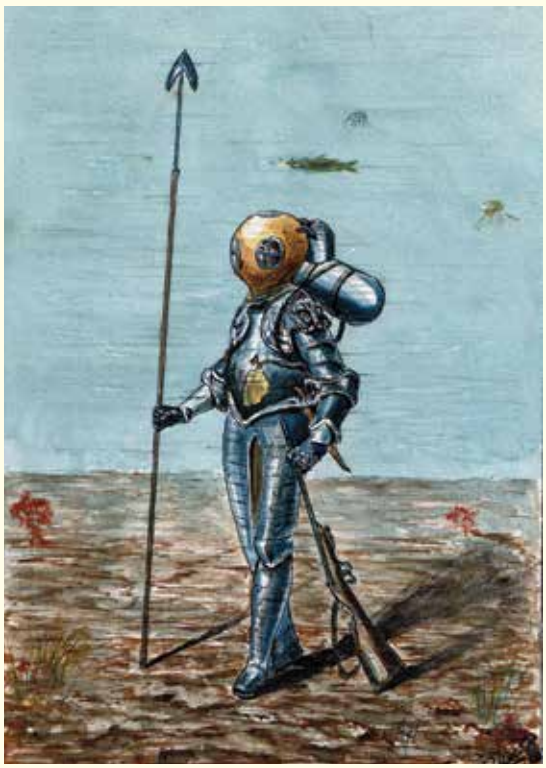
The International Journal of Diving History



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Dedicated to promoting and preserving our diving heritage

We invite articles, book reviews, correspondence, and queries on any aspect of the history of diving. Manuscripts, other contributions, and all correspondence should be sent to:

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Front cover image: Henri Mathouillot's Advanced Autonomous Suit | Layout: Ann Bevan.

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Belgian Military Divers in World War 1

Air Force Major Van Hoeserlande Patrick, Ir GS

INTRODUCTION

The First World War (1914-1918) was a terrible event, which led to some 8.5 million deaths, left 21 million wounded and millions more missing. It was towards the end of 1914 that the German advance saw them manage to capture the strategically important Belgian city port of Antwerp. What the siege of that city revealed, however, was the Belgians' refusal to bow to German demands and their determination to carry on fighting on the Allied side.

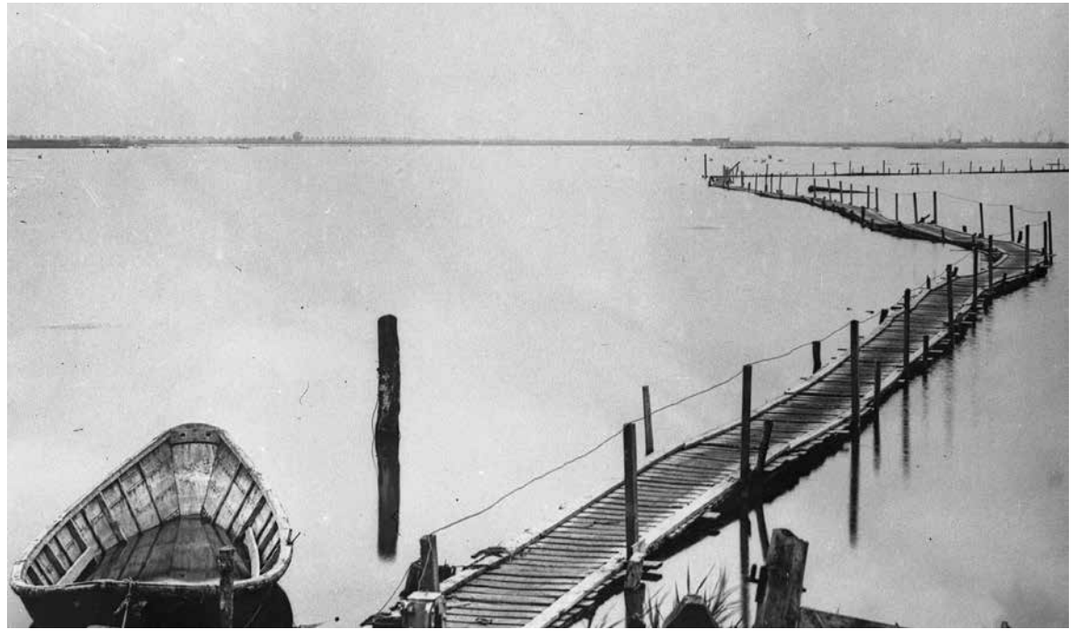
THE INUNDATIONS

In August and September 1914, to slow down the German advance, Belgian military engineers and their pontoniers made extensive and complex inundations of the Scheldt River flood plains around Antwerp. In all, these artifical floods took up more than double the land area the engineers would later manage to submerge in four years on the river Yser flood plain further to the west. To date, this 'Antwerp' operation is virtually unknown to the outside world, as is the resultant chain of events around the river Yser. The author Mignolet ends his book on the subject with the following paragraph.

> *"Antwerp finally surrendered on 9 October 1914. An exhausted Belgian army then stood with its back against the French border, with the North Sea on it left hand. The German steamroller threatened to take over the last piece of national territory. At that crucial moment, a handful of*

Fig. 1

Fig. 2 (Four photographs) October 1914. Inundation of the Yser river flood plain.



(Photographs: Collection of the (Belgian) Royal Museum of the Armed Forces and Military History)

engineering officers and soldiers, aided by a few local civilians, manage to inundate the flood plain of the IJzer (Yser) river and its associated complex waterway system. Miraculously, the water stopped the invader. Even a hundred years on, these inundations of the Yser are a well-known achievement of the First World War. The details may only live on in history books, but the inundation of the Yser at Nieuwendamme and of the Yser plain further inland via the spillway from the North at Noordvaart enabled our weary troops to stop the German advance. Although these manoeuvres saved our country from complete occupation, operationally they have been wrongly and simply identified as the "Inundations of the Yser". In reality they were only the initial activities. What followed was far more complex. The water level had to be carefully managed and maintained at the desired level, to avoid flooding our own defensive lines. This included the construction of emergency dykes using millions of sandbags, and the maintenance and repair of the hydraulic establishments either inundated by the water or destroyed by German artillery fire. In support of the original flooding, these activities were to continue for four further years."

It was as if Mignolet's message had been addressed to the present author, because like many others I had always accepted the narrow view of the whole operation. My great-grandfather and his brother may have fought at that watery front, but my knowledge of the fight with and against the water was very limited. I was convinced I had paid close attention during this part of the military history course. This was a disillusionment.

It is not my aim to earn some kind of redemption for my gap in knowledge by informing you, the reader, via this article about the complexity and scope of this operation, nor to tell you about known civilian heroes such as Karel Cogge or Hendrik Geerart. No, it is my purpose to highlight the achievements of the unknown helmet divers who did the invisible underwater work. Like so many soldiers, their names, their individual exploits, and their sacrifices will gradually fade away like the poppies on Flanders fields. I just want to blow away the dust of time to make these divers and their achievements shine.

What I initially thought would be an easy task, turned out to be much harder. Information about the military helmet divers in the 1914-18 war turned out to be very limited. Inquiries at the Belgian Defence Library, the Royal Museum of Military History, and even the Royal Military School yielded little information. My personal challenge, to limit this article to an acceptable length, quickly turned into desperation against overall failure.

THE BELGIAN MILITARY HELMET DIVERS

The first mention of military divers in Belgium dates from 1902. At that time, they were part of the special 'Compagnie Pontonniers' based at the Saint-Anna barracks in Antwerp. From 1913 on there were three sections of helmet divers working in the 'Compagnie Sapeurs' near the fortifications of Antwerp. Following the 1914 surrender of the Antwerp fortresses, these divers were then deployed in 1915 at Calais on the northern French coast, with a newly formed 'Compagnie Pontonniers'. However in 1915 three teams of helmet divers of the 'Compagnie Sapeurs-Mariniers', which was founded on September 1, 1915, carried out the diving work on the locks and other hydraulic works associated with the Yser river flood plain inundation.

The start of the operation may have stopped the German army's advance, but this did not mean that the engineering unit responsible for its execution received any back-up or support. During the years of war, Commandant Robert Thys and his men usually had to improvise to continue carrying out their mission. In the workshop of the helmet divers in Veurne, repairs were carried out using homemade tools, while the repair of recovered machines was entrusted to private Matthys, a specialist in the field.

Fig. 3 *(left)*
Commandant Robert Thys.

Fig. 4 *(below)*
The diving gear repair workshop.

A feat of ingenuity was the installation of a telephone device in the diving helmets (Fig.5). As far as I could tell, this was a first. Thanks to the ingenuity of Commandant Umé of the telegraph operators, it became possible to maintain permanent verbal contact between the diver, the surface crew and the diving commander. A diver telephone was first employed on April 15, 1915, during the underwater checks at the Gemeentebrug and the Perebrug on the road from Houthem to Ghyvelde. Immediately, it proved its worth. Not only in terms of time saving by not having to constantly surface to report, but it also improved safety in what was a war zone environment.

The hydraulic infrastructure the divers had to deal with included locks, dams, and dykes. These required constant and often complex maintenance, as many locations had not been intended for continuous use, or to contend with unplanned directions of water flow. Consequently, divers had to make regular inspections of structures for cracks, fissures, seepage, etc. Then, when problems

Fig. 5 *(above right)*
Belgian military diver with telephone communications.
(Photograph: 'De Patrouilleurs')

Fig. 6 *(right)*
Army diver inspecting a bridge on the ancient canal of Furnes.

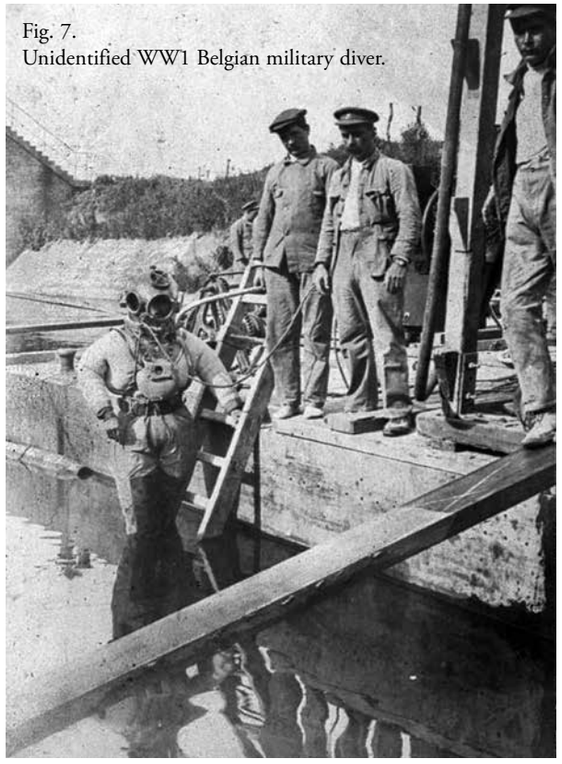


Fig. 7.
Unidentified WW1 Belgian military diver.

were identified, they usually had to carry out any necessary remedial work or effect a repair.

From the Commandant's diary it is possible to determine the kind of work undertaken by the divers.

(October 12, 1915)
"Helmet divers notice a large crack in the abutment of the Ypres lock on the Yser and immediately started making a 40 cm concrete slab."
(October 18, 1915)
"During an inspection at the lock in Veurne, helmet divers notice a seepage at low tide. During the next days they close the cracks with concrete."

There are enough early stories in circulation to appreciate that helmet diving could be a dangerous occupation. In wartime, underwater work could become even more dangerous. Effectively, the diver was extra vulnerable and completely dependent on his surface crew. The risk associated with diving activities during

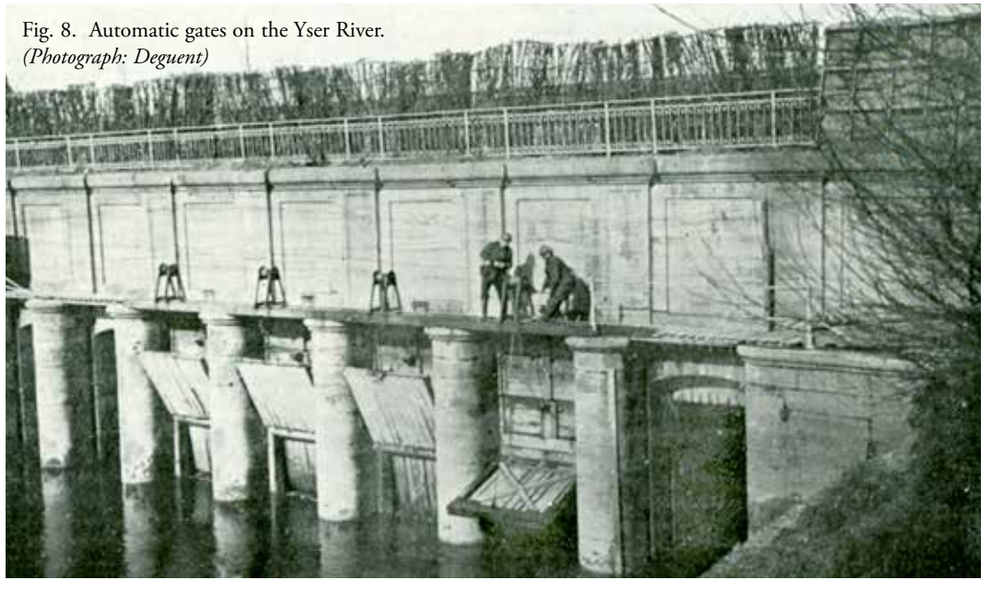


Fig. 8. Automatic gates on the Yser River.
(Photograph: Deguent)

war was nicely outlined by Commandant Thys (free translation):

> *"Imagine: a dark night, two officers and a few divers* [note: all members of a diving crew were themselves divers] *feel their way across the immense lock walls more than six meters high, in a complicated tangle of wooden beams, twisted pieces of iron, rubble of masonry, between countless funnels.*
>
> *The gloomy night is disrupted by artillery fire and suddenly lit by flares. Bullets from machine guns pierce the air with a whistling sound. The slightest glimpse can betray our presence; there is a formal ban on smoking, or even covertly lighting a match.*
>
> *We dress the diver, we put the lead weight on him, put on the brass helmet; thus transformed into an amphibian monster whose impressive profile stands out against the night sky, the diver descends into the water while the men at the pump supply him with the necessities of life. A grenade explodes and hits his brothers-in-arms, a gas attack begins* [note: the team members above water could protect themselves against gas, but the air pump was not equipped with a filter]*, and suddenly he finds himself lost underwater, to die with the most terrible torments*!"

Screens were placed around locks and gates to block the view of the diving work. While this did not stop general shelling, it did ensure that the diving crews did not attract targeted artillery or sniper fire during their work. Planned shelling of the water infrastructure has been rather limited, as it could have caused unwanted flooding. Controlled inundations are not easily planned, unplanned ones are all the more dangerous, for friend and foe.

This happened on March 26, 1915, when the lock of the canalised Yser was badly damaged by a shell that destroyed the narrow bridge over the lock gates. After a repair was carried out using wooden beams, the Germans again shelled the lock, causing cracks in the basin floor. As a result, helmet divers had to go into the water to fill the cracks with concrete.

Fig. 9
1918. Early aerial photography, used to inspect canal locks after the German bombardment.

THE DIVING ACCIDENT

During this complex work, only one dive accident was ever reported.

Fig. 10 During WW1 Belgian military divers also worked on ship repairs and salvage.
(Photograph: 'Het Leven (1906-1941) - Spaarnestad Photo').

On November 5, 1915, diver Soldier 2nd class Van der Vrecken, F., was killed while working on a lock on the Yser. This tragic event was narrated by the Commandant Thys.

> *"The lieutenant sent the Sergeant-Chief of the divers upstream of the locks, to make sure there was no current. The water looked completely still; however, the sergeant threw a stick into the canal just to be sure: the piece of wood does not indicate surface current. In reality, there was a current flow, but the visual betrayal was flawless. The greatest expert would be taken in by it.*
>
> *Diver Van der Vrecken slowly descended the ladder. The silence was impressive; but the men, break their tension by laughing at "friend Fritz", who regularly shoots at the bridges every five or six minutes. The diver was almost submerged up to his shoulders; the huge round brass helmet glittering lonely in the night before finally disappearing...*
>
> *Suddenly, there was an unexpected tug on the signal cord, which quickly slipped through the hands of the terrified men; holding on. They then had to brace themselves to resist being pulled into the lock; the diver had just been swept away by an undertow. The dress was still inflated due to a poorly adjusted outlet valve and the diver could not resist the current. Unfortunately, the drama took place in deep water…*
>
> *The men did not want to admit that their comrade has been lost; after a few moments of nervousness and surprise, realising the impossibility of retrieving the unfortunate soldier upstream,*

Fig. 11 Diver Van de Vrecken

they attempt to pull him downstream onto dry land. Dangerous carelessness may have been committed, but miracles are accomplished purely by brute force alone.

Finally, the body appears, but it is sinister looking and pale; the diver's helmet had been torn off by obstructions on the bottom, and his face is scarred by spasms of pain.

The war has drained our energies and hardened our hearts; a terrible emotion grips us in the face of this terrible death!

The lieutenant cuts, no, tears off the diving dress and has the body transported to the hiding place of the lock in Veurne. Here, in spite of everything, artificial respiration is administered – friction, rhythmic pulling movements of the tongue. The diving team constantly taking turns in this desperate battle. Nevertheless, the body becomes stiffer and colder, the movements more difficult. The efforts continue for more than an hour; the men end up literally exhausted. Aware of what is a decided fate, I give the order to stop.

The next day, work on the Yser resumes, and, as usual another helmet diver descends into the lock. The war shows us such traits of heroism every day!"

The fatal accident led to a number of improvements, to prevent similar events in the future. In particular, Major Marchal wanted to determine when the cordage used was delivered and why it broke on only the second day after being put into service. As a result, in a note of 10 November 1916, he ordered that, before putting it into service, checks be made on all cordage ordered by Commandant Thys.

As a result of the investigation following the accident, only diving helmets that were attached to the suit's corselet by bolts were used.

Fig. 12 *(above – both images)*
A French Charles Petit helmet of the type used by the Belgian army during WW1 (pre diving accident).
(Photographs, L–R: 'De Patrouilleurs' and Brion Patrick)

Before commencing diving operations, the sergeant in charge had to ensure that there were no dangerous currents at the diving site. The lock keeper responsible for the lock where the work was being carried out had to be present. The upper parts of the retrieval mechanisms had be painted white to increase the visibility for the diver. Finally, the equipment had to be completely checked before every diving operation.

Added to this, to protect against wear and tear, divers had to wear a leather-lined linen suit over their diving suit. After a day's work, the diving suits should be dried inside and out, away from the heat of the sun. The helmet had to be cleaned and lubricated weekly. To take care of these requirements, each diving section had to appoint an equipment manager.

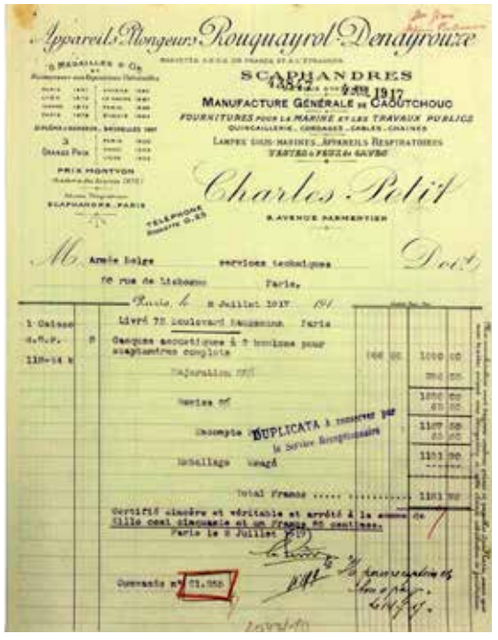

Appareils Plongeurs Rouquayrol Denayrouze
SCAPHANDRES
MANUFACTURE GÉNÉRALE DE CAOUTCHOUC
Charles Petit
DUPLICATA

Fig. 13 Receipt for the purchase of a Charles Petit helmet by the Belgian army, dated 1918.

Fig. 14 Diver Isidore Tas, who was gassed in an attack on August 18, 1917.
(Photograph: City Archive Nieuwpoort).

POSTSCRIPT

The last fact that I can find in the limited sources at my disposal, is that on May 21, 1916, the army helmet divers transferred, with their company, to the Battalion Pontonniers located at Nieuwpoort. I am convinced that a detailed search in the field diaries of the various units in which the divers worked would yield more material. For example, in support of writing his article, the "Moskow" archive of the Belgian Royal Museum of the Army and Military History, box number 1178 186-14-2842, Field Diaries of the 2nd Battalion Pontonniers (engineers, inundations), 1914 – 1919, was located. It contained two files with nine field diaries of at least 80 pages each. A detailed examination of these diaries would be time consuming, but still worthy of historical investigation.

We know that diving did not tail off as the war progressed, nor did it become safer. Diver-soldier Isodore Tas (Fig. 14) was gassed in an attack on August 18, 1917.

All considered, divers were also soldiers and, as such, exposed to the same daily horrors of war.

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Fig. 15 A WWI Belgian army diving pump in action, 2022
(Photograph: 'De Patrouilleurs')

Des Scaphandriers aux Nageurs de Combat, 4th Engineering Batallion.

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Patrick Van Hoeserlande loves to tell and write about his passion for the combination of technology and diving. He is a diving instructor, a writer-editor of the Flemish diving magazine '*Hippocampus*' and an occasional contributor to *'Divers for the Environment'*. As an aeronautical engineer, he has a keen interest in how things work and why. He started a professional doctorate at the Cardiff Metropolitan University with a research in (military) concept development.

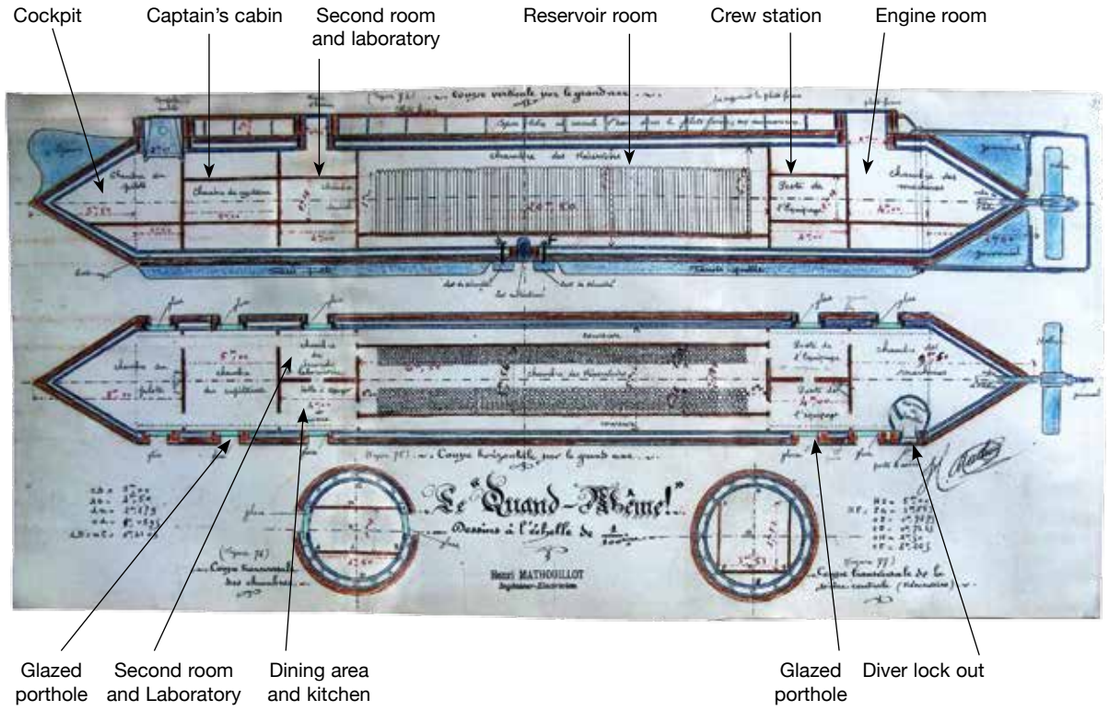

Fig. 4

4a *(above)* Cross-sections of the submarine *Quand Même! File A.*

4b *(right)* Mathouillot's illustrations of the interior of *Quand Même! :*

Left: The Cockpit. *File A.*

Right: The Reservoir Room.

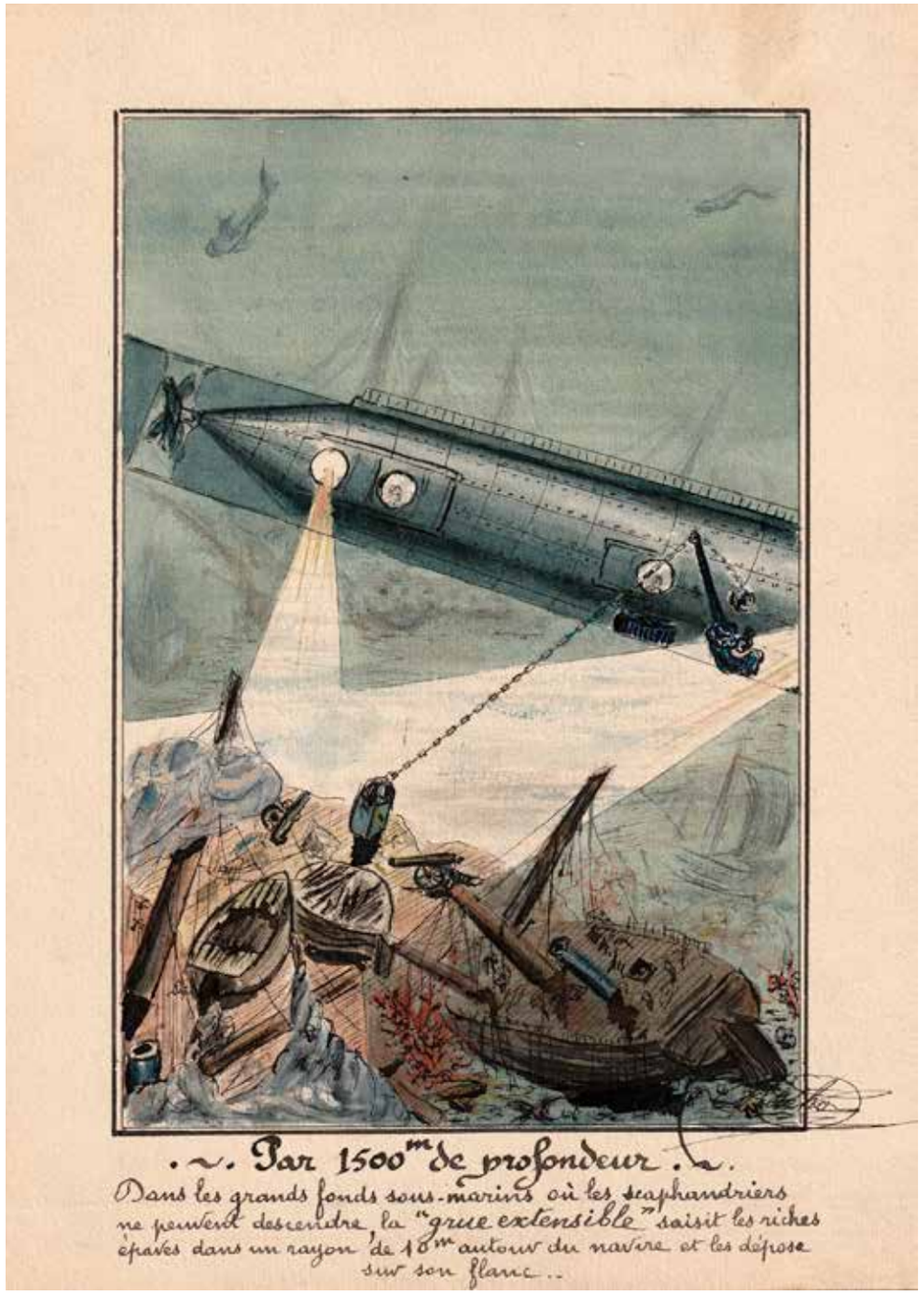

Fig. 5 *Quand Même!* at 1500 m depth. *File A*

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