H.M.V.S. Cerberus

Torpedo Incident

Table of Contents

THE ARGUS

Page 8, 5 March 1881

THE TRIP OF THE CERBERUS

[BY ELECTRIC TELEGRAPH]

(FROM OUR OWN CORRESPONDENT.)

H.M.C.S.S. Cerberus, under the command of Captain Manderville, left her anchorage in the bay this morning, and after some practice off the Red Bluff, steamed away for the Heads. During the journey two targets were thrown out, the first being a triangle fixed up for the occasion at about 900 yards distance. The first round carried it away, and upon taking it on board it was found that it had been struck at the centre of the cross beam, and shattered to pieces. A small barrel was then put overboard with a red round to starboard. On account of the ebb tide the target drifted close to the steamer, and a tack had to be made so as to leave the target about 1,000 yards distant. Both turrets were worked, and some excellent practice made, the shot dropping within a radius of 20 yards round the target, and eventually carried it away. Everything worked smoothly, and the vessel came to an anchorage off Queenscliff shortly before sunset.

At 8 o'clock this evening the electric light was displayed from the Cerberus with very good effect, showing up with great distinctness the different points of the cliff, the bay, and the shipping at anchor. The light used was only a temporary one, and not so powerful as the one belonging to the vessel, which cannot be worked for want of the boiler which is especially intended for it.

Page 4/5, 7 March 1881

Untitled

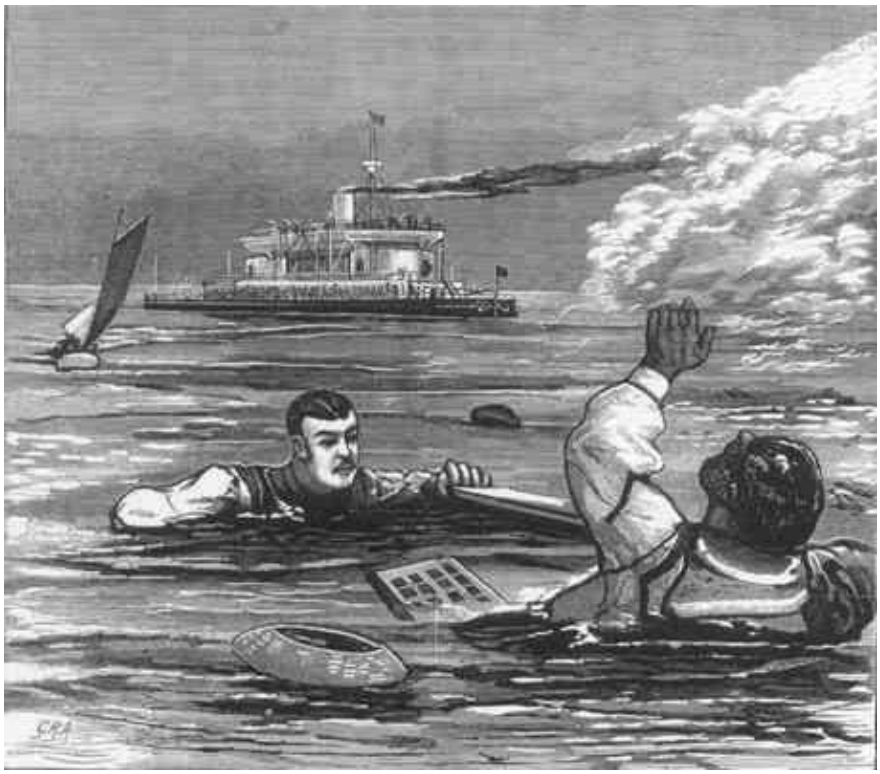
Melbourne has seldom been more deeply stirred than it was on Saturday evening by the intelligence that a boat's crew of the *Cerberus* had been blown to destruction by the accidental explosion of a torpedo. The loss of life is terrible in itself, and the circumstances under which the loss occurs add greatly to the horror of the situation. The death blow was sudden and complete, and the catastrophe took place before the eyes of spectators who were gazing upon what they regard as a holiday demonstration. The first impression is that there was truth in the warnings which were given when the Ministry superseded the old Torpedo Corps, which was under the best scientific guidance obtainable, and resorted to the rough−and−ready arrangements of the *Cerberus*. Again, there seems to have been too much holiday−making about the affair. There is no doubt that the last and fatal experiment was solely made to please an admiring crowd on the shore, and torpedo practice, as the sad event shows, is attended with far too much risk to be turned into a spectacle for sightseers. More than this it might be inadvisable to say at the present juncture, except to declare that the public will require, and the authorities will no doubt be ready to concede, the fullest possible investigation. If the inquiry before the coroner's jury shows that some individual has been guilty of carelessness, and that the mine was fired by his default, there will be an end of the matter, except so far as the person in question is concerned. But it seems probable that the disaster is traceable to some more subtle cause. The explosion appears undoubtedly to have occurred independently of the firing arrangements, and to be due to circumstances the danger of which was not recognised, and which were not sufficiently guarded against. Thus, over and above the verdict of the coroner's jury, which may not incriminate any one, an investigation by component scientific men would seem to be necessary. The testimony of the elections on board the ironclad is available, the men who stood by while Mr. GROVES prepared the torpedo can give evidence, and the survivor JASPER can state what occurred in the boat, so that it aught to be possible to trace the explosion to its real cause. Torpedos will still have to be used in the defence of the port. In the catastrophe itself we have an illustration of the terrible efficiency of the weapon, and our duty is now to take good care that it shall be placed in future in capable hands and be tested under proper conditions.

A TORPEDO CALAMITY

A BOAT'S CREW BLOWN UP

The most tragic event which has occurred in connection with our coast defence arrangements took place on Saturday afternoon off Queenscliff. The men of the Cerberus had been engaged in a series of torpedo experiments, when, from some inexplicable cause, an explosion took place which shattered a boat into fragments and killed a gunner and four seamen. The Cerberus left Williamstown on Friday afternoon, under the command of Captain Manderville, and proceeded to Queenscliff, anchoring off the Sandsprit in the evening. In addition to the officers and regular crew, Messrs. Murray, Houston, Scriber, and Doyle, electricians of the Telegraph department, were on board. The torpedo practice commenced at about 3 o'clock on Saturday afternoon, the captain's four−oared gig and the ships cutter conveying the torpedoes and the appliances for exploding them to within about 500 yards of the shore. The cutter was manned by 12 men, and the gig by six, Gunner Groves being in charge of the proceedings. Mr. Murray, who had the care of the electric batteries, remained on board the Cerberus, and when the torpedos had been sunk he completed the electric current and exploded them successfully. a number of small hand grenades were also fired, and this concluded the experiments which had been previously decided upon. Captain Manderville and Lieutenant Collins went ashore, and they were followed by the band of the vessel, permission having been given for them to perform selections of music at Queenscliff. The open−air concert commenced at 5 o'clock, and was to have lasted two hours. It was attended by a large number of visitors and residents, and about half an hour after it had commenced, and while some selections from "Pinafore" were being preformed a loud explosion was heard in the bay. Looking seawards, the spectators were amazed at seeing the fragments of a boat and what appeared to be limbs of men thrown into the air amid a vast upheaval of water. The dreadful character of the disaster was not at first realised, a number of the people believing that a boat filled with "dummies" had been blown up. Unfortunately this was a delusion. Immediately the truth became known, the band played the "Dead March," and returned to their ship. It is scarcely necessary to state that the disaster caused the most intense excitement both on shore and on board the Cerberus. After the regular excitements had been concluded, it was decided to explode 70lb. of gunpowder in a tin. For this purpose the captain's gig was manned, and sent about 100 yards from the steamer. A fuse had been inserted in the tin, and a piece of wood fixed under it to prevent it from sinking too rapidly. Attached to the tin was an electric wire, the other end of which was to be connected with the galvanic battery on board the vessel at a given signal. The tin was lowered over the stern of the boat, and the men then rowed to get her clear of the charge, but in doing this one of the oars fowled the wire connected to the torpedo. Mr. Groves endeavoured to release the wire, and while doing this the explosion occurred. The cause is not clearly explained Mr Murray states positively that the circuit necessary to explode the charge had not been made. Those in the boat were Mr. Groves and five able seamen, named Henry Timberly, James Wilkie, Wm. Barnes, Henry Hunter, and James Jasper. Groves's body was thrown to an immense height, and when picked up afterwards was found to be dreadfully disfigured about the head and face, but not otherwise mutilated. The remains of Timberly, Wilkie, and Barnes have not been found, they have been shattered into fragments. Jasper at the moment of the explosion was seated forward in the gunwale of the boat, on the opposite side to that on which the tin of powder had drifted, and was thrown over the side of the boat into the water with great force. Mr. Houston seeing him afloat gallantry jumped into the sea from the quarter−deck of the Cerberus, and succeeded in keeping him above water until they were both rescued by a boat. Another boat picked up Hunter, who was not quite dead, and he was conveyed on board the steamer. Dr. Williams at once put off to the vessel, but was unable to render any assistance any assistance as Hunter expired soon after his arrival. Jasper received a few injuries, but not a serious character. The steamer's cutter was lying near the steamer at the time of the catastrophe, and she was immediately despatched to the scene, another boat being lowered instantly. These picked up the bodies already referred to, together with some of the larger fragments of the boat.

image − Sub−Lieutenant Houston saving James Jasper



Australasian sketcher, March 12 1881

At the time of the launching of the torpedo Sub−Lieutenant Houston was on the fore−deck of the Cerberus. About 150 yards had been played out, and when the boat was going away with there was still two or three coils on deck. As the boat was going away one of the crew named Jim remarked to Jasper, "By Jove, you in the best place if there is a blow up." A minute or two after this grove stooped down, picked up the torpedo, and put it over. One of the oars got foul of the wire, and the next moment Grove's body was seen going up in the air. Jasper was seen struggling in the water, and was heard to cry out, "For God's sake, send me a boat, I'm going down." There was no boat manned at the time, and Houston therefore, after divesting himself of a portion of his clothing, plunged into the water and swan to Jasper. The water for some distance was coloured with blood, and remnants of human bodies were floating about. While Houston was swimming a mans heart floated by him and touched his face. Having reached a deal seat that had belonged to the boat, he place Jasper on it. The seat was not sufficient to hold the two, and Houston therefore made for a life−bouy. A little while after this a boat came up and reached Houston, but he told the men to go to Jasper first, as he was in greater danger. When the boat reached Jasper he appeared to be quite exhausted, and declared that he could not hold on to the seat any longer. He was wounded in the leg and had his face cut, besides being in a very nervous condition from the effects of the shock. As soon as Jasper was rescued, Houston swam after the boat. The bodies of Groves and Hunter were then picked up and conveyed on board the Cerberus. The other bodies could not be recovered, as they were in too many pieces, and had sunk. Jasper afterward sent for Houston, and thanked him warmly for saving his life. The officers and crew of the Cerberus also spoke in the highest terms of the courage and presence of mind displayed by Houston in the midst of such an appalling and sicking scene as then presented itself.

The Cerberus left Queenscliff at daybreak yesterday, and reached her anchorage in Hobson's Bay at 10 o'clock. The bodies of Groves and Hunter were aft of the quarterdeck under an awning, and covered with the Union Jack. They presented a most ghastly spectacle, the features of neither being pecognisable. The whole of the right side of Groves's face and head had been blown inwards. The remaining portion of the bodies, however, were not materially injured. Immediately on the arrival of the Cerberus, officers of the French war steamer Finistere and the German war steamers in the bay, were sent on board to express condolence with the officers and crew at the unhappy event, and during the day the flags of all the vessels in port were at half−mast.

An inquest upon the bodies is to be held at half−past 12 to−day by Mr. Candier, at the Barkly Arms, Williamstown.

We give below fuller details of the disaster as described by the officers of the vessel, as well as by eye−witnesses :−

Mr. MURRAY'S NARRATIVE

I was present at the experiments as chief of the Torpedo Naval Corps, and was, in fact, the officer in command over them. We began the practice at 3 o'clock in the afternoon, and laid down four circuit closer mines or torpedoes, and fired them off, which was all we intended to do. Some small hand grenades were thrown overboard, but all of them did not explode, and one of then which did not was afterwards put into the impromptu torpedo which was the cause of the accident. After the practice was over, somebody−I do not recollect whom− said that the persons on board, and those on shore who had been looking on, had not seen any explosion or water sufficient to give them any idea of the explosive powers of torpedoes. The reason of their not having seen such explosions, arose from my having on this, as on all practice occasions, fired only very small charges. It was then suggested that some thing should be done to make an explosion, or display throwing up water, and accordingly Mr. Groves the gunner, who was the officer in charge of the gig which had, in connection with cutter, been engaged in the discharge of the torpedos during the day, began to make a mine or torpedo. Mr. Groves was one of the gunners who had passed through the Torpedo College in England, and was sent out here by the home Government to assist this Government in torpedo matters. His was the mechanical part of the work, mine being the electrical. To fix up the torpedo which was to be exploded, Groves got an old zinc powder case, and put about 70lb. of gun powder into it. He did not fill it, and praphaps it had been filled the explosion could not have taken place. After the powder was put in, he placed some disc of wet gun−cotton on it. He put that on to get rid of it, according to a way he had on similar occasions, when he would say, as he placed it in the torpedo or mine, "it will all go up"; and as I am given to understand since, he also put a small piece of dynamite, which I now think must have caused the accident−at all events, that is the only way I can account for it. I do not know at the time that he had put dynamite in the same case. When the mine or torpedo was filled, a piece of board about 3ft. or 4ft. long was attached close to it by Groves to be used as a float, but I suggested to Groves that It would be better to tie the wood so that it would be about 1ft. or 18in. above the case, as it were close to the case it might blow all to splinters and send to a distance and hurt someone, whereas it were a little distance above the mine or torpedo to commence with, it would be blown straight up. Poor Groves was always careless, but he took my suggestion. The case was then taken away, a coil of about 80 yards of line or wire (Hooper's core) being attached to it for the purpose of making a connection with the battery on board the Cerberus. Hooper's core is a copper wire covered over with india−rubber, the whole being about one − eight of an inch thick. In order that persons who do not understand the process of discharging torpedos may know what occurred, I may state what it is. One end of Hooper's wire is fastened to a fuse which is in the torpedo. The fuse is a little instrument containing a small quantity of fulminating mercury, with two wires passing through its base, the ends of the wires being connected by a small bridge of platinum wire, and the action of the galvanic current from the battery is to make that bridge into a whit heat, which fires the fulminating mercury, and gives the explosive power to all the materials in the mine or torpedo, and an explosion occurs. Groves torpedo had one end of the 80 yards of Hooper's core attached to it in the usual way, and the other end was in my hand, wrapped around my finger, my position being on the quarterdeck of the Cerberus. The boat shoved off with five able seamen, under Groves' command, and went on until they came nearly to the end of the line or core. I could see from the ship that the torpedo and its float were thrown overboard into the water, and within about half a minute from them the explosion occurred. After the torpedo was dropped over it seemed as if they could not get away from it−as though there was something fouling them. The explosion could not possibly have occurred through electricity, because the battery was not attached to the core. I was standing with the firing key in one hand and the end of the core in the other. I was watching the wire and the boat, waiting to see them get to the end of the wire, as it was necessary for me to know when they had paid out all the wire, so that they pull the end out of my hand. When it was apparently all paid out, Mr. Richards, an officer of the Cerberus, called out to Mr. Groves from the Cerberus, and told him he had got to the end of the line. They then stopped, and I said the Mr. Richards, "There is still some slack left." There was about 10ft. or 12ft. of the wire left, and he replied, "They have plenty of way on the boat to take in all that." They threw the torpedo overboard, and as I already said, the explosion took place in about half a minute afterwards. I explosion, and also heard someone say "Poor

Fellows." As I did not see the explosion I wandered what meaning of "Poor fellows" was, and then I turned and looked, and Mr. Richards came over and said, "however did that happen? Why you have not got the wires connected." I then dropped the wire and ran to the stern of the ship and saw jasper coming swimming in. I had not operated with the firing key at all. The firing key was a small thing about 5in. long by 3in. broad. It has two binding screws to it, one in one corner ant the other in another corner. One binding screw was connected with the battery, and before any circuit could be made to fire off the torpedo it was necessary to place the end of the wire I had in my hands to the other binding screw and screw the wire down. It was then necessary for me to pull out a stud which was at one of the firing key, and afterwards press down a lever on the top of it, the latter operation being the one that sent off the current to the powder in the torpedo. I had not done any of these things. I was waiting before doing so for Groves to get a sufficient distance from the mine or torpedo before I connected the wire, my practice always being to wait until he called out, "All safe, sir." After he used to call out I made the connection to fire the torpedo, and the time occupied by me in doing so would give him a minute or so more to get further away from the torpedo before I pressed down the lever of the key. Groves was the officer who always went out with us when we were practicing, and laid the torpedoes. I think the dynamite is the thing which caused the explosion. Dynamite is a composition of nitro−glycerine and infusoria earth−the proportions being 75 per cent, of the former and 25 per cent of the later which is mixed with the nitro − glycerine to make it safe to handle, as it would not otherwise be on account of its explosive nature. It is understood that if dynamite is for an length of time under water the nytro−glycrine exudes from the earth and gets towards the sides or the outside of the cartridge in which it is contained. If that were the case with the dynamite Mr. groves put in the torpedo it might happen, as the torpedo was not full; that the contents of it might be knocked about the sides of the zinc case when the man was trying to get his oar from contact with the wire and then if the dynamite struck against the case it might go off and cause the explosion which unfortunately actually did occur. The guncotton and dynamite I have referred to as being put into the zinc case were the contents of a small tin or hand grenade that had been made up for a long time. I had told one of the electricians to throw it into the sea because it would not go off, but instead of its being thrown away Groves put the whole lot together into the case, saying it would all go up.

PARTICULARS OF THE DECEASED.

Mr Robert Samuel Groves was a native of Portsmouth, England, and was about 44 years of age. His father was drowned at sea when Robert was quite a boy, and the lad the joined the English navy, working his way up the ladder of promotion till he became a gunner in Huly, 1861. He served throughout the Crimean war, also distinguished himself in the China campaign, and wore the two Crimean medals and the Fatshan medal. On one occasion during a severe boat engagement, he was described by his commanding officer as "a bright example to all British sailors." He was looked upon as an excellent officer in all respects, a through sailor, an experienced gunner, and a master of all kinds of infantry drill. About five years ago he was appointed to H.M.S. Excellent, the training−ship for torpedo drill in Portsmouth Harbour. His duties there were a very responsible kind, as he had to instruct and examine all the young officers who were completing their course of torpedo lectures. Mr. Groves was so successful, and so won the esteem of his superiors, that when the Victorian Government applied for the services of a naval officer for torpedo purposes here, Mr Groves was at once chosen as the fittest man for the post, which was looked on as a promotion. He arrived in this colony by the ship Durham in June 1876, under engagement to the Victorian Government for duty for five years, and was looking eagerly forward to rejoining his family in 14 months from now. He was placed in charge of the torpedo hulks at the mouth of the Yarra, which position he held at the time of his death. Mr Groves leaves an aged mother, a wife and five young children to morn his loss. Groves was with Captain Manderville about 12 months ago, when an accident occurred to the latter through practicing with explosives. Groves was not then injured. Groves's watch−a presentation one from an officer of the Royal Navy−stopped at 11 minutes past 5 p.m. It is a good deal dinted by the concussion. Mr. Oliver Richards, a brother officer and intimate friend, has taken charge of Mr. Groves's affairs.

William Barnes, a petty officer on board the Cerberus, was aged 30. He was a married man, but had no children, and entered the colonial service on the 29th December 1877, having been previously in the Royal Navy, where he was at one time chief boatswain's mate in the flying squadron engaged in the China War.

Harry Timberley, aged 32, engaged as an able seaman on board the Cerberus, had been a petty officer in the Royal Navy. He was also at one time an instructor on a training ship at home.

James Wilkie as A.B. on the Cerberus. His age was 27, and he was a single man. It is believed he has some relatives in the colony. He entered the colonial service on the 9th August, 1877.

Henry Hunter, aged 35, was a single man, who entered the colonial service as A.B. on the 8th April, 1878. He had previously been in the Royal navy.

James Jasper, who was the only survivor, is an A.B. of the Cerberus, and has been two years in the colonial service. He is a married man, and resides in Williamstown.

[BY ELECTRIC TELEGRAPH]

(FROM OUR OWN CORRESPONDENT.)

QUEENSCLIFF, SUNDAY NIGHT.

A special sermon was delivered at St. George's Church this evening by the Rev. H. J. Wilkinson, upon the sudden death of the Cerberus men, killed off here yesterday. It was intended by Captain Manderville, if all had gone well, for the crew of the Cerberus to have attended this morning's service in the above church.

STATEMENT OF THE SURVIVOR, JAMES JASPER

James Jasper, A.B. on board H.M.S. Cerberus, states :−On Friday morning the Cerberus, under the command of Captain Manderville, proceeded to Queenscliff. On the way to the Heads we had some practice with the guns. On Saturday we were anchored about one mile off Queenscliff. In the fore part of the day nothing of consequence occurred. During the afternoon torpedo practice was commenced, and after firing four torpedos the second gig was then manned. I was in the gig, which was in charge of Gunner Groves. There were also in the boat Wm. Barnes, James Hunter, Harry Timberley, and James Wilkie. After manning the boat the torpedo was placed on the stern−sheets on the starboard side, and was fixed to a plank, in order not to allow it to sink too quickly. The torpedo contained 70lb. of powder. After the boat had dropped away from the vessel about 80 yards, the torpedo was lifted over the side, when by some means it got foul of one of the oars. There was an insulated wire attached to the torpedo from the Cerberus. The cylinder did not actually sink, owing to the bouncy of the plank. When it became foul all hands commenced to free it from the oar. I could not see whether the wire was around the oar, and immediately afterwards an explosion took place. I know nothing afterwards until I found myself struggling in the water, and made towards the ship, when Mr. Houston, of the torpedo corps, jumped from the vessel and came to my assistance. he pushed a form towards me, which had been thrown overboard and by the assistance of Mr. Houston I kept afloat and was picked up by the ship's cutter. I cannot say how the explosion occurred, and it is a mystery to me how I escaped, as the portion of the boat on which I was sitting, along with the rest of it, was blown to fragments. I have to express my deepest gratitude for the assistance rendered my by Mr. Houston, as I would never have reached the ship without his aid. On being taken on board I received every kindness and attention from the officers and men.

At a late hour last evening Jasper was progressing favourably, but seemed dazed from the shock to his nervous system. He is not suffering from any severe injuries. His legs are bruised, and his face is marked also.

NARRATIVE OF AN EYE−WITNESS

The following is the statement of an eyewitness on board the Cerberus:−

The torpedo experiments had been quite successful during the afternoon, and it was decided to conclude them at 5 p.m. by firing a somewhat larger charge than usual. For this purpose, a tin canister capable of holding

40lb. of rifle large−grain gunpowder was prepared, and was nearly full of powder. Holes were made in the lid for the electric wires to pass through, and the detonation fuse with its primer of gun−cotton was inserted and fitted by Mr. Groves, who then placed the lid on the canister, and proceeded to make it watertight by binding the joint with india rubber tape. Mr. Engineer Breats then suggested that redlead would serve well to keep out the water, and with his assistance Mr. Groves firmly bound a piece of canvas smeared with redlead round the joint between the canister and the lid. Great care was exercised during these operations, and Mr. Groves called the attention of those present to the danger of using anything metallic, for instance, the blade of a penknife, to remove some of the grains of powder which had adhered to the tin, and he himself removed them with his fingers. In the same way, care was taken when the lid was removed from the canister to cover the contents carefully with a large mat, in case that possibly a spark from the cook's gallery might pass by and cause the ignition of the gunpowder.

The next operation was to affix a float to the mine, so that it would not sink too deep, and for this purpose a wooden plank, some 4ft. long was attached to the canister by Mr. Groves, assisted by one or two of the seamen. This done, the crew manned the gig, took the mine on board, and rowed away from the ship to the place where they had decided to lay the mine. The cable (a light Hooper's core) was paid out to them from the ship as they went along, and it did not exceed 100 yards in length. The word being given that the cable was nearly all paid out, the men in the boat ceased rowing, and prepared to throw the mine overboard. The next thing was the explosion. The boat with its living freight was smashed to splinters, and only one man, Jasper, is left alive to tell the tale. Jasper was seen swimming towards the ship, and crying lustily for help. A couple of minutes elapsed before a boat could be lowered, but two life−bouys were thrown in the direction of Jasper, and Mr. Houston, one of the torpedo electricians, jumped into the water and swam to him with a wooden bench, on which Japer supported himself till he was picked up by one of the Cerberus boats. Great praise is due Mr. Houston for his prompt and plucky action, as it is extremely doubtful if Jasper had strength remaining to enable him to reach the ship.

CAPTAIN MANDERVILLE'S REPORT.

The Chief Secretary, Mr. Barry, has received the following telegram and report from Captain Manderville:−

"Queenscliff Saturday.

"An unfortunate accident took place this evening. A party of five men, with Mr. Groves, gunner, in charge, went to lay out a torpedo, when just as they launched it from the boat, from some quite unaccountable reason, it exploded, blowing up the boat and killing Mr. Groves and four men, named Barnes, Timberley, Wilkie, and Hunter. Full particulars by letter. The Cerberus will be the bay at 8 a.m. to−morrow.

"C.T. MANDERVILLE."

"Port Phillip Heads, March 5, 1881.

"Sir,−I much regret having to−report a dreadful accident that occurred whilst experimenting with small torpedo charges from the Cerberus this afternoon, and which resulted in the loss of one officer and four men, and one man slightly wounded.

"After having exploded four mines representing electro−contact mines and one hand − grenade a cylindrical powder case, containing 70lb. of R.L.G. powder was fitted as a torpedo for explosion by means of a falminalde of mercury fuse, which was intended to be put into electrical circuit by having one end joined up, through the firing key to the battery. The case was placed in the gig, and Mr. Groves, gunner, went with five men to lay it sufficient distance from the ship to permit of it being exploded with safety. On dropping it over the stern of the boat, and before they could pull clear, one of the oars fouled the wire connected with the fuse, and while the men were employed clearing it the torpedo exploded, blowing the boat to pieces and the men into the air.

"Mr. Groves was picked up dead, three men whose names are in the margin (Henry Timberley, A.B., James Wilkie, A.B., William Barnes, L.S.) were missing. James Hunter was picked up alive, but fearfully injured, and James Jasper slightly injured in the leg.

"A message was immediately despatched for a doctor, and Dr. Williams was on board within 20 minutes of the accident. Shortly after his arrival James Hunter died.

"Mr. Alexander Houston, a sub−lieutenant belonging to the naval torpedo corps, jumped overboard to the assistance of Jasper, who immediately after the accident was seen in the water some distance off swimming towards the ship. Had it not been for the prompt assistance of Mr. Houston, it is doubtful if Jasper would have been saved.

"The cause of the accident is at present unknown, as every care was taken, and Mr, Murray, electrician, who had charge of the firing apparatus, had not joined the wire from the mine to the firing key, so there could be no possibility be an electrical circuit.

"I am most anxious that a full and searching inquiry may be held into the cause of this sad accident, and I would most respectfully recommend that Mr. Ellery should be requested to assist in such. Mr. Ellery is not only a leading electrician and scientist, but he has considerable experience in torpedo operations.

"I have the honour to be, sir, your most obedient servant

"C.T. MANDERVILLE,

Capt. Commanding Naval Forces.

"The Hon. Graham Berry, Treasurer."

Page 6, 8 March 1881

THE TORPEDO CALAMITY

———————

THE INQUEST

Mr. Candler held an inquest at the Oriental Hotel, Williamstown, yesterday, on the bodies of Robert Samuel Groves, late a gunner of the Victorian war steamer Cerberus, and James Hunter, late able seaman of the same vessel, who were killed by the explosion of a torpedo off Queenscliff on Saturday. Sub−inspector Toohey was present. After the coroner and jury had viewed the bodies,

James Jasper, the first witness, was called. He was in a very weak condition, having to be supported into the room, and his face showed several wounds. His disposed,−I am an able seaman of the Cerberus. On Saturday I was directed to go in a boat from the Cerberus. Did not know the object. R.S. Groves, James Hunter, and three others besides myself went in the boat, which was in charge of Mr Groves. I was bowman of the boat, and had nothing to with the explosive material. We started from the Cerberus about half−past 4 o'clock in the afternoon. We rowed about 80 yards. We were then directed to stop rowing by Groves, and the torpedo was placed over the starboard side of the boat by Groves, Barnes, and Hunter. I remained in the bow. The starboard oar by some means fowled with the torpedo. I was not close enough to say whether it was with the wire. That was after the torpedo was in the water. Those aft tried to clear the oar. While they were doing that an explosion took place. Know no more about it except that I found myself struggling in the water. When I got to the surface I was facing the Cerberus. Was spitting blood. Struck out for the ship. When I had been swimming some time I felt my strength leaving me. Just as I had begun to give it up a lifebuoy was thrown

overboard, also a long stool. A gentleman also sprang overboard, and pushed the stool towards me. Went to meet him. and got on the stool. Eventually I was picked up by a boat. Had been on duty in the boat all day long, with the same crew, excepting Groves and Barnes. Groves had not been in the boat before that day. Dont know what caused the explosion. Saw the torpedo handed into the boat. It was placed in the stern sheets. Never saw any torpedo like this one before. A wire was attached to it. Only two men were rowing; I was not.Saw one of the men−not Groves− trying to clear the oar that had fowled. Groves was bending over the side of the boat, trying to clear the foul. Did not hear him give any orders. Excepting myself, all the boat was trying to get clear of the torpedo. Had been in a boat that was laying other torpedos that day. In connection with other torpedoes there had been signalling from the ship. A red flag was displayed. Could say by whom. On previous occasions when the red flag was displayed, we pulled away from the torpedo. No red flag was shown on this occasion. Timberly, one of the crew, said to me, "If anything happens you will in the safest place." Mr. Groves remarked that he would look out that nothing took place before we were clear of it. Heard Groves caution Barnes, when the torpedo was put into the boat, not to put a boathook through it. The wire was played out as we rowed from the ship. Barnes had charge of the wire.

To the Jury.−Several torpedoes were fired that day. The boathook was not used to free the oar when it fouled the torpedo.

Captain Manderville.−I am a retired commander in the Royal Navy. Am now captain of H.M. Victorian ironclad turret−ship Cerberus. On Friday last we left Hobson's Bay and went down Port Philip Bay for the purpose of exercising in shot practice with the heavy guns, and also for the purpose of practicing the electricians attached to the naval service. That night we practiced with the electric light. On Saturday morning everything was got ready for the experiments in the afternoon. During the afternoon we used small torpedoes. Left the mechanical part to Groves, who had entire charge of that part. Mr. Murray, chief electrician attached to my department, had charge of the electrical apparatus. Messrs. Houston, Doyle, and Schrither, electricians, accompanied Mr. Murray. Was not on board when the explosion took place. Went ashore to witness the effect of the torpedo. Left the Cerberus at 5 o'clock p.m. Before going ashore I left the whole conduct of the experiments to Mr. Murray and Mr. Groves. In the course of the afternoon Groves and I had decided to explode this last torpedo. We decided that a mine should be exploded in a cylindrical zinc powder case. Understood 10lb. of powder was to be used. Believe Groves put more in. The details were left in the hands of Groves, and the electricians. I did not wish to interfere with any of these gentlemen. Groves came out to instruct us as to torpedoes. The arrangements as to the last torpedo took place with my concurrence, although not by any express orders. Do not remember anything about it.

The Coroner.−I presume a captain has to sanction such proceedings before they take place on his ship.

Witness.−I ordered the torpedo to be exploded. Did not wish to interfere with their arrangements. Did not limit them to any number of torpedoes, or to the size of the charges. Groves was about was about 47 years of age. He was a gunner in the Royal Navy, and was lent to the Victorian Government for five years by the Imperial Government. He came out over three years ago. Before he left home he was specially qualified in torpedo practice. Since he came out here he was attached to the Cerberus in charge of the torpedoes. Have always found him very steady and careful.. H was apt to be a little too self−confident. As far as I know he was a strict teetotaller. This is not the first torpedo accident in which he has been concerned. I was going to experiment with some small torpedoes about a year ago. I had taken the Victoria to Geelong, and came back by train. Had arranged to meet Groves the same evening, to experiment with some small torpedoes. Groves was explaining the action of a firing−plate when an explosion took place, the wires becoming connected with the battery. He was there as an instructor. I connected the currents. That accident was not in consequence of his overconfidence. But as he knew all about it, he should have taken care that I did not connect the wires. He was instructor. I was a student.

The Coroner.−How was over self − confidence, then, exhibited by Groves?

Witness.−There was then an act of omission on his part. He ought, knowing the dangerous apparatus, to have cautioned me from connecting the currents. He was fearless, and accepted risks unnecessarily. Mines in cases have been exploded from the Cerberus before. Hunter, one of the deceased, was an able seaman, 35 years old. He has been two years in the service. Had thorough confidence in Groves. Saw him with a cylindrical zinc

case. Did not see him filling the case. Did not, therefore, know what was in it. Can't say whether it was filled when I left the ship. He told me it contained RLG powder, or rifle large powder. It was on the quarter−deck when I left the ship. All I can remember is that he told me there was powder in it. I certainly did not know there was dynamite in it. He did not tell me there was any thing but powder in it. The other explosives, besides powder, were in his charge. He exercised his own discretion within certain limits as to the explosive material used. We keep no dynamite or guncotton on board. Groves brought a small quantity of dynamite on board.

After consulting with Mr. Murray, witness altered this statement by saying. I did not know Groves brought any dynamite on board. I would not have allowed him to bring any on board. Saw in the newspapers this morning that dynamite was put in the torpedo. We never use dynamite on the Cerberus. We keep a few ounces of guncotton on the Cerberus. Everything of an explosive nature on the Cerberus was under Groves' charge, except gunpowder. Sometimes, when electricians have not been present. Groves has used the electric current to explode materials. He used to make electric batteries, and had a practical knowledge of electricity. He was aware of the precautions that should be taken, and was acquainted with the different wires used. Could easily understand Groves being frightened of a boat hook piercing the torpedo if there was dynamite init. Heard Jasper's evidence.

The Coroner.− How do you account for the accident taking place?

Witness−I can't understand it. The electric current was not connected. That is all I know about it.

To the Jury.−I was ashore when the torpedo exploded. No medical man was on board on Saturday during the experiments.

To Mr. Murray. If the iron boathook were pushed into a torpedo filled with gunpowder it might explode. We always avoid bringing iron into contact with powder.

Alexander M. Houston.− Am one of the electricians attached to the naval service. Saw the boat put off from the Cerberus with the last torpedo. Was standing on the after deck in company with Mr. Murray, Mr. Doyle, Mr. Schriber, and others. Mr Murray was in charge of the battery on the ship and the wire attached to the torpedo. A wire was attached by Groves to the torpedo. Saw the boat stop, and Groves and one of the crew lift the torpedo overboard. One of the oars fouled the wire. Saw some of the people in the boat leaning over the side trying to release it. The explosion took place. Mr. Murray said to the chief engineer who was standing by, "My God, how could this have happened? I have not got the wires connected." I then looked at Murray, and observed that one end of the wire was attached to the firing key, and the other end was round Murray's finger. It was quite impossible, from what I observed, for the current to have been established. The torpedo could not possibly have been exploded from the Cerberus. (Witness then described what would have had to be done by Mr. Murray before the electric current could have exploded the torpedo) Murray could not have done all that in the time, or without being seen, or at the distance he stood from the firing key. Saw the cylindrical zinc case containing the mine brought up on the after deck from the magazine, with the powder in it. Groves lifted the lid off. Some grains of powder were seen adhering to the lid, and he took them off with his finger, remarking that great care had to be taken to avoid an explosion. The powder was not weighed. There was about 70lb. of it in the case. Groves asked the ship's armourer to solder the two wires through the lid, which was taken off the case while that was done. Saw Groves fixing some gun−cotton on the end of the fuse, and attach the fuse to the two wires underneath the lid. He then hollowed out a place in the powder to make room for the fuse and gun−cotton. Then the lid was put on, and some indiarubber tape was put round the edge to keep the case wter−tight. and as and additional precaution against the influx of water, some red lead was put round the lid. Groves fastened a wooden float to the torpedo which was then put into the boat. When the case was first brought on the deck, I saw nothing but powder init. I took up a handful of powder. Was assisting Groves at the time. Small articles might have been placed in the case without my seeing it. So far as I know, this is the first time we have exploded a case of powder. The other mines have been gun−cotton. In my opinion, all the precautions necessary were taken. Groves said nothing as to the contents of the case. Heard nothing said about dynamite. Do bot know Groves had any dynamite on board.

Dynamite charges are always specially marked. The contents of the case were not packed tightly, and the powder could have shifted about. The torpedo was laid on its side. The powder could have got through the gun−cotton to the lid. There was special danger in that. The powder was touching the sides and end of the case. Cannot say the cause of the explosion. I believe it exploded through the oar fouling the mine. Don't see how else it could be accounted for. (Lid of the exploded torpedo produced and found to have an iron handle covered with zinc, the lid itself being zinc.) My theory is that the mine was exploded by means of the oar, but do not know how it happened. Mr. Murray always objected to the use of dynamite.

To the Jury.−A sudden jerk of the wire fastened to the handle of the torpedo and connecting it to the ship would not cause an explosion. The wire was fastened to the handle, and then taken inside the torpedo. The friction of gunpowder with guncotton could not have caused the explosion. The other end of this wire was on board the ship round Mr. Murray's finger, and he was some distance from the firing key. Saw nothing unusually dangerous in the torpedo. Was on the point of going into the boat with it, only I felt tired.

To the Coroner.− It was impossible that anything could have been maliciously placed in this torpedo that would have caused the explosion. This was the only torpedo made on board. The others were made at the hulks.

Mr. Murray, chief electrician stated, in answer to the coroner, that he could not explain positively how the accident occurred, but that he should like to be examined, as he could give a clearer and fuller explanation than had yet be given. He had his theory about the matter.

The Coroner said that Mr. Murray would be examined, but that it would also be advisable to get the evidence of an expert like Mr. Ellery, and adjourned the inquest until half−past 10 a.m. next Thursday.

Page 7, 11 March 1881

THE TORPEDO CALAMITY

THE INQUEST

The inquest on the bodies of Robert Samuel Groves and James Hunter, late of the Victorian war steamer Cerberus, who were killed by the explosion of a torpedo off Queenscliff last Saturday, was resumed by Mr. Candler at the Oriental Hotel, Williamstown, yesterday. Mr. Ellery, Government astronomer, was present as an expert by desire of the coroner.

K. L. Murray deposed,−I am telegraph engineer of the Railway department, and chief electrician in the Naval Torpedo Corps. I received a letter from Captain Manderville informing me that he proposed to take the Cerberus down the bay for shot and shell, and that he would be glad if I would accompany him with some of the electricians, with a view to holding some torpedo practice from the ship. That was about the last week in February. I accordingly arranged to go with Messrs. Doyle, Houston, and Scheiber, and informed Mr. Groves, who had charge of the torpedo hulk and stores, that I proposed to explode three or four small torpedoes upon the circuit closer system, and gave him a list of the stores I wished him to take. He informed me in due course that gear was on board the Cerberus. We went down the bay on Friday, the 4th inst., and on the following morning I gave him a rough sketch of the way I wished the cable, junction boxes, disconectors, torpedoes, and circuit−closer buoys to be laid. Mr. Groves told me that, in addition to the mines required for this practice, he had bought a few had grenades. But he said he was not sure whether they would go, as he fancied they held high tension fuses, and we had no apparatus for exploding such fuses with us. I said we would try them. During the morning all the joints and connections were made on the ship, and in the afternoon a boat was loaded with apparatus and put off to lay them down. Groves was in charge and Mr. Houston accompanied him with a signalling flag to signal me when all was laid down properly. Upon receiving the signal that all was ready, I connected the end of the cable to the firing−key, to which was also connected a wire from the firing battery. As the mines were laid down one after the other I tested them through one battery cell with the galvanometer. I then signalled to Groves with a similar flag to that used by Houston that the battery was on, and told him to bump the circuit − closer buoys. I closed the firing circuit, the buoys were bumped one after,

and the small mines exploded. Groves then, as previously arranged, lifted the end of the cable and attached another small torpedo to it, which was also exploded. He then returned to the ship to see if any thing further was required before lifting the cable. It was suggested that, as these explosions had hardly been seen, a larger torpedo should be fired. I said, " We have not any larger ones with us." Groves replied, "There is plenty of powder on board, sir." It was then arranged that a gunpowder torpedo, of about 50lb. of powder, should be fired from the stern of the ship. Shortly before Mr. groves coming on board I asked Mr. Richards, a gunner, if he would throw overboard one of the small hand − − grenade, which I attached by means of a Hooper's core wire to the firing key which was attached to the battery. Richards threw it over and it didn't explode. It was hauled in, and i told Mr. Schreiber to take the top off and let me see what was inside. He did so, and I found it contained three or four discs of wet guncotton and a high tension fuse. It had been wet a long time, that is to say, it had been in water before the recent immersion, for inside the tin were little spots of rust, and the fuse also had rust marks on it. Took the guncotton out, and threw the tin overboard. Told Schreiber to let me see what was in some of the others. He showed me two,, one of which was wet like the first. The other was comparatively dry. While looking at the last one Groves came up and asked me what was the matter. I told him what we had done, and that I thought the guncotton in the tin we were looking at was dry enough to fire, and asked him to put two or three pieces in a tin with a low tension fuse and throw it over board. He did so, and it exploded all right. Shortly after this the case of gunpowder, referred to in Houston's evidence was brought on deck. Noticed it was not full, and looked into it to see what sort of powder it was. Noticed it was rifle large−grain powder. Do not think I looked into the torpedo again. But I told Groves I thought he would find sufficient dry guncotton to fix to the fuse as a detonating charge. This he did, for I saw him tying the guncotton to the fuse. The armourer was sent for to fix two little tubes to the lid for the wires to pass through. He took the lid away, and did the work. The lid was put on. Groves sent for a piece of timber to act as a float and lashed the torpedo to it. Suggested it would be better to let the lashing be a couple of feet long. He acted on my suggestion, and the mine and float were lifted into the boat. The Hooper's core line connected with the mine was coiled up on the deck, the inner end being turned round my finger. When the line was nearly all played out, Richards told Groves so. The men ceased rowing, and I saw the torpedo with its float lifted over the side of the boat, which seemed to get foul of the torpedo. Saw one of the men jerking with an oar, and then I saw the explosion. Instinctively looked at my hand and found the wire still twisted round my finger. Said something to the chief engineer, who was standing, with Richards, by me. Richards said, "How could that have happened? The wires are not connected!" Hunter's chest was heaving when he was brought on board. He was still breathing, but quite unconscious. In about half an hour the doctor pronounced him dead. The injuries to both Hunter and Groves were in the head. The battery was in the after steerage. With regard to my opinion as to the actual cause of the explosion, Mr Doyle told me something.

J.D. Doyle was here called in. He deposed − I am chief operator in the Railway Telegraph department and an electrician in the Naval Torpedo Corps. Was on board the Cerberus on the 5th inst. Saw the lid taken off the case of gunpowder which was used for a torpedo. Those standing near looked at its contents, which were then gunpowder only. The armourer was instructed to make a hole through the lid, and took it away with him. A mat was placed over the open case. The lid was brought back and placed on the case. Then it was decided to ask the armourer to put another hole through the lid. The armourer took the lid away a second time, and the mat was replaced over the case, and remained there until he finally returned. Now Groves fitting the fuse in its place in the mine, and noticed that he had tied the gun cotton on with a string. He then placed the lid on, and bound it with indiarubber tape; and then Mr. Brakes, engineer, suggested that redled should be used to keep the water out of the tin. In the case there was, I should say, about 40lb of gunpowder. The powder was 3in. from the top. Saw about 20 1/4oz. discs of guncotton on the binnacle stand on deck, and also saw one cartridge of dynamite with them. Some of the dynamite was in the yellow cartridge paper, and there were a few grains of dynamite loose on the table. Cannot say what was done with these. Cannot say what was done with the guncotton and dynamite. They must been put in the mine, because they disappeared from the binnacle stand. That is the inference I drew. They disappeared from the binnacle stand, I believe before the torpedo left the ship. The loose portions of dynamite also disappeared. Don't recollect hearing Groves make any reference to the discs or dynamite. Nothing was said about them in my hearing. Assisted in opening a hand grenade. In one I assisted Schreiber to open there was nothing but guncotton and a high tension fuse, and no dynamite. Was on deck when the explosion took place. Was standing about four yards from Mr. Murray. A second previous saw him with wire disconnected. A second before the explosion Mr. Murray was holding the firing key in his left hand. In Mr. Murray's other hand he held the wire leading to the mine. In my opinion Mr. Murray had not time between then and the explosion to connect the wire to the key and discharge the mine.

(Witness described what Mr. Murray would have had to do to fire the mine.) It is physically impossible that the mine was exploded by means of the key. I am not competent to give an opinion as to the actual cause of the explosion. Am certain, however, it was not exploded electrically. Dynamite is a mixture of nitro−glycerine and infusoral earth.

To Mr. Murray. − Don't know the effect of soaking dynamite in water.

Mr. Ellery was requested by the coroner to ask any question he pleased.

Witness to Mr. Ellery,−The discs of guncotton have holes through them. The whole of the tube containing the fuse in the mine, was covered with guncotton. Could not say what force was required to put the fuse into the discs.

To the Coroner.− We have exploded dynamite in torpedoes in charges of not more than an ounce without accident. The instructions are, that dynamite in wet places should be exploded at once. With regard to the boat, it went from the ship stern first, and remained in that position until the explosion. The torpedo was in the stern of the boat. Consequently, the wire from the torpedo was under the oar or oars on one side of the boat, but I did not see an oar touching it.

A Juror.− I understand Mr. Houston to say that Mr. Murray was some distance from the firing key when the explosion took place.

Witness.− Mr. Murray held the firing−key in one hand at the time of the explosion, to the best of my belief. An expert might have fired the mine with the key in 10 or 15 seconds−that is to say, it would take him that time to make the connections and fire the mine by means of electricity. Was not looking at Mr. Murray when the explosion took place.

John Kennedy, chief petty officer of the Cerberus.− Groves kept some dynamite at the hulk Deborah, lying at Edom. Saw some in the laboratory there. It was made up in small paper parcels, and kept in a small tin on a shelf. It was not loose. It was labelled "Dynamite." There is some dynamite now in the laboratory. On the 2nd of February Groves made up a mine with dynamite in it. The torpedo was exploded a few days afterwards I believe. Some of the dynamite has since been removed, but I cannot say when or by whom. Only Mr. Groves and myself had access to the laboratory. He kept the key, and when he was absent it was in my charge. I did not touch the dynamite. The dynamite came to the hulk about April last. Saw the stores intended for the Cerberus for the late trip removed from the hulk. Did not assist Groves to make up the combustibles on this occasion.

To the Coroner.− Groves kept the storebook. There is no entry of dynamite in it.

Henry Schreiber.− I am an electrician in the Naval Torpedo Corps. Was on board the Cerberus when the explosion took place. Saw nothing but guncotton put into the torpedo with the gunpowder. At the time the explosion took place I was right in the stern. Mr. Murray was 10ft. behind me. As soon as the explosion took place I looked at Murray, who was standing with his left hand on or near the firing key, and apart from the other. The firing key was on a kind of table. In his right hand he held the wires. Between the explosion and my turning round to Mr. Murray, it was not possible for him to have disconnected the wire from the key had it been connected. It was not possible for Mr. Murray to have connected the wire with the key or explode the torpedo. I wish to correct one of my statements. Mr. Murray's left hand was not near the firing key. Recollect now that the key was on the table behind him, and that his other hand was stretched out holding the wire. My impression is that there was nothing in the torpedo but gunpowder and guncotton.

To Mr. Murray−I had put the firing key on the table, which was fastened to the table with string. That was about an hour and a half before the explosion.

To the Coroner. − The key was still fastened to the table after the explosion. Saw no dynamite on board. Saw some hand grenades.

To the Jury− Between the explosion and my seeing Murray after it he could not have had time to move from the firing key.

To the Coroner.− If the wire to the torpedo had touched the wire between the key and the battery there would have been no explosion. To explode the mine electrically, both wires had to be connected at the key.

E.J. Huyamans.− I am engineer in charge of the Cerberus. Was on board on the 5th inst. At the time of the explosion I was standing on the quarter − deck looking at Mr. Murray. Was about 25ft. from him. At the time of the explosion he was standing with his left hand on or near the binnacle, and with his right hand raised the wire being round one of the fingers of it. Was looking at him, waiting to see him connect the wire. He did not connect the wire or make any movement before the explosion. He held the wire in the same position after the explosion as before it. The firing key was fastened to the binnacle stand.

To Mr. Ellery.− The binnacle stand is of wood.

Oliver Richards.− I am gunner on the Cerberus. Was on board on the 5th inst. At the time of the explosion I was on deck looking at the boat. Mr. Murray was about 7ft. or 8ft. fro me. When I saw the explosion I said to Murray, "What is the cause of this?" His right hand was upraised with a wire init, but where I stood, I could not see his left hand. There had not been time for him to have connected and removed the wire. I looked at him immediately after the explosion. Saw nothing but gunpowder and guncotton put into the torpedo. Saw no dynamite, and did not know there was any on board the ship. The torpedo was placed in the stern of the boat, and the wire from it was above the oars. When the torpedo was placed in the water the wire got round an oar. The explosion took place as soon as they began to lift the oar from the rowlocks to free it.

To the Jury.− Dynamite might have been put into the torpedo without my knowledge.

To Mr Murray.− Did not see the guncotton put into the torpedo.

James Tabb.− I am a gunner on the Cerberus. Have charge of the magazine. Supplied the powder for the torpedo. Lieutenant Collins instructed me to furnish it. Supplied Groves with about 70lb. of rifle large grain powder. The powder was in the ordinary cylindrical case. It had been kept there for some years. I sent it in the same care in which it had been kept in the magazine. The magazine is under lock and key. When I am on board no one but the commanding officer and myself can have access to the magazine. The cases, such as that used for the torpedo, contain 70lb. of powder. Then the powder is about 4in. from the top. The magazine contains no dynamite, or fuses, or guncotton, or any other explosive materiel beside gunpowder. The other explosives besides gunpowder, such as rockets, blue−lights, &c, are kept in another magazine, not in my charge. I have never had any dynamite under my charge. No one could have introduced dynamite into the case while it was in my charge. When I delivered the case, it contained, as far as I am aware, no dynamite. Groves did not refer to the contents of the case. There is no iron but only galvanised iron about these cases or their lids. At the time of the explosion I was standing three yards from Mr. Murray. Heard Mr. Murray say, " My God, how could it have occurred? I have not completed the circuit?" Am satisfied he could not possibly have completed the circuit. Groves' stores from the hulk were placed in the shell − room of the Cerberus. On the morning of the 5th. inst. I saw some hand grenades and small torpedoes there, which had been brought by Groves. The holes in the lid were soldered watertight. There was no ill feeling in the ship amongst the officers and men. Groves was on good terms with everyone, and was generally liked.

Mr. Murray, re − examined.− My opinion of the cause of the explosion is, after hearing Mr. Doyle, that there was dynamite in the Torpedo, and that it could only have come out of one of the small hand grenades. These had been wet for a considerable time, so that the dynamite would be partially decomposed and easily exploded by friction or a slight concussion. Dynamite is a compound of nitro glycerine and infusoral earth, the latter being mixed with the nitro glycerine to make it safe to handle. Dynamite explodes easier than gunpowder or guncotton. If the nitro glycerine separates from the earth, it very dangerous. I had no idea that there was dynamite at the hulks. Mr. Groves recently told me there was none there. I can't account for the explosion. There was some fulminate of mercury in the fuse in the torpedo. Part of the fuse containing that was surrounded by the discs of guncotton. Fulminate of mercury will explode by concussion. That used on this occasion was new, and not decomposed. Even if it had been of the worst description, it could not have been

exploded by any friction or concussion it received on this occasion. I do not think anything could have exploded the fuse in this torpedo except the electric current. The guncotton was safe. It will not explode by means of ordinary friction or concussion. At the time of the explosion I had the wire in my left hand, and the other one was beside or behind me, on or near the firing key. If the torpedo contained nothing but gunpowder, guncotton, and the fulminate of mercury in the fuse, I cannot account for the explosion. Could not have inadvertently completed the circuit. The wire was never within two feet of the key. I think one of the hand grenades must have contained a dynamite cartridge. Know nothing about the dynamite except what Mr. Doyle has said. Groves had a very fair knowledge of explosives, but i doubt whether he knew the danger of using decomposed dynamite. He was fearless even to rashness. Assuming there was decomposed dynamite in the torpedo, there was sufficient concussion while the torpedo was in the water to produce an explosion.

To Mr. Ellery.−The deck is wooden, as is also the grating on which the key stood. On its way to the boat the wire passed over a galvanised iron rail on the side of the vessel.

To the Jury.−I have not heard that anyone excepting Mr. Doyle saw any dynamite.

To the Coroner .− I believe the torpedo was watertight when it left the ship.

To the Jury.−It was not my duty to see what was in the case. That was left to Mr. Groves. He had passed through the Torpedo College at home.

To the Coroner.−Dynamite is not much used in gunnery, but in mining chiefly. If there was dynamite mixed with the guncotton, Graves might have put it into the torpedo inadvertently. I don't know that I should have excluded dynamite, if it was not decomposed. If there was any dynamite in the torpedo, I believe he put it in himself.

To the Jury.−I never knew of dynamite being put into hand grenades.

R.L.J. Ellery.− I am Government astronomer and major commanding the Torpedo Signal Corps. Have heard the evidence given to day, and read Mr. Houston's evidence. On that evidence I can't conceive it possible that the electric circuit could have been completed on board the ship There is no evidence of any inadvertence by which the circuit might have been accidentally closed. There seems to have been at least an arm's length between the wire in one hand of Mr. Murray and the firing key. With the battery used, one of 20 cells, it was physically impossible for the current to travel from the battery to the mine unless there was a connection. Had the battery been one of the 1.000 cells the current might have passed through Mr. Murray's body without the wire being connected in the usual way. But he would have felt rather unconfutable. If Mr. Murray had touched some portion of the key with the wire, the current might have been established, but it seems impossible from the evidence that that could have been done. Some other cause of the explosion must be looked for. After examining the lid of the case, and hearing how guncotton was put on the fuse, I am of opinion that any rough usage which occurred at the boat would have been insufficient to have exploded the charge. I should have no hesitation in tumbling about such torpedo. Of course I assume the charge consisted only of gunpowder, guncotton, and fulminate of mercury. Assuming there was no dynamite in the torpedo, I can't account for the explosion. If there was free nitro glycerine in the charge, it is possible to account for the explosion. The rolling over of the case would be quite sufficient to have caused the explosion then. If ordinary good dynamite was in the charge an explosion would not have occurred. When dynamite is in water, or has been a long time made, it is frequently covered on the outside with a thin film of nitro glycerine, and a dynamite cartridge in that condition would be highly dangerous. Unless there was free nitro glycerine, I can't account for the explosion, and the evidence that there was free nitro glycerine is not very clear. I have an impression that free nitro glycerine was in the case, although I am not able to say positively that it was. Do not see how the torpedo could have been designedly exploded by electricity without detection. My opinion from the evidence is that the electrical arrangements were carefully and properly carried out. I think dynamite could not have been introduced into the case without Groves's knowledge. The motion of the powder in the case would have exploded nitro glycerine.

Mr. Doyle, recalled by the Jury.− I don't adhere to my statement that immediately after the explosion I say the firing key in Mr. Murray's hand. Remember now distinctly that the key was a fixture. It was an error of mine

to say that Mr. Murray held the key in his hand. Am not aware that any one else saw dynamite on board

Charles Evans.−I am an able seaman on board the Cerberus. Last Thursday I was one of the boat's crew which brought some things from the hulk for the Cerberus. Removed them by Mr. Groves's instructions. When I was about to handle one small parcel, Mr. Groves said, "Good God, what are you doing? That's dynamite. You will blow yourself up." Groves removed the parcel. The things were taken to the Cerberus.

To Mr. Ellery.−Mr. Groves returned to the hulk, and might have taken the parcel back with him. I never saw it again.

To the jury.−The parcel looked and felt like one containing 1 1/2lb of brown sugar.

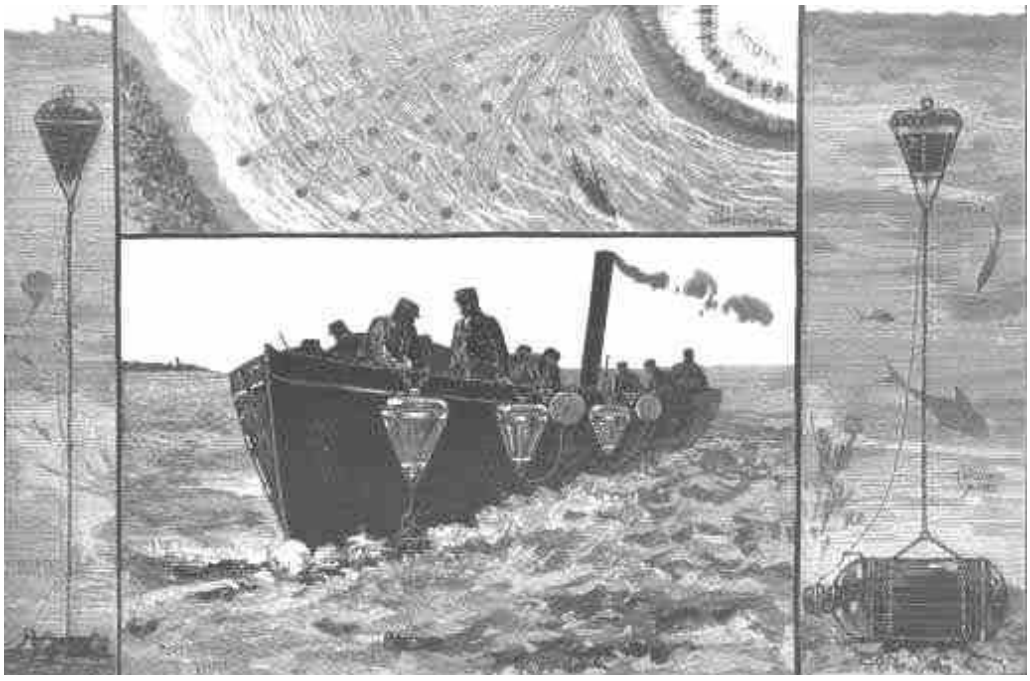
This concludes the evidence.

The coroner, in summing up, expressed his opinion that it was clear that the explosion was not brought about by electricity, nor could there be any doubt that nitro glycerine was actually present in the torpedo. The explanation of the unfortunate catastrophe seemed to be that the deceased put dynamite into the torpedo, and that he ignored or was not aware of the fact that the nitro glycerine in the dynamite had become free and highly dangerous. There was no reason to suppose that any other person had a hand in bringing about the explosion. The side issue as to whether it was wise policy to fire off such a torpedo was one that the jury need not trouble themselves about. It was enough to know that the fatal torpedo was fired with Captain Manderville's knowledge or by his order, and the jury would leave him out of their consideration. As to the saving of Jasper's life by Mr. Houston, that also had not been fully gone into, as it was outside the scope of the inquiry, but there could be no two opinions as to the courage Mr. Houston had displayed.

The jury, after consulting for about half an hour, returned a unanimous verdict that the deceased were killed by the explosion of a torpedo, but that there was not sufficient evidence to show how the torpedo was exploded.

---

image − Our Torpedo Defences 1885.



(L)Contact mine (T)Plan of torpedo field (R)Ground mine (B)Putting down mines.Torpedo boat lowering mines into water.Australasian Sketcher, March 12 1885

THE LATE GUNNER GROVES

TO THE EDITOR OF THE ARGUS

Sir,−In your account of the torpedo calamity, which you published on Monday, there occur the following words in the statement made by Lieutenant Murray :−"Poor Groves was terrible careless," &c. Now, I wish to state that I was a brother officer and old shipmate of the late Mr. Groves, and had known him intimately for the last 20 years, having passed through the same curriculum with him at Porsmouth on board the Excellent You will imagine my suprise at Mr. Murray's statement when I tell you that so far from Mr. Groves being careless, he was held up as a model of exactness and precision, in every respect, on board the Excellent; and from my subsequent acquaintance and intercourse with him I have never had reason to doubt of his character in that respect. I think, therefore, that in justice to the widow and orphans, as well as for the satisfaction of old messmates like myself, Lieutenant Murray should either substantiate or retract what I consider a most terrible slur upon the character of a naval officer,−I am&C,

JAMES THOMAS POUND,

Late Gunner in the Royal Navy.

Carlton, March 8..

Re the Official Torpedo Manual

Argus June 14 1881

To the Editor of The Argus.

Sir, will you allow me to offer a few remarks upon the late torpedo explosion, and comments which have been published in The Argus.
I may premise that I was for a number of years connected with the practical working of telegraph lines, both serial and submarine that I have used many galvanic batteries, and know the effects produced by the different knids, and which would be the most suitable to perform any particular kind of work.

A sea−cell battery is not new to me or to any other person who has worked on a cable, indeed it forms one of the most ordinary means of testing. The character of the current set up by it, therefore, is well known to electricians, and it was not, I am sure, ignorance of the current, but a knowledge that it could only be one of the most harmless kind that would be in Mr. Murray's mind if he thought of the possibility of the indiarubber covering of the firing−line being removed, and the copper wire coming in contact with the iron of the ship. That such a contingency was very unlikely to happen is well known to any one aquainted with Hooper's core, and the difficulty of removing the indiarubber from the cooper's wire, and yet upon it depends the possibility of a sea−cell having been established at all. This point appears to have been lost sight of, but anyone wishing to investigate the matter must first find that contact, and good contact, with the ship was made before he discusses the question − Given the contact, what would be the current?

I have read the evidence given before the coroner and the board, the latter's report, Mr. Murray and Mr. Doyle's comments, the letters to you of Major Cracknell, Mr. Moors. and Mr. Joseph, and your article of Monday last; and I have come to the conclusion that the difficulties in the way of the establishment of good electrical contact between the zinc case of the torpedo and the iron of the ship are so great as to be practically inseperable and that if such contact were established I agree with Mr. Murray and Major Cracknell, who experimented, the former from the Cerberus, with arraqngementa similar to those on board at the time of the

accident, and the latter in Sydney, with arrangements much more likely to produce a current sufficient to heat a platinum fuse of the ordinary service type than those which existed at Queenscliff, that it is impossible for the explosion to have been caused by such a combination. I say this notwithstanding Mr. Joseph's ascertion that he fired four platinum wire fuses by means of a sea−cell.That gentleman does not give us any details of his experiments, and he is so evidently retained for the defence of the board, or of his comrades who are members of it, that I must conclude that the conditions under which he experimented were no only (to quote him) "unlike those under which the Cerberus disaster took place," but very different. Perhapes even his fuses were very sensative, made so for the occasion. No, Sir, it seems to me Mr. Joseph and his friends on the board made a mistake. If the latter had believed in the sea−cell theory they should surely have made the needful experiments from the Cerberus, and when Mr. Murray and others interested were present.

There is another point whch proper ****** does not seem to have been laid. Everyone knows how instantaneously electricity acts; and if the explosion had been caused electrially it would have taken place the moment the torpedo touched the water, whereas a minute at least elapsed between contact with the sea and the explosion.

Assuming the existance of dynamite in the torpedo −−− about which, after reading the evidence taken both at the coroner's inquest and by the board, no impartial person, I think, can entertain any doubt whatever −−− the accident is easily accounted for. On the opposite supposition I confess myself baffled, for I feel sure, from my knowledge of electriciry, no theory as yet advanced can explain it. Why so obvious a solution of the difficulty presented by the dynamite theory should be discarded, and a witness of unblemished character like Mr. Doyle discredited, may be surmised, but it is not the less surprising.

One word more. The board say Mr. Murray acted wrongly in keeping the end of the firing line on board the ship. The usual practice, they say, is to send the firing line away with the torpedo, and to bring back the battery end to the battery after the mine is laid.

I do not know where that is the usual practice, but I do know that in an official torpedo manual which I have seen there is a description of the method in which mines are to laid, also a drawing of a launch fitted with torpedoes. Both the description and the drawing show one end of the firing line attached to the torpedoes and the other end on board the ship which contains the firing battery. That is just as Mr. Murray had the firing line at the time of the explosion, so that if he erred, it was in good company, and in accordance with authorised usage. I am &c.,

June 10 Cable

THE GEELONG ADVERTISER

Page 3, 7 March 1881

EXPLOSION AT QUEENSCLIFF

FIVE MEN KILLED BY TORPEDO

(FROM OUR OWN CORRESPONDENT.)

Shortly after five o'clock this afternoon the public here was startled by an alarming accident on the Bay, resulting in a dreadful tragedy. The Cerberus has been practising at the Heads during the last day or two, and this afternoon it was understood that a torpedo would be laid and exploded at the entrance of one of the channels. Six men in a boat left the Cerberus, which lay at anchor off Point Nepean, carrying with them the torpedo, with instructions to place it in position. They had not proceeded more than a hundred and fifty yards from the vessel when the missile exploded, blowing the boat and six men into the air. Three men were picked up frightfully injured, and two died almost immediately. Some hopes are entained that the third man may recover. Search was made for the three other bodies, but not a trace could be found. Dr. Williams, of Queenscliff, sent for to the ship, and promptly attended, and gave all necessary attention to the wounded men.

Sunday Night.

The Cerberus proceeded to Melbourne at daylight this morning.

(BY ELECTRIC TELEGRAPH.)

(FROM OUR MELBOURNE CORRESPONDENT.)

Sunday Night

A terrible accident occurred at Queenscliff on Saturday afternoon at a quarter past five. The Cerberus had been engaged in torpedo practice during the day, and had exploded four electric contact mines. She then sent the gig with a cylindrical powder case fitted as a torpedo, to be fired by fulminate mercury fuse. On getting a sufficient distance from the ship the gig dropped the powder case overboard and, on backing off, one of the oars fouled the wires. Gunner Groves, who was in charge, leaned over the boat to clear it, when the torpedo exploded, blowing the boat and men into the air. Groves, who was an old Imperial service officer, and who leaves a wife and four children in England, and seamen named Henry Timley, Jas. Wilkie, and William Barnes, were killed, and another, Jasper, who was in the bow of the boat, was flung into the water with injury to his left leg and face. He was gallantry saved by Lieut. Houston, who was on the deck of the Cerberus at the time, and who, divesting himself of coat and boots, plunged into the water, and kept Jasper afloat until a boat came to their assistance. Jasper was first taken out of the water, and he was then picked up himself. A fifth victim, a seaman, Jas. Hunter, was also recovered, but he died shortly after being got on deck. Great excitement took place. The water was covered with torn flesh and fragments of the bodies of the unfortunate men, and wreckage of the boat; but the bodies were blown into such small portions that they could not be collected. An official report has been made by Captain Manderville to the Chief Secretary, asking enquiry, and suggested that Mr. Ellery be invited to act.

The Cerberus returned to Williamstown at ten o'clock. The bodies were then removed to the Morgue. Barnes was married, but had no children; the rest of the seamen were unmarried, except Jasper, who had a wife and

two children. At Present no explanation is obtainable as to how the charge was fired. The torpedo must have drifted under the boat, but contact with the wire would be insufficient to explode it.

Page 3, 8 March 1881

THE CERBERUS DISASTER.

———————

The version of Commander Manderville is contained in the following official report, which he forwarded to Mr Berry:−

Port Phillip Heads, 5th March, 1881. Sir,−I much regret having to report a dreadful accident that occurred whilst experimenting with small torpedo charges from here this afternoon, and which resulted in the loss of one officer and four men, and one man slightly wounded. After having exploded four mines representing electro−contact mines, and one hand − grenade, a cylindrical powder case containing 70 lb of rifle large gunpowder was fitted as a torpedo for explosion by means of a fulminate of mercury fuse, which was intended to be put into electrical circuit by having one end joined up through the firing key to the battery. The case was placed in the gig, and Mr Groves, gunner, went with five men to lay it sufficient distance from the ship to permit of its being exploded safely. On dropping it over the stern of the boat, and before they could pull clear, one of the oars fouled the wire connected with the fuse, and while the men were employed clearing it the torpedo exploded, blowing the boat to pieces and the four men into the air. Mr Groves was picked up dead, three men whose names are in the margin (Henry Timberley, A. B., James Wilkie, A.B., William Barnes, L.S.) were missing, James Hunter, A.B., was picked up alive, but fearfully injured, and James Jasper slightly injured in the leg. A message was immediately despatched for a doctor, and Dr. Williams was on board within twenty minutes of the accident. Shortly after his arrival James Hunter died. Mr Alexander Houston, a sub − lieutenant belonging to the Naval Torpedo Corps, jumped overboard to the assistance of Jasper, who immediately after the accident was seen in the water some distance off swimming toward the ship. Had it not been for the prompt assistance of Mr Houston, it is doubtful if Jasper would have been saved. The cause of the accident is at present unknown, as every care was taken, and Mr Murray, electrician, who had charge of the firing apparatus, had not joined the wire from the wire to the key, so there could be no possibility be an electric current. I am most anxious that a full and searching inquiry may be held into the cause of this sad accident, and I would respectfully recommend that Mr Ellery should be requested to assist in such. Mr Ellery is not only a leading electrician and scientist, but he has considerable experience in torpedo operations. I have the honour to be, sir, your most obedient servant, C.T. Manderville, Captain Commanding Naval Forces. The Hon. Graham Berry, Treasurer

MR MURRAY'S STATEMENT.

Mr Kynaston Murray, telegraph engineer of the Victorian railways, and chief electrician of the Naval Torpedo Corps, says :− I directed the torpedo practice from the Cerberus on Saturday afternoon, and having successfully fired four mines, I had not intended proceeding further that day. As was my custom, I fired small charges by means of the "circuit closer" buoy, and when that was done, some one suggested that an opportunity should be afforded the people on shore of judging the effects of a larger torpedo; one which would "blow up a lot of water," as it was expressed. Accordingly Mr Groves, the gunner in charge of the torpedo haulks, whose duty on all such occasions was confined to the mechanical, whilst mine was the electrical department, proceeded to construct a mine. He took a zinc case in which powder is imported and placed some powder in it. He did not fill it, unfortunately, for, had he done so, I am not at all sure that the explosion would have taken place. The quantity of powder put into the case was almost 70lb. On the top of that were placed some discs of wet guncotton, which were included, as he said, so as "to get rid of them," and, as I am given to understand since, he also added a small piece of wet dynamite. These were a portion of a small hand grenade which we tried to fire previously, but failed to do so, and I told on of the electricians to knock the top off it and throw it into the sea. This was not done, however, but Mr Groves placed the contents on top of the case. It was generally a way with him to say "Put them all in, they will go up together," but I did not know then that he did so with regard to the dynamite and gun cotton. The torpedo having been constructed

it was decided that it would be necessary to attach a piece of timber to it as a float, and Mr Groves was about to lash the case to the plank, when I suggested that it would be better to sink it, about eighteen inches from the surface. I did so because I considered that it would be less dangerous if that were done, inasmuch as if the torpedo was lashed to the timber the explosion might scatter the splinters for considerable distances, and in all directions. But if the charge was sunk the effect of the bursting would be either to send the plank bodily into the air, or break it into a few pieces. Mr Groves accepted the suggestion and the torpedo and float were placed in the boat, with Mr Groves in charge. To the former was attached one end of about 80 yards of what is known technically as Hooper's core. It is copper wire thickly insulated or covered with indiarubber. This end was placed in a fuse which was in the torpedo, but in order that you may better understand the process I think I should explain what that fuse is. It is a small contrivance containing fulminate of mercury, with two wires passing through its base. The ends of these are connected by a small bridge of fine platinum wire, which, when the current is applied from the battery, reaches a white heat, and fires the fulminate of mercury, which at once explodes the material surrounding. One end of the Hooper's core then was placed in the fuse; the other I held in my right hand on the quarter deck, and in my left hand I held the key from the battery with which at the appointed time I was to make the connection to cause the explosion. The boat having been shoved off, and backed out until nearly the whole line was paid out, Gunner Richards called to Mr Groves to remain where he was. I then sae the crew place the float over the side, and I remember saying to Mr Richards, "There is yet 10 feet of slack here," to which he replied, "They have got plenty of way on, sir, and will take it out." At that time I noticed that the boat seemed as if it could not get away from the torpedo; that it was evidently foul of something. I stood watching them, and twisted the end of the wire around the first finger of my right hand, and within about half a minute from the time the torpedo was placed in the water, and before the boat could get clear of it, it exploded. I could not for a moment realise what had taken place until I heard some one call out "Poor fellows, see what has occurred!" Mr Richards at that instant came over to me and said, "However did it happen? You have not got the wires connected." My hands were just in the same position as they were before the explosion, and no contact was made. I dropped the wires when I saw the discharge, and soon afterwards the boats brought on board the body of Groves, Hunter and Jasper, who were in the gig, and Mr Houston, who had jumped overboard to save Jasper. The Hooper's core passed under my left foot over the side of the vessel to the boat, but the wire in no way touched that from the battery to the key besides, both were thickly insulated. The key at the end of the battery wire is fixed to a piece of wood, which I held. At one end it has two binding screws at each corner. To one was affixed the wire from the battery, the end being looped and placed over the screw, whilst the cap was screwed down to keep it its place. I order to complete the circuit it would have been necessary for me to make three distinct motions. I should first have to fix the wire from the torpedo to the other binding screw, then pull out a stud with an electric contact piece on it, which is in the centre of the contrivance, for quite two inches, and finally press down the key, and thus close the circuit and cause the explosion. Even if the two wires had been properly affixed to the binding screws it would have been impossible to complete the circuit by pressing the key unless the stud was withdrawn as I have stated; but not one of the movements was made and consequently no electric current was sent into the torpedo. Mr Groves was the officer who always took charge of the boat on such occasions, and he always backed off such and called out, "All safe, Sir," when it was time to discharge the mine. I was waiting for that signal before I adjusted the wires and preformed the other necessary operations, which would occupy about a minute. But the explosion occurred before the boat was away from the torpedo at all. The charge of power in the case would not be called an unusual one at all. In England they experiment with 100 lb, 150 lb, and 200lb of gun cotton in one charge, but 70 lb of powder is not equal to more than 20 lb of gun cotton. I mentioned just now that wet dynamite and gun cotton were placed in the case without my knowledge, and from conservations I have had with other professional gentlemen, and from my own consideration, I think that wet dynamite would have a dangerous effect. Dynamite is a composition of nitro glycerine and infusorial earth, containing 75 per cent. of the former and 25 percent. of the latter, and it understood that when it has been for any length of time in water the nitro glycerine oozes through the earth and skin of the cartridge. If but a very small portion of the nitro glycerine was struck by anything it would explode, and it is just possible that the cartridge was sufficiently wet for the nitro glycerine to have exuded. If it was on top of the case the jerking which was caused by the men trying to free the oar from the wire might have fired it. It is a possibility, that is all, that such a thing would occur. I do not know how long the cartridge might have been wet, as Mr Groves might have had it for a considerable time at the hulks. At present I am unable to give any other possible reason for the premature explosion.

JAMES JASPER'S STATEMENT.

James Jasper, aged 25, and an able seaman on board the Cerberus, stated : James Hunter, Harry Timberley, James Wilkie, and myself manned the gig, and took in Mr Groves and Barnes and a 70 lb torpedo attached to a float. Timberley and Wilkie pulled the midship oars, and I pulled the bow one on the port side. The torpedo was in the stern sheets on the starboard side, and Mr Groves held the wire communicating with the ship to keep the strain off it. After backing for about 80 yards, the two men amidships "laid on their oars." The torpedo was then placed over the starboard side by Mr groves, Barnes, and Hunter, but as the oar on the side fouled the wire they leant over to see what was the matter, and endeavoured to clear it. I did not do so, but I looked towards them; and one remarked that if any accident happened I would be safe. Whilst they were trying to extricate the oar the torpedo exploded. I don't remember hearing the report pr any other experience until I was in the water. my head seemed to be under severe pressure, but I struck out for the vessel when I found the boat had been smashed, and my shipmates were not to be seen. I soon felt I was losing strength, and had I not been assisted by Mr Houston, I am certain I could never have reached the ship. After he gave me the form he swam to a buoy, nothwitstanding that he was almost exhausted, and kept afloat until he was rescued. I don't know how I can thank him enough. I was kindly treated by the officers and men, but my injuries are not more than a severe shaking, and bruises on my legs and face.

INQUEST ON THE BODIES

(FROM OUR MELBOURNE CORRESPONDENT)

Monday Evening

Dr. Candler, the district coroner, held an inquest to day at the Oriental Hotel, Nelson Place, Williamstown, on the bodies of Robert Samuel Groves, late gunner of H.M.C.S. Cerberus and James Hunter, A.B., of the same vessel, who were killed by the torpedo explosion in Port Philip Bay, off Queenscliff, on Saturday afternoon. A jury of fifteen men were sworn. Mr M'Indoe was chosen as Foreman. Sub−inspector Toohey watched the case on behalf of the police, Captain Manderville, commander of the Cerberus, was also present. The first witness examined was

James Jasper, A.B. on board the Cerberus, who deposed that on Saturday last he was directed to go off in a boat. He was not aware of the object of the boat's trip. He was with the deceased (R.S. Groves and J. Hunter), and three others.. Mr Groves had charge of the boat. Was bowman of the boat, and had nothing to do with the explosive material. They started from the Cerberus between about half past four and five o'clock. They rowed about eighty yards and were then directed by Mr Groves to stop. The torpedo was placed over the starboard side by Mr Groves, Barnes and others. He remained in the bow. The boat was astern of the Cerberus. By some means the starboard oar fouled the torpedo after it was in the water. Those aft tried to clear the oar. In doing so the explosion took place, and witness knew nothing further. He found himself struggling through the water; when he got to the surface he was facing the Cerberus. He spit out a mouthful of blood, and looked round, but could not see anything. Then struck out for the ship; after swimming for some time felt his strength leaving him. Sang out two or three times for a boat. Next saw the life buoys being thrown over, and a form or a stool. A gentleman sprang overboard, and pushed the stool towards him. He got hold of the stool. Eventually he was picked by a boat. Had previously been in the boat that was destroyed, with the same crew, except Mr Groves and Barnes. That was the first time Mr Groves had been in that boat that day. Could not tell what caused the explosion, as he knew nothing of the working of the torpedo. Saw the torpedo handed into the boat, and placed in the stern sheets. Had no experience of torpedoes. He never saw one like it before. Saw the wire attached to it. Could not say precisely what was the nature of the fouling. The oars (two) were not shipped. In the efforts they made to unfoul the oar, one of the seamen stood up and tried to extricate the oar. Mr Groves was leaning over the side of the boat, trying to free the torpedo, but he gave no orders. That was when the explosion took place. Had been laying torpedoes that day. A signal (red flag) was given from the vessel after the torpedoes were laid, and they pulled away from them. The red flag was not displayed on this occasion. When the oar fouled Timberlay said to witness, "Jim if anything happens, you are in the safest place." Mr Groves said "Nothing will happen, before we are clear of it." He would take care of that. When the case

containing the torpedo was put into the boat Barnes was tightening the strap, with the boat hook, when Mr Groves said, "Look out, don't put the boat hook through the case." Barnes had charge of the wire in his hands as the boat was rowed away from the Cerberus. That was all he knew about the matter. Several torpedoes were exploded that day. The boat hook was not used to free the wire or oar.

C.F. Manderville, retired commander of Royal Navy, now captain of H.M. ironclad turret ship Cerberus, said:− We went down the bay on Friday last, the 4th inst., for the purpose of exercising with shot practice the heavy guns, and for the purpose of practising the electricians attached to the torpedo corps. There was no torpedo practice until Saturday, when preparations were made for the afternoons practice. We used some small torpedoes. Left Entirly in the hands of Mr Groves, who had charge of the mechnical part, and Mr Murray, chief electrican, who had charge of the batteries and scientific part of the torpedoes. In addition to Mr Murray, there were present − Messrs Houston, Doyle, and Schrieber. Left the Cerberus about 5 o'clock for Queenscliff. Had not given any instructions about this particular torpedo, as it had been arrangesd as part of the afternoon's programme. It was decided that a mine should be exploded in a cylindrical zinc powder case. About 50lbs of powder were used. The exploding of it was left to Mr Groves and the electricians. The explosion took place with his concurrence and order. Did not limit them to the number of torpedoes or charge used. Looked on it as part of their work. The deceased R. S. Groves was 47 years of age, and was a gunner in the Royal Navy lent to the Victorian Government by the Home Government. His time would have been up in fourteen months. he left England in August 1877. He was specially qualified at home in the use of torpedoes, and had since his arrival been in charge of the Cerberus torpedoes and stores. Always found him steady and careful but apt to be a little too self confident. Onece at his office in Williamstown, an accident occured. Witness was going to experiment with some small torpedoes about a year ago, and Mr Groves brought them and while he was explaining the action of the firing plate, which he (witness) did not understand, the wires were connected, and the explosion took place, in consequence of witness connecting the wires whilst deceased was instructing him. That was the only accident they had previous to Saturday. The deceased was a man who accepted risks unnecessarily. James Hunter was an able seaman, aged about 35 years, and had been over two years in the service. He (Hunter) had no special knowledge of the matter. Had through confidence in Mr Groves. Did not know what the contents of the case were, but he understood it contained 70lbs of powder. Was told it contained RLG powder. It was on the quarter deck when he left the ship. Mr Groves said nothing about any other explosive matter being mixed with the powder. He exercised his own discresion, within certain limits, as to the nature of the explosive materials used by him. No dynamite nor gun cotton whatever are kept on board the Cerberus, but the deceased Groves might have brought some, but not to his knowledge. If he had known he would not have allowed it to be brought on board. Never use dynamite.The gun cotton is always kept in the hulk. We have only a small quantity − a few ounces. Whatever explosive material was on board the Cerberus was under the deceased's charge. He sometimes used the electric batteries when the electricans were not present. He used to make the batteries, and had a practical knowledge of their working. He was aware of all precuations that should be used in the operations. Several varities of wire were used, and he knew how to test them. He was fully alive to the danger of the explosives. Heard Jasper's statement about Groves cautioning Barnesw. Groves did not want the boat hook driven into the case. Groves told him he had learnt abou chemistry from Mr Murray and others. Could not account for the explosion at all.

To Mt Marray: If the iron boat hook had penetrated the case an explosion might be caused.

A.M. Houston deposed that he was one of the electricans attached to the naval service. Know the deceased Groves. He was on board when the accident took place, and saw the boat put off. Mr Murray was in charge of the apparatus on board the ship. Mr Groves had charge of the wire in the boat. Saw the boat stop about a hundred yards from the ship. When she stopped saw Groves and one of the men lift the torpedo or mine from aft, and put it into the water. One of the oars fouled the wire of the torpedo. Next saw Groves leaning over the side of the boat trying to release the wire. Then saw Mr Groves' body in the air. Heard the explosion and saw pieces of the boat and the men in the air. Mr Murray exclaimed : "How could this have happened. You see the wires not connected." Then observed that one end of the wire was attached to the firing key, and the other end was round Mr Murray's finger. It was quite impossible for the current to have been established, or the explosion to have been caused from the Cerberus. Witness explained the process of firing, which took some seconds, and could not have been done some seonds, and could not have been done by Mr Murray. Saw the zinc case containing the "mine" brought from the magazine of the Cerberus. It was brought on board anout hald an hour before it was put into the boat. Mr Groves lifted the lid off. It was seen that some grains of

powder were adhering to the top. He took them off with his finger, making the remark that the greatest care should be used, so that no metal should come into contact with the powder. The case was not quite full, and after the powder was removed the wires were solderded on by the ship's armourer. (lid produced.) While the lid was away a door mat was placed over the lid of safety. Was present when the armourer returned with the lid. Mr Groves then placed some gun cotton on the fuse, attached it to the two wires, and made a place in the powder to receive the fuse. The lid was then put on, , and some indiarubber tape put round the edge to keep it watertight. Some wite or red lead was sent for, and also put on for the same purpose. Mr Groves sent for a piece of wood for a float, which was made fast, and the torpedo put into the boat. No large object could have been placed in the tin besides the gunpowder and cotton. It was the first time they had exploded gunpowder; the other mines were composed of guncotton, and made by Mr Groves. All the necessary precautions were taken, as far as he could judge. Nothing was said about dynamite by Mr Groves, and did not see him with with any that day. Neither the powder nor the cotton was packed tightly. The case was fastened on to a board lengthways, and it would have been possible for the grains of the powder to get to the lid. He could not state what was the cause of the explosion, but his opinion was that it arose from the oar fouling the wire. He believed the mine was exploded by means of the oar, but he could not give any explanation of it. Never made any experiments with dynamite. Mr Murray always objected to its use, on the ground of danger. A sudden jerk of the wires could not have exploded it. Did not think the charge was at all dangerous; in fact, he was on the point of going in the boat, but had been out before and was too tired. Nothing could have been introduced into the tin without Mr Groves' knowledge. Never had any experience with slow fuse.

At this stage the Coroner asked Mr Murray, who was present, If he could briefly give an explanation of the occurance.

Mr Murray said he could not. He had a theory, however, which, although it might be satisfactory to himself, might not be to others. He would like to be fully examined, as he could throw a little more light on the affair than had been done by the previous witnesses.

Mr Candler said he would, of course, be examined. Before he went any further he through it would be advisable to examine an expert, say Mr Ellery, the Government Astronomer, or someone else connected with the service.

After some discussion as to the date of the adjournment, it was decided to adjourn until Thursday morning, at half past ten o'clock, when the inquiry will be resumed. Mr Ellery will probably be the first witness examined.

THE FUNERAL

The funeral of the deceased men took place immediately after the inquest was adjourned. It was, of course, observed with military honours. The comrades of the deceased from the Cerberus headed the procession; then came the band playing the "Dead March." The coffins were conveyed on gun carriages, followed by the Williamstown Artillery, Naval Reserve, and the contingents from the German, French, and the Italian war vessels at present in the bay. After these came Captains Fullarton and Manderville, and the gunnery officers. All shops, etc., along the route were closed.

THE TORPEDO DISASTER

THE INQUEST

(FROM OUR OWN CORRESPONDENT.)

Thursday Evening.

The adjourned inquest on the bodies of Robert Samuel Groves And James Hunter, who were killed by the explosion in the bay, off Queenscliff, on Saturday, the 5th inst., took place to day at the Oriental Hotel, Nelson Place, Williamstown. Mr Candler, the district coroner, conducted the inquiry. Captain Payne and Mr R. J. Ellery, the Government Astronomer, were both in attendance. The first witness was:−

Kynaston Lathrop Murray, telegraph engineer of the Railway Department, and chief electrician Naval Torpedo Corps. He said he received a letter from Captain Manderville, informing him that he proposed to take the Cerberus down the Bay for shot and shell practice, and that he would like witness to accompany him, with some of the electricians, with a view of holding some torpedo practice from the ship. This was several days before the occurrence, about the last week in February. He arranged to go, with Messrs Houston, Doyle, and Schreebeer, and informed the deceased Mr Groves, who had charge of the torpedo hulks and stores, that he proposed to explode three or four small torpedoes upon the circuit closer system. Gave him a list of stores he required. The deceased in due course informed him that the gear was on the Cerberus. They went down the Bay on Friday, the 4th inst., and on Saturday morning he gave the deceased Mr Groves a rough sketch of the way he wished the cable junction boxes, disconnectors, torpedoes, and circuit close buoys to be laid. Mr Groves told him that, in addition to the mines required for this practice, he had brought a few hand grenades, but he said he was not sure whether they would go, as he fancied they contained high tension fuse, and they had no apparatus for exploding them. Witness remarked, "We will try them." During the morning all the joints and connections were made on the deck of the ship, and in the afternoon a boat was loaded with the cable and apparatus, and put off to lay them down. Mr Groves was in charge, and Mr Houston accompanied him with a signalling flag, to signal to witness when all was laid down properly. Upon receiving the signal that all was ready he (witness) connected the cable with the firing key, to which was also connected a wire from the firing battery. (As the mines were laid down, one after the other, he tested them through one battery cell with the galvanoneter.) He then signalled to Groves by flag that the battery was on, and told him to bump the circuit closer buoys. He closed the firing circuit, the buoys were bumped one after another, and the small mines exploded. Mr Groves then−as he had been previously arranged− lifted the end of the cable, and attached another small torpedo to it, which was also exploded. He then returned to the ship to see if anything further was required before lifting the cable. It was suggested that as the explosions had hardly been seen al all a larger torpedo should be fired. Witness said, "We have no larger ones with us," and Mr Groves replied, "there is plenty of powder on board, sir." It was arranged that a gunpowder torpedo, of about 50lbs of powder, should be fired from the stern of the ship. Shortly prior to Mr Groves coming on board witness asked Mr Richards, the gunner, if he would throw overboard one of the small hand grenades, which witness attached by means of a Hooper's core wire to the firing key. Mr Richards accordingly did so, and it did not explode. It was hauled in; and he told Mr Schreeber to take off the top and let him see what was inside. He did so, and found it containing three or four small discs of wet gun cotton and a high tension fuse. He noticed that it had been wet a long time, for the inside of the tin had little spots of rust and the fuse also had rust marks on it. He took the guncotton out of it, and threw the tin overboard. He told Schreeber to let him see what was in some of the others. He showed witness two; one of which was wet like the first, the other comparatively dry. While looking at the last one, Mr Groves came up and asked him what was the matter. Told him what they had done, and that he thought the gun cotton in the tins they were looking at was dry enough to fire; and asked him to put two or three pieces in a tin with a low tension fuse and fire it, and throw it overboard. He did so, and it exploded all right. It was shortly after this that the case of gunpowder referred to in Mr Houston's evidence was brought on deck. He noticed that it was not full and looked into it to see what sort of powder it was. Noticed that it was RL grain. Did not think that he looked into the torpedo again, but told MR Groves that he

though he would find sufficient dry gun cotton to fix to the fuse as a detonating charge. This he knew he did, for he saw him trying the pieces of gun cotton to the fuse with a bit of twine. His next recollection was the armourer being sent for to fix the tubes to the lid. The armourer took it away while he did the work. Remember seeing the lid being put on, previous to which he told Groves to have one of the wires solderded to the top. Remember Groves sending for a piece of timber to act as a float, and saw him lashing the torpedo to it. Suggested to him that it would be better to let the lashing be a couple of feet long, so that the torpedo might be a couple of feet from the float. He acted on the suggestion and the mine and float were lifted into the boat. The Hooper's core line, connected with the mine was coiled up on the deck, the inner end being coiled round his finger. When the line was nearly all payed out, Mr Richards told Groves so. The men ceased rowing. Saw the torpedo and its float lifted over the side of the boat. He then noticed that the boat was foul of it in some way, and saw one of the men jerking with an oar. Instinctively looked at his (witness) hand, and found the wire still twisted round his finger. Said something to the Chief Engineer, Mr Huysman, who, with Mr Richards, was standing near, and the latter said, "How could that have happened, the wires are not connected." Next remembered that he ran to see if any thing could be done. Saw Jasper swimming toward the vessel. A moment or two afterwards Mr Houston jumped overboard. Jasper was picked up, and the bodies were brought on board. Hunter's chest was heaving, and he was still breathing. It was about half an hour before the doctor said he was dead. His injuries were chiefly in the head.

By the Coroner: The battery was on the after steerage deck.

James Drummond Doyle, chief officer at the Spencer street station telegraph office, and electrican in the Naval Torpedo Corps, was one of the electricans on board the Cerberus on the 5th. Did not know who brought the tin of powder on the deck. Saw part of the lid (produced) taken off and he looked at the contents of the case. It was gunpowder. The armourer fitted the wires. He took the lid away with him, and in the meantime a doormat was placed over the open cannister. When the armourer returned the mat was removed for a time, and the armourer taking the lid away a second time the mat was replaced over the case. The next thing he saw was Mr Groves fitting the fuse in its place, and noticed particualaryt that he had tied the gun cotton primer on with string to keep it in place. He then placed the lid on and bound it with india−rubber tape, and then Mr Brakes, engineer, suggested that red lead should be used to keep the water out of the tin.

By the Coroner: He should say there were 40lb. of powder in the case. It was not full by three inches. He saw about 20 quarter ounce discs of gun cotton on the binnacle stand. Also saw one cartridge of dynamite with them. Some of the dynamite was in the carteridge paper, and there were a few grains of dynamite loose on the table. Could not say what was done with the gun cotton discs or cartridges of dynamite They disappeared, he believed, before the torpedo left the ship. The loose grains also disapeared. Did not recollect hearing Mr Groves making any reference to them. Had previously assisted Mr Schreeber to open one of the hand grenades. It contained gun cotton, but no dynamite. He was on deck when the explosion occured, but did not see it, only heard a noise. Was standing about four yards from Mr Murray. He hurried round, and saw some pieces of timber in the air. Observed a second before that the firing key was in Mr Murray's left hand. Saw in other hand the wire leading to the mine. Mr Murray had not time, first, to connect the wire with the key, second, to pull out the safety stop, and third, to press down the key. It was a physical impossibility for the mine to have been exploded by means of the key. Had no doubt whatever on that point. Did not feel himself compentent to give an opinion as to the actual cause of the explosion, but he was certain the not exploded electrically. Could not say with precision what the contents of the torpedo were composed of.

By Mr Murray: Did not know the effect of placing dynamite in water.

By MR Ellery: Saw the fuse put in the detanator. He thoughtr that the whole of the tube was covered with gun cotton. Could not say what force was required to put the fuse into the discs. He, with other electricans, had exploded dynamite in charges of not more than an ounce without accident. He would like to add that the instructions were that dynamite in wet places should be exploded at once. He noticed that Mr Groves gave the order "Back all," and the boat went out stern first. It remained in that position until the explosion. The signaficance he attached to this was that the wire from the mine in the stern of the boat would be under the oars all the time. It would take ten seconds for an expert to complete the arrangements for firing the mine.

John Kennedy, chief petty officer of the Cerberus, deposed that he knew the deceased Mr Groves. He kept some dynamite on the hulk Deborah, lying at Edom. He told witness so, and he saw it in the laboratory. It was kept in small paper parcels in a small tin on a shelf. It was labelled dynamite. There were two tins like small canisters produced, and some were left there at present.. On the 2nd February Mr Groves used some of the dynamite, but did not see him use it. He used it specially for one torpedo, which was , he believed, exploded a few days afterwards. Some of the dynamite had been removes, but he could not say by whom and when. Mr Groves had the key to the laboratory, and when he was absent it was handed to witness. Never touched the dynamite, which was delivered on the 30th of last April. Did not on this occasion assist Mr Groves to make up the combustibles. The dynamite could not get wet.

To a juryman: Could not say whether Capt. Manderville was aware that dynamite was kept at the hulk.

image − Between decks on the hulk Deborah

Australasian sketcher June 8, 1878.

To the coroner: Mr Groves kept the store book.

Henry Schreeber, electrician attached to the Naval Torpedo Corps, deposed that he was on board the Cerberus on the 5th inst. He was present for a time while the mine was being made up. It contained gunpowder, and gun cotton placed on the top. Saw nothing else. Was standing at the stern of the Cerberus when the explosion took place. Mr Murray was 10 feet behind him. When the explosion took place he turned round and saw Mr Murray, who was, he fancied, holding the wire in one hand and the key in the other (left) hand or near it. His hands were apart. The firing key was on a kind of table. It was impossible for Mr Murray to have connected or unconnected the wire and the fire plate. He (witness) turned round too quickly for Mr Murray to have done that. He wished to correct a portion of his previous evidence. Mr Murray's left hand was not neat the key. The key was on the table behind him, and in his other hand he held the wire, as now shown. Mr Groves did not say any thing about the composition of the torpedo. His impression was that it only contained powder and cotton.

To Mr Murray: He (witness) put the firing key on the cable. It was fixed thereto with a piece of spun yarn by witness about an hour and a half before the explosion occurred. It could not have been removed, and was in the same position after the explosion. Saw no dynamite.

To juryman: My Murray could not have made a step away between the explosion and his turning around.

To the Coroner: Mr Murray fired all the mines. If, by an inadvertence, the two wires came into contact, it would not cause an explosion unless the circuit had been completed.

An adjournment was here made for twenty five minutes.

On resuming,

Edward Joseph Huysman deposed that he was engineer in charge of the Cerberus, and was on board on the 5th of the month. He was on deck when the explosion took place, on the starboard side of the quarter deck. He was looking at Mr Murray at the time. He was about 20 or 25 feet from Mr Murray, and heard the explosion, Mr Murray had his left hand on the binnacle and his right hand raised, and the wire was round his finger. He was waiting to see Mr Murray connect the wire. He heard the explosion, and Mr Murray had made movement with his hand. When the explosion occurred, he went over to Mr Murray and said, "Good God, the poor fellows are gone." He still had the wire on his finger. The firing key was fixed on the stand of the binnacle.

To a juryman: The binnacle is a fixture.

To Mr Ellery: It is a wooden grating.

Oliver Richards deposed that he was a gunner on board the Cerberus on the 5th inst. Was on deck at the time of the explosion. He was standing about four feet from the gangway, and was looking at the boat at the time. Say Mr Murray, who was about seven or eight feet from him. After the explosion he turned round, and said, "Oh, Mr Murray, what is the cause of this" or words to that effect. Could not say what his reply was. In his (Mr Murray's) right hand was the wire, but he could not say in what position his left hand was. He thought it was impossible for Mr Murray to have connected the wire and Key. He (witness) turned round to Mr Murray almost momentarily. Sae gun cotton and gunpowder put in the mine, but no dynamite. He saw the boat put off, and the wire appeared to be over the oars. The man who tried to lift the oar from the rowlock appeared to stand up, and the explosion then took place. Mr Groves appeared to be leaning over the side at the time.

To a juryman: When he last saw the firing key it was on the binnacle.

To juryman: Dynamite might have been put in the mine, but he hardly thought it possible.

James Tubbs deposed that he was a gunner on board the Cerberus. Had charge of the magazine, and supplied the powder for the torpedo to Mr Groves. Lieut. Collins instructed him to supply the powder. Supplied hum with 70lb of R L G powder from the fore magazine. It had been kept in a cylinder for years, and was there when he took charge, seven years ago. Al, the contents of the magazine are under lock and key. The key was kept in the Commanding officer's cabin under lock and key. While he was on board nobody else used the key, but, when absent, the responsible gunner's mate had charge. The cases, like one introduced, contained 70lb of powder. They were filled to within four inches of the top. The magazine only contains powder. Tubes, fuses, and other ammunition are kept in the Snider magazine in the fore end of the ship. There are rockets, bluelights, and small ammunition. They contain no guncotton. Never had any dynamite under his charge. Dynamite could not have been accidentally, or otherwise, introduced into the exploded tin. Was perfectly satisfied that when he delivered the case of powder to Mr Groves it contained no dynamite. The handle of the lid was made of zinc. Saw the explosion, and exclaimed "They are blown up." Heard Mr Murray say, "My God, how could the be blown up. I have not made the circuit." He had the wire leading to the mine in his right hand. Did not think there was any possibility of Mr Murray doing it. In the shell room saw the stores brought up by Mr Groves. They consisted of some small hand grenades and mines. There was no ill feeling between the men on the Cerberus. The deceased was on good terms with them all.

Mr Murray, re examined : On the hypothesis of My Doyle, that dynamite was present, it could only be in one of the hand grenades. If such was the case the dynamite would be damp and decomposed, and if a little was exuded a slight friction or concussion would cause explosion. In his opinion there was dynamite in the case. Dynamite is a compound of nitro glycerine and infusorial earth. The latter is mixed with it to make it safe to handle. It explodes much more easily than gunpowder or gun cotton. A lethened exposure to water caused the nitro glycerine to separate from the infusorial earth. On the assumption that there was no dynamite in the mine he was helpless, he had no theory. There was fulminate of mercury used in the fuse in the case at the time of the explosion. It was surrounded by the discs of gun cotton, which Mr Groves had tied on with string. Fulminate of mercury will explode by friction or by a severe blow being struck at it. The fulminate of mercury

used on this occasion was new, and was therefore free from the possibility of decomposition. Assuming that the fulminate was of the very worst description, the amount of friction or concussion used in extracting the oar would cause the explosion. He did not know of anything but an electric current which could cause the explosion. Dropping the tin into the boat would not cause it. The gun cotton would not explode by means of friction or concussion. When the explosion occurred he was standing up with the wire on his right hand. The binnacle was to the left, rather behind him, and he thought he had his left hand on the key, but was not certain. Assuming that the case contained only fulminate of mercury, gun cotton, and gunpowder, he knew of no agency except the electric spark that could have caused the explosion. He could not have completed the circuit by inadvertence or accident. His impression was that one of the hand grenades contained a small cartridge of dynamite. Mr Groves had a very fair knowledge of explosives, but not of chemistry or electricity. In his opinion Mr Groves had not a full knowledge of the danger incurred in firing electrical mines. He doubted whether he was aware of the danger attached to decomposed dynamite. Mr Groves was fearless, even to rashness, even in matters he did not understand. Witness would not allow him to have the firing key. He was very capable in making up the mines. If there was dynamite in the mine friction by the oar might cause the explosion.

By Mr Ellery : The deck on which the wire was stretched was wood, but the wire passed over a galvanised iron rail of the ship.

By a juryman : Mr Doyle was the only man who saw dynamite. Did not feel any jerking of the wire when they were extracting the oar.

By the Coroner : The case containg the torpedo was both air and watertight.

By a juryman : Mr Groves always made up the torpedoes. He had passed through the torpedo college in England.

By the Coroner : He would not have through much one way or the other about putting dynamite in the mine. He used to say, "They will all go up together." If there was any dynamite there it was likely he would have put it in.

To a juryman : Never knew dynamite to be placed in a hand grenade.

R. L. J. Ellery, Government Astronomer, and also Major Commanding the Torpedo and Signal Corps, deposed that he had heard the evidence given to day, and had read Mr Houston's evidence touching the explosion of the torpedo on the 5th inst. After the evidence he had heard he could not conceive it possible that the electric circuit had been completed on board the ship. With the battery used it was impossible that the circuit was completed. If Mr Murray's hand passed over and touched the key the explosion might have taken place, but there was no evidence that he shifted his hand. After examining the lid of the case, and hearing the description of the method in which the fuse was inserted in the detonating guncotton, he was of the opinion that any of the rough usage in the boat would have been insufficient to have exploded the charge, assuming that it consisted of gunpowder, gun cotton, and fulminate of mercury. In the absence of dynamite, he could not account for the explosion. On the assumption that there was nitro glycerine in the charge, he thought the explosion possible under the circumstances, such as the rolling over of the case causing friction in the powder. If dynamite, in ordinary good condition, had been used in the charge, an explosion would not have occurred. Dynamite which had been in water, or a long time made, was frequently covered on the outside by a thin film of nitro glycerine. A cartridge in this condition, would be highly dangerous in a torpedo, and might cause an explosion. Without dynamite, there was no accounting for the explosion, yet its presence was clear. It was his opinion, that free nitro glycerine was in the case, although he was unable to determine it. If wilfully inclined he could not cause the explosion without some one noticing him. If he put free nitro glycerine into the mine it might explode at once. It was his opinion from the evidence, that the electric arrangements were carefully and properly carried out. In his opinion the dynamite could not have been introduced without the knowledge of Groves.

Mr Doyle, re examined by a juryman : He did not adhere to his previous statement, that Mr Murray held the key. He now remembered distinctly that the key was a fixture.

Charles Evans, able seaman on board the Cerberus, recollected removing something from the hulk Deborah last Thursday by Mr Groves' instructions. Put them on the end of the jetty. When he came about to pass one parcel into the launch the deceased (Mr Groves) said, "Good God! What are you doing; there's dynamite in that. You will blow yourself up?" He put it down, and Mr Groves removed it. The launch went straight to the Cerberus, but witness did not accompany it.

To Mr Ellery : Mr Groves did go back to the hulk, and it was quite possible that he took it with him. The parcel looked like one of sugar.

This concluded the evidence, and the jury at half past five o'clock asked for an adjournment of ten minutes.

The coroner granted the application, and, on resuming, summed up.

(BY ELECTRIC TELEGRAPH)

The jury found that the men were killed by the torpedo explosion, but that there was no evidence to show how the explosion was caused.

THE WILLIAMSTOWN ADVERTISER

12 March 1881

THE CERBERUS CALAMITY.

It is seldom that a community is thrilled with such intense and painful excitement as that which pervaded Williamstown on Saturday night last. As is usual, the Front was crowded with frugal housekeepers intent on laying in their week's supply and youth doing the block, and when the electric wire flashed the awful intelligence, trembling lips and excited tongues passed the fateful news. Dazed women stood as if spellbound, and choking sobs rose in many throughs, for amongst the throng that a few minutes before laughed and chatted and strolled carelessly, were wives,, mothers, sisters, brothers, and sons and daughters of those on board the Cerberus, and no one exactly knew who, or how many had gone to eternity, or were maimed and wounded. It was like one of those terrible coal mine tragedies in the mother country where people rush to the pit's mouth, each heart almost pulseless with fear and suspense, and eyes straining to see if some well − known and loved form is brought to the surface. At last the names of the slaughtered and particulars of the catastrophe were posted at this office, and many a "poor fellow!" and fervent "Thank God" was uttered as the excitement abated and the anxious knew that theirs were not amongst the doomed On Sunday the Cerberus returned to her anchorage bringing the dead bodies of Gunner Groves and seaman Hunter, and the survivor, James Jasper; but little additional information could be gained, and from all appearances very little more will be known of the cause of the accident. An inquest was held by Mr Candler on Monday and Thursday on the remains, and it will be from the digest of the evidence that no reason has yet been assigned for the explosion.

THE INQUEST.

The inquest upon the bodies of Robert Samuel Groves, gunner, and James Hunter, able seaman, who were killed by the explosion of a torpedo on Saturday last, was held on Monday at the Oriental Hotel, before Mr Candler the district coroner.

James Jasper, the only survivor of the crew of the boat which was blown up, and who still suffered from the effects of the explosion was the first witness examined. He stated that he saw the torpedo put over the starboard side of the boat and the crew then with exception of himself trying to clear the starboard oar, which became fouled with the wires connected with the torpedo. The explosion immediately occurred, and he remembered nothing more till he was thrown into the water, from which he was rescued by a boat from the Cerberus. It was not his duty to touch the torpedo or the wires connected with it, he being simply an oarsman.

Captain Manderville was next examined, and stated that he took the Cerberus down the bay for the purpose of exercising in shot practice with the heavy guns, and of practising the electricians attached to his department. Some small torpedos were fired on Saturday afternoon, and before he left the Cerberus − which was about five o'clock − it was decided that a mine of about 50lbs. of powder should be exploded in a cylindrical zinc powder case. The experiment took place with his concurrence, and he did not wish to interfere with Messrs Groves and Murray − the former having charge of the mechanical part of the torpedos, and the latter being the chief electrician − as both knew more about electricity and torpedo warfare than he did. He did not know whether any dynamite had been placed in the torpedo, as he did not see it filled; he would not have allowed it to be used. Dynamite is never used in the haulks or Cerberus. If a boathook were pushed through a case containing dynamite, an explosion would probably result. He could not form any opinion as to the cause of the explosion, as the electric current was not connected.

Alexander Houston, one of the staff of electricians, was next called. He stated that he was on board the Cerberus, and saw the torpedo leave the ship. When the boat was about eighty yards from the vessel he saw Mr Groves and one of the crew place the torpedo over the side, and shortly afterwards noticed that the wire was foul with one of the oars, and that the crew were trying to release it. The explosion immediately followed, and he heard Mr Murray, who had charge of the battery and the wire attached to the torpedo, say to the chief engineer, "My God, Heysman, how could that have happened? I have not got the wires connected." Witness then observed that one end of the wire from the battery was attached to the firing key, and the end connected

with the torpedo was round Mr Murray's finger. Witness thought the cause of the accident was the fouling of the oar with the torpedo, and the violent attempts that would be made to get it free; and it was quite impossible from what he had seen for the current to have been established and the explosion to have been caused on board the Cerberus. The torpedo consisted of about 70lbs. of powder, and some gun cotton attached to a fuse and placed on top of the powder by Mr Groves. No allusion was made to dynamite, and it was impossible for any person to have maliciously placed anything in the torpedo which would have caused it to explode at the time it did.

At this stage the inquiry was adjourned till Thursday, and on it being resumed Kynaston Murray stated that his orders concerning the placing of the torpedos were carried out as he had directed, and two small mines were exploded. It was then suggested that a torpedo of about 50 lbs. of powder should be fired from the stern. The powder used was large rifle grain. The torpedo was placed in the boat, which left the ship. Witness saw the torpedo lifted over the side of the boat, and then noticed that one of the oars was entangled in the wire, and one of the crew jerking it, the explosion immediately occurred. He instinctively looked at his hands, and found the torpedo wire still twisted round his finger. The firing battery was tested early in the day by witness, who also told Groves not to use more than three − quarters of a mile of cable.

John Drummond Doyle, electrician in the Naval Torpedo Corps, stated that the tin which was opened containing gunpowder only. He saw Mr Groves fitting the fuse in its place, and particularly noticed that he had tied the guncotton primer on with a string to keep it its place. Witness also saw some dynamite on the binnacle close by before the mine left the ship.

Some other witnesses who were examined also affirmed that the torpedo was not discharged from the Cerberus.

Robert Ellery, Government Astronomer, and Major commanding the Torpedo Signal Corps, stated that from the evidence he had heard he could not conceive it possible that the torpedo was fired from the ship. Assuming that the torpedo contained nothing but powder, guncotton, and fuse, no amount of rough usage could have caused the explosion. If dynamite were present the explosion would be caused by the turning over of the case in the sea, and not from any blow from outside.

The coroner in summing up said there was no dough that the explosion was not caused from the Cerberus. There had been dynamite in the torpedo, and it was evidently put there by Mr Groves.

The jury returned a verdict that Robert Groves and James Hunter were killed by the explosion of a torpedo in the bay, but there is not sufficient evidence to show how the torpedo exploded.

THE FUNERAL

The funeral took place on Monday evening at four o'clock. The remains were placed on two gun carriages and drawn to the Williamstown cemetery by comrades of the deceased. The procession, which took up the whole length of Nelson Place was composed of officers and men from the Cerberus and the Italian, French and German war ships. The bands from the Cerberus and the local volunteers marched in the procession playing the Dead March in Saul. The shops in the line of route were all closed, and crowds turned out to witness the procession. The bodies were buried with the usual naval honours, the Rev. Canon Sergeant officiating at the grave.

RESEARCH

Source Material researched by Frank Noonan

Cover Illustration from *The Illustrated Australian News* March 12 1881.