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INTERNATIONAL CONFERENCE ON NORTH CAP SECURITY PROBLEMS

ARNE OLAV BRUNDTLAND:

THE CONCEPT OF A NORDIC BALANCE.

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The following is a reprint of an article written in March 1965.

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Mr. Brundtland, who will be a participant to the North Cap Conference, will present a revised version of this article to the Conference.

The concept of a Nordic Balance.

There is no formal agreements in the security field between all of the 5 Nordic countries, and the foreign and military policies - the security policies - of the countries are based on different ideas, formally, mainly on the two different ideas of alliance-policy and neutrality. This does not, however, mean that there are no connections between the security policies of the five Nordic Countries. The policies are made and implemented by five different and sovereign cabinets, but as all kinds of realistic policies, they are hammered out with due consideration paid to the international environment, and at least part of the policies are designed to or justified in terms of keeping the peace in a broader area than the areas of the respective national states in Northern Europe. As there are no danger whatsoever for any armed clash between any of the nordic states, the main security problems of the area have to be dealt with within the context of the East-West conflict. The Great Powers do have mainly defensive, but possibly also offensive military interests in the Area. The main problem of the five states is that of any state with the aim of preserving the status quo: How to keep the peace in the area while preserving a reasonable freedom of action. Or to put it a little bit differently: How to keep the peace and remain in a position in which they do not have to give concessions to possible uses of military threats for political purposes by outside powers?

Taken for granted that the main purpose of the security policies of the five different countries is to guard the security of each of the countries, it remains to be found out to which extent the policy also is designed to guard a broader area. By membership in NATO three Western of the Nordic Countries share a political responsibility for the peace in the North Atlantic Region as defined in the North Atlantic Treaty. As all three countries are unable to defend themselves militarily over some period of time, Iceland having no military forces of her own, and Norway and Denmark having only little more than trip-wire forces, these three NATO members are unable to take a direct military commitment outside their own territory - at least when entering Great Power clashes - (I leave out the contribution of UN peace keeping forces). The same seems to be the case in the North of Europe. The eventual contribution of one of the small countries to the security of one or more of the others is not to be found in the strictly military field, but rather in the political or diplomatic field.

The North of Europe has been a relatively tranquil corner of the World since the second World War. And even after the beginning of the Cold War, the North of Europe has been less involved in and less afflicted by that particular variety of Great Power antagonism.

The main reasons for the relatively reduced cold war tensions in Northern Europe compared with the intense tensions in Central Europe are 1) that there was little to gain politically compared with the costs involved, to get complete control of the area, and 2) therefore the main interest of the Great Powers in the area was the defensive one of denying the complete use of the area to the other Power Group. To say in another way: The basic Great Power interests in the Area has been that of military security.

The North of Europe is thus an area of reduced tensions due to the fact of reduced Great Power involvment. One can speak of the North of Europe as an example of partial disengagement. This stability is also called the Nordic Balance. And we have to ask three questions: 1) Is this balance only a reflection of the Bipolar Balance? 2) Is it only partially connected with the Bipolar Balance, or 3) Is it something confined to the North of Europe, and therefore mainly a local phenomenon? And thereafter we have to ask the questions of how stable the balance is and what would be required to bring it to a higher or lower level.

But first which are the main elements of the Nordic Balance? Or in line with the statement in the last paragraph: In what ways are the Great Powers less involved in the North of Europe?

The three most important points are: 1) The absence of foreign military bases in Norway (and Denmark), 2) the recognition of the Swedish policy of alliance-free and military relative strong guarded neutrality, and 3) the special Soviet restraints in dealing with Finland, which is allowed to pursue a policy of "neutrality and friendly relations with the Soviet Union".

How are these three points related to each other? Leaving aside for a moment the question whether these three aspects of the security policies of the countries with interest in Northern Europe originally have been designed to make each other possible or to give the other side an inducement to show restraint, it is easy to see that there is a close relationship between them.

Let us first discuss the three points from the point of view of Norway. Although Norway has had a considerable rearmament since 1948 and has received a considerable military aid from USA and Canada - all for strictly defensive purposes - she has not allowed the establishment of foreign military bases on her territory. Upon Soviet enquiry,

before Norway entered NATO, she gave the Soviet Union a pledge in a diplomatic note of February 1949 that foreign bases were not to be established in Norway if Norway was not "attacked or threatened by attack". Thus rendering the Soviet Union a considerable inducement of never threatening Norway by attack, because of the possible effect it would have on the Soviet Union herself, namely, exposing the whole of North Western Russia to a considerable military threat by American arms, situated in Norway and consequently requiring an even higher military expenditure in the Soviet Union herself. The pledge was wisely given on two conditions: "attack" and "threatened by attack" the latter leaving a margin of judgement, which the Norwegian Government immediately and totally confined to herself.

In the contemporary interpretation, but even more in interpretations given to the "base-policy" later on, the Norwegian Government incessably pointed out that the "limitations and reservations" taken within the context of NATO membership, was done with due consideration to what the bordering countries -- the Soviet Union, Finland and Sweden - could expect from a friendly neighbour. The "threat of attack" would not necessarily be the threat of imminent attack by Soviet Russia on Norway - it might quite as well be a threat of attack on Norway if the Soviet Union occupied Sweden. Finland and Sweden being valuable bufferstates between Norway and the Soviet Union, and if not prepared to fight for Norwegian aims, at least representing valuable warning time which would make it possible to "request rapid dispatch of allied forces" to Norway prior to actual attack, or at least prior to the defeat of the Norwegian forces. The "base-policy" then gave the two other Nordic states a good argument in their dealings with the Soviets. And especially the Finns have used the argument.

There are numerous public statements by prominent Finnish politicians and policy analysts that there is a relationship between the lack of Great Power military establishments in Norway and Denmark and the Finnish policy of neutrality and friendly relations with the Soviet Union. And although there are considerable difficulties involved in interpreting public Finnish foreign policy statements because of the fact that they have to be phrased in a way making them serviceable both in Moscow and in the West, there seems to be a Finnish Line in the dealing with Moscow, that "improved" relations in the whole of Northern Europe, because the peaceful policies of Finland and the Soviet Union removes any desire for turning Western Scandinavia into a military bridgehead for the aggressive NATO-alliance. The peaceful policy of the two countries is designed to make the Norwegians and the Danes feel secure and

not request NATO bases on their territories. The possibility for NATO bases in Western Scandinavia then being used by the Finns as a lever against Moscow for "improved" relationship with the Soviet Union, and since the policy is designed to keep the West out of Scandinavia, the "improvement" of the relations must mean more freedom for Finland as this is the only way the West would feel even more secure and refrain from introducing bases in Norway and Denmark.

But this relationship can also be used by the Soviet Union as a lever against the Finns in order to get the Finns "work for peace" in the North of Europe. In other words that the Soviets try to press the Finns to help the Soviets get Norway and Denmark to turn their base-policy into rigid dogmas - because of the harm to Finland introduction of bases can mean - and in a longer perspective to get Norway and Denmark to quit NATO altogether. Or to use this argument, not from Moscow but from Helsinki: If you give us more freedom, we will work for peace in Northern Europe, if you press us, our work for peace will not bear any fruit.

The delicacy of the argument is, however, stressed by the Finnish President on various occasions, in terms of "The Finnish-Soviet relations are best managed by the two powers involved, please do not interfere". But also: "please do not add stones to our burden, it is heavy enough as it is, and we are the ones who are going to carry it". A further discussion of the possible use of this basic policy in Finnish-Soviet relations must wait, sufficient at this stage is to point out that there is a heavy use of it.

And then to the next country involved: Sweden. To which extent is the Norwegian "base-policy" of interest to Sweden? The Swedish thinking about this point of course, also takes the Soviet reactions to a possible set of Western Bases in Norway, into account. The value of this disengagement factor to the Swedes, however, is probably of a less direct nature. The Swedish policy in 1948-49 aimed at getting stronger defense for Sweden than a strictly Swedish effort could provide, but the Swedes were anxious not to introduce elements which would have a provocative effect on the Soviet Union. Therefore the Swedes argued for a strictly alliance-free Scandinavian defense pact, anything more could have the effect on the Soviet Union that the Soviet Union would take moves which would neutralize the stronger defense effort. Or to say it more directly: If Sweden joined NATO or even joined a Scandinavian defense pact that was not strictly neutral, the Soviets could occupy Finland, and furthermore direct more forces to the guarding of her territory close to Sweden. A Balancing point between a Scandinavia in which all nations were isloated neutral, and therefore unable to handle Soviet pressure,

and a Scandinavia united and within NATO with full commitments even with bases, was to be found in a splitted Scandinavia with Norway and Denmark in NATO without foreign bases on her soil, but with the unprovocative defense the political guarantees of NATO would give to Norway. The alliance-free Scandinavian pact was on the very top of the Swedish shopping list, but when that failed because of a different Norwegian assessment of the threat, the second best solution was the Norwegian variety of NATO membership. One cannot prove that the Swedes argued for such a solution, but the Swedish Premier has repeatedly stated, often with a remark about the long lasting Soviet allegations, early in the 1950's that the Swedish neutrality was pro-western, that "it possibly was best it went as it did" and he has repeatedly pointed out the nature of the Norwegian base-policy. The close relationship between Norwegian and Swedish security was also demonstrated in 1960 when the Swedish Government started a slow increase in defense preparedness when the Soviets started their overall political drive against the West, and also in particular against Norway. As far as the absence of bases in Norway is a factor for relaxed tensions - which has repeatedly been acknowledged by the Soviets - it is also a policy for reduced danger for Sweden.

And them to the second main factor in the Nordic Balance, the Swedish Neutrality.

Sweden being a typical Western country is unlikely to have any but one military opponent to face. But in order to get the Swedish neutrality acknowledged in Moscow, the Swedes have to stress the absolute nature of their neutrality. The price of recognition of Moscow, or to put it in more defensive terms, the mothod to be used in Moscow in order to make the Soviets feel reasonably sure that the Swedish policy is something more than a "wait and see" policy is the one of pointing out that the policy in Washington also is the policy of assuring that Government that the neutrality of Sweden is absolute. The experience of the Swedes with a sequence of espionage cases has made it clear both to the Swedes themselves and to the other peoples interested, that there is no room for Swedish double dealing as far as assurances about their neutrality is concerned. The chances that double dealing would be known are so high, that they pretty obviously assure one straight line. The value of credibility to a policy of neutrality in a setting primarily dominated by defensive thinking is so high that it must be guarded with the utmost care and attention.

The value to Norway of the Swedish neutrality is very high. To put it in a different way: Norway can not be defended if Sweden is allied with a hostile power. As of the time after the second World War, Sweden has formed a valuable buffer for Norway, and because the Soviets only reason for an attack on Sweden is to march through it in order to get to

the Atlantic, the price for doing so is too high as long as the Swedish defenses are strong as they are. Consequently Norway does not need to defend the Norwegian Swedish border.

The value to the Finns of Swedish armed neutrality is also very high indeed. But it is not to be found in a use of Swedish arms to defend Finland in a possible attack from the Soviet Union, it is merely within the framework of the assumed fact that it has removed Soviet anxiety, and thereby Soviet reasons for conquest of Finland. And secondly, there is of course a possibility for Sweden joining NATO if Finland is attacked - this was especially pointed out by "analysts" some years ago, and one can safely assume that the Soviet gain, won by a costly conquest of Finland, would be more than neutralized by a Sweden in NATO, with possible bases and a stronger military build up that is close to Soviet territory.

There is therefore good reasons for the Swedish Premier to point out, which he does at various occasions, that the Swedish policy of neutrality, guarded with a considerable military effort, also is a factor for peace and stability in the North of Europe. It is primarily designed to safeguard the independence of Sweden, but it has this broader effect. And interestingly enough, the Soviets have lately quite often recognized the Swedish policy as a factor for peace and stability in Northern Europe, and has held it out as an example for the other countries in the area.

The third factor is the Finnish neutrality and peaceful and friendly relations with the Soviet Union. Although we already have indicated connections between this factor and the other two factors in the Nordic Balance-thinking, we must add to the picture some of the values to Norway and Sweden of this policy.

Militarily you have the question of warning time, and sentimentally you have the problem of an overall feeling of solidarity between the Nordic peoples manifested in many ways, and given a solid foundation in the work of the Nordic Council, which is a forum for cooperation between the Parliaments of the five countries.

A military conquest of Finland would have far reaching consequences for the two other countries - already pointed out - and it would make them embark on a re-armament policy draining their financial resources.

The Norwegian-Finnish border of 450 miles would be even more impossible to defend, and the Swedes could no longer base their grounddefense on mobilization, as now is possible while Finland is an alarm clock. The Swedish air and naval defenses would probably have

to be stepped up very considerably. A Swedish official worded it this way: It would make us tripple our defense budget - which we can afford, (his argument was also designed to retort the question of Sweden joining NATO - a possibility no Swedish official can air at all.)

Both countries would have to face a considerable refugee problem with all the instability implied.

There are therefore a great number of good reasons for keeping this Nordic Balance, as it has been stabilized on a level on which it makes use of a good variation of defensive and offensive possibilities.

But this balance, commonly acknowledged by the Governments most directly involved, does of course neither take care of all the defense needs of the countries, nor prevent the powers involved - and in particular political and military groups in the various countries - to argue for a different balance. The Soviets seem to have the long range goal of getting Norway and Denmark and if possible Iceland to quit NATO, and they seem to feel free to comment on any aspect of the security problems in the area without too much restraint. And in particular, the balance does not prevent the two NATO countries to build a considerable conventional defense, and to follow up the general development in arms technology, for instance, by introducing tactical rockets in Norwegian and Dannish defense disregarding Soviet misgivings.

In the common, if we might call it, first level, exchange of arguments over defense policies, the balance does not seem to be involved. At least in Norwegian-Soviet exchanges, the main policy line from the Norwegian side seems to be the one of assuring that the peaceful intentions of the Norwegian Government, designed to improve the good neighbour relationship with the Soviet Union is constant and not up for change. Furthermore, they state that this peaceful policy is determined totally by the Norwegian Government and that pressures in one way or another would be of no avail. This was the case in the long exchanges of notes and statements in connection with the U-2 incident and the RB-47 episode, in which the Soviet Government alleged Norwegian co-responsibility for these "aggressive" acts and even threatened with bombing of Bodø airfield. The Norwegian line was that of clearing up misunderstandings and asserting the peaceful purposes of NATO and Norway.

The Soviet Government refused to accept the Norwegian assurances, and Chairman Khrushchev said while in Finland on the occasion of the 60th birthday of the Finnish President, that the development of the cause of peace in Northern Europe depended upon the behavior of the Norwegians and the Danes. At the same point he and the Finnish President agreed to "do their utmost best to keep the Region of Northern Europe outside the sphere of tension and friction between states".

Chairman Khrushchev certainly invoked the Nordic Balance - without saying so - and the Finnish interest to comply with the idea set forth in the communique was considerable. It was at that time that Khrushchev gave his pledge to allow the Finns to enter EFTA - the more accurate terms about which were to be determined by negotiations in Moscow in November.

The pressure against Norway, however, was stopped after a clear statement by the Norwegian Premier and Foreign Ministers late in October, when they warned the Soviet Union that public opinion had for some time been asking whether a military threat from the Soviet Union existed or not, might demand a reappraisal of the defense policies "including the reservations and limitations" which were fixed with due considerations to what the neighbours - the Soviet Union, Finland and Sweden - could expect from a friendly neighbour. Six months later, the Norwegian Foreign Minister pointed out that the Soviet-Norwegian relations had been very calm for the last six months, and that this augured well for the relationship between the two states.

One can offer the hypothesis that the mere indication of a re-appraisal was a sufficient stepping up of the level of conflict, to get it back on its previous state. If this is so, the weapon certainly was a very powerful one in Norwegian-Soviet relations. A less obvious hypothesis to offer is the one that the Norwegian indication also helped the Finns to get a reasonable contract for EFTA membership in Moscow some weeks later.

A later use of the Nordic Balance theory by the Norwegians in their dealing with Moscow seems to indicate a more direct connection with the Finnish-Soviet problems. Let us take a look at the so-called note-crisis of 1961.

The Soviet note to Finland of October 30th, 1961, was a demand for consultations under article 2 of the Friendship treaty because of a strongly increased threat of attack from revanchist Germany indicated by the considerable naval build-up in the Western part

of the Baltic. It was pointed out in the note that this build-up continued with increasing speed, and that Denmark and Norway in particular, but also Sweden were to be held to some degree responsible for this aggressive preparation for war against the Soviet Union and probably also Finland.

It was further pointed out that certain circles in Finland - and among those were to be found some of the principal supporters of President Kekkonen's challenger for the presidency, Dr. Honka. Some of these people were preparing for a "brotherhood in arms" - the wartime Finnish description on the relationship with the German forces in their simultaneous fight against the Soviet Union - with the German revanchists.

Although the note was addressed to the Finnish Government only and a copy was immediately sent to the Swedish Government, the contents of the note concerned the other Scandinavian countries almost as much.

It seemed to have been a two-level pressure on the Finns, one domestic against the presidential contender, and one at the Finnish neutrality. And as far as Norway and Denmark were concerned, the direct pressure on Finland was clearly designed in order to make these two countries stop their growing involvement with the Germans in the relatively modest build-up of defenses - under the auspices of NATO - in the Western part of the Baltic. Thus it was a clear attempt to threaten to alter important factors in North European Security in one part of the area, in order to stop a development in another part of the same area, that the Soviets interpreted as a development altering the status quo or, in our terms, altering the balance.

The reaction in Norway in particular, but also in Denmark was very prompt. The Norwegian Foreign Minister pointed out almost immediately the value of the Norwegian reservations in NATO as a valuable factor in the Security of Northern Europe, while stressing that the German build-up was of a defensive nature and that the Norwegians would not yield under pressure. In his opinion nothing had changed lately that could warrant the Soviet reactions and demands against Finland. (And some Norwegian newspapers reminded their readers that the Norwegian Base-policy mainly was made because of Finland - and that a change in Finland would warrant the abandoning of the policy.)

The Swedish Premier worded his comment more carefully. In his opinion too, the situation was not changed, and therefore no redressing change was warranted. The Premier also repeated that the present Swedish neutrality supported with considerable armed forces was a valuable factor for peace and security in Northern Europe and the Baltic area. The Swedes alerted parts of their airforce, but did not mobilize ground forces.

The Finnish-Soviet dealings over the note took place in two rounds, so to speak. The first round, up till the 14th of November dealt with the domestic political scene in Finland, and the second one up till November 24th, had a more strictly international flavour.

The Soviet allegations that the backers of Honka were unreliable as foreign policy leaders of Finland, were met by the Finnish Foreign Minister by assurances to the contrary. But when this assurances were insufficient, the Finnish Government decided to move the Parliamentary elections up from June till February in order to 1) buy time, and 2) let the people get the chance to prove their reliability. (It goes without saying that the minority agrarian Government exploited the situation by pointing out who were able to conduct foreign affairs, and consequently who were to be elected).

This move was not deemed necessary by the Soviets, who while pointing at three events in Western Scandinavia that had come about in November, declared that the situation was aggravated and that the consultations were to be started immediately. The three events were: The long before agreed-upon visit to Norway by the German Defense Minister, Mr. Strauss, 2) the negotiations at AFNORTH's Headquarters outside Oslo between Dannish and German representatives about the establishment of a joint command for the defense of the Baltic exists, and 3) joint naval exercises in the Western part of the Baltic.

All three events seem to have been known to the Soviets before they sent the note, but they were now used as new elements in the situation and as pretext for immediate consultations.

What alternatives did the Finns have in the Situation? There seem to have been three. 1) To deny the threat and refuse to enter into consultations, and by that put their clear disagreement with the Soviets "on record", with all the possibilities for subsequent Soviet interference that would have implied. 2) To deny the threat, but enter into consultations. 3) To agree on the threat and enter into consultations. The two last alternatives implying great immediate dangers for the Finnish neutrality.

The Finnish President tried to prevent the use of neither of them, and as in the first round, tried to keep the disagreement on the pure political level. He asked to see Khrushchev personally to discuss the matter.

The intention seemed to have been to trade political assurances for a Soviet refusal to press the consultation-issue.

While scolding the Western countries for letting the three events happen "when Finland was in the shadows of consultations" he did not go further than to state that he knew that NATO had peace as its purpose. He did not see an immediate threat against Finnish neutrality from that alliance.

Two things with real significance happened before Kekkonen met Khrushchev in the distant town of Novosibirsk. 1) The Honka-front collapsed, and Dr. Honka withdrew his candidacy and 2) the Norwegian Foreign Minister went to Moscow and reminded Gromyko about the value of the Nordic stability and pointed out that uneasiness and change in one part of the area could lead the Norwegians to take up for re-appraisal special aspects of their security policy. And in line with the Foreign Minister's statement, the Norwegian Defense Minister publicly stated in Denmark, that the Soviet propaganda was neither fair nor smart and that possibly would lead us "further into NATO".

President Kekkonen was able to use these events in Novosibirsk when he warned Khrushchev that the beginning of defense consultations between the Soviet Union and Finland would create a "war psychosis" in Scandinavia. Although Kekkonen had to give some assurances and concessions to the Soviet appraisal of the international situation and even concede to the new role as a "watch-dog" in the North - namely, with a duty to more actively report his assessment of events to the Soviet Union - the Soviet demand for defense consultations were "postponed".

The Novosibirsk meeting was followed up by the withdrawal from Finnish political life of some of the people on the top of the Soviet Black list. But the events initiated by the Soviets were followed by a direct reminder to Denmark in IZVESTIA four days before the Dannish Parliament should decide the fate of the Joint Dannish-German Baltic Exit Command, that Denmark's cooperation with Western Germany within NATO "complicated the situation of Denmark's neutral neighbours". The whole drive by the Soviets seemed however, to have been ended by the amicable presence of Khrushchev at the reception of the Finnish embassy in Moscow celebrating the fourty-fourth anniversary of Finland's independence, reported in the New York Times of December 7th, 1961.

We can certainly point out the use of Nordic Balance arguments in sequence of events following the Soviet Note to Finland of October 1961, and this issue made the public even more aware of the Balance, but there are a lot of difficulties involved in a more detailed analysis of the role of the Balance. The required discussion of the possible Soviet intentions with the Note must, however, precede, and there is deplorable lack of room for such discussion and analysis within the framework of this lecture.

Before conclusion, let us take the time to reflect a little bit about the nature of this balance.

In general terms, the Nordic Balance can be stated to be the notion that there is a stability in the security of the Northern European countries and that significant changes in one part of the area are likely to lead to redressing changes in other parts of the area. And furthermore that the notion of such redressing possibilities acts as a deterrent to changes in the first place.

The Nordic Balance seems to be more than a mere reflection of the Bipolar balance, because one of the redressing factors, namely, the use of the possibility of introduction of foreign bases on Norwegian soil, is a factor solely at hand for the Norwegian Government. But the Balance cannot be thought of as something confined to the North of Europe - even if one wrongly included the Soviet Union among North European countries - because the introduction of foreign military bases in Norway is a question which finally is to be decided by the American Government, and secondly because the whole balance policy - at least on its present level - has the existence of NATO as a very important factor.

The next series of questions to be explored are those of the establishment of the Balance on different levels.

Just to indicate the problem: What would happen if the going got that rough in Northern Europe that the Norwegian Government asked for bases - and now you have a long series of graduated possibilities, among others the request of the dispatch of the Allied Mobile Force (perhaps in the first place without American or German participation?)

Where could you stop the "escalation" of involvement?

And you have the other series of problems involved in the drives for establishing the Balance on a lower level. Just to indicate: If the Finns are right in their assessment of the Finnish-Soviet relations that a total absence of NATO from Scandinavia would remove all Soviet incentives for interference in Finnish affairs, the logical consequence would be for the Finns to press for some sort of a neutral Scandinavia? What would be Norwegian (or Western) redressing levers in such a situation? One might argue that the West in all circumstances would be interested in defending themselves from Soviet hegemony in Scandinavia, but where would the frontiers go, and how would such power relationships be made useable diplomatic instruments?

March 15th, 1965

2

INTERNATIONAL CONFERENCE
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SECURITY PROBLEMS

THE FUTURE ROLE OF SOVIET SEA POWER

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The Russians have been politically interested in sea power since the 17th and 18th century campaigns of Peter the Great. Since Stalin's death, however, Soviet maritime strategy has appeared in a different political concept. It now reflects the Soviet scenario of a struggle best defined by George Kennan who pointed out that the Soviet Union's "main concern is to make sure that it has filled every nook and cranny available to it in the basin of world power." Despite repeated threatening language in speeches and diplomatic exchanges, however, the theme of Soviet strategy is victory by Cold War and diplomacy.

Nikita Khrushchev made it clear that the Soviet Union did not desire to engage in war when he spoke to workers at Novosibirsk on 10 October 1959; and Marshal Vasily D. Sokolovskiy has more recently considered this theme important enough to repeat: "Peaceful coexistence . . . must be correctly understood. Coexistence is a continuation of the conflict between social systems, but by peaceful means, without war . . . We consider this an economic, political and ideological struggle, not a military one." Then the Soviets, via the voice of the Twentieth Party Congress, clarified the main target of their "cold" struggle by stating: "In short, the world has moved out of the stage of the capitalist encirclement of the Soviet Union and during the current phase of coexistence is moving into the stage of the socialist encirclement of the United States as a prelude to final victory of Communism." The essence of this declaration supposes that the Soviets will capture the economic and political vitals of the developing nations and, thereby, isolate the United States. This is what Sokolovskiy had in mind when he stressed " . . . politics has available in addition to war, a large arsenal of various non-forcible means which it can use for achieving goals, without resorting to war."

Economic warfare, the co-element of Soviet political and psychological warfare, actually equates to trade-war. It seeks to dominate the economy of the rising nation and is nothing more than "mercantilism." Khrushchev set the Soviet course in this direction when, in 1955, he forecasted intentions to increase foreign trade by 70 per cent. It will be recalled that Khrushchev made this announcement when he introduced the Seven Year Plan shortly after replacing Giorgi Malenkov, and thereby used the opportunity to broadcast the Soviet policy of invoking the political instrument of trade and aid as the new tactic in pursuing Kremlin goals.

The unique advantage to the Soviets is their ability to prosecute a trade-war by decision. that is, when the political stakes are high enough, they decide, and manage to afford, the economic policies that help to win them.

Another facet of recent Soviet politico-maritime strategy involves designs to neutralize Western sea power by creating political and military obstacles to free movement of ocean commerce. In this regard, the Kremlin continues to work diligently to fester the political environment around the four strategic, commercial bottlenecks of world trade routes: the Panama and Suez Canals and the Straits of Malacca and Gibraltar.

Efforts have been made by the Kremlin to extend Soviet sea power by proxy to these vital areas by building up the naval power of Cuba, Algeria, Egypt, and Indonesia. Further indications of these tactics are reflected in Soviet construction of seaports such as Hodeida in Yemen. This port, as well as others which may be offered for Soviet naval "blackmail" operations, constitutes a potential fleet-in-being type of haven which could accommodate both submarines and surface ships. Support ships for naval and fishing units could well find strategic ports and coves similar to the facilities which the Soviets enjoyed briefly in Albania for submarine operations. These projections of Soviet sea power are not myths. Indeed, current Soviet political maneuvering and planning lends new significance to them.

The naval and air forces which the Soviet Union has provided the developing nations have minelaying capabilities and, though neither first rate nor operational in all cases, these forces pose an additional potential threat in very strategic areas.

Closely associated with neutralizing Western sea power is the Soviet Union's effort to increase the three-mile limit of territorial waters. The political motive is obviously to nibble away the freedom which has always been a hallmark of the high seas and, accordingly, diminish Western sea power's

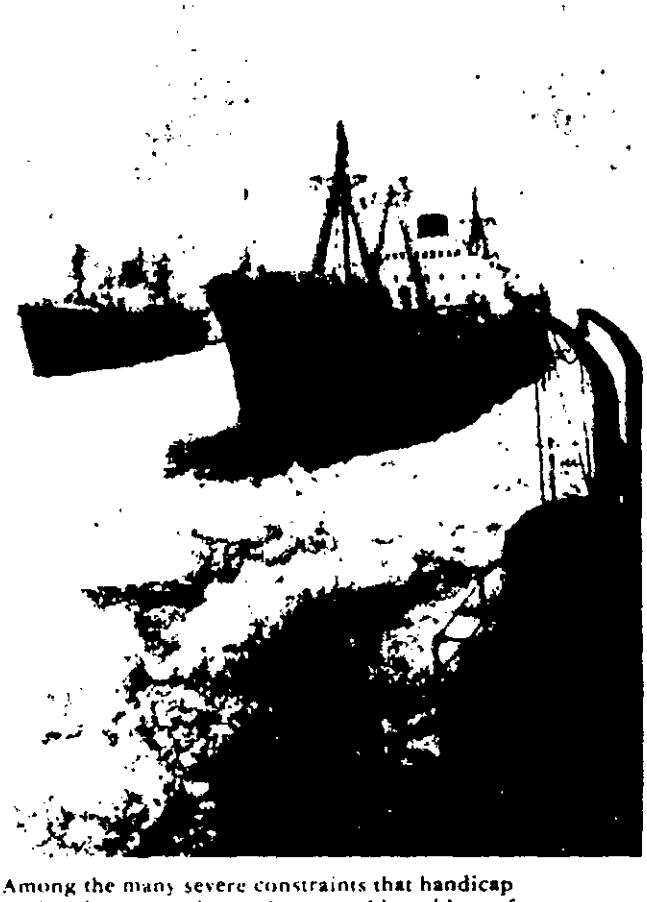
mobility. If, for example, the [illegible] were to become international [illegible] would no longer be free seas [illegible] passages now classed as international [illegible] subject to political wrangling. The Soviet Union's desire for coastal control [illegible] Communist insurgency activities around the world is another, more covert, motive.

Other political motives which shape Soviet maritime strategy could be cited, they, however, would merely reaffirm Soviet designs to further the Kremlin goal of world domination through maximum use of sea power.

There are important fixed factors affecting Soviet sea power. Professor Nicholas J. Spykman (1893–1943) emphasized that geography was fundamental to the formation of foreign policy, and so it is with Soviet foreign policy. Spykman highlighted the dependence of relative power of states not only on military forces but also on such factors as size of territory, nature of frontiers, size of population, absence or presence of raw materials, economic and technical development, financial strength, ethnic homogeneity, effective social integration, political stability, and national spirit. Credence is added to Spykman's concepts by Alfred Thayer Mahan and Sir Halford Mackinder, both of whom arrived at the same deductions. The former oriented his philosophy toward maritime strategy and the latter more toward the potential power inherently possessed by the Eurasian land mass. It is the wisdom of these three men which provides the tools with which one may analyze Soviet national power and, indeed, sea power, with reliability. The relatively new third dimension of Communism does introduce insidious tactics which challenge old theories. Nevertheless, as Mahan pointed out, his principles "belong to the unchangeable, or unchanging order of things, remaining the same, in cause and effect, from age to age," and that flexibility of application, occasioned by unforeseen developments, is necessary.

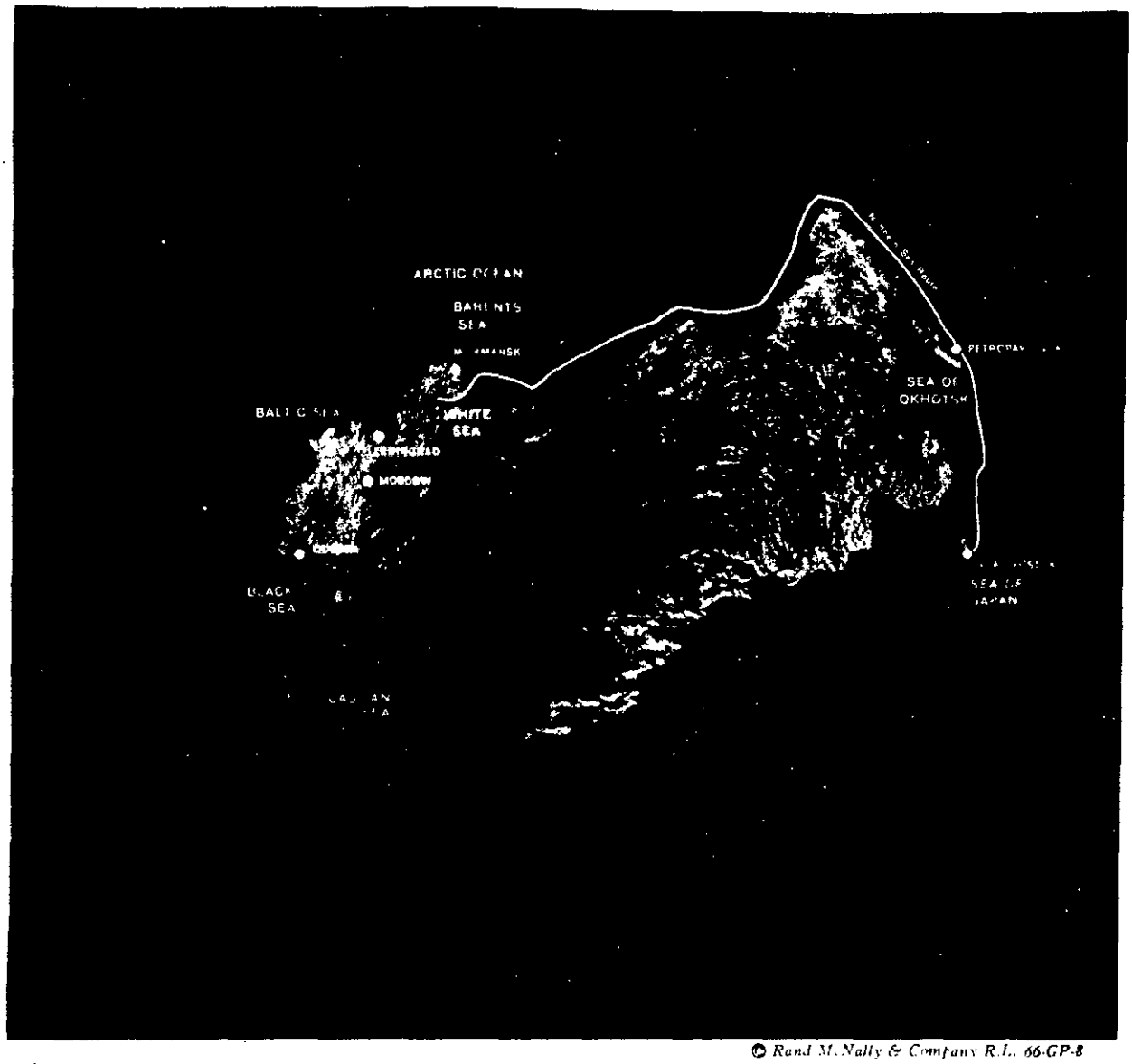
Land Mass Orientation. The vast size, northern location, and orientation toward the Arctic have significantly influenced everything that is Russian. The high mountains in the east and south, the proximity of the Arctic, and the continental climate combine to [illegible] extremely hot and cold regions, large [illegible] areas, and difficult interior [illegible] As a result, the bulk of Soviet [illegible] tion and transportation is [illegible] Western Russia in a triangular area [illegible] significantly of only about 11 per cent of the country, the apex of which is near Lake Baikal.

Another region of less than 2 per cent of the entire land has been developed as the Far East Maritime Province. Geographically isolated, this near area 4,000 rugged miles east of the apex has been forced into military and economic seclusion. Both areas, consisting of about 80 per cent of the population, are joined by an excellent, but by itself inade-



Among the many severe constraints that handicap Soviet planners today is the ages-old problem of ocean ice that obstructs even the major Far East port of Vladivostok for part of every year.

Soviet



quate, east-west Trans-Siberian railroad.

In reality, then, the vast land of the Soviet Union is literally reduced to a comparatively small, productive portion which is oriented like a tipped table in the direction of Europe. This feature explains why the Russians have always considered the defense of their western front the key to their survival. It follows, of course, that the isolated nature of the Maritime Province contributes little, if any, to the major power complex which is centered in western Russia.

Peter the Great was one of the first to appreciate the western orientation of Russia; this was symbolized by his moving the capital from Moscow to St. Petersburg. He clearly understood that the wealth and greatness of his country lay in its association with Europe and understood the importance of the Baltic and Black Sea to this greatness.

Geographic Vulnerability. From a defensive point of view, the high perimeter of the "tipped table" is bound by excellent obstacles; frozen seas, wide deserts, and high mountains protect three sides. Only from the west is the Soviet heartland approachable across terrain suitable for any large-scale ground movement, while the remaining large portions of its western frontier are coastal in nature.

Imagine yourself standing in Moscow, the geographic center of the Black, Baltic, and White Seas, and facing west; the vulnerability of Russia from the Muscovites' perspective can thus be more clearly appreciated. Not only do you gain a better understanding of

the purpose of the Red Army, but you also recognize more fully the importance of sea power to the vast water-washed shores of western Russia both from the point of view of defense and of contact with the world, the latter being the source of Soviet progress. Also from this vantage point, one may visualize the industrial triangle of Russia with its base facing quite vulnerably to the west. Eastern Europe and the Baltic directly threaten the center, whereas the Black Sea and the White Sea weaken the extremities. This is to say, the Soviet heartland is vulnerable from four distinct sectors, three of which must rely upon naval power for defense.

In a similar vein, the Soviet Union is militarily weakest where the seas literally penetrate deeply into the base of its industrial triangle. This makes the Soviets sensitive to any threat from the seas and increasingly conscious of the need for sea power. Furthermore, the Soviets become justifiably fearful of the sea-threat when they remember that within the last 115 years,[1] while successfully resisting repeated invasions over land, they have been defeated twice by sea power in the Crimean War (1853–1856) and the Russo-Japanese War (1904–1905).

Internal Mobility. From the Soviet interior to its seaports, water transportation is seemingly difficult. The combination of waterways enables the interior movement of smaller merchant vessels and naval ships between the Arctic, Baltic, and Black Sea areas. Even though the internal water system is elaborate, it moves one-fifth as many ton-miles by water as the United States which has one-fourth of the mileage. Moreover, Soviet waterways transport only five per cent of the nation's freight turnover. Better use, however, can be expected of the rivers, locks, and canals as the current extension and improvement programs progress. Actually, river transit by ocean ships is now in effect and increasing. However, there is no river which provides free access to the ocean. The large Siberian rivers all empty into the Arctic Sea which is frozen for nine to ten months of the year. The Amur in the Far East deviates to a shallow estuary which is icebound for many months. The Volga, the most important river, carrying over half of the inland waterborne commerce, flows south into the landlocked Caspian; and both the Don and Dnieper rivers reach the Black Sea which, in turn, must exit through the Turkish Straits.

Thus, nature has forced the Soviets to the limits of man's ingenuity in efforts to overcome natural obstacles. In general, the inland waterways can be considered marginal, being susceptible to improvement but not substantial change.

Although all but one of Russia's major seaports lie in proximity to a river mouth the exception being Vladivostok they are relatively unimportant. In fact, the most important, Leningrad, does not rate among the 50 leading seaports of the world. Another point the remoteness of many consuming and producing centers from the ports makes international commerce very expensive after the heavy freight from river or rail is added to the ocean freight.

Peripheral Limitations. Access from the Soviet Union, that is the tipped table portion, lies either across the northern plain of Europe or through the Black, Baltic and White-Barents Seas. Not one of these seas has free access to the world inasmuch as each one is severely restricted in at least one of several ways. Exits from the Black and Baltic Seas require passing through narrow waters controlled by Turkey and Denmark respectively. Egress from the White Sea area is through relatively narrow and channeled waters of the Barents and Norwegian Seas. To further the restrictive effects, all three exits are under close surveillance of the North Atlantic Powers.

Likewise, the heartland of the Far East, the Maritime Province, is hemmed in by the Sea of Japan with only three accesses to the Pacific Ocean, all of which are easily dominated by Western-oriented Japan.

In effect, Soviet naval capabilities beyond their contiguous "lakes" depend primarily on the two port areas, Petropavlovsk, in Kamchatka, and Murmansk. And, the Soviets have been forced to make maximum use of these areas irrespective of their relatively remote and isolated locations. Although Petropavlovsk fronts on the Pacific Ocean, it is icebound three months of the year and hampered by extreme climatic conditions. With icebreaker operations, it is usable the year round, and a small portion of the Far East Fleet is based there. Even the major port

of Vladivostok is icebound part of the year, requiring icebreakers for year-round use. Murmansk is more useful inasmuch as it is ice-free; in fact, Murmansk is the only Soviet port in European Russia that is unimpeded in its outlet to the high seas by ice or extensive narrows. Nevertheless, it is plagued by inhibiting climatic conditions and severely so.

Thus, the Northern Fleet and the Petropavlovsk forces represent the major Soviet sea power threat in their respective ocean areas. For the Soviets to project their threat into the Atlantic, however, it would be essential for the forces (surface, sub-surface, and probably air) to funnel via the relatively narrow Norwegian Sea. In addition, channeling through the Greenland-Iceland-Faeroes Gap would increase their vulnerability. Submarine use of the Arctic ice cap would be probable but not without inconvenience and undesirable sacrifices.

A glance at a North Polar Map reveals three salient features which diminish the power position of the Northern Fleet. First, the Barents-White Sea area lies deeply in the Arctic, which extends even into the depths of Russia's Northwest; second, the circuitous route and distance to the North Atlantic is extremely long and vulnerable; third (and this relates to the second) the route to the Atlantic is relatively narrow.

Sokolovskiy has summarized Russia's dilemma from the experience of World War II: " . . . two of our fleets were based in inland seas [Baltic and Black Seas] and it was difficult to bring out the Northern and Pacific Fleets onto the high seas."

Unfavorable Climate. Although adversities of climate have been mentioned, it is proper to emphasize their limitations on both commercial and naval activities. Cold and dismal climatic environments seriously affect three of the coastal complexes; only the Black Sea enjoys the milder weather. The White Sea and Far East areas are plagued much of the year by fierce inclement conditions. Only the Satellite countries have Baltic ports with year-round weather conditions that are suitable for reasonably efficient commercial and reasonably effective naval operations.

As a general deduction, the areas from which Soviet naval operations could project into the distant oceans experience climatic conditions which not only discourage, but also preclude operational flexibility. This same limitation applies to ocean commerce. Where the Black Sea has more favorable weather, its accessibility to the open seas is more restrictive including periodic weather limitations on navigating the Bosphorus-Dardanelles.

The Northern Sea Route, some 6,000 miles long, is only open from about mid-July to the end of September; and the use of icebreakers extends this season by about two weeks. Although the Soviet Union has progressively made greater and greater use of this strategic route, it is inconceivable that, within the foreseeable future, they will be able to enhance the route's military and economic contributions to any significant extent.

The magnitude of the modern Soviet Navy was placed in clear focus by Admiral Arleigh Burke on 26 August 1957, when as Chief of Naval Operations he told the Veterans of Foreign Wars: "They have a large, well-rounded navy with the largest submarine force in history, and they are building subs at the rate of about 100 a year." He also pointed out that "In twelve years the Soviet Union has replaced Great Britain as the second ranking sea power." Subsequently, it became recognized that "the Soviet Union . . . has surpassed in some respects the military technology of the West and it also maintains far larger conventional forces." Although these statements were made six to eight years ago, they realistically portray a Soviet Navy today which was commenced in 1928 as part of Stalin's first Five Year Plan.

Stalin, although a "big ship" advocate, emphasized sub-surface warfare and in 1941, produced the largest submarine force in the world. A naval reorientation during 1953-58 under Khrushchev further stressed the submarine but with a continuing degradation of the surface navy. "Cruisers," said Khrushchev, "are fit only for diplomatic missions to foreign countries." In 1959, he stopped cruiser construction and replaced the "big-ship" sailor Admiral Kuznetsov with Admiral Gorshkov, a proponent of submarines, missiles, and smaller ships. Since then, missilery has dominated the naval scene (and has even been honored on land as a separate branch of the military). And now, the earlier concept of balanced fleets has given way to an emphasis on missile firing submarines and missile ships in the Northern and Far East Fleet.

The Soviet surface naval force today is the second largest in the world when measured in terms of tonnage. It includes a significant number of relatively modern cruisers, frigates, and destroyers, many equipped with surface-to-air and surface-to-surface missiles. These units are augmented by numerous coastal types which also brandish missiles. In addition, more than 100 oceanographic research ships emphasize the magnitude of Soviet interest in both the military and economic applications of the world's oceans.

The Soviets have a substantial naval air arm which has been dramatizing increased capabilities with long-range reconnaissance flights over the Atlantic and Pacific. Some of these aircraft have been TU-95 turboprops, the longest range type in the Soviet air inventory useable for oceanic patrol and antisubmarine-surface shipping.

The Red submarine fleet continues to be the world's largest; it includes numerous nuclear and about 400 conventionally-powered types. At least one-third are long-range, while the remainder are medium-range or coastal types; and increasingly large portions of the long-range submarines are being equipped with missiles.

The majority of all Soviet surface and submarine vessels are capable of minelaying, giving the Soviet Navy an unusually extensive mining potential. Smaller units, including trawlers, further increase this capability to significant proportions. Equally important are the continued efforts by the Soviet Union to maintain a highly effective minesweeping force. At present this force is also acknowledged to be the world's largest.

The Soviet merchant fleet has expanded absolutely most since World War II, and now its current estimated annual increase approximating 1.7 million deadweight tons and a 12.7% projected strength of about 13.5 million tons.* The probable goal for 1980 is 20 million gross tons. Current Soviet shipbuilding programs call for about 332 dry cargo ships, 131 tankers, and notably, 38 passenger vessels. Meanwhile, at least 1,124 Soviet merchant ships totaling 7.03 million deadweight tons, are using the high seas today.

The Soviet fishing fleet will soon be the largest in the world. It is already considered to be the most modern. The trawlers are impressively large and capable of distant and extended operations through the organic support of modern salvage ships, tankers, refrigeration ships, and dry-storage vessels. Estimates indicate that the Soviet fishing force has increased from about 36,404 vessels of all types in 1940 to about 75,000 in 1962, and has a program for an additional 14,000. Fishing operations are global.

It must be concluded that the Soviet Union has, or will have, a numerical preponderance of the components essential to sea power; and Soviet efforts to develop a balance of naval, merchant, and fishing fleets are increasing.

The Soviets remain very much convinced that past efforts toward achieving global Communism have been successful, and that their ideology will reap progress under clever and determined leadership, through aggressive policies, and within the framework of Peaceful Coexistence. Hypnotized by their belief in the "inevitable world revolutionary movement," they will continue to seek every possible action short of war to hasten what they feel to be the ultimate crumbling of the world into their lap. Their strategy is shaped by the nuclear stalemate and the predominating influence which economic development has, and will continue to have, in the foreseeable future, both in Russia and

* *See* Frank A. Nemec, "The Soviet Maritime Establishment," U. S. Naval Institute PROCEEDINGS, December 1964, p. 26.

throughout the world. In this environment they plan a significant role for sea power as the instrument for implementing Soviet political goals.

The Soviets will experience during the next decade their most serious challenge in the economic sector; and it is apparent that through directing a greater share of their national effort toward agriculture and consumer industry they intend ultimately to realize greater economic viability to meet the consumer needs. In addition, a necessary extension of the Soviet industrial base and greater participation in world trade are to be pursued by the Soviet leaders in an effort to stimulate their economy and enhance their power image. As a consequence, the military posture will feel the pinch and will find it necessary to restrain expansion desires. Thus the Soviets will probably maintain a military posture, including large naval forces, adequate to preserve the condition of stabilized deterrence and provide territorial security.

Reflection upon the world scene as an image of economic and military power will continue as a paramount Soviet aim. Through this image, the Soviets indeed hope to take full advantage of the high seas more than ever before to gain international prestige and impose blackmail. At the same time they will act to neutralize the effectiveness of Western sea power where possible by choking off the strategic crossroads of ocean commerce and extending their sea power by proxy.

The Soviets are bent on attaining world "socialism" through "economic diplomacy" and without direct involvement in military conflict. They envisage cultural and political co-operation with developing nations as sequel to economic penetration. The eventual aim of course is the development of pro-Communist attitudes and governments. This means that all efforts of aid and assistance will continue to be channeled to ensure profitable political goals irrespective of the resulting hardships to the Russian people.

This political strategic concept frames the future of Soviet sea power; it minimizes the limitations while making maximum use of Soviet sea power capabilities. It provides for the continued modernization of the Navy but will restrict in all probability further expansion; it will promote a progressive and larger commercial fleet; it will foster further growth of the already extensive fishing fleet; and will use these elements of sea power primarily for Cold War objectives while, at the same time, always being prepared to defend the homeland by offensive-defensive naval strategy.

The key to Soviet tactics within this strategy will be to avoid Western positions of strength which is tantamount to avoiding war at practically all cost. Meanwhile, there is no doubt that the strategic missile submarines in the Northern and Far East Fleets will be maintained to reflect creditability of a nuclear deterrent and, in Kremlin diplomacy, as nuclear blackmail.

Increased deployment of surface units primarily into the Mediterranean Sea and the North Atlantic can be expected as part of an effort to enhance the Soviet sea power image and to employ more fully sea power's potential as a diplomatic instrument. Large-scale deployments would seem to be around the corner as the Soviets overcome their logistic limitations, gain experience, and find "friendly" ports. In this regard, close co-

Construction of such fast, formidable—but defensive—vessels as these modified *Osa*-class guided missile patrol boats may indicate the Kremlin's awareness that, although land invasions have been repulsed repeatedly in the last 115 years, their country has twice succumbed to sea power.

Sovfoto

operation of Soviet naval units with those of Algeria, Egypt, and Cuba, to mention a few could well be high on the Soviet priority list. It is more likely, however, that Soviet out-of-area activity will emphasize show-of-strength in furtherance of political goals, inasmuch as the Soviet Navy is not the international "mixer" that other navies have been.

The Soviets will proceed rather cautiously in projecting their naval power into new areas in order to minimize Western reaction; they still recall the Cuban missile incident. A careful "approach" is also necessary to avoid alarming the nations of the Afro-Asian Bloc with their insidious and sophisticated penetration techniques.

The Soviet Navy is a Cold War Navy and highly capable of generating two desired ingredients for Soviet foreign policy: prestige and blackmail. To this end, the Navy will continue to be glossed in secrecy, deceit, and exaggeration.

Meanwhile, the Soviet fishing fleet has given evidence that it will make its presence felt throughout the world and in such fashion as to provide global prestige for the Soviet Union. The vessels, aside from providing economic assistance and intelligence services, serve to augment the Soviet image of sea power. Eventually, it can be expected that Soviet fishing units will associate themselves rather closely to selected ports as some have done in Cuba. The Soviets will use this technique to improve their opportunities to penetrate a multitude of nations and to expand Communist insurgency activity.

The growing Soviet merchant fleet will also serve definite political purposes. It will, of course, further the prestige of the Soviet Union as a creditable major power and, more importantly, it will lend itself to the Soviet design to create a "Socialist commercial bloc" on a global scale, resembling Soviet-Satellite economic ties. The Soviets undoubtedly feel that they have been successful in orienting the economy of Cuba and Egypt toward Moscow and now have confidence that other developing nations will follow at a progressive pace. To accomplish this progress in proper Communist style, all commerce would move in Communist ships; this would permit the Kremlin more positive control over the victims' economy. The ultimate goal of Moscow in this scheme would be two-fold: to isolate the United States from the world markets and from the raw materials abroad; and to consolidate control of the economies of the rising nations. This would be in effect the revival of mercantilism, Communist style.

A graduate of the U. S. Naval Academy with the Class of 1946, Commander Dudley was serving in the USS *Monterey* (CVL-26) when World War II ended. The operations officer of the USS *Massey* (DD-778) from 1954 to 1956, he commanded the USS *Fidelity* (MSO-443) for 17 months before becoming Head, Congressional Liaison Branch, BuPers, in 1957. He attended the Naval War College until mid-1960 when he was assigned to the USS *Mullinnix* (DD-944) for nine months. He commanded the USS *William M. Wood* (DDR-715) for 17 months and served on the Staff, CINCLANT from December 1962 until June 1964, when he attended the Naval Warfare Course at the Naval War College. He is now Logistics Plans Officer, Staff, COMASWFORLANT, Norfolk, Va.

The primary mission of Soviet naval forces in wartime is most likely the defense of the water approaches to the Soviet Union. The various fleets would conceivably be confined to their respective "lakes," as in the past. The strategy would be the usual offensive-defensive scenario with fringe benefits from submarine long-range operations.

The Northern Fleet would be the most active inasmuch as it would be the only European Fleet, including submarines, capable of projecting beyond the "lakes" of the Soviet coast. The surface units would probably penetrate as far as possible into the Norwegian Sea without undue exposure to Western opposition. The effort would be to provide defense in depth of the industrial Northwest and its associated bases and, in effect, to neutralize the Scandinavian Peninsula. This projection of naval power would be preceded by submarines of the attack and missile types to blunt the approach of any Western naval forces and to maintain control of the Norwegian-Barents Sea area. The primary mission of the submarines would be to destroy Western surface forces while the modern surface-to-air missile ships, with the assistance of naval air power,

would hope to blunt an air strike against the Soviet Northwest. The limited number of Soviet ballistic-missile-type submarines (nuclear or not) could be used against the mainland of the United States; however, this would be out of context with the defensive orientation of the Russians and would probably not be prosecuted energetically after the initial stages, if then.

Assorted missions by submarines against the sea lines of communications would be a definite probability although on a much less efficient scale than the Germans in World War II. In this regard, the maximum effort by the Soviet boats would be expected in the Eastern Atlantic where it would be directed toward isolating Western Europe and supporting the Soviet Ground Forces. As the land battle disfavored the Red Army, or Soviet naval superiority became questionable, retreat of all Soviet naval forces to the proximity of their home bases for operation Fleet-in-being would be most likely.

In the Far East, the operating area for surface forces in defense of the Maritime Province would be confined to the Sea of Japan. Offensive-defensive submarine and aircraft operations could project outside the Japanese-Kurile Island chain to blunt approaching hostile forces to an extent dependent upon Japanese involvement. Full Japanese participation in favor of the Western powers would lead to a general withdrawal of Soviet naval forces to the vicinity of their bases with subsequent limited air and submarine operations. The Fleet-in-being concept would be implemented in the interest of retaining an adequate defensive posture to stave off direct attacks against the vital industrial heart of the Maritime Province.

Baltic and Black Sea operations could serve a three-fold purpose: protect the coastal shipping; provide defense in depth against air, surface, and submarine threats; and support ground forces as usual. Naval infantry in moderate amphibious operations would be used to support ground forces. Likewise, an important role of naval air would be to support the respective fleets.

In all four fleets, extensive mining could be anticipated whenever and wherever defensive action so favored. This would include efforts to exclude opposing forces from entrances to the home waters of the fleets.

The merchant and fishing fleets would, of course, be forcibly withdrawn to Soviet controlled waters. There is no conceivable sophisticated plan apparent at this time which the Soviets would be likely to apply in an effort to make military use of these components of sea power except insofar as they do provide a broad base for seafaring manpower. The merchant fleet would not be able to ply the oceans in war since the Soviet Navy does not have the antisubmarine capabilities with which to protect it; in fact, the antisubmarine forces have very limited range in regard to both tactical and logistic support.

The more one analyzes the Soviet Navy, its composition, its history, its disposition, and the Soviet propaganda concerning it, the more one becomes convinced that it serves primarily a Cold War purpose. And the Soviets undoubtedly find it prudent to emphasize Dwight D. Eisenhower's view: "War in our times has become an anachronism. Whatever the case in the past, war in the future can serve no useful purpose." In consonance with political objectives, the Kremlin will avoid direct involvement in war at practically all cost. This is evident by their political efforts and sea power strategy both of which are oriented toward a Cold War environment. If a Hot War should occur accidentally, Soviet maritime strategy would most likely be basically defensive, as history and current behavior tend to indicate.

3

NORWEGIAN SECURITY POLICY: THE STRATEGIC CONTEXT

by

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NORWEGIAN SECURITY POLICY: THE STRATEGIC CONTEXT

The present article does not purport to present an exhaustive analysis of the problems of Norwegian security policy. Rather it is designed with the aim of identifying the structure of some of the major problems of Norwegian security policy, as I see them. I want to emphasize that the exposition is in the nature of a personal discussion. It is neither an official exposition of Norwegian policy nor an unofficial attempt at presenting that policy. I shall focus on policy problems rather than analysing in detail the policy evolution and the political context of Norwegian policy making.

Objectives, functions and means

For purposes of analysis I shall assume the objective of Norwegian security policy to be the protection of the rights and the possibilities of the Norwegian people to choose and implement the form of government and distribution of values which the majority of the population wants. Furthermore, Norwegian security policy should be designed with the purpose of influencing developments in the world at large in the direction of peaceful evolution and security and happiness for the individual human being. It would seem particularly important to contribute to the erection of a viable and just political order in Europe. The potential influence of a small power on alterations in the international environment is, of course, quite narrowly circumscribed and its security policy must very largely constitute an adaptation to the prevailing environmental conditions. As a general proposition the maintenance of a national freedom of action constitutes a priority "sub-objective". In certain circumstances, however, it may be necessary and desirable to foreclose or renounce such a freedom of action in the interest of achieving the major objectives. Complete freedom of action is a chimera as well as a disruptive objective in international politics.

The defence establishment is a means for the furtherance of the security policy objectives; it should create options for

the political authorities and not confine the latter to narrow and automatic responses. The main objectives of the Norwegian defence establishment, as I see them, are: (1) to prevent war, (2) in war to deny to other powers the control over Norwegian values and to induce alterations in the opponent's objectives, (3) to limit the destruction of Norwegian values in a war, (4) to bring about a rapid and acceptable conclusion of hostilities. In order to achieve these fourfold objectives, we may, I believe, consider the structure of the Norwegian defence establishment in terms of the following functions:

- Control and warning
- Standing defence against invasion
- Securing and advancing reinforcements
- Force production following mobilization
- Preparedness for UN-missions
- Research and Development
- Training

The relative priorities assigned to these various functions need be based on their presumed contribution toward the achievement of the main objectives within the framework of different budgetary restrictions and various hypothetical contingencies of conflict. The choice of means for the support of the major functions needsbe based on the relative cost/ effectiveness performance of alternative systems.

The Strategic Nexus

The nature of the Norwegian security dilemma is a function inter alia of the location of the country, its size and its resources. Norwegian security has traditionally been dependent on the existence of a balance of power in Europe, and the consequences have been grave in instances when any one country actively aspired to dominance. The Soviet Union is potentially the dominant power of Europe, contained only by the interposition of American power. The concentration of Soviet armed might in the immediate proximity of Norway is, for a variety

of reasons, very impressive. I shall assume it to constitute a primary objective of Norwegian security policy to contribute to the local containment of Soviet power in Northern Europe. The process of containment would include the disposition of capabilities and the manipulation of risks and costs. The means employed would comprise alliance commitments and defence deployments and strategy. The purpose of Norwegian security policy is, of course, to influence Soviet intentions rather than containing her capabilities per se. Soviet objectives, however, should not be assumed to be constant; they will vary with the opportunities and incentives inherent in any particular situation. I assume that it is an objective of Norwegian security policy to structure Soviet incentives in favour of the status quo in Northern Europe or in the direction of internal developments rather than external expansion. Hence it would seem important to achieve a reasonable and viable balance between deterrence and reassurance vis-a-vis the Soviet Union. It is desirable to deter expansionist designs and equally important to avoid provocations which might generate Soviet incentives for preemptive or compensatory actions on the Northern flank. The credibility of the policy posture will depend very critically on Norway's ability to achieve convincing communication of her intentions and resolve.

The Norwegian defence policy needs also be considered from a communication point of view; in terms of how it is perceived by others. Frequently the message which is implicit in certain actions may be ambiguous and lead to misassesments on the part of other powers. The verbal communication which explains and justifies the actions is presumably designed to prevent such misperceptions. The Soviet leaders are likely, however, to look for confirmation of our expressed intentions in our actions.

The objectives of deterrence and reassurance involve in effect the exploitation of a potentiality for inflicting pain and damage on the adversary. The system of unilateral arms restraints which has been practiced by Norway in respect to

foreign bases, atomic weapons and military manoeuvres fall very much in this category. The maintenance of the self-imposed restraints have been made explicitly contingent on Soviet good behaviour with the corresponding assurance that it is up to the Soviet Union to avoid the adverse consequences of a reversal of the Norwegian policy of restraints by refraining from the exertion of pressure and threats against Norway or countries in her immediate vicinity. The Norwegian policy is predicated on the assumption that our interests and those of the Soviet Union are not absolutely opposed. In fact the policy presupposes a certain implicit cooperation, in spite of the general posture of conflicting interests, based on the presumed mutual interest in preventing developments which would increase the level of tension on Europe's Northern flank. This policy of implicit cooperation does not, of course, prevent the Soviet Union from attempting to restructure the situation so as to minimize her own constraints by way of reducing the contingent nature of the Norwegian restraints and according to the latter a quality of absoluteness. Such attempts are likely to be aimed at influencing the Norwegian decision making process as well as Norwegian public opinion. The Norwegian policy, moreover, has been formulated in quite general terms, so that the operational significance of the restraints needs be worked out in many particular instances. Here the Soviet Union and Norway are likely to advance conflicting interpretations concerning the application of the general policy to particular dispositions.

Much of the disagreement in the Norwegian debate on security policy has centered on the relative weight to be accorded deterrence and reassurance vis-a-vis the Soviet Union.

The existence of nuclear weapons and more recently the stability of the strategic relationship between the United States and the Soviet Union have tended to focus attention on the contingency of local conflicts, which, should they occur, all parties concerned would be interested in preventing from escalating to a major war. This perspective is of particular

importance to Norwegian security policy. The occurrence of any local war, particularly in Europe, would ipso facto serve to raise the risks of general war. There is a certain amount of nebulous security for small countries in this state of affairs. However, any war which may appear "local" from the perspective of the major powers may nevertheless constitute a total challenge to the small country whose territory and society is at stake. Herein resides some of the potentially complex problems of intra-alliance confidence and bargaining.

The security of Norway is to a large extent also dependent on the strategic importance attributed to Scandinavia and its adjacent ocean areas by the major powers. That importance is certainly a variable which is largely determined by the developments of military technology. The interests of the major powers may be both positive and negative in the sence that they may focus on the need to acquire advantages and to deny advantages to an adversary. The strategic importance of the Northern Cap area has been closely connected with its position in direct line with the shortest intercontinental air routes and missile trajectories between the Soviet Union and the United States. Secondly, North Norway is on the major Soviet naval access route to the Atlantic. An overriding factor is, of course, the proximity to a major Soviet military base area containing strategic assets like the Soviet Arctic Fleet.

NATO and Deterrence

The Norwegian membership in NATO constitutes the major deterrence component in Norway's security policy posture. It may be useful to outline the logics of this assertion. Through membership in NATO Norway has obtained a guarantee which infers that the importance to the allies of defending Norway's integrity exceeds the intrinsic value of any piece of Norwegian real-estate which may become subject to attack. Attacks against any part of Norway would at the same time constitute a challenge to the credibility of the guarantee which is basic to the whole

alliance. The allied reactions to an attack against Norway are hence directly connected with the expectations in the international community of how the alliance would react to challenges at other times and at other places. A recognition of such a state of affairs seems likely to influence the risk calculus of a would-be attacker who would need to assess the risks that a struggle for Norway could not be confined to a struggle with Norway but would escalate to a conflict involving the major western powers. The same degree of security and deterrence could hardly be enjoyed by a neutral state which relied on the Western Powers to intervene in order to protect their own interests. The difference is significant even if such a neutral state expectation should be true, because its credibility would probably be lower in the eyes of the potential adversary who might feel less constrained in exerting pressure on the small, neutral power during peace time. Within the framework of an alliance the small power may also enhance the credibility of its guaranteed integrity by implementing and preparing measures aimed at making good on the alliance guarantee in concert with her allies. The construction of infrastructure installations and the implementation of allied manoeuvres in Norway constitute such measures. For a small power membership in an alliance constitutes insurance that any conflict involving its territory will escalate to the level of a major international conflict.

It needsbe recognized, however, that Norway's NATO membership has also made the value of conquering a piece of Norwegian real-estate exceed the intrinsic strategic and economic value of that territory. Such an operation could be aimed at the political payoffs connected with a successful demonstration of the inoperability of the alliance guarantee. From the point of view of the alliance it hence becomes important that no segments of its guaranteed area constitute tempting targets for such probing moves because of manifestly inadequate capabilities for resistance.

As a concession to Soviet security interests and in order to

avoid jeopardizing Norwegian security by provoking Soviet action, Norway has decided against stationing allied troops on Norwegian territory during peace time. It hence becomes necessary to communicate the assertion that any move against Norway will be met by the alliance as a whole, without the physical presence of hostages to convey the "message". The construction of NATO infrastructure installations in Norway and the implementation of allied manoeuvres in the country constitute in effect measures which also serve the function of communicating to the Soviets the commitment of the Western Alliance to the defence of Norway. Norway's credibility problem does not involve missile triggers and safety catches, but the structure of the problem is very much akin to NATO's nuclear control problem. It is no doubt true that no Norwegian government can ever be absolutely sure that effective allied assistance will be forthcoming in a crisis situation. The decision to render assistance will be made by autonomous decision making centers. It is possible, however, to influence the decision making criteria of the potential assisters during peace time by engaging in contingency planning and actual exercises. It is important that the allied decision making bureaucracies are familiar with the capabilities and limitations relevant to rendering such assistance, and most of all that they have become accustomed to viewing the problem as one that concerns them and the national interests of their country.

The assistance which Norway would receive must not only be credible and effective, it needs also be acceptable from the Norwegian point of view. The Norwegian authorities would presumably want to call on the allies to render assistance of a kind which would not automatically escalate the conflict to unacceptable levels. The intervention capability needs be versatile enough to provide for flexible responses. Particularly in the early stages of a conflict, before the outbreak of hostilities, the Norwegian authorities might be reluctant to call in large contingents of foreign troops for fear of provoking preemptive Soviet moves. Acceptable early-crisis

assistance might, for instance, involve transport aircraft for purposes of airlifting Norwegian reinforcements to the threatened area or prepositioning of heavy equipment for allied forces. It may also be important to be able to bring in "generally accepted" defensive weapons systems, as, for instance, mobile air defence units, to the threatened area. Soviet assistance to Iraq, Indonesia, Cuba and North Vietnam has in a way established a "precedent" for rendering small powers assistance by improving their air defence capabilities. The strategy of bringing in troops should also be considered, as it may, for instance, be more important to bring in a few foreign soldiers who can be brought into military engagement at a very early stage of a conflict rather than designing the operation on the criterion of airlifting a complete combat ready division as fast as possible. The strategy may thus involve affecting the risk calculus of the adversary by confronting him with the prospect of having to kill soldiers from the major Western powers in order to reach his objectives in Norway.

In a limited conflict the major power contestants would presumably attempt to contain the process of escalation defining their objectives in a manner which would have a contractive rather than an expansive influence on the parties' perceptions of the nature and stakes of the conflict. They would presumably also attempt to structure the image of the stakes in ways that would further their respective interests. However, Norway might find it quite unacceptable to have the major contestants in a local conflict on the Northern flank treat such a conflict as an isolated incident whose outcome would have no implications and precedents for the western alliance at other times and at other places. The small country must have confidence that its major allies will not bargain away its alliance guarantees in the course of limiting a conflict. Alliance confidence can probably be maintained only if the smaller powers are confident of being able to influence the establishment of limitations in a conflict affecting their territory. For this purpose peace-time contingency studies

may serve an integrating function. The small countries would, of course, also be interested in limiting conflicts which affected them directly, but not all conceivable limitations would prove acceptable.

It is sometimes suggested that small countries like Norway would be better off in bilateral defence agreements with the major western guarantors. While it is no doubt true that the multilateral framework is at times cumbersome and inefficient, there are substantial political advantages associated with the multilateral solution. Membership in NATO brings Norway into closer political collaboration with other European democracies and their efforts at creating a viable political order in Europe, and there are no substantial indications that membership in the alliance has prevented Norway from establishing contact with the countries in Eastern Europe. On the contrary, I believe, a good case could be made for the proposition that Norway's membership in NATO makes her better qualified to establish contacts in the East with a view to normalizing the situation in Europe because of her direct access to her allies and the authority with which she may approach the Eastern European countries. A multilateral framework, furthermore, serves to mitigate the consequences of cooperating directly with major powers on security questions. In a bilateral context the major powers would certainly be much more dominating than in a multilateral alliance where the expectations and reactions of the other smaller states exert a moderating influence.

The Federal Republic of Germany is particularly important to the Norwegian defence posture in that by contributing indirectly to the defence of Southern Norway, particularly with her naval forces, she enables Norway to concentrate her defence efforts in North Norway. The consequences of France's withdrawal from NATO's organization, however, need to be assessed closely in this connection. If the NATO crisis should deteriorate to the point where French territory for all practical purposes would not be available to NATO the geographical structure of

the alliance would be radically changed. In fact we would then, ceteris paribus, be left with an alliance system consisting of two European groupings (on the North Sea and the Mediterranean respectively) with a defence guarantee from the US and Canada. In the context of such a constellation Southern Norway and Denmark would probably acquire major importance as a base and support area for the defence of Central Europe in general and the Federal Republic in particular.

The Politics of Unilateral Arms Control

At the time of entry into the Atlantic alliance the Norwegian government pledged itself not to join "in any agreement with other states involving obligations to open bases for the military forces of foreign powers on Norwegian territory as long as Norway is not attacked or exposed to threats of attack". (emphasis added). What constitutes a military base was not precisely defined. The Norwegian authorities appear to have claimed the right of umpireship quite consistently, i e to define the area of permissible activity whenever a problem of particular policy application arises (manoeuvres, visits by allied aircraft and naval vessels, the construction of NATO infrastructure installations, the presence of arms assistance personnel and NATO staff officers, etc). The Soviets have fairly consistently attempted to advance restrictive interpretations. Thus the politics which has taken place over the unilateral Norwegian arms restraints have been in the nature of what we might call "competitive interpretationism".

In the few instances when the Soviets advanced threats in connection with the Norwegian interpretation of the base policy these threats were never very specific (with the possible exception of some Malinovskij statements in connection with the U-2 affair) in terms of the threatened action, the conditions under which it would be carried out, or the terms of compliance to be met in order to avoid the implementation of the threat.

The strategy of verbal manipulation appears to have been more subtle. The Soviets seem to assign some value to frequent reiterations of the base policy by the Norwegian authorities. Such reiterations would presumably contribute to a fastening of the Norwegian commitment. The Norwegian authorities, on the other hand, appear to be quite reluctant to volunteer statements about the base policy except in response to particular challenges, presumably on the reasonable assumption that frequent unsolicited reiterations might appear to reflect Norwegian uncertainties concerning the credibility of the policy of arms restraints. To a very large extent the Norwegian statements have been kept in standard terms. Changes in language might presumably give rise to unwarranted and undesirable speculations about changes in substance and hence provoke Soviet solicitations. The Soviet-Norwegian communications in regard to the Norwegian arms restraints are of course transmitted through usual diplomatic channels. It has at times escalated to the level of diplomatic notes and aide memoires, but the most frequent Soviet communications are found in the Soviet press. There appears to have been a very consistent feedback interaction between the Soviet communications and the expressed criticisms of the Norwegian left-wing opposition to Norway's security policy.

During the Stalin period the Soviets did not openly acknowledge that Norway was in fact adhering to her announced policy of conditional restraints. Frequent assertions were made to the effect that Norway contained American air and naval bases and that the country was being transformed into a place d'armes for an imperialist attack upon the Soviet Union. Similar contents were transmitted in connection with the U-2 and RB-47 incidents in 1960. Since the mid-fifties the tenor of Soviet communications has shifted. Thus Bulganin, in 1957, acknowledged "with satisfaction that the Norwegian Government keeps its promise of not rendering bases for foreign armed forces", and Khrushchev in 1964 found the Norwegian policy to constitute "a significant contribution towards the strengthening of the peace in Northern Europe". As of the last

months the articles in the Soviet press have asserted rather vehemently that the frequency of allied manoeuvres makes the policy of no bases a policy of empty phrases.

Certain other themes have remained extremely constant in the Soviet commentaries, albeit with somewhat varying emphasis. Thus Norway is presented as being subjected to severe pressure by the "aggressive" Western powers (England and the US until the mid-fifties, thence West Germany and the US) and right wing Norwegian circles to abolish its restrictive base policy.

Popular opinion is allegedly against the measures which the Norwegian authorities are pressured into accepting. While under Stalin the Norwegian political leaders were depicted as conscious traitors and militarists, the current depiction is one of leaders bamboozled and led astray by cunning and scheming warmongers.

As early as 1951 the area of permissible activity under the general restrictions of the base policy was formulated by the Norwegian minister of defence in a comprehensive statement which derserves quoting at some length:

> "The Norwegian base policy does not prevent Norway from making bases available to the Allied armed forces in the event of an armed attack on the North Atlantic area, or at a time when the Norwegian authorities consider themselves exposed to threat of attack and summon Allied armed forces to the country.
>
> Nor does Norwegian base policy prevent Norway in prescribed constitutional forms from entering into conditional agreements with our allies, having a situation of this kind in mind.
>
> Our base policy cannot prevent Norway from developing her military installations according to a pattern which will make them capable of receiving and effectively maintaining Allied armed forces transferred to Norway in order to assist in the defence of the country.
>
> Our base policy cannot prevent Norway from participating in joint Allied exercises or being visited for short periods by the naval and air forces of our Allies even in peace time".

The conditional nature of the base policy would seem to require some more detailed exposition of the kind of behaviour on the part of the adversary which will cause Norway to change her policy. The adversary should, for the policy to work, be able to predict quite concisely what moves he should refrain from so as not to cause Norway to reverse the base policy. Such explicit definitions are obviously almost impossible to arrive at on a general level. They need to be made in connection with particular situations which arise. Furthermore, it would probably be undesirable to communicate publicly over such issues since the adversary could ill afford to appear to give in to pressure from a small country. Traditional diplomacy would be a more suitable medium.

As early as 1949-50 two of the major areas of contention were crystallized between Norway and the Soviet Union in regard to the operational practice of the base policy, viz the construction of military installations in Norway and the organization of allied manoeuvres on Norwegian territory. The Russians have focused particularly on airfields, naval installations and communication installations. The Norwegian airfields were allegedly built as staging bases for American strategic bombers and bases for fighter escorts. The naval installations were, the Soviets asserted, intended as support facilities for Anglo-American offensive naval operations. In 1959 the West German Navy was presented as the major culprit and disturber of the status quo in the North, particularly in view of the establishment of naval supply depots for the Bundesmarine on the Norwegian south-coast. As for allied manoeuvres, they have been presented as provocative undertakings. Khrushchev, however, did ridicule the exercises during his 1964 visit to Oslo, implying that the real threat to the Soviet Union from such exercises was rather negligible ("All foxes boast of their own tails").

The Norwegian refusal to station atomic weapons in Norway is akin to the base policy in its contingent nature, as the government reserved for itself the right of reconsidering at

any time the decision not to station such weapons in the light of the international situation. The refusal to accept tactical nuclear weapons (1960) was also significantly determined, however, by the strong popular opposition to atomic weapons and the change in military doctrine which had become evident in the US by the turn of the decade. Various attempts have been made by both the Soviets and the Finns to have Norway renounce unconditionally the acquisition of nuclear weapons in any form. The Norwegian government, however, has refused all schemes for Scandinavian nuclear free zones, as first suggested by Bulganin in 1957 and most recently by President Kekkonen of Finland in 1963.

Among the unilateral arms restraints we should also mention the established practice of not permitting allied manoeuvres in the county of Finnmark and the regulations applying to the presence and passage of allied military aircraft and naval vessels on or over Norwegian territory and in Norwegian territorial waters. That the manoeuvres serve the function primarily of signalling solidarity and commitments may be surmised inter alia from the nature and size of the foreign troops participating therein. They have been confined to infantry units and limited to brigade group strength.

The contingent arms restraints also contribute to the spectrum of Norwegian options which may be implemented in a crisis situation. Reversals of the restraints constitute potential sanctions which contribute towards filling the area of potential reactions between the extremes of "immobility" and "all out war" and hence provide added flexibility for the decision-making authorities.

"Nordic Balance"

From a Norwegian perspective the defence policy should be designed so as not to cause altercations in the immediate environment. There can be little doubt that Norway's security position would deteriorate materially should Finland,

for instance, be forced into direct military collaboration with the Soviet Union.

In recent years several attempts have been made to construct a theory of the so-called "Nordic Balance". The theory implies both normative and descriptive connotations. The presumed sub-system of Nordic States exhibits a constellation characterized by the Fenno-Soviet treaty of friendship and mutual assistance, Sweden's policy of non-allignment and Denmark's and Norway's membership in NATO which is modified by their conditional arms restraints. Theoretically speaking a change in status for one or more of the Nordic countries should result in compensatory adjustments from the others.

The concept of Nordic Balance is <u>two-dimensional</u>. It implies a stand-off between the Soviet Union and the United States in regard to their direct involvement in the Nordic area. A system of checks and balances presumably operates to mitigate the incentives for increased involvement by focusing on the compensatory adjustments of the adversary in response to any moves aimed at changing the <u>status quo</u> in the Nordic region. The potential area of compensatory adjustments has been "institutionalized" in the form of the Dano-Norwegian conditional no-bases policy and the Fenno-Soviet treaty of mutual assistance. In this dimension the concept of "Nordic Balance" is descriptive of a particular segment of the East-West bipolar relationship. Further, however, the concept is descriptive of the security relations among the Nordic countries implying the existence of mechanisms for committing <u>each other</u> to the <u>status quo</u> and for deterring the <u>great powers</u> from increased military engagements in the area. The two dimensions would presumably be brought into frequent interactions on the arena of international politics.

The current concept of the Nordic Balance is one of substantial ambiguity. The presumed content will vary with our approach, i e whether we consider the political constellation in Northern Europe <u>descriptively</u> or <u>prescriptively</u>. On the descriptive

level we would be interested in finding out the extent and nature of the considerations concerning the positions of the other Scandinavian countries which influence security policy decisions in the Nordic capitals. We would furthermore be interested in analysing the operational characteristics of the assumed balance by investigating its functioning during crises in the region.

In a descriptive treatment of the "Nordic Balance" it is easy to commit the error of assuming the system to be the results of a conscious foreign policy in one or more of the Nordic countries. It seems to me much more likely that it has the quality of being more of an accidental by-product of the policies which were pursued for other reasons by the Nordic countries in the post-war period. At a certain time, (around 1961), the Norwegian authorities may have considered it useful to present the established situation as being in consonance with the security policy objectives, particularly because it appeared to contain certain possibilities for protecting Norwegian interests in regard to the evolution of Fenno-Soviet relations. An "ideological superstructure" was perhaps constructed as a kind of rationalization for the policy pursued up till that time and subsequently acquired a normative influence on Norwegian policy vis-a-vis her Nordic neighbours.

It will be necessary to raise certain analytical problems. One is the problem of <u>symmetry</u>. Is there in fact a symmetrical distribution of the potentialities for compensatory adjustments both in the context of the Nordic regional system and the bipolar great power dominated system? Is it reasonable to assume Finland to be equally able to counter the impacts of an advance against North Norway as Norway is to compensate for Finnish military concessions to the Soviet Union? Is it, furthermore, equally credible that the US would counter Soviet encroachments in Finland by establishing a military presence in Norway/Denmark and that the Soviets would demand concessions in Finland in response to, for instance, the stationing of American troops in Denmark and/or Norway? The very concept of

"balance" may be semantically misleading. Analytical and political insight into the security policies of the Nordic countries may be unduly constrained by an a priori conceptual framework implying symmetrical equilibria.

We may also raise the question whether the image of the "Nordic Balance" and the desirable constellation for the region is the same in the various Nordic capitals. In Finnish foreign policy I perceive a certain tension between two conflicting images: (1) The image of the Nordic Balance as providing a bargaining lever towards the Soviet Union, and (2) the image of a neutralized Nordic system which would eliminate any Soviet pretexts for exerting pressure against Finland. The dichotomy in the Finnish perspective perhaps also reflects a communications dilemma. The surrounding states entertain conflicting expectations concerning Finland's role in the Nordic region. Such a state of affairs may not be altogether undesirable from a Finnish point of view. Helsinki, however, is confronted with the problem of assigning credibility to dissimilar positions to the two audiences (the Scandinavian countries on the one hand and the Soviet Union on the other). The problems arise when the parties "listen in" on the communications in both directions.

The Norwegian interest in maintaining the present stability in the region is of course not contingent on the Finns' sharing the Norwegian preference. Irrespective of Finnish wishes, it may be good Norwegian security policy to make the maintenance of the unilateral arms restraints explixitly conditioned on Finland's not being forced into closer military collaboration with the Soviet Union. This was done during the Fenno-Soviet crisis in November 1961 and indeed constitutes a very important instance of the Norwegians' having precisely defined the kind of actions from which the Soviets must abstain in order to assure that Norway will continue to observe her restraints.

We may raise the problem of credibility and ask what probability

the Soviet leaders are likely to assign to the possibility that Norway will in fact reverse her restraints in regard to foreign bases and nuclear weapons should Finland be required to make military concessions to the Soviet Union. Internal public opinion may possibly restrict the Norwegian freedom of manoeuvre. Even if we assume a Norwegian ability to react, the authorities in Oslo would need to assess the short term dangers of provoking immediate Soviet countermeasures against the more long-term impact of Finland's new position. Norway is furthermore dependent upon her NATO allies' consenting to furnish troops and nuclear weapons.

The problem of adequacy also needs to be raised as it is conceivable that the Soviets in certain circumstances would attribute sufficient value to Finnish concessions to make them willing to run the risk of having to pay the price of Norwegian compensatory actions. Furthermore, we would need to know what level of Soviet moves could be handled within the confines of the system of the "Nordic Balance".

Finally we may raise the problem of challenge. Changes in the "Nordic Balance" need not assume the form of clear cut break-off points. They may occur through a process of accumulated marginal shifts which will not confront the decision making authorities with identifiable changes requiring the implementation of countermeasures. The changes may never at any time present the decision makers with shifts of a magnitude sufficient, for instance, to warrant a reversal of the Norwegian base policy.

We shall not pursue the discussion of the concept in regard to the many problems encountered on the prescriptive level of analysis. However, there are some perspectives which should be made explicit. It should be noted that the Fenno-Soviet treaty of mutual assistance specifically identifies Germany as the power whose foreign policy may necessitate the invocation of the stipulated military collaboration. This fact has obvious implications for the Dano-German collaboration in COMBALTAP

and for the development of relations between Norway and the Federal Republic. By presenting the maintenance of the "Nordic Balance" as a priority policy objective of the Norwegian government an indication is also communicated to the adversary of how he could influence the content of Norwegian security policy. We need not wonder why the Finns are quite unhappy about having been assigned the role of "pushbuttons" in the relations between the Soviet Union and Norway (Denmark).

The "Nordic Balance" may in particular constitute an obstacle to closer collaboration between the Federal Republic and Norway (Denmark) as pressure may be exerted on Finland for purposes of preventing such developments. In the light of the current crisis in NATO we may question whether it is in consonance with Norwegian national interests to have the freedom of manoeuvre thus circumscribed. We are not, of course, suggesting that Norway could eliminate the possibility of Soviet pressure against Finland merely be refusing to "recognize" the "Nordic Balance". However, it is not obvious that Norwegian interests are well served by an a priori commitment to a certain priority of considerations.

The Soviet Union is assigned a particular role in the "Nordic Balance" system. The hypothetical model tends to formalize expectations of Soviet countermoves in a wide range of contingencies. Because of the desire to maintain the established expectations and assign credibility thereto, the Soviets may thus be "forced" to react in situations which otherwise may not have called for Soviet moves, because of the additional Soviet objective of maintaining the image of the "Nordic Balance".

Operationally the concept of the "Nordic Balance" may have some further undesirable implications as a guide to policy making. The model implied may provide incentives for manipulation according to a very simplified notion of interstate relations. The danger arises that policy may be made with primary reference to the presumed operational characteristics

of the "Nordic Balance" rather than the specific situation at hand. We should also be aware of the policy perspectives which may be generated by the concept of the "Nordic Balance". It may structure the image of the Nordic environment as one composed of a limited set of interstate relationships lending itself to regional arrangements. Thus the concept may obscure a recognition of the interdependence of all elements in the European structure. The Scandinavian countries under the influence of the perspective referred to above would be vulnerable to Soviet attempts at influencing the political situation in Europe by changing the political texture of Northern Europe. Proposals for a formalized Scandinavian non-nuclear zone might be interpreted as a design which may be exploited as a lever aimed at its political impact on Central Europe.

The doubts which we have expressed about the analytical and political utility of the concept of the "Nordic Balance" do not deny of course, that the Nordic constellation is an important element of the environment under the impact of which Norwegian security policy is formulated. It is necessary, however, to see the wider European and Atlantic context of which the Nordic constellation is an integral element. From the point of view of long range planning it is also useful to hypothesize on the kinds of developments within the region which might upset the present atmosphere of tranquility and change Soviet incentives. Transformations which would require analysis would include the deployment of Swedish nuclear weapons, the election in Finland of a president unwilling to adhere to the established Paasikivi-Kekkonen line, the establishment of a Scandinavian Defence Union which could not fail to become a center of attraction for Finland and potentially confront the Soviets with a united Nordic bloc - a constellation which the Russians have traditionally tried to prevent. Soviet policies towards Scandinavia may also be influenced by developments outside the region. Thus a gradual erosion of the present alliance system in the West might confront the Soviets with new incentives for expansion and possibly also with incentives to

protect the USSR from the spill-over effects of a situation in which the European structure had deteriorated to a point where intra-European conflicts would constitute a serious possibility. The process of polycentric developments in Eastern Europe may also furnish the Soviets with preventive incentives to eradicate the present form of Fenno-Soviet relations as an attractive model for the political aspirations in Eastern Europe.

Military Strategy

The Soviet areas which border on North Norway are of vital strategic significance to the Soviet Union and contain an impressive concentration of military force. Historical memories of the Allied intervention in the Civil War and the German advances during the Second World War contribute to the Soviet concern about the vulnerability of the area.

The military advantages which would accrue to the Soviets in connection with an acquisition of control over North Norway would depend somewhat on the strategic situation at the time of such an operation. The coast of North Norway would give increased possibilities for dispersing the Arctic Fleet, presently confined to a small segment of ice free waters on the coast of the Kola peninsula, and thereby decrease its vulnerability. The Soviets would be in a better position to interdict the maritime lines of traffic between the United States and Western Europe and the time on station for conventional submarines would be increased as a result of the reduced transit distance. Control over Norwegian territory, moreover, might increase the Soviet possibilities for protection against Western missile bearing submarines as well as creating options for rendering air cover to the Soviet Arctic Fleet and increasing the threat against the NATO Strike Fleet. The situation could furthermore be exploited for purposes of exerting pressure on the other Scandinavian countries.

To identify the advantages accruing to a state in a certain situation, however, is not equivalent to demonstrating the

existence of designs on the part of that state to establish itself in that situation. We should emphasize also that Soviet conduct has been characterized by and large by calculating caution.

Norway's position in the immediate proximity of an important Soviet base complex may paradoxically involve a certain amount of security for Norway. Fears lest a conflict on the Northern Flank escalate on to Soviet territory would probably exert a moderating influence on Soviet action policy. On the other hand the geographical location of North Norway would also make the Western powers and Norway reluctant to carry the fighting in a limited conflict in the area on to Soviet territory for fears of provoking a major expansion of the conflict. It seems reasonable to assume that the Soviets, in connection with a limited attack on Norway (not necessarily prior thereto), would prefer to deploy a substantial part of their Arctic Fleet to the Atlantic Ocean in order to be in a position to detect, deter and interdict Western intervention efforts and to reduce the vulnerability of the fleet against air bombardments. Such a disposition would, however, be very difficult to distinguish from the initial moves in a much larger conflict (e g a slow motion war in Europe) and might hence increase the danger of escalation as a result of misassessments. Thus the Soviet Arctic Fleet may in some contingencies confine the Soviet freedom of action and make it difficult for the Russians to signal limited intentions in the context of a limited conflict in Northern Europe. The constraining influence of the Arctic Fleet on Soviet behaviour would be particularly salient in a situation of strategic preemptive instability. It is, of course, in principle possible for the Soviets to establish a pattern of peacetime naval manoeuvres with substantial random fluctuations and thus improve the chances of achieving initial surprise in an attack against North Norway. The coincidental occurrence of Soviet military moves in the North and the presence of substantial Soviet naval forces in the Atlantic might still complicate Soviet attempts at providing credible communication of limited objectives.

From a Norwegian point of view the maintenance of a fairly effective system for surveillance of Soviet naval activities in the adjacent ocean areas could constitute a potential lever motivating the Soviets in favour of restraint. Furthermore, it may be desirable that Norway perform such surveillance herself rather than leaving it to her more powerful allies in order by interposition to reduce the chances of conflicts in the area deriving from great power confrontations during peace time.

The present atmosphere of relative tranquility in Northern Europe may undergo transformations in the future. I have already alluded to changes in the political environment which might restructure Soviet (and, we should add, western) incentives. The Soviet propensity for risk-taking is furthermore much more of a variable in the long run. Changes in the technological environment may affect the perceptions of the strategic utility of Norwegian territory as may the formulation of novel political and military objectives. In regard to Norway, Soviet incentives for military action may be generated by interests in denial (prevent the western powers from exploiting Norway to their strategic advantage) and acquisition (obtaining Soviet advantages).

The concentration of military force on the Kola-peninsula which borders on Norway is extremely impressive. The Arctic Fleet comprises i a some 22 cruisers, 150 destroyers, 100 frigates, and 150 submarines, 28 of which are nuclear powered. The airforce units allocated to the Arctic Fleet include some 150 medium range bombers and 100 reconnaissance aircraft and helicopters. Some 10 divisions are stationed in the area from Leningrad to Murmansk, 3-4 of which are deployed in the Kola peninsula. The Kola peninsula also includes some 50 airfields and airstrips as well as a few hundred tactical fighter aircraft. The Soviet divisions may have extensive protective functions vis-a-vis the large complex of naval bases. However, it does not seem unreasonable to assume that they may be assigned offensive missions in the case of war.

The Soviet military superiority in the area is potentially translatable into political leverage and could in a crisis situation be exploited so as to transfer in large measure the burden of decision-making to the West. This perspective may be particularly relevant to low-level politically motivated probing actions.

A Soviet interest in an overseas intervention capability might also increase the danger of conflicts arising in the area of interest. To the extent that such a capability would include naval task forces stationed in the North, Norway's security could be affected by Western attempts at preventing the commitment of such forces to a conflict in the Afro-Asian or Latin-American regions. The same reasoning applies to Western attempts at preventing Soviet submarines from interferring with the maritime logistics of the Western powers in connection with such conflicts. There have been a discernible rise in the Soviet interest in amphibious operations during recent years and the reestablishment of the Soviet marines some two years ago point in the same direction. Soviet capabilities and strategies for amphibious operations would also have obvious implications for the potential direct threat against Norway as does the new concept of rapid forward rebasing in Soviet naval thinking.

We observed initially that the Norwegian defence effort is of necessity primarily <u>adaptive</u> and only marginally <u>alterative</u> in relation to the prevailing environment. Norwegian defence measures will normally have no appreciable influence on the Soviet allocation of resources for defence during peace time. The particular Norwegian military dispositions may, however, influence the tactical allocation of an adversary's forces in a wartime environment.

In the context of the present environment we may assume the Norwegian defence effort to be directed <u>inter alia</u> towards the objective of complicating a Soviet exploitation of the assymmetrical military relationship by influencing the Soviet

cost and risk calculus as adversaries. In a war the effects of Soviet military superiority may be mitigated to some extent by confronting the Soviets with targets which are unattractive from a cost-effectiveness point of view, i e the value of a particular target destruction would not measure up the costs associated with effectuating that destruction. Hence measures of dispersal, concealment and hardening are likely to be important components in the Norwegian defence posture. The Norwegian allocation of resources may also aim at raising the threshold which an adversary would have to cross in order to achieve his tactical objectives. Any adversary would be operating under some resource limitations and the Soviets may in a conflict in Norway in some contingencies be confronted with substantial opportunity costs and risks of escalation deriving from high efforts on their own part. In some fields the Norwegian defence effort would proceed no further than raising the entrance fee of an adversary.

The Norwegian defence posture has a national component of standing forces and mobilization units and an international one in the form of airborne reinforcements which may be brought in during a crisis situation.

We have already discussed some of the strategic options and calculations which derive from this posture. It should be pointed out also that the efficient functioning of such a posture may over the long run constitute a prototype model for the military posture of the Western alliance based on a twin pillar structure of Western Europe and North America. Such a posture may gain substance from the developments in air transport capabilities (C-5A) and provide flexibility for political settlements in Central Europe.

The efforts at creating meaningful military counterweights on the Norwegian side involve several complex trade-off problems. What is e g the optimum allocation of resources between Norwegian fighting units and the system which is to receive and support outside reinforcements? Another set of trade-off considerations are associated with allocations

between standing units and mobilization units. The proper balance would depend inter alia on the assumptions made about the availability of strategic warning. Such assumptions are critical also in connection with preparations for outside assistance. For how long can the Norwegian forces resist a determined aggressor? What measures can reduce the time which will elapse before the arrival of allied reinforcements in North Norway? Because of the limited Norwegian resources it is at least conceivable that marginal investments in surveillance and warning systems would be more productive than equal size investments in fighting units in terms of augmenting the forces which would confront an adversary at an early stage of a local conflict in North Norway.

The structure of the Norwegian defence posture needs also be considered in relation to a spectrum of different contingencies. It seems that the Norwegian attention has been focused very heavily on the contingencies of surprise enemy attacks against Norway. The reasons for this concern are manifold. It is in many ways the contingency which would hurt the most and it is furthermore in consonance with the perspective of NATO strategic doctrine. The present technological and political situation in many ways should induce us to concentrate more attention on the process of crisis expansion which may eventuate in open hostilities. Such contingencies would provide more opportunities for preparatory measures, and, incidentally, the military dispositions would in such a context very clearly acquire the quality of constituting, and being perceived as constituting, moves in a bargaining process. We should also ask the more uncomfortable question of whether it is possible for Norway to improve significantly her ability to counter determined surprise attacks within the framework of currently available resources. More could probably be gained in regard to the contingencies involving a period of crisis build-up.

It should be recognized, of course, that in a tense situation on the Northern flank the moves of the adversary may be very well calculated and that considerable emphasis may be attached to the achievement of tactical surprise.

The ability to request assistance in time is likely to be of critical importance as will be the appearance of a willingness to escalate. Hence the Norwegian decision making machinery will constitute a key factor. How fast will it be able to react on the basis of what amount of information? A composite objective of Norwegian security policy would in accordance with our reasoning be the attainment of a balanced posture in terms of efforts at providing surveillance and warning, maintaining sufficient forces in being, exploiting the mobilization potential, preparing for the receipt of reinforcements and streamlining the decision making procedures. The various combinations would be analyzed in regard to their operational performance in the interactions of various wartime environments.

The objective of containing the expansion of an armed conflict on the Northern Flank presupposes the existence of appropriate means of crisis management. We may note that apart from the heads of state of the major western powers, the Norwegian border commissar is probably the only western official who has a direct telephone connection with his Soviet counterpart. What could in effect serve the purpose of a local hot line was installed only last year when the Russians abandoned their opposition to the idea of direct communication facilities. For purposes of preventing misassessments in a crisis the existence of effective systems of surveillance could prove very useful. Such surveillance systems could indeed be "used" by the parties to communicate intentions during a crisis by means of their moves or absence of activities.

The incongruent distribution of military capabilities on the Northern Flank complicates the working out of Soviet-Norwegian agreements for force reductions or deployment restrictions. A reciprocal recognition of certain geographical limitations on the military activities of the two sides, particularly in the air, could constitute a useful arms control arrangement aimed at reducing the chance of miscalculations and accidents. A reciprocal exchange of ground observation posts might similarly reduce the fears of explosive crisis interactions

and provide some reassurance about the absence of hostile designs. An agreement on prior announcement of military manoeuvres in Northern Norway and the North-Western parts of the USSR might have a crisis-preventive effect. Such an agreement would be useful also from the perspective of denying the Russians the political payoffs from protestations against allied manoeuvres in North Norway as the latter would be publicly perceived in relation to the frequency and magnitude of Soviet manoeuvres. At present there is practically no reference to Soviet manoeuvres in the public mass media.

The preceeding discussion has only been able to focus on some of the problems in connection with the defence of the Northern Flank. It is my hope that it may stimulate some further intellectual efforts at disentangling the strategic problems associated with the security of small countries. For very long now the problems of general war, Central European conflicts and counterinsurgency have monopolized the attention of the strategists.

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TO: Participants in the International Conference on North Cap Security Problems, August 30-September 2, 1966.

Below is a Xerox copy of the galley proofs of an article by Nils Örvik which will appear in the Summer 1966 issue of International Organization. Since these are not the final proofs, quotes should not be made without checking either with the author or with the published article.

Scandinavia, NATO, and Northern Security

NILS ÖRVIK

THE present strains on the North Atlantic Treaty Organization (NATO) alliance have far-reaching implications for members as well as nonmembers. In the current Scandinavian debate on security the year 1969 has become almost a magic number. In Norway there has even been talk of a national referendum on whether to continue membership in NATO. While recent polls show a majority in favor of the alliance, the margin is not large enough to preclude a change during the next three years. Parties, politicians, and pressure groups are already bracing themselves for a major campaign.

As yet, few are concerned about possible alternative courses. This raises the question of whether it is conceivable that the Scandinavian countries would change their present policies on security. What factors determine the security position of the Fenno-Scandinavian region? Is it within the power of these states, jointly or individually, to secure the stability of the region? Or are the decisive forces to be found outside the area within the "triangle" of Atlantic, West European, and Soviet concentrations of power? And, in view of the latest developments, what consequences might follow if President Charles de Gaulle should take France entirely out of NATO or bring to an end its practical cooperation with the alliance?

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The Nordic region has not had in modern times a centralized source of authority or even one of coordination. In major matters the countries within the area have moved independently, each according to its interests and location, which provided them with different sets of enemies as well as friends. For more than a hundred years Norway has been almost exclusively concerned with the Atlantic powers, Denmark obsessed with Germany and the Continent, and Finland with Russia. Only Sweden, sheltered by the others in the middle of the region, was able to develop a more detached view of the three power groups which surrounded the Fenno-Scandinavian area. But Sweden never was able to provide the Nordic region with a core strong enough to bring the three Nordic neighbors under a set of common institutions. The centripetal attraction Sweden offered in terms of capital and protection proved too light to make up for the centrifugal forces of the Russian, German, and North Atlantic cores of power.

The end of the Second World War found Germany powerless, Britain weakened in the midst of victory, and the Soviet Union war scarred but in triumphant possession of most of the eastern seaboard of the Baltic. Even Finland was drawn halfway into the Russian sphere of influence. The weights among the three great centers of power had shifted, with a new Soviet predominance which posed a threat to the power stability of the Nordic region. The Scandinavians had three possible ways to counter the threat: neutrality, joint regional defense, or Western alignment.

Hoping that the growth of Soviet power would either have no external repercussions or might be contained through the United Nations, the Scandinavians from 1945 to 1949 continued their prewar policies of isolated neutrality. Fears followed the Soviet pressures during 1946–1947 on Norway for joint military bases on Spitsbergen. The Finns, already deprived of their northern

ity. Fears followed the Soviet pressures during 1946–1947 on Norway for joint military bases on Spitsbergen. The Finns, already deprived of their northern port, Petsamo (Pechenga), entered the 1948 Russo-Finnish Treaty of Friendship, Cooperation, and Mutual Assistance. In view of such demonstrative attempts by the Soviets to expand their European sphere of influence neutrality proved clearly insufficient for the Scandinavian countries. Norway and Denmark even discarded the second alternative of a joint, nonaligned Scandinavian defense organization.

The rising Soviet power was compensated through the third alternative—extraregional support. But Norway and Denmark did not see the need to go all the way. Through their denial of allied bases on their territory they kept an intermediate position between Sweden's neutrality and full-fledged Atlantic alignment. Even with such reservations the overwhelming superiority of the United States provided ample power to maintain the security of the Nordic region.

During the middle fifties the new Soviet leadership began a campaign for peaceful coexistence which posed an intensified political threat to the Nordic countries. At the same time the Soviets increased their military and industrial concentration in the northern, Arctic area. Cramped on the narrow ice-free strip of the Kola peninsula, Murmansk and Petsamo became key bases harboring the world's largest submarine force, together with a sizable fleet of trawlers and a rapidly growing merchant marine.

The situation must have become very unsatisfactory from a Soviet point of view. A military-industrial concentration of this magnitude would make the whole area an obvious target for the first round of a nuclear exchange. A dispersal of the ships to ports on the Norwegian side would improve the chances for survival of parts of the Soviet fleet. It would also shorten the distance to theaters of operation which would be particularly important if the Soviet leaders should decide to develop task forces to support wars of national liberation for which they presently have no naval support.

Soviet naval activity has been considerably less in the Baltic. Large units have been transferred from its shallow waters. Even so, the Belts remain important strategic objects and the Danish-German-Norwegian "funnel" would be a vital target of control in the outbreak of a general war.

On the Nordic side the alliance alternative began to lose some of its force through the doubts which were raised in the early sixties. The change was marked by the following events. The Norwegian and Danish governments reinforced their long-standing reservations on foreign bases with a tightened ban on nuclear weapons. The Swedes postponed the decision on whether or not to make nuclear weapons. The United States administration brought in the "flexible response" strategy, together with a tighter control of nuclear weapons in forward areas. The Norwegian and Danish governments reduced their terms of military service from sixteen to twelve months, while the United States government began a gradual reduction of military aid to its European allies. In spite of their growing prosperity the Scandinavian members of NATO did not increase their national appropriations sufficiently to prevent an overall reduction in military preparedness compared to previous years. As there has been no corresponding arms reduction, nuclear or otherwise, on the Soviet side, the result is a disproportionate weakening of capabilities on the Western side of the northern flank.

Are détente and polycentrism, in short, the decreased probability of a Soviet military move, sufficient compensation for the apparent imbalance in the Nordic area? Or has the adjustment been secured through the growth of the United States' missile and nuclear arsenals? Have strategic weapons, supplemented by the instantaneous holding actions of mobile NATO forces, offered increased credibility for meeting contingencies on the northern flank? Is there, on the other hand, a Nordic alternative by which the four nations themselves can provide for the stability of the region? Would a formal French withdrawal from the alliance and a tightening Russo-French rapprochement impair Nordic security?

The Nordic Balance

The "Nordic balance" is the popular term for a particular concept of Nordic security that revolves around 1) Finnish neutrality and the Russo-Finnish treaty of 1948, 2) Sweden's neutralist policies and 3) the Norwegian-Danish reservations against foreign bases and nuclear weapons. The balancing mechanism is supposed to work as follows: According to the 1948 treaty the Soviet Union can ask for consultations with Finland if it feels that its security is threatened through Finland by Germany or any state that is allied with the Federal Republic of Germany—in other words any member of NATO. The treaty also provides that Finland will defend its territory against an attack by Germany or a German ally, with Soviet help if necessary.

The balance theory maintains that the Soviets could be deterred from using the possibilities which the treaty offers or otherwise tightening their grip on Finland by a Norwegian and Danish threat to reconsider their reservations on bases and nuclear weapons. This would mean inviting their allies to station troops and nuclear weapons on Norwegian and Danish soil. Such actions by the Norwegians and Danes could be reinforced by Sweden's threatening to modify its neutralist policy. Sweden might develop closer relations with the Western states, possibly consider membership in the NATO alliance.

The theory assumes that the policy of "calculated weakness" which the reservations on bases and nuclear weapons implies is actually a position of strength. It supposedly provides the Scandinavians with a lever, a counter-threat, which they could use against the Soviet Union. The proponents of the balance theory maintain that its practical value as a deterrent was proved during the "note crisis" in Finland in the fall of 1961. When the Soviet premier demanded military consultations with the Finnish government, the Norwegian foreign minister issued a public statement indicating to the Russians that if they carried out their threats to invoke the 1948 treaty, Norway might reconsider its policy on nuclear weapons and foreign bases. It should be noted that the theory of the Nordic balance, which was developed in the early sixties, is not just a plaything in the hands of a few theoreticians. It has been mentioned publicly in high places in Scandinavia and is considered in some quarters as close to official policy.

The appealing picture of Nordic solidarity and Soviet moderation which the assumptions behind the balance theory give should not be accepted without reservations. It is probably correct to say that a majority of Norwegians, Danes, and Swedes are content with their present policies and that the status quo in the northern area is for the moment also satisfactory to the Soviet Union. It can also be argued that since 1949 Norway, Denmark and Sweden *might* have leaned more to the West and that the Soviets *might* have pressed harder on Finland.

As a description of the status quo at a given moment the theory of a Nordic balance would probably meet few objections. The difficulties arise when the theory is put forth as an instrument of policy, a tool in the hands of the Nordic nations to safeguard their national security and deter the Soviet Union. From this point of view the balance theory presents certain weaknesses.

First, the particular chain of events for which it is constructed, i.e., Soviet pressure on Finland and Scandinavian counterpressure to stave it off, covers only one contingency which may not even be a relevant one. It is true that Finland has a unique status among the countries which came under Soviet control after the war. But this situation was established long before NATO came into being.

Second, the more conciliatory attitude which the Russians adopted toward Finland after 1955 came as a consequence of the change in Soviet leadership and its new policy of peaceful coexistence, not as a concession to any Scandinavian pressure. Neither is there any evidence to show that the stiff Norwegian reaction to the 1961 Soviet note to Finland made Nikita Khrushchev drop his demand for military consultations. There are a number of other explanations which seem just as plausible. Many put greater stress on the internally aimed motivation of securing President Urho Kekkonen's reelection, which the Russians clearly favored.

Politically as well as strategically, it is very hard to see what the Soviet Union possibly could gain by taking a tighter control of Finland. By the end of the war the Soviets had taken over all the strategic points they had originally demanded. Most of these areas had already been rendered unimportant by advances in military technology. The vitally important points, such as the nickel mines and ports in the Petsamo area, were firmly in Russian hands. What strategic assets were still left in Finland amounted to little more than transit privileges, facilitating Soviet military operations in Sweden or northern Norway. In these crucial areas an adequate roadner with newly reinforced bridges already exists on the Finnish side. Whatever the motivation, this net of modern communications stretching from the Soviet border toward Norway and

Sweden has greatly improved conditions for transferring heavy equipment and forces. In view of the disparity of strength Finland could hardly be expected to offer very effective resistance for preventing the use of these communications if Soviet transit needs became acute.

In the northern region the important strategic *objectives* are in Norway rather than in Finland. To the extent that military moves against the north of Norway would become relevant at all, a balance mechanism designed for maintaining the neutrality of Finland would be ineffective and even harmful to Norway. If tensions increased in the North, the Soviets might keep the Norwegian government from reconsidering its base and nuclear reservations by threatening reprisals toward Finnish neutrality. The balance theory might just as well be run in reverse.

Further, it seems questionable whether the theory of the balance takes full account of actual Nordic interests. It seems inconceivable that the Danish government, so remote from the far north and its problems, should be prepared to make any such drastic change in its policy on bases and nuclear weapons for the sake of maintaining Finland's present state of neutrality. The Danes would do what they could by diplomatic and other nonmilitary means to strengthen the Finnish stand, but they should not be expected to call on their allies for bases and nuclear defense unless an imminent Soviet threat to Denmark should appear.

It would also seem a miscalculation to assume that Sweden might threaten to leave its path of neutrality to deter the Soviets from closing in on Finland. Joining NATO has never been seriously considered an acceptable alternative to the Swedes and, with the present state of friction within the alliance, it is even less so.

To dispel any doubts about Sweden's position the Swedish Deputy Defense Minister in a recent publication has made it abundantly clear that if northern Norway and the Danish Belts should be involved in a struggle

> it is of decisive significance that these most-exposed areas north and south in the Nordic region are not Swedish, and therefore beyond our military responsibility. . . . Even if one or both power-blocs try to move their positions into our immediate vicinity, we shall persist in our determination to remain outside and maintain our alliance-free status.[1]

[1] Karl Fritthiofsson, *Sveriges säkerhetspolitik* (Stockholm, 1965), p. 12.

Finally, the likelihood that the Norwegian authorities would agree to reconsider their hardening reservations on bases and the stationing of nuclear weapons in Norway for the sake of Finnish neutrality seems very small indeed. There is little to support an assumption that the Norwegian government would come to the aid of Finland by asking for United States troops and nuclear weapons. No party or faction—either the social democrats or the present nonsocialist government—has ever suggested any peacetime change in Norway's base and nuclear policy. A foreign minister may express warnings to the Soviets not to raise tensions in the North, as Halvard Lange did in 1961, but that does not mean the Norwegian government and the Storting would do anything about it. Official statements are not an effective deterrent if they lack sufficient support to make them credible, not least of all, to the Soviets.

The Nordic balance concept is presumedly a tool which the Scandinavian members could use independently of their NATO allies. Even in the unlikely case that the Norwegian and the Danish governments would ask for troops and nuclear support for backing the Finns, the decision whether to accommodate the request and thus make the Scandinavian counterthreats credible would in fact be made by other allies. Considering the doubts that have been raised about the use of nuclear weapons—at any rate until other means [have] been tried—it cannot be taken as a matter of course that any of the large NATO powers would respond positively to a request to rush in troops and nuclear weapons for the aid of a country that is not even a member of the alliance in order to deter the Russians from pressing Finland. Particularly in a period of détente the United States would be reluctant to engage in a deterrent action so close to the Russian home base.

Such limitations would tend to give the balance theory very low credibility. It should be seen as a belated attempt to provide a rational explanation for the special kind of alliance policy which Norway and Denmark follow. Its justification is that conscious, calculated moderation by the Scandinavians and the Soviets has kept the peace on NATO's northern flank. But peace in the North is not a unique case. There has been no Soviet attack on the central or southern parts of NATO. As this is generally attributed to the Western deterrence which has kept the peace, why should this not apply to the Nordic region as well?

The theory of a Nordic balance may be useful as a political instrument on the domestic level. In terms of strategy it can hardly be fruitful to deal with Scandinavian-Soviet relations as operating within a kind of Nordic vacuum. There should be no confusion: The troops and nuclear weapons which might deter the Soviets from pressing harder on Finland or any other Nordic country do not exist in the Nordic area. They must come from the larger NATO countries and be dependent on the decision of the allies. The decision-making machinery, however, is not likely to run any smoother after de Gaulle's recent move. Therefore it seems highly unlikely that the balance theory would apply to possible future crisis situations and contribute to the maintenance of stability in the region.

The Nuclear Spread and Nordic Stability

The rather sudden interest in a "Nordic balance" has coincided not only with the new United States strategic concepts of the early sixties but also with the 1960–1961 decision by the Scandinavian NATO members not to receive nuclear weapons on their territories. As Denmark and Norway were the only two out of a total fifteen [which] made such explicit reservations, it seems legitimate to ask what effect their stand has had on Nordic security. While it is generally assumed that the relative stability which is achieved in East-West relations is a product of a "nuclear balance," could it be that the regional security in the Nordic area is enhanced by a consistent nonnuclear policy?

During the nuclear debate in Scandinavia in 1960–1961 some major arguments invoked were that introducing nuclear weapons would increase tension and provoke the Soviet Union; that storing nuclear charges would be inconsistent with the policy of no bases; and that by draining defense funds it would prevent a sufficient buildup of conventional forces. Finally, it was also argued that nuclear stores would contribute to the further spread of such weapons. While it is sometimes unclear whether "spread" is meant to include the physical presence of United States-owned weapons in a certain area or just the transfer of control, the nonproliferation argument has gained predominance in the positions taken by the Scandinavians on various nuclear matters.

The NATO multilateral nuclear force (MLF) scheme may not be the most clear-cut example since its military weaknesses tended to overshadow the political importance of the proposal. But as its nuclear aspect was in the forefront, there was no faltering among the Scandinavian members who remained reserved, refusing to participate as well as to grant MLF ships any facilities if they were put into operation. According to Norway's former Premier Einar Gerhardsen, "Nor will naval nuclear forces, belonging to NATO or allied powers, get bases in Norway or in other ways be allowed to establish themselves in Norwegian territorial waters."[2] The British proposal fared no better

[2] *Aftenposten*, December 8, 1964.

treatment from the Norwegian government. Foreign Minister Lange made it abundantly clear that "Norwegian participation in a nuclear force built on the announced British model is as unlikely as in the MLF."[3]

[3] *Arbeiderbladet*, October 26, 1964.

On the other hand, when Finland's President Kekkonen proposed the establishment of a nuclear-free zone in the North in 1963, the Scandinavian governments remained cool and negative. President Kekkonen argued that his May 1963 proposal would not mean any changes in the policies of the Nordic states because these states already formed a *de facto* nuclear-free zone. In the United Nations the Scandinavian governments had already supported the Undén plan of 1961 as well as the "Irish Resolution," which implied treaties for prohibiting the acquisition and production of atomic weapons.[4] Why then should all

[4] General Assembly Resolution 1665 (XV), December 4, 1961.

Scandinavian states, including Sweden, turn so sharply against the Kekkonen plan?

One of the objections which the Scandinavians raised to the Kekkonen plan concerned the extent of the area involved. The Norwegian and the Danish governments pointed out that in order to become acceptable Kekkonen's proposal would have to be incorporated into a more comprehensive treaty for disarmament or arms control. These governments reasoned that agreements for nonproliferation should not be made separately but should form part of a general European settlement. The Swedish government went even further and put up a series of conditions that had to be fulfilled before it would consider any plan for a Nordic nuclear-free zone.

The answers to the Kekkonen proposal illustrate the particular kind of political dilemma which has confronted the Norwegian and Danish governments in the nonproliferation issue. Faced with public opinion in their respective countries, they go quite far in seeking to remove any doubt that the nuclear ban, which they have pledged themselves to observe, is as valid as ever and will not be subjected to any reconsideration. On the other hand, in their external relations they make it just as clear that they do not want to lose the option of threatening to introduce nuclear weapons.

The need for a nuclear option has been especially felt in Sweden, where national freedom of action is held up as the guiding principle for the country's policy of nonalignment. Contrary to their Norwegian and Danish neighbors, the Swedes have never issued any formal ban against nuclear charges on Swe-

dish territory. When the issue of developing nuclear arms came up for a decision in 1960, the government chose to postpone it for a period of up to five years. By that time it was thought that Sweden's nuclear research programs would have reached a stage where the work on "atoms for peace" could no longer be run through the same research channels as the work on nuclear warheads.

In 1965 the Swedish research institutions apparently were approaching the critical point, which prompted a request to the government from the Swedish head of defense. Like their Norwegian and Danish colleagues, Swedish military headquarters have favored the acquisition of a nuclear capability for tactical purposes. The defense chief recommended that the government ought to make such preparations as would reduce the time it would take from when the decision was made to the point when the actual warheads were ready for use.[5] In his opinion a threat to use nuclear weapons which might take up to seven years to implement would not provide the government with much of a real option.

[5] *ÖB-65*, Stockholm, 1965, pp. 94 ff.

The Swedish Commander in Chief did not get much support from the politicians although there have been signs of a certain uneasiness on the subject.[6]

[6] Karl E. Birnbaum, "Sweden's Nuclear Policy," *Survival*, December 1965 (Vol. 7, No. 9), pp. 314–318.

On a recent trip to the United States the Swedish Prime Minister, Tage Erlander, made it clear that if the Great Powers could not agree on a nonproliferation treaty, Sweden might have to consider its position on the production of nuclear weapons. However, when he was faced with a question in parliament on whether his statement in the United States indicated any change in Sweden's official policy on nuclear weapons, Erlander answered with a flat "no."[7]

[7] *Arbeiderbladet*, December 17, 1965.

The Scandinavians are also worried about the implications of signing a formal agreement pledging themselves to a permanent ban on nuclear weapons. As far as Norway and Denmark are concerned, their whole defense posture is built on the assumption that if tensions should rise above a certain point or if they become victims of a surprise attack, their Western allies would rush to their assistance with whatever means might be needed. Most probably such aid would include some form of nuclear capability.

One might say that in a situation of extreme emergency a rescue action would not be stopped by a treaty. While this may be true, a formal regional ban on nuclear weapons would have *political* effects, domestically and externally, from the moment it was signed. The Scandinavian members fear that the formal act of signing President Kekkonen's proposal might impair their claim for allied protection. They are already considered to be in the periphery, and it might be hard to claim full rights of protection at the same time that they formally denounced the weapons upon which their national security ultimately depends.

Moscow has made no attempts to conceal what the Soviet Union expects from stabilizing the Nordic area through a nuclear-free zonal arrangement. According to *Izvestia*,

> The establishment of a nuclear- and missile-free zone in the North would become the first stage in the transition of all the Nordic countries to a neutral status. . . . The Soviet Union, *together with the other great powers*, would be prepared to respect the neutrality of the Nordic countries, their territorial integrity and independence without interfering in their domestic affairs.[8]

[8] *Izvestia*, August 14, 1959. Italics added.

The implications of a nuclear-free zone point toward some form of neutralization of the Nordic area. But suppose, as suggested by Moscow, that the security of the zone were guaranteed by several Great Powers, among them the United States. Would not this to a large extent satisfy Scandinavian demands for safeguarding their national security, burdened as they are by the cost of defense and the Sisyphean task of keeping up and worried by the slow progress of nonproliferation negotiations and by disturbing trends of tension in many parts of the world? It thus seems not at all inconceivable that certain groups in Scandinavia should take an interest in blueprints for neutralization. Moreover, it might be tempting to set forth "in shining armor" and set an example of being among the first who ventured to undertake a full-scale, formal denuclearization.

On the other hand, a proposed nuclear-free status for the Nordic area would meet with objections. The increasing polycentrism in international affairs would make even a United States-Soviet guarantee a partial solution at best. The troubles and frictions between two Great Powers, no longer in supreme control of events, might be transferred to the guaranteed area and raise tension there rather than reduce it. The problems of institutionalized controls and inspection rights would be no less acute for the Nordic area than for Berlin and other places where attempts at joint control have been made.

The Scandinavian leaders appear to be well aware of the long-term implications of a formal nonnuclear arrangement in the Nordic region. But the fact that these originally Soviet ideas have been pressed over the last years by their Nordic colleague, President Kekkonen, makes it harder for them to tackle the situation squarely. Former Prime Minister Gerhardsen of Norway said in 1964 that

> if this question [of a Nordic nuclear-free zone] is raised by the Soviet Union to the effect that parts of the Soviet Union also become nuclear-free, it would be something to discuss. But if we are the only ones to give pledges and the other side not, then this proposal has no purpose.[9]

[9] *Arbeiderbladet*, January 2, 1964.

De Facto Neutralization

Since 1963 President Kekkonen has returned to his proposal for a Nordic nuclear-free zone on various occasions. But when he mentioned it in a speech in November 1965, he also brought up another proposal which, although different in scope, might be seen as a modification of the more comprehensive plan for the nuclear-free zone.

Kekkonen's new proposal was aimed explicitly at Norway. In the speech Denmark and Sweden received only brief references. Finland is prepared, he said, "to consider treaty arrangements with Norway that would protect the Finnish-Norwegian frontier region from possible military action in the event of a conflict between the great powers." An agreement with Norway would, according to Kekkonen, lessen military tensions and increase the possibilities for Norway and Finland "to preserve their territorial inviolability. . . . Fin-

land's land frontiers would then be safe as far as they can be made by treaties." The treaty would be intended "to maintain peace on both sides of the Finnish-Norwegian frontier."[10]

[10] Speech by President Urho Kekkonen, Helsinki, November 29, 1965 (English translation, Ministry for Foreign Affairs [Finland], Press Bureau, pp. 9–10).

The Finnish President was vague as to what he had in mind but some basic points seem to emerge from the text of the proposal. First, the "protection" which he talks of could not be guaranteed by military means. The contingency that the Finns should hold back a Russian attack on their side and that the Norwegians should protect the area against an invading NATO force is out of tune with their respective military capabilities. Second, Kekkonen said that the treaty would increase the possibilities to preserve Norway's and Finland's territorial inviolability in a major conflict.

Thus, the suggested treaty would seem designed to bring about a zonal arrangement, limited to the frontier region, a peace zone on both sides of the border. With such requirements it must amount to a kind of demilitarized, possibly "thinned out" zone, extending to an area of some definite limitation running on both sides of the border from approximately the Lyngen fjord near Tromsö, all through Finnmark up to the Russian border in the Pasvik valley. The exclusion of foreign forces and weapons from this area would effectively block all NATO maneuvers and other allied military activities.

If this is what Kekkonen had in mind, such an agreement would have far-reaching consequences for the existing security arrangements on the northern flank. A glance at the map shows that even a narrow strip of 50 kilometers on each side of the Finnish-Norwegian border (which, with today's technology, would seem a minimum for a zone designed to reduce military tension) would cut the vital Norwegian and NATO communication lines at the Lyngen fjord as well as farther north. The zone would also include most of East Finnmark with Vadsoe, Kirkenes, and the crucial Varanger fjord west of the Norwegian-Soviet border. The Finnmark region includes a number of strategic points essential for naval warfare.

Should the Finnish President's proposal be accepted, it would turn the strategically most important parts of NATO's northern flank into a virtual no-man's-land. The proposed treaty would prevent the Norwegians as well as their allies from making defensive preparations in the Finnmark area. If the need arose, the Soviets might move in without risking military opposition. By approaching along the coast they would not even have to violate a Finnish-Norwegian border treaty. Like the 1948 pact it could only apply if *Finnish* territory were violated, a point which Kekkonen specifically referred to in his November 29 speech.

The official Norwegian reaction to the proposed treaty was strongly negative and soon after the Finnish Foreign Minister brushed off the proposal as something which the President had merely thrown out for the sake of discussion. However, in a statement at a press conference in Moscow shortly before Christmas 1965 Kekkonen returned to the subject and confirmed his thoughts on a neutralization of the Finnish-Norwegian border as a future possibility. "In the course of four or five years," he said, "the idea may ripen and the chances of putting the plan into effect may have improved."[11] The four to five year period

[11] *Aftenposten*, December 23, 1965.

he referred to would bring us up to 1969–1970, then generally considered the crucial decision point for the future of NATO. While he conceded that Norway would probably continue as a member of NATO, the Finnish President said that this should not prevent border arrangements such as those he suggested.

What might Finland hope to gain from a *de facto* neutralization of the Scandinavian area? Although in his speech of November 1965 Kekkonen explicitly denied that Finland wanted to abrogate the 1948 treaty with the Soviet Union, it cannot be overlooked as a vital factor in Finland's foreign policy. The treaty could be turned into a Russo-Finnish alliance if West Germany or any of its allies threatened an attack on the Soviet Union through Finland. As long as West Germany is a member of the NATO alliance, any NATO-Soviet conflict on the northern flank would involve Germany. Therefore, the Finns could well reason that if Norway drifted out of NATO—or were neutralized within the framework of the alliance—the Soviet Union would no longer have a pretext for using the 1948 treaty to tighten its grip on the Finns.

Alliance or no alliance, nothing the Scandinavians may do will stop West Germany from seeking to safeguard its security interests. However, the chances of a German threat to the Nordic area—if ever such should arise—would seem far less within an integrated alliance structure including Norway and Denmark. A neutralization of Scandinavia would, in practical terms, bring the area close to the status it had at the outbreak of the Second World War.

The Finns, with all their firsthand experience, can hardly be expected to work toward an overall Soviet domination of the Nordic region. But it is hard to see how a neutralization of the Scandinavian peninsula could have any other result. It seems highly unlikely that Finland's position would be improved if the other Nordic nations adopted the Finnish version of neutrality. Finland's special relationship as the model democratic neighbor of the Soviet Union might be harder to achieve if the whole area should acquire the same status.

Judging from the long range of Soviet statements since the 1950's, the consistent agitation for neutrality by the Scandinavian Communist parties, and the Soviet campaign against NATO and the European Economic Community (EEC), there seems little doubt that the Soviet Union, stressing political rather than military approaches, seeks a *de facto* neutralization of the Nordic area. Seen from the Nordic perspective, the Scandinavian nations including Sweden are unable by their own means—either in conventional terms or through a deliberate "strategy of weakness"—to prevent the further destabilization which a rapidly growing Soviet potential seems certain to produce in the area.

The Euro-Atlantic Alternative

The security necessary for the stabilization of the North must be sought in the two centers of power comprising, on the one hand, the Continent—France and Germany—and, on the other, the Atlantic nations—the United Kingdom and the United States. The ties which Norway and Denmark have to these two power concentrations are reinforced by a pattern of traditional relationships.

Norway's close bonds with Great Britain go far back in time. From the nineteenth century on, the slogan "we trust in England" was accepted as a guiding principle of Norwegian foreign policy. There was a genuine community of interest built on shipping, capital investments, and tourism. Britain needed transport services for its trade. Norway had to sail in order to live. But Norway

was clearly unable to defend its long coastline. Britain could. Not, however, for the sake of blue Norwegian eyes but because of its transport needs and because the position of the British Isles would have been intolerably exposed if it allowed a Great Power to control Norway's Atlantic and North Sea coastline.

Although in a slightly different way, Denmark has been as dependent upon a Great Power as Norway has for its security. Since Denmark's defeat by Prussia in 1864 and the rise of modern Germany, Danish foreign policy has tended to mirror the fluctuations of Germany's status and capabilities for exerting influence. In periods of a weak Germany Denmark has concentrated more on Nordic and British relations while it has drawn closer to the Continent whenever Germany has become influential.

Thus, when the establishment of the Common Market brought Germany along with the other continental powers back into political focus, it seemed bound to affect Denmark more than the other Scandinavian countries. From about 1958 on, one can trace in Danish policies a marked tendency toward shifting the weight from the Nordic orientation, which had been predominant during the forties and early fifties, to a more continental line. So far it has been more of an indication that a movement. In all major questions the Danish government has been in full accord with its Scandinavian colleague. But it should be kept in mind that shortly after President de Gaulle's refusal to accept Britain and the Scandinavians in the Common Market, he made a special approach to Denmark, thereby indirectly recognizing its position as a continental country.

While there are visible differences in Norwegian and Danish attitudes to the EEC, their NATO relations remained for a long time almost identical. However, since the early sixties there have appeared certain nuances, particularly in nuclear matters. Both denounced the MLF, but the Danes did not make any special reference to the British proposal. In November 1965, when the leading members of the alliance decided to establish a special committee for the discussion of nuclear questions within NATO, the Danish government joined while Norway's new nonsocialist government, along with Iceland, Luxembourg and Portugal, decided not to be represented in the committee. The importance of this incident should not be exaggerated, but Danish foreign policies viewed in the perspective of the last few years leave the definite impression that the Danes are gradually drawing closer to the Continent.

General de Gaulle's blow to NATO in March of this year came as a shock to both Scandinavian members. Although slightly embarrassed by France's references to their own restrictions on foreign bases, which in principle were said to be the same thing, they immediately rallied to the support of the alliance. But again there were nuances. While the Norwegian government remained remarkably passive, the Danish premier was among the first NATO leaders to meet with de Gaulle personally, calling for a modification and compromise. Even if his interventions brought no changes in the French position, this seems to be another indication of the continental trend in Danish foreign policies.

In Norway President de Gaulle's determined attempt to cripple the present NATO structure has caused grave concern. Most politicians and parts of the public realize fully NATO's importance for Norway's security and the numerous advantages which have derived from membership. So far Gallup polls have shown a majority in favor of continued membership but this attitude should not be taken for granted. Among recent obstacles is the need for increased appropriations for defense as a consequence of the sharp reduction of United States military aid. Further, the intensified war in Vietnam, where the Ameri-

can domestic opposition has found many Norwegian supporters, has raised the old fears that Europe will receive a lower rating on the United States government's priority list.

The counterarguments to the allied relationship were, in effect, already there. But until de Gaulle's spring offensive the demands for reevaluation of the alliance could be met with references to a unified, strong, and sturdy NATO. After de Gaulle's denunciation, even staunch believers in the Western alignment have privately expressed their concern about the disintegration of the alliance before the crucial year 1969. In spite of the reassuring official declarations of "business as usual" with fourteen instead of fifteen members, one perceives an uneasy feeling that this NATO may not provide the same shields and swords as it once did.

Among the ranks of the Norwegian leftish opposition to NATO—the Communist Party, the Socialist People's Party, and the left fringe of the Labor Party—de Gaulle's initiative has been welcomed. Making skillful use of the General's argument, the anti-NATO groups claim that de Gaulle has effectively exposed the inadequacy and the antiquity of the Western alliance. New roads must be opened for peace and security. All socialist forces must unite in a constructive attempt to create a Nordic neutral league, independent of all power constellations, with close ties to Eastern as well as to Western Europe.

The Soviet Union lost no time in taking advantage of the new situation. The Russians have always disapproved and complained of NATO maneuvers in the Northern area. But since Norway has explicitly excluded such activities from its overall reservation against foreign bases, the Soviet neighbors have not made them a major point. The exercises of NATO's mobile forces in early March this year have, however, received remarkable attention from the Soviet press. In a series of articles *Krasnaya Zvezda, Izvestia, Pravda,* and others have strongly condemned Norway's participation in NATO "aggressive moves" against the Soviet Union and warned of the consequences.[12]

[12] *Krasnaja Zvezda,* March 24, 1966; *Izvestia,* April 6, 1966; and *Pravda,* April 24, 1966.

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A GEOGRAPHICAL SURVEY OF NORTH NORWAY, INCLUDING HABITATION AND COMMUNICATIONS

1 REGIONAL DEFINITIONS

The area of interest in the present context comprises the ocean areas between approximately 20°W and 60°E north of the Polar Circle and the land areas of Norway, Sweden, and Finland north of the Polar Circle and Murmanskaya Oblast'. Figure 1.1 indicates the position of North Norway in that area.

The centre point of a line, drawn from Norway's most southerly point to the north east border towards Russia, will lie approximately at the southern most point of North Norway. Administratively North Norway embraces from south to north east the three counties Nordland, Troms and Finnmark. North Norway represents the northern most part of Europe stretching well into the Arctic Ocean, and more than 85% of the area is north of the Polar Circle (66°33'N). The extreme northern and southern points are respectively: 71°11'8''N, 31°10'4''E, 64°56'25''N and 11°10'40''E. The North Cape lies on the same parallel as the southern point of Novaja Zemlja, the magnetic north pole and Point Barrow in Alaska, whilst Mosjøen in Nordland and Fairbanks in Alaska are on the same latitude.

2 BOUNDARIES

Nordland County (see Fig 2.1) borders in the east towards Sweden for a distance of 600 km, in the south it borders towards North Trøndelag, in the west towards the Norwegian Sea, and in the north towards Troms county. To the south east Troms also has borders in common with Sweden and Finland. These border-lines stretch respectively approximately 230 km and 131 km. To the south Finnmark county has a common border with Finland stretching 585 km, and to the east with Russia for 196 km. The coastal areas off West Finnmark belong to the Norwegian Sea, whilst the eastern areas are in the Barents Sea. Norway claims

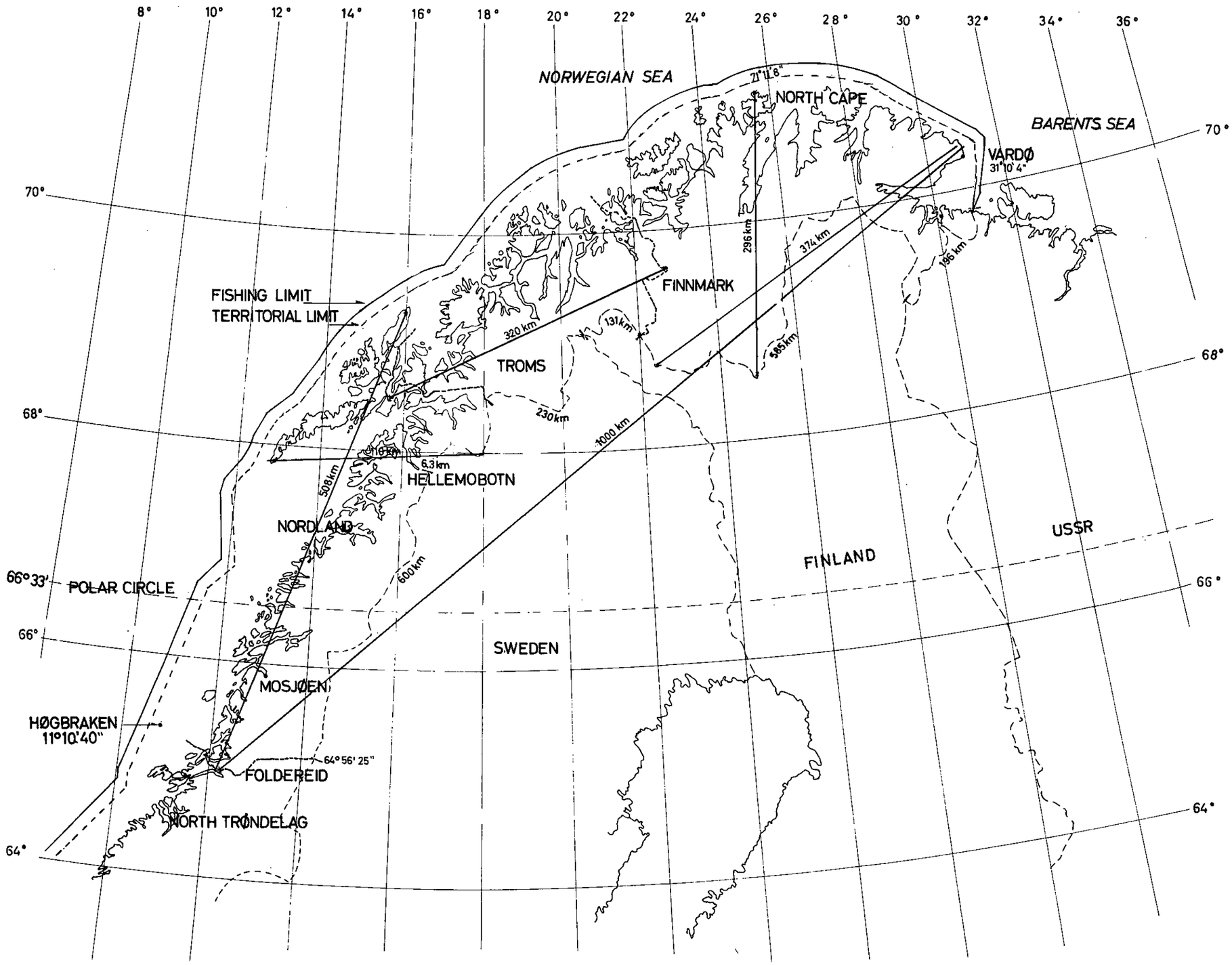

Figure 2.1 North Norway - distances and boundaries

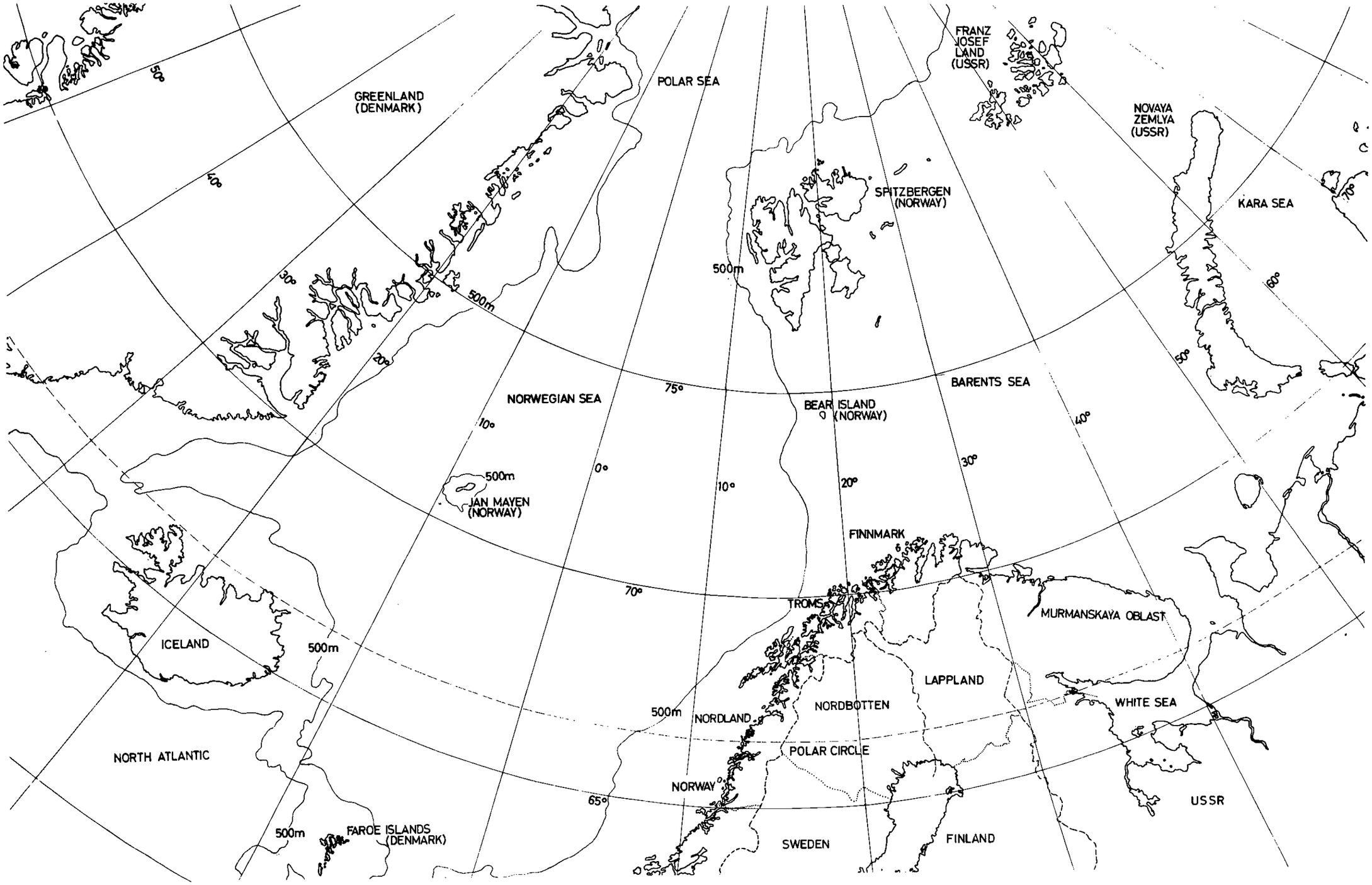

Figure 1.1 The Northern Flank Area

territorial rights for 4 nautical miles calculated from a basic line drawn between determined points. The fishing rights cover 12 nautical miles.

3 CONFIGURATION - form

North Norway is irregularly shaped and is often compared to a club. The county of Nordland represents the handle, whilst the club-head turns towards Finland and the USSR. North Norway is dissected by innumerable fjords and bays and most of the coast is sheltered by chains of islands. The orientation of this area is south west - north east.

4 DISTANCES

A straight line from Foldereid, on the border of Trøndelag to Vardø in East Finnmark measures approximately 1000 km, and the road distance (route 50) from the southern border between Nordland and Trøndelag to Kirkenes is 1,612 km. The distance along the coast measured in a direct line is approximately 1,300 km, but measured along the fjords the distance will be multiplied many times.

The counties measure respectively:

Nordland - 508 km north-south direction and from 110 km to 6.3 km (Hellemobotn) east-west

Troms - 320 km south west to north east direction

Finnmark - 296 km north-south direction and 374 km east-west direction.

5 SIZE AND DISTRIBUTION OF AREAS

The three most northerly counties comprise approximately 113,000 km^2, or one third of Norway's total area. North Norway covers approximately the same area as Bulgaria, or the states

of Pennsylvania or Washington.

Table 5.1 shows the area in square km (km^2) of the three counties, it also gives the distribution of water, agricultural areas, forest areas and bare mountain and other items in absolute and relative figures for all the counties. The rest of Norway is included for comparison. All figures are given to the nearest km^2.

	Nordland		Troms		Finnmark		Total	
Area	38327	%	26292	%	48649	%	113268	%
Water	2041	5.3	632	2.4	2112	4.3	4785	4.2
Earth[1]	718	1.9	402	1.5	127	0.3	1247	1.1
Forest[2]	3790	9.9	2661	10.1	2063	4.2	8514	7.5
Forest[3]	1019	2.7	839	3.2	5094	10.5	6952	6.1
Bare Mountain	25131	65.6	15916	60.5	32380	66.6	73427	64.8
Diverse	5628	14.7	5842	22.2	6873	14.1	18343	16.2
Total		100.1		99.9		100.1		99.9

	Rest of Norway		Whole of Norway		North Norway per cent of Norway
Area	210950	%	324218	%	34.9 %
Water	11128	5.3	15813	4.9	30.3 %
Earth[1]	9054	4.3	10301	3.2	12.1 %
Forest[2]	51030	24.2	59544	18.4	14.3 %
Forest[3]	3761	1.8	10713	3.3	64.9 %
Bare Mountain	78939	37.4	152366	47.0	48.2 %
Diverse	57038	27.0	75481	23.3	24.3 %
Total		100.0		100.1	

Table 5.1 Area distributed between the three counties. Absolute and relative figures (8, pp6, 66, 89)(9 II pp 20-21)

1 Cultivated areas
2 Productive forest areas below coniferous belt
3 Productive deciduous forest above coniferous belt

In the table one notices particularly that only 1.1% of the area is used for agricultural purposes. North Norway has however a considerable reserve of cultivable land, (approximately 2,000 km^2) and each year 20-25 km^2 more land is cultivated, while unprofitable farms are closed. The total area of cultivated land has decreased since 1945. More than half of Norway's deciduous forest area is to be found in North Norway, but the coniferous forest area is small, (in all approximately 2900 km^2 or 6%). 66% of North Norway is bare mountain area.

The category "diverse" covers mostly marsh-land and other areas below the coniferous forest belt.

6 TOPOGRAPHY

6.1 General Contours

Topographically North Norway is characterised by large and partly very rugged mountain areas, many large and small fjords and numerous islands. Along the coast and fjords, the mountains often drop steeply straight into the sea or onto a narrow beach which has risen above sea-level since the ice-age. A large part of the coastal mountains have alpine form, the island districts are dominated by mountain plateaus and lakes. Table 6.1 shows in percentages the distribution of heights in the three countries, and in Norway as a whole.

Height above sea level	Nordland	Troms	Finnmark	N Norway	Norway
0-60 m	13%	9%	6%	9%	8%
60-150 m	8%	9%	14%	11%	9%
150-300 m	12%	15%	31%	21%	17%
300-600 m	28%	30%	44%	35%	27%
600-900 m	24%	24%	5%	16%	20%
900-1200m	11%	6%	0%	5%	12%
Over 1200 m	3%	8%	0%	3%	8%

Table 6.1 The distribution of areas according to heights in the various counties. Relative figures (9, pp 22-23)

The highest mountain peak in Nordland is Oksøskolten (1915 m), in Troms Jiekkivarre (1833 m) and in Finnmark Svartefjellet (1218 m).

North Norway has 96 peaks over 1600 m. Of these 82 lie within a 20 km broad belt stretching from Majavatn to Lyngseidet. If broadened to 50 km the belt would include 91 peaks.

6.2 The Individual Counties

The Norwegian mountain range cover the whole of Nordland county and continues out over the islands and fjords of Troms and West-Finnmark. Most of this area consists of Cambrian-Silurian mica-slate and chalk with elongated granit deposits in the slate. The slate lies in strips parallel to the coastline, these in turn influence the direction of the valleys. This is a typical feature of Helgeland, where broad inland valleys run from north to south. The beaches in this district are relatively wide. The fjords cut deep into the Salten and Ofoten areas and in Tysfjord the distance to the Swedish border is only 6.3 km. Practically half of the Nordland area lies 600 m above sea-level, which here forms the tree barrier. Lofoten and Vesterålen consist of steep syenite peaks surrounded by large areas of low-lying land, mostly marshy. The highest mountain areas in Nordland are covered by more than 1700 km^2 of glaciers (See Figures 6.1 and 6.2).

The belt of large islands continues with high rugged mountain formations into Troms. The fjords are broad and long particularly in North Troms. The inland districts of the north resemble Finnmark with their vast extensive evenness, they no longer have the wild rugged characteristics of the south. Large mountain plateaus with lakes and comparatively wide valleys, running south-east to nørth-west, are typical for the inland district of Troms county.

Finnmark's topography differs in many ways from that of the other two counties. To the south of a line from Varangerfjord to Porsanger lies Finnmarksvidda, a gently rolling mountain

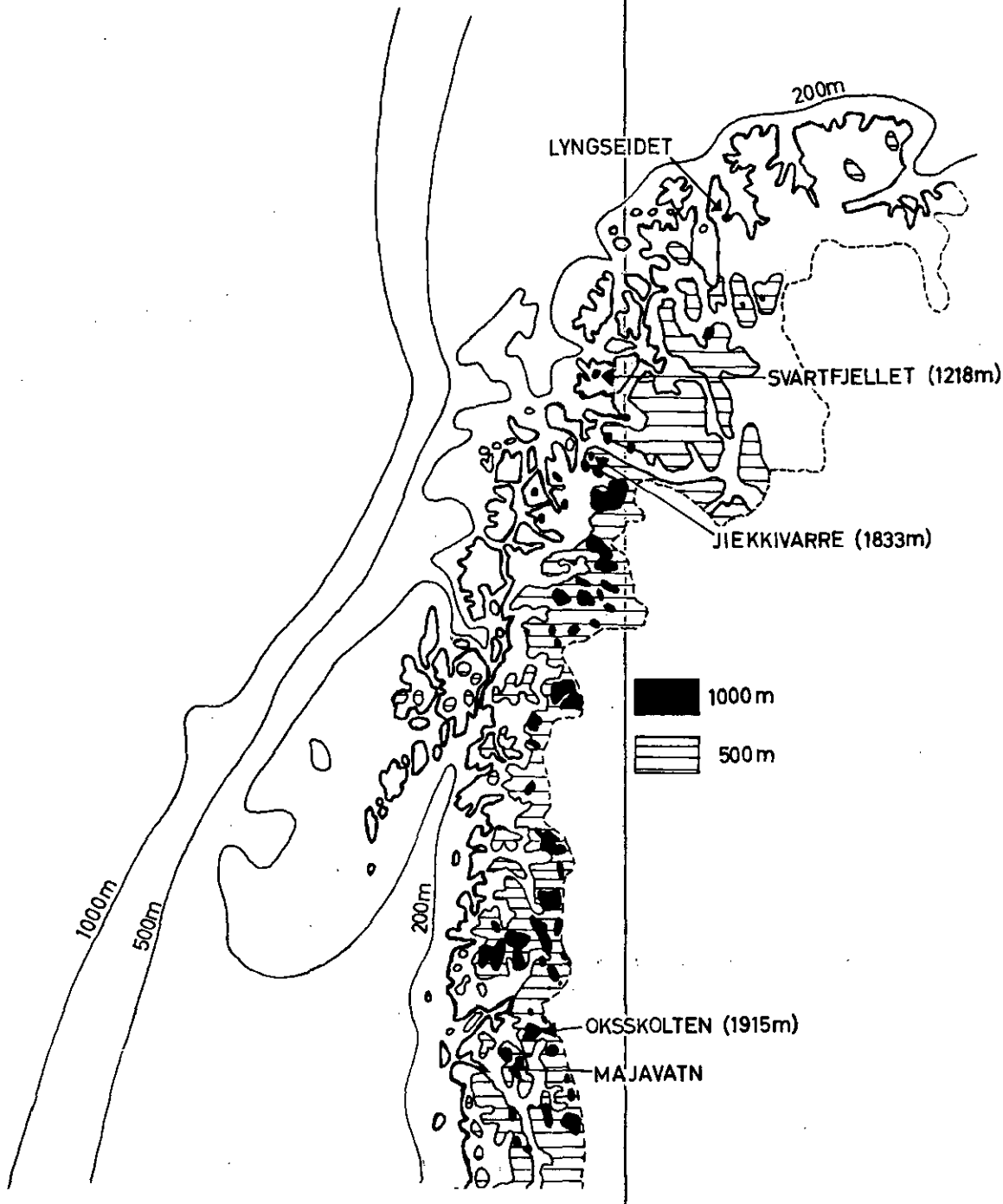

Figure 6.1 The topography of North Norway (altitudes and depths in meters)

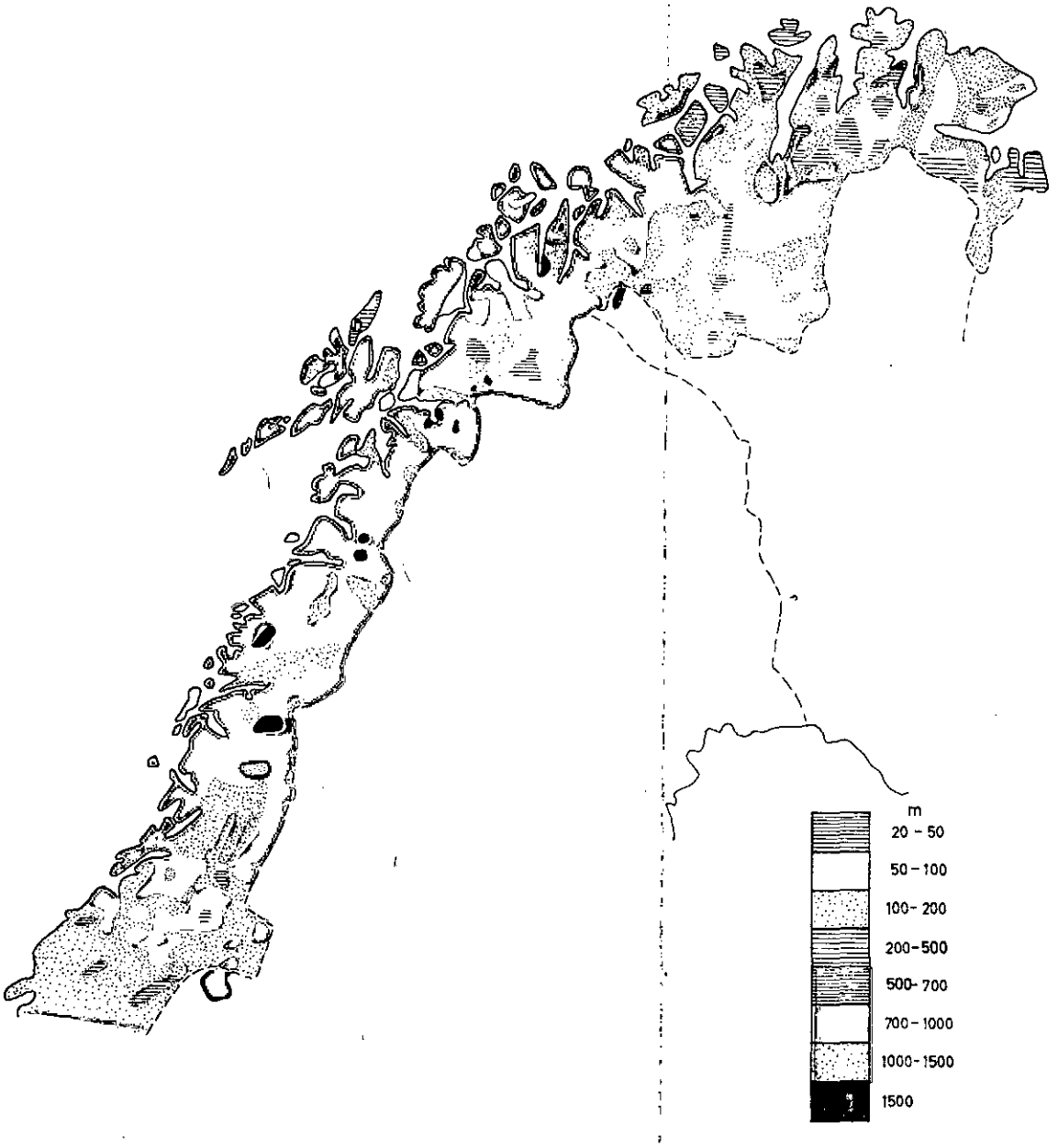

Figure 6.2 The Relative Height Distribution in North Norway
(Heights in meter)

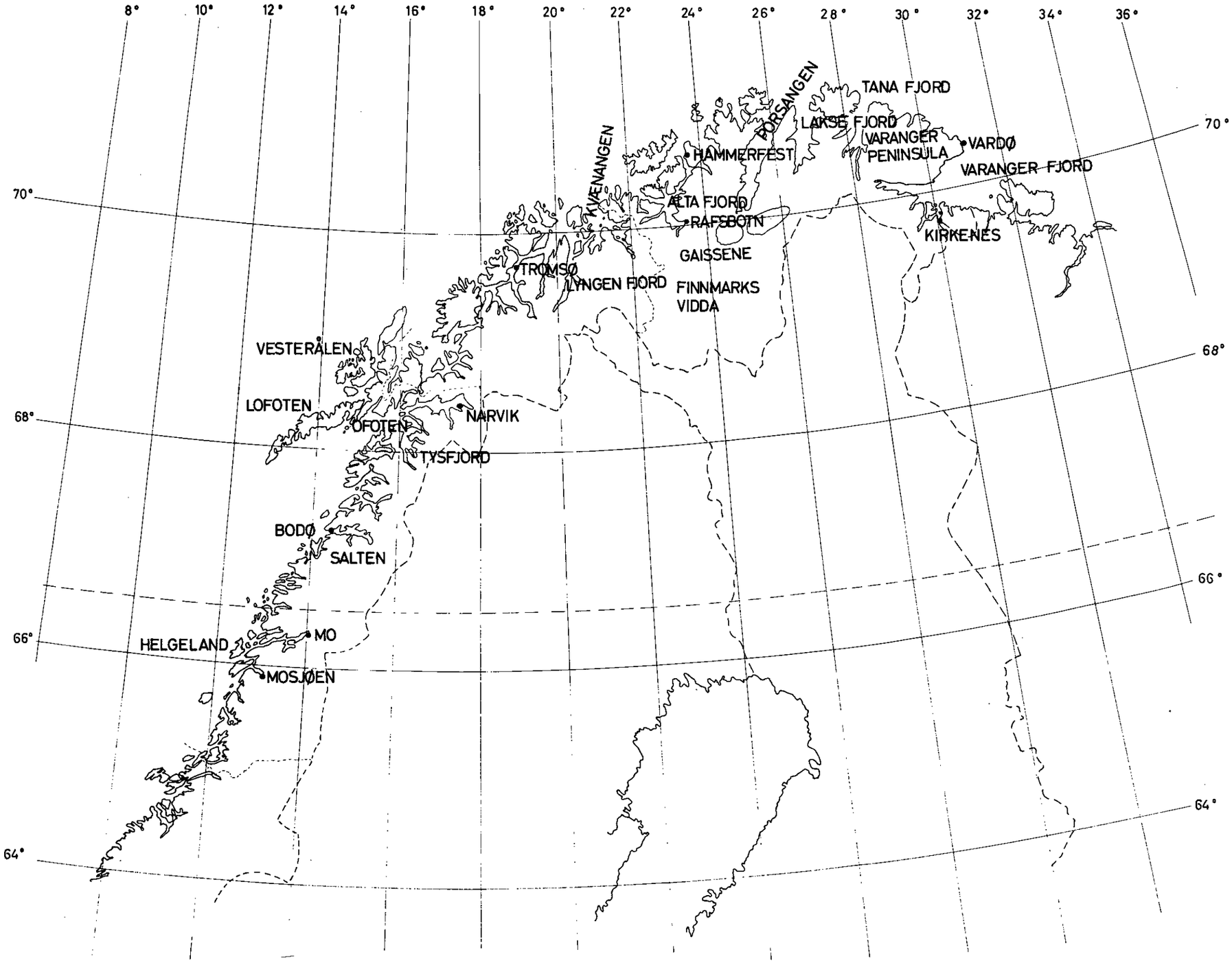

Figure 6.3 North Norway - some names

plateau 300-400 m high, with wide shallow valleys, lakes and marshes. To the north Finnmarksvidda is separated from the inner reaches of the fjords and the peninsula by Gaissene, a 1000 meter high pyramid-shaped mountain range with peaks running in an east-west direction. The coast of Finnmark is unlike the coast line further south. Although in West-Finnmark there are some chains of rugged peaks, these gradually give way to steep chains of heavy mountains with almost perpendicular cliffs rising precipituously out of the sea for several hundred meters. There are no beaches or vegetation. The eastern side of the county is serrated by large open fjords from 65-125 km long, between which lie large flat barren peninsulas. These peninsulas rise directly out of the sea often to the height of several hundred meters. There are no sheltering islands in the central and eastern part of Finnmark. Varanger peninsula, the most easterly of the five peninsulas consists mainly of a desert-like sand and stone plateau.

6.3 Ocean and Fjord Areas

As already stated, North Norway is bounded by the Norwegian Sea to the west, and the Barents Sea to the north. The western boundary of the Barents Sea borders along a line drawn from Tromsø to the southern tip of Svalbard. The Norwegian Sea is deep, reaching a depth of 4,000 m between Iceland and North Norway, near the coast and out to the so-called "edge" the depths are only a few hundred meters. Westwards, from the continental platform, the depths increase rapidly. The distance out to the edge is 300 km in the south of Nordland but only 30 km at Vesterålen. At this point the edge turns north and run along the west side of Svalbard. The Barents Sea is a shallow sea reaching a depth of 400 meters and is part of the Continental Shelf which at this point is unusually wide. Only 3% of this sea is deeper than 400 meters, whilst 48% is less than 200 meters deep.

It is difficult to give a generel picture of the depths of the Norwegian fjords as they vary greatly from one fjord to

another. They often have comparatively shallow ridges at the mouth. In Nordland the depth varies from 300 m to 600 m, in Troms from 200 m to 400 m, whilst the fjords in Finnmark are shallower, from 100 m to 300 m. Navigation along the coast is difficult.

7 CURRENT AND ICE CONDITIONS

The currents off the coast of North Norway are difficult. Along the edge the Gulf-stream dominates, running in a north-north easterly direction. The Norwegian coastal current runs between the shelf-edge and land. The direction varies according to the time of year. In the summer it flows outwards towards the sea, whereas in winter it turns more towards the coast. The tidal waters increase the strength of the current at high-tide but decreases it at low-tide.

Off Troms and Finnmark the course of the current varies greatly dependable on local conditions. Normally the course is north and north east.

Table 7.1 shows the tidal differences at various locations.

Location	Average difference in tides	Average flow
Bodø	1.72 m	2.30 m
Narvik	1.88 m	2.56 m
Tromsø	1.78 m	2.32 m
Hammerfest	1.76 m	2.32 m
Vardø	2.02 m	2.60 m

Table 7.1 Tidal differences off the coast of North Norway (12, vol I)

Many places along the sea-way the current flows, at its strongest, with a speed of 4-5 knots.

The coastal winters are comparatively mild and the outer coastal waters and ports remain open, while the shallow, inner coastal waters, and most of the small fjords are often ice-bound. During a severe winter, the ice may seriously affect communications with Mo, Mosjøen and Kirkenes, while the other larger ports always remain open.

In Troms the inner 10-15 km of Lyngenfjord freeze whilst Kvænangen is always navigable. Altafjord in Rafsbotn, 30-35 km of inner Porsangerfjord, most of the fjords running into Laksefjord and many of the fjords in south Varanger, freeze. The largest fjords in Tanafjord are usually free from ice.

8 CLIMATE

8.1 Factors affecting the climate

Weather conditions in North Norway are affected by two factors; it's proximity to the open sea and exposure to sea-winds, though long mountain ranges shelter the inland districts. The Gulfstream, with its warm, salt water, runs into the Norwegian Sea between the Faroe Islands and Shetland. It follows the edge along Nordland and Troms and continues north past Bjørnøya. One branch of the current runs along the coast of Finnmark into the Barents Sea. This warm stream of waters along the coast and the predominant warm, humid south-west wind creates a stabler, milder climate in North Norway.

In winter, however, a strong current of cold, dry, clear air emerging from the polar area produces dry, very cold weather. At the same time strong low pressure areas often form over Iceland which produce damp, warm weather with heavy precipitation. Although North Norway is on the perimeter of the low-pressure area of Iceland, these low-pressures and the polar air create unstable weather conditions in the winter, particularly in Lofoten, Troms and Finnmark. During the summer the arctic front is non-existent and the force of the wind is considerably reduced. On the whole one can say that,

considering the latitude of North Norway, the temperatures and rainfall are propituous, but this does not apply to the wind.

Practically all North Norway lies in the temperate zone, only the outer districts of Finnmark belong to the Arctic zone, i e where the mean temperature during the warmest month does not exceed 10°C.

8.2 Precipitation and Fog

Due to the topography of North Norway the rainfall is very unevenly distributed. It is heaviest in the centre of Nordland, Lofoten, Vesterålen and the islands of Troms, where the annual downfall is more than 1,000 mm. In the central part of Troms, and the outlying districts of Finnmark, the downfall averages 500-1,000 mm, whilst Finnmarksvidda has only approximately 300 mm a year. Nordland and Troms have the heaviest precipitation from September to November, and West Finnmark from July to September, whilst North Norway as a whole receives least rain from April to June, Finnmarksvidda has least rainfall from January to April (See Figures 8.1 and 8.2).

The differences between the climate of the inland and the coastal districts are most apparent in the winter, when the downfall inland, from November to April, comes as snow, whilst the coast only receives snow midwinter. Outer Lofoten is normally only snow covered for 40 days, Vesterålen for 100-150 days, the coastal and fjord districts of Troms and Finnmark for 150-200 days, and the inner areas for more than 200 days. The border line for the snow varies and it is not unusual for Finnmark to be snow covered down to 600 m above sea level, even in the warmest season.

Sea and coastal fog usually only occurs in summer, while inland fog is most frequent in winter. Table 8.1 shows the yearly variations of the number of fog-free days at various meteorological stations, as well as the number of days with less than 4 km visibility. All figures are percentages and are based on observations taken at 0800, 1400, 1900 hrs.

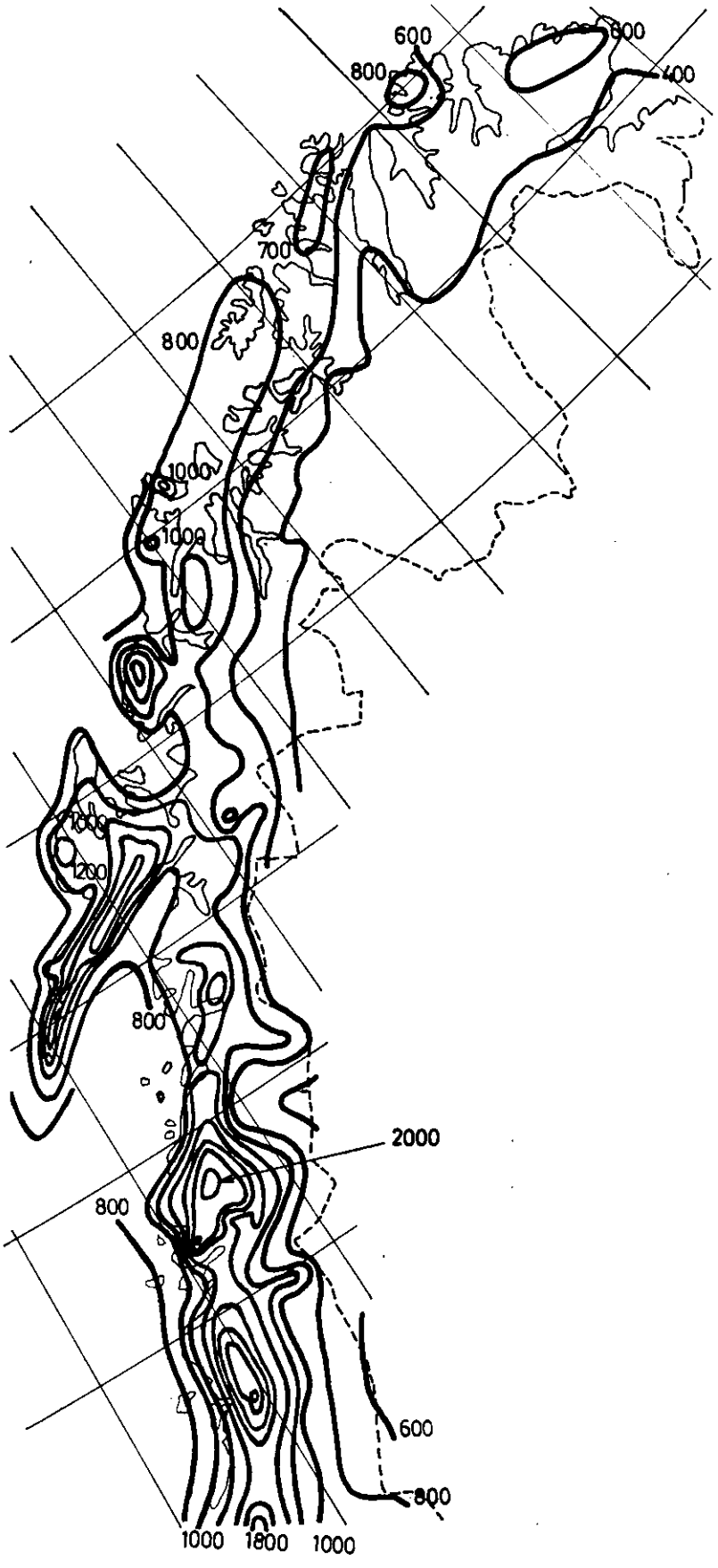

Figure 8.1 Mean annual precipitation in North Norway in mm (Isohyets for every 200 mm)

Figure 8.2 Number of days with precipitation $\geq$ 1.0 mm per year

Time of year / Station	January-April		May-August		September-December	
	Fog free	Visibility under 4 km	Fog free	Visibility under 4 km	Fog free	Visibility under 4 km
Narvik	99.8	5.2	99.7	1.1	100.0	2.5
Skomvær	94.5	10.9	72.5	11.5	90.5	10.8
Andenes	99.8	6.4	93.2	3.1	99.7	3.5
Bardufoss	99.3	7.4	95.8	1.5	95.4	4.2
Alta	99.7	6.5	91.6	1.0	97.2	5.7
Ekkerøy	93.2	13.3	92.2	4.7	94.4	8.6
Karasjok	93.9	7.1	93.5	4.9	86.0	13.4

Time of year station	All the year	
	Fog free	Visibility under 4 km
Narvik	99.8	2.9
Skomvær	85.8	11.1
Andenes	97.6	4.3
Bardufoss	96.8	4.4
Alta	96.2	4.4
Ekkerøy	93.3	8.9
Karasjok	91.1	8.4

Table 8.1 Percentage of days without fog and days with visibility less than 4 km at various seasons based on observations taken 3 times daily from 1946-1950 (15)

Fog seldom occurs over the outer districts of Nordland, but summer fog is comparatively frequent in Lofoten and Vesterålen. In Troms there is comparatively little fog, but in the outer districts of Finnmark and on Finnmarksvidda fog is more frequent.

8.3 Temperature

As already mentioned, the climate in North Norway is much milder than expected at this latitude. The mean January temperature in outer Lofoten is nearly 25° above the normal

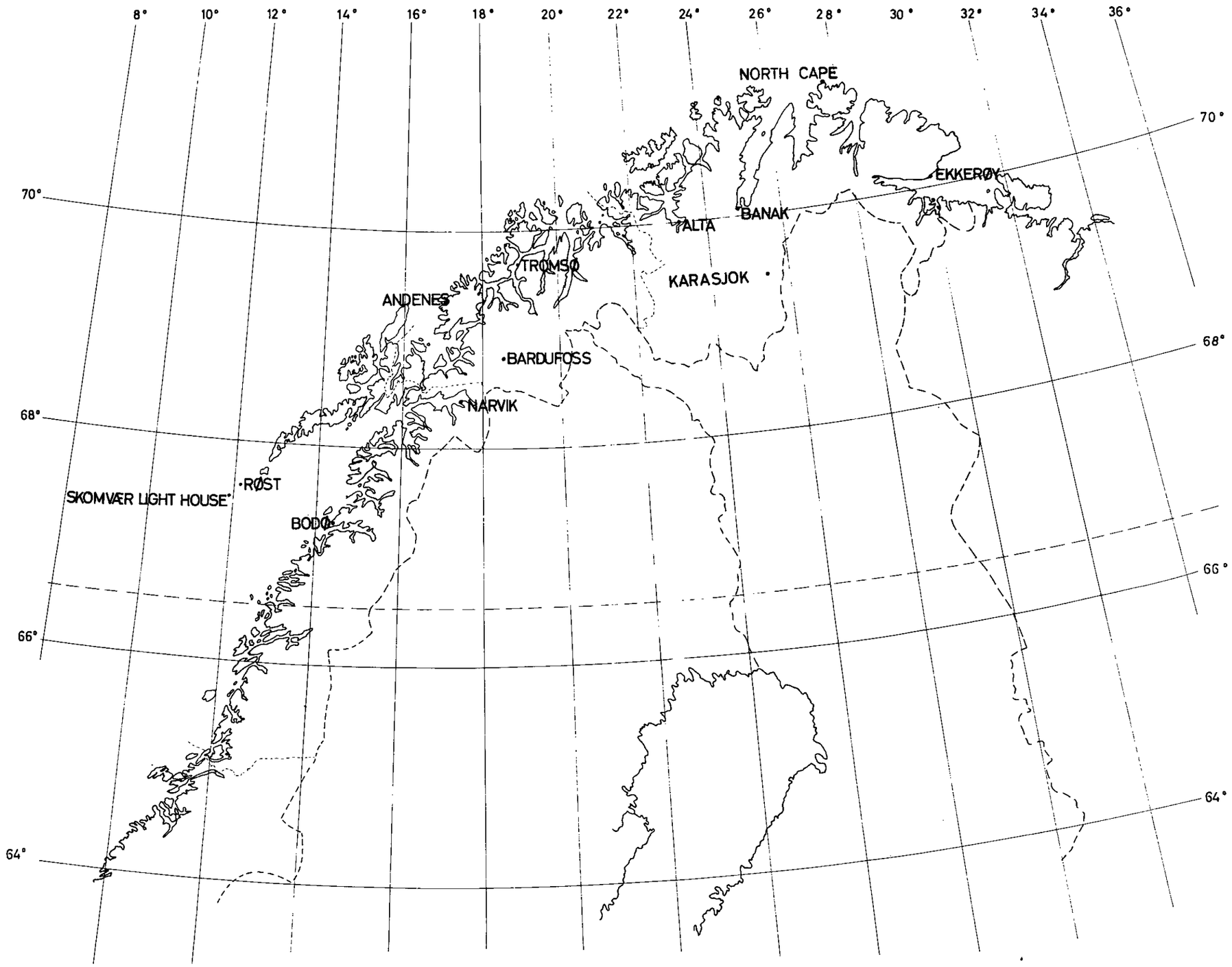

Figure 8.3 North Norway - some names

for that latitude, whilst the summer temperature is about normal. As one moves inland the winter temperature sinks rapidly and is often as low as ÷ 35°C or less. During the summer months these inland districts are the warmest. The isoterms are parallel and follow the coast line. The difference in temperatures between outer and inner districts is greatest in the winter (See Figures 8.4 and 8.5).

The non-periodic temperature oscillations are however great, as weather changes are frequent. One way of describing the temperature conditions is by giving the length of the various seasons. The winter pericd is characterized by a mean daily temperature not exceeding 0°C, during spring and autumn the temperature varies from 0°C - 10°C, and it is summer when the temperature shows more than 10°C.

Table 8.2 shows the average length of the seasons at various meteorological stations in North Norway.

Time of year / Place	Winter	Spring	Summer	Autumn
Bodø	124 days	84 days	77 days	80 days
Røst	0 "	132 "	58 "	175 "
Andenes	126 "	98 "	51 "	90 "
Bardufoss	185 "	57 "	73 "	50 "
Tromsø	166 "	75 "	53 "	71 "
Alta	185 "	59 "	71 "	50 "
Vardø	192 "	93 "	0 "	80 "
Karasjok	204 "	48 "	64 "	49 "

Table 8.2 The average length of the seasons (16)

The table shows that the winter season is very long in North Norway, particularly in the inner districts of Finnmark where there are normally more than 230 frost nights a year (130 of these having a minimum temperature below ÷ 10°C). Meanwhile Lofoten and Vesterålen have very mild winters, with approximately

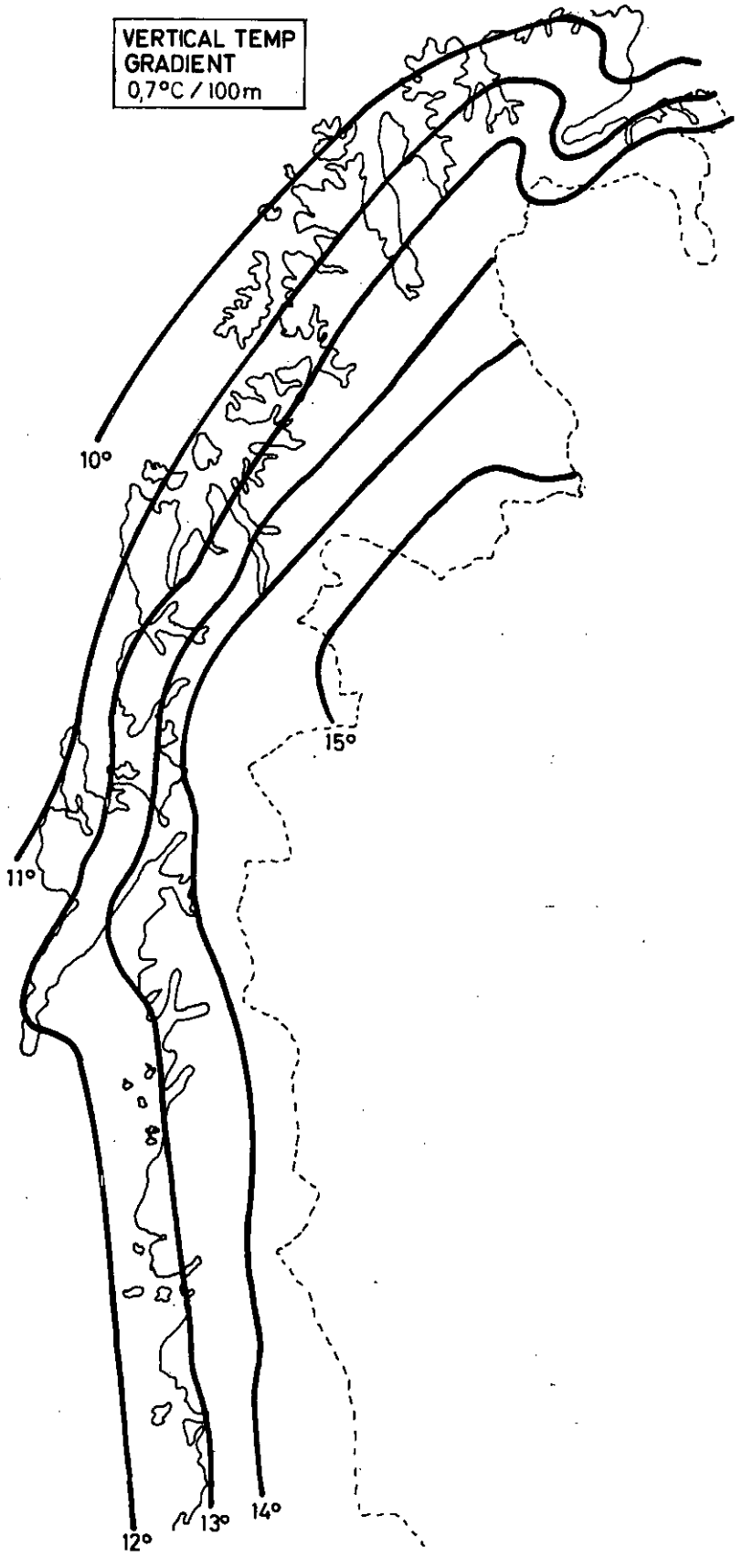

Figure 8.4 Mean temperature in July (warmest month) reduced to sea level for the period 1901 - 1930 in C°

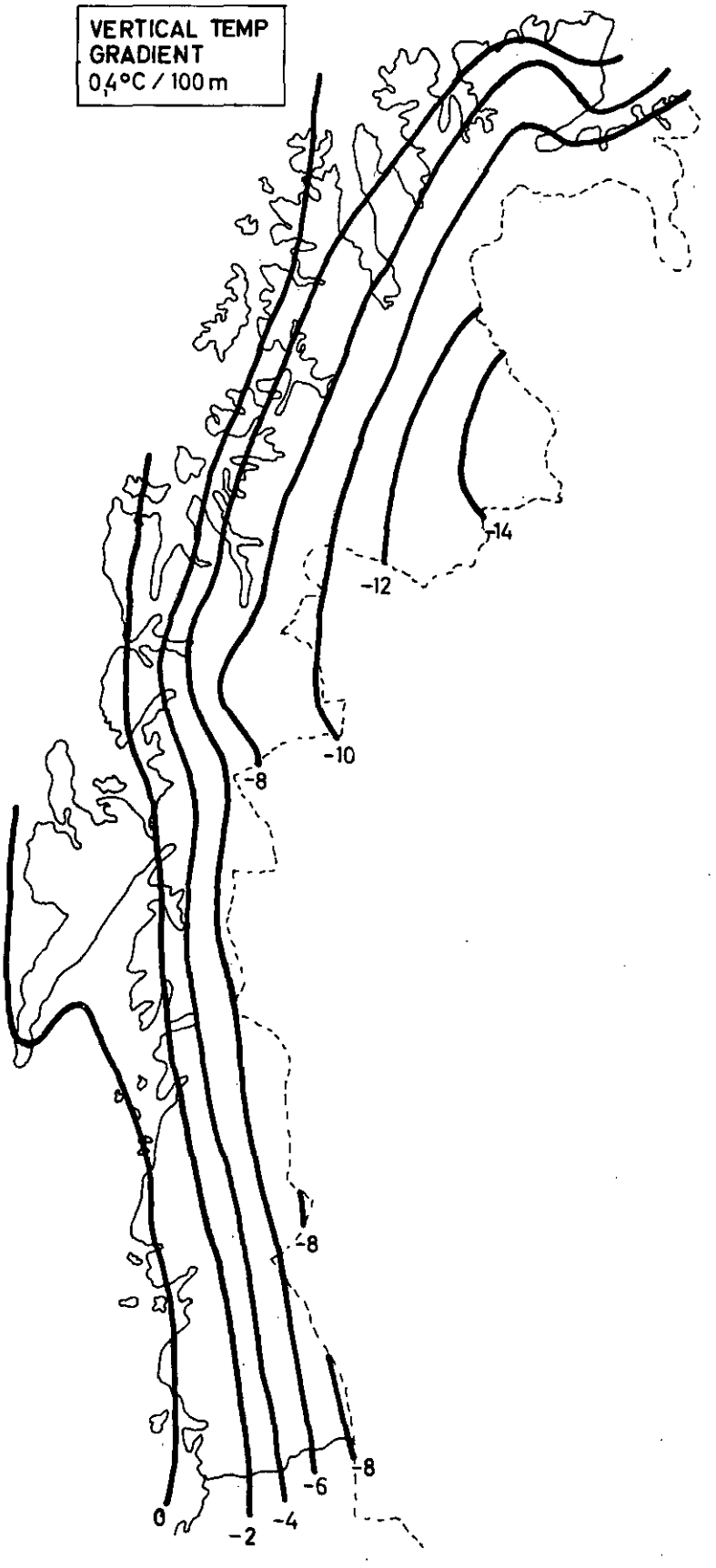

Figure 8.5 Mean temperature in February (coldest month) reduced to sea level for the period 1901 - 1930 in C°

only 130 frost nights annually and of these only 4-5 days with temperatures of ÷ 10°C or below. For the whole of North Norway the coldest month is usually February and the warmest July. Karasjok has the greatest registered temperature range in Norway, the highest temperature being 32.4°C, the lowest ÷ 51.4°C, giving a difference of 83.8°C.

8.4 Wind Conditions

As already mentioned large areas of North Norway are highly exposed to wind. In the autumn and the winter Lofoten to Kirkenes is one of the most tempestuous areas on the European Continent. Forty days of storm a year is normal for the North Cape. The great differences in temperature between inland and coastal districts lead to disturbances in the atmosphere in winter. Cold, heavy air from the mountain plateaus flows out through the valleys and fjords. This type of wind is strongest in Finnmark where the fjords may be unnavigable for days at a time due to squalls. The winter monsoon usually blows from the south west, whilst the summer monsoon blows in the opposite direction (See Figures 8.6 and 8.7).

Table 8.3 shows the individual characteristics of the wind forces at some meteorological stations at the different seasons. The average force of the wind is given according to Beaufort's Scale and the table is based on observations taken 3 times a day from 1931-1940 and 1940-1950.

The table shows that the average force of wind is strongest in autumn and winter. This is in particular typical for the East-Finnmark coast, where the variations in conditions are also greatest throughout the year. During the same period the inland stations of Bardufoss and Karasjok have their greatest number of calm days. The high force of the wind in Vardø throughout the year should be noted. Force 6 is analogous with 10.8 to 13.8 m per sec.

Time of year / Station	December - February			March - May			June - August			September - November			The whole year			
	Force	Direc-tion	No of calm weather obs	Force	Direc-tion	No of calm weather obs	Force	Direc-tion	No of calm weather obs	Force	Direc-tion	No of calm weather obs	Force	Direc-tion	No of calm weather obs	No of stormy weather obs
Bodø	4	E	2	3	E	7	3	SW	16	4	E	7	4	E	32	1
Røst	5	S	5	5	N	3	4	N	5	5	SW	4	5	SW	17	11
Andenes	3	S	3	3	S	6	3	NE	10	3	S	7	3	S	26	2
Bardufoss	1	W	108	2	W	49	2	W	43	2	W	114	2	W	314	0
Tromsø	3	SW	27	3	SW	22	2	NE	27	3	SW	35	3	SW	111	0
Alta	2	SE	22	3	NW	50	3	NW	62	2	SE	54	3	NW	188	1
Banak	4	S	44	2	S	41	2	N	39	4	S	47	4	S	171	3
Vardø	6	SW	1	4	SW	3	3	SE	3	5	SW	2	6	SW	9	15
Karasjok	2	W	170	2	W	124	2	N	96	2	W	169	2	N	559	0

Table 8.3 Force and direction of the prevailing winds for each season. Observations with calm weather, 3 daily observations (18)

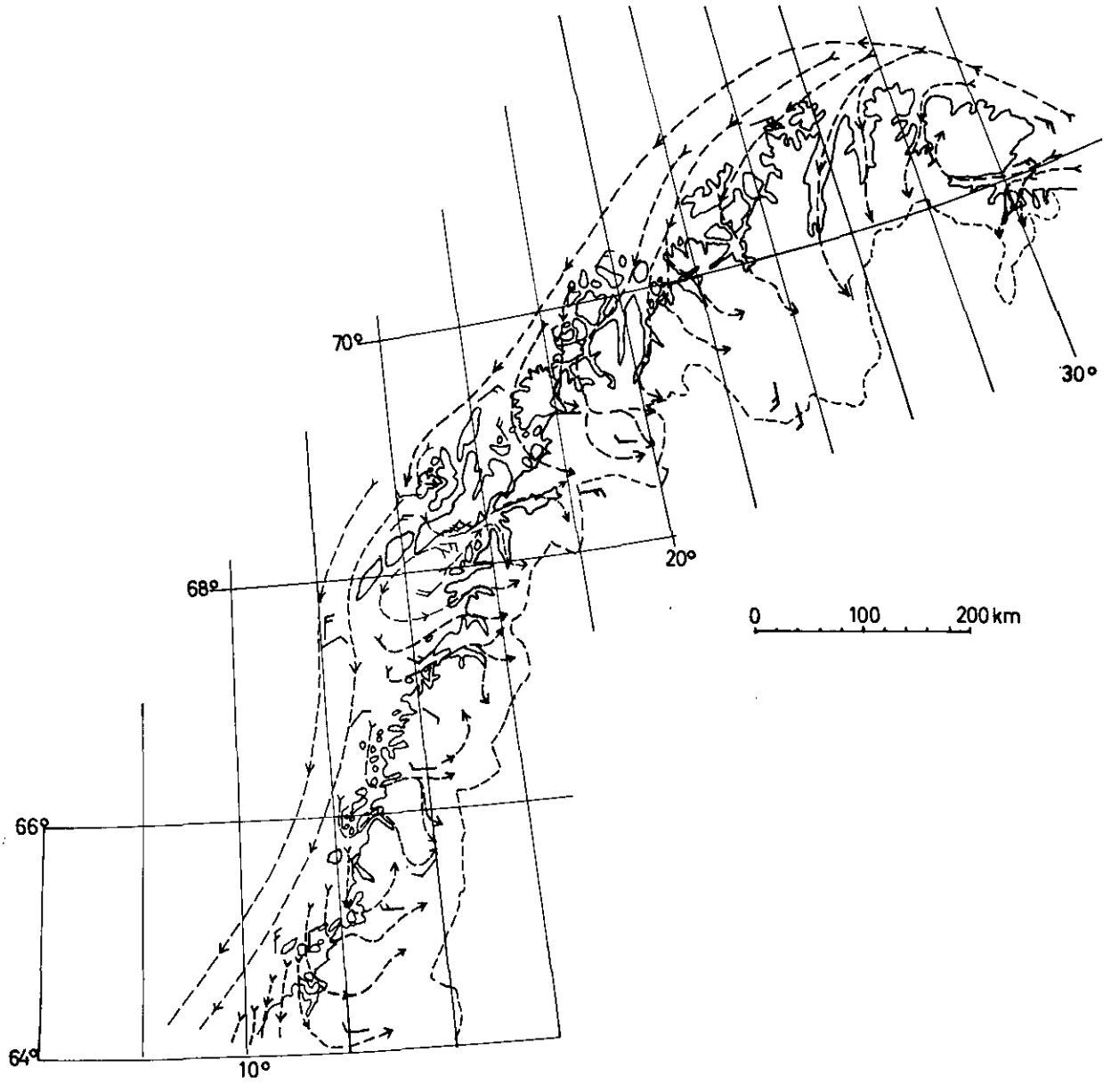

Figure 8.6 Prevailing wind direction in Summer and wind force (Beaufort's scale)

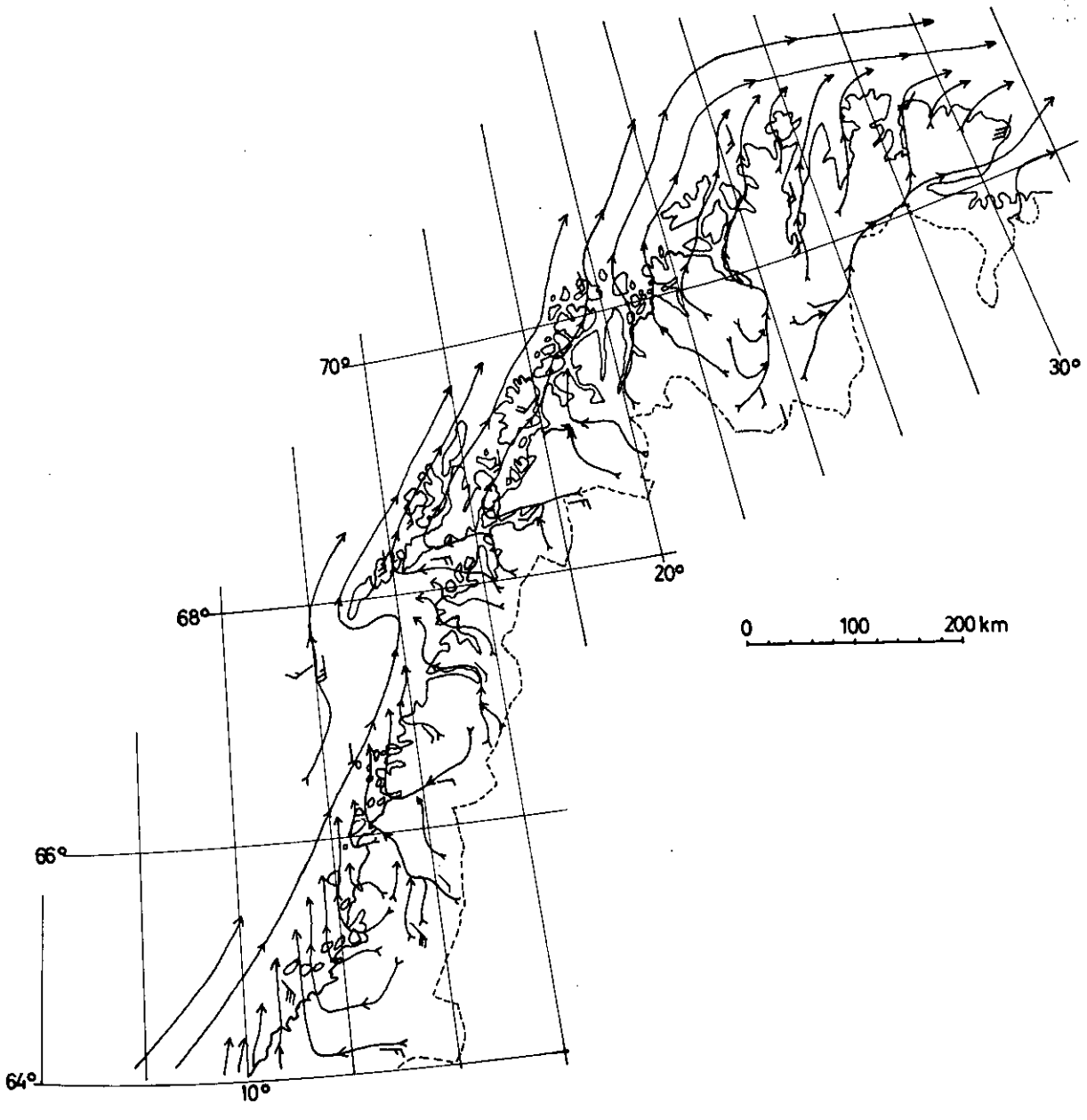

Figure 8.7 Prevailing wind direction in Winter and wind force (Beaufort's scale)

Vardø has also the greatest number of registered storms, normally 15 a year. The force of a storm being 9 or above (more than 20.8 meter per sec).

One should note that the table only gives average figures. It does not show the great variations in wind that may occur from one year to another within seasons and also within certain areas.

8.5 Light Conditions

The conditions of light in North Norway are dependant upon the fact that nearly the whole region lies north of the Polar Circle, 66°33'N. The sun does not rise above the horizon midwinter, and never sinks below it in the midsummer. However, light refraction in the earth's atmosphere causes the midnight sun to be visible from as far south as 66°N, and it also means that, once a year the sun cannot be observed above the horizon at 67°30'N. Further north the length of the dark periods, as well as the periods with midnight sun, increase. Table 8.4 shows the number of days with midnight sun and days of darkness at various places.

Place	Latitude	Days with midnight sun		Days of darkness
		Sun visible	Sun visible total	Less than ½ sun-disc visible
Bodø	67°16'	43	34	14
Andenes	69°19'	65	59	49
Tromsø	69°39'	68	63	53
Alta	69°58'	71	66	56
Vardø	70°22'	74	69	60
Nordkapp	71°10'	81	77	67

Table 8.4 Number of days with midnight sun and days of darkness in North Norway (1)

There is not total darkness until the sun have sunk lower than 18° below the horizon. At winter solstice there is, for example, twilight at 70°N for 3-4 hours a day and there are light nights for about 6 months of the year. The moonlight also brightens the winter months (See Figures 8.8 and 8.9).

The actual amount of sunlight, as opposed to the possible amount for each district, is greatest in the inner areas of Nordland from March-May when it is from 30-35%, whilst the outer areas of Nordland have from 25-30%. Troms and Finnmark have relatively more sunshine from February-April with 35-40% and in July with 35%. On the coast of East Finnmark the maximum sunshine is only 25-30%. In the whole of North Norway October-December the sky is from 70-80% cloud-covered. But in Nordland January and February are also very cloudy months.

9 VEGETATION

9.1 Main Features

The differences in climate, topography and soil in North Norway produce a non-uniform vegetation that is relatively abundant for that latitude.

Nordland has the best climate conditions for forests because of its higher temperatures and greater rainfall. As far south as Helgeland 95% of the forest is spruce. Fir and birch trees replace spruce further north in Troms and Finnmark, Finnmark being the least forested county of North Norway. Birch is the hardest of our trees growing at greater heights than any other trees, and dominating the woods of the two most northerly counties.

As elsewhere in Norway, the tree line is uneven, a sheltered slope enabling the woods to reach higher up and vice-versa. The level of the tree line, which is 700 m above sea level in Inner Troms sinks towards the coast line so that the outer coastline of North Nordland, Troms and Finnmark is barren.

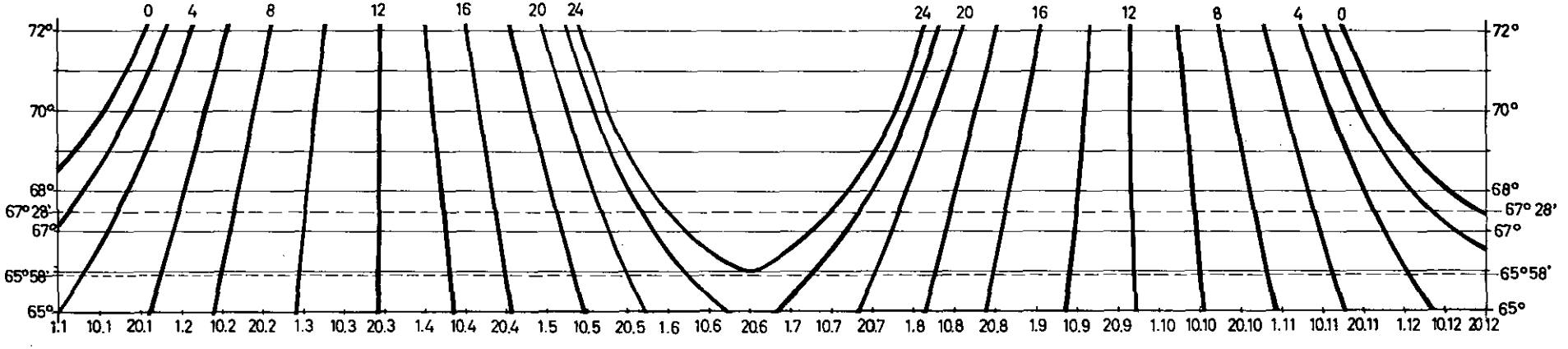

Figure 8.8 Annual variations in duration of daylight (in hours) at latitudes 65°N - 72°N

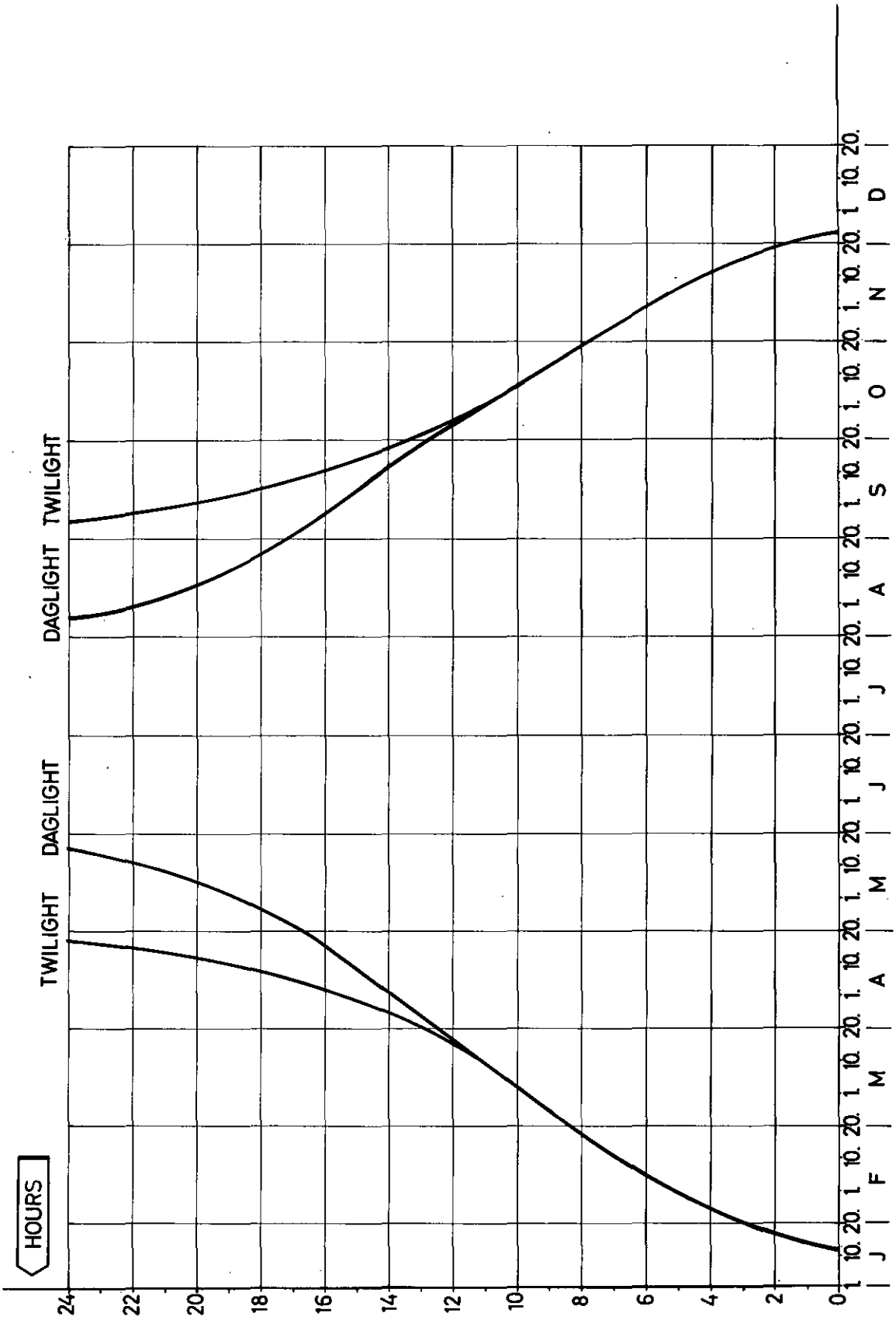

Figure 8.9 Annual variations of daylight and dusk (when the sun is $\geq 9^{o}$ below the horizon) at latitude 70^{o}N

In Inner Helgeland the line is slightly higher, whilst in Inner Finnmark it is about 300 meters above sea-level. (Figure 9.1). The increase in newly planted forest areas in North Norway is now considerable, approximately 65-70 sq km are planted annually.

9.2 The Individual Counties

More than 12% of Nordland is forest. Of these areas 34% consists of coniferous forests and 66% are deciduous. More than half of the coniferous forests are found in Inner Helgeland and Inner Salten, and in the districts around Mosjøen and Mo, and south-east of Bodø. Here spruce is predominant. In the outer areas the coniferous forests are scattered, but also here they consist mainly of spruce. The deciduous forest areas are more evenly spread over the county and particularly the birch forests lie above the coniferous tree line and stretch as far as the coast in many places. About 50% of the area is in Inner Helgeland and Salten.

In Troms forests cover 13% of the area and here only 12% is coniferous whilst 88% is deciduous. Fir trees are predominant in the inner areas, particularly concentrated in the valleys of inner South-Troms and near the borders of Finland. Most of the deciduous forests are to be found in the same areas, but there are also relatively large deciduous forests in other districts in Troms.

Finnmark is 15% forested and as in Troms 12% of the woods are coniferous and 88% deciduous. Fir is found almost exclusively in the districts of Alta, Karasjok and South-Varanger where one also finds the most northerly spruce forests in the world. Nearly 90% of the deciduous forest area below the coniferous tree line is to be found in the three districts. In Kautokeino, Lebesby, Polnak and Tana we also find large deciduous forest areas above the coniferous line. The rest of Finnmark is largely barren apart from some small, wind-swept birch woods.

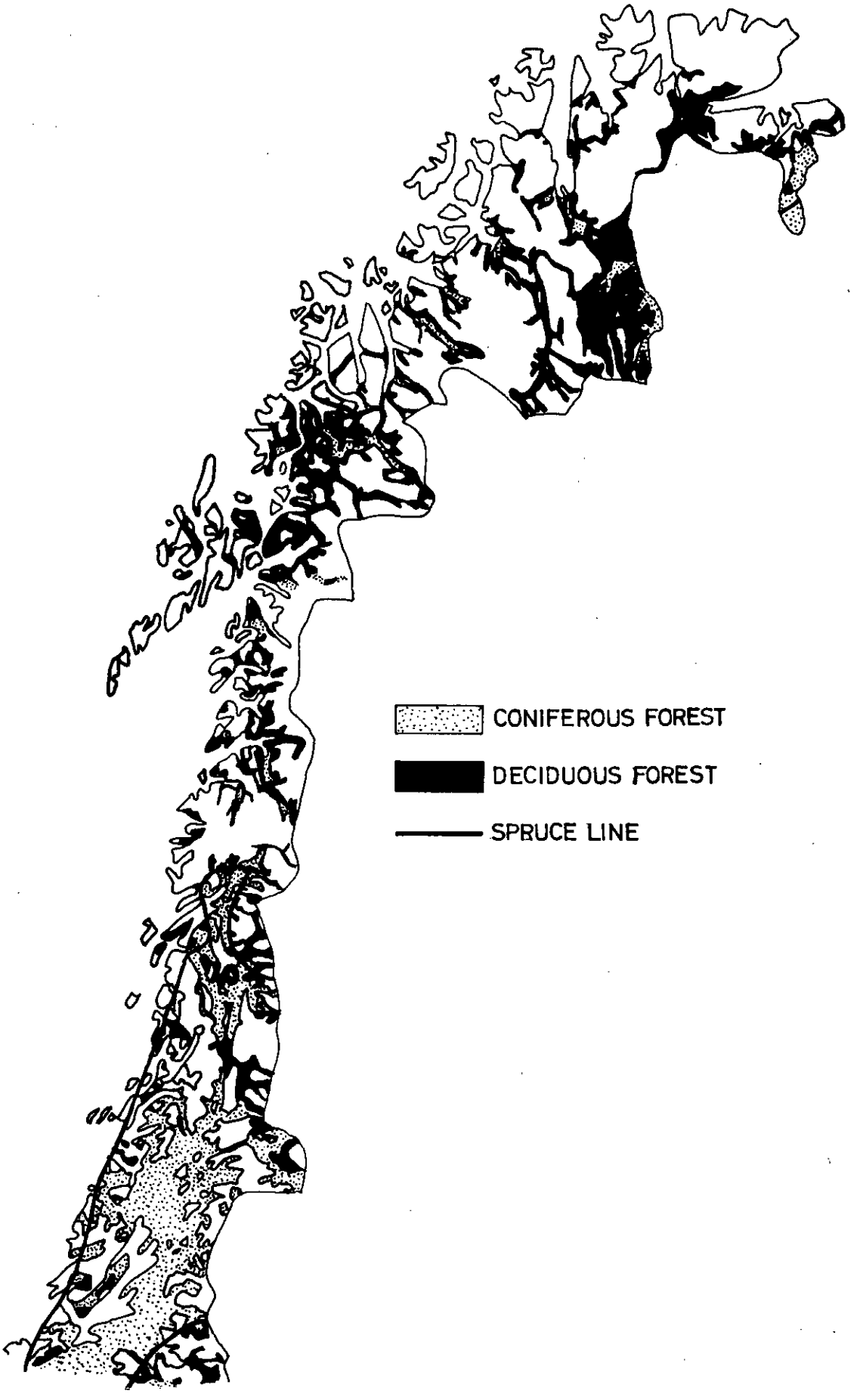

Figure 9.1 Forest covered area of North Norway

10 HABITATION AND DEVELOPMENT OF POPULATION

10.1 Main Features

Even by Norwegian standards North Norway is a very thinly populated area, and, even more so when compared with the rest of Europe. In North Norway the average number of people per sq km is only 3.9 (1964) in South Norway it is 15.3, in Canada 2 and in USA 20 per sq km. This average is greatly affected by the large but poorly populated areas of Inner Troms and Finnmark. The other areas are quite densely populated. In Lofoten the number of people per sq km is 25, and in Vesterålen it is 15. 90% of the population live less than 4 km from the coast and fjords and only 6% live more than 10 km inland. Nearly half the population lives on islands. (Figure 10.1).

There is only one town, Tromsø, with a population of over 20,000 in North Norway. Most of the inhabitants live scattered in smaller places.

The tendency in the last ten years has been towards a greater concentration of population, particularly in Nordland. In North Norway the rate in increase in population is higher than in the rest of the country. But this increase has been reduced due to the number of people who have moved out of the district and shows therefore a relatively smaller net increase than in south Norway.

10.2 Individual Counties

Table 10.1 shows the size of the population of North Norway distributed in the different areas of the three counties. The table includes comparative numbers and number of density for 1964.

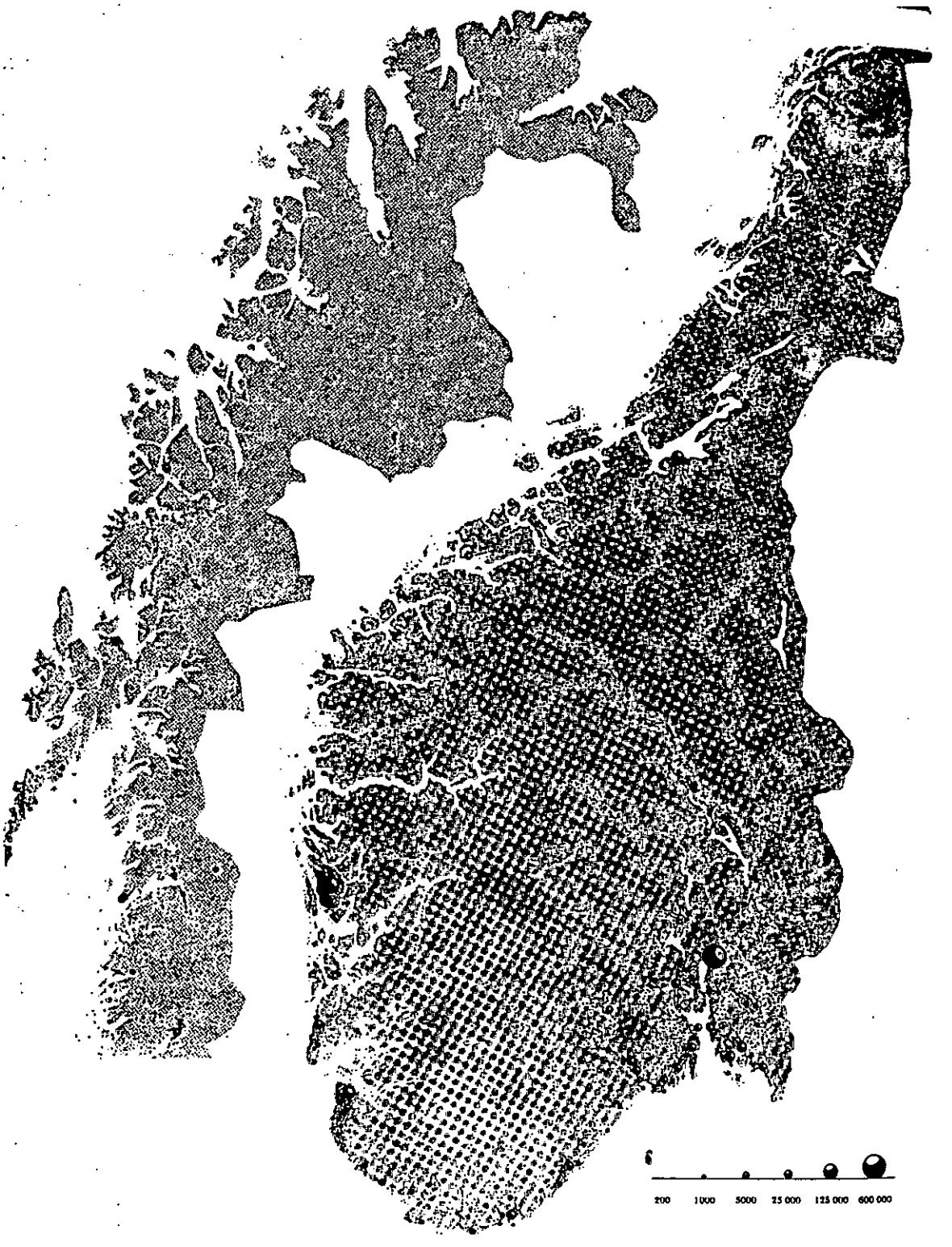

Figure 10.1 Domiciliation in Norway

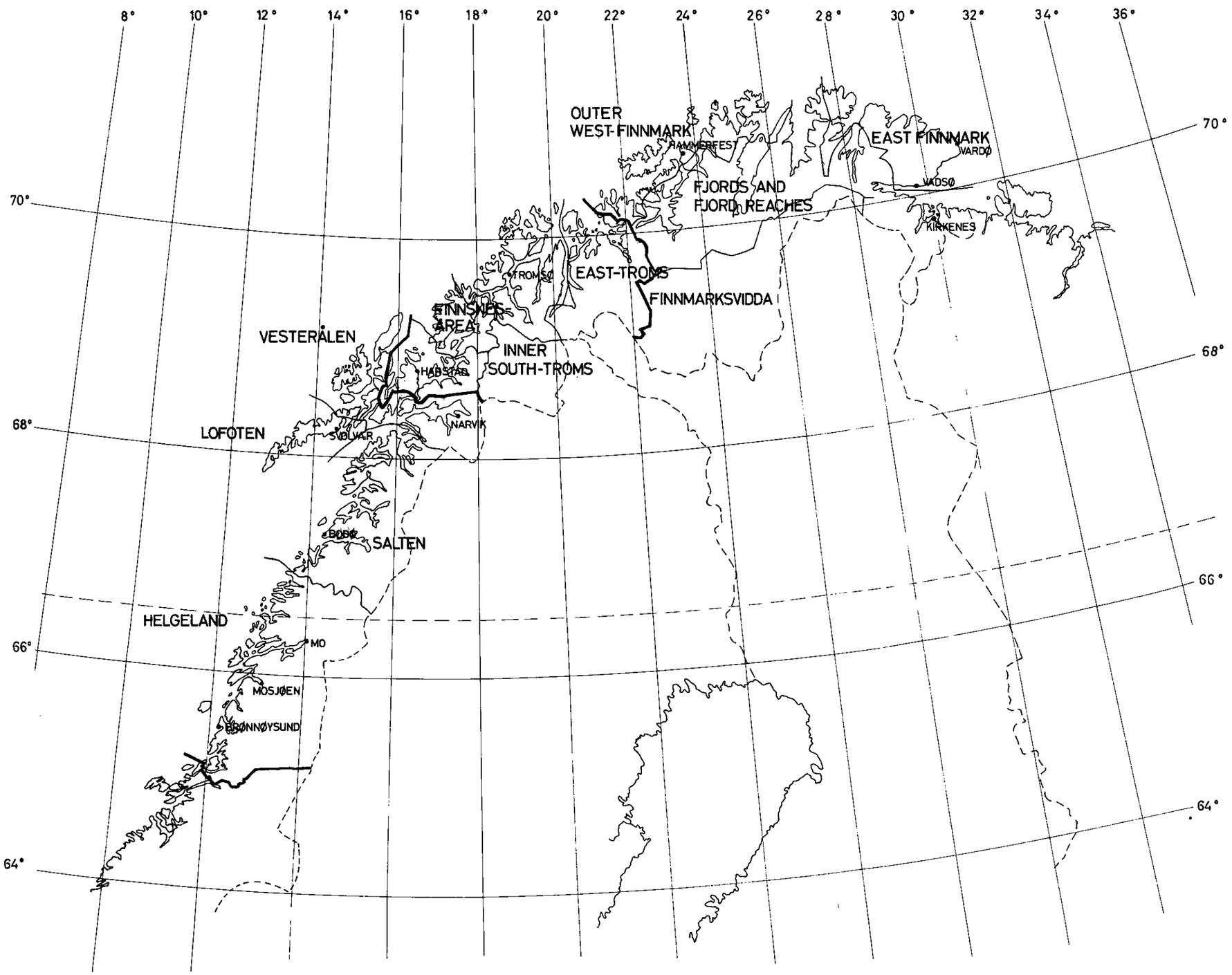

Figure 10.2 Geographical sub-regions in North Norway

County, district	Population	Comparative distribution per county	Density per km^2	Relative distribution in North Norway
Nordland consisting of:	242 164		6.3	54.3%
Helgeland	88 358	36.5%	4.7	19.8%
Salten	59 724	24.7%	5.0	13.4%
Narvik area	31 165	12.9%	7.7	7.0%
Lofoten and Vesterålen	62 917	26.0%	17.5	14.1%
Troms consisting of:	129 634		4.9	29.1%
Harstad and Finnsnes area	56 812	43.8%	10.6	12.7%
Tromsø area	46 923	36.2%	7.4	10.5%
Inner South-Troms	10 804	8.3%	1.8	2.4%
East-Troms	15 095	11.6%	1.8	3.4%
Finnmark consisting of:	73 939		1.5	16.6%
Outer West-Finnmark	21 660	29.3%	5.1	4.9%
Fjords and Fjord-reaches	32 986	44.6%	1.4	7.4%
Finnmarksvidda	4 399	6.0%	0.3	1.0%
East-Finnmark	14 894	20.1%	2.6	3.3%
Total North Norway	445 737		3.94	

Table 10.1 Distribution of the domicile and density of population in North Norway per 1 January 1964 (1,8)

The table shows that more than 50% of the population of North Norway resides in Nordland, whilst only 17% reside in Finnmark, the largest of the three counties. On an average the density of the population lies between 7-8 people per sq km in Nordland and outer Troms, but the number is reduced to less than 2 per sq km in Inner Troms and Finnmark when looked upon as a whole. One should be aware of the fact that large variations are to be found in the individual districts. A

large part of the population is concentrated in densely populated districts.

Table 10.2 below shows how the population in the three counties was distributed in densely and sparsely populated areas in 1960.

County	Densely inhabited districts			Sparsely inhabited districts
	200-1999 people	2000 and over	Total	
Nordland	13%	28%	41%	59%
Troms	9%	24%	33%	67%
Finnmark	22%	34%	56%	44%
North Norway	13%	28%	41%	59%

Table 10.2 Domicile population in densely and sparsely inhabited areas per 1 January 1960 (8)

2/3 of Nordland's population live scattered while less than half of Finnmark's population live in districts with less than 200 inhabitants. The largest towns, including suburbs and densely populated districts were in 1960:

Tromsø	20 774 inhabitants
Bodø	17 902 "
Narvik	15 992 "
Mo	13 954 "
Harstad	11 624 "
Hammerfest	5 806 "
Mosjøen	4 649 "
Kirkenes	4 433 "

Table 10.3 Domicile population in the largest places most densely populated per 1 January 1960 (25)

In 1960 42% of North Norway's population resided in islands. The number of island inhabitants was highest in Troms with 52%, and lowest in Finnmark with 31%, while 40% of the population of Nordland were island inhabitants.

10.3 Increase and Migration of Population

In the previous century North Norway had only 120,000 inhabitants. This number increased to 300,000 in 1930 and to 400,000 in 1950. Up to 1960 the population of North Norway increased more rapidly than elsewhere in Norway. North Norway's percentage of the total population of Norway increased slightly from 1920-1950 but has since shown a slight decrease. In 1964 it was 12.1%.

In latter years more people have moved from, than to, North Norway. In 1961 8,000 people left whereas only 5,000 new inhabitants settled in North Norway. The increase in population for 1961 was practically 5,000 which gave a net increase of approximately 2,000 inhabitants that year. The increase of population in Nordland was 0.4%, in Troms 0.2% and in Finnmark 0.8% as opposed to 0.8% for the whole of Norway.

Lately there has also been considerable movement within this part of the country. For example in 1961 3,000 inhabitants moved from North Norway's rural districts to North Norway's towns (22). During the period 1950-1960 the population in the rural districts of Nordland only increased by 1.0% whilst the town population increased by 43.5%. Corresponding figures for Troms show an increase of 8.7% and 7.9%, and for Finnmark 9.5% for the rural districts and 23.4% for the towns (8). (Figure 10.3).

Immigration has been especially high in the densely populated areas in Inner Helgeland, South-Salten, Harstad, Tromsø, Hammerfest, Alta, and Kirkenes. As a result of this concentration of population in larger industrial areas the coastal districts in Helgeland, Salten, Lofoten, and South Troms have been comparatively depopulated and this tendency, according to

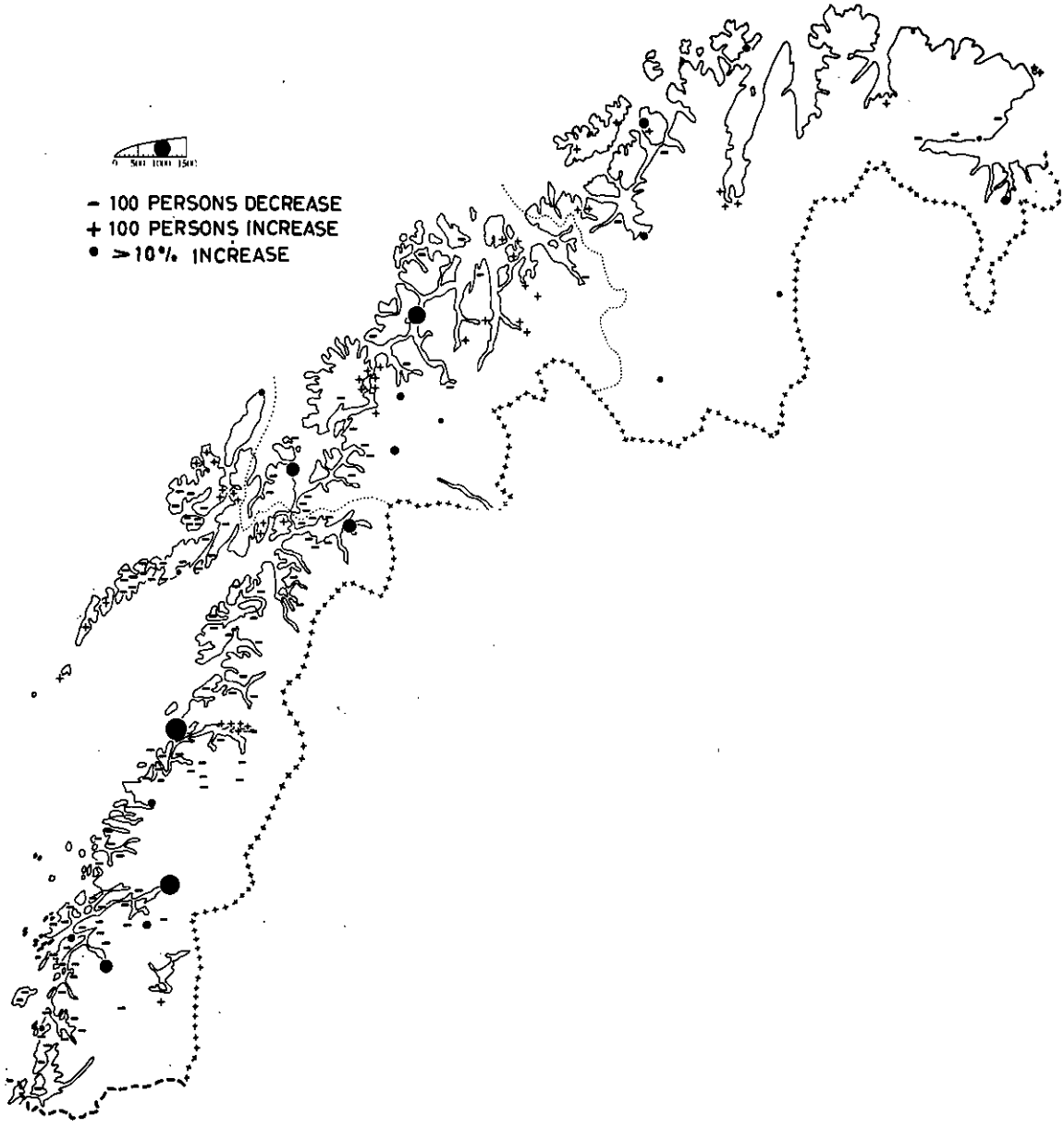

Figure 10.3 Population increases and decreases in North Norway

prognostications, will be stronger in the future.

11 COMMUNICATIONS

11.1 General Survey

Up to the present time coastal transport has been the most important. This is due to the shape, topography and mild coastal climate of North Norway as well as the fact that the sparse, widely scattered inhabitants are chiefly dependant on the sea as a means of existence. Local transport has now become road traffic, and air and train transport are used for greater distances, but sea transport still remains predominant.

There are many good small harbours all along the coast of North Norway, but only a few are able to receive larger vessels. The coastal ships call at all the large ports of North Norway several times a week and the regular passenger route carries annually over half a million passengers. To give an idea of the distances one can state that the regular passenger route takes four days from Trondheim to Kirkenes, including ten hours spent calling at almost 30 different ports.

The road net in North Norway is small, and a large number of the roads are isolated roads of which some are attached to the main net by ferries. Snow closes important parts of the net each winter. Meanwhile roads are constantly being built and improved to eliminate the ferries and mountain passages.

The railway from the south stops at Bodø and it is uncertain whether it will be prolonged as far as Narvik, which, via the Ofotbanen (Ofot railway) has a railway connection with Sweden.

There are relatively few airfields in North Norway, but, here too, there are constant improvements and new airfields are being established. (Figure 11.1).

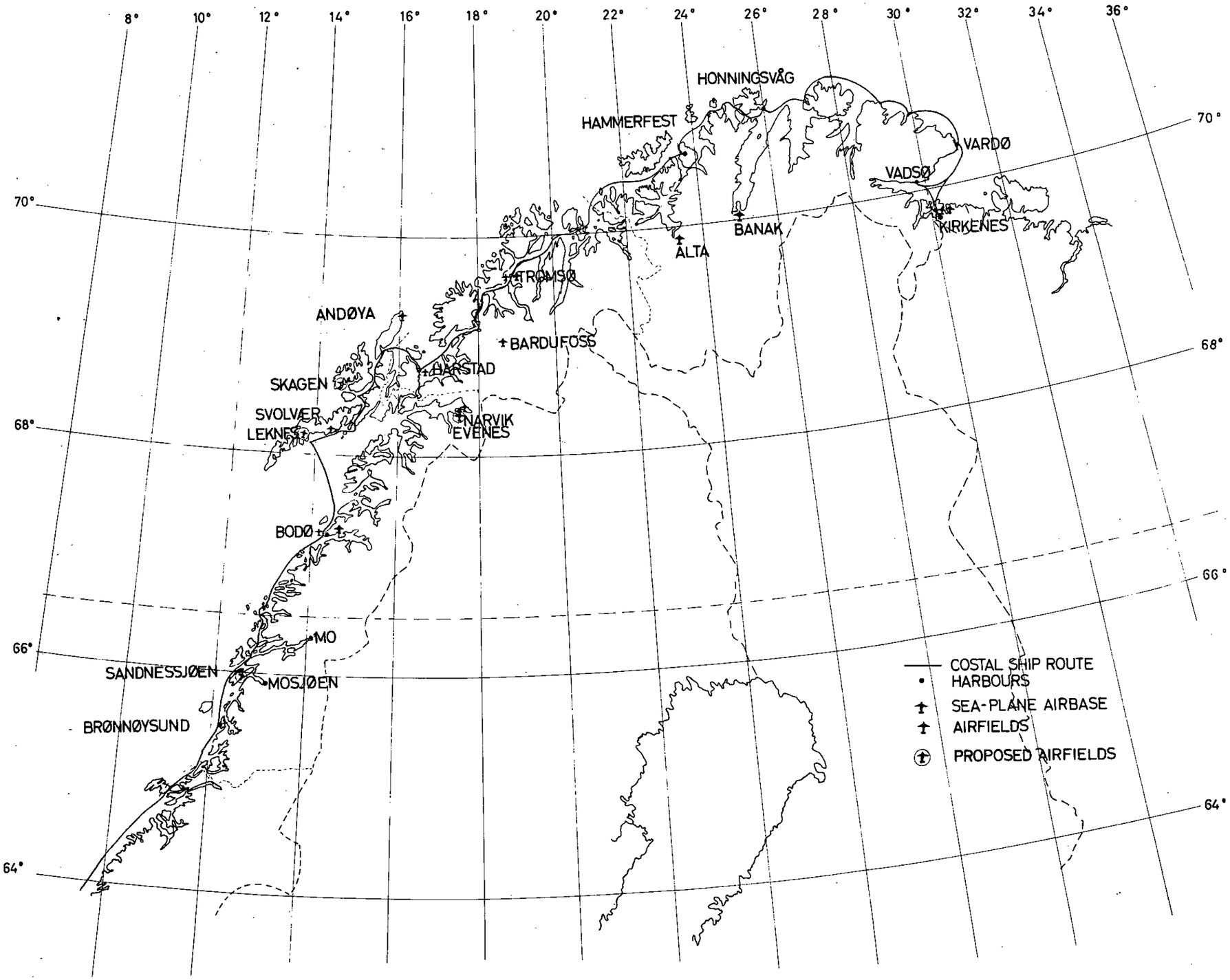

Figure 11.2 Communications in North Norway - Coastal ship route with harbours, airfields, proposed airfields and maritime airbases

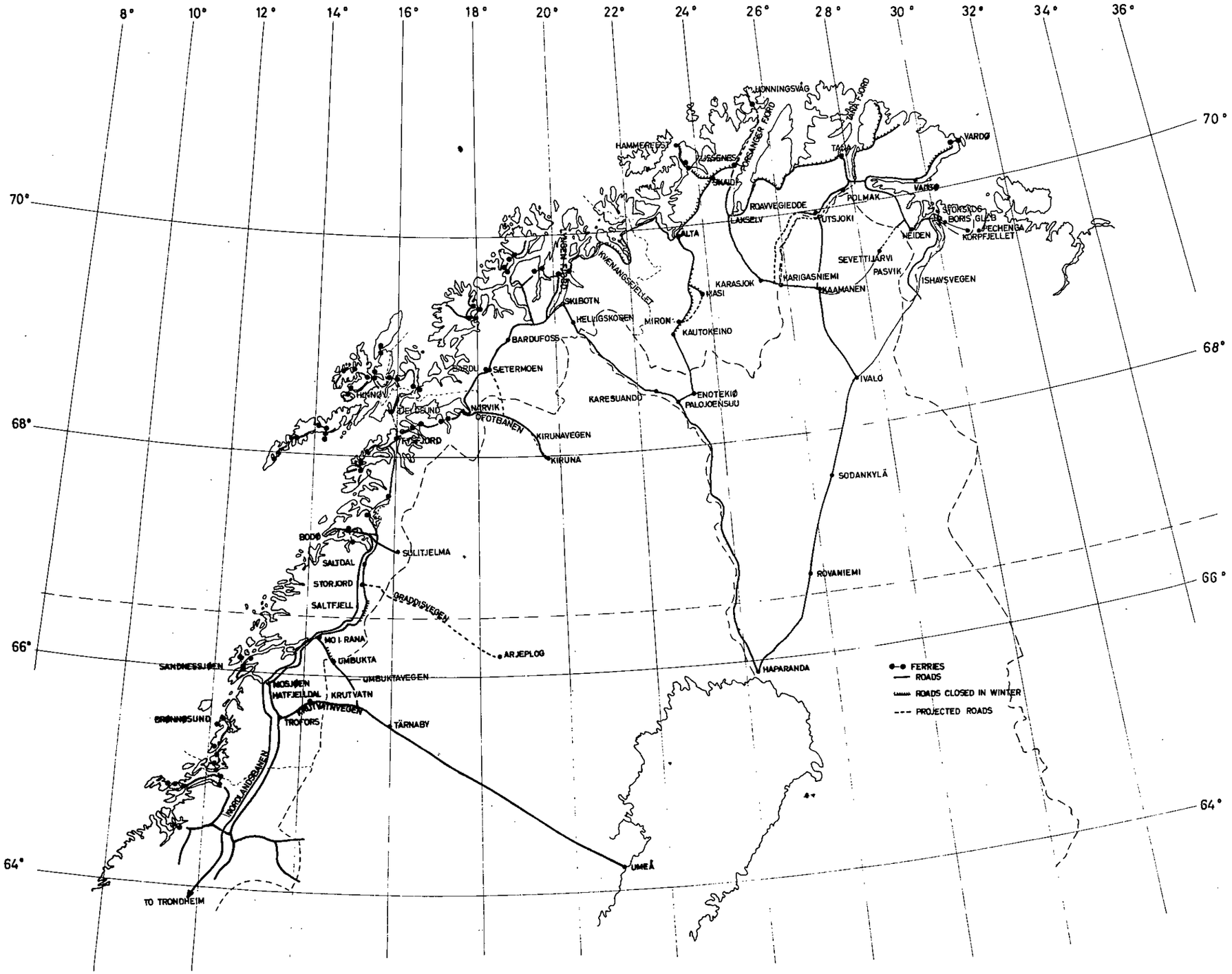

Figure 11.1 Communications in North Norway - Railways and roads with ferries and connections to Sweden, Finland and USSR

11.2 Coastal and Harbour Conditions

There are approximately 80 large and small harbours in North Norway. In Nordland and Troms the harbours are fairly evenly distributed but are more scattered in Finnmark. The main concern of practically all these harbours is to receive and store the haul from the fishing fleets, they are therefore relatively small. Most of the harbours are ice-free but the majority lie exposed. Narvik and Kirkenes are the largest transit harbours in North Norway due to the transport of iron-ore. A considerable number of the other harbours have quite large quays for unloading. Table 11.1 shows a survey over the 11 largest harbours.

Current and ice conditions are favourable for practically all 11 harbours, but the crane capacity is small apart from in Kirkenes and the harbours of Nordland. Only Mo, Mosjøen, Bodø, and Narvik have railway connections with South Norway. Finnmark has the smallest quays and several of these are also dependant on ferries for connection with the main road.

Other important harbour works are Sandnessjøen and Brønnøysund situated on the coast of Helgeland, and Honningsvåg in north Finnmark. There are good anchoring grounds the whole length of the coast, but many of these grounds are very exposed particularly off the coast of Troms and Finnmark. North of Helgeland there are relatively few beaches. The majority are small and narrow and are seldom connected with any road. The roughness of the country is usually the cause of their isolation. In return there are many good places under the cliffs where ships may lay-to. The majority of these places are to be found off the coast of Finnmark and East-Troms.

11.3 Railway Connections

North Norway has permanent railway connections with the rest of the country along the approximately 700 km Nordland railway, which runs from Trondheim to Bodø. The line has been opened

at different stages, it reached Mosjøen in 1940 and its present terminus, Bodø, in 1961. The line is a normal guaged line of Class I, it is not electrified. The minimum curve radius is 300 m south of Mo and 400 m north of Mo. The maximum rise is $18^{o}/_{oo}$ to be found over Saltfjellet, where the line crosses the Polar Circle. The gross weight in Nordland can be 800 tonns. The journey from Trondheim to Bodø today takes at least 13 hours. Plans are in progress to prolong the Nordland line to Narvik (226 km) and it is presumed that the decision over this extension will be made within 1970.

11.4 Road Net

As mentioned earlier it has taken longer to develop a good modern roadnet in North Norway than elsewhere in the country. Real progress was first made in 1940. Since 1900 relatively fast progress has been made in Finnmark. In 1900 there were only 2,200 km of roads in the whole of North Norway, in 1940 there were 5,700 km and today there are 9,000 km.

The table below shows the length of public roads outside the towns and in the three northern counties in 1962.

County	Total length of road in km			Asphalt-covered roads			Density of roads
	Main road	Side road	Total	Main road	Side road	Total	
Nordland	2397	1908	4305	51	1	52	112 m pr km^2
Troms	1608	1079	2687	26	-	26	102 "
Finnmark	1562	392	1954	25	-	25	40 "
North-Norway	5567	3379	8946	102	1	103	79 "
Norway	25663	27561	53224	3969	679	4648	164 "

Table 11.2 Shows the length of public roads outside the towns, per 31 December 1962 (28)

The table shows that North Norway has about 17% of the total of roadnets outside towns in Norway. This part of the country has only 2% of the total of asphalt covered roads. The road density decreases from Nordland to Finnmark, and for this part of the country as a whole it is only 79 m of road per sq km. area. From 1957-1962 there was on an average 275 km of new roads built per year. Almost half of these were built in Nordland.

The length of public roads does not give a correct picture of the possibilities for road communications in North Norway, as many of the roads are isolated from the main roadnet, which is Route No 50 from Oslo to Kirkenes. Roughly speaking Route No 50, including connecting side-roads, represented 65% of the counties' roads in 1959, while 18% of the road-lengths are connected with this main road by ferry. This means that 17% of the roads had no connection with Route No 50 or any of the adjoing side-roads. The best connected roadnet is to be found in Finnmark, where only 10% of the roads are isolated, in Troms 12% are isolated and in Nordland 25%.

The ferry-connections are of the greatest importance in Nordland. The main Route No 50 in North Norway covers today 1,686 km of which 43,6 km are covered by ferries. This route is dependant on four ferry-connections in Nordland, one in Troms and none in Finnmark. Two of these ferry-connections in Nordland are expected to be replaced by bridges and one will be eliminated by a new lay-out of the road within the next 5 year period. It is doubtful whether it will be possible to eliminate the remaining two ferries (Tysfjord and Lyngen).

Several roads are blocked by snow during the winter and by mud during the spring thaw. The main Route No 50 is blocked at most of the mountain-passages which lie above the tree boundary. These are to be found at Saltfjellet in Nordland, Kvænangsfjellet i Troms, between Alta and Russenes and between Porsangerfjord and Tanafjord in Finnmark. These snow- blockades may last from 4-6 months, and even the Germans with large quantities of material and manual labour were unable to keep

the connection open with South Norway during the years of occupation. Work is in progress to establish an all-year-round connection Oslo-Kirkenes but this will necessarily be a long-term project. It is possible, however, that the road over Saltfjellet may relatively soon be turned into an all-year-round road, but it will certainly take a long time before a west-east road can be built across the Finnmark plateau. Other important roads which are blocked by snow are between Mo-Umbukta, 50 km of the road between Kautokeino and Alta, Skaidi to Hammerfest and Vardø to Vadsø. On the other hand the roads from Tana, Lakselv and Skibotn to the Finnish border are open all the year round.

In general it may be noted that the standard of the side-roads is lower than that of the main roads. The majority of roads built now have a width of 3.5 meters and can carry a weight of 10 tonns per axle. Many of the old roads have too weak a fundament to carry modern traffic and become unservicable during the spring thaw and after heavy rain. The transport capacity of the roadnets is limited by the width of the bridges and the weight they can sustain.

Some characteristics of main route 50 are given below.

Distance	Distance in km	No of bridges with road width			No of bridges with allowed axle pressure				
		Under 4.5 m	Over 4.5 m	Total	5 t	6 t	8 t	10 t	13 t
N-Tr lag border - Narvik	591	66	98	164	49	82	1	30	2
Narvik - Finnmark border	406	37	80	117	30	44	0	42	1
Troms border - Kirkenes	615	27	161	188	0	10	0	178	0
N-Tr lag border - Kirkenes	1612	130	339	469	79	136	1	250	3

Table 11.3 Bridges on main Route 50 distributed according to width and allowed axle pressure (27)

Taken as a whole 28% of the bridges have a width under 4.5 m and 17% of the bridges can sustain a maximum weight of 5 tons. The widest and strongest bridges are to be found in Finnmark and North Troms, where practically all the bridges have been rebuilt after the war. The weakest bridges are to be found between Fauske and Narvik. The adjoining side roads have the same characteristics. The bridges here are best in Finnmark and weakest in Nordland.

Apart from the elimination of the ferries and snow blockades on the main Route 50 other important plans are the construction of a bridge over Tjeldsundet to Hinnøy, a main coastal road from Mo to Bodø, and the completion of the Lofot road. A large proportion of work goes towards the reinforcements of the existing road-net by improving bridges, drainage, asphalting etc.

11.5 Airfields

There are not many airfields in the north. There are only 7 large airfields and 5 small ones. A number of small airfields are under planning. The most important sea-plane airbases have up to the present been Bodø, Narvik, Svolvær, Harstad, Tromsø and Kirkenes.

Specifications of the larger airfields are given below.

Airfield	Length	Width	Surface
Bodø	3140 m	45 m	Concrete
	3000 m	15 m	Concrete
Andøya	2440 m	45 m	Concrete
Bardufoss	2440 m	45 m	Concrete
Tromsø	2030 m	40 m	Asphalt
Alta	1400 m	40 m	Asphalt
Banak	2000 m	30 m	Asphalt
Kirkenes	1600 m	40 m	Asphalt
	1270 m	40 m	Single

Table 11.4 Length, width and surface of the most important airfields in North Norway

Main airfields are Bodø, Bardufoss and Tromsø (opened in 1964).

All these airfields are open for commercial traffic. (but they serve also military purposes).

The committee for further building of the air net has given 1st priority to Evenes near Narvik, 2nd priority to Leknes in Lofoten and Stokka on Alsten near Sandnessjøen and 3rd prioroty to Skagen in Vesterålen.

The report has not yet been dealt with by the Storting.

11.6 Communications with Sweden and Finland

11.6.1 Railways

The only railway connection from North Norway with the neighbouring countries is the Ofot-railway, which runs between Narvik and Kiruna in Sweden. It was established in 1902 for the purpose of transporting Swedish iron-ore to an ice-free port. The railway has further connections with the Swedish railway-net. The Norwegian part of the line has a length of 42 km. The distance between Narvik and Stockholm is 1,580 km. It takes 32 hours to travel from Oslo to Narvik via Sweden. The distance is 1,925 km. The railway is driven by electricity. It is built for an axle pressure of 18 tons, (average Norwegian standard), but within 2-3 year it will be developed for an axle pressure of 25 tons. The steepest gradient is 17% and the curve radius has a minimum of 300 m (with one exception). 16 million tons of iron-ore were transported in 1964. The quantity is expected to increase to about 20 million within 1965. One iron-ore train can carry more than 2,500 tons.

11.6.2 International Main Roads

In the county of Nordland there are two roads leading from main Route 50 into Sweden. One goes from Trofors over Hatfjelldal-Krutvatn to Tärnaby (Krutvatnvegen) (110 km). The Norwegian section of the road is 73 km. It is a good road, serviceable all the year round. The other road goes from Mo i Rana over

Umbukta to Tärnaby (Umbuktavegen) (125 km). The Norwegian section of this road is 40 km. Work is in progress to keep the road open all year. Tärnaby has further connections with the Swedish road net and the total distance of the road from Mo i Rana to Umeå (Sweden) is 570 km.

A Swedish-Norwegian commission recommended in 1965 that the work in progress on the Umbuktavegen be completed by 1971. The road will then be serviceable all year. The commission furthermore recommended that the Norwegian Government by the summer of 1965 arrive at a decision concering the final constructions on the so-called Graddisvegen from Storfjord in Saltdal, Norway to Arjeplog in Sweden. Only 17 km remain to be built on the Norwegian side and 70 km on the Swedish side. The road could be completed by 1974. The third project considered by the commission was the so-called Kirunavegen from Kiruna in Sweden to Narvik and Sætermoen. Swedish military authorities would not recommend the project and further deliberations will take place during 1965 for purposes of reaching a decision in the matter. (30).

In the county of Troms a road open all year runs from Main Route 50 to Sweden over Skibotn-Helligskogen to Karesuando-Haparanda (535 km). 67 km of this road are on the Norwegian side. There is also an international main road from Alta over Kautokeino to Enontekiö and on to Palojoensuu on the road Skibotn-Haparanda (232 km). 168 km of this road is on the Norwegian side. The Norwegian part of this road is in bad condition and is closed during the winter between Masi and Mieron. This section of the road is being rebuilt so as to be kept open all the year round. It is expected to be completed in 2-3 years.

In Finnmark county there are two roads from Main Route 50 into Finland. The one road which is open all year goes from Lakselv over Karasjok to Karigasniemi-Ivalo-Rovaniemi (526 km). 93 km of this road are on the Norwegian side. The other road goes from Tana over Roavvegiedde to Utsjoki and Kaamanen (171 km). 81 km of this road is on the Norwegian side.

During the summer the road is dependant on the ferry over the river Tana, during the winter the road crosses the river by an ice-bridge. In consequence the crossing possibilities in spring and autumn are limited. Finnish authorities will hasten the road building on the Finnish side of Tana from Utsjoki to Polmak on the border. As a result the unreliable ferry connection will be eliminated. This road is expected to be finished 1965/66. The Norwegian part of the road from main Route 50 will be 20 km.

Finland has planned to prolong a new all-year road from Kaamanen to Sevettijärvi, towards the Norwegian border. The road inspector in Finnmark has suggested that a road should be built from Øvre Neiden to the border (8 km). This road could be completed within 3-4 years.

In 1964 the municipal authorities in Sør-Varanger took the initiative to re-open the so-called "Ishavsvegen" for international traffic. The road runs from Ivalo in Finland, over the Finnish-Russian border south of Pasvik and follows the Norwegian-Russian border northwards to Boris Gleb, where it crosses to Norwegian territory. The road has been closed for international traffic since the end of World War I. The distance Kirkenes-Boris Gleb-Ivalo-Sodankylä-Rovaniemi is 480 km. The Norwegian part of the road is 13 km.

There are two secondary road connections with the Soviet Union at Storskog and Boris Gleb. A cart track and winter road runs from Pechenga over Korpfjellet. The border is closed to traffic.

11.6.3 Air Routes

Finnair has a summer route between Rovaniemi and Kirkenes. In 1963 and 1964 respectively there were 1400 passengers. During the summer of 1964 there was flight connections between Kiruna and Bardufoss twice a week.

12 CONCLUSION

North Norway represents 1/3 of Norway's total area, but populates only $\frac{1}{9}$ of Norway's inhabitants. Practically 2/3 of North Norway consists of bare mountain and 1/10 is productive land and forest area. Topographically North Norway is characterised by the massive mountains running through Nordland and Troms, the vast Finnmark plateau and all the fjords and islands. Considering the latitude the climate is favourable apart from the wind conditions. More than 4/5 of the country lies north of the Arctic circle which means that for a period during the winter the sun does not rise above the horizon, while during the summer months the sun shines 24 hours a day. Approximately 1/8 of North Norway is covered by forest. The areas with deciduous forests above the coniferous belt are comparatively large.

In all 9/10 of the population live along the coast and 1 out of 2 live on islands. 2/5 live in densely populated areas. The population is increasing rather slower than in the rest of the country.

Up to the present most of the transport has gone by sea, but now an ever increasing part is going by road. The road-net is under developed and the railway stops just north of the Polar Circle. Harbour facilities are relatively good but the majority of harbours can only receive small ships. Both the road-nets and airfields are under constant improvement and expansion.

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CONTENTS

THE ECONOMY OF NORTH NORWAY[x)]

1 INTRODUCTION

By Norwegian standards the economy of North Norway has always been considered underdeveloped, with low individual income, high seasonal unemployment, lack of employment and stringent municipal economy.

In 1939 the share of the gross national product was only 6% and it increased to 8% in 1957. During this period 12% of the Norwegian population lived in this area. There are two circumstances that explain this relatively weak representation in the national economy.

a) From an economical point of view North Norway has a less favourable position with high employment in forestry , agriculture and fishing which, by experience, have proved to be trades with low productivity.

b) Productivity of the individual trades is on the whole lower in North Norway than in the rest of the country.

What can be the cause of this unfavourable economical picture? First and foremost the natural circumstances are difficult. The topography, climate and the lack of easy utilization of resources are the causes of the strictly limited economy in North Norway. When one also realises that the population live scattered and have restricted communications, that equipment of trade production is poor and that knowledge within the trades is relatively small and retarded, it is understandable that the preconditions of the economy of North Norway are rather unfavourable.

Northern Norway was the district which was hardest hit by World War II, as the whole of Finnmark and East-Troms were

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x) See map on page 37

leveled to the ground by the Germans during their retreat to Lyngen in 1944. Most places were entirely destroyed, in Finnmark, for example, about 80% of the houses were left in ruins, 500 factories, workshops and fishing-centres, 118 power-plants and 350 bridges were destroyed, etc.

At the same time the majority of larger places in Nordland and Troms were bombed. Re-building began in the spring of 1947 and was completed over a period of 8-9 years. Even before the completion of this re-building period it was realised that special efforts would have to be made to raise the economy of North Norway to the same level as the rest of the country. In 1952 the Storting passed the so-called North Norway Plan. The aim of this plan was to establish more places for permanent employment by economical expansion and at the same time to raise the productivity in industry, as well as in agriculture and fishing. Special importance was attached to the expansion of the trades that were naturally advantageous in North Norway. It was also necessary to include basic investments such as expansion of power-plants, communication-nets, schools, etc, as well as surveying and investigating natural resources.

The main modes of assistance were amongst others special grants through the state-budget, to "corner-stone" industries (e g The Iron Works at Mo), loans and guarantees via a special Fund for North Norway (Utbyggingsfondet for Nord-Norge), and tax-arrangements which were specially favourable towards investments in North Norway.

During the programmed period 1952-1960 North Norway's share of the gross national product rose from 7.1% to over 8%, and the economical increase was in fact slightly higher here than in the rest of the country. To what extent this development was due to projects under the expansion programme is uncertain. Generally speaking the development has undoubtedly been greatly influenced by the special efforts within the programme and by other public investments at key-point sectors. The Expansion Fund for North Norway was amalgamated in 1961 with The Districts Expansion Fund, which is

responsible for the development of all trades throughout the country.

To make it easier to judge the result of the plans for North Norway it could be appropriate, briefly, to sum up North Norway's economical background, its natural resources, employment, educational level etc.

2 ECONOMICAL BACKGROUND

The natural resources of North Norway are relatively small, few in number and inadequately mapped out. Iron-ore and minerals are to be found in all three counties, but they are mostly of poor quality and give small profit. The most important mines are in Sør-Varanger, Nord-Rana and Sulitjelma. In return the district has rich water-power sources waiting to be utilized. It is estimated that power-stations with an annual production of 20 billion KWh can be built. Practically 80% of this potential lies in Nordland county, the rest is evenly distributed between the two other counties. In 1950 only 8% of these power sources were utilized. A large part of the effort in North Norway since 1950 has actually been concentrated on the expansion of power-resources and the power-consuming industries. The other great asset in the economy of North Norway has always been the short distance out to the best fishing-banks in the world. The great seasonal cod-fishing takes place immediately off the coast of Nordland and Troms from February to April, and off the coast of Finnmark from May to June. Meanwhile, over a certain length of time the size of the haul has shown a decreasing tendency. The fish-factories in the ice-free harbours have made it possible to utilize the fish hauls to the full.

The following table, which shows how the production and the population engaged were distributed in the different trades in 1950, gives a quantitative picture of the trade structure in North Norway in 1950 as compared to the rest of the country.

Trade Sectors	Population		Production	
	NN	N	NN	N
Agriculture and Forestry	22	22	10	10
Fishing, Seal-Catching and Whaling	22	6	11	4
Industry, mining, etc	12	24	14	29
Building & Works	13	10	12	6
Commercial Trade	6	9	15	16
Communications	9	9	16	17
Services	7	10	14	11
Diverse	9	10	8	7
All Sectors	100	100	100	100

Table 2.1 The population in North Norway and Norway in 1950 distributed in trade sectors. The composition of the district production of North Norway compared with the composition of the gross national product of Norway in 1950 (relative figures), (16)(13, vol 27)

The table shows that, in spite of the climatic handicaps, agriculture and forestry were relatively just as important for the economy of North Norway as for the country as a whole. The sector fishing and seal-catching was three times as important for North Norway as for Norway as a whole, whilst industry and mining accounted for 14% as compared to 29%. The rebuilding of North Norway was at its height in 1950, as a result the sector for building and works represents a relatively high share of the district product. As mentioned earlier the share in the national product was 7.1%, of this Nordland produced 4%, Troms 1.9% and Finnmark 1.2%. At the same time Nordland had 6.7% of Norway's population, Troms 3.6% and Finnmark 2.0%.

The table clearly emphasizes the unevenness in the trade distribution in North Norway. The extractive trades with a low production strongly dominate the economical picture, whilst the highly productive trades such as industry and mining, communications and services only added slightly to

the production of the district.

The trade structure was not uniform from county to county. This is clearly illustrated in the following table, which shows the significance of the different trade sectors for the economy of the individual county in 1950.

Trade Sector	Nordland		Troms		Finnmark		Norway	
	Population	Production	Population	Production	Population	Production	Population	Production
Agriculture & Forestry	22	10	26	14	15	7	22	10
Fishing, Sealcatching & Whaling	19	11	23	6	27	21	6	4
Industry, mining, etc	13.5	15	10	10	13	14	24	29
Building & Works	13.5	14	11	9	14	11	10	6
Commercial Trade	6	12	6	21	7	15	9	16
Communications	10	17	8	16	8	10	9	17
Services	7	13	7	16	8	14	10	11
Diverse	9	8	9	8	8	8	10	7
All Trade Sectors	100	100	100	100	100	100	100	100

Table 2.2 The distribution of population for each county according to trade in 1950. The composition of the domain's production for each county compared to the gross national product's composition in the whole country in 1950 (relative figures) (16), (13, vol 27)

Agriculture and forestry are more important in Troms than in Finnmark, which stands to reason. Finnmark has the highest share in fishing production whilst Nordland has the highest production of industry and mining.

There is usually a great deal of unemployment during the winter.

This tendency is clearly shown in the table below by the unemployment figures for 1950 and 1951.

	Unemployment pr 1,000 of population				No of workers in percentage of the population
	1950		1951		
	March 31st	September 30th	March 31st		
Nordland	12.5	4.6	14.2		39
Troms	17.5	2.7	17.7		40
Finnmark	20.0	0.6	21.9		39
North Norway	15.2	3.4	16.4		39
Norway	4.6	1.5	6.9		43

Table 2.3 No of unemployed per 1,000 of total population per 1/1/1950. Working population in percentage of the total population per 1/12/1950 (1), (16)

Winter unemployment per March 31st was about three times as high in North Norway as for the whole of Norway, it was highest in Finnmark and lowest in Nordland.

This is coherent with the seasonal unemployment within the fishing trade. Summer unemployment per September 30th was also higher in North Norway than in the rest of the country. In the summer, however, the unemployment is highest in Nordland and lowest in Finnmark. Compared with the total population the working population is smaller in North Norway than in South Norway.

Another weak side of the employment-market in North Norway is the tendency to combine occupations. Agriculture was usually a secondary occupation for the farmers, fishing and seal-catching were the more important tracks. A large proportion of the workers in building and works also have a secondary occupation.

In 1950 the school system was still less developed in North Norway as compared to the rest of the country. This was apparent also in the lack of professional teachers. A most important link in the expansion programme was the concentrated effort to give trade education by increasing the capacity of the trade-schools, technical schools, fishing-trade schools, "real schools", junior high schools and gymnasia (senior high schools), etc. The working power was also relatively less mobile than in South Norway. An attempt was made to improve this situation by public assistance to provide employment in other districts, re-education, etc.

The economical conditions were obviously rather modest in North Norway. The commercial banks which were small and scattered owned only 2% of the capital within the Norwegian commercial banks, while the savings banks were slightly better situated as they owned about 7.5% of the total deposits in Norway.

Due to the great need and the weak financial state, a relatively large part of the loans from the Bank of Norway and the State Banks went to North Norway in the years after 1945. A great part of the extra grants and supporting efforts through the State-Budget, funds, etc also went to North Norway. About three quarters of the resources of the tax-funds went to the counties of North Norway as additional help through the State-Budget. This represented a direct transfer of capital from the richer counties of the south to the poorer counties of the north. The counties of North Norway also had a higher rate of tax assessment and a more unfavourable tax reduction scale than the rest of the country.

The differences in the natural resources, the equipment for production, domiciliation and communications net lead to extensive local variations in the trades in North Norway. Inner-Helgeland, Salten, the district of Harstad, the district of Tromsø, Hammerfest and South-Varanger belong to the richest districts, whereas especially Stigen, Outer-Ofoten, East-Troms and large parts of Finnmark were problem

districts with poor trade possibilities with underemployment and high seasonal unemployment.

What has been done since 1950 to develop industry, power production, communications, schools, etc in North Norway? Which methods were used, what have the results been and where does North Norway stand economically to-day? It would be natural, first, to look at the policy and methods used in the programme for the development of North Norway.

3 THE NORTH NORWAY DEVELOPMENT PLAN

To achieve the desired balanced growth in the district, specific aims were set to develop the individual trade sectors, schools, the communications system as well as the expansion of water-power. Among other things plans were made to build iron-works, a large chemical works, several fish-distribution centres, and to increase and modernise the fishing fleet, to work for the rationalisation of agriculture, to increase the profits on forestry, etc. In addition to all this came large basic investments in the school-sector, in railways, roads, harbours and airfields. Land transport was to take the place of sea-transport.

3.1 Policies and Methods

The methods used to launch this plan were first to establish the Expansion Fund of North Norway in 1952. In principle this fund should give top financial possibilities to private enterprise with normal interest rates, i e loans when all other possibilities for financing were extinct. The fund could also give a guarantee for loans in other institutions. During the period up to 1961 nearly 250 million kroner had been distributed via the fund. The two tables below show how the liabilities were distributed between the counties and between the different trades. The figures are in million kroner.

County	No of enter-prises	Loans Mill kr	Guaran-tees Mill kr	Capital shares in Mill kr	Subsi-dies in Mill kr	Total	
						Mill kr	%
Nordland	199	97.6	27.5	0	1.3	126.4	51.7
Troms	109	44.2	5.8	0.8	0.5	51.3	21.0
Finnmark	85	57.3	2.8	0.4	0.9	61.4	25.1
Not spe-cified	21	0.1	0.1	4.0	1.1	5.3	3.3
Total	414	199.2	36.2	5.2	3.8	244.4	100.0

Table 3.1 Liabilities of the Expansion Fund in the respective counties, in million kroner per 1/1/1961 (12)

Trade Sector	Approved per 1/1/1961 in %
Mining	11.4
Fisheries	13.5
Other Industry	26.1
Sea-transport	9.0
Fishing- Seal-catching boats	7.6
Trade	2.3
Power Expansion	21.1
Roads, harbours, etc	4.6
Other Projects	4.4
Total	100.0

Table 3.2 Liabilities of the Expansion Fund per 1/1/1961 divided according to trade sectors (12)

Approximately half the resources of the fund were placed in Nordland and a quarter in each of the other two counties. About 50% of the resources went to the three-sectors power-expansion, fisheries and mining. The liabilities of the fund were on an average the equivalent of 40% of the total investment in connection with these projects. The total investments in the enterprises subsidised by the Fund from 1952-1960 amounted to a total of 600 million kroner. By

comparison it may be noted that North Norway's share in the gross national product in 1950 was approximately 1,200 million kroner, in 1957 2,500 million kroner. Since 1960 the liabilities in North Norway have decreased to 194 million kroner (11) as repayments have superseded new loans and guarantees.

Parallel with these enterprises a comprehensive research and planning work was carried out on behalf of the Fund. It is impossible to evaluate this work in kroner.

Apart from the Fund the State-banks, and in particular "The Fiskar-Bank" (Bank for Fisheries) gave large loans to private enterprise in North Norway, the "Husbanken" (Housing Bank), to a large extent, also favoured the northern districts. The table below clearly indicates that a large movement of capital took place from South Norway to North Norway via these banks.

Statebanks	Loans to North Norway in mill kr	North Norway in % of the whole country	Distribution to the counties in % of the whole country		
			Nordland	Troms	Finnmark
Housing Banks	883	16.4	7.9	4.5	4.0
Commercial Banks	469	24.6	13.4	7.0	4.2
Bank of Norway	45	90(ca)	18(ca)	24(ca)	48(ca)
Post Saving Bank	114	34.2	19.2	8.1	6.9
Total	1511	19.7(ca)	9.8(ca)	5.4(ca)	4.5(ca)

Table 3.3 Loans from Statebanks to North Norway per 1/1/1960. Loans from Bank of Norway per 30/6/1960. Absolute and relative figures (12)

During the period up to 1960 20% of loans from Statebanks and 25% of the loans from commercial Banks went to North Norway. The distribution between the counties was approximately

the same as for the resources from the Expansion Fund.

Parallel to the establishment of the Expansion Fund the Storting granted about 100 million kroner extra for educational and communication purposes. These propositions also received 86 million kroner of the Norwegian resources committed under the Marshall-help. These districts have also been given special consideration through the ordinary grants from the State-Budget, especially with regards to the communication-sector and employment.

Another category of assistance was the preferential treatment the State gave North Norway, to raise the so-called cornerstone-industries which were to form the foundation of the new industrial centres. It was expected that these centres would attract new enterprises which would give the establishment of the cornerstone-industries a far-reaching multiplier effect. Through the State-Budget share-quotas were granted, high reduction loans and state guaranteed loans for the expansion of the iron-works at Mo, for the building of Rana Mines, which were to supply iron-ore to the iron-works, and to the building of the ammonia factory and the coke-works in Mo which was based on coal from Svalbard. These works also required high grants for the expansion of the power-stations in Inner Helgeland. In all approximately 1,700 million kroner were concentrated on these projects between 1945-1965.

The counties of North Norway have also received considerable sums over the State Budget from the special funds (tax transfers).

During the period 1951-1964 the Municiple Districts in North Norway received more than 550 million kroner from the Tax Distribution Fund. This represented 57% of the distribution within North Norway, Nordland received 275 million kroner or 50%, Troms received 180 million kroner or 33% and Finnmark 100 million kroner or 17%.

In 1952 North Norway was given special taxation rules with an aim to stimulate trade and attract new firms to North

Norway. Firms in North and South Norway were given the opportunity to transfer part of their profits to recognised investments in North Norway. The regulations for writing off these investments were particularly favourable.

In both South and North Norway a number of firms have availed themselves of this tax system and by 1/1-1959 720 million kroner in all were put aside to be invested in firms in North Norway. Practically half of this capital was conveyed to North Norway from other districts and about 70% of this deposit was invested by 1960. In accordance with the special law drawn-up for North Norway a further 150 mill kroner were deposited in the period up to 1/1-1963.

Approximately 1/3 of the sum which was deposited by firms of North Norway was utilised for mining. Investments in the iron-ore mines in South Varanger were the most important. The sectors industry and crafts, communications and trade received 40% of the deposits, whilst fishing and fish-distribution received 16%.

The southern Norwegian deposits are mainly used for special projects within the chemical industry (Norsk Hydro Saltpetre Factory in Glomfjord), in metallurgic industry (Aluminium works in Mosjøen) in shipping and the textile industry (Mosjøen). Deposits in these sectors represented over 90% of the funds that were used by 1/1-1960.

From this account of the capital assistance in North Norway during the period 1952-1960 it is clear that a very considerable sum, over 5 billion kroner, have been invested in the expansion of trade, power, communications-net and education in North Norway. It would be appropriate to sketch the result of this economical policy.

3.2 Results of the Expansion Policy 1952-1960

The economical growth in North Norway in the period 1952-1960 has on the whole been more intense than in the rest of Norway.

North Norway's share of the gross national product rose from 7.1% in 1950 to 7.9% in 1957, and the share of estimated income rose from 7.0% to 7.7% during the same period. Both in 1950 and 1957 the percentage of population was 12.3%. The increase applies to all three counties and as the results were so noticable they must be considered as a real increase from North Norway towards the national product. During the same period the net national product in Norway rose by about 3% per annum.

The increase in the employment of wage-takers was on an average higher in North Norway than in the country as a whole, (20% and 13%), in return there was a decrease among the self-employed, especially in the fishing industry and agriculture. In consequence the number of registered unemployed rose during the programmed period. The total number of employed remained practically unchanged, but it must be maintained that the market for employment improved with the considerable movement of employees from trades with low productivity to trades with high productivity. The table below shows the domicile population with the different trade sectors in North Norway in 1950 and in 1960. The figures are in per cent.

Trade-sector	Domicile population in 1950	Domicile population in 1960
Agriculture & Forestry	22	15
Fishing Seal-catching & Whaling	22	15
Industry, mining, etc	12	15
Building & Works	13	13
Commercial trade	6	7
Communications	9	12
Services	7	12
Diverse	9	11
Total	100	100

Table 3.4 Domicile population in North Norway in 1950 and 1960 distributed in trade-sectors. Figures in per cent (16), (17)

A large proportion of the population which was dependent on the primary sectors have transferred to industry, communications and services during the 1950's. The decline in the agriculture and forestry sectors was as prominent as the decline in the fishing and seal-catching sectors. No calculations have been made over the increase in production in the individual trades over the same period; but it is obvious that production in angriculture, forestry, fishing and seal-catching have relatively decreased, whilst communications, industry and in particular mining have become more important for the economy of North Norway since 1950, both absolutely and relatively speaking.

The trade sectors have expanded unevenly in the individual counties. Table 8 shows the distribution of population in the sectors within the three counties in 1960.

Trade-sector	Nordland	Troms	Finnmark	Norway
Agriculture § Forestry	15	18	13	15
Fishing Seal-catching & Whaling	13	16	19	4
Industry, mining, etc	16	11	18	25
Building & Works	13	13	13	10
Commercial trade	7	7	6	9
Communications	14	11	9	10
Services	11	13	12	13
Diverse	11	11	10	14
Total	100	100	100	100

Table 3.5 Population distributed per county according to tradesin 1960, as compared with the distribution in the rest of Norway (12), (13)

If tables 2.2 and 3.5 are compared it will be seen that the agricultural population has been reduced least in Finnmark, where it is in fact also lowest. The population engaged in fishing and seal-catching have been equally reduced in all counties, whilst in Finnmark the industrial and mining

population have increased substantially. This is partly due to the re-opening and expansion of A/S Syd-Varanger (mining company at Kirkenes) at the beginning of the 1950's. During the same period industry and mining have particularly increased their relative importance in Troms. The development in communications and services have been just about parallel with regards to the population dependent on them.

In the sequel a brief summary will be given over what has taken place in the individual sectors in North Norway during the development period.

In the power-sector the machine capacity in the power-stations was trebled during the period, from 227 MW in 1951 to 657 MW in 1960. Practically the entire increase in power production has gone into industry.

Within the communications sector the roads were extended by 1500 km. Special importance was attached to the building of roads which increased the potential growth in industry, agriculture, fishing and commercial trade. The railway was completed as far as Fauske in 1958 and reached Bodø in 1961.

In the educational sector most progress was made in the crafts-training. The capacity of pupils at the Industrial and Crafts schools was increased from 0 to 900. "Statens Teknologiske Institutt" opened courses in Narvik in 1957. The aim of the institute is to create a technical milieu which will be able to give all-round courses and instructional assistance to the industry of the district. The junior high schools (realskole) and the senior high schools (gymnasia) were also built during this period. The capacity for pupils at the junior high schools (realskolen) was more than doubled.

The development within the sectors industry and mining was the most noticeable. The value of the production was in 1951 2.1% of the total for the whole country, this percentage rose to 5% in 1958. More than half of this increase was due to the expansion of the primary iron and metals industries

in Inner Helgeland, and the mining industry in Varanger. The value of the production per worker also rose strongly during the same period and was about the same in North Norway as in the rest of the country in 1957.

The tonnage of north Norwegian shipping was more than doubled in the period 1952-1960, but even so was still very low in comparison to the rest of the country (151,000 gross-tons or 1.4% of the country's tonnage). The number of sailors from North Norway on board Norwegian ships abroad rose from 3,200 to 6,900 during the same period. The number of north Norwegian sailors as compared to Norwegian sailors rose from 10.1% in 1952 to 15.5% in 1960.

There was a marked reduction in agricultural employment, but a slight rise in production due to the mechanisation and intensification of the operations and improved distribution of the products. The district's share of the country's gross production rose from 8% in 1950 to 8.7% in 1957. The planting of forests also increased during this period, in all about 250 kv km^2 were planted out. Two hard board factories were established in Nordland, these factories are dependent on decidious forests for raw materials.

The fishing trade in North Norway has been and still is passing through a difficult period while converting from coast-fishing to sea-fishing. Parallel to a great decrease in employment the number of small craft, which can only be used near the coast, rose strongly. The trawling fleet was still small, in 1960 it consisted of only 60 craft over 100 feet. The size of the hauls varied between 410,000 and 550,000 tons per annum. The fish-factories were further expanded with modernised cold-storage plants, filleting factories etc. But the fishing industry has had many serious problems due to the breakdown of supplies of raw materials, several of the factories are only in full activity for a few weeks of the year.

The development in commercial trade has been much the same as in the rest of the country. Both export and import via

north Norwegian customs staticns was more than trebled during the period.

The tourist trade in North Norway also increased in the 1950's but the tourist season was shorter here than in the rest of the country and the country hotels were underbooked outside the season.

As a few large factories were established in Nordland and Finnmark the economy of these counties was better than in Troms. There are still economically poor districts to be found in all three counties. A closer study of the development in the individual districts follows.

The iron-works, coke-factories, aluminium works, and two mines in Inner Helgeland represent the most important part of the industrial build-up in North Norway. As a result there was a certain shortage of labour in this district. The large works have barely influenced the ready-made goods industry whilst services have expanded in size and denomination.

The development in Outer-Helgeland has also been satisfactory. In this district communications, expansion of fish-factories, and the chemical industry have been of great economical importance.

In Salten the centres Bodø and Fauske have expanded most, and possess the necessary requirements for industrial expansion. The Steigen district, further north, was still a difficult district with one-sided trade possibilities in agriculture and fishing. But in the Ofoten district there has been a steady economical rise with Narvik and its iron-ore exportation as the centre of activity.

The economical situation has become poorer in Lofoten due to several unprofitable fishing seasons.

Whilst the neighbouring district Vesterålen has had a more successful development with increasing profits from agriculture and fishing. The Vesterålen fishesmen have based their fleet on sea-fishing craft.

The Harstad district in Troms county has developed satisfactorily with increasing agricultural production. In Harstad the dominating industry is based on workshop-trade.

In the central part of South-Troms the industrial development has been more modest. A valuable addition was the ferro-silicium works in Finnfjordbotn. Agriculture is the main occupation.

In Inner-Troms agriculture dominates. It has shown a marked increase in production due to the demands and needs of the military camps in the district. Forestry has also been an important source of income, but the ready market is small for deciduous woods as there is little timber industry in Troms.

In Outer-Troms the fisheries dominate. There are, however, insufficient raw materials to meet the demands as most of the fishing is carried out from small craft.

Tromsø district has made steady progress by the development of the industries already established there. The fish-factories in particular have increased their output and Tromsø has the largest production of frozen fish in Norway.

Northern-Troms has a very weak foundation for its trades inspite of considerable assistance from the Expansion Fund. There is practically no industry, fishing and agriculture are usually combined.

The development in the different districts in Finnmark has also been varied.

In Western-Finnmark development was well underway in 1960, with the expansion of fish distribution, expansion of the seafaring trawler fleet and increased mining (Alta). Hammerfest has become a strong economical centre during the course of the programme-period.

In Central-Finnmark the development has gone slower than in the Western parts of the county and as a whole the district is in a

weak position. Apart from fishing, agriculture and reindeer-breeding were the main occupations.

East-Finnmark is also a marked fishing-district with all the usual problems. South-Varanger, from a trade point of view, is one of the best developed districts in North Norway. The mining industry is the reason for its position.

This survey shows that the expansion of trade in North Norway from 1952-1960 has been so comprehensive in some of the geographical districs, that these also have an economically strong position even when judged according to the rest of the country. This applies in particular to Inner-Helgeland and South-Varanger.

In many districts the expansion programme has shown results even though the trade possibilities are still not fully developed. The greatestexpansion is expected in Ofoten and Salten district. In other districts the programme has had little effect. This is noticeable in the Steigen district, Lofoten, Northern-Troms and East Finnmark.

The development inaugurated by the expansion programme of North Norway in the period 1952-1960 has in its broad features lasted up to now. With the given tendencies as a background a more detailed survey of the individual trade sectors in North Norway as they present themselves today will be given below.

4 THE NORTH NORWEGIAN ECONOMY - STATUS AND PROSPECTS

One of the most important conditions for the continued economical growth in North Norway will depend upon an advantageous development of the population structure. The recruiting of manpower within the most productive age groups, i e 19-49 years, will be of the greatest importance.

4.1 Population-size and composition

The census of 1960 showed that there were 437,000 inhabitants

in North Norway, the numbers rose to 446,000 in 1964. A prognostication has been worked out over the further progress of the development of the population up to 1980 based on, among other things, the census of 1960. The prognosticative number is shown in the table below.

County	1/11-1964	1970	1975	1980	Growth in % 1960-1980
Nordland	242 164	250 317	259 664	270 380	14%
Troms	129 634	134 874	139 320	144 290	13.1%
Finnmark	73 939	78 702	82 772	87 082	21%
North-Norway	445 737	463 893	481 756	501 752	14.9%
North Norway's share	12.1%	11.9%	11.8%	11.8%	

Table 4.1 Prognostication of the development of the population in North Norway up to 1980 (Data from the Norwegian Central Bureau of Statistics)

Looked upon as a whole the population in North Norway is expected to increase somewhat slower than the entire population of the country (14.9% as opposed to 18.9%).

The population in Finnmark will probably increase relatively rapidly. Up to now the prognostications for Troms and Finnmark have been correct, but for Nordland they have been too low.

In 1960 51.5% of the population in North Norway were men, this percentage was highest in Finnmark with 52.5%, it was equal in Nordland and Troms with 51.3%. The table below shows the distribution of ages in the three counties.

According to the table the population of Finnmark had the most advantageous age groups. The prognostication shows meanwhile a marked development in this structure.

County	0-19 years	20-49 years	50 years or more
Nordland	37.6%	37.2%	25.2%
Troms	38.3%	37.9%	23.8%
Finnmark	41.1%	38.9%	20.0%
North Norway	38.4%	37.7%	23.9%

Table 4.2 The distribution of the population in percentages according to ages per 1/11-1960 (17)

In 1980 the various age groups are expected to be:

County	0-19 years	20-49 years	50 years or more
Nordland	35.1%	35.9%	29.0%
Troms	36.3%	34.9%	28.8%
Finnmark	38.1%	36.5%	25.4%
North Norway	36.0%	35.7%	28.3%

Table 4.3 Prognostication of the population distributed in percentages according to age in 1980 (Data from the Central Bureau of Statistics)

An ever increasing share of the population in North Norway will belong to the age group 50 years or older. Finnmark will continue to have the most advantageous age compositions in 1980, with relatively most people within the "productive" age group.

With regards to inhabitancy the development which has taken place since 1960 is expected to continue. Apart from the extensive changes in structure the employment market of North Norway has in recent years been characterised by the increase of wage-earners, and the stagnation in number of independent tradesmen. In 1963 there was, on an average, 52,600 wage-earners in Nordland, 26,500 in Troms and 16,000 in Finnmark.

The independent tradesmen represented respectively 24,000, 14,000 and 8,000 in the three counties in February 1964. There is still relatively high seasonal unemployment in North Norway. The numbers vary from 600 in May to 9,500 in December the same year. Per 1,000 inhabitant the distribution per county of unemployed is given below:

County	June 1963	December 1963	March 1964
Nordland	1,3	19,8	11,0
Troms	1,3	17,1	10,9
Finnmark	1,1	33,2	15,7
North Norway	1,3	21,3	11,8
Norway	1,5	8,5	6,1

Table 4.4 Number of unemployed per 1,000 of total population per June 1963, December 1963, March 1964 (30, I, 1964)

Unemployment continues to be a heavy burden for the economy of North Norway. Unemployment is highest in winter and the figures for Finnmark continue to be the highest (Cfr Table 2.3). It is difficult to predict whether this high unemployment in North Norway will be reduced in the coming years. In Nordland the majority of unemployed are to be found in the building trades, whilst unemployment among the workers in the fishing-industry is especially high in Finnmark.

A favourable development in these trades and improved methods for labour exchange, courses for re-training, etc, would be capable of absorbing some of the working-power which has, up to the present, been almost permanently unemployed during the winter. Continued reduced employment is expected within the primary trades and increased employment in industry, communications and services.

We have previously noted the distribution of employment among

the various trades and shown how the trade-structure has changed during the 1950's. What profit in the form of production results does the effort in the individual sectors give and what further development is expected in the near future?

4.2 Agricultural production

The latest figures for the returns in agriculture are from 1963, which was a year with an average crop. The table below shows the distribution of the profit in tons according to counties in North Norway's agriculture.

County	Barley	Oats	Potatoes	Fodder in 1000 units[x]	Vegetables	Milk and cream total weight	Officially controlled	
							Meat	Pork
Nordland	1700	200	70000	130000	3000	68000		
Troms	10	0	31000	76000	1500	50000		
Finnmark	0	0	3500	23000	100	12000		
North Norway	1710	200	104500	229000	4600	130000	6200	320
North Norway's share	0.4%	0.2%	8.6%	10.2%	3.1%	9.4%	10.1%	0.8%

[x] 1 unit = Nutrition value of 1 kg barley

Table 4.5 Main production in tons in agriculture 1963 (15, 1964) (23, 1963)

The figures for milk and cream are for 1962 and only concern the production that passes through the dairies. The total production of milk is approximately 160,000 tons per annum. Likewise the total production of meat and fish lies 20-25% higher than shown in the table.

Approximately half of the agricultural production in North Norway comes from Nordland. A typical feature of agriculture in North Norway is its varied production. So far few farms have specialised in particular produces. Most of the farms

are small and mainly based on domestic animals. The incoms of North-Norwegian farmers are slightly lower than in the rest of the country. North Norway is not self-supported in agricultural products and is compelled to import wheat, pork and vegetables.

There are approximately 130,000 reindeers in this part of the country of which 85,000 are to be found on Finnmarksvidda. Mink is the main animal bred for fur production and the profits are increasing rapidly.

The main tendency in agriculture in North Norway in the coming years will presumably be decreasing employment, increased size of farms, improved quality of agricultural areas, increased specialisation and production capacity as a result of mechanisation and rationalisation.

4.3 Forestry

The largest forests in North Norway are to be found in Helgeland. In recent years the timber production has been about 500,000 m^3 per season. In the three northern counties the production in the period 1961-62 is divided between coniferous and deciduous trees as shown in the following table. The numbers are given in 1,000 m^3.

County	Coniferous timber	Deciduous timber	Coniferous and deciduous wood	Wood consumed on farms	Total production
Nordland	137	26	15	146	324
Troms	11	0	21	133	165
Finnmark	20	0	2	30	52
North Norway	168	26	38	309	541
North Norway's share	2,4%	7,1%	11,6%	16,2%	5,6%

Table 4.6 Timber products in 1,000 m^3 for the season 1961-62 (15, 1964)

As may be expected the production of the coniferous trees is higher in the forest districts of Nordland. There are large resources of decidious trees in the whole of North Norway and reasonable utilisation of these can make forestry a much more important factor for the economy of North Norway than it is today.

4.4 Fisheries

In addition to agriculture, fishing is the trade which employs most people in North Norway. The number of fishing people in North Norway have been nearly halved since the war while at the same time there is a tendency towards specialisation and rationalisation. The age of the fishing population has risen as there have been few new-comers. The most important fishing-seasons are the Lofoten cod-fishing from February to April, the spring cod-fishing in Finnmark from May to June, herring-fishing along the coast all summer, fishing out on the fishing-banks in late summer and autumn and trawler fishing all year.

During the spring there is capelin (lodde) fishing in Finnmark, and purse-net fishing for herrings continues all through the year. The size of the haul has varied greatly from one year to another which makes it difficult to define a "normal" year. In 1961 850,000 tons of fish to a value of 375 million kroner were brought ashore in North Norway, whilst the figures for 1962 were 560,000 tons to a value of 325 million kroner. The variation in the capelin-fishing strongly influences these figures, for in 1961 the total haul of capelin was 217,000 tons but only 363 ton in 1962.

Norway has had the largest quantity of hauls among the European fishing nations in recent years and the table below shows the quantity of main types of fish which were landed in North Norway in 1962. The figures are given in 1,000 tons and the table shows North Norway's share of the whole country's takings.

County	Had-dock	Cod	Finnmark spring cod	Bank-cod & Fjord-cod	Coal-fish	Large herrings	Small her-rings	Other types of fish	Total
Nordland	3	49	0	13	19	3	57	31	255
Troms	3	7	0	20	14	4	16	19	83
Finnmark	33	9	31	33	14	71	20	16	227
North Norway	39	65	31	66	47	158	93	66	565
North Norway's share	94%	95%	100%	66%	56%	93%	68%	16%	50%

Table 4.7 Size of hauls of the main types of fish in 1962 in 1000 ton (15, 1964)

In 1962 about the same quantity of fish was landed in Nordland and Finnmark while very much less was landed in Troms . North Norway's share in the quota caught was 50%, and in value it was 49% of the profit of the whole country.

The traditional methods for preserving have been drying and salting. Now, an ever growing quantity is filleted and frozen. Herrings are used for oil and meal.

About 3/4 of the catches in North Norway is prepared prior to exportation.

It is expected that the importance of fishing as a trade will diminish in the coming years. It is impossible to increase the size of the hauls of cod and haddock in the near future as these sorts of fish are already overdrawn. A large quantity of cod and haddock are caught in the Barents Sea in competition with the Soviet trawlers. It would be of great importance to be able to reach an agreement for the rational utilisation and sharing of the fish in this district. The prospects for increased herring and capelin fishing are good.

Small whale and seal-catching have gradually decreased in

North Norway, 5-7,000 tons of small whale and 100-120,000 seal are caught a year.

4.5 Mining and Industry

The industry of North Norway is mainly based on the export of prepared fish and iron-ore, both partially refined.

In addition there are several small factories in all branches for production to the local market. The large sources of power have been one of the foundations for the raising of industry in North Norway. The potential water-power and developed capacity up to 1963 is given below. The figures are in thousand kW.

County	Potential (including developed	Developed per 1/1-1963
Nordland	1911	442
Troms	411	74
Finnmark	316	21
North Norway	2638	537
North Norway's share	17.6%	12.8%

Table 4.8 Potential and developed water-power per 1/1-1963 in thousand kW (15, 1964)

There are still great potential water-power resources in North Norway particularly in Helgeland and North Troms and further development is expected during the coming years. Three large power-stations in respectively Rana, Kvænangsbotn on the border between Troms and Finnmark and in the Pasvik valley on the Soviet border will be ready for production in a short time. Two other stations in Nordland and Troms are planned.

According to the industrial statistics North Norway had, in 1962 8.4% of the mining and industry in Norway, 6% of the

entire employment and 11.8% of the gross-investment were to be found here. The value of the products in North Norway represent 5.5% of the total for the whole country. In this part of the country Nordland has nearly 2/3 of the factories, more than half of the workers within industry and mining, 3/5 of the value of the produce, 3/4 of the gross investments.

All three counties are relatively rich in metals and minerals but few of the sites are of economical value.

The largest iron-ore producers in Norway are unquestionably A/S Syd-Varanger in East-Finnmark. The total produce in 1962 was nearly 1.5 million tons of iron-ore with 64% iron after separation. The greater part of the production is exported to West Germany and Great Britain. The iron-works at Mo have also been important customers. The works plan to increase their production to 2.4 million tons during 1966 and surface-mining will be able to continue another 20-25 years.

Rana-mines situated north-east of Mo will be our second largest iron-ore mine during the coming years. The first stage of building which has recently been completed will increase the annual production to approximately 500,000 tons iron-ore with an iron content of 65%. The second building stage, still to be approved by the Storting, will double the annual production. The iron-works will consume the entire iron-ore production from the Rana-mines. The latest surveys show that the mine fields will produce 400 million tons of iron-ore of at least 30% and further 600 million tons with at least 25% iron. The refining of iron-ore has presented some problems.

Other large mines are the Sulitjelma-mines east of Fauske, which produce copper, pyrites, zinc and lead, Bleikvassli-mines at Korgen in Inner Helgeland with a production of pyrites, zinc and lead and Mofjellet-mines at Mo with a production of copper, pyrites, lead and zinc. The table below gives a summary of the production of ore in North Norway in thousand tons for 1962.

Type of ore	Quantity of production in 1000 tons	Percentage contents	North Norway's share of country's total produce
Iron-ore	1493	64,4-65,5 Fe	ca 68%
Copper	19	22,8-25,1 Cu 34,9S 30,4 Fe 31,6 Zn	ca 71%
Pyrites	106	46,1-50,2 S 0 - 1,9 Cu	ca 19%
Zinc	15	47,9-55,4 Zn	ca 66%
Lead	5	54,8-60,1 Pb	100%

Table 4.9 Production of ore in 1962 in thousand tons (22, 1962)

The production of ore in the Bjørkaasen-mines in Ofoten is not included in the table as this mine has now been closed.

Graphite is mined in Senja (7,000 t), feldspar and dolomite in Inner Salten and Steigen (170,000 tons), quartz in Inner Troms, nefelinzyenite in Stjernøy in northwest-Finnmark (30,000 tons) and chalk several places in this part of the country.

There is continuous searching for new mineral fields and A/S Syd Varanger have, among other things experimental fields in Bidjovagge in Inner West-Finnmark. There is also the possibility for a mine in the copper fields by the Altevann areas in Inner Troms.

The industry of oil and fat is one of the largest industrial groups in North Norway. The group consists mainly of the fish-refining factories such as canning factories, herring-oil factories and the deep-freeze and cold-storage plants. This part of the country also has a number of dairies, a couple of breweries etc based on the needs of the local market. The fish-refining factories are situated far apart along the coast at Bodø, in Vesterålen and Lofoten, at Senja, in North Troms and West and East-Finnmark.

The largest factory is "Findus" in Hammerfest with an annual production of 11,000 tons of frozen goods in 1962. The firm has been taken over by the Swiss firm "Nestlé".

Other large production centres are "Fi-No-Tro" with firms in Vardø, Båtsfjord, Berlevåg, Mehamn, Kjøllefjord, Honningsvåg and Skjervøy. A third large cold-storage amalgamation is "Frionor" which includes a number of smaller firms.

Textiles and clothes industry is little developed in North Norway. One of the largest enterprises is the artificial silk manufactures in Mosjøen, the wool factory in Harstad and fishing equipment in Finnsnes in South-Troms.

The timber trade is also undeveloped, the largest factories are situated in Hattfjelldal in Inner Helgeland and at Rognan in Salten. Apart from these factories there are a number of small saw-mills, carpenters workshops, etc.

The artificial fertiliser factory in Glomfjord, Outer Helgeland is the only large factory within the chemical industry.

There are plans here to produce 130,000 tons of ammonia, 250,000 tons of artificial manure and 100,000 tons of lime-saltpeter during the period 1/7 1964 to 1/7 1965. A substantial part of the production is absorbed by the home market. The factory is expanding but has difficulties due to the lack of adequate land communications.

The coal-refining industry in North Norway consists of only one large works, the coke-works at Mo. The coke-works which are supposed to utilise the coal from Svalbard for their own production are now running. The production capacity will be 250,000 tons of coke annually, 22,000 tons tar and 7,000 tons benzol. It is expected that the iron-works at Mo will absorb 110,000 tons of coke annually but it is still uncertain whether coke based on coal from Svalbard will be suitable for these works. The remaining coke will probably also be used on the home market. The coke-works'

ammonia-factory has an annual capacity of 7,000 tons, and is about to start production. These supplies will go to "Norsk Hydro".

Two raw-materials dominate the stone industry, slate and marble. The largest production of slate is in Alta in Finnmark (500,000 m^2 slate in 1962) whilst Fauske is the center for the production of marble. There is also a large cement factory in Tyssfjord in the northern most part of Nordland, with a prospective annual production of 300,000 tons cement in 1965 (224,000 tons in 1964). Most of the cement is disposed of in North Norway. Expansion is expected in both the slate and cement production. The enlargement of the factories in Tyssfjord will be dependent on road communications with Main Route 50.

Primary iron and metal industry are now a very important branch of the industry in Nordland. In the first place this is due to the establishment of the iron-works at Mo in 1955 and the aluminium-works at Mosjøen in 1958. Both these works are still under expansion.

In 1964 the iron-works production will be about 355,000 tons of raw-iron, 240,000 tons steel, 195,000 tons electro steel, 388,000 tons blooms and slabs, 350,000 tons billets and heavy section mill products, 151,000 tons light section mill products, and 12,000 tons ship-plating.

At first the iron-works were only intended to provide for the Norwegian market. Lately the works have gone over to export basis and the annual export amounts to 75% of the sale-value of the total production. Great Britain received about half of the exported steel and iron. It would be premature to state that the iron-works will undergo further expansion as the main task now is to attain the optimum efficiency within the present structure of production.

The aluminium factory at Mosjøen is a Norwegian-Swiss enterprise based on the refining of imported aluminium-oxide.

The annual production in 1964 was approximately 55,000 tons of aluminium which was exported, mostly to Great Britain. The works are about to undergo a large expansion.

The third relatively large melting-works are the ferrosilicium-works at Finnsnes in Southern Troms. Here the annual production in 1964 was approximately 20,000 tons ferrosilicium (calculated to 45% Si), which is mostly exported to Great Britain and West Germany. There are also plans to build another ferrosilicium-works at Fauske or Sørfold in Nordland.

Since 1950 there has also been a considerable expansion in the iron and metal-ware industries, in machine industry and shipping industry in North Norway. This part of the country has relatively many small ship-building yards and repair workshops for the fishing fleet. The largest ship-yard and mechanical workshops are in Harstad. In Borgen in Ofoten there are works producing winches and cranes and in Bodø there is a factory producing engines.

Among other new establishments are several modern car-workshops, workshops for iron and metal constructions and an iron-foundry.

Further development of the north Norwegian industry will probably be based on the power-resources which are still undeveloped, an improved utilisation of the ore-resources and a more regular supply of raw materials to the fish-refineries, and last but not least an improved utilisation of labour. In the near future the main expansion will concern the factories which are already established. One of the most interesting perspectives is the possible cooperation with Sweden and Finland in connection with the utilisation of the ore and forest reserves in North-Sweden and Northern-Finnland. Up to the present time the economical cooperation accross the borders in the north has been of relatively little importance apart from the export of ore over Narvik. Limited possibilities for communications have also been a serious impediment for inter-nordic economical cooperation in the north. A possible increase in commercial connections with the Soviet-Union could also be of significance for further development of the north Norwegian industry.

4.6 Commerce

Commerce over the north Norwegian customs stations has increased the last years. In 1963 imports represented approximately 440 million kr whilst exports were about 540 million kr. The harbours which transacted the commerce of highest value were Mo, Mosjøen and Tromsø. Earlier whole-sale and retail commerce was dominated by Norwegian interests from the south, but this is now changed at the same time as trade has expanded and been modernised. The turn-over in commercial business is approaching 2,000 million kr per annum. It would be reasonable to expect further expansion in the future.

The tourist trade is expected to be of increased importance for the economy of this part of the country. There is an ever increasing number of tourists travelling by car and air, whereas the number of tourists travelling by the coastal-routes is not increasing so rapidly.

The hotel capacity is too small for the short peak season. The number of tourists for 1964 was approximately 150,000 of which a large proportion were Swedish and Finnish. It is difficult to state what amount of currency is spent by tourists each year. The figure 75 million kr has been mentioned.

4.7 Education

In the educational sector North Norway is now in a better position to educate the post-war youth, but in many educational branches the capacity is still inadequate.

In 1963 there were, for example, only 15 junior-high schools attached to senior-high schools (gymnasia), in the whole of North Norway whereas there were 123 in South Norway. The worst shortage is in Finnmark. The difficulties of education are obvious and are reflected by the low educational standard of the population of North Norway. The 1960 census proved that only 12.2% of the population over 15 years in North Norway had special education whilst the percentage for the whole country is 20.1%. The number of high school graduates within

each age group was six times greater in Oslo than in Finnmark.

There is no academy or university in this part of the country. But there is every possibility that Tromsø may become a university town by 1970.

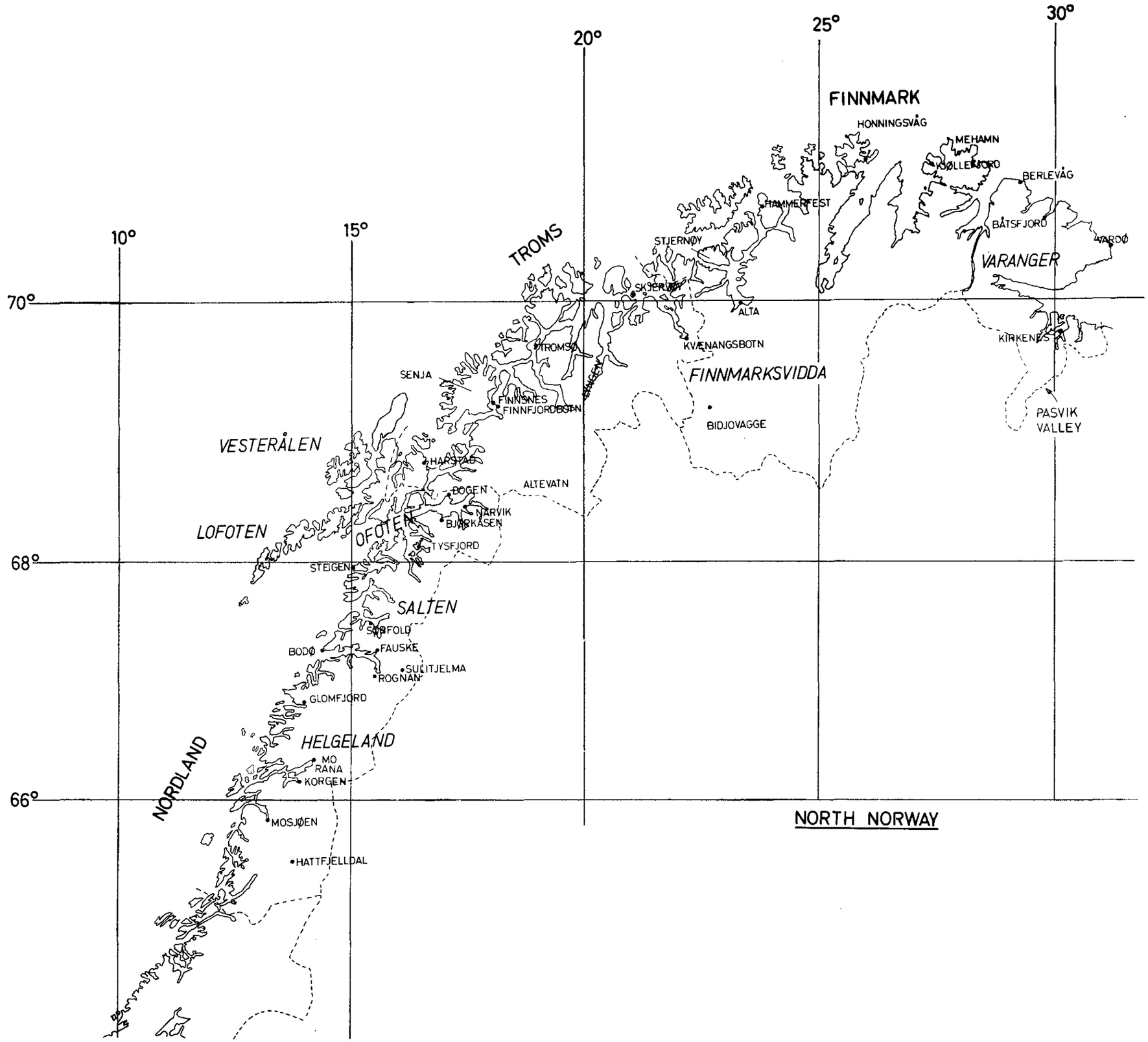
Prolongation of the "Folkeskole" (Grammar School) education from seven to nine years is now being rapidly introduced in North Norway. Finnmark is the most advanced with altogether 15 schools. Further expansion of this type of school, an increase in the capacity in the gymnasia and an improved situation where teachers are concerned will be the most important objectives for the North Norwegian school authorities in the years ahead.

5 CONCLUSIONS

On the whole the economy of North Norway, both absolutely and by comparison with South Norway is much stronger today than in 1950. From an economical point of view the differences have been evened out as, in whatever way one calculates, one will notice that the population of North Norway does not receive more in value from the rest of the country than they themselves supply.

The future development will depend upon the rate of rationalisation and modernisation of agriculture, fishing and the supplies of raw materials to the fisheries (landing of fish from foreign trawlers), continued expansion of the state concerns, investment of private Norwegian and foreign capital, co-operation accross the border in the north, and not least the expansion of the communication-net and the educational capacity.

To-day's picture of North Norway's economical situation brings promises for a brighter future.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GLOMFJORD
MO I RANA
KORGEN
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NORTH NORWAY

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