine weighed 24 tonnes.

More importantly for the Royal Navy, Bury's locomotive was cheaper than other larger steam engines. An example can be seen today at the National Railway Museum in York. Installing the engines required modifying the hull of both Franklin ships:

Their Lordships witnessed the manner in which the screw was shipped and unshipped by tackle and chains suspended over the starboard side of the vessel, and then proceeded on board the *Erebus* to witness the manner in which the screw propeller could be taken on deck and replaced in its proper position, by letting it down through a well formed in the stern of the vessel.

(*The Times*, London, 26 April 1845)

Despite having their sides built up to withstand sea ice pressing against them, both *Erebus* and *Terror* would have been weakest at their bow and stern. It is quite probable that such modifications weakened the structural integrity of each vessel, especially at its stern, making the ship susceptible to damage by ice. The *Terror*'s stern was badly damaged by ice during the Back Expedition of 1836–7, sent out to determine whether the Boothia Peninsula was an island. When it was freed from the ice it had to be sailed straight back across the Atlantic in a sinking condition, with chains tensioned around its hull to hold the ship together. *Terror* was beached on the Irish coast and its sternpost had been shattered so badly that it was several feet out of true. For the Franklin Expedition, both *Erebus* and *Terror* had their sternpost cut in two to allow for the new propeller shaft. Each stern post was strengthened with a series of h-shaped iron fittings. Lang, head of the dockyard at Woolwich, was asked by the Admiralty to confirm that the sternposts had not been weakened. He refused to do this, instead saying that, although they were weaker than before, each ship would be adequate for the voyage.²⁴

Ice movement

During the latter half of the nineteenth century several stories emerged of unmanned, derelict, sailing ships being caught in ice drifting in Arctic waters. Some believed that these phantoms

²² Email correspondence with William Battersby, May, 2008.

²³ *Finding Franklin*, T.V. documentary, Crossing the Line Production, 2005.

²⁴ Email correspondence with William Battersby, May, 2008.

were, in fact, the Franklin ships. One tale even puts them off the coast of Newfoundland.²⁵ One Royal Navy ship, HMS *Resolute*, was abandoned by its crew near Lancaster Sound because of crushing ice and was later recovered many miles south by the crew of a whaling vessel.²⁶ But there is no evidence that either of Franklin's ships were carried any distance by moving ice. Despite this, some searchers continue to believe that *Erebus* and *Terror* drifted many miles south around King William Island from their last known position as recorded in the Victory Point letter.

Larsen Sound has been described by climatologists and ice scientists as an 'ice sink'. Sea ice to the northwest (McClintock Channel to Victoria Strait) and northeast (Peel Sound) gets pushed south into the area north of King William Island.²⁷ According to environmental scientists, the mid-nineteenth century was a particularly cold period, and it is quite probable that the ice trapped in Larsen Sound would have remained there for more than five years.²⁸

Conclusions

Much of the physical evidence pointing to what became of Sir John Franklin's men and ships was lost in the years following the disaster. Even today, wood is a precious commodity in the Arctic. The Inuit of the mid and late nineteenth century would have used whatever they could salvage from any ship's boat they found abandoned. The same can be said for any other Franklin debris they encountered. The Inuit were, and are, a resourceful people.

It was not the Inuit's tradition to bury their dead. Any human remains of Franklin's men they might have come across would have been left where they were found, and natural erosion would have taken its toll. In time, little would have remained to show that Franklin's men had been there at all. Over time, the Franklin legend grew, and the story changed with its telling. Some details were forgotten, others were added. Sites once known were forgotten. Some were rediscovered, and some were not. Some have never been found and likely never will be. Today the best remaining evidence of what became of the Franklin Expedition cannot be found in the Arctic. Rather, it lies in museums and archives a world away, where Franklin and his men came from and hoped to return.

Archaeology is an interpretative science. Essentially, it is the archaeologist's job to make his or her best educated guess, based upon the physical evidence. Given this, we can deduce a number of things from the evidence presented in this paper.

Franklin's men were not driven mad and left to wander aimlessly around the central Arctic. The artefacts they left behind demonstrate that they knew where they were and where they had to go to be rescued. And it is evident that they prepared themselves for the arduous journey as best they could. Any mariner, faced with the threat of having to abandon his ship, knows that his best chance of survival is to stay with it as long as possible. It's no different today than it was in Franklin's time. Once the hull of one of their ships had been breached, all 105

²⁵ Woodman, *Unraveling the Franklin Mystery*.

²⁶ Sandler, *Resolute: The Epic Search for the Northwest Passage & John Franklin, and the Discovery of the Queen's Ghost Ship*.

²⁷ 'Finding Franklin'.

²⁸ 'Arctic Passage', T.V. documentary, PBS, 2006.

sailors would have had no choice but to abandon both *Erebus* and *Terror*. To date, the remains of only about one-third of Franklin's men have been encountered, mostly within 90 km of where they came ashore.

And of Franklin's ships? They are likely to be found near where the Victory Point Letter says they are: north of King William Island and lying on the bottom of Larsen Sound.

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