



<https://theses.gla.ac.uk/>

Theses Digitisation:

<https://www.gla.ac.uk/myglasgow/research/enlighten/theses/digitisation/>

This is a digitised version of the original print thesis.

Copyright and moral rights for this work are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge

This work cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given

Enlighten: Theses

<https://theses.gla.ac.uk/>
research-enlighten@glasgow.ac.uk

Norwegian Air Power
1900-1923:
The Debate on Doctrine and
Organisation

Ole Jørgen Maaø

Thesis submitted for the Degree of Master of Philosophy
Department of Modern History
University of Glasgow

April 2003

© Ole Jørgen Maaø

ProQuest Number: 10390796

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10390796

Published by ProQuest LLC (2017). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

GLASGOW
UNIVERSITY
LIBRARY:

13058

COPY. 2

Summary

From around 1904-1905 a few officers argued in favour of the development of air power, and put the issue on the agenda in Norway. Before the First World War air power was mainly seen as a means for observation and reconnaissance. The officers were inspired by developments in France and Germany. The arguments of these officers met with little opposition from the military and political establishment, but none was particularly eager to foster the progress of this new technology. Although the importance of air power was stressed in Parliament on several occasions, this did not lead to the allocation of much funding or any decision on the question of organisation.

During the First World War, a shift occurred in Norwegian air power doctrine. The Air Arms were very small, but their very existence made it possible to expand the activity when this was necessary. Necessity arrived with the fear of aerial attacks from Germany in the late autumn of 1916. Aerial defence became a priority within both Air Arms. Eventually the Norwegians succeeded in acquiring aircraft from Great Britain, which also led to British influence upon the Air Arms. During the war, the Defence Department tried to arrange joint leadership over the two existing Air Arms, but without success.

When the war was over, a Defence Commission was set up to evaluate the lessons of the war. With respect to air power, the Commission delivered its report in 1923, and advised the creation of an independent Air Force that should return to pre-war priorities. Observation and reconnaissance were again to be the most important tasks, although aerial defence was not forgotten.

Throughout the period, officers led the debate on air power. At no time was the political establishment in the forefront. The development of air power was not politicised in Norway.

In politics, air power was almost solely an organisational question. The question was problematic, as it threatened the two existing services. For 14 years the authorities tried unsuccessfully to get Parliament to sanction a solution. Declarations from Members of Parliament concerning the importance of air power did not lead to sanctions from Parliament. The main reason was that theoretical and practical importance of air power was disproportionate. Thus, when the theoretical importance of air power technology and doctrine approached the realities of organisation, next to nothing happened.

Foreword

This thesis was made possible by the Royal Norwegian Air Force Academy because the institution believes in giving its academic staff the opportunity to study. I would especially like to thank Dr. Nils Naastad, Lieutenant Colonel Bjørn Tore Sneisen and Lieutenant Colonel Rune Bjerkås for their personal contribution in formalising studies for Norwegian officers at the University of Glasgow.

My deep gratitude also to Professor Hew Strachan, who has not only been my supervisor, but also for his dedication to the co-operation between the University of Glasgow and the Norwegian Air Force.

My sincere gratitude to my colleagues at the Department of Air Power and Technology, for their help and support throughout this work.

The writing of a thesis and marital life do not always go hand in hand. I am still happily married to Oddrun. That is a product of her patience. Thank you.

Contents

1 INTRODUCTION.....	5
LITERATURE	8
2 BACKGROUND	11
POLITICAL BACKGROUND.....	11
THE MILITARY.....	14
3 AIR POWER IN NORWAY?	17
THE PROPAGANDIST'S	18
CONTINENTAL INFLUENCE.....	28
THE RESPONSE FROM THE ESTABLISHMENT.....	30
WHY SHOULD NORWAY DEVELOP AIR POWER?.....	40
WHY SHOULD NORWAY NOT DEVELOP AIR POWER?.....	47
CENTRALISATION OR DECENTRALISATION?.....	49
CONCLUSION.....	56
4 THE FIRST WORLD WAR.....	58
THE ZEPPELIN FEAR.....	60
AERIAL DEFENCE BECOMES A PRIORITY	68
THE ATTEMPTS FOR GREATER JOINTNESS.....	72
BRITISH INFLUENCE	76
CONCLUSION.....	79
5 THE AFTERMATH OF WAR.....	80
EPILOGUE TO THE DEFENCE COMMISSION	86
CONCLUSION.....	89
6 CONCLUSION.....	90
EPILOGUE.....	91
APPENDIX: SOURCES.....	94
PRIMARY SOURCES	94
SELECTED SECONDARY SOURCES	104

1 Introduction

It was 19 April 1912.¹ In the officer's mess at the Royal Norwegian Navy's main base, Karljohansvern in the city of Horten, three Navy officers read that day's newspapers. The senior ranking of them was Lieutenant Commander Carsten Tank-Nielsen, Captain of Norway's first submarine "Kobben". "Kobben's" second-in-command, First Lieutenant Hans Fleischer Dons and the mate onboard the supply vessel "Tyr", First Lieutenant Jens Helge Sem-Jacobsen, were also present.

The newspapers reported that a Swedish Lieutenant, Olle Dahlbeck, planned a new flight in Norway the coming summer. He planned to pass Karljohansvern, and rumour had it that he wanted to bombard the base with oranges, just as he had the old fortress of Kristiansten in the city of Trondheim the year before.

By April 1912 no Norwegian had flown an aeroplane over Norwegian territory. There had been several display flights from 1910 onwards, mainly performed by Swedish pilots, such as the famous Baron Von Cederström, who had flown several times over Norway's capital, Kristiania.

The three Navy officers discussed the glove that Dahlbeck had thrown down to the Norwegian Navy. They were could not tolerate that a Swedish pilot should be the first to fly over Karljohansvern, the Navy's pride. It was only seven years since the dissolution of the union with Sweden. They decided that the first to fly over Karljohansvern was to be a Norwegian.

They established a committee, which they named after their submarine. The aim was to forestall Lieutenant Dahlbeck. They were in quite a hurry, as their goal was to get airborne by the end of May.

The "Kobben" flight committee did not lack initiative. It was decided that Dons was to travel to Germany to acquire an aeroplane and try to get himself some training as a pilot. Tank-Nielsen was to head a fund-raising campaign that would pay for everything. Dons was therefore given immediate leave by Tank-Nielsen, and left for Germany the same evening.

¹ This story is based on Hans Fleischer Dons, "Start". *En norsk flyvehistorie*, (Oslo, 1935); Vera Henriksen, *Lufforsvarets historie. Bind 1, Fra opptakt til nederlag juni 1912 – juni 1940*, (Oslo 1994), 13-17; Gunnar Thoresen, "Løytnant Dons' dristige flyvetur til Øra i 1912", *Wirwar*, 1986, 14-22. (English translations of all Norwegian sources are given in the appendix).

The fund-raising campaign went ahead splendidly. They needed about 30,000 Norwegian Kroner (NOK),² and after appeals in several newspapers they quickly managed to get that amount. The Norwegian King, Haakon VII, gave 3,000 NOK.

In Germany Dons did not have that great a time. The weather was quite bad, resulting in a queue at the pilot training school. He flew, however, several times, and already on 24 April he sent a telegram to Tank-Nielsen that just read: "All my worries have gone to hell. Get the money."³ But the weather was still a major problem, and by late May Dons was not ready to take his pilot exam. He decided to return without a pilot's certificate.

Dons had bought a Rumpler Taube, a two-seat monoplane, and had it shipped to Horten. The aircraft arrived in late May. "Kobben's" second engineer, Kristian Jacobsen Snekkestad, had been in Germany on a crash course, and was responsible for assembling the aircraft.

Dons arrived 31 May. They decided to try to fly the next day from the Gannestad field, outside Horten. At the last minute they named the aeroplane "Start".

In the early morning of 1 June 1912 Dons, without a pilot's certificate and with just a few solo-trips, seated himself in "Start". Some seamen held the aeroplane back, since it was not fitted with brakes, and one rotated the propeller so that the engine started. The next minute "Start" flew over Karljohansvern, crossed the Oslo fjord, and landed after a 35-minute flight at Øra by the city of Fredrikstad. During the flight Dons had taken his first ever turn to the right.

² The exchange rate before World War I was approximately 18 NOK to a Pound Sterling. In the rest of the period the exchange rate fluctuated more.

³ Quoted in Henriksen, *Lufforsvarets historie*, 14, author's translation, ("Mine betenkeligheter er gaat fändenivold. Skaf penge.").

Why begin a thesis about the Norwegian debate on air power doctrine and organisation – a theoretical theme – with this practical story of the first Norwegian flight? First, to stress the differences between the practice of flying and debates on air power, thus elaborating on the topic of this thesis. Second, to make a point about the available literature. These two aspects will be outlined in what follows.

The story of the first Norwegian flight is a matter of pride, and has been told elsewhere. But, a theoretical approach is necessary in order to explain the development rather than describe it. This thesis will therefore focus on the air power debate that took place in Norway in the period between 1900 to 1923. The emphasis will be less on the development of Norwegian military flight, but on the doctrinal and organisational underpinnings of that development.

It will be argued that there was extensive development of doctrinal views on air power. The inspiration for this development came first from the continent, and later from Great Britain. The concept of air power met little resistance in the military and political establishments, although none of them was particularly enthusiastic. The problems of developing Norwegian air power surfaced, however, when the question of organisation had to be solved. When the theoretical possibilities of new technology approached reality, opposition emerged.

The starting point for this thesis is around 1900. Although some had considered the use of balloons for military purposes before that,⁴ it was not until the turn of the century that some saw flight as having an influence upon military operations. The thesis ends in 1923, when a Defence Commission submitted its report on military aviation in Norway. A short epilogue will be given, so to explain the faith of the Commission's recommendations.

Two conceptions are central to this thesis: debate and doctrine.

The term debate is understood as a more or less public discussion on a subject, created against the background of disagreement. A debate or discussion demands at least two active participants, but this was not always the case. Several of the articles used as sources did not get a direct reply, but they were part of a larger debate. It follows from this that a debate has to be carried out in a public forum. This view informs the use of

⁴ Captain S. Jenssen held two addresses on military ballooning in Trondhjems Militærforening (Trondheim Military Association) in 1899, see O. Holtermann and Johs. Haanæs, "Trondhjems Militærforening", *Norsk Militært Tidsskrift*, 1/1900, 58-59.

sources. The main ones have been public documents and journal articles. The sources are outlined in an appendix.

The term doctrine is commonly used in military establishments today. NATO defines it as: "Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgement in application."⁵ In Norwegian the English term has its direct counterpart in the term "doktrine". However, the term was not used in any of the sources to this thesis. But principles for the employment and use of air power were of course debated. Although nobody referred to these discussions as a debate on doctrine that is what we would call such discussions today.

The thesis is chronologically structured, and divided into six chapters. Chapter 2 provides a brief political and military background. Chapter 3 focuses on the period before the First World War, while chapter 4 concentrates on the period of the First World War. The fifth chapter investigates the lessons learnt in Norway from that war. Chapter 6 contains the conclusion and an epilogue.

Literature

Very little is written on the subject of this thesis. Not much scholarly work has been done on Norwegian air power at all. As John H. Morrow observes in the introduction to his book on aviation before and during the First World War, most of the literature about aviation is written with such a passion for the concept of flight that the analytical perspective disappears.⁶ David Edgerton writes that almost every detail about every aircraft the British have ever flown is covered in the literature.⁷ Another aspect of military history in general is that most of it describes military development as a military concern *per se*, and fails to take into account the cultural, social and political influences on that development. As Michael Paris argues, this has been a feature of British aviation history, and the same can be said about the case of Norway.⁸ The literature is mainly of a narrative nature without any analytical perspective. A lot of the authors are by definition pro-flight.

⁵ NATO, *AJP 1(A), Allied Joint Operations Doctrine*, September 1997, Glossary-5.

⁶ John H. Morrow Jr., *The Great War in the Air. Military Aviation from 1909 to 1921*, (Shrewsbury, 1993), xiv-xv.

⁷ David Edgerton, *England and the Aeroplane. An Essay on a Militant and Technological Nation*, (Manchester, 1991), 122.

⁸ Michael Paris, *Winged Warfare. The Literature and Theory of Aerial Warfare in Britain, 1859-1917*, (Manchester, 1992), 3.

To make my point about the literature, the story about Dons and his aircraft "Start" has been told in several books and articles. You can find out almost everything about it; how the weather was; when the aeroplane was baptised etc. But hardly any of the authors makes a huge point out of *why* this flight came about. Dons and his fellow officers in the Norwegian Navy had no special interest in flying or in aeroplanes.⁹ It was the relationship between the big brother Sweden and the little brother Norway that triggered the initiative of the Norwegian Navy officers. They just wanted to beat the Swedes.

Some works have however been helpful to this thesis. Vera Henriksen has written the official history of the Army and Navy Air Arms in the period.¹⁰ It is an official history of what actually happened, and does not focus much upon the development of doctrine. Henriksen focuses on personalities, and although she shows quite clearly that the development of Norwegian aviation was a story of accidental development, she does not put this development into any bigger picture. The same can be said about an earlier book by Fredrik Meyer.¹¹ A particular debate in the period from 1912 until 1944, when the Royal Norwegian Air Force was formed was whether the two Air Arms should join in an independent Air Force. On this subject professor Olav Riste has written a short article,¹² and Bjørn Magne Smedsrud has submitted a thesis at the Royal Norwegian Air Force Academy.¹³ Both argue that the reason for not having an independent service was that the Navy opposed the idea. Fredrik Tiller's thesis on the procurement of British fighters during the Great War has been helpful, although he has looked little into the doctrinal background for the procurement.¹⁴

Rolf Hobson and Tom Kristiansen's volume three of the ongoing work on Norwegian Military History covers this period, although with little emphasis on aerial development.¹⁵ The book gives, however, a brilliant background of military development in the period. On Norwegian foreign politics, Roald Berg's volume 2 on the history of Norwegian

⁹ None of the officers involved in the procurement of "Start" was involved in military aviation on a later stage, with the temporary exception of Dons, who until 1913 flew "Start", see N. W. Arveschoug, "Norsk flyging fyller 50 år", *Norsk luftmilitært tidsskrift*, 5/1962, 160-161.

¹⁰ Henriksen, *Luftforsvarets historie*.

¹¹ Fredrik Meyer, *Hærens og Marinens flyvåpen 1912-1945*, (Oslo, 1973).

¹² Olav Riste, *Slow Take-off. The Pre-History of the Royal Norwegian Air Force, 1912-1944*, (Forsvarets Høgskole, 1985).

¹³ Bjørn Magne Smedsrud, *Luftmakt i Norge. Debatten om et selvstendig flyvåpen frem mot 1940*, Hovedoppgave Luftkrigsskolen, (Trondheim, 1998).

¹⁴ Fredrik Tiller, *Bakgrunnen for Norges kjøp av britisk flymaterieell under første verdenskrig*, Hovedoppgave Luftkrigsskolen, (Trondheim, 1997).

¹⁵ Rolf Hobson and Tom Kristiansen, *Norsk forsvarshistorie, bind 3, 1905-1940, Total krig, nøytralitet og politisk splittelse*, (Bergen, 2001).

foreign policy has been helpful, although it contains little about military questions.¹⁶ On Norwegian culture in the period, Hans Fredrik Dahl's volume on the period from 1905 to 1940 in the Norwegian history of ideas gives good insights into contemporary debate.¹⁷

To put the Norwegian debate into an international perspective, several books are available on German, French and British air power. John H. Morrow's book on military aviation from 1909 to 1921 gives a comparative overview.¹⁸ On Britain, Hugh Driver illuminates technological aspects before 1914, and shows why Britain was not the leading country in pre-war Europe.¹⁹ Malcolm Cooper gives the background for the creation of the RAF in a brilliant book on British air policy during the Great War.²⁰ David Edgerton's essay is written as an anti-thesis to the general acceptance of Britain as backward in aeronautical development. Michael Paris' splendid book on the literature and theory of aerial warfare in Britain has been a great inspiration.²¹ On Germany, Peter Fritzsche's *A Nation of Fliers* shows how German nationalism and aviation became intertwined from 1908 onwards.²² Robert Wohl's *A Passion for Wings* is an excellent more general cultural study on the development of air power, and has also inspired this thesis.²³ Wohl puts aviation and modernity in a broad cultural and ideological context in the years before and during the Great War. The same can be said about Azar Gat's *Fascist and Liberal Visions of War*.²⁴

¹⁶ Roald Berg, *Norge på egen hånd, 1905-1920, Norsk Utenrikspolitikk historie, bind 2*, (Oslo, 1995).

¹⁷ Hans Fredrik Dahl, *Norsk idéhistorie, bind V, De store ideologienes tid*, (Oslo, 2001).

¹⁸ Morrow, *The Great War*.

¹⁹ Hugh Driver, *The Birth of Military Aviation. Britain, 1903-1914*, (London, 1997).

²⁰ Malcolm Cooper, *The Birth of Independent Air Power. British Air Policy in the First World War*, (London, 1986).

²¹ Paris, *Winged Warfare*.

²² Peter Fritzsche, *A Nation of Fliers. German Aviation and the Popular Imagination*, (Cambridge, Massachusetts, 1992).

²³ Robert Wohl, *A Passion for Wings. Aviation and the Western Imagination 1908-1918*, (London, 1994).

²⁴ Azar Gat, *Fascist and Liberal Visions of War. Fuller, Liddel Hart, Douhet and Other Modernists*, (Oxford, 1998).

2 Background

A debate on air power is not committed in a vacuum. Both international and national developments formed the Norwegian debate on air power. Some of the international developments within air power doctrine will be commented throughout the thesis. This chapter will therefore give a national background in which the debate on air power took place.

The first part of the chapter will give the political background. The newly independent Norway was not struggling for power on the international scene. As a small nation on the outskirts of Europe in a steep armament period, the Norwegian authorities did their best to stay out of the way.

To understand the debate on air power in Norway, it is important to have some knowledge about the military system. The Army and the Navy operated quite independently both in military and political terms. The second part of this chapter will give a brief overview of the system.

Political background

1814-1905

Since 1814 Norway had been in a Union with Sweden. Norway had an autonomous position in the Union, and its own Constitution, Parliament, Cabinet, Army and Navy, but no Foreign Service. Parliament had control over all funding within the state. After a harsh dispute with the King, the parliamentary system was introduced in 1884.

In 1895 Norway suffered a bitter defeat when the Swedes threatened war to discipline the Norwegian authorities on a question about whom should control the Foreign Service. The Norwegians had to back down, partly because their armed forces were in no condition to fight the Swedes. This led to an increase in armaments in Norway over the next ten years, with the result that Norway entered the 1905 union crisis with both a modern Army and Navy. The break up of the union, however, ended peacefully.

Until 1914

In the first years as an independent nation, Norway prospered. The development of hydropower led to the industrialisation of more parts of the country. This created a labour force that radicalised politics. The period showed little stability, since Governments changed quite often between three political parties, Høyre,²⁵ Venstre²⁶ and Frisinnede Venstre.²⁷

The first years of Norwegian foreign policy have been characterised as: "neutralism, non-alignment and a strong taint of isolationism."²⁸ The first Norwegian Minister of Foreign Affairs, Jørgen Løvland, worked for an Integrity Treaty, by which the great powers of Europe would guarantee the integrity and neutrality of the country. Great Britain, Germany, France and Russia signed the Treaty in September 1907. Great Britain had been critical, because the Treaty could create problems for their freedom of action in the North Sea. The formal Treaty only contained a guarantee from the signatories that they would respect Norwegian *integrity*. On request, they would protect it.

Great Britain was portrayed as the implicit guarantor for Norway. Norwegians expected that Great Britain, in its own interest, would see to it that Norway, with its long coast and harbours, was not occupied by another great power. Roald Berg argues that the Norwegian security system was based upon three pillars: 1. The military, 2. International law and 3. The implicit guarantee from Great Britain.²⁹

The budgets of the Armed Forces declined after the immediate threat of war disappeared. A new plan for a modern and well-equipped Army was, however, sanctioned by Parliament in 1909, but the budgets to follow it up did not materialise. From around 1911 Venstre was forced to change their military policy, partly as a result of the strengthened anti-militarism of Arbeiderpartiet.³⁰ Arbeiderpartiet was, however, still too weak to have a major influence in Parliament. Thus, in 1912 a new Navy-plan was sanctioned. It would have modernised the Navy, but it was set back by the outbreak of the First World War, since ships being built in Great Britain for the Norwegian Navy were not released.

²⁵ Conservatives (Høyre means Right).

²⁶ Liberals (Venstre means Left).

²⁷ Moderate Liberals.

²⁸ Olav Riste, "Was 1949 a turning point? Norway and the Western Powers 1947-50", in Olav Riste (ed.), *Western Security, The Formative Years: European and Atlantic defence 1947-1953*, (Oslo, 1985), 129.

²⁹ Berg, *Norge på egen hånd*, 48, 91.

³⁰ Labour.

1914-1918

Initially, Norway followed a line of strict formal neutrality during the War. Politically the period was characterised by stability, since Venstre headed the government throughout the war. The Prime Minister from 1913 until 1920, Gunnar Knudsen, was not, however, interested in security or military questions but in social welfare. It was the Minister of Foreign Affairs, Niels Claus Ihlen, who was the important war politician. Political opposition was almost gagged, since Venstre had the majority in Parliament from 1913 to 1918.

Norway's neutrality created increasing problems as the war lengthened. From the autumn of 1916 Norway drifted towards the Allies and especially Great Britain. This has made the historian, Olav Riste, to call Norway "The Neutral Ally".³¹ Although most of the country's trade before the war had been with Great Britain, parts of the academic and cultural elite had close bonds with Germany. Norway was dependent upon import and its merchant Navy, the fourth largest in the world. The Entente saw this large fleet as a weapon in the war. The war brought Norway closer to Britain in almost all aspects of life. Defence budgets rose. The entire Navy, several fortresses and parts of the Army had been mobilised at the outbreak, and, as guarding neutrality was not an easy task, especially given the long coastline of the country, claims for higher spending were sanctioned by Parliament. A strong and somewhat non-political Minister of Defence, Lieutenant Colonel Christian Theodor Holtfodt, led the development of the Armed Forces in the period.

After the War

As the Great War ended, and the League of Nations rose out of the ashes, Norwegian politicians began fighting for and against participation. The League was used to question the need for armed forces. The Government set up a committee in 1919 to look at all aspects of Norway's Armed Forces, including total disarmament. A possible Norwegian participation in the League also challenged Norway's long tradition of isolationism, as well as the question of neutrality.

In 1920 the seven-year reign of Venstre and Gunnar Knudsen ended, and in the next four years Norway had four different Governments, since neither Høyre or Venstre could

³¹ Olav Riste, *The Neutral Ally. Norway's relations with belligerent Powers in the First World War*, (Oslo, 1965).

establish a government based on a solid parliamentary basis. The growing Arbeiderpartiet was radicalised by the Russian revolution and the establishment of the Third Communist International.

By 1921 the Norwegian economy was in major trouble, troubles that would last well into the 1930s. From 1920 to 1935 Norwegian industry was in almost constant crisis. The leading economic theory was to save in harsh times, and hence the budgets of the armed forces kept on decreasing.³²

The Defence Commission of 1920 published its views on Norwegian defence policy in several reports from 1921 onwards. The majority of the Commission rejected disarmament, thus securing the basis of the armed forces.

The Military³³

The formal head of both the Army and the Navy was the King. This arrangement was mostly formal. The political leader was the Minister of Defence, which was responsible to Parliament. Norway had formed a joint defence department as early as 1885, but this jointness did not amount to much. The only joint position in the Department was that of the minister himself; all others were placed in either of the two divisions, the Army and the Navy. Leading each of these divisions were respectively the Commanding General of the Army and the Commanding Admiral of the Navy.

The Ministers of Defence shifted quite often in the period, with the exception of the five year long reign of Lieutenant Colonel Holtfodt (August 1914 until February 1919). All of the men who held the position between 1900 and 1923, with one exception, were officers.³⁴ Some officers also were members of Parliament.

In an attempt to establish joint leadership of the armed forces, Parliament created the Commission on Defence Issues in 1900. This Commission consisted of the Minister of Defence, the Commanding General, the Commanding Admiral, the Chief of the General Staff and the Chief of the Admiral Staff. As Rolf Hobson and Tom Kristiansen have shown, the Commission did not function as planned, and had little practical value.³⁵

³² Edvard Bull, *Klassekamp og fellesskap, 1920-1945, Bind 13 av Norges historie*, (Oslo, 1978), 38, 256.

³³ This part is mainly based on Hobson/Kristiansen, *Norsk forsvarshistorie*.

³⁴ Only one of the Ministers of Defence was an officer of the Navy.

³⁵ Hobson/Kristiansen, *Norsk forsvarshistorie*, 28-29, 171.

The most important part of each of the two services was respectively the General Staff of the Army and the Admiral Staff of the Navy. Although both were formally subordinated to the Commanding Officers, they had a somewhat independent position. There were great differences between the two staffs. The General Staff had a stronger position within the Army than its counterpart in the Navy. The General Staff was also the larger: in 1907 37 officers were employed, whilst only five in the Admiral Staff. There were ongoing disputes on competence between the Staffs and their respective Commanding Officers.

The Army was also by far the larger of the two services. The structure of the Army was clearly based on what it saw as the potential threat to Norway, which was an attack from the east, most probably from Sweden. The threat from Russia was never that seriously treated in Norwegian Army circles. The Army depended heavily upon conscription and reserve officers. Only a small part of the officer corps and some non-commissioned officers held full peacetime positions. Until 1909 the Army was organised according to the plan of 1887, and consisted of five infantry brigades. The supporting arms, such as the cavalry, the artillery, and the engineers, were each led by a General Inspector, and normally organised in independent units. They were to support the infantry brigades when necessary. With the new Army Plan of 1909 the Army was organised in six combined brigades with organic support weapons. They were geographically spread throughout the country, the 6th brigade being formed in Northern Norway.³⁶ The positions of the General Inspectors of each of the Army's Arms were, however, kept.

The Norwegian Navy was faced with two questions. First, was the Navy to be a fighting Navy that was organised to attack an invading fleet or was it to guard the country's neutrality? Second, was the Navy to support the Army's threat evaluation of a possible attack from the east, or was it to prepare for a possible war in the North Sea between Germany and Great Britain? Until a new plan for the Navy was approved by Parliament in 1912, the Navy's structure was a compromise between these two scenarios. The new plan was very ambitious, partly as a result of the threat to Norway during the Moroccan crisis of 1911, when large parts of the German Fleet trained in the Norwegian fjords. The North Sea scenario was chosen as the most likely, but the Navy's structure was still a compromise between a war-fighting organisation and an armed coast guard. The plan of 1912 was never fulfilled, due to both the outbreak of the First World War, which made

³⁶ In 1916 brigade was changed to division.

the procurement of ships abroad difficult, and the lack of funding. The plan was important, though, in a doctrinal perspective, since it so clearly chose one scenario.

3 Air Power in Norway?

Although air power was new technology which had the potential to change war fundamentally, the Norwegian air power debate in this period cannot be termed speculative at all. It has not been possible to find any literature of the kind that Michael Paris has written about.³⁷ There is no Norwegian parallel to the British science fiction writer, H. G. Wells, or his book, *The War in the Air*, of 1908.³⁸

Mostly officers participated in the debate. Probably this created a debate that never contained very speculative thoughts on future warfare. Air power was mainly seen as a new means for waging the wars of yesterday.

In addition to this, most of the debate had a land and not a naval perspective, which enhanced this view of warfare. The aircraft had an inherent potential for observation, and this was therefore to be its purpose. The fighting would be done by men on the ground, not by machines in the air. As both Ståle Ulriksen and Karsten Friis have pointed out, the mental picture of the soldier as a farmer with a rifle has been very strong in the Norwegian Army.³⁹ This picture of the Norwegian as a common man and hence a common soldier who would fight in the harsh parts of Norway made it difficult to argue for one of the most important symbols of the machine age – the aircraft.

This mental picture had its opposite in the belief in modernisation. The belief in a better society and future through science, technology and the enlightenment of the people was strong. The development in communication especially inspired people's fantasies. Some even claimed that when the new communications had torn down the imaginary walls surrounding mankind, they would bring peace and prosperity to mankind, and make war impossible. As Per Fuglum points out the fascination for new technological achievements was huge, and the aircraft was among the new developments that created the largest sensations and bravest expectations.⁴⁰ In the early summer months of 1914 a huge anniversary exhibition was held in Kristiania to celebrate the 100-year-old Constitution.

³⁷ Paris, *Winged Warfare*.

³⁸ Kåre Fasting has pointed out, however, that Wells' book was published in Norwegian serials, but claims that most people did not take Wells' book that seriously, see Kåre Fasting, *Fra Kontraskjæret til Tokio. Norsk sivilflyging gjennom 50 år*, (Oslo, 1959), 36.

³⁹ Ståle Ulriksen, *Den norske forsvarstradisjonen – militærmakt eller folkeforsvar?*, (Oslo, 2002); Karsten Friis, "Forsvar og identitet: De norske friskusverdiene", in Geir Dale (ed.), *Kritiske perspektiver på norsk utenrikspolitikk*, (Oslo, 2000), 119-143.

⁴⁰ Per Fuglum, *Norge i støpeskjeen 1884-1919, bind 12 av Cappelen's Norgeshistorie*, (Oslo, 1978), 133-168.

The exhibition glorified technology and the belief in the future.⁴¹ The famous Norwegian author, Bjørnsterne Bjørnson, expressed this belief when he received the Nobel Prize for literature in 1903:

*I see the development of mankind as an endless journey on a path forward – if not in a straight line, indeed forward. An irresistible desire drives it, from the beginning by instinct alone, but afterwards more and more by purpose.*⁴²

The tension between these two views had a clear impact on the air power debate. There were three officers whose engagement in air power made them propagandists of the new weapon, Einar Sem-Jacobsen and Severin Christian Holm Simonsen of the Army, and Halfdan Gyth Dehli of the Navy. They all argued for the need to develop Norwegian air power, but were reluctant to use too speculative a vocabulary. These three men and their ideas will be discussed more closely in what follows. Thereafter the reactions from the establishment will be examined, including the arguments for and against the development of air power, before the chapter will end with a discussion on organisation.

The propagandists

Air power was in this period seen first and foremost as an instrument of observation. In most of the articles no other use of airspace was commented on or foreseen. The foremost exponent of this view was Einar Olaf Sem-Jacobsen.

Sem-Jacobsen was born in 1878, the son of a Lieutenant Colonel in the Army. He became a student in 1896, graduated from the Krigsskole⁴³ in 1899, and the Militære Høiskole⁴⁴ in 1901. He was an engineer officer of the Army, and became inspired by aeronautics quite early. He gave the first of his many lectures on air power at the Kristiania Militære Samfund⁴⁵ in 1904, the most important rostrum for military speakers in Norway.⁴⁶ In 1909 he talked about the man-lifting kites which he was in the process of constructing for

⁴¹ Karsten Alnæs, *En ny arbeidsdag. Norges historie, bind IV*, (Oslo, 1999), 63.

⁴² Quoted in Fuglum, *Norge i støpeskjeen*, 136, author's translation, ("Jeg ser menneskehetens utvikling som et endeløst tog på vandring fremover – om ikke nettopp i en like linje, så dog fremover. En uimotståelig trang driver det, fra først alene av instinkt, men etterhånden mer og mer bevisst.")

⁴³ The War Academy.

⁴⁴ The Staff College.

⁴⁵ Kristiania Military Society. Today the name of the society is Oslo Militære Samfund.

⁴⁶ "Aarsberetning for Kristiania Militære Samfund 1904", *Norsk Militært Tidsskrift*, 2/1905, 122.

Roald Amundsen.⁴⁷ In 1911 he lectured on the latest French military aircraft,⁴⁸ and he spoke on 25 March 1912, about the military use of aeroplanes.⁴⁹

Sem-Jacobsen wrote several articles on air power. The main body of them was factual, giving reports on developments in continental Europe. He also wrote articles on the technicalities of airships and aircraft, as well as articles advocating the development of Norwegian air power.

In 1909 he wrote his first of many articles on air power.⁵⁰ This article is a clear example of Sem-Jacobsen's ideas on air power before the Great War, and will therefore be used to illustrate his views. The article focused upon the military use of all the types of aerial vessels; captive balloons, free-balloons, kites, airships and aircraft.

He began the article with the negative outcome of the second Hague-conference with regards to the ban on bombardment from the air, and used this as an argument to foresee military use of the air without limitations in a coming war.⁵¹ He was of the opinion that balloons would mainly be used for signalling, reconnaissance and observation purposes. The captive balloon would be used as an observation platform for an army in the field and the free balloon for signalling from an entrenched army or city. But he concluded that the airship would take over the balloon's role as a platform for observing and signalling.

Sem-Jacobsen also commented on the problems concerning the downing of captive balloons. This was not easy with ordinary artillery guns: one had to have weapons especially constructed for this purpose. To solve this problem, however, he had an original idea. He claimed that an airship could do the job quite easily, running into the captive balloons one by one. Sem-Jacobsen here foresaw the air to air battle, although only one of the battling parties would be able to manoeuvre.

Sem-Jacobsen gave some attention to the offensive aspects of air power. He pointed out that thoughts on the offensive use of air power were strictly theoretical, since it had not yet been tried in war. He saw the aeroplane mainly as a means of observation or for the transportation of commanding officers, due to its limitation in tonnage. The airship would, however, be a terrible offensive weapon, spreading severe damage to the targets it

⁴⁷ "Aarsberetning for Kristiania Militære Samfund 1909", *Norsk Militært Tidsskrift*, 2/1910, 99.

⁴⁸ "Aarsberetning for Kristiania Militære Samfund for 1911", *Norsk Militært Tidsskrift*, 2/1912, 203.

⁴⁹ Einar Sem-Jacobsen, "Om flyvemaskiners militære anvendelse. Hvorledes bør denne branche organiseres, opsættes og utstyres med materiel hos os.", *Norsk Militært Tidsskrift*, 1912, 231-247.

⁵⁰ Einar Sem-Jacobsen, "Luftskibes militære anvendelse", *Norsk Militært Tidsskrift*, 8/1909, 505-512.

⁵¹ The second Hague-conference was conducted between 15 June and 18 October 1907. The attempts to ban bombardment from the air did not succeed.

would attack. Sem-Jacobsen had opinions on the targets too, although he did not argue for this selection. He did not see armies in the field as suitable targets. Airships would rather attack targets behind the front – the bases of the army. The targets would therefore be the enemy's seaports, his depots, his railway junctions and his fleet. In other words, Sem-Jacobsen was referring to what we today term interdiction, defined as operations "conducted to destroy, disrupt, neutralise or delay the enemy's military potential before it can be brought to bear effectively against friendly forces."⁵²

Sem-Jacobsen's view on the offensive potential of air power developed along with its technological development. Already in 1913 he suggested that there be three small units of offensive aircraft in the Norwegian air power inventory. The reasons for this suggestion were not given, however, and it is quite difficult to see what development Sem-Jacobsen's ideas had gone through to make him suggest this. One did not have to be that visionary to believe in air power's potential as an offensive weapon in 1913, but it was a great leap to put such a vision into practice by establishing three offensive units within such a small Air Arm. The Defence Department seems not to have taken the suggestion seriously, since it was no more than mentioned in their proposition to Parliament.⁵³

Sem-Jacobsen wrote about the moral aspect of air power several times. Although he seemed somewhat sceptical of air power's capacity to hit and destroy targets, he pointed out that offensive air power at least would have a great moral impact on the enemy. Troops attacked from the air – or troops who had only seen an aircraft – would be frightened, and thus do their job worse. The moral fibre within the armed forces of a country without aeroplanes, if the enemy had many, would break. Sem-Jacobsen foresaw that air power would not be a precise weapon, and used air power's long lasting but never conclusively proven argument – that bombs from the air would have a moral impact.

⁵² Royal Air Force, *AP 3000. Air Power Doctrine*, 2nd Edition, 1993.

⁵³ Stortingsproposisjon 147/1913, 15.

Sem-Jacobsen made a point of explaining that air power would bring warfare to a new dimension and that this would mean that the traditional boundaries of warfare would become obsolete. The 1909-article concluded that:

*With the airships of war the existing boundaries of military operations will vanish.*⁵⁴

Although Sem-Jacobsen claimed this, his views on the development of air power cannot be categorised as very visionary. He was, however, amongst the few Norwegians who foresaw the development of aerial bombardment as early as 1909, but he had a practical focus and seemed not to be too interested in speculations about the future. It could be that this lack of vision about future developments stemmed from a wish not to emphasise air power's possible contribution to warfare. Too visionary ideas could lead to a lesser impact in the defence community.

Sem-Jacobsen was most definitely the person writing on air power who reached the broadest audience. Although most of his articles were published in the *Norsk Militært Tidsskrift*,⁵⁵ and most of his speeches were probably given to military audiences, he wrote for other journals as well. When the *Norsk Luftseiladsforening*⁵⁶ began its journal, *Luftseilads*,⁵⁷ in 1910, Sem-Jacobsen was the most frequent contributor. The same year he also wrote a series of articles for *Teknisk Ukeblad*,⁵⁸ a magazine that focused on technical development, and had a wide audience throughout the country.⁵⁹ These richly illustrated articles is quite an impressive run-through of all the different types of airships. In addition to his writing, he addressed different audiences throughout the country. Sem-Jacobsen spoke at least twice to the Polytechnic Association, the foremost technological association in Norway.⁶⁰

⁵⁴ Sem-Jacobsen, "Luftskibes militære anvendelse", 510, author's translation ("Med krigsluftskibene utslettes således de nuværende grænser for militære operationer.").

⁵⁵ Norwegian Military Journal.

⁵⁶ Norwegian Aeronautical Association.

⁵⁷ Aeronautics.

⁵⁸ Weekly Technology.

⁵⁹ Einar Sem-Jacobsen, "Moderne luftskibes brukbarhet og anvendbarhet", supplement to *Teknisk Ukeblad*, 1910.

⁶⁰ 6 April 1909 he spoke on the development of flight in the Polytechnic Association. The address mainly dealt with the technological development, and is thus not that important to this thesis. Parts of the address is given in Fasting, *Fra Kontraskjæret til Tokio*, 18-20.

When H. Aschehoug published a six volume monumental encyclopaedia from 1907 until 1913, Sem-Jacobsen was the expert on aerial subjects.⁶¹ The historian Hans Fredrik Dahl has termed this a pioneering encyclopaedic work written by the foremost experts in all fields of knowledge in Norway.⁶² This suggests that Sem-Jacobsen was not only the foremost expert on these issues, but also known to be that.

The government also used Sem-Jacobsen several times as an expert on air power. He also assumed this role with the General Inspector of the Engineering Arm on several occasions. As such, Sem-Jacobsen had a great influence on Norwegian aerial policy at several levels of government. Since the Defence Department was the body that was to evaluate the proposals from the different General Inspectors, Sem-Jacobsen had a dual role both as the one who proposed new ideas and as an evaluator of the ideas of others.

Sem-Jacobsen became the central aerial pioneer in the Army. He flew in the first captive balloon at Fredriksten in 1906, and took the initiative to form the Norsk Luftseiladsforening in May 1909, becoming its secretary and definitely most eager member for the next ten years.⁶³ He qualified as a certified balloon pilot in 1910. With his own funding he was educated as an aeronautical engineer in Paris in 1911. He was one of four officers who got a scholarship from the government to become a pilot in 1912, obtaining the international flying certificate on 21 July 1912. He became the main developer of the Norwegian Army Air Arm from 1912 onwards, and served as Chief of the Army Air Arm Technical Branch and the Aircraft Factory at Kjeller.⁶⁴

Sem-Jacobsen was a stubborn and short-tempered man. This was combined with loads of enthusiasm on air power matters and plenty of ideas about the development of Norwegian air power. Norwegian bureaucracy would disappoint him on several occasions, and, as he protested quite loudly, his influence slowly degraded.⁶⁵

⁶¹ Haakon Nyhus (ed.), *Illustrert Norsk Konversations Leksikon*, six volumes published by H. Ascheoug & Co. (W Nygaard), (Kristiania, 1907-1913).

⁶² Dahl, *Norsk idéhistorie*, 138.

⁶³ The pioneer years of the Norsk Luftseiladsforening and Sem-Jacobsen key role within that organisation is described in Fasting, *Fra Kontraskjæret til Tokio*, 1-200.

⁶⁴ Sem-Jacobsen wrote about these innovative years, see Einar Sem-Jacobsen and Odd Arnesen, *Til veirs på norske vinger. Av flyvningens historie i Norge*, (Oslo, 1930).

⁶⁵ Amongst others, Sem-Jacobsen was very disappointed and wrote a lengthy letter threatening to leave the Army to the Defence Department when they nominated his fellow airman, Henrik Thaulow, as the first Chief of the Army Air Arm Tactical Branch on 15 August 1913. This happened in spite of the fact that Sem-Jacobsen from January 1913 temporarily had been appointed Chief at the air base at Kjeller, which meant that Sem-Jacobsen led military flight in the Army.

Sem-Jacobsen visited Germany for aeronautical purposes both in 1909 and 1910. In 1909 he flew as a passenger with Orville Wright. He also visited Italy, in 1911 he was at an aeronautical exhibition in Torino.⁶⁶ Despite this, he seems to have been most interested in the development in France. The obvious reason for this was that France was the leading nation with regards to aircraft before 1914. Sem-Jacobsen visited France several times - in 1911 he attended the famous military aircraft competition in Reims.⁶⁷ He also represented the Norsk Luftseiladsforening at the international conference arranged by FAI (Fédération Aéronautique Internationale) in Paris in October 1910.⁶⁸ It was respectively Parliament, which awarded Sem-Jacobsen a small scholarship to study air power, and the Norsk Luftseiladsforening that paid for these trips.

Sem-Jacobsen's impact on the ideas of air power in Norway was quite large. He was the central figure, in the military and at the political level as an adviser, and he influenced public opinion through his works in the encyclopaedia and also in other popular writings. His sobering influence was probably one of the reasons why the Norwegian air power debate never took the speculative form it did in other countries. The historian Kåre Fasting has indeed described Sem-Jacobsen as a "sober enthusiast".⁶⁹ Although he was extremely enthusiastic about the development of manned flight, he did not fantasise about it.

The other Army officer who wrote extensively on air power in this period was Severin Christian Holm Simonsen. He spent his entire military career in the Fortress Artillery Arm. Like the Engineering Arm, this was not an Arm that led to high-ranking commands.⁷⁰ He became an officer in 1901, and was thirty years old and a First Lieutenant when he began writing about air power issues in 1906. In 1907 he visited Germany, most probably on a study trip in an aeronautical context, and witnessed tests with different types of balloons.⁷¹ From 1906 to 1910 Holm Simonsen wrote on air power

⁶⁶ Ibid, 19-20.

⁶⁷ Einar Sem-Jacobsen, "Militære aeroplaner. Fra konkurransen i Reims 1. oktober - 15. november 1911", *Norsk Militært Tidsskrift*, 1/1912, 37-65.

⁶⁸ Karl J. F. Engelstad, "Foreningsmeddelelser, Norsk Luftseiladsforening", *Luftseilads*, 6/1910, 24.

⁶⁹ Fasting, *Fra Kontraskjæret til Tokio*, 19.

⁷⁰ In 1917 non-of Norway's 12 generals was a fortress artillerist. Of the colonels, only two out of thirty were from this arm, and amongst a total amount of 39 lieutenant colonels, only 5 were fortress artillerists. See Forsvarsdepartementet, *Militærkalender for den norske Hær og Flaate 1917*, (Kristiania, 1917), 167-169.

⁷¹ Severin Christian Holm Simonsen, "Militær luftseilads", *Luftseilads*, 4/1910, 15.

and other technological issues of war. Three articles on air power were published in 1906-07 in the *Norsk Militært Tidsskrift*. He was the first to write on military aviation in *Luftseilads* in 1910.⁷² In addition, he wrote about other technological developments and how they would influence warfare.⁷³ He also gave addresses on these matters. On 21 December 1909 he conducted a discourse on military aeronautics in the *Norsk Luftseiladsforening*.⁷⁴ Near the end of 1910 or the beginning of 1911 he delivered another lecture at the *Bergen Militærforening*⁷⁵ where he again talked about the influence of air power on warfare.⁷⁶

Holm Simonsen probably wrote the first article written by a Norwegian to comment on the offensive potential of air power in 1906.⁷⁷ He saw air power mainly as a platform for observation- and reconnaissance. In this rather visionary article he was probably the first to use the term air power,⁷⁸ and claimed that technological development would lead to air power becoming as influential as land and sea power. He focused on the use of the airship as an offensive weapon, and used experiments in France on bombardment from the air to underline this argument. Airships were able to carry explosives that could be thrown against targets on the ground, and they would therefore be used for such a purpose. Holm Simonsen argued that this was a temporary problem. The main point of the article was, however, that air power had come of age with the invention of the airship, especially as a means of observation.

In 1909 Holm Simonsen wrote a lengthy article which was published over four editions of the *Norsk Militært Tidsskrift*.⁷⁹ The article dealt with the development of fortress guns and tried to evaluate which types of guns would be used in the future. Holm Simonsen named one section air power. He pointed out that aircraft could now be a possible target for the guns of a fortress. He also stressed that the future lay in the airship. Holm Simonsen again argued that the main use of airships would be for observation purposes, but referred to tests in both France and Germany to conclude that they would also be used

⁷² *Ibid.*

⁷³ Severin Christian Holm Simonsen, "Hvilken indflydelse bør en rationel utnyttelse av den moderne teknik øve på vort infanteris organisation?", *Norsk Militært Tidsskrift*, 7 and 8/1908; Severin Christian Holm Simonsen, "En oversigt over fæstningsskytsets udvikling i de senere år. Hvilke skytstyper bør nu fortrinsvis komme til anvendelse på fæstningernes land- og sjøfronter", *Norsk Militært Tidsskrift*, 4, 5, 6 and 7/1909.

⁷⁴ Engelstad, "N. L. Foreningsmeddelelser", *Luftseilads*, 1/1910, 4.

⁷⁵ Bergen Military Association

⁷⁶ "Bergens militærforening", *Norsk Militært Tidsskrift*, 12/1911, 746.

⁷⁷ Severin Christian Holm Simonsen, "Aeronautikens indflydelse på fremtidens krigføring", *Norsk Militært Tidsskrift*, 1906, 653-662.

⁷⁸ In Norwegian "luftmakt".

⁷⁹ Holm Simonsen, "fæstningsskytsets udvikling i de senere år."

for offensive purposes. He also mentioned the conclusion of Major Gross, head of the Prussian airship battalion, that Germany must now develop its own anti-aircraft artillery. Holm Simonsen concluded the article with:

*In other words, the modern Air Force engages itself not only in the observation and reconnaissance missions, but also in the provision of weaponry that can be used from the airships.*⁸⁰

Holm Simonsen repeated this message in an address in the Norsk Luftseiladsforening in December 1909. He concluded the address with his more general view on air power:

*"The development of military aeronautical vessels will most likely lead to no fundamental change in the steady development of warfare."*⁸¹

This quotation in many ways sums up Holm Simonsen's writing on air power in the period. Although he was the first Norwegian officer to write about air power's offensive potential, his arguments were somewhat ambiguous. He claimed that air power would alter the course of modern wars, but he still saw it mainly as a new method to fight old wars. The two quotations above show Holm Simonsen's ambiguity. If air power was more than simply a support weapon for the purpose of reconnaissance and observation, it is difficult to see that it was just another technological feature in "the steady development of warfare". If one looks at Holm Simonsen's technological views he may be called a visionary. But these visions about the future did not inspire him to go beyond the view that air power was just another tool for the wars of his days. In his 1910 article, he therefore claimed that "...in this context one has to stick to the present, not to what a near or distant future might bring."⁸²

⁸⁰ Ibid, 449, author's translation, ("Det moderne luftskippervæsen befatter sig med andre ord ikke alene med observations- og opklarings-tjenesten, men også med at tilvejebringe kampmidler der kan benyttes fra luftskibene.").

⁸¹ Engelstad, "N. L. Foreningsmeddelelser", 4, author's translation, ("Noget brud paa krigsvidenskabens jevne udvikling vilde militærluftskibenes udvikling neppe antages at forårsake."). The address was printed, see Holm Simonsen, "Militær luftseilads", *Luftseilads*, 3, 4, 5, 8, 9 & 10/1910, 9-10, 14-15, 19-20, 31-32, 33-34.

⁸² Ibid, 14, author's translation, ("...ti her gjælder det først og fremst at holde sig til nutiden og ikke til hvad en nærmere eller fjærmere fremtid muligens vil komme til at bære i sit skjød !").

Holm Simonsen followed international developments quite closely, and he was most influenced by German developments. He referred German publications several times, and only on a few occasions British ones.⁸³ He was a strong believer in the airship as the best platform for military use of airspace, a belief common in Germany in this period.

Holm Simonsen seems never to have had any practical knowledge of flight. He was selected as a reserve when the Norsk Luftseiladsforening was about to educate two balloon pilots in 1910, but he probably never obtained the certificate.⁸⁴ Shortly thereafter he moved to Bergen, and apparently he then left the aeronautical environment. At least he appears to have stopped writing and lecturing about these issues around that time.⁸⁵

It is not easy to say what impact Holm Simonsen's ideas had in Norway. He could be considered a technocrat – at least fascinated by new technology – and may therefore not have been that influential. When looking at the debate on both defence politics and military doctrine in this period in Norway, the lack of a technological focus is striking.

Halfdan Gyth Dehli was the only Navy officer to write extensively on air power before 1914.⁸⁶ The bulk of his articles was printed in the Norsk Tidsskrift for Søvesen⁸⁷ and was of a technological nature.⁸⁸ He had studied Physics and Electronics in Paris in 1904/1905 and again in 1906/1907, the latter at L'Ecole d'application du génie Maritime.⁸⁹ He obviously had a profound interest in the technology of flight, and this led him to get an officer scholarship to study at the L'Ecole supérieure d'Aéronautique et de Construction mécanique in 1910-1911.⁹⁰

⁸³ He referred to books by Major Balck (*Taktik*), Major Schmiedecke (*Die Verkehrsmittel im Kriege*), Major Mödebeck (*Taschenbuch für Flugtechniker und Luftschiffer*) and Major von Parceval (*Motorballon und Flugmaschine*). He also referred to journals like "Zeitschrift für Luftschiffahrt und Physik der Atmosphäre", "Militär Wochenblatt" and "Kriegstechnische Zeitschrift". The British references were to the "Journal of the Royal United Service Institution" and to "The Journal of the Royal Artillery".

⁸⁴ Engelstad, "N. L. Foreningsmeddelelser", 4

⁸⁵ The reason for this sudden stop in engagement is not known. Holm Simonsen had left the south-eastern part of Norway, where the most intellectually stimulating aerial environment in Norway was developing, and this could be the reason. By 1917 he had not advanced beyond captain, and was still a commander of a fortress artillery company in Bergen, see Forsvarsdepartementet, *Militærkalender 1917*, 130.

⁸⁶ Personal details from Bj. Keyser Barth, *Norges militære embedsmenn*, (Oslo, 1930), 114.

⁸⁷ Norwegian Naval Journal.

⁸⁸ See for instance, Halfdan Gyth Dehli, "Prisopgave. Luftskibsteknik", *Norsk Tidsskrift for Søvesen*, 1910, 1-24; Halfdan Gyth Dehli, "Flyvemaskiners fremskridt i 1909 og deres nuværende standpunkt", *Norsk Tidsskrift for Søvesen*, 1910, 74-89; Halfdan Gyth Dehli, "Aéroplaners teori og konstruksjon", *Norsk Tidsskrift for Søvesen*, 1911, 302-310, 349-362.

⁸⁹ A school in practical maritime engineering.

⁹⁰ The first school for educating engineers on aeronautics in the world.

The technical articles written by Gyth Dehli do not contain doctrinal views, and are therefore not that interesting for this thesis. What is shown through them, though, is that he was up to date with international developments, especially in France.⁹¹

He also held, however, views on air power doctrine. An article printed in November 1910 summarised how the French had used airships and aeroplanes during an exercise conducted from 9 to 18 September 1910.⁹² Aeroplanes and airships had shown their importance for military operations within three areas: 1. Carrying orders or information; 2. Observation and reconnaissance; and 3. Spotting for artillery. Gyth Dehli concluded with his main view on air power:

*...We will however state that it is too early to make any assumptions or have hopes that airships or aeroplanes will have any other role in a war than carrying orders and conducting reconnaissance.*⁹³

Gyth Dehli's engagement with air power had a practical outcome. He was educated as a pilot on a scholarship from Parliament at the Farman pilot school in 1912, became the first Chief of the Navy Air Arm in 1914, and the Director of the Navy Aircraft Factory in 1917. In 1919 he left the aeronautical milieu of the Navy, as he began three years of service in the Admiral Staff. He left the Armed Forces in 1922. He was also involved in one of the first attempts to establish a civil aviation firm in Norway, as he was Technical Director of the "Norsk Luftfartsrederi" in 1919-1920.

Gyth Dehli falls into the same category as Sem-Jacobsen and Holm Simonsen as a thinker on air power. He was not willing to speculate on the future of air power, and stated that one had to concentrate on what air power could already do. Having said that, he was convinced that military commanders would benefit tremendously from having such a capacity for observation.

⁹¹ The same point is made by a series of short news articles that he wrote regularly from around February 1910, see for instance Halfdan Gyth Dehli, "Flyvemaskiner", *Norsk Tidsskrift for Søvesen*, 1910, 129-130; Halfdan Gyth Dehli, "Om luftseilads", *Norsk Tidsskrift for Søvesen*, 1910, 277-278; Halfdan Gyth Dehli, "Enkelte nye aeroplantyper", *Norsk Tidsskrift for Søvesen*, 1911, 50-55.

⁹² Halfdan Gyth Dehli, "Luftskibes og aeroplaners anvendelse under militære operasjoner", *Norsk Militært Tidsskrift*, 11/1910, 666-668.

⁹³ *Ibid*, 668, author's translation, ("...men vi vil dog ikke undlate at fremholde, at det endnu er for tidlig at gjøre sig noget håb om at luftskiber eller aeroplaner skal ta anden aktiv del i krigførselen end som ordreoverbringere og rekognoscører.").

Continental Influence

German and French thinking mainly influenced the officers writing about air power issues in the period. German and French were the second languages of Norwegian officers. In the public schools and at the University in Oslo, German was the foremost second language.⁹⁴ In the military, however, it was French.⁹⁵ The concrete references point towards the continent, except for a few British ones, and the literature in the library of the General Staff was of French and German origin.

The Library of the General Staff was the central library and reference for officers writing on military matters. It had a profound continental approach, and the bulk of the literature was of French, Austrian and German origin. By June 1912 the library had 28 books on air power. Of these 28 books, 16 were published in Germany, 11 in France and the last was the Norwegian Army's directive for its captive balloon.⁹⁶

This orientation was not unusual in Norway in the period. French was still in many ways the language of the elite, and parts of the officer corps still lived in this tradition. It was stated in the 1901-plan for the War Academy that: "...it is unfortunate if there is anyone amongst the officers of the Army who does not have any knowledge of the French language."⁹⁷

At the same time German influence upon the Norwegian military was clear. As in other parts of society, such as engineering, the Army learned from Germany. The most important military strategist in Norway during this period was Gudmund Schnitler. Schnitler became famous for his book on the Great War which first was published in 1924,⁹⁸ and later translated into German, Dutch, French and Danish.⁹⁹ He had also written

⁹⁴ Dahl, *Norsk idéhistorie*, 42.

⁹⁵ Norwegian officers mastered several languages. At least that was the case for the officers of the General Staff. As early as 1850, one had to master German and French, and have knowledge of English, to become an adjutant of the second class in the General Staff, see M. Haffner, *Generalstabens 1814-1914*, (Kristiania, 1914), 69.

⁹⁶ In 1908 a catalogue was published on the contents of the library, see Generalstabens, *Katalog over Generalstabens bibliotek*, (Kristiania, 1908). In addition the *Norsk Militært Tidsskrift* published lists with new titles in each quarter of the year.

⁹⁷ Quoted in Hans P. Hosar, *Kunnskap, Dannelse og Krigens Krav – Krigsskolen 1750-2000*, (Oslo, 2000), 173, author's translation, ("...lidet heldigt, om der inden Armeens fastlønnede Officerskorps skulde være nogen, som ganske savnede Kjendskab til det franske Sprog.").

⁹⁸ Gudmund Schnitler, *Verdenskrigen: 1914-1918*, (Kristiania, 1924).

⁹⁹ Gudmund Schnitler, *Der Weltkrieg 1914-1918*, (Berlin, 1926); Gudmund Schnitler, *De Werelderloog (1914-1918)*, (Den Haag, publishing year unknown); Gudmund Schnitler, *La guerre mondiale 1914-1918*, Ed. française par L. Koeltz, (Paris, 1928); Gudmund Schnitler, *Verdenskrigen 1914-1918*, (København, 1939).

a book on Moltke d.e. in 1896.¹⁰⁰ Besides being a historian, Schnitler was also a strategist. In 1911 he published his book on strategy.¹⁰¹ It appeared in a revised edition in 1914.¹⁰² It was clearly influenced by contemporary German thought, and was received well within the Norwegian Armed Forces.¹⁰³ It was used as *the* book on strategy in the courses of the Staff College at least until the 1930s. His obituary stated that he "...had exercised an exceptional influence upon several classes in the Staff College".¹⁰⁴ Schnitler himself served almost his entire military career in the General Staff, and taught history and strategy at the Staff College from 1903 to 1925. Schnitler also travelled a lot. He had been studying for several years in Vienna, Berlin, Copenhagen and Paris, and he had also served with the German General Staff for two years, and spent half a year at the German Military Academy.¹⁰⁵

The small Norwegian air power environment before the Great War mirrored the German and French influence. Holm Simonsen followed most of his contemporary colleagues in the Army and found inspiration from Germany. This is shown in his belief in the airship as the platform for air operations. Whether it was the fascination for the airship that drove him towards Germany or vice versa, is a chicken and egg matter. Sem-Jacobsen and Gyth Dehli believed in the aircraft as the primary platform for air power. Thus they were inspired by, and came under the influence of French solutions. Time was passing out on Holm Simonsen's view. The airship was very expensive, and thus almost unrealistic that a small country like Norway could have some. The aeroplane, as in most other European countries, was the preferred machine.¹⁰⁶

¹⁰⁰ Gudmund Schnitler, *Moltke*, (Kristiania, 1896).

¹⁰¹ Gudmund Schnitler, *Strategi*, (Kristiania, 1911).

¹⁰² Gudmund Schnitler, *Strategi*, (Kristiania, 1914).

¹⁰³ H. D. Lowzow, "Strategi. Av avdelingschef i generalstaben, major Gudmund Schnitler" (Bokomtale), *Norsk Militært Tidsskrift*, 11-12/1914, 617-620.

¹⁰⁴ "Oberst Gudmund Schnitler" (nekrolog), *Norsk Militært Tidsskrift*, 1925, 778.

¹⁰⁵ Schnitler got a scholarship from Parliament and served in Germany, with both the General Staff and the War Academy from November 1898 to October 1900. See Haffner, *Generalstaben*, 165-166; Nanna With (ed.), *Illustrert biografisk leksikon over kjendte norske mænd og kvinder*, (Kristiania, 1916), 796.

¹⁰⁶ Wohl, *A Passion for Wings*, 97.

The Response from the Establishment

The three officers did not meet with enthusiasm from the established elements of Norway's military and political system.

As Rolf Hobson and Tom Kristiansen point out, a small group ran Norway's defence.¹⁰⁷ The men of this group almost alternated between the most influential positions, both in politics and in the military. The leading defence politicians were without exception officers, and the main body of the Defence Department was all officers. This created an environment of agreement in defence policy, which was inherently conservative. For analytical purposes, however, the response from the establishment will be separated in two bodies. The military, represented by the General and Admiral Staff, and politics, represented by the Defence Department and Parliament, with special emphasis on the Military Committee.

The Military

The General Staff seems not to have been particularly interested in air power in the period. Only one of the writers on these issues was a General Staff Officer. In 1913 and 1914 First Lieutenant Edvard Samuel Larsen Os, an aspirant in the Staff, wrote two short articles on air power in the wars in Tripoli and the Balkans.¹⁰⁸

The story of the General Staff is not yet written, but it will briefly be described, so as to explain why it could be claimed to be a self-recruiting conservative organism. Until 1912 the mission of the General Staff was based on regulations established in 1872. The Staff was to be the main think-tank of the Army. Although it was not specifically requested to follow international military developments, this was nevertheless one of its goals. It seems, however, that the General Staff and the officers working there were not the ones who were in the forefront of development.

In an organisational plan of 1900 the Staff had a total of 33 officers, of whom 12 were aspirants. In 1911 this number was increased to 41, of whom 14 were aspirants.¹⁰⁹ The General Staff was based on the system of passage, and the career system of the Staff had five levels. Between each level the officers served with their regular arms in the Army. The officers of the Staff took precedence over the officers in the rest of the Army, and

¹⁰⁷ Hobson/Kristiansen, *Norsk forsvarshistorie*, 71.

¹⁰⁸ E. S. L. Os, "Krigen i Tripolis. Erfaringer angaaende anvendelse av luftfartøier", *Norsk militært tidsskrift*, 3-4/1913, 163-177; E. S. L. Os, "Flyvemaskiner under Balkankrigen", *Norsk militært tidsskrift*, 3/1914, 138-152.

¹⁰⁹ C. F. Moe, "Hærens generalstab i 150 år", *Norsk Militært Tidsskrift*, 5/1964, 338-339.

officers who had served in the Staff manned almost all important positions in the Army.¹¹⁰

To become an officer of the General Staff one had to be a graduate from the Staff College. Normally the top 50 % from a class were considered as aspirants.¹¹¹ The aspirants served for four years, in all departments of the Staff. After serving as aspirants, the officers went back to positions in their own Arms, and waited for a vacant position as adjunkt, the next level in the Staff. This was also held for four years. When the 4 years as adjunkt was over, the General Staff Officer exam was held. After passing this exam, he became a captain, and was qualified to be Chief of Staff at one of the six Norwegian Army brigades or a captain in the General Staff.

The officers of the Staff were recruited not only from within the system of the Army, but also from within the system of the General Staff itself. The eight years of service in the Staff to become a General Staff Officer were formative for the young officers. Since the ones running the Staff were the ones educating and qualifying new members for their own organisation, the organisation became a near perfect self-recruiting oligarchy.

One of the reasons why the General Staff did not involve itself in air power matters could be that the organisation did not encourage creative young officers to look into matters of new technology. Gudmund Schnitler had for instance no chapter on air power in his book on strategy, published in 1911. In his revised edition published three years later, an amended chapter dealt with air power, but Schnitler saw it only as a means for observation and reconnaissance. The aerial battle was mentioned, but the offensive potential of air power was not.¹¹²

Although the General Staff or its personnel did not take the initiative in the development of air power in Norway, the picture is somewhat qualified by the fact that the General Staff made statements on air power matters on several occasions from 1909 onwards. These statements came, however, as answers to specific questions from, for instance, the Defence Department. The responses from the General Staff were not always negative towards air power; they were simply answers to questions they had received.

¹¹⁰ Of Norway's 13 Army Generals in 1917, 10 were or had been officers of the General Staff.

¹¹¹ Of the officers enlisted as aspirants in a twenty year period, only two was enlisted with lower grades than the average for the Staff College, see Moc, "Hærens generalstab", 343-344.

¹¹² Schnitler, *Strategi* (1914), 271-274.

As with the General Staff, the Admiral Staff was not in the forefront of development. There was only one officer writing on air power in the Admiral Staff, Edgar Otto. He wrote a prize-winning article on air power in 1910. The Norwegian Admiral Staff was a lot younger and smaller than the General Staff was. It had been established in 1899, and in 1908 it consisted only of six officers. The Admiral Staff was to give advice and pursue planning with special emphasis on defence and mobilisation plans, organisation and exercises.¹¹³ The history of the Admiral Staff has also not been written. But the main points made about the General Staff are probably as valid for the Admiral Staff.

The Norwegian General Staff thus played quite a different role in the development of Norwegian air power than was the case in Germany and Austria-Hungary. As John H. Morrow has shown, the German General Staff, and its counterpart in Austria-Hungary, put a constant pressure upon its governments to develop air power in the years before 1914. In those countries it was the political authorities that were sceptical.¹¹⁴ In Germany the War Ministry's view on air power changed in 1912, possibly as an effect of the Morocco crisis in 1911 and the Balkan-wars in 1912. In Austria-Hungary this change never occurred, being the main reason for that country's unpreparedness in air power when the war began. In Norway, the situation was somewhat opposite. As will be shown, it was the Defence Department that engaged first in the matter, in 1909.

Although the General and Admiral Staff was slow regarding the development of the new air weapon, some high-ranking individual officers showed a special interest in air power. The foremost of those was Haakon Ditlef Lowzow. His engagement as a Minister of Defence is covered in the next paragraph. Towards the end of 1911, he served as the General Inspector of the Cavalry, and proposed to the Defence Department that Norway should educate pilots immediately. In October 1911 the Commanding Admiral, Karl Friedrich Griffin Dawes, sent a proposal to the Defence Department recommending the purchase of an aircraft and the education of pilots. This was also a part of his initial proposal for the new plan for the Norwegian Navy, the so-called Fleet-plan of 1912, but when the proposal became policy, air power was not part of it.¹¹⁵

¹¹³ Christian Meyer, "Den norske flaae. 1808 til nu", in Abel, Fr. (ed.), *Den Norske Hær og Flaate*, (Oslo, 1914), 154.

¹¹⁴ John H. Morrow, *Building German Air Power, 1909-1914*, (Knoxville, Tennessee, 1976), 115-117.

¹¹⁵ Henriksen, *Luffforsvarets historie*, 20.

When the Norsk Luftseiladsforening was formed at a meeting in Oslo in May 1909, Lieutenant General Christian Wilhelm Bredal Olsøn became its deputy chairman.¹¹⁶ Olsøn was at that time General Inspector of the Fortress Artillery Arm. The year after General Olsøn left the position, but was followed by Major General Johan Christopher Ræder, then the General Inspector of the Engineering Arm. It seems, however, that neither of the two Generals was that active in the work of the Association. General Ræder had, however, as a part of his proposal regarding the restructuring of the Engineering Arm in connection to the Army Plan of 1909, proposed to establish a military ballooning unit within that Arm.¹¹⁷

That the military establishment in Norway was not that interested in the development of military flight needs also to be qualified by the fact that the two central journals within the military showed interest in the matter. Both the Norsk Militært Tidsskrift and the Norsk Tidsskrift for Søværnen printed articles on air power issues.

In addition the yearly article prize contest in the Norsk Militært Tidsskrift was used to inspire officers to write on air power. The committee that suggested the titles was formed by the Kristiania Militære Samfund, and constituted of high-ranking officers from different Arms.¹¹⁸ Each year the contest was announced in the Norsk Militært Tidsskrift. The committee suggested between 15 and 30 titles. The first time air power was suggested was in 1905, when the committee proposed the following title: "Should a balloon service be a part of the Army, and if so, how should such a capacity be organised?"¹¹⁹ In 1906 this title was repeated. In 1909 the committee again suggested an air power theme: "Shooting from and against balloons and airships".¹²⁰ The title suggests that the committee saw a possible offensive weapon in air power as early as 1909. This title suggestion was repeated in the announcement of the prize contest both in 1910 and

¹¹⁶ Leif Feiring, "Omkring den første utvikling av Hærens flyvåpen", *Norsk luftmilitært tidsskrift*, 1957, 278.

¹¹⁷ Stortingsproposisjon 50/1909, 141.

¹¹⁸ As an example, the committee in 1912 consisted of the following members: Major General Lowzow (General Inspector of the Cavalry Arm); Major General Bull (Commandant at Akershus Fortress and the 2nd Combined Brigade); Colonel Færden (Commandant of the 1st Field Artillery Regiment); Lieutenant Colonel Munthe (Commandant of the Valdres Infantry Battalion); and Lieutenant Colonel Sejersted (Head of the Communications Department in the General Staff).

¹¹⁹ "Det militære tidsskrifts prisoppgaver for 1905", *Norsk Militært Tidsskrift*, 2/1905, 128, author's translation, ("Bør ballontjeneste optages i vor arme og i bekræftende fald, hvorledes bør denne tjeneste anordnes?").

¹²⁰ "Det militære tidsskrifts prisoppgaver for 1909", *Norsk Militært Tidsskrift*, 2/1909, 126, author's translation, ("Skytning fra og mot ballonger og luftskiber.").

1911, although aeroplanes had been added to the text by 1911.¹²¹ In 1913 three of the suggested 18 titles were on air power.¹²² One or several titles on air power continued each year also after 1913, but it was not until 1922 that an officer delivered an article on air power.¹²³ First Lieutenant Einar Haganes wrote on the development of the Army Air Arm.¹²⁴ In the Army, most officers sending in articles were officers of the General Staff. The lack of articles on air power in the contest enhances the argument that the General Staff was not very interested in air power matters.

The Norsk Tidsskrift for Søværnen also had an article prize contest. From 1911 until at least 1917 the committee suggested the following title: "What influence will airships and aeroplanes have on our Navy?"¹²⁵ It seems as though nobody replied to the challenge from the committee, although Halfdan Gyth Dehli had submitted an article on air power to the contest already in 1909, without winning an award.¹²⁶ The year after Captain Edgar Otto of the Admiral Staff also delivered an article on "Aeronautics and the Navy", and earned a silver medal.¹²⁷

Why then did the pilots not write articles? As shown, the first Norwegian pioneers did, but the next generation of airmen did not. Such a question can have only speculative answers, but the breed of men joining up for the first pilot training courses of the Army and Navy were definitely not academics. As an example, Tancred Ibsen, a Lieutenant within the Army, and grandson of both Bjørnsterne Bjørnson and Henrik Ibsen, joined the pilot school at Kjeller in 1917. Ibsen later became a famous film director, and wrote his autobiography.¹²⁸ Reading it, one is struck by the fact that the only thing Ibsen writes about his military career is his adventures. There are details about his record-breaking flights, his trip to Trondheim over the mountains, his first looping-the-loop and his first Immelmann. The book says almost nothing about military pilot training. This could be due to several reasons. It could be that Ibsen, thinking such stories would be too boring,

¹²¹ "Det militære tidsskrifts prisoppgaver for 1910", *Norsk Militært Tidsskrift*, 2/1910, 105; "Det militære tidsskrifts prisoppgaver for 1911", *Norsk Militært Tidsskrift*, 3/1911, 176, ("Skytning fra og mot ballonger, luftskiber og flyvemaskiner." ["Shooting from and against balloons, airships and aeroplanes"]).

¹²² "Norsk militært tidsskrifts prisoppgaver for 1913", *Norsk Militært Tidsskrift*, 3-4/1913, 222-223.

¹²³ Christophersen, *Norsk Militært Tidsskrift 1830-1930*, 209-222, gives an overview of all articles found worthy of a medal.

¹²⁴ The article was awarded with the silver medal, see Einar Haganes, "Giv en fremstilling av flyvevåbnets virksomhet under hærens operasjoner og kamp. Hvorledes bør dette våben søkes utviklet hos os?", *Norsk Militært Tidsskrift*, 1922, 324-380, 399-419, 455-466, 519-528, 587-597.

¹²⁵ Author's translation, ("Hvilken betydning vil luftskibe og flyvemaskiner faa for vort sjøforsvar?").

¹²⁶ Gyth Dehli, "Prisoppgave. Luftskibsteknik".

¹²⁷ Unfortunately, it has not been possible to find this article.

¹²⁸ Tancred Ibsen, *Tro det eller ei [Believe it or not!]*, (Oslo, 1976).

did not write about them. Or it could be that life in the Army Air Arm was seen as an adventure, risking one's life in the hunt for the skies. The answer may lie somewhere between these two hypotheses. What is quite certain is that men like Tancred Ibsen, did not write articles on air power development or doctrine. If the men of the early days of Norwegian military flight were of Ibsen's breed, no wonder that there was not much thought on the development of doctrine or strategy within the Air Arms.

The Political Response

When Minister of Defence Lowzow, at that time a Lieutenant Colonel in the Army, forwarded his budget proposition for the fiscal period June 1909 - June 1910, he had made his department write an annex on air power. Lowzow proposed that Parliament vote 10 000 NOK for the study of aerial warfare and the testing of guns to shoot down aircraft. Lowzow meant that developments in Europe were bringing war to the air, and that Norway had to follow this development. Lowzow was a stubborn cavalry officer with a reputation in the corps as being too creative. He was controversial in both political and military circles and heavily engaged in the nationalist defence organisation Norges Forsvarsforening¹²⁹ from its beginning in 1886.¹³⁰ In military circles he was deemed too fast and too different. During an exercise in 1901 he had "disappeared" with his cavalry company for eight days; telling his superiors nothing.¹³¹ In 1936, his military biographer, General Laurantzson, stated that Lowzow was controversial because "he came up with too many new things."¹³² When this creative and unorthodox officer became Minister of Defence, he immediately proposed to look into the issue of air power.

Lowzow mainly used a defensive argument for his proposal. If Norway could be attacked from the air it would have to create a defence. Lowzow appealed to the central proposition of Norwegian defence doctrine, that its sole task was to engage attackers against Norwegian soil.

Lowzow got no support in the Military Committee. Although the Committee thought it necessary for Norway to follow carefully developments in aviation, it considered the

¹²⁹ The Defence Association of Norway.

¹³⁰ For more on Lowzow's controversiality, see Nils Ivar Agøy, *For konge og fedreland? Offiserer, politikk, unionsstrid og nasjonalisme 1890-1905*, (Valdres, 2001), 55-56, 78-86, 189; Johan Castberg, *Dagbøker 1900-1917, Bind II 1906-1917*, (Oslo, 1953), 17-18.

¹³¹ Agøy, *For konge og fedreland?*, 189

¹³² J. Laurantzson, "Lowzow, Haakon Ditlef", in A. W. Brøgger and Einar Jansen (eds.), *Norsk biografisk leksikon, bind VIII*, (Oslo, 1938), 463, author's translation, ("han fant på så meget nytt").

budget to be too small to tolerate such a grant. Lowzow took the rostrum in Parliament the day the budget was debated. He did not raise his proposal for funding again, but made a lengthy argument for his views on air power. He repeated his point about defence against air attack – and claimed that Norway would have to prepare itself for what was to come in a possible war. That was probably also the reason why he specifically mentioned trials with the use of land-based guns for shooting down airships and aircraft.¹³³

Lowzow was the first politician actually to propose funding for air power in Norway. He lacked, however, political talent, and was constantly in trouble with Parliament in his 16 months as Minister of Defence.¹³⁴ Hobson and Kristiansen have termed him “inflexible and incautious in parliamentary matters.”¹³⁵ But he got retrospective admiration for his views on air power from one unlikely source – the eager anti-militarist and socialist Adam Egede-Nissen.¹³⁶

The offensive potential of air power naturally brought its corollary, the question of how one would defend oneself against an attack from the air. The defensive aspect of air power suited Norwegian defence policy quite well. In the eyes of the Army, war would be fought against an invading Army from the east, most likely from Sweden. This view dominated Norwegian threat evaluation at least until around 1911, in the Army possibly longer.¹³⁷

If Sweden were to attack Norway the most obvious axis would be from the area along the Swedish border towards the capital Oslo, and in the countryside in Trøndelag. Both these areas of operation suited the observation role of air power well. The countryside was relatively flat, at least by Norwegian standards. This evaluation also lay behind the positioning of Norway’s first two airbases. The first positioned at Kjeller was close – but not too close – to both the capital and the Swedish border. Værnes, the second land-based airbase established was positioned in the middle of Trøndelag, the other main axis in case of a Swedish attack.

¹³³ Stortingsforhandlingene/1909, VIIa, 2323. The suggested amount was small, considered the size of the whole budget for the Army. The Army budget for 1909 totalled 13,5 million NOK. Lowzow’s proposal amounted to about 0,7 per thousand of the total budget.

¹³⁴ Bernt A. Nissen, “Venstre i Norge efter 1905”, in Jacob S. Worm-Müller, Arne Bergsgård and Bernt A. Nissen, *Venstre i Norge*, (Oslo, 1933), 267, 271.

¹³⁵ Hobson/Kristiansen, *Norsk forsvarshistorie*, 42.

¹³⁶ Adam Egede-Nissen, *Et liv i strid*, (Oslo, 1945), 136-137.

¹³⁷ Hobson/Kristiansen, *Norsk forsvarshistorie*, 71; Berg, *Norge på egen hånd*, 65.

The propagandists for the development of Norwegian air power met a problem when arguing for a defence against aerial attacks. To argue that a defence against aerial warfare could be established with air defence artillery could be counter-productive if one wanted aeroplanes. The point was therefore stressed, especially by Sem-Jacobsen, that it would be very difficult to shoot down moving objects in the air. Rifle fire was not suitable; the bullets were too small and did not go high enough. Air defence artillery was the only possible solution, but that too would be very difficult, because the targets were moving. The propagandists for the development of Norwegian air power capabilities had to strike a balance in this respect. They could not argue that air power was an offensive weapon per se. At the same time they could not overemphasise the defensive aspect, since that might lead to the development of air defence artillery, which presumably would lead to a lesser development of military flight. A focus on the use of air power mainly as a means for observation therefore fitted very well for both the propagandists and Norwegian defence doctrine.

After Lowzow's proposal in 1909, two years elapsed before the Defence Department again considered funding for air power. The General Inspector of the Engineering Arm, General Ræder, proposed to allocate funding for the purchase of an aeroplane. The Department, however, considered the development of aircraft immature, and did not propose any funding when the budget was announced.¹³⁸ The Military Committee in Parliament agreed with the Department, but found it necessary that Norway follow international developments, suggesting the grant of 1 000 NOK as a scholarship for the study of aerial flight and wireless.¹³⁹ The proposal was sanctioned by Parliament after a rather short debate. The majority in Parliament was however very small, 55 voted for, 51 against.¹⁴⁰ The scholarship was awarded to Sem-Jacobsen, who was already in France to become an aerial engineer. In the same budget, the Defence Department proposed and the Military Committee and Parliament agreed to give 1 500 NOK to the work of Norsk Luftseiladsforening. Thus, the first official funding for air power was awarded in 1911.

In 1912 the scenario was nearly repeated, but now the Defence Department itself proposed to grant 1 000 NOK for a scholarship.¹⁴¹ The Military Committee agreed, but raised the amount to 2 000 NOK in its proposal to Parliament. The Committee also stated

¹³⁸ Stortingsproposisjon 1/1911, 94.

¹³⁹ Indst. S. X./1911, 30.

¹⁴⁰ Stortingsforhandling/1911, VPa, 878-880.

¹⁴¹ Stortingsproposisjon 1/1912, 154.

that "...it was very interested in the purchase of aircraft and the education of pilots...", and it therefore asked the Department to try to find money for those purposes in next year's budget.¹⁴² In the debate that followed in Parliament, Prime Minister Jens Bratlie himself took the rostrum, and said that he was very eager that Norway acquire aircraft as soon as possible. Therefore, he had arranged a proposition to Parliament for the education of pilots and the study of air power. Parliament sanctioned the proposal for 2 000 NOK for a scholarship. Only eight members voted against.¹⁴³ In the treatment of the Navy budget the same year, the Commanding Admiral, Admiral Dawes, proposed to allocate money for the purchase of an aeroplane, but the Defence Department did not put this proposal to Parliament, allegedly for economic reasons.¹⁴⁴ The Military Committee again repeated its wish that the Department find money for the purchase of aeroplanes in next year's budget.¹⁴⁵

Only six days after Dons' flight, the Defence Department announced proposition 107, proposing to award at least three scholarships to officers to become military pilots.¹⁴⁶ The Department began with referring to international developments, and concluded that military flight now had come of age as a means of observation, both for the Army and Navy. Norway ought therefore to take the first steps towards the development of military aviation. The Department saw these scholarships only as a first step. The Proposition mentioned the creation of a pilot school, the possible purchase of aircraft, and a future military Flying Corps. In a short proposal to Parliament the Military Committee, with the exception for Egede-Nissen, agreed with the Defence Department.¹⁴⁷ Only twelve days after the Department's proposal, it was sanctioned by Parliament with only eight votes against.¹⁴⁸

The political authorities were not unfriendly towards the development of air power in Norway. But nor can they be deemed eager in their efforts to allocate money to the cause. As to the doctrinal issues debated in political documents and sessions in Parliament, they were few. Air power was regarded by most as an instrument for observation. Member of Parliament Johan Hestnes spoke of the possibility of aerial bombing in the debate in

¹⁴² Indst. S. X/1912, 43, author's translation, ("...framholde sin store interesse for anskaffelse av flyvemaskiner og utdannelse av flyvere...").

¹⁴³ Stortingsforhandlinger/1912, VIIb, 1923-1928.

¹⁴⁴ Stortingsproposisjon 1/1912, 45.

¹⁴⁵ Indst. S. II/1912, 18.

¹⁴⁶ Stortingsproposisjon 107/1912.

¹⁴⁷ Tillæg 4 til indst. S.X/1912.

¹⁴⁸ Stortingsforhandlinger/1912, VIIb, 2335.

1911, and he saw it as such a terrible weapon, that it could abolish war. Hestnes meant that air power, without anything to stop it, would bomb cities, castles and history itself to pieces. If nations got that capacity, they would think twice before waging war. None of the other representatives commented on Hestnes' view.¹⁴⁹

The next year, the Defence Department forwarded proposition 147, the largest and most detailed proposition on air power before World War I. They now raised several doctrinal questions about the development of air power. The Department saw in the air weapon first and foremost a means for observation and reconnaissance. It referred to international developments and also to the experiences of the Italy-Turkey War of 1911-1912 and of the first and second Balkan Wars of 1912-1913. Air power had been important, especially as a means for observation and reconnaissance. The Department also saw the possibilities for air-to-air combat and for bombing from the air. With regards to bombing, the Department mentioned in particular rear-area targets such as headquarters, depots and railways. The Department concluded this discussion by making the point that military flight was immature regarding offensive use and, because of that, Norwegian air units were to be established primarily for observation and reconnaissance purposes. Aerial observation was deemed especially suitable for Norwegian terrain and topography, since the cavalry had limitations in the fjords and mountains of Western and Northern Norway.¹⁵⁰ The Department's view on air power was exactly the same as Sem-Jacobsen's. This parity is so striking that it is hardly coincidental. It is not unlikely that Sem-Jacobsen wrote the introduction to the proposition. If that was not the case, it is quite obvious that the officials in the Department had read Sem-Jacobsen's articles.

Debates in Parliament also saw air power as a means for observation and reconnaissance. This was especially clear when Parliament debated Proposition 147. The Defence Minister, Wilhelm Keilhau, emphasised this role, along with representatives Kragtorp (Venstre) and Michelet (Høyre).¹⁵¹ In addition to this, several members of Parliament realised that this would lead to air power taking over some of the other Arms' roles. When the Military Committee delivered its recommendation to the proposition, it wanted the Department to evaluate whether other Arms of the Army could save the amount of money spent on the development of air power, thus not increasing the total Army

¹⁴⁹ Stortingsforhandlinger/1911, VIIa, 879.

¹⁵⁰ Stortingsproposisjon 147/1913, 3-4.

¹⁵¹ Stortingsforhandlinger/1913, VIIb, 2651-2667.

budget.¹⁵² On several occasions in 1912-1914, some Members of Parliament pointed out that an evaluation was lacking from the Defence Department on what the Army could save on its traditional arms when air power was introduced.¹⁵³ The Department seems, however, never to have given any such evaluation.

Although both military experts and politicians considered the observation/reconnaissance role to be the primary role for aircraft in this period, several speakers in Parliament mentioned the offensive role of air power. Most of them had a defensive perspective - how would Norway defend itself against this new threat.¹⁵⁴ There is little indication that there existed any thoughts in political circles on developing offensive air power in Norway.

Why Should Norway Develop Air Power?

In the debates on how air power would be used in the Norwegian Armed Forces, several arguments were used to show that the development of Norwegian air power had to be different from those of the larger nations of Europe. This argument was partly based on facts. Norway was a small nation that could not compete with France, Britain and Germany. It could, however, also be argued that Norwegians in this period had a profound interest in showing how special Norway was. At least until 1914 a strong nationalist wind blew on Norwegian life, debate and culture. It was important to show how special the Norwegian way of life was. The more Norwegian one could be the better.¹⁵⁵ As both Peter Fritzsche and Robert Wohl have pointed out, nationalism and the development of aviation went hand in hand in pre-war Europe, in Germany exemplified by the willingness of the German people to contribute money to Graf Zeppelin's wrecked airship L. Z. 4 in 1908.¹⁵⁶

¹⁵² Tillæg 9 til indst. S.X/1913, 5.

¹⁵³ See for instance the debate in Parliament 24.07.1913 when Proposition 147 was debated. Especially Gausdal (Arbeiderpartiet), meant that the Defence Department should have considered what could be saved in the Cavalry Arm, see *Stortingsforhandling/1913*, VIb, 2651-2667.

¹⁵⁴ See for instance the debate in Parliament 24.07.1913 when Proposition 147 was debated. Both Mjøen (Arbeiderdemokratene [The Working Class Democrats, a small labour Party associated with Venstre]) and Michelet (Høyre) mentioned the offensive potential of air power, see *Ibid.*

¹⁵⁵ For more on Norwegian nationalism, see Øystein Sørensen, (ed.), *Jakten på det norske. Perspektiver på utviklingen av en norsk nasjonal identitet på 1800-tallet*, (Oslo, 1998).

¹⁵⁶ Fritzsche, *A Nation of Fliers*, 2, 15-18; Wohl, *A Passion for Wings*.

Several scholars have recently claimed that this influenced Norwegian defence doctrine in particular.¹⁵⁷ The Norwegian way of life - non-urban and close to nature – was reflected in the Norwegian view on warfare. As Nina Witoszek has shown in her study of Norwegian cultural history, Norwegians preferred nature instead of culture.¹⁵⁸ In addition the egalitarian Norwegian farming societies were considered as the real Norwegian way of life. This led Norwegian doctrine to emphasise such an aspect as conscription, which fitted very well into Norwegian society. The view also trickled down to the tactical level of war. Troops were to exploit the harsh topography and climate to attack the less mobile enemy in his flanks. Although the Norwegian Army trained mainly during the summer, Norwegian topography and climate was seen as a major force multiplier, since all Norwegians were capable of surviving in such conditions, implying that foreigners could not. A mechanised technological and professional Army could not do that job, since such a development would lead to Norwegian forces fighting on the invaders' terms. Lieutenant Colonel Söphus Christensen's study of Norwegian defence politics from 1911, pointed out that topography was the Norwegian Army's foremost ally.¹⁵⁹ The mental picture was strengthened by the images of men such as Fridtjof Nansen and Roald Amundsen, the most popular Norwegians of the period. Although Amundsen especially was eager to exploit new technology – he was the first to get a Norwegian pilot's certificate in 1914 – the picture of men on skis fighting the powers of nature was strong in the Norwegian mentality - and hence in the Norwegian Army. Parts of the Norwegian military doctrine of the period could be characterised as anti-modernist.

This doctrine was, however, problematic. The country's most densely populated areas, as well as most of its industry, were situated in the southern and south-eastern parts of the country, where the countryside is flatter, although with large forest areas. Thus a Norwegian Army that was to fight in the mountains would not defend what can be termed the country's obvious centre of gravity

Ken Booth has argued that one cannot free thinking on strategy from the broader cultural impact of the nation state and period in which it is developing. He is of the opinion that the impact of culture on strategy has been underdeveloped. His book can be read as a reaction to the creation of the rational Strategic Man in strategic studies. He claims that

¹⁵⁷ Ulriksen, *Den norske forsvarstradisjonen*; Friis, "Forsvar og identitet".

¹⁵⁸ Nina Witoszek, *Norske naturmytologier. Fra Edda til økofilosofi*, (Oslo, 1998).

¹⁵⁹ Söphus Christensen, *Studie over Norges krigspolitiske Stilling og dets Forsvarsevne 1911-1912*, (Stavanger, 1913), 13 in amendment.

the idea of rationality is at the centre of Western strategic thinking, and that the rational Strategic Man has to be replaced by the national strategic man, and argues for what he terms strategic relativism.¹⁶⁰ He writes that:

*If strategic studies are to be improved, it is necessary to embrace more completely the idea of strategic relativism, the idea that truth in strategy is relative to the individual or group in question and to the time and place in which the individual or group acts.*¹⁶¹

This argument is most certainly valid regarding the Norwegian development of strategy in this period.

This anti-modernist aspect on warfare stood in sharp contrast to other military thinkers of the period. Technology was seen by some as the ultimate weapon of such a small nation as Norway. Technology could compensate for the lack of numbers. This would be important, since no matter whom Norway would fight it would almost certainly be outnumbered. Norway ought therefore to have armed forces of good technological standard. Air power fitted very well in this doctrine, especially since aircraft were relatively cheap compared with other military equipment.

Thus, the Norwegian view on the aeroplane as a medium of war was rather paradoxical. A clear anti-modernist tradition within parts of the population and parts of the Army was coupled with a fascination for new technology. An enemy equipped with modern weapons could be defeated on land by the Norwegians if they exploited Norway's topography. This was not possible with an enemy having aerial weapons. Air power would not be that limited by topography. The Norwegian way of warfare was thus threatened by the invention of the aeroplane, since an enemy using air power could only be defeated in the same environment.

¹⁶⁰ Ken Booth, *Strategy and Ethnocentrism*, (New York, 1979), especially 16-18, 63, 152.

¹⁶¹ *Ibid*, 139.

To persuade the opinion that air power was important, the argument most frequently used was that Norway would soon be the only country without any capacity in the air. Usually this referred to developments in the larger nations of Europe claiming that Norway was not following developments. Sem-Jacobsen wrote in 1912: "We are already considerably outdistanced in comparison to those with whom we may have to fight".¹⁶² Who was Norway going to fight? In the years after 1905, Sweden was portrayed as the main threat towards Norway. By 1912 this picture had changed, and the possibility of a war between the great powers in Europe, with a possible war in the North Sea, emerged as the central challenge to Norwegian sovereignty. It should be mentioned, though, that parts of the Army clung to the Swedish scenario, in the words of Rolf Hobson and Tom Kristiansen, "for institutional reasons".¹⁶³ The new threat assessment culminated in the Fleet Plan of 1912, which made the Navy better suited to defend Norway's neutrality in case of a war in the North Sea. The lack of proper defences in Northern-Norway against a possible Russian threat was, according to Roald Berg, a reflex based upon the most likely scenario, a major war in the North-Sea. The Morocco-crisis of 1911 had enhanced this scenario. When the crisis peaked, large parts of the German fleet had been in Norwegian waters, a fact that worried Parliament and public opinion. The Defence Minister, Karl Sigwald Johannes Bull, had drawn the conclusion that the Norwegian Navy needed to face west and north – in defence against the great powers. However, such a war was not seen as very likely. Few believed in a major war in Europe. Roald Berg explains the reason for this in two dimensions, first that the great powers would fight over their colonies, and second that the general positivism encouraged the belief that war between civilised nations was both impossible and irrational.¹⁶⁴

In 1913 Lieutenant Colonel Sophus Christensen wrote a book on Norway's strategic situation.¹⁶⁵ The book was printed in 2 000 copies, but not published for sale, since Christensen himself was of the opinion that it contained material that could hurt Norway in intelligence matters. The book was revised in 1915,¹⁶⁶ and has been interpreted as one of the main reasons for a defence friendly movement in the years before the World

¹⁶² Einar Sem-Jacobsen, "Et norsk flyverkorps. Dets organisation og materiel.", *Vor Hær*, 1912, 4, author's translation, ("Vi er allerede nu betydelig agterutseilet for alle de launde med hvem vi kan tænkes at komme i kamp.").

¹⁶³ Hobson/Kristiansen, *Norsk forsvarshistorie*, 71, author's translation, ("Hærens institusjonelle trang til å holde på svensketrusselen.").

¹⁶⁴ Berg, *Norge på egen hånd*, pp. 65-68, 181.

¹⁶⁵ Christensen, *Norges krigspolitiske Stilling* (1913).

¹⁶⁶ Sophus Christensen, *Studie over Norges krigspolitiske Stilling og dets Forsvarsevne 1911-1915*, (Christiania, 1915).

War.¹⁶⁷ Even key politicians, such as Johan Castberg, had come across Christensen's views.¹⁶⁸ Christensen was extreme in his militaristic views. He got his inspiration from Germany and the Prussians, and claimed that radical reforms had to begin in the Army. His study also represented, however, the change in Norway's threat assessment. Although Sweden was mentioned as a possible foe, the dominant scenario was a possible war in the North Sea. Christensen claimed that both Great Britain and Germany would try to secure a base on the southern or south-western coast of Norway. Christensen also emphasised the possibility of war with the Russians, and claimed that they would have to pursue their advance towards the Atlantic through Norway.¹⁶⁹ Another example of the same threat evaluation was found in Lieutenant Commander Christian Meyer's book of 1914, where he argued that Norway was unprepared for the most possible scenario, a war between the great powers in the North-Sea. Meyer was of the opinion that both the Germans and the British would want to establish some sort of base on the Norwegian coast.¹⁷⁰

In his attempts to convince public opinion that Norway alone was soon to be without aircraft, Sem-Jacobsen exaggerated somewhat. The only countries that by 1912 had what can be termed an air power capability in Europe were France and Germany. Only three years had elapsed since France had established its first military aircraft units. At the beginning of 1912, the French had about 150 aircraft, not all of them operational. Germany followed as Europe's second largest air power nation, but it had directed its main effort to the development of airships. The British were sadly behind, while the Russians at this point had only training aircraft.¹⁷¹ If the comparison had been with more similar countries, such as Sweden or Denmark, Norway would not have looked like a straggler. In Sweden the first military flight took place in February 1912. It was Lieutenant Dahlbeck who flew the Swedish Navy's first aircraft. The Swedish Army got its first aircraft during the summer of 1912.¹⁷² The Danes had started a civilian flying school partly sponsored by the military in 1911, but there was no organised military aerial

¹⁶⁷ Ulriksen, *Den norske forsvarstradisjonen*, 107; Tom Selboe, *Norsk forsvarspolitik 1905 – 1914*, Hovedoppgave i historie, Historisk Institutt, Universitet i Oslo, våren 1952, 68-83.

¹⁶⁸ Castberg, *Dagbøker*, 80.

¹⁶⁹ Christensen, *Norges krigspolitiske stilling* (1913), 14-15, 118.

¹⁷⁰ Chr. Meyer, *Forsvarsboken*, (Kristiania, 1914), especially 96, 124.

¹⁷¹ Morrow, *The Great War*, 1-57.

¹⁷² A. Annerfalk, *Från Dronnen til Gripen. Flygvapnet 1926-1996. Flygvapnet 70 år den 1 juli 1996*. (Stockholm, 1996), 17-22.

activity before the summer of 1912, when the Danish Armed Forces got their first two aircraft as private gifts.¹⁷³

The development of air power in Norway was also seen in a broader cultural perspective. Norway was striving to become a modern state alongside other European nations. As a new born independent nation it was important to show that it was becoming a modern industrialised state. The Minister of Defence from February 1913, Wilhelm Keilhau, used this argument to try to convince Parliament of the necessity of developing an Army Air Arm when he put forward proposition 147.¹⁷⁴ Keilhau argued that Norway had already participated in socio-cultural and technological developments for decades, and that the development of flight was an area of such great importance that Norway ought to participate. He claimed that the plan for an Air Arm of the Army therefore had to be considered from a broader perspective. Norway had not been sitting on the fence watching progress in Europe in other areas. Manned flight was a large breakthrough for mankind. He played on the strings of nationality, and explicitly referred to the achievements of both Nansen and Amundsen. Against this background Keilhau argued that: "... we should be obliged to and feel the commitment to participate in the effort to conquer the air."¹⁷⁵ In the same debate, Member of Parliament Lasse Torkelson Trædal (Venstre) stated that there would be more honour and glory for those who were in it from the beginning, than those who joined when the development had matured.¹⁷⁶ Both Keilhau and Trædal argued directly against the epigonism that was present in Parliament, an epigonism that will be discussed later.

Aviation was in the beginning driven by civilians in most countries. Although they usually saw its military potential quite quickly, as the Wright brothers did, aviation was also seen as a major cultural development for mankind. Man would be rid of his earthly bounds. A long-held dream of humanity had come to life. As the arguments above show, several Norwegians argued that Norway therefore ought to take part in this development from the very beginning. The development of aviation in Norway was; on the other hand, quite different from that of other nations, since it was mainly officers who were involved. Aviation quickly acquired a military dimension in Norway. But Norway was not in the

¹⁷³ H. A. Schrøder, *Det danske flyvevåben*, (Tøjhusmuseet, 2001), 5-7.

¹⁷⁴ Stortingsforhandling/1913, VIIb, 2653-2655.

¹⁷⁵ Ibid, 2654, author's translation, ("...vi her absolut maa være forpligtet til og føle os kaldet til at være med paa arbeidet paa luftens erobring.")

¹⁷⁶ Ibid, 2651-2667.

forefront of military development in the world. Therefore this combination of the military and aviation could lead to a problematic symbiosis for the development of aviation itself. But it can be claimed that the greater cultural meaning of manned flight itself to some degree removed this possible problem. For small nations like Norway, this could mean a position amongst the greatest in some aspects. The country could not compete with the great powers in Europe in the military field. But being small was no hindrance to being great in other areas in which mankind was prospering. As W.C. Brøgger and Nordahl Rolfsen put it in their seminal biography of Fridtjof Nansen in 1896:

*It is not in the area of war that the small nations can compete and defend their sovereignty. It is in the area of culture, civilisation, science and art.*¹⁷⁷

The aeroplane offered the possibility of both at the same time. It was just what Defence Minister Keilhau was arguing. The development of military aviation in Norway had two dimensions – air power and as a task for mankind in the name of civilisation and modernity.

Two other arguments in favour of air power development were profound in Parliament. Both had their foundation in the fact that air power relied on relatively cheap technology. First and foremost, technology was considered by some a tool that could compensate for inferiority in numbers. Member of Parliament Ivar Aavatsmark made this point in a debate about the development of Norwegian flight in 1912,¹⁷⁸ and repeated it in the debate on proposition 147 in 1913.¹⁷⁹ Aavatsmark, who represented Venstre, was one of the leading politicians on military questions in the period from 1905 to 1925. The Military Committee also used this argument in its recommendation to Parliament about the development of the Army Air Arm in 1913.¹⁸⁰ Both Aavatsmark and the Committee pointed to a constant problem in Norwegian defence planning: whomever the country was going to fight, it would almost certainly be outnumbered.

¹⁷⁷ Quoted in Bodil Stenseth, *En norsk elite. Nasjonsbyggerne på Lysaker 1890-1940*, (Oslo, 2000), 133, author's translation, ("Det er ikke paa krigens bane, at de smaa nationer kan hævde sin plads og forsvare sin selvstændighed. Det er paa kulturens, paa civilisationens, paa videnskabens og kunstens felt.")

¹⁷⁸ Stortingsforhandlinger/1912, VIIb, 1924.

¹⁷⁹ Stortingsforhandlinger/1913, VIIb, 2661.

¹⁸⁰ Tilæg 9 til Indstilling S. X./1913.

Enhancing this argument was the low price of aeroplanes. Compared to the two dreadnoughts Norway was planning to purchase, the price of an aeroplane was negligibly low.¹⁸¹ Because of this, air power was argued to be a cost-effective means for a small nation. The Defence Department made this point in Proposition 147/1913. Air power was an area of military armament where small nations were able to compete with the larger nations of Europe, at least to some degree.¹⁸² The Military Committee followed this line of argument, claiming that: "The majority of the Committee see in the Air Arm a possible future weapon that, with not too extensive funding, could give a great contribution to the country's defence."¹⁸³

Other politicians also used the cost-effectiveness aspect of air power as an argument in Parliament. Both Alf Mjøen (Arbeiderdemokratene) and Christian Fredrik Michelet (Høyre) mentioned this aspect in the debate about Proposition 147.¹⁸⁴ Michelet claimed that in the future, it would be quite easy to sink a dreadnought with bombs from an aeroplane, and that this would be a very cost-effective way of warfare that Norway ought to pursue.

Why should Norway not develop air power?

The politicians who argued for the development of air power met some, but not much opposition. With the exception of the anti-militaristic Arbeiderpartiet, it is not possible to see any difference in the political parties' views on air power.

Some early Norwegian thinkers argued that the aeroplane would be so terrible a weapon that it would make war end. No sane politician would go to war, having created such a fiery weapon, which, if its potential was brought to its maximum could endanger civilisation itself.¹⁸⁵ This argument was also used by the first man who actually flew in Norway, the Swedish Baron Carl Von Cederström, who, after being invited by Norsk

¹⁸¹ When the Army Air Arm planned to purchase their first aircraft in 1914, the price was estimated to be 20 000 NOK, see Stortingsproposisjon 1/1914, 183. The price of one of the small dreadnoughts that Norway planned to acquire from Britain in the Fleet-Plan of 1912 was 7,5 million NOK, see Stortingsproposisjon 26/1912, 18.

¹⁸² Stortingsproposisjon 147/1913, 3.

¹⁸³ Tilæg 9 til Indstilling S. X./1913, 5, author's translation, ("Men komiteens flertall ser i flyvevæsenet et mulig fremtidig vaaben, der med forholdsvis overkommelige utgifter vil kunne yde landets forsvar store tjenester.").

¹⁸⁴ Stortingsforhandlinger/1913, VIIb, 2655-2656, 2660.

¹⁸⁵ This view was for instance put forward by Kristian B. R. Aars, "Verdensfreden. Avrustningen bør begynde med at magterne neutraliserer luften", *Samtiden*, 1910, 522-527.

Luftseiladsforening in 1910, flew several display flights in the autumn of that year in Oslo. He claimed that air power would be such a dangerous weapons that it would make war impossible.¹⁸⁶

Arbeiderpartiet was strongly anti-militaristic in this period, and its representatives in Parliament used every occasion to promulgate this view, both as members of the Military Committee and in Parliament. Thus Arbeiderpartiet were in principal negative to developments in air power. For instance, in a debate in Parliament in 1912, Adam Egede-Nissen stated: "I find it a lot more important to teach people how to brush their teeth than to teach them to become aviators."¹⁸⁷ The political influence of Arbeiderpartiet was, however, not that high in this period. Although it was a fast growing political party, it had not much actual power in Parliament. Almost all decisions in military matters went against them. Arbeiderpartiet did not display the more general view of Parliament in this period. The attitude of Parliament towards air power is better described as a mixture of curiosity and positivism coupled with a huge amount of what can be termed epigonism.

In 1901, engineer officer Clare Sewell Widerberg wrote about the development of the Engineering Arm.¹⁸⁸ The article contained a lengthy section on the use of balloons for military purposes. Widerberg pointed to the fact that Norway was one of the very few countries in Europe without any balloons in service. What is interesting is that he devoted a large part of the article to argue against the scepticism that had been shown towards balloons. He argued that such scepticism was no longer valid, since balloons were in extensive use in the rest of Europe. Widerberg's effort against this scepticism is an indication that such scepticism must have been profound.

The epigonism materialised in the form of an argument that Norway was a small country with scarce resources and that it could not be a leader in developing new technology. Norway ought to wait until the larger nations had developed and tested the technology before it procured balloons, airships or aircraft. Holm Simonsen argued against such a view in an article of 1910:

...many people are sceptical as to the practical value of aviation. Such scepticism is only valid when it is used to argue against those who are too

¹⁸⁶ Meyer, *Hærens og Marinens flyvåpen*, 13.

¹⁸⁷ Stortingsforhandling/1912, VIIb, 1928, author's translation, ("Jeg anser det for at være av en ganske anden betydning at lære folk at pudse sine tænder end at opdra folk til militære flyveteknikere.")

¹⁸⁸ Clare Sewell Widerberg, "Enkelte hovedspørgsmål vedrørende en reorganisation af ingeniørvåbnet", *Norsk Militært Tidsskrift*, 3/1901, 186-202.

*visionary and see in aviation a revolution of society. The scepticism is, however, based on obdurate conservatism and ignorance, when it results in statements such as that 'the practical value of aviation is too small for the small and poor nations to be part of this development'.*¹⁸⁹

Debates in Parliament underlined this point. Already in one of the first debates on air power in 1909, Bastian Tomas Lauritz Eidem (Venstre) claimed that a war in the air would be more dangerous for the people in the airships than for the people on the ground. He stated that as far as he knew the best airship in the world was a Zeppelin, and that he was informed that such an airship had crashed into a pear tree and had been destroyed. He also claimed that Norwegian fortress guns could quite easily shoot down these ships.¹⁹⁰

Thus, many argued for epigonism in Norway. The country was too small to be a part of the development; it should only harvest the seeds when the time and the price were ready. This wait-and-see attitude was long lasting within Parliament and the Defence Department. Those who argued for such an approach did not state, however, when the time would be right. Their views were in many ways a rather naive interpretation of technological development, since it almost never stops – or rarely even takes a short pause.

Centralisation or Decentralisation?

The first aircraft, which were gifts from private persons or institutions, were given to the Army and Navy in 1912. The Army got two aircraft, the Navy one. These aircraft initiated thoughts on how to organise air power in Norway. Once the Army and the Navy had obtained aircraft, both the military itself and the Defence Department saw the necessity of formalising the activity. Traditional military opinion was that everything had to find its position somewhere in the existing military hierarchy.

The Defence Department's first attempt to organise military aviation came in 1913. It was Parliament that had the authority to change the organisation of the military

¹⁸⁹ Holm Simonsen, "Militær luftseilads", 9, author's translation, ("...stiller mange sig meget skeptiske til spørgsmaalet om luftseiladsens praktiske utnyttelse. Denne skepticisme er imidlertid kun paa sin plads, hvor det gjælder at bringe koldt vand i blodet paa de talrike profeter, der i luftseiladsen ser et samfundsrevolutionerende middel, men røber forstokket konservatisme og uvidenhed, naar den resulterer i uttalelser som, at 'sakens praktiske værd er for liten til, at de smaa og fattige nationer kan beskæftige sig med den.'").

¹⁹⁰ Stortingsforhandlinger/1909, VIIIb, 2325.

establishment in Norway. But, it was the Department that formed the organisation of military aviation. The Department wanted two Air Arms. Although this was not sanctioned by Parliament until 1927, this was in practice embodied by 1913. Since Parliament refused to accept the proposal on military aerial activity put forward by the Department in 1913, and did not vote for another solution, the Department had to find temporary solutions. Thus, Parliament had what can be termed a negative power: since it did not sanction any solution at all, the power was vested in the Defence Department.

The debate on how best to organise air power contained two main doctrinal questions. First was the question of whether there should be two Air Arms or an independent Air Force. From a comparative international view, it is interesting that the Defence Department as early as 1913 considered the establishment of an independent Air Force. By 1913 no independent air force existed in the world, and Norway had a total of four aircraft. It is difficult to see how such a small force could be considered an independent service. Second was the question of how to organise the aircraft within the two services. Were they to be distributed and put under the command of the Chief of the Army Brigades, or were they to be centralised directly under a Chief of the Air Arm? These two questions and the viewpoints in the debate are the main issues in what follows.

As Prime and Defence Minister, Jens Bratlie, had promised during the budget debate in the summer of 1912, the Defence Department in January 1913 forwarded a proposition that dealt mainly with military flight.¹⁹¹ The main theme of the part of the proposition that discussed air power was the practical arrangements that had to be taken care of in the Army. The organisational question was also discussed, but no conclusion was reached. One of the reasons for issuing the Proposition was probably that Parliament had not yet sanctioned the ongoing development. The Army had established their activity at Kjeller, while the Navy had established some activity with their only aircraft "Start" at Karljohansvern.

In the Proposition Parliament was informed that military flight in the Army had been established under the supervision of the General Inspector of the Engineering Arm. The Inspector, General Ræder, had been given the opportunity to give his advice on a more formal solution. Ræder did not want, however, to give detailed advice because of the rapid development within the field of military aviation. He therefore only mentioned possible solutions.

¹⁹¹ Stortingsproposisjon 31/1913.

The Department did not comment extensively on the Ræder's possible solutions. On two occasions the possibility of a combined Army and Navy pilot training school was mentioned, but not concluded. The rest of the Proposition dealt with more practical issues regarding the established air unit at Kjeller, such as the lease of the field, the procurement of a third aircraft and salary for the personnel.

Proposition 31 from January 1913 was withdrawn the next month, because of a change of Government. The new Minister of Defence from Venstre, Wilhelm Keilhau, did not share all the views of Jens Bratlje, and the new Government withdrew the proposition.¹⁹²

Defence Minister Keilhau forwarded Proposition 147 in June the same year.¹⁹³ It discussed the question of an independent Air Force or two separate Air Arms. The Department had made inquiries about this to the authorities of both the Navy and the Army, and also to the four Norwegian military pilots.¹⁹⁴ None of these was of the opinion that an independent Air Force was the best solution. The main reason for this was an operational one. Hydroplanes were to operate together with the Navy, and land-based aircraft together with the Army. Both for training and operational purposes, it was seen as best if each of the existing services established its own Air Arm.

The only argument in favour of an independent Air Force was economics. One air force would be cheaper because this meant one aircraft factory, one pilot training school, and only one administration. The reason for reviewing the idea of an independent Air Force was not based upon the need for independent air operations. This is supported by the fact that few of the authorities on air power envisaged the possibility of any independent operations. The fact that the Department concluded that the development of the aeroplane as a weapon-carrying platform was immature, both in defence and offence, also points towards the same conclusion. If military aviation was to be used only as a means of observation or reconnaissance it was obvious that it should be seen as a support element of the Army or Navy.

Several instances also argued that the already established bases – the Army's at Kjeller and the Navy's at Horten – were not of a joint nature. Sem-Jacobsen explains in his memoirs that they had been looking for a field in the Lillestrøm-area from the early autumn of 1912.¹⁹⁵ The two pilots Captain Thaulow and First Lieutenant Sejersted, had

¹⁹² Stortingsmeddelelse 4/1913.

¹⁹³ Stortingsproposisjon 147/1913.

¹⁹⁴ Ibid, 4-6.

¹⁹⁵ Sem-Jacobsen and Arnesen, *Til veirs på norske vinger*, 47-48.

found the field at Kjeller after a bicycle tour of the area in September. The Defence Department agreed to the hiring of the field, and thus Norway's first land-based air base had been established. It seems, though, that nobody had thought of a joint air base. The use of hydroplanes from Kjeller was problematic, although Lake Øyeren was a possibility. When Dons returned with his aircraft in May 1912, it was natural for the Navy to use Karljohansvern as their base. When "Start" got floats in January 1913, it could use the harbour at Karljohansvern. At Horten there was no nearby possibility for a land-based air base. Thus, the rapid development in 1912/1913 had created a practical obstacle to the creation of an independent Air Force. Norwegian air power developed almost by happenstance.

The Department's conclusion in proposition 147 was quite clear. Norway was to organise all of its aerial resources in two separate Air Arms. Even the basic pilot training schools should be separate.¹⁹⁶

Some parts of the Proposition were used to explain why the Department had used funding that Parliament had not approved to finance some of the activity that was going on in both the Navy and the Army. In 1912 Parliament had committed the use of some 20 000 NOK to train pilots. The Department had, however, used some 45 000 NOK, and accordingly asked for Parliament's approval of this use of unsanctioned money. The majority of the Military Committee approved both the spending and the Department's conclusion that an Army Air Arm was to be established. They did not, however, approve the detailed plan of this Arm, as they concluded that this was premature.¹⁹⁷

A minority of the Committee did not share these views. They meant that Norway had too few aircraft and pilots to establish any Arm within the Army. This minority consisted of Representatives Kragtorp (Venstre) and Svendsbøe (Frisinnede Venstre). They claimed that such small-scale activity did not need a formal organisation. Especially in a period when the Army was restructuring (The Army Plan of 1909), and when finances were not in place for this restructuring, new Arms within the Army should not be established. They were, though, of the opinion that military flight should continue within the Army.¹⁹⁸

The Committee did not debate the question of one Air Force or two Air Arms. They questioned, however, why the Department had discussed an independent Air Force,

¹⁹⁶ Stortingsproposisjon 147/1913, 8.

¹⁹⁷ Tilæg 9 til Indst S. X/1913, 5.

¹⁹⁸ Ibid, 6-7.

concluded with two Air Arms, and then put forward a plan for only one – the Air Arm of the Army. They awaited a plan for the Navy Air Arm.

That a plan only for the Air Arm of the Army was forwarded was most likely due to the way the Defence Department was organised. As mentioned in chapter two, Norway had established a joint Defence Department as early as 1885. The Defence Department continued, however, with separate Army and Navy divisions. This led for instance to no joint defence budget. Most Propositions forwarded to Parliament were of a one-service nature. The description of the Department in the Official Yearbook of the Norwegian State, began with a note telling the reader that mail being sent to the Department had to be addressed either to the Army or Navy division. If the mail was of a joint nature, one had to send a separate copy to each of the divisions.¹⁹⁹ In addition to this, the two divisions were led by respectively the Commanding General and the Commanding Admiral.

The Proposition on how to organise military aviation was written by the Army division, and was therefore not of a joint nature. Thus, the problem of co-operation between the two services – and indeed the possibility of inter-service rivalry – was a part of the Department's organisational solution.²⁰⁰ It was not until 1917 that the Defence Department established a joint Military Aerial Commission.²⁰¹

The minority's argument was raised in Parliament. It was claimed that one did not want to establish a military organisation for such small scale activity, since such organisations tended to live their own lives and thereby began growing uncontrollably. The Defence Department was also criticised for the use of unsanctioned funding. These arguments seem to have won the day in Parliament. The proposal from the majority of the Military Committee did not pass (69 against, 50 for), while the minority's proposal was carried by a clear margin (96 for, 22 against). Thus, Parliament concluded that a plan for the development and organisation of the air resources in the Army was premature. But it also concluded that the ongoing training and flying should continue both in the Army and in the Navy, and some funding was allocated. The question of one Air Force or two Air Arms was not debated in Parliament.²⁰²

¹⁹⁹ N. F. Leganger (ed.), *Norges statskalender for aaret 1914*, (Kristiania, 1915), 78-82.

²⁰⁰ It could be that the two divisions were physically separated as well, and if that were the case, that would probably hinder co-operation to a great extent. The answer to this question has, however, been difficult to find.

²⁰¹ Henriksen, *Lufforsvarets historie*, 167-168.

²⁰² *Stortingsforhandlingene/1913*, VIIb, 2651-2667.

Once the question of an independent Air Force or two Air Arms had been concluded, the question on how to organise these Air Arms was raised.

During the spring of 1912 Einar Olaf Sem-Jacobsen wrote several articles on air power issues, and all of them included arguments on organisation. Sem-Jacobsen, who at this point knew that the arrival of aircraft was imminent in the armed forces, wanted two Air Arms. Sem-Jacobsen was an Army officer, and his more detailed views on organisation therefore dealt with that service alone. He meant that a detailed plan was premature, but made some recommendations. He was fascinated by and detailed the French solution. This meant that all aerial means and personnel were to be organised in the Engineering Branch, but in a rather independent position.

In proposition 31 from 1913, General Ræder was willing to give some advice on how military flight was to find its place in the Army. As a temporary solution he recommended that it should be organised as a part of the Engineering Arm, but he foresaw a development that would lead towards an Air Arm of the Army. This was, according to Ræder, only to be a peacetime solution. In wartime each of the six combined brigades of the Army was to have its own flying unit.²⁰³

When during the spring of 1913 the Defence Department worked on Proposition 147, it made inquiries of several commands in the Army as to their views on the organisation of air power. The Commanding General, the General Staff, the General Inspector of the Engineering Arm and the four Norwegian pilots were asked to give their advice. There was an interesting disagreement between the General Staff and the General Inspector of the Engineering Arm. The latter repeated his views given in Proposition 31 some months earlier. He was still of the opinion that it was premature to give advice on any detailed organisation of an Air Arm. The General Staff was, however, of the opinion that the aircraft were to be placed directly under a chief of the Air Arm, subordinated only to the Commanding General (and hence the General Staff) during wartime. No aircraft were to be permanently distributed to the brigades. The reason for this was that it was in strategic and not tactical reconnaissance that the aircraft were most useful. The Commanding General supported the view of the General Staff, but also added that it was the possible theatres of operation within Norway that ought to be the guideline when the flying units

²⁰³ Since Norway had a conscripted Army, the wartime and peacetime solutions had to differ. The mission in peacetime for the commander would be to produce operational units to the wartime organisation.

were to be distributed throughout the country.²⁰⁴ The central command in case of war in Norway would be the General Staff, wherever that war was to be fought. That central element should therefore have control over the resources for strategic reconnaissance and observation.

The Defence Department concluded by laying out a rather detailed plan for an Army Air Arm, with its own Chief who was to be placed directly underneath the Commanding General both in peacetime and wartime. The Air Arm was to be organised in two Flying Groups, one in Southern Norway and one in central Norway (Trøndelag). These Flying Groups were not to be subordinated to the six combined brigades.²⁰⁵ Thus, the Defence Department followed the proposals from the General Staff and the Commanding General. The aerial resources were to be centralised.

In Parliament this issue was never debated. And, since the proposition was not carried by Parliament, the question of centralised or decentralised aircraft within the Army was not concluded.

For the peacetime organisation of the Army Air Arm, the Defence Department concluded that it should be divided in two units: "The Tactical Branch" and "The Technical Branch". They were not placed under the same command. Henrik Thaulow, who became Chief of the Tactical Branch on 15 August 1913, was subordinated to the General Inspector of the Engineering Arm. Sem-Jacobsen, appointed Chief of the Technical Branch the same day, was subordinated to the Director of Ordnance Services.²⁰⁶ This organisation was probably based on the German ideal that operational activity should be split from logistics and research.²⁰⁷

One might expect that a debate on how to organise military aerial activities would reveal views on air power doctrine. This is, however, only partially true for the Norwegian case. Although the Defence Department actually considered an independent Air Force alongside the Army and the Navy, this did not reflect a belief in independent air operations. The reason was purely economic - one Air Force would be cheaper than two. Both the military and aerial authorities argued that the economic potential of a cheaper Air Force was not enough to establish a third service. The reason for having two Air Arms instead of an independent Air Force was mainly due to the claimed difference in

²⁰⁴ Stortingsproposisjon 147/1913, 14-16.

²⁰⁵ Ibid, 21-25.

²⁰⁶ Meyer, *Hærens og Marinens flyvåpen*, 27.

²⁰⁷ Driver, *The Birth of Military Aviation*, 193.

operational demands. Since the role of the aircraft was mainly reconnaissance and observation, it was natural that they were established in two separate Air Arms. Since there were to be no independent aerial missions, there was no need for an independent Air Force.

Conclusion

The role of air power was seen in this period in three different ways. Observation was considered the most important role. This was of course due to the inherent elevation of aircraft, airships and balloons, which made observers capable of viewing a larger part of the battlefield than the traditional observer on horseback. In naval operations air power were also seen mainly as better platforms for observation than the lookouts on ships. This followed the international pattern. As John H Buckley states: "The military establishments up to 1914 saw only limited roles for aircraft in war – essentially reconnaissance and artillery spotting."²⁰⁸ Secondly air power was seen as a potential offensive weapon. But, none of the participants in the debate made this the foremost role of air power. Thirdly the new air weapon was considered a necessary defensive weapon. The defensive aspect of air power had a particular impact on the Norwegian debate. The defensive aspect of air power was introduced quite early in Norway, through the Minister of Defence, Haakon Ditlef Lowzow, in 1909.²⁰⁹ What he did not say anything about, however, was what should be defended. Thus it is unclear whether Lowzow foresaw any bombing from the air on civilians, or whether he was speaking about the defence of an Army or Navy.

²⁰⁸ John H. Buckley, *Air Power in the Age of Total War*, (London, 1999), 40.

²⁰⁹ Stortingsforhandlingene/1909, VIIb, 2322-2326.

Relatively young but ambitious officers with a technological focus wrote on air power in the period. They were without exception not established as career officers in the Norwegian Army or Navy. The early pioneers of Norwegian aviation would suffer the same faith as the British ones. As Malcolm Cooper has argued: "Many of Britain's early airmen were possessed of strong, not to say headstrong personalities. As perhaps befits their positions as pioneers, they did not work easily within the established service hierarchy."²¹⁰ This quotation can be directly transferred to the Norwegian situation. This created a situation where the pioneers were not that influential. Conservative organisations do not make a habit of listening to people with unconventional views. The pioneers were quite clearly influenced by developments in Germany and France.

The Defence Department and Parliament several times stressed air power's importance. These expressions of importance led to few practical efforts to develop Norwegian air power. The Department and Parliament did not sanction such a development for two reasons. Most important was the everlasting question of funding. The period was characterised by tight budgets, especially in the years 1908-1911. Neither the Department nor the Military Committee could find any room for new activities in a period when both the Army and Navy were reorganising. Secondly the establishment displayed epigonism in matters of new technology. In Parliament some politicians mocked the idea of Norway becoming an air power nation. Although these politicians may have been few, even the Military Committee expressed concerns whether technological developments had come far enough for Norway to begin its air power development. The best explanation of the lack of connection between the expressed importance of the matter and the lack of practical effort lies in the combination of these two hypotheses. There was no room for spending money on uncertain new technologies in a period when the budgets were tight. The few aircraft were organised in two separate Air Arms. The need for independent air operations was, however, soon to arise. The perspective was the same as the situation that created the Royal Air Force in Great Britain, in the Norwegian case the possibility of a German air attack. By the autumn of 1916 both Air Arms considered such an attack a possibility, and defensive air operations against such an attack was an overarching role for the two Air Arms.

²¹⁰ Cooper, *Independent Air Power*, 21.

4 The First World War

The First World War changed Norwegian air power doctrine. The role of aerial defence became a major task for both Air Arms. The views on how to organise aerial military activity also changed, as the Defence Department proposed greater jointness for the Air Arms.

This change followed the international pattern. The role of aerial defence had not been considered a main role for aircraft by any nations before the war.²¹¹ It grew out of the experience that one had to fight for mastery of the air, both in offensive and defensive terms. The British mostly used fighter aircraft as offensive weapons on the western front, hunting down German aeroplanes over the German side. They also used fighters in a defensive role, against the Zeppelin airships and Gotha aircraft that attacked the British Isles throughout the war. The Germans mostly used their fighters to defend airspace on the front and to protect their observation aircraft.

Hence, the Norwegian change in doctrine might be explained as a product of international developments. This chapter will argue, however, that the change in Norwegian doctrine came quite quickly as opposed to other areas where Norway could learn from the Great War, and that this quickness was a direct product of the fear of an aerial attack on Norway. It was the possibility of German aerial attacks that created the need for aerial defence in Norway.

The structure of the two Air Arms also changed during the war. The Defence Department put forward two different plans for the organisation of the Air Arms, but neither was accepted by Parliament. The pattern from 1913 repeated itself. The development of the Air Arms happened at the discretion of the Defence Department.

The Norwegian Air Arms entered the war influenced by French aerial development. Their aircraft were mainly of French origin and the pilots and engineers had mainly been educated in France. At the end of the war, both Air Arms were under heavy British influence. Their most modern aircraft were British, a lot of pilots had visited Britain during the war, and thus the main influence came from Britain.

As the major powers in Europe went to war in August 1914, Norway and Sweden issued a common statement of neutrality, also promising not to attack each other.²¹² Militarily,

²¹¹ Morrow, *The Great War*, 1-57.

²¹² Fuglum, *Norge i stopeskjeen*, 480.

Norway was quite well prepared, since Parliament had followed a defence-friendly movement within public opinion. In 1913, when Gunnar Knudsen of Venstre again had become Prime Minister, he devoted large parts of his first announcement to Parliament to defence issues. This was a clear sign of a new policy on defence issues, both from Venstre, and from the Prime Minister himself.²¹³ Parliament allocated a lot of time to defence issues during its spring session in 1914, and in February 1914 it agreed to sanction higher budgets and longer service time for the conscripts.²¹⁴ Although some parts of Arbeiderpartiet were advocating pacifism and unilateral disarmament, both Venstre and Høyre were willing to strengthen the Armed Forces.

The Norwegian aerial forces, however, were very small. The Navy had no operational aircraft, while the Army had four. For some time into the war, the situation got even worse. By New Year 1915 the Army had no operational aircraft, due to several accidents.²¹⁵ The main doctrinal emphasis in both Air Arms was aerial observation.

At the end of the war the Navy Air Arm could be termed a modern Air Force, equipped with the fighter aircraft Sopwith Baby. Its main emphasis was thus on aerial defence, although observation was still considered a major task. The Army had not been able to acquire any fighter aeroplanes. However, the effort from the Army to do that from the autumn of 1916 and throughout the rest of the war shows that its emphasis was also on aerial defence. A clear doctrinal change had taken place. This chapter will look in more detail at why and how this happened.

To write about the debate on air power doctrine in Norway during the Great War is rather difficult. This is due to the fact that Norwegian officers were not allowed to express their views freely in journals or to the press during the war. In addition, most debates in Parliament about the development of the Air Arms were held in closed and classified sessions, and the documents produced were also classified. These were not printed in *Stortingsforhandling*, and a lot of the sources disappeared during the Second World War, probably in Germany. Since there were no open debates this chapter will take a different approach from the rest of this thesis. It will be based more upon what actually happened than the previous chapters, because this is one of the ways in which it is possible to establish the doctrinal emphasis of the two Air Arms.

²¹³ Nissen, "Venstre i Norge", 300.

²¹⁴ Ibid, 308; Høgum, *Norge i stopeskjeen*, 481.

²¹⁵ Henriksen, *Lufforsvarets historie*, 101.

The Zeppelin Fear

A debated question regarding the First World War is to what extent war threatened Norway. Was it likely that Norway would have to give up its neutrality and join one side in the war? Reading the Foreign Minister's statements to Parliament, which was held in closed sessions during the war, one learns that the concrete threat of war was not what worried Niels Claus Ihlen the most.²¹⁶ What worried him was the constant British pressure upon Norway to reduce its exports to Germany, along with the question of what such a decrease would mean to the German-Norwegian relationship. Ihlen was a pragmatic politician; he balanced Norwegian foreign politics throughout the war, always with the goal of keeping Norway out of the war. The other central issue in Norwegian foreign politics during the war was the country's need to import both food and coal from Great Britain and USA.

Norway's dependence on imports from Great Britain was the country's main problem. The British were most willing to use this to apply pressure to stop Norwegian exports to Germany. Norway did not import important goods from Germany. Thus, the only reason for the Norwegian government to please the Germans was the fear of war. Trade was the overarching issue in Norwegian/British relations, but Britain was also the only country in a position directly to threaten Norwegian territory. There was much talk in the years before the war as to whether a major power, in the case of a war, would try to seize a bridgehead in the south-western part of Norway, thus being able to control a large part of the North Sea.²¹⁷ But only Britain was capable of performing such an operation, as it would probably stop anybody else who tried. Norway's drift towards Britain during the war was not based on a fear of war, but on having a good relationship with this major supplier of food and other important goods. During the Napoleon Wars, Great Britain had enforced an effective blockade of Norway, which led to famine. The Norwegians had not forgotten this. The poet Henrik Ibsen captured Norwegian problems in his epic poem *Terje Vigen*, first published in 1862. The poem is about a Norwegian sailor who rows to Denmark and back to bring food to his wife and child, and is stopped by the British Navy.

²¹⁶ RA, UD, boks 5543, several statements. The statements were long thought missing, but Karl Erik Haug located them in the Riksarkivet. The author wishes to express his regards to Haug for the loan of these documents.

²¹⁷ Fuglum, *Norge i stopeskjeen*, 482. The possibility of a huge naval battle in the beginning of the war also worried Ihlen, see RA, UD, boks 5543, P 12-A 01/14.

His wife and child dies in the famine. Norwegian policy was quite clear. Adjustment to please the British, but not in such a manner that it would lead to war against Germany. The drift in neutrality worried many Norwegian politicians. They were uncertain of the German reactions to these policies, as Norwegian exports to Germany kept decreasing. The fear of warlike reprisals from Germany was common, at least in three periods, not only among politicians, but also in the population. The first incident happened during the late summer and autumn of 1916, when the Norwegian government issued a resolution restricting the movement of foreign submarines in Norwegian waters. The sinking of the Norwegian merchant fleet had reached new peaks during the early autumn that year, and the newspaper *Tidens Tegn* led the campaign that eventually made the government issue a submarine resolution on 13 October.²¹⁸ The resolution was interpreted by the Germans to be unfriendly. In an interview with the central newspaper, *Aftenposten*, on 21 October the German under-secretary of State said that Germany could not let this happen without reacting. Many believed this to be unspoken threats of military punishment. In Kristiania, the demand for insurance against aerial attacks reached new peaks.²¹⁹ After diplomatic contact with the German authorities, the text in the resolution was slightly changed in January 1917. The second incident came during the spring of 1917, when Norway was secretly negotiating with Great Britain about the possibility of lending the Entente the Norwegian merchant fleet. The fleet was at that time the fourth largest in the world.²²⁰ The third incident occurred in early 1918, when the Norwegian, German and Austrian governments negotiated a treaty on trade. There was fear of the possibility of German attacks in case the negotiations broke down.²²¹

The overriding fear during the war was the threat of a German U-boat campaign against the Norwegian merchant fleet in Norwegian waters. The possibility of attacks from Zeppelins on the Norwegian capital and/or industry also was considered a most possible threat. Olav Riste claims in his study on Norway's relations with belligerent powers during the war, that these fears were exaggerated, since Germany never planned to use force against Norway. He even states that "...serious military measures could with reasonable confidence be discounted by Norway from the very beginning".²²² Riste

²¹⁸ Berg, *Norge på egen hånd*, 215.

²¹⁹ Ibid, 216; Berge Furre, *Norsk historie 1905-1940*, (Oslo, 1972), 78-79.

²²⁰ Only the British, German and American were larger.

²²¹ Berg, *Norge på egen hånd*, 238

²²² Riste, *The Neutral Ally*, 126.

claims that the main reason was that the German government did not want to push Norway into the hands of the Entente.²²³

Karl Erik Haug has shown that Germany did not plan a war against Norway when the fears peaked in Norway during the autumn of 1916.²²⁴ Haug shows that what some historians have interpreted as a crisis that could lead to war with Germany, was actually a political conflict. He writes:

*In this perspective, the conflict between Norway and Germany in the autumn of 1916 in connection with the Norwegian resolution on submarines was no crisis imbued with the looming danger of war, as it was felt in contemporary Norway.*²²⁵ (Author's emphasis.)

The point is, however, that what shaped Norwegian politics was the contemporary understanding. The fear of German Zeppelin attacks was definitely real. Both Riste and Haug make a point of exactly this in their studies, that Norwegians interpreted the crises to be more serious than historical sources have since proved them to be.²²⁶ As Riste explains:

*Germany's reactions to the submarine decree evidently made a deep impression in Norway at the time. There are indications that business circles began preparing for a war: many owners of houses in the capital took out insurance against bombardment and war damage; some Norwegian diplomats made dispositions for the safety of their families if the worst should come to the worst.*²²⁷

Thus, as Riste himself shows, even fears that were exaggerated, were important, because they explain Norwegian policy. One of the products of the fear of German attacks was

²²³ As Riste demonstrates, a neutral Norway best served both Germany and Great Britain, although several British agencies, among them the Admiralty, on several occasions considered options that would bring Norway into the war.

²²⁴ Karl Erik Haug, "Falls Norwegen auf die Seite unserer Feinde tritt". *Det tysk-norske forhold fra sommeren 1916 til utgangen av 1917*, Hovedoppgave i historie, Historisk Institutt, Universitet i Trondheim, høsten 1994, 79.

²²⁵ Karl Erik Haug, *Den tysk-norske spenningen under Første Verdenskrig*, IFS-Info 5/1994, 22, author's translation, ("Konflikten mellom Norge og Tyskland høsten 1916 i forbindelse med den norske ubåtresolusjonen blir etter dette ingen krise med fare for krig slik den norske samtiden oppfattet det.").

²²⁶ Riste, *The Neutral Ally*, 143; Haug, *Den tysk-norske spenningen*, 26.

²²⁷ Riste, *The Neutral Ally*, 143.

that Norwegian air power doctrine changed, as it initiated the process of creating an aerial defence for the country.

A threat assessment, as one would believe Norwegian authorities made in the autumn months of 1916, constitutes an evaluation of two factors, your potential enemy's intention and capacity. In what follows these two factors will be discussed.

In 1916-1917 Norwegian authorities were uncertain as to the German intentions. The Norwegian authorities had no civil or military intelligence organisation to support their threat assessment, but the General Staff acted as the central intelligence agency of Norway. On 31 October 1916, as the problems peaked in the Norwegian-German relationship, the General Staff ordered the Army Divisions to prepare the blackout of the cities of Kristiansand, Bergen and Trondhjem, because, as the General Staff concluded:

*We are [...] helpless in case of aerial attack.*²²⁸

In a report on the Air Force delivered in 1936, Colonel Otto Ruge, analysing possible aerial threats against Norway, referred to what he termed the Zeppelin-threat of 1916. He stated that "We have ourselves a World War I experience of how straining threats of such aerial attacks can be."²²⁹ In 1916 Ruge was an adjunkt of the General Staff, and is therefore considered a valid source as to what were the feelings in the General Staff.

Central Norwegian politicians feared war with Germany in the busy days of late October. In the middle of the turmoil concerning the submarine resolution, a meeting was held 28 October 1916, arranged by the Foreign Minister. All party leaders within Parliament participated. No minute of this meeting seems to exist, but Johan Castberg has written about it in his diaries.²³⁰ Castberg's report was written on 5 November 1916, only eight days after the meeting, and is therefore considered a reliable source. The meeting shows clearly that several politicians feared war with Germany, and also that the government took some precautions, since Defence Minister Holtfodt briefed on the military situation. Holtfodt stated, according to Castberg, that, if Germany were to attack, it most probably would launch an air attack and an U-boat war against Norwegian shipping. He claimed, however, that, as long as Sweden stayed neutral, Norway would manage such an attack.

²²⁸ RA, PA 616, pakke 8, 31.10.1916, Generalstaben til 1., 2., 5., og 6., div m.v., here quoted from Berg, *Norge på egen hånd*, 221.

²²⁹ Bilag 2 til Stortingsmeddelelse 38/1937, 72, author's translation, ("Vi har selv fra Verdenskrigen direkte erfaring for hvor trykkende trusler om slikt angrep kan være.").

²³⁰ Castberg, *Dagbøker*, 109-130.

Kristiania and Kristiansand could not be attacked by U-boats, and, as long as the British were masters of the sea, Germany could not try a bridgehead operation on the Norwegian coast. Because of this, Holtfodt said that Norway could not tolerate any speculation about the British or French being allowed a stronghold on Norwegian territory, since this would put Sweden in a very difficult position. Johan Ludwig Mowinckel, who headed Venstre's group in Parliament, did not agree with Holtfodt. Mowinckel stated, according to Castberg, that Norway at once ought to find out what help the Entente could give if Germany attacked. Foreign Minister Ihlen then reported several telegrams from Norwegian foreign stations, which stated that both France and Great Britain were holding Navy vessels and aircraft capable of shooting down airships ready in the event of a German attack.²³¹

Defence Minister Holtfodt worried about the consequences for the civilian population in case of aerial attacks upon Norwegian cities. Therefore he sent an inquiry to the Norwegian embassy in London, asking if they could explain what measures the British were taking. Holtfodt was also worried about the possibility of gas being used in such operations.²³² Holtfodt got several replies from the Attaché, giving brief information on how the British tried to defend themselves.²³³

In early 1918, Gunnar Knudsen, on several occasions feared that a possible break in the negotiations with Germany and Austria would lead to war. In retrospect, Knudsen remembered that:

*If there was a break with Germany, we could have risked that a few hours later we would be visited by some Zeppelins attacking Kristiania, Rjukan and the power stations on the river Glommen with the most terrible consequences.*²³⁴

What about the perceived German capacity to attack Norway? Karl Erik Haug has argued that this was modest. Haug has a valid point here. It is correct that the German capacity by 1916 was somewhat modest. Peter Fritzsche has demonstrated that the Zeppelin

²³¹ RA, UD, boks 510, G14C 3/15, 13.11.1916, Vogt til Ihlen, J. Nr. 33888.

²³² RA, FD, FD til 1940, boks 2, 27.11.1916, FD til UD, J. nr 3616/1916, 1.

²³³ RA, FD, FD til 1940, boks 2, 06.12.1916, Militærattachéen til FD, J. Nr. 1203/1916, 5.

²³⁴ Per Fuglum, *En skute -- en skipper. Gunnar Knudsen som statsminister 1908-10 og 1913-20*, (Trondheim, 1989), 331, author's translation, ("Blev der brud med Tyskland, så kunde vi godt ha risikert nogen timer efter å ha hat besøk av nogle Zeppeliner med homber over Kristiania, Rjukan og kraftstasjonene ved Glommen med de mest forferdelige følger.").

attacks on Great Britain from 1915 until the end of the war were a military catastrophe.²³⁵ The Zeppelins were taking a high loss rate, not proportional to the damage they did. But there is clear evidence that this was not known in Norway. As in Great Britain, many Norwegians exaggerated the capacity of the Zeppelins. In the autumn of 1916, probably as a response to the Zeppelin-fear, Sem-Jacobsen wrote about the giant airships. The article was strictly technical. Sem-Jacobsen did not write about the possibility of an attack. He based his knowledge on pre-war writings on the Zeppelins, but also on facts given by British and French authorities. He emphasised the great development that had taken place during the war, and made the point that the new Zeppelins had a far better potential for creating havoc than earlier models. He even termed the Zeppelins “monsters of the air”, and concluded with the claim that the oceanic journey (the flight across the Atlantic) would soon be unproblematic.²³⁶

It could be claimed that Sem-Jacobsen had his own agenda in exaggerating the capacity of the Zeppelins. When he wrote the article, he was leading the Army Air Arm, which in this period sought to procure fighter aircraft. It would therefore be in his own interest to inflate the capacities of the Zeppelins. Sem-Jacobsen may, however, serve as an example of the fact that the capacity of the Zeppelins was interpreted to be that they would be able to attack Norway.

Karl Erik Haug makes the point that Norway was helped by its climate, as the Zeppelins could not withstand high winds. Haug uses the crash of the “L-20” in May 1916 at Jæren on Norway’s south-western coast as an example of this.²³⁷ But Zeppelins were sighted on several occasions on the southern and south-western coast of Norway. They were spotted off the Norwegian coast at least four times in July and August 1916. In 1917 the Navy registered five sightings of airships.²³⁸ Although there is some uncertainty regarding the purpose, or possible lack, of the Zeppelin’s visits to the Norwegian coast, the “L-20” was not representative of the airships that were seen. Roald Berg has turned Haug’s argument upside down, by claiming that the “L-20” was a signal that the next time such an airship

²³⁵ Fritzsche, *A Nation of Fliers*, 43-58.

²³⁶ Einar Sem-Jacobsen, “Zeppelinerne”, *Norsk Militært Tidsskrift*, 1916, 571-578, author’s translation, (“luftulyrer”).

²³⁷ Haug, *Det tysk-norske forhold*, 91.

²³⁸ Admiralstaben, *Marinen. Neutralitetsvernet 1914-1918, samt neutralitetsvernets utvikling 1918-1919*, (Kristiania, 1921), 18-34.

could attack Norwegian nitrate-factories.²³⁹ Haug also makes the point that the Germans lacked aerial maps of Norway during the war, but this was not known in Norway.

In April 1917 Parliament was again concerned about the possibility of a German aerial attack. Johan Castberg wrote in his diaries that Defence Minister Holtfodt on several occasions was asked whether the Norwegian military was prepared for an attack. According to Castberg, particular emphasis was put on aerial defence. But Holtfodt was silent, and in spite of several appeals in Parliament, he would not answer the question, since that would turn the debate into a question of defence politics. Castberg himself then replied that what Parliament needed was a clear statement that Norway was prepared to defend itself. Holtfodt was silent, and, according to Castberg, this was a silence that spoke for itself.²⁴⁰

An interesting question about the fear of war with Germany is how it came into being. That Germany was thought to have the capacity to attack Norway with airships is already established. Germany never explicitly threatened to attack Norway, and it is possible that Norwegians over-estimated their own role in Germany's foreign affairs. Robert Jervis has argued that this is a tendency in international affairs, and described the phenomenon as "Overestimating One's Importance as Influence or Target."²⁴¹

It is also an interesting feature of the fear that the Norwegians feared something they knew very little about. Malcolm Cooper has argued that the British felt the development of military aerial flight as more threatening than other countries in Europe, as the British had felt shielded by the Royal Navy.²⁴² This argument can also be used with respect to the Norwegians. Although many people, especially those in close contact with the Norwegian sailors manning the merchant fleet, had felt the effects of war, Norway was still a peaceful corner of Europe. The main reason for this peacefulness was geography. Norway was a European outpost, divided from the continent by the Skagerak, and from Great Britain by the North-Sea. The creation of the aeroplane and the airship threatened the advantages of being an outpost. War could be brought to Norway in a matter of hours. In addition, nobody had any experience in this new kind of warfare. The possible effects of aerial attacks on cities or industries could only exist in people's imaginations.

²³⁹ Berg, *Norge på egen hånd*, 227.

²⁴⁰ Castberg, *Dagbøker*, 194.

²⁴¹ Robert Jervis, *Perception and Misperception in International Politics*, (Princeton, 1976), 369.

²⁴² Cooper, *Independent Air Power*, 2.

Zeppelins were giant monsters of the air. Peter Fritzsche has argued that not only was the sheer size of the Zeppelins frightening and somewhat superhuman, but also that:

*...the streamlined zeppelin itself seemed inaccessible, closed, without showing even a trace of the crew, added to the sense of the unknowable, possibly extraterrestrial power.*²⁴³

The Norwegian fear during the autumn of 1916 thus has clear parallels to the Zeppelin fear in Great Britain in 1909.²⁴⁴ The ocean and the distance to the battlefield no longer protected Norway, and Britain was no longer the only country that was able effectively to threaten Norway. The importance of the British Navy as Norway's implicit guarantee was still considered to be huge in Norwegian security policy, but it had been somewhat modified by the invention of aeronautics.

The fear of the airship was about the unknown, somewhat "...otherworldly, all-seeing, all powerful."²⁴⁵ But unlike the British in 1909, the Norwegians knew that cities and industries had been bombarded from the air in the ongoing war. In a sequential Danish/Norwegian publication about the development of the war, a 1915 issue concerned air power. They listed fifteen missions for air power, amongst them "Attack on the enemy's main cities."²⁴⁶

But, the Norwegian situation also is a clear parallel to the British policy on aerial defence during the First World War. Several scholars have shown that the fear of Zeppelin and Gotha attacks was out of proportion to the amount of damage that these vessels could create. But this fear shaped British aerial policy both before and during the war.²⁴⁷ Reactions to the German attacks, however modest their results, created the first independent Air Force in the world. As Malcolm Cooper has argued, the creation of the RAF was not a military, but a political necessity. The British government had to show its population that it had done something both to protect them and to retaliate against Germany.²⁴⁸

²⁴³ Fritzsche, *A Nation of Fliers*, 49.

²⁴⁴ For an outline of the Zeppelin-fear of 1909, see Alfred Gollin, *The Impact of Air Power on the British People and their Government, 1909-1914*, (Stanford, California, 1989), 49-63.

²⁴⁵ Fritzsche, *A Nation of Fliers*, 49.

²⁴⁶ H. Jenssen-Tusch, H. Ewald, Johs. Lindbæk and H. Styrmer, *Verdenskrigen, 49. Hefte*, (København og Kristiania, 1915), 93-94, author's translation, ("Overfald paa Fiendens Hovedbyer").

²⁴⁷ See for instance Gollin, *The Impact of Air Power*, 49-63, 230-260; Barry D. Powers, *Strategy without slide-rule. British Air Strategy 1914-1939*, (London, 1976), 11-52.

²⁴⁸ Cooper, *Independent Air Power*, 10, 65.

Aerial Defence Becomes a Priority

By the summer of 1916 Norway had almost no defence against aerial attack. The two Air Arms had no fighter aircraft and no ordinary air defence artillery guns. The only defence was some observation aircraft equipped with light machine guns, and some artillery guns that had been modified through a new carriage.²⁴⁹

The Norwegian authorities, faced with the threat of German aerial attack, began improving its air defences during the autumn of 1916. Although the General Staff in 1915, in a proposal for the further development of the Army Air Arm, had mentioned the importance of fighters,²⁵⁰ it was not until the concrete fear of German attacks that Norwegian air power doctrine changed. The work would be successful, although the time it would take to acquire fighter aircraft and air defence guns was rather long. This was of course because the belligerent countries were not eagerly awaiting customers for equipment they needed themselves. The Navy and artillery eventually succeeded. The Navy Air Arm obtained several Sopwith Babies from Great Britain, while the artillery acquired both mobile and stationary guns from France and Great Britain.

Before looking into these procurements, it is necessary to recap the status of the Norwegian air power doctrine by the summer of 1916. Given the procurement policy of the two Air Arms, it will be quite clear that the aerial authorities did not consider aerial defence a major priority until the autumn of 1916.

In the Navy, the aircraft factory at Horten had been building several types of aircraft from 1915 onwards. All these types were of pre-war Farman-design, and designed for reconnaissance and observation, although they could be equipped with machine guns and small bombs.²⁵¹ At the Army aircraft factory at Kjeller Farman-type aircraft were also being built.²⁵² As Vera Henriksen has shown, both Sem-Jacobsen and Gyth Dehli kept on constructing obsolete aircraft based on the Farman design. Since those two were the only

²⁴⁹ Early in the war, work had begun on converting some of the Field Artillery's 7,5 cm M/1901 Rheinmetal and Hotchkiss machine-guns, see Øyvind Asbjørnsen, *Det norske luftvernartilleriets historie, del 1, 1916-1945*, (Stavern, 1983), 2, 18, 57-58.

²⁵⁰ The General Staff only mentioned the importance of fighters, but proposed to have none, see RA, GS, boks 114, 15.11.1915, Generalstaben til Kommanderende General, J. nr. 2232/15.

²⁵¹ For a description on aircraft types built by the Navy, see Johan Høver, "Marinens flyvebåtfabrikk", *Volund. Norsk teknisk museums årbok*, (Oslo, 1975), 7-51.

²⁵² In Norway ten different types of Farmans were built to a total of 45 aircraft, see Finn Lillevik, *Forsvarets luftflaade 1912-1982. Beskrivelser av våre bevarte militære fly*, (Oslo, 1984), 30.

aircraft engineers in the country at the beginning of World War I, it could not be expected that they could keep pace with the rapid development in the rest of Europe.²⁵³

During the summer of 1916, the Navy aircraft factory sent about ten inquires to the United States, Britain and Sweden, as to the possibility of acquiring a seaplane for reconnaissance purposes. The Army also received some reconnaissance aircraft from France, the first two arriving at Kjeller by August 1916.²⁵⁴

The change in priorities came during the autumn of 1916. In the Army Air Arm, the acting chief, Sem-Jacobsen got the task of putting together a policy for the procurement of aircraft from abroad. In October a list was ready. Three different types of aircraft were listed. Sem-Jacobsen wanted 25 Farman 40s equipped with machine-guns and light bombs which could be used against airships, 10 Sopwith or Nieuport fighters for aerial defence against high-maneuvrable targets, and 20 flying boats which should be used at the fortresses, mostly for reconnaissance.²⁵⁵ The list thus clearly shows a change in the priority of the tasks of the aircraft.

The Military Attaché in London, Major Gulbransson of the Army, began the work of acquiring acroplanes in the beginning of November 1916.²⁵⁶ The first hope was to buy modern fighter aircraft from the British, but the only plane the British were willing to sell was the BE2e, a two-seat reconnaissance aircraft. The BE2e was only a modest improvement on the BE2c, the famous Fokker-fodder aircraft that had been produced in great numbers, which was obsolete by at least the middle of 1916.²⁵⁷ The aircraft were thus of a quite different type than the ones Sem-Jacobsen wanted. But the embassy in London was told on 9 December 1916 to order 20 of these aircraft. Not until the middle of June of 1917 did the Air Arm get the promise of 20 aircraft, used and of different types. The Army pilots already in England recommended the aircraft, as the best available option. One of the pilots, Tellefsen, later claimed that they had tried to get either Sopwith or Bristol fighters, but without any luck.²⁵⁸

²⁵³ Henriksen, *Luffforsvarets historie*, 104.

²⁵⁴ *Ibid.*, 71, 105.

²⁵⁵ *Ibid.*, 108-109.

²⁵⁶ RA, UD, boks 510, G14C 3/15, 08.11.1916, Forsvarsdepartementet til Utenriksdepartementet, J. Nr 33284.

²⁵⁷ Cooper, *Independent Air Power*, 34.

²⁵⁸ Henriksen, *Luffforsvarets historie*, 122-123.

Sem-Jacobsen himself went to England to inspect the aeroplanes in July 1917. As he probably knew that the Navy was getting new fighters from the Admiralty, he was furious. The BE2e did not satisfy the Air Arm's need. He protested loudly, worsening his already bad relationship with Colonel Grüner and making the Military Attaché in London, Major Gulbransson, write a rather angry letter to his superiors.²⁵⁹ The British had by then pulled back most of its BE2s from frontline service, although the type had proven useful in aerial defence against airships over Britain.²⁶⁰ This possibly should have made Sem-Jacobsen less furious about the purchase. It is not unlikely that it was envy of the Navy Air Arm, which out of the blue had become a modern Air Force that was most difficult to tolerate for him.

The Norwegian Navy Attaché in London suddenly got the offer to buy modern Sopwith Babies from the British Admiralty in July 1917.²⁶¹ The purchase was hastily arranged, as Ambassador Benjamin Vogt in London stated that: "Since the situation here changes almost on a daily basis, I recommend immediate decision."²⁶² By late July 1917 the Navy Air Arms had received their first four Sopwith Babies. Six more aircraft arrived in April and August 1918. The First Sea Lord, Commodore Pain, had met with Riiser-Larsen and Horgen, two Norwegian Navy pilots, and, according to Vera Henriksen, had almost bypassed his superiors, and ordered ten Sopwith Babies for Norway. Pain said that they could be more useful there than in Britain.²⁶³ The planes were modern fighters; they were equipped with one or two Lewis machine guns that fired through the propeller, and could carry nine small bombs (9 kilos) or one larger 50-kilo bomb.

Vera Henriksen wonders what the British got in return for both their most modern fighters and also giving Norwegian pilots training during the war. Could it be that these aircraft were considered a "long arm" of the Royal Naval Air Service, fighting German U-boats on Norwegian territory? It is quite clear that what the Norwegians wanted was fighter aeroplanes, but could it be that the British had other plans as to the possible tasks of the Babies?

²⁵⁹ RA, UD, boks 510, G14C 3/15, 07.08.1917, Militærattacheen til Forsvarsdepartementet, J. Nr. 26354.

²⁶⁰ Lillevik, *Forsvarets Luftflaade*, 31.

²⁶¹ RA, Utenriksstasjoner, boks 389, 01.06.1917, Marineattacheen til FD; RA, UD, boks 510, G14C 3/15, 18.07.1917, Vogt til Ihlen, J. Nr. 24338.

²⁶² RA, UD, boks 510, G14C 3/15, 22.07.1917, Vogt til Ihlen, J. Nr. 24438.

²⁶³ Henriksen, *Luftforsvarets historie*, 72.

The Norwegian Navy had not been able to hinder totally the traffic of submerged German U-boats through Norwegian waters. And the Navy stationed their newly acquired aircraft not only in Kristiansand, on Norway's southernmost coast, but also near Karmsundet, a small narrow waterway inside Norwegian territory often used by German U-boats.²⁶⁴ The official explanation for this new air base was to search for mines, but according to its chief, Hjalmar Riiser-Larsen the main emphasis lay on chasing U-boats.²⁶⁵

What the Norwegian Navy wanted were fighter aircraft that in addition could hunt U-boats. But, the Sopwith Baby was not the best aircraft to do that job by July 1917. It therefore seems unlikely that the sole argument behind the British decision to sell the Sopwiths to Norway was that it wanted the Norwegian Navy to chase U-boats. If that had been the case, they probably would have offered aircraft of other types.

With regards to the air defence artillery, the authorities were of the opinion that the converted field artillery guns were not satisfactory. In the autumn of 1916 Captain Richard Osmundsen was sent to both Britain and France to try to procure guns. He succeeded in procuring quite modern guns. The Army got British guns of 7,6 cm, both mobile and stationary types, and the French 7,6 cm stationary gun. In 1916 the Navy had also bought anti-aircraft guns from Sweden to be installed on their small dreadnoughts.²⁶⁶

The use of the guns, and the possible targets they were to protect, gives insight into what the military authorities feared most regarding aerial attack. Norsk Hydro's factories at Rjukan and Notodden, which were both owned by French investors, were equipped with privately financed British and French guns in the autumn of 1916.²⁶⁷ The factories were intertwined in the war economy, since they produced nitre for French munitions.²⁶⁸ The personnel at the factories manned the guns, although officers from the Army made up a small corps of leading men. Thus, the military did not need to situate its new guns to protect the central factories in southern-Norway. The 12 mobile guns, which had been acquired from Great Britain, were put into the defence of the capital, Kristiania. The stationary guns were to protect the fortresses in south-eastern and southern Norway.²⁶⁹

²⁶⁴ Meyer, *Hærens og Marinens flyvåpen*, 47.

²⁶⁵ Hjalmar Riiser-Larsen, *Femti år for kongen*, (Oslo, 1958), 73.

²⁶⁶ His travel bill created some difficulties. He had hosted several receptions and parties, and the bill reached 60 000 NOK. None of the bureaucrats in the Defence Department dared to sign it, and it went all the way up to Defence Minister Holtfodt, who signed it when he saw what Osmundsen had managed, see Ashbjørnsen, *luftvernartilleriets historie*, 18, 24-37, 41, 259-260.

²⁶⁷ Furre, *Norsk historie 1905-1940*, 79.

²⁶⁸ Bull, *Klassekamp og fellesskap*, 26.

²⁶⁹ Ashbjørnsen, *luftvernartilleriets historie*, 90.

The Attempts for Greater Jointness

When in the spring of 1916 the Military Committee treated the Defence Department's budget proposal for the Army, it stated that:

The Committee will, regarding the Air Arm in general, note that one has the impression that the development of this new and important weapon leaves a lot to be desired.²⁷⁰

The Committee concluded, however, that it knew that the Department was finally about to propose an organisational plan for both Air Arms, and that it therefore did not want to use this opportunity to comment more on the matter.²⁷¹ In April 1916, the Department forwarded the awaited proposition.²⁷² Proposition 84 was classified, and was characterised by a lot of proposals, but few arguments.

The Defence Department found the situation in the two Air Arms unsatisfactory. They proposed to employ a joint General Inspector of both Air Arms, which clearly shows that they were dissatisfied with the co-operation between them. The Department pointed towards Britain to explain that it was necessary for the development of the two Air Arms that this became the responsibility of a single officer.²⁷³

Both Fredrik Meyer and Bjørn Magne Smedsrud have claimed that the Defence Department through Proposition 84 proposed an independent Air Force.²⁷⁴ This is not correct. What the Department wanted was a mutual General Inspector for the two Air Arms. This Inspector was not to have operational command over any aircraft, but was supposed to become responsible for procurement, education and maintenance in both Arms, as well as being the Department's foremost advisor on aerial policy. Although the Department did not mention to whom this General Inspector of the Air Arms was subordinate, it was most probably their intention to establish the Inspectorate as a part of the Army. An officer of either the Army or the Navy could man the position of Inspector.

²⁷⁰ Indst. S. X./1916, 10, author's translation, ("Komiteen vil angaaende flyvevæsenet i sin almindelighet ha bemærket, at man har indtryk av, at utviklingen hos os av dette nye og viktige vaaben lar ikke litet tilbake at ønske.").

²⁷¹ Ibid, 10.

²⁷² Stortingsproposisjon 84/1916.

²⁷³ Ibid, 54.

²⁷⁴ Meyer, *Hærens og Marinens flyvåpen*, 25; Smedsrud, *Luftmakt i Norge*, 24.

The aircraft were to be organised in small groups, consisting of one to four aircraft, which were to be organised within the six divisions of the Army, or the six different Navy districts. Thus, aerial development would be put under a centralised leadership in peacetime, while the aircraft was to be distributed throughout the armed forces for operational use.

The Department wrote nothing in particular about the role of the aircraft. Each aeroplane was, however, to have both a pilot and an observer, pointing to the conclusion that the Department still saw aerial observation and reconnaissance as the main role for air power. They mentioned the need to educate aerial gunners and bombers, but concluded that Norway ought to obtain more experience in these matters, before it was possible to conclude how many men were needed for these purposes.²⁷⁵

The proposal from the Defence Department had been discussed in the permanent Commission on Defence matters. The Commanding General of the Army and the Chief of the General Staff agreed to the entire Proposition, while the Commanding Admiral and the Chief of the Admiral Staff did not want a common General Inspector of the two Air Arms. This was probably because the General Inspector was to be subordinate to the Commanding General, thus becoming a part of the Army and not directly influenced by the Navy. The Navy feared that naval air would lose priority.

Another argument has, however, to be mentioned. The Navy was, to a greater extent than the Army, involved in neutrality guard operations. In this respect, the small Navy Air Arm had proven itself a good asset. The Norwegian Army was, on the other hand, a war-fighting organisation, with only a small part performing neutrality guard operations. Thus, the Navy's arguments for a Navy Air Arm probably referred to the armed forces as a neutrality guard force. The Army was structured for war, and thought of air power in that respect.

It has not been possible to find out in detail what the Military Committee and Parliament felt about the Proposition. In his report of 1936, Colonel Otto Ruge gave short explanations to documents that are now missing.²⁷⁶ He there stated that the Military Committee, in its secret recommendations to Parliament, proposed to postpone the matter. Parliament followed this advice.²⁷⁷

²⁷⁵ Stortingsproposisjon 84/1916, 56-57.

²⁷⁶ Bilag 2 til Stortingsmeddelelse 38/1937, 57.

²⁷⁷ Meyer, *Hærens og Marinenes flyvåpen*, 43.

The Defence Department kept on pushing for a joint leadership of the Air Arms. In a letter to the Military Committee in November 1916, it repeated the necessity of joint leadership, and referred to letters from both the Commanding General and the General Staff who were of the same opinion. The Military Committee answered the Defence Department in a letter of 9 December. Although the Committee was to some degree split on this question, it did not want to go against the advice of the Department.²⁷⁸ Both authorities thus wanted a common leadership.

This was, however, not to be the case. The Defence Department answered the Military Committee in January 1917. The situation had now changed. The Department stated that it saw no possibility of solving the personnel issues regarding a joint leadership, and that therefore, as a temporary solution, it wanted to establish positions as Inspectors of the two Air Arms.²⁷⁹ It has not been possible to find out why the Department changed its policy so soon, or what were the personnel questions that were insoluble. It could be that the Defence Department did not find the individual who would have trust within both Air Arms. The Military Committee followed the reasoning of the Department, and the temporary positions as Inspectors of the Air Arms were established. It is paradoxical that personnel question was able to hinder organisational development.

Since Henrik Thaulow's death in March 1916, Sem-Jacobsen had more or less headed the Air Arm. Through a resolution of 18 August 1916 the Defence Department had made this arrangement official policy. Based on Proposition 84, the Defence Department established the position of Weapons Inspector of the Army Air Arm and Air Defence, and appointed Colonel Gustaf Grüner to the position from 12 February 1917.²⁸⁰ Thus, the heavy anti-aircraft artillery was organised within the Air Arm.²⁸¹ Commander Jack von der Lippe was temporarily appointed Chief of the Navy Air Arm on 13 September 1916.²⁸²

Grüner was a man of great energy who instantly set about to improve the situation in the Air Arm. He is described as an energetic person with loads of enthusiasm. Vera Henriksen writes that it was typical of him that he obtained his pilot's certificate in 1918,

²⁷⁸ Bilag 2 til Stortingsmeddelelse 38/1937, 57.

²⁷⁹ Ibid, 57.

²⁸⁰ Meyer, *Ilærens og Marinens flyvåben*, 41; Henriksen, *Luftforsvarets historie*, 110.

²⁸¹ This arrangement only lasted about 18 months, since a Royal Decree of 6 September 1918 decided that the Air Defence Artillery was to be transferred to the Field Artillery (mobile guns) and the Fortress Artillery (stationary guns), see Asbjørnsen, *Luftvernartilleriets historie*, 91; Henriksen, *Luftforsvarets historie*, 129-130.

²⁸² Ibid, 107.

at the age of 53.²⁸³ Grüner and Sem-Jacobsen almost instantly clashed. Grüner entered the scene without any experience of aviation, a field dominated by Sem-Jacobsen. Grüner demanded, for instance, strict calculations about the production rate at the aircraft factory at Kjeller, while Sem-Jacobsen was always optimistic. A lot of letters back and forth show that the relationship between the two central men in the Army Air Arm was an unhappy one that to some degree prevented progress.²⁸⁴

The Defence Department took a step towards integration in February 1917, when it established the Permanent Commission on Aviation. The mission of this Commission was to enhance the co-operation between the two Air Arms. Colonel Grüner headed the Commission, and Commander von der Lippe was deputy.²⁸⁵

In 1917, a massive increase in the funding of both Air Arms was sanctioned by Parliament. Through proposition 102, the Defence Department suggested giant leaps in the budgets of military aerial activity in Norway. The money was mostly to be used for procurement of new aircraft, as well as for the construction of several new air stations, especially on Norway's southern and south-western coast. Some funding was intended for the procurement of 21 anti-air artillery guns. The guns were to be used to protect the Army in the field, the fortresses, the cities of Kristiania and Trondheim, and the factories of the Army.²⁸⁶ As with most propositions during the war, 102 from 1917 included very few arguments. The Department stated again, however, that the new weapon of air power was developing so rapidly that it was difficult to conclude what the best solution would be. The Military Committee forwarded and Parliament sanctioned the proposals of the Department.²⁸⁷

In June 1918 the Defence Department again tried to convince Parliament to sanction a plan for the two Air Arms, through Proposition 165.²⁸⁸ The Department's major goal was to make sure that the country's military aerial resources were spread throughout the country, and not centralised around the capital. Colonel Grüner warned against the rapid change of the organisation. He claimed that the threats of war and the unusual situation in which the Air Arm was developing should lead to only small changes. More fundamental changes would lead to a temporary downturn in the organisation's efficiency, a downturn

²⁸³ Ibid, 121.

²⁸⁴ Ibid, 132.

²⁸⁵ Meyer, *Hærens og Marinens flyvåpen*, 54-55.

²⁸⁶ Stortingsproposisjon 102/1917, 10.

²⁸⁷ Indst. S. LXXII./1917; Printout of "Stortingets forhandlingsprotokoll 1917", 70.

²⁸⁸ Stortingsproposisjon 165/1918.

that was not wise in such harsh times.²⁸⁹ Therefore, his suggestions were almost similar to the proposed plan in Proposition 84.²⁹⁰ The Commanding General and the General Staff agreed with Colonel Grüner, and thus the Defence Department concluded that a plan for the Army Air Arm was still premature. The Department wanted more experience before concluding on this matter, but proposed to Parliament to allow the Department to follow Colonel Grüner's plan.²⁹¹ One wonders when the Department would have been ready to decide on the organisation of Norway's aerial forces.

When discussing the establishment of airbases throughout the country, the Department stressed that the bases at Kristiansand in southern Norway (two bases) and Bergen in western Norway be made operational as soon as possible, due to what they termed "the current situation". Thereafter, the base in Northern Norway was to be given priority. Again the priority for defensive action against aerial attack was shown.

The proposition did not contain much on the Navy Air Arm. The Navy's air bases at Kristiansand and Bergen were mentioned, as was the explicit arrival of six new fighters from Britain. The Department used the proposition to inform Parliament that these aircraft would be stationed in Kristiansand, another clear sign of priorities. Indeed this was where, on Norway's southernmost tip, all fighter aircraft within the country were to be stationed.

British Influence

When working on proposition 84 of 1916, the Department had tried to get information about developments from other countries. But it complained that this had not proven possible because of the secrecy of which such questions were treated.²⁹² However, the attempt shows the government's determination to follow international developments in air power.

²⁸⁹ Ibid, 2.

²⁹⁰ Henriksen, *Lufforsvarets historie*, 124.

²⁹¹ Stortingsproposisjon 165/1918, 3.

²⁹² Stortingsproposisjon 84/1916, 54.

Norway educated its flight engineers abroad in this period. Before the war they had been sent to France, but this of course created trouble after the war began. Therefore the authorities arranged for First Lieutenant Arne Køltzow to attend an engineering school in Lausanne. Køltzow's knowledge of how things could be different abroad had a rather peculiar effect. On his return to Norway, he wrote to the Defence Department on 5 December 1916, asking to leave the Air Arm immediately. The reason was that he could no longer tolerate working in such a mediocre organisation. His conscience said that he could not be indirectly responsible for the development of the Army Air Arm. Køltzow was an employee at the Army Aircraft Factory at Kjeller, which was headed by Sem-Jacobsen. Amongst others, Køltzow criticised the Air Arm for not emphasising the tactical lessons from the ongoing war and for the lack of air defence artillery to defend the airbase at Kjeller. Sem-Jacobsen was given the opportunity to answer the criticisms. He pointed to the lack of funding and employees, and stated that the Defence Department had tried to get, but not obtained, approval from any of the warring nations to send officers to study their Air Arms. The belligerent countries were of course not willing to share their war secrets with a neutral country.²⁹³

This changed, however, as the procurement of British aircraft began. From 1916 onwards most Norwegian pilots visited Great Britain. The British insisted that pilot training on new aircraft types was a necessity, and thus this was the most common reason for officers visiting Great Britain.²⁹⁴ But some pilots were also sent during the autumn of 1916 to try to negotiate a purchase of aircraft. The Norwegian Army also sent officers to study the development of aircraft at British factories.²⁹⁵ The number of personnel leaving for Great Britain was so high that it created problems for the pilot school at Kjeller. Tancred Ibsen mentions in his autobiography that he and the chief of the pilot school were the only pilots left at Kjeller, since the rest were in Croydon in England for educational purposes.²⁹⁶

Other sources also mention trips to Great Britain for educational reasons. Pilots Hjalmar Riiser-Larsen and Emil Andreas Horgen of the Navy were in Britain during the summer of 1917 to perform pilot training, study aerial development in general, and seaplanes

²⁹³ Henriksen, *Lufforsvarets historie*, 114-115.

²⁹⁴ RA, FD, FD til 1940, boks 2, 06.12.1916, Militærattacheen til FD, J. Nr. 1203/1916, 5; RA, UD, boks 510, G14C 3/15, 02.12.1916, Vogt til Ihlen, J. Nr. 37557.

²⁹⁵ RA, UD, boks 510, G14C 3/15, 02.12.1916, Vogt til Ihlen, J. Nr. 37557; RA, FD, FD til 1940, boks 2, 06.12.1916, Militærattacheen til FD, J. Nr. 1203/1916, 5.

²⁹⁶ Ihsen, *Tro det eller ei*, 43.

especially.²⁹⁷ They were used as authorities by the Norwegian embassy in London when the sudden offer of Sopwith Babies came.²⁹⁸ By June 1917, Captain Trygve Klingenberg, First Lieutenant Kristian Hellesen and First Lieutenant Arne Tellefsen were in Great Britain, for educational purposes.²⁹⁹ In March and April 1918, Lieutenant Commander Halfdan Gyth Dehli and First Lieutenant Leif Ragnar Dietrichson from the Navy were on a similar trip.³⁰⁰ There are also indications that British officers came to Norway during the war, to train the Norwegians in operating their new aircraft, although it has not been possible to find out how many.³⁰¹

These visits had a tremendous impact upon the two small Air Arms. In addition, their most modern aircraft, and thus their training manuals and technical publications, were British. When the war ended, the Air Arms were under heavy British influence.

The influence can clearly be seen in the proposal from Colonel Grüner regarding the use of fighters. Grüner wanted to fight the aerial battle in an offensive manner. It is not unlikely that this was based on the doctrine of the British on the western front. The British Royal Flying Corps under Trenchard, subordinate to the British Expeditionary Force under Haig, was using its fighters in an offensive role from at least the Somme and throughout the war.³⁰² The Germans had learnt that to fight outnumbered meant to fight defensively. Grüner seems not to have taken into consideration the fact that the Norwegian situation was more like that of the Germans than that of the British. To fight like the British, with very heavy casualties, the Norwegians would need numerical superiority, not only in operational aircraft, but also in the supply of new aircraft and aircrew. This would most likely not be the case.

²⁹⁷ Riiser-Larsen, *50 år for kongen*, 66.

²⁹⁸ RA, UD, boks 510, G14C 3/15, 30.07.1917, Forsvarsdepartementet til Utenriksdepartementet, J. Nr. 25153.

²⁹⁹ RA, UD, boks 510, G14C 3/15, 30.06.1917, Vogt til Ihlen, J. Nr. 25573.

³⁰⁰ Henriksen, *Luftforsvarets historie*, 72.

³⁰¹ RA, UD, boks 510, G14C 3/15, 03.05.1917, Vogt til Ihlen, J. Nr. 14732; Berg, *Norge på egen hånd*, 215.

³⁰² Cooper, *Independent Air Power*, 71-81.

Conclusion

Malcolm Cooper has argued that when the effects of strategic bombing in World War I are evaluated, it is not enough to look at the concrete operational results. The German attacks on Great Britain and London in particular had, for instance, almost no operational effect. But they created a fear that produced the world's first independent Air Force.³⁰³

The same argument can be used about the Norwegian situation regarding the effects upon the country's aerial forces. The possibility of a German attack that did not materialise created a new doctrine and new thoughts on organisation within the two Norwegian Air Arms.

This change in doctrine and thinking on air power in Norway began around October 1916. When the Defence Department forwarded Proposition 84 in April 1916, the lengthy document did not contain much on aerial defence. The same was the situation with regards to the procurement policy of the two Air Arms.

By October and in the following months, all this had changed. The effort from the Defence Department and the Department for Foreign Affairs to establish an aerial defence of the country illustrates this. Another example is of course that the Air Defence Artillery was organised as a part of the Army Air Arm in February 1917. This can only be seen as an attempt to integrate the country's aerial defence resources. The establishment of the Permanent Commission on Aviation in the same month is also a part of this picture. The role of aerial defence was not given to any of the Air Arms, but was a mutual responsibility, and it therefore needed co-operation. The massive leap in funding to the Air Arms during the war also fits into the same pattern. It was not until aerial attack became a most concrete and possible reality, that Norwegian authorities began to interest themselves in the matter.

The fear of aerial attacks by Zeppelins had produced a change in Norwegian air power doctrine. By 1923, however, this was almost totally forgotten.

³⁰³ Ibid, 65.

5 The Aftermath of War

When the War ended, and the League of Nations rose out of the ashes, the Norwegian Authorities quite quickly saw the potential for reducing defence spending. Already in the spring of 1919, the Government proposed to reduce service time for the conscripts. After a harsh debate, this was sanctioned by Parliament.³⁰⁴ The Government saw the need for a Royal Commission that was to evaluate all aspects of Norwegian defence policy. The Commission was sanctioned by Parliament in July 1919.³⁰⁵ The Commission was announced 16 April 1920. It consisted of 11 civilian members, only its secretary being an officer. The Commission was not bound by a strict mandate, as even the possibility of total and unilateral disarmament was to be considered.³⁰⁶ The main reason for setting up such a Commission was, of course, the social and military lessons learnt from the war. But it was also expected that the League of Nations would have a great influence on Norwegian defence policy.

The Commission delivered nine reports in the period from 1921 to 1924. Its report on the Air Force was delivered on 5 May 1923, and it argued for an independent Air Force to be established based mainly on the tasks of observation/reconnaissance and aerial defence. This chapter will argue that this conclusion was based primarily on a military argument. The Commission wanted a flexible Air Force to be used where it was most needed, and this meant a unified Air Force. The Commission did not propose to expand the Air Force given the harsh economic situation in Norway, and thus used economics as its second most important argument. The role of independent air operations was not an important argument.

Before looking in more detail at the Commission's recommendations, it is necessary, so as to be able to get a hold of its starting point, to give a short status report on the Norwegian Air Arms.

The situation in the two Air Arms was unsatisfactory in the early 1920s, particularly in the Army. This was illustrated at the air show at Kjeller in 1921. Norsk Luftseiladsforening arranged the display, and several of the Army pilots attended flying

³⁰⁴ Nissen, "Venstre i Norge", 343.

³⁰⁵ Stortingproposisjon 162/1919.

³⁰⁶ Nils Ørvik, *Sikkerhetspolitikken 1920-1939 – fra forhistorien til 9. April 1940, Bind 1, Solidaritet eller nøytralitet?*, (Oslo, 1960), 56-57.

BE2e.³⁰⁷ The Swedish pilots beat the Norwegians in almost every competition. That it was the Norwegian civilian pilots who had been runners-up did not make it better. After the show, the newspapers had headlines like “Is our aircraft park outdated?” and “Do our pilots have bad aircraft?”, along with more technical criticisms like: “The RAF engines that always fail.”³⁰⁸ The following debate criticised the Army Air Arm in almost every aspect. The aircraft were not good enough and the equipment was outdated. The media wondered what would happen in case of war: how long would it take to organise the Air Arm so that it could constitute a fighting force? Colonel Grüner defended his organisation. He claimed, for instance, that the outdated BE2e machines were among the best the British had, and that their stability was very good. The latter statement was of course correct: the BE2e was stable, but thus also outdated. As to why the newly acquired Bristol fighters were not used, Grüner claimed they were not ready, because the pilots had not had enough training to fly them properly.³⁰⁹

A striking aspect of the Commission’s report is that it meant it could use ten years for the development of military aviation. It stated that it was not at all satisfied with the current status, but nonetheless made a plan beginning in 1925 and not ending until 1936. This plan did not intend to significantly expand the Air Force. If the plan had been followed, Norway would only have had 15 more aeroplanes than had been suggested in Proposition 165 of 1918 (see chapter 4). The total number of operational aeroplanes would have been 147 by 1936.³¹⁰

Norway did not feel its integrity or sovereignty threatened in the same way as before and during the war. The possibility of a new war between the major powers of Europe seemed remote. The 1920’s were a period of disarmament all over Europe. Germany was still struggling to heal its wounds after the World War. Russia did not seem to be a threat. As Nils Ørvik has argued, in the early 1920’s, Great Britain was the only country in a position to threaten the security of Norway, but British-Norwegian relations were

³⁰⁷ Thoresen, Gunnar, “Flygestevnet på Kjeller 4. til 6. mars 1921”, *Norsk luftmilitær tidsskrift*, 1953, 99-112.

³⁰⁸ Quoted from Henriksen, *Luftforsvarets historie*, 155, author’s translations, (“Er vort flyvemateriell utidsmessig?”, “Har vore flyvere for daarligt materiel?”, “RAF motorene som stadig klikker.”).

³⁰⁹ The critique made the Defence Department put down a special commission to amongst others evaluate the aircraft in both Air Arms. The commission gave mostly technical recommendation, and their work is therefore not central to this thesis, see *Ibid*, 151-158.

³¹⁰ *Bilag 3 til Innstilling VII fra Forsvarskommissjonen av 1920. Flyvevåbnet*, (Kristiania, 1923), I.

good.³¹¹ The party Venstre, which had been behind the build-up of the Norwegian aerial forces during the war, changed its programme on defence issues in 1921:

*Considering the international peace work, the mutual disarmament amongst peoples and the security of the nation, steps will be taken to reduce our defence forces as much as possible, with total disarmament as the final goal.*³¹²

The creation of the League of Nations gave hope for a better future in Europe, although the losing countries of the war were not given membership. The debate about the League of Nations in Norway was rather chaotic, although, as Hans Fredrik Dahl has stated, the League ought to have suited the idealistic Norway very well.³¹³ Several of the arguments used in favour of Norway joining the League of Nations were of course related to the armed forces. Major General C. B. Rud, for instance, argued in Parliament in 1920 that Norway ought to enter the League since Norway would not be able to develop forces to protect its neutrality by itself. An expert committee set up by Parliament also stated that membership opened up the possibility of saving defence spending. Nils Ørvik states that the majority in Parliament shared this view.³¹⁴ The debate, however chaotic, ended with Norway joining the League.³¹⁵

To conclude, the beginning of the 1920s were a peaceful period in Europe, and thus Norway, not having any declared enemies, did not foresee war. Therefore one could plan to use ten years to establish an effective Air Force.

In addition, the deteriorating economic situation was becoming a huge problem. With governments following the leading economic doctrine – to reduce spending in harsh times – they fostered this development. In the autumn of 1920, the economic recession hit Norway hard. There was huge unemployment, a large part of the merchant fleet was laid up at bay, and many important export goods dropped in price. Unemployment amongst organised workers reached 20%, and among those not organised the situation was

³¹¹ Ørvik, *Sikkerhetspolitikken*, 38.

³¹² Nissen, "Venstre i Norge", 361, author's translation, ("I den utstrekning det internasjonale fredsarbeid og hensynet til den mellemløkelige avrustning og til landets sikkerhet tilsier, skrides til innskrenkninger i vårt forsvar med sikte på avvikling.").

³¹³ Dahl, *Norsk idéhistorie*, 33.

³¹⁴ Ørvik, *Sikkerhetspolitikken*, 55-56.

³¹⁵ For more on the Norwegian debate about the League, see Nils Yngvar Bøe Lindgren, *Norge og opprettelsen av Folkeforbundet*, Hovedoppgave i historie, Historisk Institutt, Universitetet i Oslo, våren 1993.

probably worse.³¹⁶ From our point of view, the key point is that the defence budgets kept on decreasing throughout the 1920s. One of the obvious goals of the Commission was not to use too much money.

The Commission's primary argument was, however, a military one, flexibility. A small country like Norway, having scarce resources, would have to have an Air Force that could be used where it would be most needed. With a unified Air Force, seaplanes based in Norwegian fjords could attack targets on shore, and land-based aircraft could attack targets offshore. As the Commission concluded:

*For an effective use of the country's total aerial resources it therefore seems correct and necessary to place the two existing Air Arms under a unified command.*³¹⁷

Although the Commission saw the need for some specialisation, such as pilots especially trained for operations with either of the two existing services, its main aim was an Air Force rid of the barriers stemming from the operational environments of the older services. In its report, it repeatedly returned to this argument.

The threat assessment was essential to this argument. A hypothetical hostile country would most likely attack Norway from the sea, and in that case, the enemy would only be able to bring light reconnaissance aircraft. He could not operate battle aeroplanes, either fighters or bombers, unless he had a stronghold on Norwegian territory and had built an air base. But this was not easy, since he probably would bring machines that would need a lot of space both to land and to take off. The Commission took into consideration the possibility of an enemy using his own air bases in his home country, but ruled it out due to lack of range. If a foe attacked on land, the Commission claimed he would have trouble using his reconnaissance aircraft in an efficient manner, due to Norwegian topography. The conclusion was therefore that a massive use of air power, as was seen during the Great War, was not so likely in Norway. The Commission warned, though, that technological developments could make this reasoning flawed in a matter of years, and that Norway therefore had to follow developments quite closely.

³¹⁶ Furre, *Norsk historie 1905-1940*, 126.

³¹⁷ *Forsvarskommisjonen*, 13, author's translation, ("For en effektiv utnyttelse av landets samlede luftforsvar synes det derfor riktig og nødvendig å legge de nuværende to små særvåben inn under en felles overordnet ledelse.").

The Commission also used the reoccurring argument in the Norwegian air power debate that the aeroplane was not yet fully developed. It would therefore be unwise to invest money in huge numbers of aeroplanes today that would be obsolete within a few years. The Commission spoke about the “stabilisation-question”, meaning by that probably a stable technological development, and concluded that, when this was solved, aeroplanes would have a longer life expectancy.

In the debate of one or two Air Forces, other arguments used in favour of an independent Air Force were the lesser gap between technology for aeroplanes within respectively the Army and Navy; the bad effects of having two organisations battling over resources; and the increasing amount of independent air operations within all Air Forces in Europe. The only argument against independence that the Commission could find, besides the specialisation argument, was that the two Air Arms were already established. This would lead to a heavy and expensive process when two were to become one. The Commission argued, though, that if Norway had set about the formation of an Air Force without having any Air Arms, it would most certainly choose an independent service. Therefore, one would have to tolerate the troubles that a reorganisation would lead to. The Commission argued that an independent Air Force would be required at some point in the future, since independent air operations would become more important in the future. Although for the time being an Air Force would perform mostly support operations to the Army and Navy, this was no argument for not creating an independent service. This was because:

The few aircraft that can be allocated to each region of the country, must, depending on the situation, be used soon on land, soon at sea, and therefore co-operate with both the Army and the Navy.³¹⁸

The necessity of a joint air attack warning system and the problems of dividing responsibility between the two Air Arms for aerial defence, and the co-operation with the air defence artillery, also pointed towards an independent service.

The Commission argued that the Air Force needed to conduct three types of missions. First were the observation and reconnaissance missions, both strategic and tactical,

³¹⁸ Ibid, 13, author's translation, (“De fåtallige flyvemaskiner som kan avdeles til hver landsdel, må alt efter krigssituasjonen brukes snart på land, snart på sjøfrontene, og herunder samvirke med hær og marine.”).

second the fighter missions that were either to protect the scout planes or to attack the enemy's scout aircraft, and third the aerial defence fighter missions.

Thus, the Commission wanted to create an Air Force without bombers. Scarce resources made it propose this. Modern air operations were divided in three categories based on experience from the war:

1. Co-operation with the Army
2. Co-operation with the Navy
3. Independent Operations

The Commission believed in the possible effect of what they termed independent operations, what today would be termed strategic bombing, and stated that:

By paralysing the enemy's defensive forces, hindering him in using his communications and keeping him under constant pressure, the Air Force's independent operations will have a great impact on the outcome of war.³¹⁹

It also claimed that the World War had shown that bombers had to operate in large formations if they were to have effect. In addition, bombers were quite expensive. This led the Commission to conclude that Norway, given that it could not afford enough bombers, should not have any. It added, though, that this decision was not to hinder the Air Force's trials and studies of bombing, as long as the resources allowed such activity. Bombing was excluded for economic and not military reasons.³²⁰

The Commission saw the fighter as the best means of defence. It discussed air defence artillery, but concluded that nothing could substitute for the fighter in the battle for mastery of the air. The artillery could only make life worse for attacking forces, forcing the enemy to fly higher. Only a battle-ready fighter force could meet an attacking enemy wherever and whenever needed. If this were to happen, one would have to organise an air attack warning system. Such systems had been developed in all belligerent countries during the war, and were of utmost importance in aerial defence, since the attacker chose when and where to attack. This led to a large and well-planned organisation for warnings of air attack within the Air Force-to-be.

³¹⁹ Ibid, 7, author's translation, ("Ved på denne måte å lamme motstanderens forsvarskrefter, ved å hindre ham i å bruke sine kommunikasjoner og holde ham i stadig uro får flyevåbnets selvstendige operasjoner stor betydning for krigens utfall.")

³²⁰ Ibid, 14-15.

The Committee's report was full of ambivalence. In sharp contrast to the proposed jointness, it proposed that the air defence artillery should not be organised within the Air Force. The main reason was that the Commission did not want to create a fourth artillery weapon within the Armed Forces.³²¹ First to argue for flexibility and an independent service, and then to organise weapons that constituted a part of that service's tasks in another part of the Armed Forces, seems a bit odd. The establishment of a joint air attack warning system within the Air Force, and not the air defence artillery, also seems a bit odd. Another lack of logic concerned the contradiction between the threat evaluation and the Air Force the Commission wanted to create. It claimed that Norwegian topography was not well suited to enemy observation and reconnaissance missions, but nonetheless proposed to establish an Air Force with exactly that role as its first priority. If a pilot of another nation could not see through dense forests, nor could a Norwegian pilot.

The third and most important ambivalent factor in the report, was the lack of jointness in the detailed proposal on the organisation of the new service. Separate squadrons and wings for the Navy and Army were to be organised. Only two small squadrons of fighters were to be really joint for air defence purposes, controlled by the supreme military command. In addition, the new Air Force was not to become a third service with respect to personnel, since the 29 flying officers that were to form its full-time officer corps would continue as officers within the Army or Navy. This was because careers within the Air Force would be short, since few pilots could continue flying for very many years. The proposed independent service was actually not that independent.

Epilogue to the Defence Commission

The Defence Ministry, seeing that one of the arguments used by the Commission was that an independent Air Force would become a necessity in the *future*, put the proposal aside. It fell back on its usual wait-and-see approach, but did form a special Air Force Committee to look into the question once more.³²² This Committee did not report until 1926, and then took a middle course and proposed better co-operation between the two existing Air Arms.

³²¹ The three artillery weapons that already existed were the Naval Artillery, the Fortress Artillery and the Field Artillery.

³²² Ristic, *Slow Take-off*, 3.

In 1926, a Government headed by Johan Ludwig Mowinckel (Venstre), was the first to propose anything based on the Commission's report. Proposition 33 argued that the time was not ready for an independent Air Force. This was to be arranged when joint air operations were a reality.³²³ The Government had listened to the naval authorities, but also the Commanding General was against a third service.

The Mowinckel-government had to step down in March 1926. A government headed by Prime Minister Lykke (Høyre) took over, and immediately withdrew Proposition 33.³²⁴ The new government took another approach. They discussed the proposals from the Commission in a statement to Parliament in 1926, and stated that:

*With regards to the Air Force the Department have...reached the conclusion that both military and economic arguments point towards that we, in a country like ours, leave the solution with two separate Air Arms for the Army and Navy. The Air Force will therefore be proposed to become a service alongside the Army and the Navy.*³²⁵

The government referred to international developments to underline this argument. More and more countries formed independent Air Forces. Since the Norwegian situation was not that different, Norway had to follow the international pattern.

Olav Riste has missed the fact that the Høyre-government in 1926 signalled an independent Air Force. He has, however, accurately characterised the policy of the Defence Department thereafter, when he concludes, "Again the Ministry of Defence, faced with conflicting advice, took the line of least resistance. And this time Parliament took a formal decision in favour of the establishment of separate air forces for the army and navy."³²⁶ Faced with several comments based on their proposal for an independent Air Force, the Defence Department wrote two letters to the Military Committee on 26 November and 11 December 1926. It repeated that its ideal was an independent Air Force, but, faced with the probable trouble of a unification process, concluded that it was

³²³ Stortingsproposisjon 33/1926, 158-159.

³²⁴ Stortingsmeddelelse 19/1926.

³²⁵ Stortingsmeddelelse 30/1926, 7, author's translation, ("Med hensyn til flyvæsenet er man...kommet til det resultat at de beste grunner både av militær og økonomisk art taler for at vi i et land som vårt forlater den nuværende ordning med særskilt flyvæsen for hær og for flåte. Flyvæsenet vil derfor bli foreslått organisert som ett våben ved siden av hær og flåte.").

³²⁶ Riste, *Slow take-off*, 3

premature to push the decision through.³²⁷ Given this advice from the Department, the Military Committee proposed to Parliament finally to sanction the establishment of the two existing Air Arms.³²⁸ This was done by Parliament in February 1927.³²⁹

Both the Defence Department and the Army were clearly of the opinion that an independent Air Force was the best organisational form, but they were not confident enough to push the decision through. Disagreement within the armed forces eventually led to no action at all.

³²⁷ Bilag 8 til Innst. S. 2/1927.

³²⁸ Innst. S. 2/1927, 93-94.

³²⁹ Stortingsforhandlinger/1927, VIIa, 63-204, 208-245.

Conclusion

The period after the First World War created few new thoughts about air power. The lessons of the war had mostly been learnt during the war years. This made the report of the Commission almost uninteresting. It would take three years before the Defence Department forwarded some of its arguments to Parliament, a clear signal of this.

The conclusions of the report could have been written at least six years before. A more unified air service was the goal of the Defence Department as early as 1916. The arguments were almost the same, although the flexibility argument was not that distinctive in the 1916 proposal from the Department.

The situation was the same over the priorities about different roles for air power. The main task was still to be reconnaissance and observation. Protection of ones own and attack on the enemy's scouting aircraft were priority number two. The lessons from the fear of aerial attack only a few years before were almost totally forgotten. Although the Commission mentioned this, it stated that geography and topography would protect Norway. But the importance of distance was deteriorating almost year by year as the range of aeroplanes became better. The First World War had shown this. The Commission stated that the possibility of aerial attacks upon Norway had decreased, and thus also the importance of aerial defence. This was in accordance with the international development, but in Norway for a different reason. As the aeroplane took over the airship's role as the offensive weapon, aerial defence was regarded to be almost impossible, since one could not defend a country's entire airspace. In Norway, however, the change from airships to aircraft as the most likely offensive weapon, led the Commission to conclude that Norway again would be protected by geography.

The topography of the nation was its second shield, if anybody should attack. Aeroplanes were difficult to use in Norwegian terrain and climate. It was almost implicit in the Commission's argument that only Norwegians could operate aircraft with success under such conditions. This line of reasoning followed the traditional Norwegian approach, to fight well in Norway, you had to be used to the climate and topography. Some 17 years later, the Germans were to prove them wrong.

6 Conclusion

In the period around the dissolution of the union with Sweden, some Norwegian officers began to consider the consequences of manned flight for military operations. They developed ideas on doctrine and organisation, and saw air power's most important contribution to warfare as observation and reconnaissance.

These officers set out to convince the Norwegian political and military authorities through articles and addresses that the development of air power was necessary in Norway. The officers were inspired by both German and French developments, and followed them quite closely. Several officers were educated as aerial engineers and pilots in France.

Thus, when the First World War began, air power was already on the agenda both in the military and political establishment. Although the Norwegian Air Arms were small and only temporarily organised, their existence made it possible for Norwegian authorities to expand the activity when it was necessary. Necessity arrived with the fear of aerial attacks from Germany in the late autumn of 1916. This fear changed Norwegian air power doctrine. Aerial defence became a priority within both Air Arms, and aircraft to fight the hypothetical airships from Germany eventually came from Great Britain.

When the war ended the air power doctrine returned to its pre-war priorities. Observation and reconnaissance were regarded as the most important tasks. Aerial defence was not, however, totally forgotten. But, the Defence Commission of 1920 stated that the possibility of aerial attacks upon Norwegian soil had decreased, and thus also the importance of aerial defence.

Throughout the period, the officers led developments. At no time was the political establishment in the forefront. The development of air power was not politicised in Norway.

The politicians were, however, mainly occupied with the organisational question. Although views on organisation could also be based on doctrinal ideas, organisation itself became more and more important as time went on. For 14 years the Defence Department tried to get a formal decision from Parliament with regards to the organisational question, but without success. The question was difficult, as it threatened the two existing services. This was not a uniquely Norwegian problem: it figured in the development of air power in most European countries.

The introduction of air power in Norway met with no opposition in principle, with the exception of anti-military milieus within the Arbeiderpartiet. The importance of air power was stressed on several occasions in Parliament. This did not lead, however, to huge investments or to development within the two Air Arms. As the organisational consequences of this new technology were put forward, opposition emerged. Therefore, when the theoretical importance of air power technology and doctrine approached the realities of organisation, almost nothing happened.

Epilogue

After 1927 the two Air Arms developed as support weapons for each of the two services. The only attempt after that to create an independent Air Force before 1940, came when the Commanding General and the Commanding Admiral wrote a letter to the Defence Department on 11 November 1935, arguing that a joint leadership had to be established, at least for aerial defence. An independent Air Force had also to be considered.³³⁰ The Defence Department asked the Chief of the General Staff, Colonel Otto Ruge, to consider the question. Two months later he delivered his conclusions in a lengthy report.³³¹ Douhet had inspired Ruge, and he therefore wanted an offensive independent Air Force that could attack the enemy at his bases. But, he recognised that economy would stop Norway from developing an Air Force of heavy bombers. Therefore a small, flexible and mobile independent Air Force should be created. Its main mission would be to attack the enemy once he tried to establish a bridgehead on Norwegian soil, wherever that might be.

The Defence Department did not adopt Ruge's recommendations. In a statement to Parliament in 1937, the Department concluded that the budgets could not finance the establishment of an independent Air Force.³³² The Department had received comments from both the Commanding General and the Commanding Admiral on Ruge's report. The Commanding General, Kristian Laake, supported Ruge's conclusions,³³³ while the Commanding Admiral, Edgar Otto, was convinced that the Navy needed its own Air Arm, as neutrality guard operations demanded close co-operation between Navy vessels and aircraft. He claimed that this could only be done through having an Air Arm within

³³⁰ Stortingsmeddelelse 38/1937, bilag 1.

³³¹ *Ibid*, bilag 2.

³³² *Ibid*, 3.

³³³ *Ibid*, bilag 3.

the Navy.³³⁴ The different doctrines of the two existing services thus prevented a common view on air power. The Army focused on war fighting, and wanted an independent Air Force, while the Navy focused on neutrality guard operations, and therefore wanted its own Air Arm. Parliament therefore asked for another evaluation of the question in early February 1938.³³⁵ As the authorities saw darker and darker skies on the horizon in Europe, they did not want to begin a process of reorganisation. Therefore the Defence Department eventually proposed only minor changes in the two Air Arms.³³⁶ The Military Committee agreed,³³⁷ and Parliament sanctioned this unanimously.³³⁸

In their letter to the Defence Department in late 1935, the Commanding General and the Commanding Admiral had referred to international developments, claiming that the international tendency was to create an independent Air Force.³³⁹ A short table at the end of the letter showed that the only countries in Europe that did not have an independent Air Force besides Norway were the Netherlands and Denmark.

Norway's two neighbouring countries, Denmark and Sweden, are of particular interest. Sweden created an independent Air Force in 1926, although the question had been discussed during the First World War. The Swedish Navy opposed an independent Air Force. Despite this, the Swedish Parliament sanctioned one, partly for economic reasons. As a consequence the Swedish cavalry was almost halved. In a study on Swedish air power Klaus Richard Böhme has concluded that the creation of an independent Air Force was due to the initiative of one Swedish pilot, Lieutenant Carl Florman.³⁴⁰ Florman was the secretary to the Parliamentary Committee that considered the question. The Swedish geo-strategic situation also indicated that an attack on the country was most likely to come from the east, and an independent Air Force equipped with light bombers could follow the offensive air power doctrine of the period, despite the lack of heavy bombers.³⁴¹

The Danes did not create an independent Air Force until 1950. In his seminal study on Danish military flight, which puts special emphasis on the organisational question, Paul Ancker has argued that the main reason for this was that the question was complicated

³³⁴ Ibid, bilag 4.

³³⁵ Innst. S. 8/1938, 75; Stortingsforhandlinger/1938, VII, 125-159.

³³⁶ Stortingsproposisjon 114/1938, 2-3, 14.

³³⁷ Innst. S. 211/1938, 571-580.

³³⁸ Stortingsforhandlinger/1938, VII, 1526-1528.

³³⁹ Bilag I til Stortingsmeddelelse 38/1937, 3.

³⁴⁰ Klaus Richard Böhme, "Svensk Luftförvarsdoktrin 1919-1936", *Aktuellt och historiskt*, 1973, 129-172.

³⁴¹ Annerfalk, *Från Dronten til Gripen*, 29-32.

and forestalled by different views both among politicians and within the military. Inter-service rivalry played an important role, as neither of the two existing services was willing to establish an independent Air Force since it would lead to less resources for themselves.³⁴² The two Danish services fought over resources throughout the 1930s, and although Germany was considered an immediate threat, inter-service rivalry prevented the creation of an independent Air Force. The doctrinal underpinnings were similar to those in Norway. The Danes never did clearly decide whether their armed forces were primarily for war fighting or for neutrality guard operations.

The three neutral countries in Scandinavia faced the Second World War with quite different solutions with respect to air power. The Swedish Air Force followed international doctrine, and had an aircraft ratio of 4:1 between bombers and fighters. The Danish and Norwegian aerial forces were mainly for observation and reconnaissance purposes, with some emphasis on air defence. They were in no condition to make a difference when the Germans simultaneously attacked both countries on 9. April 1940.

³⁴² Ancker, Paul E., *De danske militære flystyrkers udvikling 1910-1940*, (Odense, 1997), 18.

Appendix: Sources

Primary Sources

The main sources for this thesis have been journals published in the period, and official documents from both the Defence Department and Parliament.

The views expressed in the journals are considered a good source for what contemporary Norwegians thought about the development of air power. Most of the journals were probably read almost exclusively by military readers, but one must expect that a debate about military doctrine will take place mainly in military circles.

The official documents give a good insight as to the position of the authorities in Norway regarding the development of air power. They are printed in *Stortingstidende*,³⁴³ which contain Propositions from the Defence Department, recommendations from the Military Committee in Parliament, and reports from the negotiations in Parliament.

As argued, archival sources are not that central to a thesis seeking to outline a debate. I have, however, consulted archive material to support some of the arguments, especially in the chapter on the First World War. Classified official documents were not printed in *Stortingstidende*, and only a few have been possible to find in the archives, mainly *Stortingsarkivet* (SA)³⁴⁴ and *Riksarkivet* (RA).³⁴⁵ A lot of the archives in Norway from this period were destroyed by the Germans during their five year long occupation of Norway during the Second World War.

Description of the most frequent used journals

Norsk Militært Tidsskrift

The Kristiania Militære Samfund published this journal. It was the central journal of the Norwegian Army, and, as a subscription list from 1902 suggests, most of the career officers, as well as the Generals, subscribed to the journal.³⁴⁶ It appeared monthly, and had a print of about 1 000 copies. It usually contained one to three lengthy articles on a

³⁴³ *Stortingstidende* is the Norwegian counterpart to the British *Hansard*.

³⁴⁴ Parliament's archive.

³⁴⁵ The central archive of the Norwegian state.

³⁴⁶ "Fortegnelse over abonnenter på norsk militært tidsskrift samt norske abonnenter på det svenske kongl. krigsvetenskapsakademiens handlingar och tidsskrift og det danske militære tidsskrift for 1902", *Norsk Militært Tidsskrift*, 12/1902.

military tactical/technical issue, either of a historical or contemporary nature. In addition to this the editor followed international journals, and gave short summaries of the articles he found most interesting. The officers of the General Staff were the most frequent contributors to the journal, which is considered a great source on doctrinal developments in the Norwegian Army.

Norsk Tidsskrift for Søvæsen

The Sjømilitære Samfund³⁴⁷ published this journal. The journal was published six times a year, and was the Navy's counterpart to the Norsk Militært Tidsskrift. It was the central debating area for Navy officers and thus gives quite a good overview of the agenda at any given time. The editor made sure that he had personnel following international developments and each edition thus contained both commentaries on specific tactical/technical developments in naval warfare and a list of interesting articles from other Norwegian and international journals. One of the areas that the editor followed from about 1910 was air power.

The journal could be considered a compromise between an academic journal and a newsmagazine. It printed long articles in a military academic style alongside short commentaries on detailed aspects of modern sea warfare and news from other navies in the World. The journal is considered a good source on doctrinal developments within the Navy.

Luftseilads

The Norsk Luftseiladsforening published this journal. It appeared only for one year, 1910. The reason for its demise is not known. The Journal contained articles on the development of both military and civil aviation, alongside news of international developments. Officers that were members of the Association wrote most articles. The readership of this journal was probably confined to those who had a special interest in the field of aeronautics, which would mean that it was not that influential with politicians and public opinion. But the journal gives good insight into the thoughts that developed within the newly established Norwegian aeronautical milieu.

³⁴⁷ Naval Society.

Articles and books

- “Bergens militærforening” [“Bergen Military Association”], *Norsk Militært Tidsskrift*, 12/1911, 746.
- “Det militære tidsskrifts prisopgaver for 1905” [“The Military Journal’s prize articles for 1905”], *Norsk Militært Tidsskrift*, 2/1905, 128.
- “Det militære tidsskrifts prisopgaver for 1909” [“The Military Journal’s prize articles for 1909”], *Norsk Militært Tidsskrift*, 2/1909, 126.
- “Det militære tidsskrifts prisopgaver for 1910” [“The Military Journal’s prize articles for 1910”], *Norsk Militært Tidsskrift*, 2/1910, 105.
- “Det militære tidsskrifts prisopgaver for 1911” [“The Military Journal’s prize articles for 1911”], *Norsk Militært Tidsskrift*, 3/1911, 176.
- “Fortegnelse over abonnenter på norsk militært tidsskrift samt norske abonnenter på det svenske kongl. krigsvetenskapsakademiens handlingar och tidsskrift og det danske militære tidsskrift for 1902” [“Subscription list for the Norwegian Military Journal”], *Norsk Militært Tidsskrift*, 12/1902.
- “Norsk militært tidsskrifts prisopgaver for 1913” [“The Norwegian Military Journal’s prize articles for 1913”], *Norsk Militært Tidsskrift*, 3-4/1913, 222-223.
- “Aarsberetning for Kristiania Militære Samfund 1904” [“Annual report of Kristiania Military Society 1904”], *Norsk Militært Tidsskrift*, 2/1905, 122.
- “Aarsberetning for Kristiania Militære Samfund 1909” [“Annual report of Kristiania Military Society 1909”], *Norsk Militært Tidsskrift*, 2/1910, 99.
- “Aarsberetning for Kristiania Militære Samfund for 1911” [“Annual report of Kristiania Military Society 1911”], *Norsk Militært Tidsskrift*, 2/1912, 203.
- Engelstad, Karl J. F., “N. L. Foreningsmeddelelser” [“Information from the Aeronautical Association”], *Luftseilads*, 1/1910, 4.
- Engelstad, Karl J. F., “Foreningsmeddelelser, Norsk luftseiladsforening” [“Information from the Aeronautical Association”], *Luftseilads*, 6/1910, 24.
- Gyth Dehli, Halfdan, “Prisopgave. Luftskibsteknik” [“Prize article. The Technology of Airships”], *Norsk Tidsskrift for Søvesen*, 1910, 1-24.

- Gyth Dehli, Halfdan, "Flyvemaskiners fremskridt i 1909 og deres nuværende standpunkt" ["The development of aeroplanes in 1909 and their current status"], *Norsk Tidsskrift for Søværnen*, 1910, 74-89.
- Gyth Dehli, Halfdan, "Flyvemaskiner" ["Aircraft"], *Norsk Tidsskrift for Søværnen*, 1910, 129-130.
- Gyth Dehli, Halfdan, "Om luftseilads" ["On Aeronautics"], *Norsk Tidsskrift for Søværnen*, 1910, 277-278.
- Gyth Dehli, Halfdan, "Om flyvekunstens utvikling og regler for at erhverve førerpatent" ["On the development of flight and the regulations for obtaining a pilot's certificate"], *Norsk Tidsskrift for Søværnen*, 1910, 391-396.
- Gyth Dehli, Halfdan, "En permanent aeronautisk inspektørstilling er opprettet i Frankrike" ["The position of Inspector of aeronautics is established in France"], *Norsk Tidsskrift for Søværnen*, 1910, 422.
- Gyth Dehli, Halfdan, "Certifikat for aeroplaner" [Pilot's licence], *Norsk Tidsskrift for Søværnen*, 1910, 423.
- Gyth Dehli, Halfdan, "Luftskibes og aeroplaners anvendelse under militære operasjoner" ["The use of Airships and Aeroplanes in Military Operations"], *Norsk Militært Tidsskrift*, 11/1910, 666-668.
- Gyth Dehli, Halfdan, "Enkelte nye aéroplantyper" ["Some new Aeroplane Models"], *Norsk Tidsskrift for Søværnen*, 1911, 50-55.
- Gyth Dehli, Halfdan, "Aéroplaners teori og konstruksjon" ["The Theory and Construction of Aeroplanes"], *Norsk Tidsskrift for Søværnen*, 1911, 302-310, 349-362.
- Gyth Dehli, Halfdan, "Om anvendelsen av radiotelegrafi ombord i styrbare luftskibe og aéroplaner" ["On the use of radio in airships and aeroplanes"], *Norsk Tidsskrift for Søværnen*, 1911, 342-343.
- Gyth Dehli, Halfdan, "Aéronautisk nyt" ["Aeronautical news"], *Norsk Tidsskrift for Søværnen*, 1911, 411-414.
- Gyth Dehli, Halfdan, "Aéronautisk nyt" ["Aeronautical news"], *Norsk Tidsskrift for Søværnen*, 1913, 400-404.
- Forsvarsdepartementet, *Plan for Generalstaben* [Plan for the General Staff], (Oslo, 1912).

- Haganes, Einar, "Giv en fremstilling av flyvevåbnets virksomhet under hærens operasjoner og kamp. Hvorledes bør dette våben søkes utviklet hos os?" ["A view on the Air Arms' mission during the Army's operations. How should this weapon be developed?"], *Norsk Militært Tidsskrift*, 1922, 324-380, 399-419, 455-466, 519-528, 587-597.
- Holm Simonsen, Severin Christian, "Aeronautikens indflydelse på fremtidens krigføring" ["The influence of aeronautics on war in the future"], *Norsk Militært Tidsskrift*, 1906, 653-662.
- Holm Simonsen, Severin Christian, "Hvad har bevirket luftskipperafdelingernes raske udvikling i vor tid?" ["What has caused the rapid development of aerial units in our time?"], *Norsk Militært Tidsskrift*, 1906, 719-727.
- Holm Simonsen, Severin Christian, "Et forslag angående det militære luftskippemateriels anvendelse og betjening hos os" ["A proposal for the use of military aerial equipment in the Norwegian Armed Forces"], *Norsk Militært Tidsskrift*, 8/1907, 433-459.
- Holm Simonsen, Severin Christian, "Hvilken indflydelse bør en rationel utnyttelse av den moderne teknik øve på vort infanteris organisation?" ["What influence should a rational exploitation of modern technology have on the organisation of our infantry?"], *Norsk Militært Tidsskrift*, 7 and 8/1908.
- Holm Simonsen, Severin Christian, "En oversigt over fæstningsskytsets udvikling i de senere år. Hvilke skytstyper bør nu fortrinsvis komme til anvendelse på fæstningernes land- og sjøfronter" ["An overview on the recent development of fortress guns"], *Norsk Militært Tidsskrift*, 4, 5, 6 and 7/1909.
- Holm Simonsen, Severin Christian, "Militær luftseilads" ["Military aerial activity"], *Luftseilads*, 3, 4, 5, 8, 9 & 10/1910, 9-10, 14-15, 19-20, 31-32, 33-34.
- Holm Simonsen, Severin Christian, "Hvorledes skal vi kunne skaffe os pengemidler til luftseiladsens fremme og utnyttelse?" ["How should we obtain financial support for the further development of aeronautics?"], *Luftseilads*, 9-10/1910, 36.
- Holtermann, O. and Johs. Haanaes, "Trondhjems Militærforening" ["Trondheim Military Society"], *Norsk Militært Tidsskrift*, 1/1900, 58-59.
- Lowzow, H. D., "Strategi. Av avdelingschef i generalstabten, major Gudmund Schnitler" (Bokomtale) ["Strategy. By the head of department in the General Staff,

Major Gudmund Schnitler" (Book review)], *Norsk Militært Tidsskrift*, 11-12/1914, 617-620.

- Os, E. S. L., "Krigen i Tripolis. Erfaringer angaaende anvendelse av luftfartøier" ["The War in Tripolis. Experience regarding the use of aerial vessels"], *Norsk Militært Tidsskrift*, 3-4/1913, 163-177.
- Os, E. S. L., "Flyvemaskiner under Balkankrigen" ["Aircraft in the Balkan War"], *Norsk Militært Tidsskrift*, 3/1914, 138-152.
- Sem-Jacobsen, Einar, "Luftskibes militære anvendelse" ["The military use of aerial vessels"], *Norsk Militært Tidsskrift*, 8/1909, 505-512.
- Sem-Jacobsen, Einar, "Moderne luftskibes brukbarhet og anvendbarhet" ["The usability and applicability of modern airships"], supplement to *Teknisk Ukeblad*, 1910.
- Sem-Jacobsen, Einar, "Flyvemaskin contra ballon" ["Aircraft versus balloons"], *Luftseilads*, 2/1910, 1-2.
- Sem-Jacobsen, Einar, "Luftseiladskarter" ["Aerial maps"], *Luftseilads*, 2/1910, 7-8.
- Sem-Jacobsen, Einar, "Oberstl Hermann W L Moedebeck", *Luftseilads*, 3/1910, 1.
- Sem-Jacobsen, Einar, "Luftseiladskarter" ["Aerial maps"], *Luftseilads*, 3/1910, 2-3.
- Sem-Jacobsen, Einar, "Paa fart med ballonen 'Norge'" ["A journey on the balloon 'Norge'"], *Luftseilads*, 5/1910, 17-19.
- Sem-Jacobsen, Einar, "Den store rundflyvning i Frankrike. 7-17. august 1910" ["The flying contest in France 7-17 August 1910"], *Luftseilads*, 7/1910, 28.
- Sem-Jacobsen, Einar, "Militære aeroplaner. Fra konkurransen i Reims 1. oktober - 15. november 1911" ["Military aeroplanes. From the competition in Reims 1 October - 15 November 1911"], *Norsk Militært Tidsskrift*, 1/1912, 37-65.
- Sem-Jacobsen, Einar, "Flyverekorder" ["Record flights"], *Norsk Militært Tidsskrift*, 1/1912, 67-72.
- Sem-Jacobsen, Einar, "Om flyvemaskiners militære anvendelse. Hvorledes bør denne branche organiseres, opsættes og utstyres med materiell hos os" ["On the military use of aircraft. How should this new Arm be organised and equipped in Norway?], *Norsk Militært Tidsskrift*, 1912, 231-247.

- Sem-Jacobsen, Einar, “Nogen ord om aeroplanernes betydning for Forsvaret” [“On the importance of aeroplanes for our defence”], *Landsinnsamling for luftflaate*, 1912, 1-8.
- Sem-Jacobsen, Einar, “Et norsk flyverkorps. Dets organisation og materiel.” [“A Norwegian Flying Corps. Its organisation and equipment”], *Vor Hær*, 1912, 4-6.
- Sem-Jacobsen, Einar, “Zeppelinerne”, *Norsk Militært Tidsskrift*, 1916, 571-578.
- Widerberg, Clare Sewell, “Enkelte hovedspørgsmål vedrørende en reorganisation af ingeniørvåbnet” [“Important aspects of the reorganisation of the Engineering Arm”], *Norsk Militært Tidsskrift*, 3/1901, 186-202.
- Aars, Kristian B. R., “Verdensfreden. Avrustningen bør begynde med at magterne neutraliserer luften” [“Disarmament ought to begin with the neutralisation of airspace”], *Samtiden*, 1910, 522-527.

Official documents

- Stortingsforhandlinger/1909 VIIb, [Negotiations in Parliament].
- Stortingsforhandlinger/1911, VIIa.
- Stortingsforhandlinger/1912, VIIIb.
- Stortingsforhandlinger/1913, VIIIb.
- Stortingsforhandlinger/1927, VIIa.
- Stortingsforhandlinger/1938, VII.
- Stortingsproposisjon 50/1909, *Om Hærorrdningen [On the organisation of the Army]*.
- Stortingsproposisjon 1/1911, *Hærens budget [The Army budget]*.
- Stortingsproposisjon 1/1912, *Hærens budget [The Army budget]*.
- Stortingsproposisjon 1/1912, *Marinen [The Navy]*.
- Stortingsproposisjon 107/1912, *Om stipendier til utdanning av militære flyvere [On scholarships for the education of military pilots]*.
- Stortingsproposisjon 26/1912, *Om flåteplan og ekstraordinære forsvarsbevilgninger [On the fleet-plan and extraordinary funding to the armed forces]*.
- Stortingsproposisjon 1/1913, *Hærens budget [The Army budget]*.
- Stortingsproposisjon 31/1913, *Om ekstraordinære bevilgninger til Forsvaret [On extraordinary funding to the Armed Forces]*.
- Stortingsproposisjon 147/1913, *Om ekstraordinære bevilgninger til forsvarsvæsenet [On extraordinary Funding to the Armed Forces]*.
- Stortingsmeddelelse 4/1913, *Om tilbakekaldelse av proposition om ekstraordinære bevilgninger til forsvarsvæsenet [On the withdrawal of the proposition on extraordinary funding to the Armed Forces]*.
- Stortingsproposisjon 1/1914, *Hærens budget [The Army budget]*.
- Stortingsproposisjon 84/1916, *Om bevilgninger til hæren og marinen (Hemmelig) [On funding for the Army and Navy (Classified)]*.
- Stortingsproposisjon 102/1917, *Om bevilgning til hæren og marinen [On funding for the Army and the Navy]*.

- Stortingsproposisjon 165/1918, *Om decentralisation av hærens og marinens flyvevæsen m. v (Hemmelig) [On the decentralisation of the Army and Navy Air Arm etc. (Classified)].*
- Stortingsproposisjon 162/1919, *Om nedsettelse av en kommisjon til behandling av forsvarsvesenets fremtidige ordning [On the creation of a Commission to consider the future of the armed forces].*
- Stortingsproposisjon 33/1926, *Om ny hærordning [On a new plan for the Army].*
- Stortingsmeddelelse 19/1926, *Om tilbakekallelse av proposisjonen om ny hærordning [On the withdrawal of the proposition of a new plan for the Army].*
- Stortingsmeddelelse 30/1926, *Om fremme av arbeidet med en ny forsvarsordning [On the progress of a new plan for the armed forces].*
- Stortingsproposisjon 60/1927, *Om ny forsvarsordning [On a new plan for the Armed Forces].*
- Stortingsmeddelelse 38/1937, *Om organisasjonen av luftforsvaret [On the organisation of the Air Force].*
- Stortingsproposisjon 114/1938, *Om organisasjon av luftforsvaret [On the organisation of the Air Force].*
- Indst. S. XXXXII./1909, *Indstilling fra den forsterkede militærkomite angaaende hærordningen, i tilknytning til indst. S. XXXXII og tillæg til samme, 1908 [The Military Committee's recommendations regarding the Army Plan].*
- Indst. S. X./1911, *Indstilling fra Militærkomiteen angaaende Hærens budget for terminen 1ste juli 1911-30te juni 1912 [The Military Committee's recommendations regarding the budget of the Army 1911-1912].*
- Indst. S. II./1912, *Indstilling fra Militærkomiteen angaaende Marinens budget for terminen 1ste juli 1912-30te juni 1913 [The Military Committee's recommendations regarding the budget of the Navy 1912-1913].*
- Indst. S. X./1912, *Indstilling fra Militærkomiteen angaaende Hærens budget for terminen 1ste juli 1912-30te juni 1913 [The Military Committee's recommendations regarding the budget of the Army 1912-1913].*

- Tillæg 9 til indst. S.X./1913, *Indstilling fra militærkomiteen angaaende ekstraordinær bevilgning til forsvarsvæsenet (St. prp. nr. 147) [The Military Committee's recommendations regarding extraordinary funding to the Armed Forces]*.
- Indst S. X./1916, *Indstilling fra militærkomiteen angaaende hærens budget for terminen Iste juli 1916-30te juni 1917 [The Military Committee's recommendations regarding the budget of the Army 1916-1917]*.
- Indst. S. LXXII./1917, *Indstilling fra den kombinerte budget og militærkomite angaaende ekstraordinær bevilgning til hæren og marinen (St. prp. nr. 102) [The combined Budget and Military Committee's recommendations regarding the extraordinary funding to the Army and Navy]*
- Innst. S. 2/1927, *Innstilling fra den forsterkede militærkomite om ny forsvarsordning (St. med. nr. 30 – 1926) [The Military Committee's recommendations regarding a new plan for the Armed Forces]*.
- Innst. S. 180/1927, *Innstilling fra den forsterkede militærkomite om ny forsvarsordning (St. prp. nr. 60 · 1927) [The Military Committee's recommendations regarding a new plan for the Armed Forces]*.
- Innst. S. 8/1938, *Innstilling fra Militærkomiteen om organisasjonen av Luftforsvaret [The Military Committee's recommendations on the organisation of the Air Force]*.
- Innst. S. 211/1938, *Innstilling fra Militærkomiteen om organisasjonen av Luftforsvaret [The Military Committee's recommendations on the organisation of the Air Force]*.
- Printout of “Stortingets forhandlingsprotokoll 1917” [“Parliament's record”].
- *Innstilling VII fra Forsvarskommissjonen av 1920. Flyvevåbnet [Proposal VII from the Defence Commission of 1920. The Air Force]*, (Kristiania, 1923).

Selected Secondary Sources

- “Oberst Gudmund Schnitler” [Colonel Gudmund Schnitler] (nekrolog [obituary]), *Norsk Militært Tidsskrift*, 1925, 774-780.
- Admiralstaben, *Marinen. Nøitralitetsvernet 1914-1918, samt nøitralitetsvernets utvikling 1918-1919* [The Navy. The neutrality guard 1914-1918], (Kristiania, 1921).
- Agøy, Nils Ivar, *For konge og fedreland? Offiserer, politikk, unionsstrid og nasjonalisme 1890-1905* [For King and country?], (Valdres, 2001).
- Alnæs, Karsten, *En ny arbeidsdag. Norges historie, Bind IV* [A new working day. The history of Norway, Volume IV], (Oslo, 1999).
- Ancker, Paul E., *De danske militære flystyrkers udvikling 1910-1940* [The development of the Danish Air Force 1910-1940], (Odense, 1997).
- Annerfalk, A., *Från Dronten til Gripen. Flygvapnet 1926-1996. Flygvapnet 70 år den 1 juli 1996* [From the Dronten to the Gripen. The Swedish Air Force's 70th Anniversary], (Stockholm, 1996).
- Arveschoug, N. W., “Norsk flyging fyller 50 år” [“50 years of Norwegian flight”], *Norsk Luftmilitært Tidsskrift*, 5/1962, 159-182.
- Asbjørnsen, Øyvind, *Det norske luftvernartilleriets historie, del 1, 1916-1945* [The History of Norway's Air Defence Artillery, part 1, 1916-1945], (Stavern, 1983).
- Barth, Bj. Keyser, *Norges militære embedsmenn* [Norwegian Military Officers of the Crown], (Oslo, 1930).
- Berg, Roald, *Norge på egen hånd, 1905-1920, Norsk Utenrikspolitikk historie, Bind 2* [Norway on its own, 1905-1920, the history of Norwegian foreign policy, volume 2], (Oslo, 1995).
- Böhme, Klaus Richard, “Svensk Luftförarsdoktrin 1919-1936” [“Doctrine of the Swedish Air Force 1919-1936”], *Aktuellt och historiskt*, 1973, 129-172.
- Booth, Ken, *Strategy and Ethnocentrism*, (New York, 1979).
- Buckley, John H., *Air Power in the Age of Total War*, (London, 1999).
- Bull, Edvard, *Klassekamp og fellesskap, 1920-1945, Bind 13 av Norges historie* [Class struggle and solidarity, 1920-1945, volume 13 of the history of Norway], (Oslo, 1978).

- Castberg, Johan, *Dagbøker 1900-1917, Bind II 1906-1917* [*Diaries 1900-1917, Vol II 1906-1917*], (Oslo, 1953).
- Christensen, Sophus, *Studie over Norges krigspolitiske Stilling og dets Forsvarsevne 1911-1912* [*A study of Norway's strategic situation 1911-1912*], (Stavanger, 1913).
- Christensen, Sophus, *Studie over Norges krigspolitiske Stilling og dets Forsvarsevne 1911-1915* [*A study of Norway's strategic situation 1911-1915*], (Christiania, 1915).
- Christophersen, Bjørn, *Norsk Militært Tidsskrift 1830-1930* [*Norwegian Military Journal 1830-1930*], (Oslo, 1930).
- Cooper, Malcolm, *The Birth of Independent Air Power. British Air Policy in the First World War*, (London, 1986).
- Dahl, Hans Fredrik, *Norsk Idéhistorie, Bind V, De store ideologienes tid* [*Norwegian history of ideas, volume V*], (Oslo, 2001).
- Dons, Hans Fleischer, "Start". *En norsk flyvehistorie* ["Start". *A Norwegian tale of flying*], (Oslo, 1935).
- Driver, Hugh, *The Birth of Military Aviation. Britain, 1903-1914*, (London, 1997).
- Edgerton, David, *England and the Aeroplane. An Essay on a Militant and Technological Nation*, (Manchester, 1991).
- Egede-Nissen, Adam, *Et liv i strid* [*A life in battle*], (Oslo, 1945).
- Fasting, Kåre, *Fra Kontraskjæret til Tokio. Norsk sivilflyging gjennom 50 år* [*50 years of Norwegian civil aviation*], (Oslo, 1959).
- Feiring, Leif, "Omkring den første utvikling av Hærens Flyvåpen" ["On the first development of the Army Air Arm"], *Norsk Luftmilitært Tidsskrift*, 1957, 277-287, 312-323.
- Forsvarsdepartementet, *Militærkalender for den norske Hær og Flaate 1917* [*Military calendar of the Norwegian Army and Navy 1917*], (Kristiania, 1917).
- Friis, Karsten, "Forsvar og identitet: De norske friskusverdiene" ["Defence and identity"], in Geir Dale (ed.), *Kritiske perspektiver på norsk utenrikspolitikk* [*Critical perspectives on Norway's foreign politics*], (Oslo, 2000), 119-143.
- Fritzsche, Peter, *A Nation of Fliers. German Aviation and the Popular Imagination*, (Cambridge, Massachusetts, 1992).

- Fuglum, Per, *Norge i støpeskjeen 1884-1919*, bind 12 av Cappelen's Norgeshistorie [*Norway in the mould 1884-1919. Volume 12 of Cappelen's history of Norway*], (Oslo, 1978).
- Fuglum, Per, *En skute – en skipper. Gunnar Knudsen som statsminister 1908-10 og 1913-20* [*One ship – one captain. Gunnar Knudsen as Prime Minister 1908-10 and 1913-20*], (Trondheim, 1989).
- Fure, Odd-Bjørn, *Mellomkrigstid, 1920-1940, Norsk Utenrikspolitikk historie, Bind 3* [*Between the Wars, 1920-1940, the history of Norwegian foreign policy, volume 3*], (Oslo, 1996).
- Furre, Berge, *Norsk historie 1905-1940* [*Norwegian History 1905-1940*], (Oslo, 1972).
- Gat, Azar, *Fascist and Liberal Visions of War. Fuller, Liddel Hart, Douhet and Other Modernists*, (Oxford, 1998).
- Generalstaben, *Katalog over Generalstabens bibliotek* [*Catalogue for the library of the General Staff*], (Kristiania, 1908).
- Gollin, Alfred, *The Impact of Air Power on the British People and their Government, 1909-1914*, (Stanford, California, 1989).
- Haffner, M., *Generalstaben 1814-1914* [*The General Staff 1814-1914*], (Kristiania, 1914).
- Haug, Karl Erik, "Den tysk-norske spenningen under Første Verdenskrig" ["The German-Norwegian tensions during World War I"], *IFS-Info*, 5/1994.
- Haug, Karl Erik, "Falls Norwegen auf die Seite unserer Feinde tritt". *Det tysk-norske forhold fra sommeren 1916 til utgangen av 1917* [*The German-Norwegian relations from the summer of 1916 until the end of 1917*], Hovedoppgave i historie, Historisk Institutt, Universitet i Trondheim, høsten 1994 [Thesis within the subject of modern history].
- Henriksen, Vera, *Luftforsvarets historie. Bind I, Fra opptakt til nederlag juni 1912 – juni 1940* [*The history of the Air Force, volume I, 1912-1940*], (Oslo 1994).
- Hobson, Rolf and Tom Kristiansen, *Norsk forsvarshistorie, bind 3, 1905-1940, Total krig, nøytralitet og politisk splittelse* [*Norwegian military history, volume 3*], (Bergen, 2001).

- Hosar, Hans P., *Kunnskap, Dannelse og Krigens Krav – Krigsskolen 1750-2000* [*Knowledge, culture and the demands of war. The War Academy 1750-2000*], (Oslo, 2000).
- Høver, Johan, "Marinens flyvebålfabrikk" ["The Navy aircraft factory"], *Volund. Norsk Teknisk Museums Årbok*, (Oslo, 1975), 7-51.
- Ibsen, Tancred, *Tro det eller ei* [*Believe it or not*], (Oslo, 1976).
- Jenssen-Tusch, H., H. Ewald, Johs. Lindbæk and H. Styrmer, *Verdenskrigen, 49. Hefte* [*The World War. 49th volume*], (København og Kristiania, 1915).
- Jervis, Robert, *Perception and Misperception in International Politics*, (Princeton, 1976).
- Keilhau, Wilhelm, *Norge og Verdenskrigen* [*Norway and the World War*], (Oslo, 1927).
- Laurantzon, J., "Lowzow, Haakon Ditlef", in A. W. Brøgger and Einar Jansen (eds.), *Norsk biografisk leksikon, bind VIII* [*Norwegian biographic encyclopaedia, volume VIII*], (Oslo, 1938).
- Leganger, N. F., (ed.), *Norges statskalender for aaret 1914* [*The Norwegian State's official yearbook 1914*], (Kristiania, 1915).
- Lillevik, Finn, *Forsvarets luftflaade 1912-1982. Beskrivelser av våre bevarte militære fly* [*The military aerial fleet 1912-1982. A description of our preserved military aircraft*], (Oslo, 1984).
- Lindgren, Nils Yngvar Bøe, *Norge og opprettelsen av Folkeforbundet* [*Norway and the creation of the League of Nations*]. Hovedoppgave i historie, Historisk Institutt, Universitetet i Oslo, våren 1993 [Thesis within the subject of modern history].
- Christian Meyer, "Den norske flaaet. 1808 til nu" ["The Norwegian Navy. From 1808 to the present"], in Abel, Fr. (ed.), *Den Norske Hær og Flaaet* [*The Norwegian Army and Navy*], (Oslo, 1914).
- Meyer, Chr., *Forsvarshoken* [*The defence book*], (Kristiania, 1914).
- Meyer, Fredrik, *Hærens og Marinens flyvåpen 1912-1945* [*The Army and Navy Air Arms 1912-1945*], (Oslo, 1973).
- Moe, C. F., "Hærens generalstab i 150 år" ["150 years of the General Staff"], *Norsk Militært Tidsskrift*, 5/1964, 338.

- Morrow, John H. Jr., *Building German Air Power, 1909-1914*, (Knoxville, Tennessee, 1976).
- Morrow, John H. Jr., *The Great War in the Air. Military Aviation from 1909 to 1921*, (Shrewsbury, 1993).
- Nissen, Bernt A., “Venstre i Norge efter 1905” [“The Liberals in Norway after 1905”], in Jacob S. Worm-Müller, Arne Bergsgård and Bernt A. Nissen, *Venstre i Norge [The Liberals in Norway]*, (Oslo, 1933).
- Nyhus, Haakon, (ed.), *Illustrert Norsk Konversations Leksikon [Illustrated Norwegian encyclopaedia]*, six volumes published by H. Ascheoug & Co. (W Nygaard), (Kristiania, 1907-1913).
- Paris, Michael, *Winged Warfare. The Literature and Theory of Aerial Warfare in Britain, 1859-1917*, (Manchester, 1992).
- Powers, Barry D., *Strategy Without Slide-rule. British Air Strategy 1914-1939*, (London, 1976).
- Riiser-Larsen, Hjalmar, *Femti år for kongen [Fifty years for the King]*, (Oslo, 1958).
- Riste, Olav, *The Neutral Ally. Norway's relations with belligerent Powers in the First World War*, (Oslo, 1965).
- Riste, Olav, “Slow Take-off. The Pre-History of the Royal Norwegian Air Force, 1912-1944”, (Forsvarets Høgskole, 1985).
- Riste, Olav, “Was 1949 a turning point? Norway and the Western Powers 1947-50”, in Olav Riste (ed.), *Western Security, The Formative Years: European and Atlantic defence 1947-1953*, (Oslo, 1985), 128-149.
- Royal Air Force, *AP 3000. Air Power Doctrine*, 2nd Edition, 1993.
- Salmon, Patrick, *Foreign policy and national identity: the Norwegian integrity treaty 1907-24*, Forsvarsstudier 1/1993
- Salmon, Patrick, *Scandinavia and the Great Powers 1890-1940*, (Cambridge, 1997)
- Schnitler, Gudmund, *Moltke*, (Kristiania, 1896).
- Schnitler, Gudmund, *Strategi*, (Kristiania, 1911).
- Schnitler, Gudmund, *Strategi*, (Kristiania, 1914).
- Schnitler, Gudmund, *Verdenskrigen: 1914-1918 [The World War: 1914-1918]*, (Kristiania, 1924).

- Schröder, H. A., *Det danske flyvevåben [The Danish Air Force]*, (Tøjhusmuseet, 2001).
- Selboe, Tom, *Norsk forsvarspolitik 1905 – 1914 [Norwegian Defence Politics 1905-1914]*, Hovedoppgave i historie, Historisk Institutt, Universitet i Oslo, våren 1952, [Thesis within the subject of modern history].
- Sem-Jacobsen, Einar and Odd Amesen, *Til veirs på norske vinger. Av flyvningens historie i Norge [In the air on Norwegian wings. From the history of aviation in Norway]*, (Oslo, 1930).
- Smedsrud, Bjørn Magne, *Luftmakt i Norge. Debatten om et selvstendig flyvåpen frem mot 1940 [Air power in Norway. The debate on an independent Air Force until 1940]*, Hovedoppgave Luftkrigsskolen [Thesis submitted at the Royal Norwegian Air Force Academy], (Trondheim, 1998).
- Stenseth, Bodil, *En norsk elite. Nasjonsbyggerne på Lysaker 1890-1940 [A Norwegian elite 1890-1940]*, (Oslo, 2000).
- Sørensen, Øystein, (ed.), *Jakten på det norske. Perspektiver på utviklingen av en norsk nasjonal identitet på 1800-tallet [In pursuit of a Norwegian culture. Perspectives on the development of a Norwegian national identity in the 19th century]*, (Oslo, 1998).
- Thoresen, Gunnar, "Flygestevnet på Kjeller 4. til 6. mars 1921" [The air show at Kjeller 4-6 March 1921], *Norsk luftmilitært tidsskrift*, 1953, 99-112.
- Thoresen, Gunnar, "Løytnant Dons' dristige flyvetur til Øra i 1912" ["Lieutenant Dons' hazardous flight to Øra in 1912"], *Wirwar*, 1986, pp. 14-22.
- Tiller, Fredrik, *Bakgrunnen for Norges kjøp av britisk flymateriell under første verdenskrig [The background for Norway's procurement of British aircraft during World War I]*, Hovedoppgave Luftkrigsskolen [Thesis submitted at the Royal Norwegian Air Force Academy], (Trondheim, 1997).
- Ulriksen, Ståle, *Den norske forsvarstradisjonen – militærmakt eller folkeforsvar? [The Norwegian defence tradition – military power or popular defence?]*, (Oslo, 2002).
- With, Nanna, (ed.), *Illustrert biografisk leksikon over kjendte norske mænd og kvinder [Illustrated biographical encyclopaedia of famous Norwegian men and women]*, (Kristiania, 1916).

- Witoszek, Nina, *Norske naturmytologier. Fra Edda til økofilosofi* [Norwegian mythologies of nature], (Oslo, 1998).
- Wohl, Robert, *A Passion for Wings. Aviation and the Western Imagination 1908-1918*, (London, 1994).
- Ørvik, Nils, *Sikkerhetspolitikken 1920-1939 – fra forhistorien til 9. April 1940, Bind 1, Solidaritet eller nøytralitet?* [The security policy 1920-1939], (Oslo, 1960).