THE DISAPPEARANCE OF THE "LATHAM"

REPORT BY A SPECIAL EXPERT GROUP



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1. Summary



In 2003, it is 75 years since the "Latham" disappeared with its French crew of four, Captain René Guilbaud, lieutenant Albert de Cuverville, and petty officers Emile Valette and Gilbert Georges Paul Brazy, together with polar explorer Roald Amundsen and navy pilot Leif Dietrichson. The cause of the accident remains unresolved, and the wreckage has never been found.

On September 30, 2002, the Norwegian Aviation Museum initiated the appointment of a working group, or special expert group, whose purpose and primary objective was to collect and examine available background material on the disappearance of the French seaplane "Latham 47" at an unknown location on June 18,1928.

Previously obtained material and new information have been analyzed, and two locations have arisen as possible scenes of the incident, one off the coast of Kvaløya and the other near the island of Bjørnøya. The area around Bjørnøya is of particular interest, for two main reasons:

- Ocean currents and meteorological conditions that can explain the drift of the wreckage
- The find of what was presumed to be aircraft wreckage in 1933.

The group recommends a search by a suitable vessel with a remote controlled submarine in the position where the "Kvitholmen" hauled up part of an aircraft in its halibut nets in 1933. This may provide us with further information as to whether the "Latham" sank there, and perhaps we may also find the engine.

2. About the Project

2.1 Historical background of the "Latham" incident

Roald Amundsen is one of Norway's best known polar explorers and his deeds were of major sigificance to Norwegian self-esteem and national identity. In 1926, Amundsen was leader of the first airship expedition to cross the North Pole. Umberto Nobile built and flew the airship "Norway" that was used on the expedition. Afterwards, a conflict arose between the Italian Umberto Nobile and the Norwegian Roald Amundsen.

The conflict put an end to their relationship. In 1928, when Nobile's own expedition on the airship "Italia" met with misforutne north of Svalbard, Amundsen took the first step towards taking part in a search operation.

The French Navy placed an aircraft, the "Latham 47" and its crew at his disposal, and at 3.55 p.m. on June 18, 1928, Roald Amundsen, Leif Dietrichson and the french crew of four set off from Tromsø. Three hours later, at 6.55 p.m., the last signals were picked up from the plane. It was assumed that it had crashed into the sea in the vicinity of Bjørnøya, and that all of those on board had perished. Only two pieces of wreckage from the aircraft were found, both of them along the coast of Norway. What had happened, is still unclear.

In 2003, it is 75 years since the Latham incident. The Norwegian Aviation Museum wishes to draw attention to the fact that not only did we lose our world famous polar explorer, Roald Amundsen and the pilot Leif Dietrichson, but at the same time, France lost four of her best and bravest airmen.

Today, we have more information and greater scientific knowledge than we had in 1928. Prior to the commemoration of the 75th anniversary, the Norwegian Aviation Museum has sought to shed light on information old and new about the accident, in order that we might come closer to establishing the cause, and if possible identify an area where a search for the wreckage might be made.

2.2 Terms and preconditions

In the autumn of 2002, new information was published in the press that, when compared with previously established facts, might serve to shed new light on the disappearance of the "Latham 47" and provide the basis for a search for the aircraft wreckage. In the light of this, the Norwegian Aviation Museum, in collaboration with the Polar Museum, arranged a hearing in Tromsø on September 30, 2002. Representatives from various professional communities were invited to participate in a special expert group.

The project's main objective was to:

- Collect and analyze validated background material in order to carve out hypotheses about what happened, and arrive at a conclusion with regard to the cause of the accident in 1928.
- Submit recommendations with regard to a possible search operation for the "Latham 47" or its remains.

Project duration:

The work will be concluded with a preliminary report on June 18, 2003, 75 years after the "Latham" took off from Tromsø on course for Ny-Ålesund. The final report will be published in August 2003.

2.3 The collected data

The project group has collected data from the following sources:

- The hearing in Tromsø on September 30, 2002
- Interviews with witnesses from 1928 (in the light of articles in the Tromsø newspapers, autumn 2002)
- Letters to the Norwegian Aviation Museum.
- The finds made by "Kvitholmen" near Bjørnøya in 1933, including a map indicating the aircraft's position.
- Hovdenak and Hoel's book of 1934: Roald Amundsen's final voyage.
- National Archives (Riksarkivet), Oslo:
 - Gunnar Hovdenak: Report to the admiral in command on the French and Norwegian Navies' search for the Latham, summer 1928.
 - Hjalmar Riiser-Larsen: "Report on the search for the "Italia" and the "Latham," summer 1928"
 - The commanding admiral's archives prior to 1940
- Regional State Archives in Tromsø and Trondheim: Archives handed over by Tromsø and the Lofoten and Vesterålen Police Headquarters respectively
- Main Rescue Co-ordination Centre in North Norway: Calculation of the drift of wreckage
- Institute of Marine Research: Brief account of ocean currents in the North Atlantic and Barents sea
- Meteorological Institute: Information on weather conditions, summer 1928 and spring 2003 at Bjørnøya Island and in the Barents sea.

3. Methods

On the basis of the hearing, a working group / special expert group was appointed to continue work on the case. The group consisted of Professor Roald Berg, Dr. art. Bjørg Evjen, rear admiral Kjell Prytz, meteorologist Helge Tangen, museum director Kjell Lutnes, journalist Knut Hoff and navigator Per Arvid Pettersen. Lutnes, Hoff and Pettersen have acted as the group's executive committee and secretariat.

Five working meetings have been held during the period between October 2002 and June 2003. Tasks to be implemented between meetings have been divided among the members of the group.

Bjørg Evjen has carried out a series of interviews with a view to clarifying the new information about events in 1928 that appeared in the newspapers Tromsø and Nordlys in autumn 2002.

Some members of the working group have been in Troms county to search for objects and gather the testimonies of witnesses.

The Meteorological Institute, North Norwegian Rescue Co-ordination Centre and the Institute of Marine research in Bergen, have been consulted with regard to weather conditions between Norway and Svalbard in the summer of 1928, and the predominant ocean currents in the same sea areas.

4. The Work Itself

4.1 The Hearing in Tromsø

At the hearing in Tromsø on 30 September 2002, new information emerged that may help shed new light on the tragedy that occurred in 1928. The French Embassy was represented at the hearing by the French Consul in Tromsø. The Norwegian authorities were represented by fisheries minister Svein Ludvigsen.

4.2 Summary of interviews

Jenny Johansen, Hillesøy, told journalist Per Eliassen that in the spring of 1928 she and her sister Kaspara had seen an aircraft for the first time. They were at Værholmen, Hillesøy, looking for goats when they saw an aircraft in the sea. She was reasonably sure that it was the day that Amundsen disappeared. It took the sisters half an hour to return home and when they arrived they told the men on the farm what they had seen. When they went to look, the aircraft had disappeared. The girls were told to keep quiet about what they had seen.

After this had been published in the newspapers last year, Lovise Trondsen appeared on the scene. She had also seen her first aircraft in the spring of 1928, and thought it was Amundsen she had seen, although she could not be completely sure. She was working at Vasstrand at the time. One night they were woken up by the local teacher who came running to tell them that an aircraft had come flying out of the Kattfjorden. Lovise stood looking through the attic window and saw the aircraft fly out of the fjord at low altitude past the beacon at Vasstrandnes.

The farmer later said he had found a pontoon from the "Latham" and that he had hidden it in the boathouse.

Anna Sofie Hansen, Kaldfjord, could confirm that in the autumn of 1928 she and some other school children had found a light coloured cylinder on the shore at Skittenelv. The cylinder was marked with the word "Latham." Even though the name was spelled incorrectly, both the children and the teacher believed it to originate from Amundsen's accident.

All of these events occurred at a time when contacting the newspapers or authorities was looked upon in a completely different light than is the case today.

4.3 Objects



- <u>Pontoon found at Torsvåg on 31 August 1928</u>. It was later ascertained that this was the left wing pontoon of the "Latham 47." In 1928 it was concluded that the pontoon had been torn from the wing, probably as a result of a hefty collision with the sea.
- <u>Fuel tank found on the Haltenbanken, 13 October 1928.</u> It was ascertained that this was the Latham's forward internal fuel tank. Subsequent modification of the tank might indicate that they had attempted to use it as a float, perhaps as a substitute for the pontoon that had been torn off.
- <u>Sheet of plywood found on Edgeøya.</u>
 One of the many encouraging contacts made by the working group after the open hearing in Tromsø on Spetember 30 on the disappearance of the Latham, came when they were approached by a former hunter in Svalbard, Per Johnson.

During his time as a hunter on the island of Edgeøya, he found a double sheet of plywood in 1964 with studding and ribs between the sheets. The piece of wood had metal fittings and in some places it was insulated with a bakelite-type substance. The sheet of plywood was approximately 120 cm x 120 cm. It was flat and the colour of the wood had faded to grey after spending such a long time in the sea.

The sheet of plywood was used to make improvements to the hunting shack, "Blåsebelgen" east on Negerpynten point on the island of Edgeøya. The improvements were made to the southern wall of the shack, by the entrance. The working group has not had the necessary resources to visit Edgeøya in order to further examine the sheet of plywood. The drawings of the Latham that we have received from the Musee de l'Air et l'Espace in Paris are probably not detailed enough to allow us to identify this part of the aircraft. However, experts with knowledge of the "Latham" and similar aircraft will, on inspection and retrieval of a smaller section of the part in question for further examination, be able to say something about whether the part orignates from a wooden aircraft and possibly from the "Latham".

The newspaper Svalbardposten has shown interest in the story and is considering a trip to Negerpynten point on the island of Edgeøya. If this trip is realized, the group examining the part should include aviation experts. At the time of writing we do not know whether the trip to Edgeøya will actually be made.

On the basis of today's knowledge of currents and wind conditions in the northern Atlantic, any possible confirmation that the part belonged to the "Latham" would strengthen the theory that the accident occurred near the island of Bjørnøya. In the light of this, verification of this find will be of considerable interest.

• Pontoon/tank found at Skolmen in Vestvågøy; Lofoten

I 1933/34 a possible pontoon/tank was found at Skolmen in Vestvågøy. The object was reportedly handed in to the police in Svolvær. The Regional State Archives in Trondheim can find no entry regarding the handing in of such an object in the police archives and it has therefore not been possible to trace the object.

- <u>Wreckage from an aircraft and a skull found at Auvær.</u> During the hearing at the Polar Museum in Tromsø on 30 September 2002, a fisherman, Håkon Robertsen from Aurvær in the borough of Tromsø, said that during the halibut fishing in 1990, a skull was found together with some alumimium mesh at a certain location off the island of Sommarøy. Finds of aircraft wreckage made near Aurvær over several years are interesting, but may originate from two German aircraft that crashed into the sea in that area during World War II. A skull was also brought up there. This incident was followed up, but the search ended at the police station in Tromsø where we were informed that the skull had disappeared in transit. The Navy has been informed of the finds so that further examination of the area can be undertaken in conjunction with other tasks.
- Cylindrical container found at Skittenelv.

In 1928, a cylindrical container was found at Skittenelv north of Tromsø. The receptacle was handed over to the local teacher who apparently sent it on to the local sheriff's office, although this has not been corroborated. Examination of State Archives provided no clues as to whether the object was handed over to the police, or what became of it.

• The drop tank find at Håja.

The newspaper "Tromsø" reported that a local squire, Alfred Paulsen of Håja, had found something he assumed to be a "drop tank" from the "Latham." The tank cannot be traced and it seems to have been thrown away in conjunction with a local clean-up operation.

4.4 The "Kvitholmen"

Newspaper reports from the period 1928 – 1935 have been scrutinized and an article about wreckage found near Bjørnøya has been examined more closely.

On July 20, 1933, an object weighing several hundred kilos and measuring 2 $\frac{1}{2}$ - 3 m in length was caught up in the longlines of the the M/V "Kvitholmen" of Malangen and skipper Edvard Mathisen, 15 $\frac{1}{2}$ nautical miles north-west to west of Cape Duner. The object was shiny and was taken at a depth of 60-65 fathoms.

The event launched a flood of speculation in the newspapers. In retrospect, one of the crew of the "Kvitholmen" believed that it must have been one of the "Latham's" pontoons that had turned up on their longlines. The object disappeared into the sea again only 2-3 metres below the surface. The position was plotted onto a chart, but subsequent attempts to surface the object proved futile.

In order to ascertain the exact position of the find, the group has enquired as to whether a logbook was kept on board the "Kvitholmen." In all probability, no log was kept. After a three month search the vessel's chart was found. The chart shows the position of the find made in 1933.

4.5 Conclusion, item 4

The testimonies of witnesses and reports about finds have been examined as far as possible.

There is some doubt as to whether observations of an aircraft in the Sommarøy/Kvaløy area relate to the "Latham" or the "Marina 1." The "Latham" would have been back on the Norwegian coast at 10 p.m. at the earliest. The "Marina 1" flew over the same area about a week later. According to Hovdenak: " ... On June 28, during the evening, the Marina 1 scoured the coast between Hekkingen and Tordvåg and parts of the waters offshore..." It is not possible to ascertain the route and movements of the "Marina 1" unless the pilot's logbook can be found in Italian archives. The group has not had the resources to follow up this lead.

Reported finds of objects have not given results because it has not been possible to find the objects themselves. They have disappeared in one way or another and it has not been possible to find references to them in police lost property records. There may have been some correspondence in connection with the finds, but there is no listing of this in the Regional State Archives. Going through the correspondence archives would be a very time-consuming process and the group has not had the resources to do so.

The Navy has been informed of the finds of wreckage and a skull near Auvær. Several events occurred here during World War II. A future examination of the location in conjunction with other tasks may, however, prove to be of interest.

The sheet of plywood found on Edgeøya may be of interest and will be examined if possible.

In the opinion of the working group, the find made by the "Kvitholmen" in 1933 is the most interesting observation, and a search is recommended in order to ascertain whether the object originates from the wreckage of an aircraft.

5. Hypotheses about the Cause and Location of the Accident

5.1 Reflections on the flight of the "Latham"

During the open hearing in Tromsø on 30 September, project developer and seaplane pilot Morten Waltinsen submitted some interesting ideas about the "Latham 47" aircraft and its characteristics as a seaplane. We will not go into detail regarding Waltinsen's report, but rather look more closely at aspects of the aircraft, the crew, the weather conditions and the circumstances surrounding the operation itself, that may have had some significance for the fate of the flight. Technical data about the type of aircraft and assessments made by Hovdenak/Hoel and Riiser-Larsen have been included in this conclusion with regard to the flight itself.

The Crew



The crew members were French and were led by Captain René Guilbaud, born 1890, an experienced pilot from the French Naval Air Force who served his country in World War I. The copilot was Albert de Cuverville, born 1892. The aerotechnicians were maitre Gilbert Georges Paul Brazy, born 1902, and 2nd maitre Emile Valette. The French crew must be considered well-qualified for the task, even though they lacked experience of Arctic operations.

The lack of Arctic experience was

compensated by the participation of initiator and Arctic explorer Roald Amundsen and navy pilot Leif Ragnar Dietrichson. The Norwegian contribution to this operation consisted largely of planning and preparation. It is only natural to assume that neither of the Norwegians took a direct part in the actual manoeuvring of the aircraft.

The "Latham" took off from Normandy, France, at 9.05 a.m. on June 16 and flew non-stop to Bergen where it landed at 9.45 p.m. Next day, after a stopover of about 22 hours, the aircraft took off from Bergen at 8.20 p.m. landing in Tromsø at 6 a.m. on June 18. After a stop of just under 10 hours in Tromsø, they took off again at 3.55 p.m. and were last seen for certain heading in a northerly direction north of Hekkingen lighthouse.

One can only assume that the crew set off on this trip with expectations, a feeling of excitement and a certain fear of the unknown. There had been little time for planning and preparations. We do not know how many hours the crew had allowed for rest and sleep in

Bergen, but due to lack of both time and support crew, it is obvious that the crew would have had to carry out most of the essential tasks themselves, including loading, research, planning, etc. The flights from Bergen to Tromsø, and then from Tromsø, took place at night. The crew had not had time to acclimatize themselves to conditions such as the midnight sun and 24-hour daylight. The stop in Tromsø from 6 a.m. until departure at 3.55 p.m. took place in an animated and stressing atmosphere where there would hardly have been any time for rest. In all probability the crew would not have been fully rested on their departure from Tromsø and are likely to have lost track of the time of day since their last trip to Tromsø took place at night time. The midnight sun and bright nights would most likely also have been a distracting factor.

The "Latham 47" Prototype II

The French aviation industry was among the best in the world at the time. Latham was a wellequipped and modern aeroplane with most of the advanced instrumentation that was available. It was primarily constructed for long-distance flights and was taken out of service on the preparations for trans-atlantic flights in order to search for the "Italia." Plywood was used to reduce the weight of the aircraft itself, and to increase its payload capacity. For the same reason, a boat-shaped fuselage was chosen in order to avoid the increased weight and air resistance that two sturdy pontoons would represent. The compromise involved two small pontoons, one at each wing tip, designed to balance the aircraft on the water. However, during operations on the sea, when there are strong winds and considerable swell, a construction with a keel and two wing pontoons causes great strain on the wings, wing pontoons and wing fittings, particularly when the direction of the wind does not correspond to that of the waves. Under such conditions, the aircraft was probably difficult to manoeuvre on the water.

The range of the aircraft was more than sufficient for the planned distances with intermediate landings and refuelling.

The aircraft was equipped with instruments for blind flying, i.e. it could fly through areas of cloud or fog without the need for references to the ground or sea surface. However, flying with visual references to the ground/sea surface was the norm at that time. The instruments of the time were rudimentary and not the easiest to manoeuvre an aircraft by. Furthermore, in time they could accumulate errors and needed to be reset on a regular basis, something which normally required visual reference to the ground. Some of the instruments were retrospective, thus indicating change of course, loss of altitude and so forth, after a certain period of time had elapsed. In actual fact, the length of time the instruments could be used when flying through cloud was limited by the need to reset.

Weather conditions and daylight

The weather in the Tromsø area on 18 June 1928, was dominated by low pressure over central Scandinavia. North Norway was under the influence of a high pressure zone east of Svalbard that crossed over to the Kola Peninsula. The result north of Tromsø was a north-easterly wind with fog and fog banks. The wind increased in strength further north. In the area around Bjørnøya there was a north-easterly wind and the fog had lifted and given way to hazy weather with low stratus. If we assume that the aircraft held a steady course for Bjørnøya after passing Hekkingen lighthouse, the crew would have had the midnight sun 60-70 degrees to the left of the nose of the aircraft. Low sunshine from that angle combined with fog and mist would have made visual flying conditions difficult. The horizon becomes diffuse and indistinct. It becomes difficult to find one's bearings and to distinguish where the sky ends

and the sea begins, or vice versa. The references necessary for visual flying are erased. The prevailing flying conditions were instrumental to disorientation and a false sense of the aircraft's horizontal plane.

The radio message

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If we assume that the "Latham" flew straight from Hekkingen lighthouse towards Bjørnøya after passing Hekkingen at 4.20 p.m. local time, the aircraft's position would have been approx. 72° 30' N, 018° E when the radio call was made between 6.45 and 6.55 p.m. The radio message mentioned nothing about technical difficulties and indirectly confirms that the flight was progressing normally and as planned. The transmission revealed difficulties with the radio connection, but this is normal and a well-known phenomenon in Arctic regions during the summer, due to varying atmospheric conditions. It is correct to assume that the flight went more or less as planned until 7 p.m.

5.2 Ocean currents and calculations of drift

Ocean currents (Brief account by Harald Loeng, Institute of Marine Research) Objects that drift in the sea follow the direction of the current if they are floating low in the water or are more or less submerged. Objects that drift lightly on the sea, with ample windage, float predominantly in the direction of the wind with little influence from the direction of current. Since the Institute of Marine Research knows little or nothing about the wind during the period between the accident and the time the objects were found, emphasis in the following assessments has been placed primarily on the ocean currents

Let us first consider the alternative that assumes the accident occurred between the mainland and Bjørnøya, most likely on the underwater ridge between the Barents Sea and the Norwegian Sea. The enclosed map roughly shows the pattern of the currents in the Norwegian Sea. It is possible for objects that drift out into the Norwegian Sea to be picked up by currents that first move north-westwards then gradually turn more and more to the south. These currents would turn towards the Norwegian coast and it is therefore quite possible that objects can drift from the area around Bjørnøya to the Haltenbanken. It is also possible for objects from the same area to drift in towards the coast of Troms and Finnmark. The driftwood found along these areas of the coast is an example of this.

An accident just off the coast of Troms is not so easy to explain on the basis of ocean currents, because it is difficult to see how objects could have drifted down to the Haltenbanken from this area. In such a case, the wind would have to have played an important role, which is something of which we have no knowledge. The wind has probably played a role irrespective of where the accident took place, because it is difficult to imagine that parts of the wreckage could have reached the Haltenbanken in 4 months without the help of the wind.

Main currents in the Nordic seas and Barents Sea



Conclusion: Both sites submitted as locations for the accident are possible, given the finds that have been made, but the underwater ridge between Norway and Bjørnøya seems most probable in the light of what we know about the ocean currents.

Drift calculations (made by Kjell Johansen, Main Rescue Co-ordination Centre (RCC), North Norway)

With the help of the RCC's computer programme, drift calculations have been made regarding wreckage that "floats lightly" in the sea. The calculations are based on two positions 74°44'N 018°00'E (in the vicinity of the "Kvitholmen" find) and 72°30'N 018°00'E (estimated position for the "Latham's" last radio message). Calculations of drift near the Norwegian coast are difficult because the waters are shallow and there are innumerable isles and skerries.

The computer programme calculated drift in May/June 2003 compared to the weather in question. Calculations began on May 12 and were concluded on June 9, 2003. Compared with the right kind of weather in the area, the calculations provide a good indication of how current and wind may have influenced the drift of the pontoon and fuel tank from the "Lataham."



<u>Conclusion, drift calculations</u>: The drift of wreckage both near Bjørnøya and between the Norwegian Sea and Bjørnøya is influenced to a greater extent by wind than by ocean current. In 1928 there was a strong easterly wind between Bjørnøya and the mainland during the days following the accident. At Bjørnøya on 18 June 1928 and for several weeks afterwards, there was only a light easterly wind, but rather heavy seas.

• Conclusion "Ocean currents and drift calculations":

If the accident had taken place at position 72°30'N 18°E the wind may have carried the wreckage against the current, i.e. towards the west/south-west. When the wind died down the current would once again carry the wreckage eastwards, towards the Norwegian coast.

On the other hand, if the accident had occurred in the vicinity of Bjørnøya, where the wind was calm, the wreckage would have followed the current from the outset. As the figure on page 10 shows, a cold ocean current moves from the north turning around Bjørnøya from east to west, where it meets the Gulf Stream and is pressed northwards towards Svalbard again. It is also worth noting that the Gulf Stream divides into two in this area. One part of the current turns down towards the Norwegian coast and into the Barents Sea, while the other moves northwards, to the west of Svalbard. In time, wreckage from an accident in the vicinity of Bjørnøya may therefore spread across a considerable area, from Svalbard to the entire Norwegian coast.

5.3 Possible site in the Kvaløy area



In 2002, reports in the newspaper "Tromsø" kindled new interest for the disappearance of the "Latham." Two witnesses told the newspaper that they had seen the "Latham" floating on the sea at Hillesøy in 1928. This information makes it once more necessary to look into the hypothesis of an accident on the coast of Norway.

To a certain extent, we have considered the hypothesis that Amundsen turned round, returned to the coast and perished there. If the "Latham" had turned round, difficult weather conditions would have been the most likely cause. Given a situation with easterly and north-easterly winds along the stretch between Troms and Bjørnøya, as was the case on the days in question in 1928, sudden changes in weather conditions are rare. The extent of fog may vary and periodical variations in wind force may occur at different times and locations. On June 19, a boat reported strong easterly winds and heavy seas between Torsvåg and Bjørnøya. This, combined with fog /low cloud/ poor visibility, may have made captain Guilbaud turn round.

In 1928 there were rumours that the "Latham" had been seen on the coast of Norway on the days following June 18. Parts of the coast were searched using an Italian Dornier Wal, the "Marina I," but nothing was found. At the time, reporting observations or finds was not the natural thing to do for most people. Naval officer Hovdenak, who co-ordinated the search operation between French and Norwegian authorities, puts it this way in his book (1934):

"... However, I once asked the skipper of a hunting vessel why he didn't just come up to the hotel after he had read our call for information in the newspaper. In that way he would have saved me a lot of trouble. "Oh no," he said, "you know, you feel a bit humble when you see your kind of people, but you seem like an ordinary person, that you can talk to, so if I'd known that, I suppose I could have come up ..."

A few months later, a fuel tank, a pontoon (and perhaps a white cylinder) from the "Latham" were found along the coast. We also know from reliable sources (2002) that an aircraft was seen on a June evening, and later at night in 1928, in the Hillesøy area. One of the observations took place at 8 or 9 in the evening, off Værholmen, and here, the aircraft was was said to have been on the sea. The other took place around midnight near Vasstrand, not far from Værholmen. In this case, the aircraft was seen taking off from the fjord. It flew over the sea at relatively low altitude and seemed to continue in that manner past the beacon at Vasstrandnes.

We do not know the exact date for either of these observations, apart from the fact that they occurred around the time Amundsen disappeared. Nor do we know whether it was the same aircraft in both cases. The "Latham" passed by Laukvik at 4.20 p.m. and continued northwards over the Tromsøflaket on its way out from Tromsø, northwards towards Bjørnøya. As mentioned, one hypothesis is that the aircraft had problems, turned round, and flew in towards the coast again in the evening, before taking off again later that night. However, some days later, on the evening of June 28, the Italian aircraft "Marina I" was involved in a search for the "Latham." The aircraft observed may then have been the "Marina," the "Latham," or even both.

The "Latham" could fly at speeds of 130 to 140 km.p.h, i.e. a maximum speed of 75 knots. Based on the time the aircraft was observed at Hekkingen and until the last radio message was received at 6.55 p.m., when everything seemed to be normal, the aircraft would have covered a distance of 180 nautical miles. If we add 30 minutes (35 nautical miles) before the Latham possibly turned round, her position would have been approx. 73°N 18°E. On the return journey to Sommarøy, with the addition of a favourable wind component of 15 knots, the aircraft would have taken 150 minutes, arriving at about 9.45 p.m. at best.

In the light of the objects that have been found, it seems unlikely that the accident occurred on or near the coast. Given the predominant direction of the current and the lack of wind, the torn-off pontoon had, in that case, drifted a short distance in the sea during a period of just over two months. It is also difficult to explain the fuel tank find on the Haltenbanken if the accident occurred in the vicinity of Karlsøy. On the other hand, if we had managed to locate the cylinder found at Skittenelv, and this proved to originate from the "Latham," then this would provide a strong indication that the accident took place on the coast between Hekkingen and Torsvåg.

5.4 Possible site in the vicinity of Bjørnøya



In this chapter, the working group compares earlier information with new scientific facts, particularly in the fields of meteorology and oceanography, based on the hypothesis that the accident took place in the area around Bjørnøya.

If we base our assumptions on normal flight operations until 7 p.m. on the evening of June 18, 1928, and assume that the aircraft maintained course for Bjørnøya as planned, the accident must have occurred north of 72°30'N.

The ocean currents in the area around Bjørnøya are complicated since the location is situated at the point of intersection between the northeasterly current between North Norway and Bjørnøya in the Barents Sea, and a branch northward towards Svalbard. Further west we find a cold, southern current west of the Greenland Sea. The location of the pontoon at Torsvåg and the fuel tank on the Haltenbanken, together with the sheet of plywood on Edgeøya island can be explained if the accident took place here.

During the first few days after the accident, there

were strong east-north-easterly winds in the area. The fuel tank, empty and light, would float very high on the surface of the sea and be largely affected by the wind. The pontoon, damaged and full of water, would for the most part, follow the ocean currents. The sheet of plywood, if one is to give it significance before the find has been corrobborated, would almost exclusively have followed the ocean currents.

In the light of such a hypothesis, the fuel tank would relatively quickly have drifted furthest west and into the homogenously southerly ocean currents. It would probably have drifted far south before westerly winds moved it eastwards again to the Haltenbanken. By way of a combination of winds and currents, the pontoon would have followed a smaller curve west – south – west before stranding at Torsvåg. *In addition to this, it is probable that the pontoon was torn off at an early stage of the accident, and before the aircraft drifted with the wind and sank*. The sheet of plywood has followed the ocean currents on its journey to Edgeøya.

The cause of the accident itself may be very simple. Based on the fact that many accidents and near accidents are caused by inattentiveness in combination with other factors, it would not be inappropriate to submit a train of thought about the accident on this basis. Given the conditions mentioned earlier involving fatigue, difficult flying and daylight conditions combined with inattentiveness and/or distractions, the aircraft might easily have crashed into the sea.

This train of thought does not in any way rule out an accident as a result of tehenical malfunction, for instance, where the crew have made a more or less controlled emergency landing. An emergency landing would have been carried out in the same weather, daylight and ocean current conditions as described above. Irrespective of cause, the result of the landing was fatal. Based on the few objects that have been found and analyzed, it seems probable that the pontoon was torn off and punctured in the process. This may have happened when the aircraft's left/port pontoon impacted the sea, or hit the crest of a wave, or by a combination of both.

If we consider the fuel tank and the makeshift improvement (blocking) of the hole in the lid, it is natural to assume that the aircraft remained afloat while the crew attempted to stabilize it by replacing the missing pontoon with the fuel tank. Furthermore, it is possible that the aircraft was not able to take off again due to the damage and/or to reduced engine power. In such a situation, the crew would have attempted to manoeuvre towards Bjørnøya. The prevailing conditions with a damaged aircraft, strong winds and high seas would inevitably have led to the sinking of the aircraft.

The torn-off pontoon has most likely remained afloat in the position where it impacted the sea, and its course would therefore have a different starting point.

The so far unidentified find (assumed to be part of an aircraft) made by the "Kvitholmen" north-west of Bjørnøya, supports the hypothesis that the accident took place here. We know of no other possible plane crashes in this area prior to 1933.

5.5 Conclusion, Item 5

The working group has carefully assessed previously obtained information together with new evidence. The group considers the reports made by Hovdenak/Hoel and Riiser-Larsen to be thorough and comprehensive. It has not been possible to follow up all of the information and finds that have been made available, or verify some of the older information in cases where relevant documentation has been lost. In these areas, the group has based its conclusions on previous assessments, or in some cases has chosen to disregard the information altogether. The information that has made an essential contribution towards shedding new light on the incident has largely been provided by the Institute of Marine Research in Bergen, the Main Rescue Co-ordinaiton Centre for North Norway and the Norwegian Meteorological Institute. By combining all of the available information and related analyses, two possible locations for the accident have arisen. One off the island of Karlsøy and the other in the area south and west of Bjørnøya.

It is beyond doubt that several people observed aircraft west of Karlsøy, at Sommerset, Hillesøya and Vasstranda, at the time of the "Latham's" flight, but we cannot eliminate the possibility that some of these were sightings of the "Marina I" during its search for the "Latham." It is the opinion of the working group that most of the facts, calculations and probabilities coupled together in one general assessment, indicate that the accident took place in the area west of Bjørnøya.

Today, given the facts and information available, it is not possible to reach a conclusion with regard to where the "Latham" incident took place, without validation, or invalidation, of the wreckage that the "Kvitholmen" brought to the surface in 1933. Locating and raising this piece of wreckage may bring us closer to a solution. An analysis of the sheet of plywood on

Edgeøya island will only serve to strengthen the theory that the accident occurred west of Bjørnøya.

6. Conclusion/Recommendation

Today, possible confirmation of where the "Latham" was lost is attainable. In the light of the analyses that have been made, the special expert group recommends a search for the object that the "Kvitholmen" brought to the surface in 1933, and which was then identified as part of a wrecked aircraft. The search should be made by a vessel with a remote controlled submarine at the position where the M/V "Kvitholmen" made its find. After 75 years, one can only expect to find remains of the two engines.

There is still considerable interest in Roald Amundsen and his fate. A search operation, and the media coverage it would incite, might serve to unveil new accounts and finds. Such accounts and finds should be thoroughly examined, but are now beyond the jurisdiction of the initiative taken by the Norwegian Aviation Museum.

