



"An unalerted and poorly defended Swedish port"

– operation Paul from the viewpoint of Luleå

John Turesson

Peter Hore's essay "Operation Paul – the Fleet Air Arm attack on Luleå in 1940" was first published in *Forum navale* 70. A translation in Swedish is now available in the book *I fred och örlog* edited by Gustaf von Hofsten.

In his essay, Hore describes that the British plan in June 1940 was to mine the entrance of Luleå with magnetic mines delivered by aircrafts starting from one or more carriers in the Norwegian Sea. As the aircrafts lacked range to return to the carriers, they would seek refuge in Finland.

Hore answers his question "Would Operation Paul have succeeded?" with:

Had the attack on Luleå taken place, there is little doubt that it would have succeeded, at whatever cost to the British, and it would deserve entry into the pantheon of naval warfare. (p. 101)

John Turesson (b. 1963), works with system development. Member of the Swedish Society for Maritime History and amateur historian focused on the Nordics 1940.

He also writes that:

At full scale, Operation Paul would have used three carriers and almost four times more aircraft (78) than were used during the Battle of Taranto (21) against a heavily defended Italian harbour, and at reduced scale would have used only a few less aircraft (18 or 15) against an unalerted and poorly defended Swedish port. (p. 100)

I found the assumptions of "an unalerted and poorly defended Swedish port" worth some investigation.

One of the most striking features of the Norwegian campaign was how the British staff planning often was based on assumptions, rather than intelligence gathering, and that the plans did not always blend favourably with reality. Admittedly, the Swedish armed forces in June 1940 had no combat experience and the newly raised air defences in particular had limited training, but Sweden was not completely without means to defend herself. It is always hard to evaluate a plan never executed so if Operation Paul would have become a success like Taranto or another Baclava style "Charge of the Light Brigade" is open for discussion. I see two major problems in Hore's account of operation Paul, namely that Luleå would be unalerted and that it was poorly defended.

Would Luleå have been unalerted?

From Hore's account of the British plan, we can read that:

There were two routes for the aircraft. One was to attack Luleå from the north-west, flying over the mountains and following the Gällivare-Luleå railway, the second was to launch in Porsangerfjord or Varangerfjord in northern Norway, "the latter being more suitable as there is more searoom", and fly over Finnish territory to attack Luleå from seaward and out of the sun." (p. 94-95)

If the aircraft were launched from south of Vestfjord (Bodø), the flight path over Swedish territory would be approximately 150 nautical miles, or a 90 minutes flight (arrow A in map 1). If the aircraft were launched

from West Tromsø, the flight path would be longer and closer to the inhabited areas along the Riksgränsen–Luleå railroad. The Swedish air observer network was active (blue lines on map 1) and due to the fighting in Norway, the observer line that initially followed the Inlandsbanan railroad in a North–South direction was moved westwards 30 nautical miles to a position between Sorsele and Porjus (see the red line in map 1); approximately one hour’s notice from Luleå. In addition to the army’s air observer chain, both the railroad authorities and the guard detachments spread along the railway were instructed to report unknown aircrafts. By following the railroad, the British aircrafts would also overfly the Boden fortified area, Sweden’s main garrison in the north with its own air defence consisting of a local observer chain and armed with twelve 75 mm guns and four 40 mm Bofors autocannons.²

If the British force attacked from North Cape, the slightly shorter flight path would pass Finnish territory. The Finnish observer network was demobilised during April, and only the Rovaniemi Area Air Defense Center (ilmapuolustusaluekeskus, IPAK) was active.³ If Rovaniemi wasn’t overflowed, it would have been up to civilian individuals to send an alarm. Given the cooperation between Swedish and Finnish air defences established during the Winter War, any of these alarms would be shared across the border.

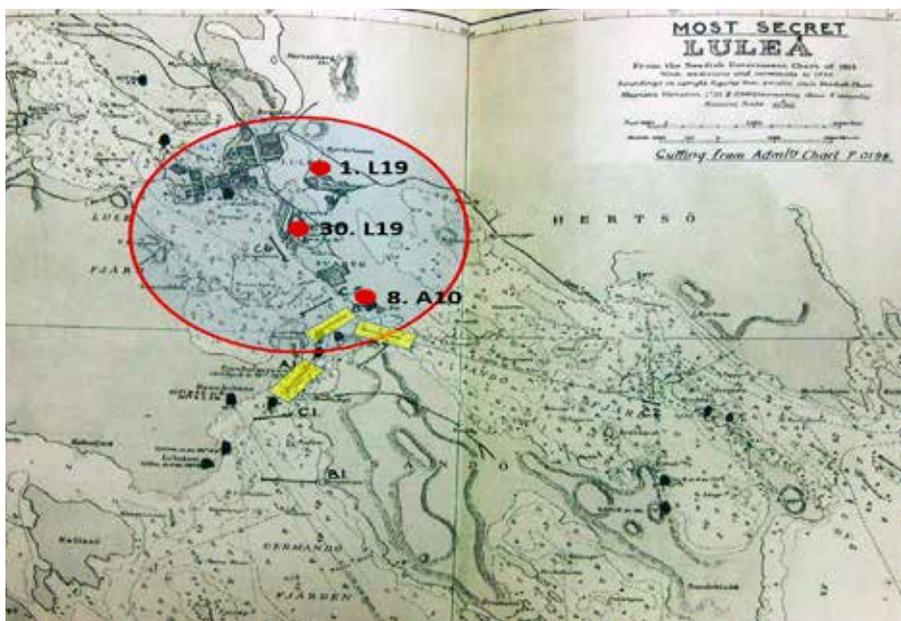
Sweden’s east coast and the Swedish-Finnish border up to Karesuando were covered with observation posts no longer than ten kilometres apart. The direct path from Vestfjord to Luleå would cross the Swedish observer line some half an hour before the arrival of the aircrafts at Luleå (arrow B in map 1). Thus, in the best case, the aircrafts would have passed unnoticed between Rödkallen’s and Hindersön’s observation posts in the Luleå archipelago after an hour’s journey over Finnish territory (arrow C in map 1). In such a case, the Swedish defenders would have been taken by surprise.



Map 1. Possible British flight paths overlaid a map of the Swedish air observer network in June 1940.⁴

A poorly defended port?

Luleå air defences by the end of May 1940 consisted of two 40mm Bofors guns and six 75 mm AA guns. Another battery, “30. Lvautomatkanontroppen L19” with two 40 mm guns, was placed on the hill just behind the ore loading quays. “8. Lvkanonbatteriet A10”, a battery of three 75 mm guns was placed on Svartön, with a free arc of fire towards the entrance of the harbour and the harbour basin. A second 75 mm battery, “1. Lvkanonbatteriet L19”, was based in the eastern part of Luleå.⁵ The 75 mm guns were equipped with both high explosive and shrapnel grenades designed against low flying aircrafts. The latter exploded at a set range and threw 300 11-gram lead balls in a cone, 17 meters wide and 100 meters deep. Each battery also had a twin 8 mm anti-aircraft machine gun for close defence.



Map 2. The red circle represents the area covered by the 40 mm guns and the red dots the positions of the batteries. If a one-carrier raid with 18 aircraft had been implemented, only mine lines A1, A2 and B5 were to be laid,⁶ marked with yellow boxes.

The planned attack

The Svartön lighthouse guided mariners into the harbour basin of Luleå. British planners used the lighthouse as a range mark for the *B5 mine line*. The *A2 mine line* in the eastern entrance was also within half a mile's distance from the lighthouse and the *A1 mine line* a nautical mile further south. The British pilots would just line up their Fairey Swordfish biplanes with the mine line and drop the rather fragile mine from an altitude below 250 feet (76 meters) at a maximum speed of 100 knots (185 km/h or 50m/s).⁷ According to Hore, the H-Hour was set to 05:00, which means bright daylight.

For the Swedish air defence, the entrances to the harbour had a similar importance. "8. Lvkanonbatteriet A10" was deployed a few hundred

meters north of the lighthouse and could engage the attackers before they reached the release points. Whether the other air defences would engage before a mine release or not would depend on the attacker's flightpath.

As the aircrafts were not expected to return, losses might not have been considered as an issue as long the mines were dropped in the harbour or at its entrance. So, the main issue is whether the air defences would engage the aircrafts before they delivered the mines.

Measuring success - for how long would the port of Luleå have been closed?

The port would be closed for some time just by a British mine warning, but how long would it take to clear the mines and resume operations? And what effect would the delay have on German production based on Swedish raw materials?

British planning assumed that the port of Luleå would be closed for two months. The ore shipments from Luleå in June and July 1940 represented around 18 percent of Sweden's deliveries to Germany that year, so a complete standstill for two months would have some effect on German production.⁸ The record-breaking shipments during July 1940 of more than 100,000 tons above the monthly average was partly due to the ore storage built up during winter months.⁹ A delayed opening of the port would thereby result in more ore in storage when the port was opened. Routing shipping to Oxelösund could add another 100,000 tons per month so the net result would be a reduction of Swedish export between 12 to 18 percent.

It is also important to consider the Swedish mine-sweeping technology and the on-going transfer of technology from Germany in this respect. On June 11, Swedish authorities allowed German "civilian contractors" to lay a submarine net in Swedish territorial waters blocking the passage through the Sound between Elsinore and Helsingborg. In July 1940, Germany provided the Swedish navy with know-how of the British magnetic mines and sweeping techniques.¹⁰ The first Swedish magnetic sweep was ready for trials in September 1940. If the port in Luleå had been mined, it would undoubtedly have been faster and seen as of mutual benefit to clear the

mines with German assistance. Swedish authorities would of course have preferred to buy or charter German vessels under Swedish flag to maintain neutrality, but German built minesweepers¹¹ could make a port visit to Luleå and clear the mines within a couple of weeks. Thus, the net reduction of Swedish export could be reduced to about 5-10 percent.

To deny Germany 5 percent of the Swedish iron ore export for the cost of 18 Swordfish aircrafts with crew would, as long as the carrier survived, be considered as some sort of a success. However, as Germany had just occupied the Belgian and French iron mining districts, this meant that Sweden's share of German ore imports was halved.

British planning contained several assumptions based on wishful thinking to keep the plan alive. I might be affected by a hurt of Swedish pride, but the disregard of possible Swedish countermeasures still strikes me. The British Chiefs of Staff considered the pros and cons and eventually rejected the plan. And even if it had been implemented, I can't see that the consequences merit Operation Paul to be listed among Pearl Harbour, Taranto, or the Doolittle raid. I rather see Operation Paul closer to Operation Wilfred, the British mining of Norwegian territorial waters on the day before the German attack. Wilfred confused Norwegian decision-making without impeding the German attack.

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Notes

¹ KrA, Berv. Bilaga "Luftbevakningslinjer våren 1940".

² KrA, Fst LV F IV, vol. 4-5, appendix 22b, table with changes in deployment of upper Norrland (ÖN) Defense Region. These sources are part of what looks like an early and very detailed draft of air defence history during the period 1937-40, the official history completed after the war omits most details.

³ Mail conversation with Jussi Pajunen.

⁴ KrA, Beredskapsverket Arméns Luftvärn.

⁵ KrA, Fst LV F IV Vol. 4-5.

⁶ Acasta, Message To: C.in C.H.F. (543) (R) VAA (332) from Admiralty June 8, 1940.

⁷ Acasta, Appendix VIII "particulars with regard to mines and torpedoes".

⁸ Fritz 1974, p. 67. Note the volumes do not represent the weight of the ore but the weight of the iron content in the ore.

⁹ Johansson 2009, p. 27.

¹⁰ Lagerwall 1991, p. 46; Bergström & Swahn 1996, p. 26, 32.

¹¹ R-boots with magnetic sweeps or Sperrbrecher with VES or a combination thereof.