



## Leif Tronstad — The Father of FFI

In the 1930s, the Norwegian Armed Forces had no organised research activities. So how did the idea of a Norwegian defence research institute come about?

It all began in England. The year was 1941, and the Germans were victorious on all fronts. In Great Britain, a number of Norwegian scientists were aiding the war effort, having fled the German occupation of Norway. One of these had a clear vision of a free Norway with a dedicated institution for military research. Without such an institute, Norway would risk falling behind in the rapidly evolving field of defence technology.

This man was Leif Tronstad. He was serving with the Norwegian High Command in London, holding the rank of major, and would later become one of Norway's most renowned resistance fighters.

### **A scientist turned resistant hero**

Leif Hans Larsen Tronstad was born in the small town of Sandvika, not far from Oslo,

in 1903. He began his career as a chemist and completed his studies at the Norwegian Institute of Technology (NTH) in Trondheim before undertaking research stays in Berlin, Stockholm, and Cambridge. By the 1930s, Tronstad had earned a solid reputation in British scientific circles – a connection that would prove invaluable during the war. In 1936, he earned a full professorship at NTH, a position he still held when Germany invaded Norway in April 1940.

Tronstad fought the invaders and occupiers for more than a year before fleeing to Great Britain and continuing the fight from there. In 1943, he played a pivotal role planning the sabotage of the Norwegian heavy water plant at Vemork – a facility he had once helped design. The operation later inspired films and a TV series, including Operation

Swallow: The Battle for Heavy Water (1948) and The Heavy Water War (2015), as well as Hollywood's The Heroes of Telemark (1965), starring Kirk Douglas.

His contributions extended far beyond Vemork, for which he was awarded the Order of the British Empire. He helped organise the wiretapping of German officers in Norway, uncovering critical intelligence about the V1 flying bomb production at Peenemünde. This information triggered extensive Allied bombing raids that disrupted German operations and gave the British a much-needed reprieve.

### **FOTU: the forerunner of FFI**

Before the Second World War, Norway's Armed Forces had little interest in organised research. Instead, senior officers often believed



Leif Tronstad with several of those who contributed to the sabotage operation, on the occasion of the participants receiving their British honours in London. Photo: Unknown



Leif Tronstad with King Haakon at the Norwegian training camp in Scotland, 1944. Photo: Unknown

traditional military expertise outweighed technological innovation. But the war – and especially the atomic bomb – proved that science and defence research had become indispensable in a violent world.

In response, the Norwegian government-in-exile appointed Tronstad to lead the Norwegian High Command's Technical Committee (FOTU). FOTU's mission was to recruit Norwegian scientists and technologists for military research in Britain and to advise the High Command on technical matters. Its 30–40 Norwegian engineers and scientists, working at British research institutes, would later form the core of FFI's initial research staff, making FOTU the precursor to FFI in terms of personnel as well as mission.



The Vemork power station at the Rjukan Falls was the world's largest hydroelectrical power plant when it opened in 1911. Photo: Anders Beer Wilse / Norsk folkemuseum

### Behind enemy lines

Even as the head of FOTU, Tronstad was a soldier until the very end. In late 1944, he led Norwegian paratroopers from Kompani Linge in operations across the mountains of Telemark. But after months in the field, they were ambushed by Norwegian Nazi collaborators in a mountain cabin near Møsvatn. Tronstad fell in the skirmish, just two months before the end of the occupation and shortly before his 42nd birthday.

### FFI becomes reality

Tronstad never got to see his vision of a free Norway with its own defence research institute. But his idea lived on.

After the war, resistance leader Jens Christian Hauge was appointed Minister of Defence. He proved to be a key supporter of a defence research institute, and under his leadership, what started as an idea in Leif Tronstad's mind in 1941 saw the light of day five years later.

On April 11, 1946, the Norwegian Parliament unanimously approved the creation of Forsvarets forskningsinstitutt – The Norwegian Defence Research Establishment.

FFI was born.

### Tronstad's legacy

Leif Tronstad's legacy is commemorated in several places:

- Leif Tronstads plass in Sandvika, where King Olav V unveiled a memorial on May 8, 1973
- Leif Tronstads veg in Trondheim
- Professor Tronstads gate in Rjukan

Tronstad received several distinguished Norwegian decorations for his service, including the War Cross with Sword and the Order of St. Olav, as well as international honours such as the Order of the British Empire.

