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AFNORTH MAGAZINE

No. 3/1991

Volume 6



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Front page photo: One of Norway's coming golf players, Joachim Cock, 13 years, with handicap 22. Here, together with coach Johan Tanum, at Borre Golf-course.

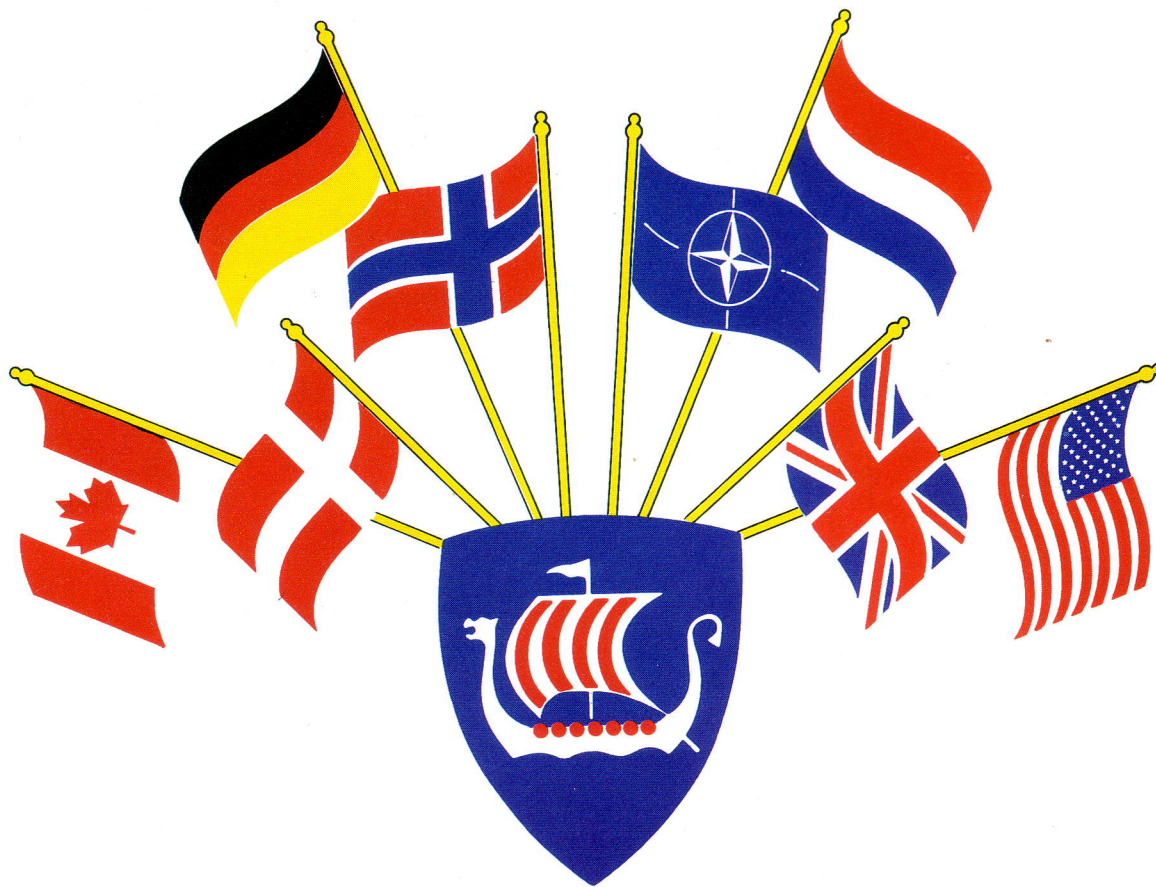
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NATO: 16 FREE NATIONS





AFNORTH Insignia

Insignia for HQ AFNORTH is a Viking Ship in white on a blue background. The sail has red and white fields and there are six shields along the ship's side.

The Viking Ship on the blue background symbolizes the land and sea ar-

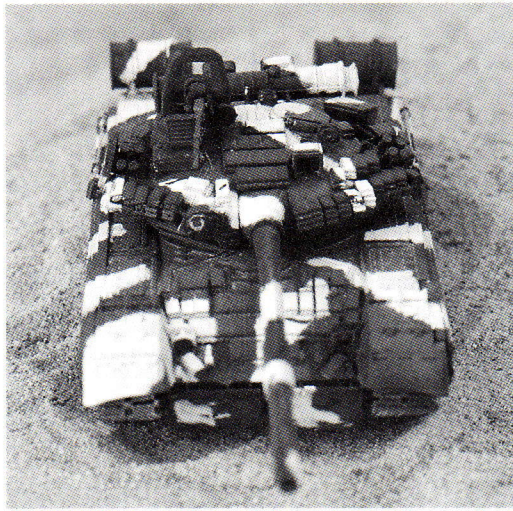
reas of the Northern European Command (NEC), and the shield symbolizes defence & determination against aggression.

Military personnel at the Headquarters will wear the insignia as a fabric badge on the upper arm, or as a metal

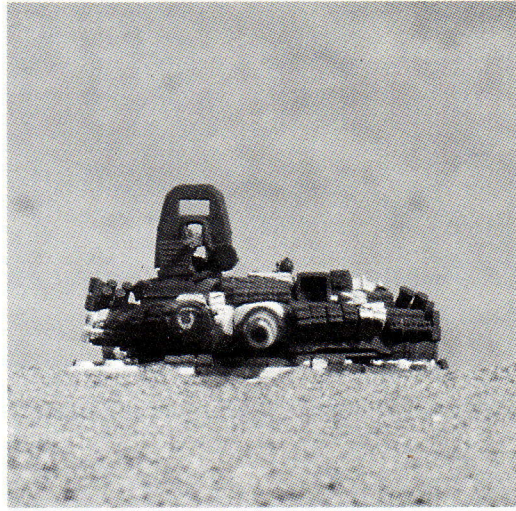
shield on the left side of the chest. Civilian personnel, and military personnel in civilian dress, may wear it as a pin on coat lapel.

Note: All insignia are for sale in the Gift Shop.

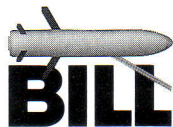
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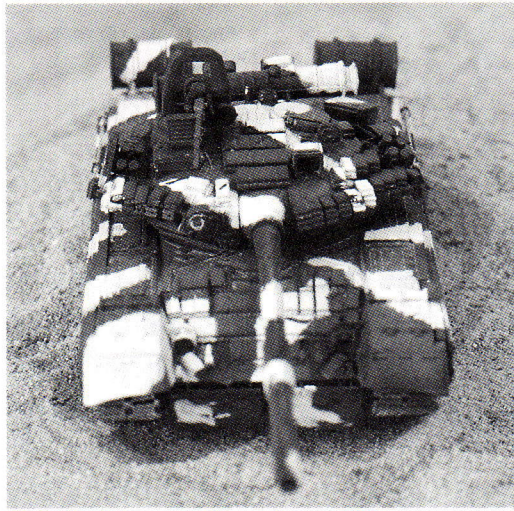
"... superior tank killing capability." Quoted from an official US Report.

Swedish Ordnance

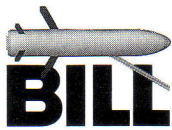
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The new company has taken over all Bofors' and FFV Ordnance's activities.*

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IN FOCUS

Golfing has become a large activity amongst the personnel of this headquarters. Since golf is a rather new sport in Norway it may be of interest to have some information about the other golf courses we have in this part of Norway.

During summer holidays and weekends it can be a good idea to **visit The Norwegian Folk Museum** at Bygdøy. This is a fascinating museum with both indoor and outdoor exhibitions. Visiting this place you ought to set aside at least 3 hours, otherwise you will have to go several times.

Vigeland's Parken is the most attractive recreation area in the center of Oslo. The sculptures and figures are all made by Gustav Vigeland creating a special atmosphere well worth feeling.

The Coastal Surveillance Service is a newly established body covering the monitoring and control of the coast that was done by several agencies and bodies before. With so many different tasks it is of interest for the readers whether it be sailing or leisure fishing.

The presentation of **the Norwegian Defence** written by MOD Norway is a general introduction to the Norwegian Defence Organization. This article will give the non-Norwegians a good introduction to the different concepts of which the Norwegian Defence is based upon.

Traffic and driving in Norway can be a problem to some of our readers. This article may solve some of the problems you already have, and even possibly solve some you didn't know you had.

The Editor



**Next Dead-Line:
1 August**

Norwegian Defence

Some Historical Facts

Norwegian security policy and the character of Norway's defence structure are deeply rooted in the nation's history and military traditions. Traditionally, defence of the Norwegian homeland relied on mobilisation of adult males who had carried out basic military training. Basically, the same applies today. Even though females now have equal opportunities in the armed forces, the bulk of the military personnel are males.

For centuries Norway has sought to achieve her security as well as her political and commercial objectives by a realistic calculation of the international situation. Between 1905 and 1940 Norwegian security policy relied on the Nordic ideal of neutrality. World War II destroyed this ideal, and Norway became a founding member of NATO in 1949.

Since 1949 Norway has borrowed strength from her allied partners in NATO. Norway's tiny population, 4.2 million, and her large land and sea territory, the largest sea territory in Western Europe, makes us heavily dependent on allied reinforcements should Norway be attacked by a foreign power.

Since joining the Alliance, Norway's strategic importance has both continued and increased. Norway's border with the Soviet Union, or Russia, and the proximity to the huge military bases on the Kola peninsula, still plays a major role in Norway's security policy and military planning. The capabilities of the military machinery on Kola is increasing, even though the perceived immediate threat has declined in recent months. In Norwegian defence strategy most emphasis is placed on defending the Northern region of the country.

Allied reinforcements, prepositioning of allied equipment and joint military exercises at sea and on land is vital to Norway's defence capabilities. Since the early 1970s there has been a steady progress in the work of integrating and exercising Allied defence of Norway. The joint NATO exercises, both during winter and summer

time, is valuable both for NATO's overall defence capabilities and certainly for Norway.

Command Structure

Under the Norwegian Constitution, the highest executive power is vested in the King who is also Commander-

in-Chief of the military forces. This authority is exercised in the "Council of the State" (i.e. by the Government). The Government, therefore, has the highest authority for both military and civilian preparedness.

The Minister of Defence heads the Royal Norwegian Ministry of Defence and is the highest administrative head



of the armed forces. The Ministry of Defence is composed almost entirely of civilians and is located near Akershus Castle in down town Oslo.

The Chief of Defence is the ranking military authority at Headquarters Defence Command Norway. In peacetime he has the general command of the Armed Forces and he is the principal military adviser to the Government and the Minister of Defence on military matters. Headquarters Defence Command Norway is located at Huseby, a few miles outside down town Oslo.

In time of war the Chief of Defence continues to be the Government's closest adviser, while command authority is transferred to the Commander-in-Chief Allied Forces Northern

Europe (CINCNORTH). Under a special agreement the Government has assigned CINCNORTH the task of leading the defence of Norway. The defence plans approved by Norwegian authorities. CINCNORTH exercises operative command, both over Norwegian forces and allied reinforcements, through the Norwegian Commanders-in-Chief in South and North Norway. It is the Government that decides if and when allied reinforcements shall be called to Norway.

Total Defence

Norwegian defence effort is based on what is labeled Total Defence. Total Defence means that the country's total resources can be mobilised in the event of war. This presupposes close cooperation between civilian and military authorities within the Total Defence concept. A number of tasks which in other countries are the responsibility of the military sector are in Norway handled by the civilian sector. This applies especially to logistics support and transport. This includes, for example, all available motor vehicles, airplanes, helicopters and ships.

The ability for a comprehensive mobilisation of the whole of Norwegian society is of major importance for the total defence of the nation. Therefore, in order to obtain a complete picture of Norway's defence capabilities, the military sector and the civil emergency planning system must be seen as integrated parts.

The Norwegian Mobilised Defence

The national system of conscription, where all young males have a duty to be military trained for a year, is decisive in Norwegian military preparedness. Females also play a part, alt-

hough in numbers still a small part, in our defence structure. Females have a right to apply for military service, and they now occupy positions in all branches of the Armed Forces.

The system of a defence based on mobilisation is firmly established in the Norwegian population. Norway is sparsely populated, with scattered settlements, and the mobilisation model fits well for the defence of the country. It is a people's defence, a model which has many advantages. It helps to create a proper understanding of the role of the Armed Forces and the need for both national and Allied defence efforts. The model gives a large portion of the population military training in peacetime and a high level of education and vocational qualifications which is valuable also for military assignments.

The peacetime figure for personnel in the armed forces is relatively small - around 50,000. This include some 12,000 officers, 12,000 civilian employees and 26,000 conscripts. When fully mobilised Norwegian military forces will increase to a quite impressive number, 320,000. This amounts to nearly 8 percent of the population, a percentage higher than any other NATO country.

Cost considerations also have influenced the solution chosen for the mobilised defence. If Norway were to depend entirely on defence consisting of professional soldiers, Norwegian defence budgets would produce only a fraction of the number of soldiers of the mobilised defence. Thus, with professional soldiers Norway would be even more dependent on reinforcements from abroad.

It must be stressed that Norwegian mobilisation forces are trained military forces composed of conscripts who have completed 12-15 months initial service and who undergo regular training for as long as they are required to mobilise. Naturally, there are also weak points in the concept of a mobilised defence compared with professional soldiers.



Coastal forts are important in the anti-invasion defence.

RAUFOSS-LEADING IN DEFENCE TECHNOLOGY

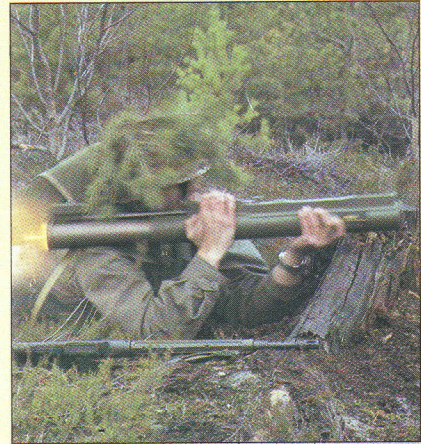
Modern defence forces rely heavily on advanced technology. Electronics and composite materials form the basis for today's defence technology.

At Raufoss Standard ammunition, Multipurpose ammunition (MP), Light anti-tank weapons, Anti-ship warheads, Rocket motors – represents the result of intensive studies and development within the vast area of defence technology. The challenge of tomorrow will be met by further refinement of known technologies as well as by structured development within new technological areas.

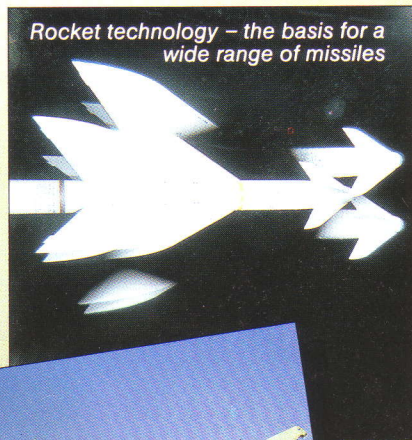
Modern composite materials combined with advanced computer analyses will further enhance Raufoss' position as a leader within defence technology.



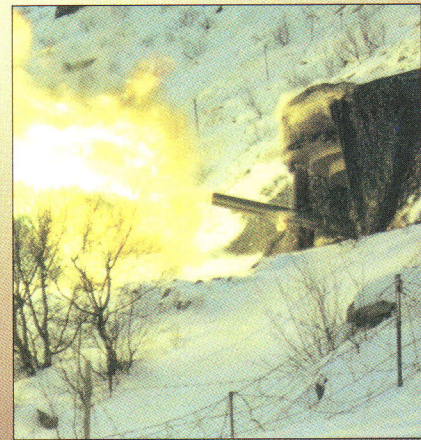
Multipurpose ammunition – cost effective high performance of destruction against a multiple of targets



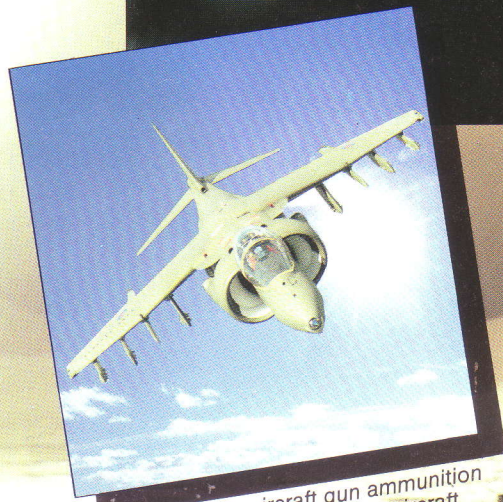
M72 – lightweight multi-purpose assault weapon



Rocket technology – the basis for a wide range of missiles



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Exercise in North Norway.

Among the weak factors are less intensive training and coordinating of different units, a more complex logistic system, less experienced soldiers and officers and longer time to set the military forces on war-foot. The latter factor is to some degree balanced with the fact that almost 140,000 per-

sons in the Home Guard keep their weapons, ammunition and personal equipment at home. These can take up the fight in very short notice. The mobilisation time is calculated to be 6-12 hours on the company level, 12-24 hours at the battalion level and about 36 hours on the brigade level.

The Army regards a unit as operative when 70 percent of the force is assembled.

Since the Norwegian defence concept is based on the view that North Norway is the most exposed part of the country, one must deal with the transfer of forces from South Norway,

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where most people and therefore most of the military manpower, lives. Much of the heavy equipment is already stockpiled in the north, so in many cases it is only necessary to transport personnel and light equipment. A few days after mobilisation the forces in North Norway may amount to a total of 6 brigades.

In addition, Norway has recently started a deep restructuring of its defence organisation, a process that will

last for some years. The restructuring aims at a leaner and more effective defence organisation, a reorganisation which will result in less overhead and fewer administrative entities. The changing economic and political realities has made a reorganisation more urgent than prior planned.

Officer Training

The Armed Forces offer education in

many different fields. The Army, Navy and Air Force offer their own non-commissioned officer schools, with basic education for operative, administrative and technical officers.

The training required to become an operative officer takes two years, irrespective of Service. The first year is spent at school, followed by one year of obligatory service as an officer. Education at the technical schools takes from one to three years, followed by obligatory service. As a rule, the obligatory service lasts as long as the schooling. Training to become a pilot or navigator lasts about 30-35 months, followed by 8 years of obligatory service.

Advanced officer training is given at the military academies for the Army, Navy and Air Force. Qualifications for application to a military academy is generally graduation from a non-commissioned officer school. Education at a military academy takes 3-4 years. The Armed Forces' most advanced education is provided by the staff colleges which last from 10-15 months, depending on service or branch in the Armed Forces.

Public Support for Military Defence and for NATO

The public support for a military defence and support for NATO membership is high, and has been high for a number of years. The organisation People and Defence has commissioned annual public opinion polls which show that the percentage of Norwegians who favour a military defence has fluctuated between 80 and 86 percent during the last 10 years. In the same period the percentage of Norwegians who favour continued membership in NATO has fluctuated between 63 and 70 percent.



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Norwegians attitude toward military defence - public opinion poll

Question: Given the current situation, do you think Norway should have a military defence?

Total in %	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Yes	84	86	80	86	87	87	84	83	86	81	83	81
No	6	4	6	6	6	5	5	7	4	5	7	9
Uncertain	7	5	6	3	3	3	4	3	3	4	2	5
No opinion	4	6	8	5	4	5	7	7	7	10	8	5
Total	100	100	100	100	100	100	100	100	100	100	100	100
No. respondents	1709	1437	1376	1404	1390	1312	1325	1318	1324	1320	1398	1014

Answers in %	Political party sympathy								
	Total	Men	Woman	A	H	Kr.F	S	SV	Fr.P
Yes	81	85	77	82	90	84	78	66	82
No	9	9	9	6	6	5	3	22	11
Uncertain	5	3	7	6	2	7	12	8	3
No opinion	5	3	7	6	2	4	7	4	4

The public opinion poll was conducted for "Folk og Forsvar" (People and Defence) by Norges Markedsdata in March 1990 based on a nation-wide sample of 1014 persons.

A= Labour Party, H= Conservative Party, Kr.F= Christian Democratic Party, S= Centre Party, SV= Socialist Left Party, Fr.P= Party of Progress, V= Liberal Party.

Norwegians attitude toward NATO

Question: Do you think that Norway's membership in the Western defence alliance, NATO, helps safeguard the country against attack by a foreign power, increases the risk of attack, or is a matter of no consequence in this respect?

Total in %	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Helps to safeguard the country	64	65	65	67	65	63	70	70	68	66
Increases risk of attack	10	10	10	10	6	7	5	6	5	3
Makes no difference	9	12	10	11	10	10	11	11	10	16
No opinion	17	14	15	12	19	20	14	13	17	15
Total	100	100	100	100	100	100	100	100	100	100
No. respondents	1348	1367	1312	1365	1260	1244	1312	1387	1288	1014

Answers in % 1990	Age				Political party sympathy					
	Total	15-19	30-59	60+	A	Fr.P	H	Kr.F	S	SV
Helps to safeguard the country	66	59	72	63	67	67	86	72	77	45
Increases risk of attack	3	4	3	2	2	3	0	2	1	10
Makes no difference	16	18	15	17	16	15	8	7	10	37
No opinion	15	19	10	18	15	15	6	19	12	8

A= Labour Party, Fr.P= Party of Progress, H= Conservative Party, Kr.F= Christian Democratic Party, S= Centre Party, SV= Socialist Left Party.

The public opinion poll was conducted for "Folk og Forsvar" (People and Defence) by Norges Markedsdata for 1990 in October based on a nationwide sample of 1014 persons.

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The Coastal Surveillance Service Finally Under Way

By Kjell Arne Bratli

Translated by Erik Irgens

Approaching 40 knots the small craft whips over a surface near Oslo. From the Swedish border to Oslo harbour and to Jomfruland on patrol. Great distances and long watches. Speed counts.

On a clear day you can sense the name "Hugin". Contrary enough, the Coastal Surveillance Service shines brilliantly in tall and bold writing. A concept expressed you have never seen before. Coast Guard and Fisheries Surveillance Service are well

known, but the Coastal Surveillance Service ...?

A new creative and experimental arrangement to experience how we can organise the coastal waters monitoring, says regional director of fisheries, Skagerak coast, Mr. Birger Lar-

sen. With two fast craft, one from the Swedish border to Jomfruland, and one from Jomfruland to Kristiansand S.

So far monitoring the coast proximity has been executed by several bodies and agencies. The Coastal Surveil-

"Hugin", one "Mørejet" capable of near 40 knots speed. The Coastal Surveillance Service is an experimental arrangement for improved control of coast proximity waters, and the Oslo fjord is first out.



lance Service is a shot at gathering all under one command. Thus the Coastal Surveillance Service will be given more tasks. Cooperating closely with land-based personnel, a number of control functions will be performed.

Number one priority as before is checking the fisheries. Both professional and leisure fishing, as well as control of fish farming and illegitimate trade in fish and shellfish.

News is coastal surveillance of the environment and pollution. The two vessels take sea-water samples more or less continually. The samples are immediately sent to a biological laboratory in Horten. Daily control of algae, possible oil spills and other polluting emissions is thus facilitated.

Other tasks are also everyday occurrences. Like picking up fish nets and other objects floating freely on the surface, that can be dangerous or harmful to shipping and leisure mari-

ners. Additionally, the two boats are well equipped with safety and rescue materiel, thus playing an important role in maritime safety.

"Hugin" is 30 feet, normally sporting a crew of two. Among the boat's features is equipment for water sampling down to 500 meter's depth, collection of bottom sediments and measurement of oxygen contents, salinity and temperature at various depths. The craft is consequently well suited for scientific tasks contracted by the civil services, for instance "Statens Forurensingstilsyn (SFT), The Royal Ministry of the Environment and The Institute of Marine Research. And with its speed, the Coastal Surveillance Service will be a cooperative partner for the Police, Customs authorities and the Norwegian Navy.

The boat is built by Skorpa, and is propelled by 200 bhp twin turbo charged diesel, with a bunkers capa-

city of 800 litres, and an average consumption of 30-35 liters per hour. It is equipped with Furuno's new M 1830 radar, GPS Navigator and Raytheon colour sounder. Hugin has a boom with winch, power block, rescue raft, rubber dinghy and comprehensive First Aid equipment.



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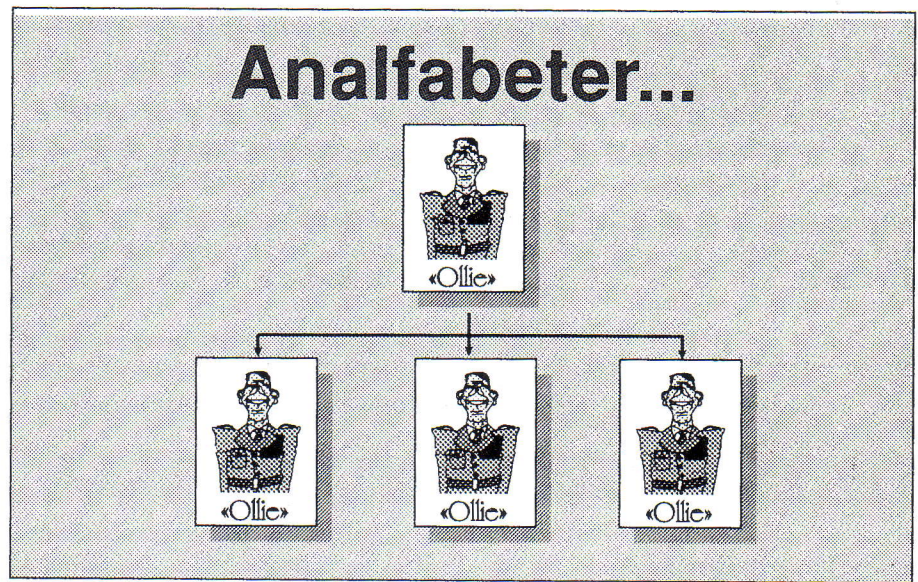


Right information, person and time.

This is just as much a question of organisation as of EDP, and it is a question of goal control. We cannot plan EDP without, at the same time, considering the organisation in which the EDP-tool is going to serve and what the organisation is destined to accomplish.

While earlier solutions demanded a gathering of people around central archives, we now have the possibility to organise the flow of information through the organisation in a much freer way. The gains we may achieve are manifold, but first of all we may create efficiency and job satisfaction, clearer relations regarding responsibility and concentration on the most essential tasks.

In this article we deal with some relatively new thoughts concerning how information flows within organi-



In a talk with EDP in the Army and the Homefront Jørgen Gether says: Today's military hierarchical organisation is almost a blueprint of how Caesar in his time organised his military organisation - The difference is that at that time nearly all were illiterates!

sations, and some conditions of importance for EDP to be effectively uti-

lized. We are not so much preoccupied by technical solutions, but rather

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we focus on the interplay between humans and EDP-solutions.

Organisations and goals

All organisations have some reason for existing, a task to solve, a goal to reach. Organisations consist of many parts, each solving partial tasks necessary to reach the main goal. This holds true both in private business life and in official institutions and management. In order to solve their tasks, these organisational parts must have access to information, and they give further information necessary for others to solve their tasks.

These organisational parts are "information islands". There are flows of information among the islands which we may map, thus enabling us to see what might be worthwhile to mechanise. At the current pace of technological development there is continually more and more becoming worthwhile to mechanise. What we achieve by means of EDP is not only the mechanising of routine work, however, it is just as much that we get a clearer view of the information flow in the organisation, and that we relate these flows to conscious work to reach the organisation's goal.

Relations of responsibility and change

In organisations there are people and relations of responsibility. Someone has the responsibility to reach the goals or partial goals, and they also get the responsibility for the correctness and to mediate information to the right place. People are concerned by matters of responsibility and having a voice in the management. EDP-systems must not tear apart this pattern, or render lines of responsibility unclear. Some kind of common denominator for good results is that

the EDP-systems must be perceived as being useful (and understandable!) tools, and not as some controlling instrument. It is also important to keep in mind that organisations are "living" and change with time, they are not static. Changes imply adjustments to the flow of information. EDP-systems need to be designed so that they may be adapted according to changes in the organisation. This is very impor-

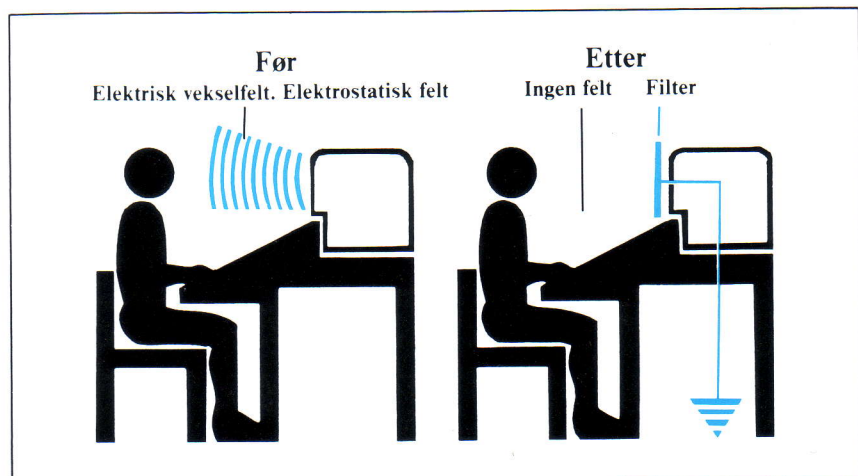
tant, and may be the greatest problem with many existing systems.

Technical development

The PC-world is about to give us EDP for all of us. There is a richness of good and cheap software, but those programs which are really used ex-

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Mange svenske forskere har rettet interessen mot det elektriske vekselstrømsfeltet foran dataskjermen. De mener det er en forbindelse mellom hudskader, hodepine og dette feltet. Static as er eneimportør til Norge av VU-PRO-TEK glassfilter og Sun Flex terminalfilter. Ifølge en testrapport fra Arbeidsmiljø-instituttet reduseres det elektriske vekselstrømsfeltet med 80-98%, og det elektrostatiske feltet med 100%. Testrapporten kan rekvireres fra Static as. VU-PRO-TEK glassfilter og Sun Flex terminalfilter er også blant de produkter som anbefales av Norsk Tjenestemannslag og Statens institutt for folkehelse.



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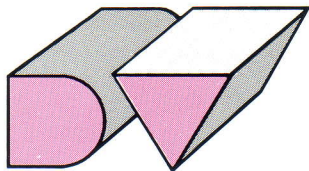
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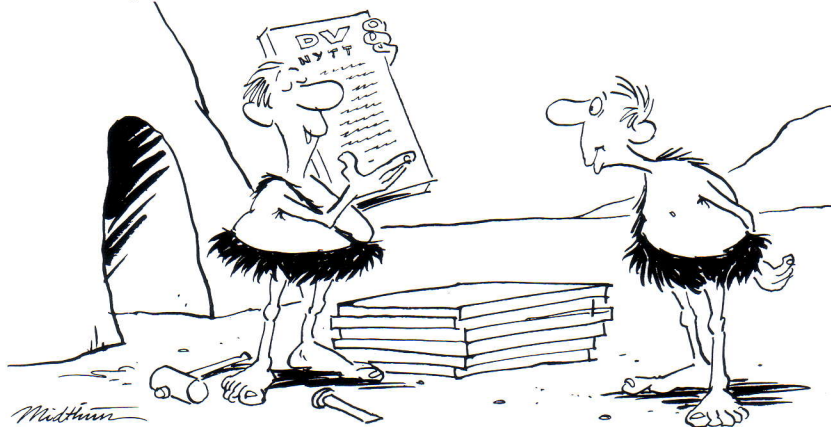
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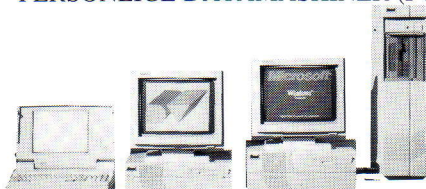


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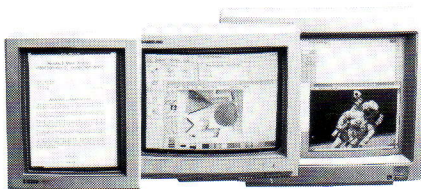


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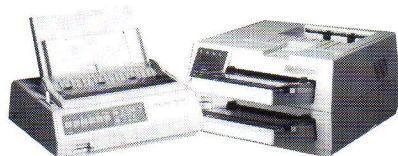
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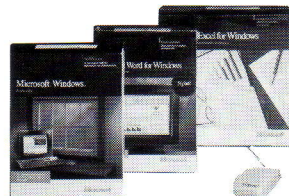
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DATAVAREHUSET

mation effectively within organisations, this is not enough. We must be able to structure information in order to mediate it further, and we must have clear concepts in order to say simply and clearly what "right" information is.

Base data

Base data is information from one part of the organisation available for use at other places. The organisational part being the originator of this information has a special responsibility to provide this information, and to make sure it is correct and available where it is to be used. The receivers use the information but must not be able to change it. Different parts of the organisation produce information which is base data for other parts. Examples of base data are prices, technical specifications and plan data for the carrying out of work tasks.

Base data is an important concept, because it directly supports the lines of responsibility in the organisation. Each responsible instance maintains and mediates its own base data. The EDP-systems are allowing for changes in the organisation with time by directing different base data to where there is a need for them at any given time.

Concepts from project and production control

Within the technical world there are two subject areas contributing to the carrying out of work tasks in an orderly and efficient way and at the same time help us to structure administrative information. These are technical project planning and production planning. These areas have much to give also in relation to performing administrative and management tasks.

Technical project planning and control is about dividing work tasks into smaller and more manageable "activities", stating who is responsible for

each activity, making clear the demand on resources, and to generate a time schedule in such a way that resources are utilized efficiently. When decisions are made to carry out the project, the lines of responsibility are pointed out and resources are reserved. (There is of no use carrying out tasks without resources, however, it is not unusual to try just that in large and complex organisations.) The amount of work and costs are estimated for each activity and the uncertainty in the estimates are considered. If the uncertainty is too big in one or more activities, these are further divided until the uncertainty is acceptable ("PERT"). Several activities will depend on others being completed before they may be started. Together the activities form series in time. The series requiring the most time are said to be critical, and the activities in this series are said to be critical activities. Delays in critical activities delay the whole project. The forcing of uncritical activities just produce waiting periods.

Production planning and control is about getting the most possible, useful work out of available equipment and personell. From an earlier rather

static planning ("MPS" means material and production control) one has in later years entered into the so-called "OPT" (Optimized Production Technology). The background for this is not least the technological development in Japan, and OPT is a progression of their concept "Just in Time". The main idea in OPT is that one concentrates on bottlenecks in the production, and these have about the same significance as critical activities in projects. Lost time in a bottleneck is lost production capacity for the whole organisation, and the forcing of work in non-bottlenecks only produce expensive temporary storage. these concepts are important in official administration also, and might lead to considerably more efficiency if they were known and understood, and if adequate EDP-tools were available.

Decentralised systems

When one is to describe the structure of an organisation, the usual thing to do is to draw hierarchic organisational charts ("Roman Army Model"). That is a model which is easy for

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thought to follow, and usually it also denotes formal authorities. In our days this model is more and more questioned as to its usefulness. Some of the most important objections are that it leads to bureaucracy and non-independence, it takes a long time to make decisions, and it is difficult to pass information "upwards" in the system. Good, modern organisations are "flatter", and has a much more flexible pattern than the hierarchical model. They are more open to individual creativity and initiative and it is easier to stimulate job satisfaction and efficiency. One seeks to lead such organisations by way of goal controlling rather than via commands from above. The modern organisations still have clear lines of responsibility regarding the performance of tasks, but there are many more ways for mediation of information than in the hierarchical systems. By the introduction of information technology we must con-

sider the organisational relationships and adjust the EDP-systems to the organisational pattern. More and more it is understood that EDP-systems must not disturb the lines of responsibility or render them unclear by transferring information out of pace with this pattern. This has easily happened, however, at installations of big, centralised EDP-systems. What if we imagine EDP-systems in organisations in the form of many small units which mainly mediate base data among the organisational parts and which use base data from other parts based on local needs and goals?

*Decentralised solutions are cheaper, easier to understand and thus simpler to use. There are no large scale benefits in modern EDP.

*New program tools and new equipment may be utilised without redesigning the whole system.

*Each part will address base data to where it is intended and only there.

This reduces the "dilution" of information by giving the receiver what they actually need. At the same time one will have a considerably better protection for sensitive information.

*It will automatically match the organisational pattern and take care of the relationships of responsibility in the organisation.

*It is easy to change the flow of information as the organisation changes with time, thus one maintains a system in accord with the organisation.

One argument one often meets is that decentralised solutions makes it difficult to have gathered views. There are two sides to this:

*The one thing one actually says, is that there are some wanted information flows that will be missing because one is not able to manage this on the technical level. This is wrong. It is only a question of specifying the flows.

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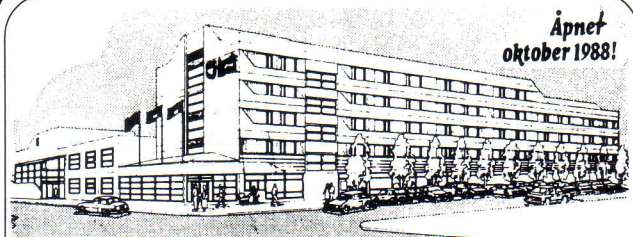
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*The second thing one is saying, is that it is difficult to manage non-planned criss-crossing communication. But that is unwanted! This is the surest way to create difficulties in an organisation having EDP-systems.

EDP may to a certain extent be thought of as a nervous system. Living organisms have tested and developed such systems for millions of years and have tried most of what may fail. In living organisms the flows of information are controlled, they never flow at random. "Broadcasting" of information, however, is used extensively, but with clear addressing. The natural way to design decentralised systems technically is to interconnect workstations in data networks. This is a relatively new technology and the consequences for incorporation in organisations are far from worked out. It is needed another way of "thinking organisation" than we are used to from central EDP-systems.

Human values, change and adaptation

We started this discussion by asking what EDP actually gives us. The answer is mainly; more efficiency in the use of time and resources, better background for decisions concerning the priority of tasks, clearer lines of responsibility and concentration on the most important tasks. If this happens side by side with the growing of good organisational conditions, we may have increased job satisfaction for free. (Without a parallel organisational development the opposite may happen!) In private businesses we improve the company's competitiveness and protect the workplaces. Within the official area we release resources which may be applied elsewhere. If the EDP-tool is flexible and well designed, the individual will perceive it as challenging and a means to solve new tasks. In this article we have studied some conditions for utilising EDP in a good and efficient way, first-

ly by utilising the concept of information flow among organisational parts, by concepts helping us to structure information better, and by designing decentralised solutions. This will quite certainly yield better solutions than much of what is in use today. All the same there is reason for afterthought. If the implementation of EDP happens too fast, people are torn out of work tasks which have been necessary up to now and which are perceived as meaningful. It is not a good solution to release work force without at the same time to have a system for re-education and adaptation which may utilise this work force for other reasonable and meaningful purposes. In this lies maybe the greatest challenge regarding successful implementation of EDP.

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Stock Management

By Capt. Oddmund Nicolaysen

EDBLF is now developing an EDP-based stock management system to take care of the accounting and management of all categories of stock for all local units in the Army and the Home Front. The system is to be completed March 1, 1992, and the expectations to the system are great. By developing a local system which takes care of all stock categories, the Army will harvest big gains concerning education and training within the stock management.

In today's system there are several very work- and time consuming routines which demand a high degree of accuracy. Our current stock management system is very complex with many and detailed rules. The stock management is stamped by the centralised location of the Army's EDP-equipment. This involves much reporting from local units to central systems. The work is also highly marked as monotonous routine tasks. Stock management at local units is one of the areas where we can harvest the biggest gains by the introduction of EDP.

A mixed past - now a major investment area

The stock management part is one of EDBLF's main investment areas. Both the initial study and the following interviewing of people in the piloting units showed the need for a new stock management system. This system is greatly dependent on communication with the other systems of stock management in the Army. During one period of the analyses phase of the EDBLF/stock the system group Stock was included as a part of HFK's project "EDP in the supply service"(P960). Here we had a close cooperation which resulted in a common data model and a platform to

ensure communication between the two systems. After this four month long cooperation with HFK we were once again back in EDBLF's localities, this time to make sure the interfacing towards the other modules in EDBLF was taken care of.

We are ready!

From April '89 we have had the necessary resources to provide for optimal progress. This made it possible to have a specification ready in september describing the system, and in October a prototype showing screen pictures to reveal a little of the new system's functionality. Initially it was decided that the stock module were to be developed by the project's own resources. The intention was to give the Army experience in developing program modules of this size. Considering available resources in 1991 led to a change in these plans, and it is now decided that also the stock part is to be produced by an external vendor. The system for stock management is to be ready and delivered to the Army March 1, 1992.

The workgroup - our most important partner!

EDBLF's systems are not something

being developed by "EDP-experts" in Oslo. Users have been taking part from the first day, represented by a systems officer and a workgroup. This workgroup consists of 10 representatives from different units with background from various areas of local management. All these have been selected because they possess considerable competence in the area of stock management, and not because of eventual EDP experience.

What do we want to achieve?

What do we want to achieve by this million kroner venture?

Communications

By developing a local, integrated system of management where stock is included, we simplify and ensure good communications internally among the management areas. Thus we eliminate several occurrences of double registering, and besides we avoid registering the same information several times in the stock management system.

Automation

One of the main purposes of the system is to automate several of today's boring routine jobs. Just to mention a few:

*reporting to central EDP-systems

- *filing account cards
- *filing in summary lists
- *filling in vouchers

Better inventory control and preparedness

By means of a local titles database, which at any time shows the real status of KOP-stock, we provide correct base data for purchase and use of this stock.

Better use of the resources

By relating economy to stock transactions we give the local units the possibility to consider the use of the resources in a better way.

Avoid double registration

By saving transactions in one place only in the database, we avoid unnecessary double registration, and potential trouble sources are eliminated from the accounts. One example illustrating this is at the reception of new stock: Imagine you have requested or ordered some stock. By entering the

transaction number, you will receive all relevant information you might need. (f.ex. vendor, catalog number, description, amount, and any remarks you entered when ordering.) In the same reception screen you may also allocate the stock directly to the unit or location you wish. If the stock is borrowed from mob-stock, a plan for delivering back the stock is worked out based on the information contained in the reception screen.

Petty officer takes over responsibility

The most significant change is to be noted in the actual process of filing entries in the stock account. The system is designed so that those registering a transaction, shall also make sure that the accounts are updated. This implies that the petty officers will take over the responsibility for accounting their own stock. Still there will be a voucher register at the units, but the petty officer or equivalent will archive his vouchers according to a special archiving key.

Cooperation with other systems

Internally we cooperate with the systems of personell, crew and education. Since we will register the delivery of personal clothing and equipment, such as mob-equipment and weapons on the personal record, we are going to communicate most frequently with the personell module. Further we will fetch information on job positions from this module for use in the calculation of stock titles for persons.

Externally we have an interface to HFK's project; EDP in the supply service (EDBFT), EDP in the maintenance service (EDBVT) and project 940 restocking of spareparts on 2. and 3. line. The most frequently used interface will be towards EDBFT, where we are enabled to transfer requisitions electronically to arsenals and magazines. Similarly we are to have electronic follow-up on the status of these requisitions. We also have frequent interfacing towards existing systems such as:

*711-KOP-stock register

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- *87-The weapon record
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- *325-Civilian vehicle register

These systems entail considerable workload concerning report generation in today's system. Through the implementation of EDBLF the reporting to these systems will be automated by loading data from the local database to diskette/tape, and then mailing them to central authority.

The functional areas one by one

What then will the system consist of? EDBLF/Stock has the following main functions: Purchasing, Stock holding, Discarding, Personal equipment, Accounting and Provisions. These functions will be presented in the following.

Purchasing

This part consists of several functions.

In one part dealing with demands, there will be one function suggesting recommended amount to order, based on predefined maximum and minimum stock. Here there will also be allowed for the possibility to declare demand for consumer articles and stock which is to be entered into the unit's A-plan. Registration of offers is to be entered in this part also. All central and regional contracts, which are received electronically by the units, are to be filed here. In addition, local units will file offers from local vendors in the same register. Issuing requisitions to military depots and orders to civilian vendors are also placed in the purchasing part.

Stock holding

This will be the largest part in the stock system. Reception of stock is taken care of in this part, and any reclamation to military or civilian supplier may be produced here. At

the reception of stock borrowed from mob-stock, there is allowed for a function to register the plan for return delivery. Relocation and delivery of consumer articles is taken care of in this part. Stock maintenance is one of the modules which will be included in later versions of EDBLF. In this version we have only included the most important functions in order to take care of the stock distribution. The unit may register its annual maintenance plan for HVK-stock and follow up the calling-in for repair/maintenance. Similarly there is included a function for following up the unit's washing and cleaning list. One of the new possibilities for following up stock status, allowed for through the implementation of this system, is the possibility to follow up all articles regarding their conditional status. Of course we have included registering of TK-change for ammunition, but also for other groups of articles the

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out something, a rent price is stated and an invoice is produ-

arding

g vouchers of discarding and ering of the discarding commis- decision is taken care of in this on. Sale of stock and issuing of documents are also included to the new requirements regarding om to sell equipment. A function nfer of stock from local units oots or other local units is also led here.

agement of personal ment

oping this part we have tho- ly studied HV's own "Equip- List" program - we have not ind- to reinvent the powder! In or- o simplify the management of nal equipment we have chosen late personal equipment, mob- ment and stock lent out on receipt to the person's personal d. The system will also take care the tasks HV intended it for. a persons are transferred to a unit, the mob-equipment and fer equipment will follow the nal record. On the equipments- accounts lists (URL) and also the lists this stock will be shown as g delivered to person. Registering ss- and damage notes will be en- here. Delivery of substitution ar- may be done immediately, inde- ent of the person being entitled mpensation or not. The one ap- ed to make decisions on the er may fetch the registered infor- on from TS and make his decisi- Any amount of compensation ged from corporals and men will nferred electronically as a cla- o the crew system. Today's pro- s regarding transfer equipment

Accounting

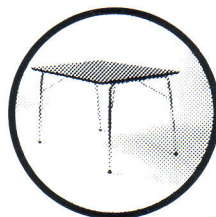
In the accounting module we have incorporated the Army's article identi- fication register (IDREG). This will

user may access the voucher register. The unit will have a local KOP-stock register available to turn out their URLs and titles lists. Further there will be an electronic weapon file card and a vehicle register where current infor-



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mation related to each individual will be found. Furthermore, each user may extract all conceivable reports concerning stock status. This may be inventory lists, stacking cards, LOT-surveys, stock pr. depot/unit etc. Stock counting and revision is included as a routine in the system. By using these routines, the units may output counting cards/counting lists periodically. Finally there will be an automated routine to check transactions between units and depots. This revision report will unveil wrong registering and transactions among the units, e.g., deviation between departed amount at one unit and received amount at another unit.

Provisions

Provisions are mainly treated like any other stock. The difference lies in the close follow up regarding costs and calculations related to this. Thus we have included calculation of stock value and consumption needed to follow up daily status of catering expenses. There is also included menus in the system so that one may calculate amount and expenses at the creation of the monthly menu plan.

Gradation

The system will be graded confidential for establishing units which are filing unit accounts. This will imply some physical security measures such

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as safeguarding machine room and rooms where printers are located.

ning within the stock management area.

What will be noted as the greatest change?

The greatest change or gain the Army or HV will note after the implementation of EDBLF/Stock will be that we will now have only **one** system to take care of all stock management at local units. This will have considerable consequences for education and train-

Views of the future

By the implementation of the stock module the officers in the stock management will get a tool which will lift them straight up from stone age to 1. division concerning EDP. You will get a tool which will ease your daily planning and work and also the stock accounting itself. And most important; data which you have already entered into the system you may next retrieve for further work.

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usually, you see signposts along the road with a yellow diamond. If you don't see such a signpost, you are on a secondary road.

If you are driving on a secondary road and a car on a road approaching from your right has the right-of-way. This is true even if the road you are on is much wider than an intersecting road and appears to be a "main road". The trick is that some drivers will take their right-of-way and others will yield. You never know.

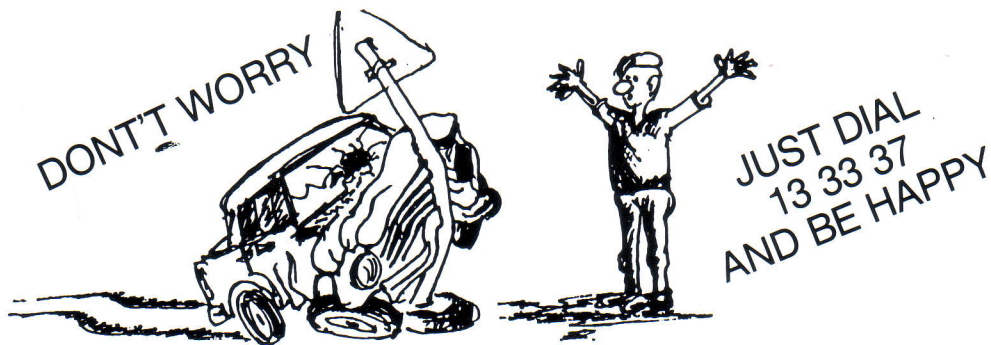
While driving, you will actually see cars stop, as they approach an intersection, to let incoming cars by. This is a good practice because, (1) it is the situation, (2) it prevents you from being taken by surprise by an aggressive driver, and (3) it serves as a reminder to you to continue to pay attention. I was very impressed when I arrived by a woman who, after 20 years, still had "American" driving instincts, and had gotten nailed, again, by failing to yield.

The exception to # 2 is if the intersection is marked by a traffic sign that says yield, or a stop sign.

Another hard and fast rule that is different is the use of traffic circles. There are lots of them, and the reason is that they work really well - you just have to get used to them. In a traffic circle - a car in the circle has the







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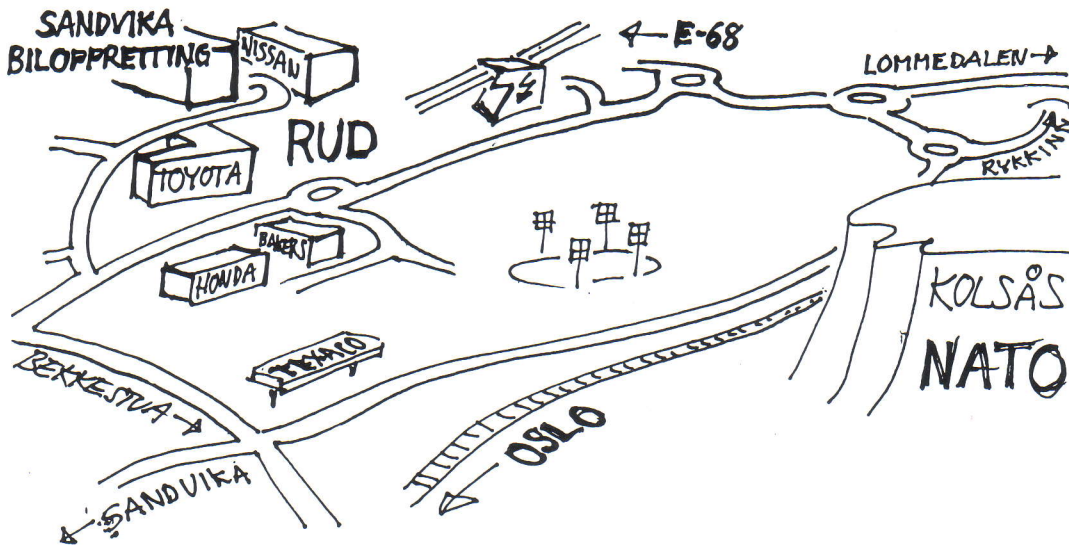
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undergo a breath test.

Blood tests may be performed by a medical practitioner or a registered nurse or medical technician. A clinical examination shall be performed by a medical practitioner if it is suspected that the driver is under the influence of any substance other than alcohol or if other special reasons so indicate.

The Ministry issues specific regulations governing the examination.

Tire regulations

Automobiles with allowed gross weight under 3,500 kg shall have tires with a tread depth of at least 1,6 mm.

Automobiles with allowed gross weight over 3,500 kg shall have tires with a tread depth of at least 1 mm.

Studded tires or chains must not be used during the period from the first Monday after Easter through 31 October unless the conditions make it ne-

cessary. In Nordland, Troms and Finnmark the period is from 1 May through 15 October.

Instead of studded tires, winter tires, e.g., tires for winter driving which have a tread depth of 3 mm or more and are marked with M+S, MS, M&S, M-S or "Mud and Snow", can be used.

Use of Headlights

According to Norwegian law, all motor vehicles must use lights both day and night.

These lights being low-beam headlights or special day-time lights, must be turned on automatically when the vehicle is in motion; Norwegian motor vehicles thus may not be driven without lights turned on.

Speed Limits in Norway

In Norway we find it preferable to

have low speed limits on our roads, in order to maintain the highest possible degree of traffic safety. Beside our roads are of varying standard.

In particular you should note that some of our main highways run through built-up areas, so that the same road is used by both local and long-distance traffic.

You should also note that there are speed limits signs along almost all roads, except in zones where limit is 80 kms per hour. Consequential you will frequently be reminded of the maximum speed allowed on the road you are travelling.

The general rule is that you must not drive at more than 50 km/h in built-up areas, or at more than 80 km/h elsewhere.

The change from a built-up to a non built-up zone will not always be clearly apparent. In many place houses are scattered along the road for some distance from the actual built-

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up area. In these intermediate zones the speed limit will be 60 km/h or 70 km/h.

Sometimes you will find 60 km zones in rural areas. Usually these are near small groups of houses.

Pedestrians often frequent such roads, and therefore lower speed limits apply there too. In some parts of typical housing areas you will find the sign "Sone 30 km/t." This means that throughout the whole zone the maximum allowable speed is 30 kms per hour. In addition there may be physical means of speed control (such as "sleeping policemen" or "humps") in the roadway. Warning signs are not always posted.

The following signs indicate that you have reached the end of a stretch of road where a special limit applied, so that speed limit is then 80 km/h.

This sign means that you are leaving a housing area where the speed limit was 30 km/h. Normally you will

then still be within a built-up area, and therefore the speed limit will be 50 km/h.

Wherever work is being carried out along the road lower speed limits will be put into effect. Usually these will be 30 km/h or 50 km/h and signs will be posted.

This should give you a short briefing on the speed limits you will encounter on Norwegian roads. We ask you to observe the speed limits carefully and wish you a pleasant traffic-safe journey in Norway.

Automobile Clubs

Norwegian Automobile Club (Norges Automobil Forbund - NAF), Storgata 2, (34 14 00). With over 300.000 members, NAF is the largest automobile association in Norway. Members receive a monthly magazine and an excellent route book of Norway with detailed maps and descriptions of

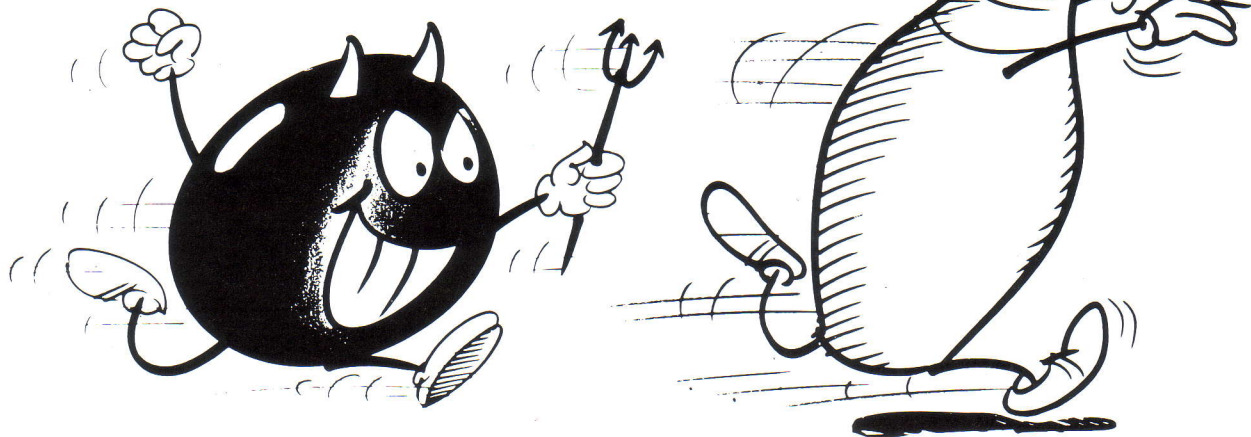
communities, roads and points of interest. These are written in Norwegian, and if you want, you can ask for a membership that doesn't include the publications, for a much smaller fee. Publications available in English are "Motoring in Norway" and "Camping in Norway," both of which provide information on NAF camp-sites and recommended hotels. Membership also includes accident and illness insurance for Scandinavia and luggage insurance and rescue road service in Norway.

Royal Automobile Club (Norsk Automobilklub - KNA), Drammensveien 20 c, monthly magazine for members. Various other advantages from membership.

Emergency Service from Falken (23 25 85) and Viking Redningstjeneste (60 60 90) requires a membership, or paying the charge for emergency service.



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Public transportation in Oslo is very good. Taxis (drosje - "droh'-shah") are at corner stands throughout the city where they wait in queue. You can order a cab by telephoning taxi central at 30 80 90 (in Bærum call 12 34 56), or from the stand in your neighbourhood. (These are listed under "drosje" in the telephone book.) The charge is based on the distance from the taxi stand to your pick-up point. An empty cab will probably not respond to your signal, particularly if there is a stand nearby. About 10% tip is sufficient.

A public transportation system of streetcars (trikk), buses (buss), city trains (bane), and trains (tog) covers Oslo and suburbs in an excellent system via A/S Oslo Sporveier. They publish a map called SPORVEISKART OSLO which is quite useful.

Fares

There are several types of tickets you may purchase for travel on the trikk, buss, bane and tog. In the summer, you can even ride on boats which are part of the system. From both the Oslo City hall area and Sandvika these boats go to various stops on nearby islands and you use the same types of tickets. An example of this is the ferry to and from Bygdøy. Passengers are required to keep their tic-



kets and show them if questioned by an inspector. Be careful to keep your ticket until you have completed your trip.

You may buy a ticket good for one ride at the front of the buss, trikk or bane, or from the ticket seller who walks through the tog. This is good for one hour and you may change within the different means of transport on Oslo. There are a variety of tickets that you can buy which are good for more than one ride. They may be purchased at all stations which have a sales window, such as Oslo Central and National Theatre. On the trikk, some busses, and the bane, you can then validate the ticket yourself using the orange machine inside the conveyance, or as you go into the tog will validate it for you. If you do it yourself, just put a blank

edge of your Mini or Maxi card in the machine to get the time and date stamp. If you use this kind of transport often you can save some money on buying "MAXICARD". They are valid for another trip within the same clock hour after it has been stamped.

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§ 1. Order concerning the use of safety belts in cars.

Safety belt shall be used whenever it is installed. Children shall use appropriate safety equipment if this exists in the car.

Children from 0-3 years shall be placed in seat where safety belt is installed, shall use approved safety equipment adapted to the child, or such equipment in combination with ordinary safety belt.

Children above 4 years shall use approved safety equipment which is appropriate for the child whenever this exists in the car. When the car does not have such equipment, the ordinary safety belts shall be used in an appropriate way.

The order does not apply, however:

- a) when the car stands still
- b) during backing
- c) during driving in the garage, on parking place, petrol station, workshop area or similarly limited area
- d) during driving at low speeds when the person in question at short intervals must leave his place, such as by distribution of mail or newspapers, cleansing work or equivalent
- e) when the person in question has brought with a declaration from doctor freeing him from the use of safety belt
- f) for taxi driver in service.



§ 2. Order concerning the use of helmet.

Everybody shall wear helmet approved by "Vegdirektoratet" during the driving of motorcycle (moped included) or in side carriage of motorcycle.

Small children

It is not allowed to transport children under 4 years only fastened by ordinary safety belt. Children up to 9 months must be transported in a special seat, alternatively baby-bag in combination with additional equipment for safeguarding them. Children from 9 months up to 3 years must be transported in special chair/seat or use special children safety belt, alternatively generations belt together with seatcushion/chair.

Children from 4 years up shall sit safeguarded in special chair/seat whenever this exists in the car and is appropriate for the child. Whenever

this equipment does not exist, they shall use the ordinary safety belt in a useful way, f.ex. to use the hip part of the adult belt, if the anchoring points may not be adjusted or the car does not have generations belt. When the child is so big that the diagonal part of the belt does not touch the neck, the belt may be used in the ordinary way.

Children's safety equipment must be approved by "Vegdirektoratet" or have the E-mark.

If children are passenger on motorcycle, it shall use approved helmet. If the child is so small that it cannot use approved helmet, the child cannot be passenger either.

According to the vehicle regulations § 138 nr. 2 part e, it is not allowed to have children above 10 years as passenger on moped. If there is a passenger between 10 and 15 years, the driver may still be fined, in addition to any reaction for the violation of the vehicle regulations § 138.

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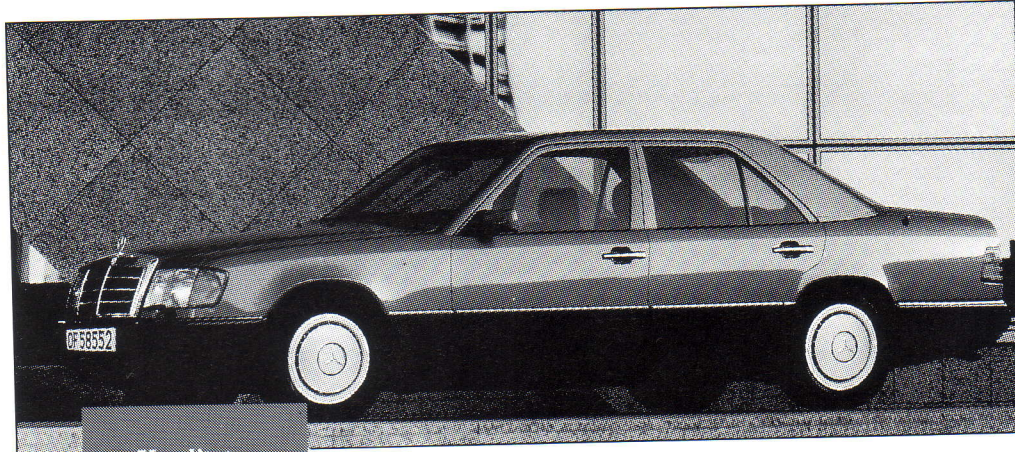
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The Vigeland Park

By Ingrid Reed Thomsen

The Vigeland Park is Oslo's largest and most outstanding park and covers an area of 80 acres. It functions both as a sculpture park and a public park, open to visitors day and night the year round.

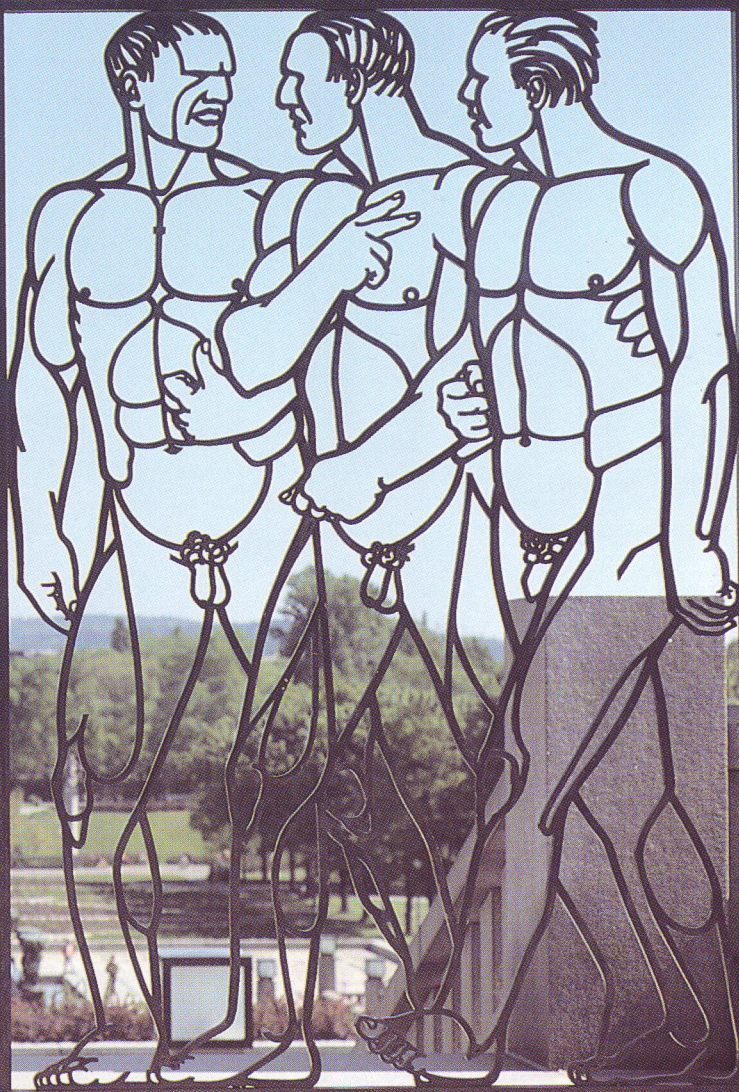
The park contains 192 sculptures with more than 600 figures, all modelled in full size by Gustav Vigeland (1869-1943), Norway's most prominent sculptor. He also designed the architectural setting and the layout of the grounds with far-stretching lawns and long straight avenues bordered by maple trees. The park was not originally conceived as the entity we see today, but is the result of a process that went on for about 40 years.

We enter the park through the Main Entrance. The 7 gates are made of wrought iron forged after Vigeland's drawings by highly skilled workers in a smithy that was set up outside the artist's at Frogner, today the Vigeland museum, where most of his original works can be seen. The gates have panels with geometric patterns as well as three-dimensional lizards intertwined in a complicated wrought iron ropework. Also the Gate Houses on both sides of the entrance are Vigeland's work and have bronze doors with symbolic reliefs.

Two alleys, one on each side of a spacious lawn lead to The Bridge where 58 bronze figures or groups (1926-33) are standing on the granite parapets. They portray people of all ages, although there is less emphasis on old age than in the next two units in the park. Dominant motifs among the groups are the relationships between man and woman and adults and children. Many characteristic representations of children are noticeable, as for instance The angry little boy. Each of the 4 corners of the



Figural gate in wrought iron.



Oppskriften er jordens egen



EDISON

Farris er absolutt rent og fullstendig upåvirket av ytre forhold, som temperatur, årstid og menneskers adferd mot naturen. Det eneste vi gjør er å hente mineralvannet opp fra Kong Haakons og Kong Olavs kilder, tilsette kullsyre og tappe det på flasker.

Farris er full av mineraler og sporstoffer, men inneholder ingen kalorier.

Du finner neppe noe sunnere og mer forfriskende.



FARRIS

Norges eneste naturlige mineralvann.

is no single interpretation of the Monolith, and Vigeland himself said that the column belongs to the world of fantasy and may be interpreted in many ways.

On the western side of the Monolith is the Sundial mounted on a granite pedestal bearing the 12 signs of the Zodiac.

The final sculpture along the main axial path is the Wheel Of Life (1933-34) with adult figures and children linked together in a circular composition around a void. Vigeland has used the circle, this ancient symbol of eternity, repeatedly in the sculpture park. Here it is used for the last time as a crowning finish to his work.



Right: The Monolith.

Below: The Fountain.

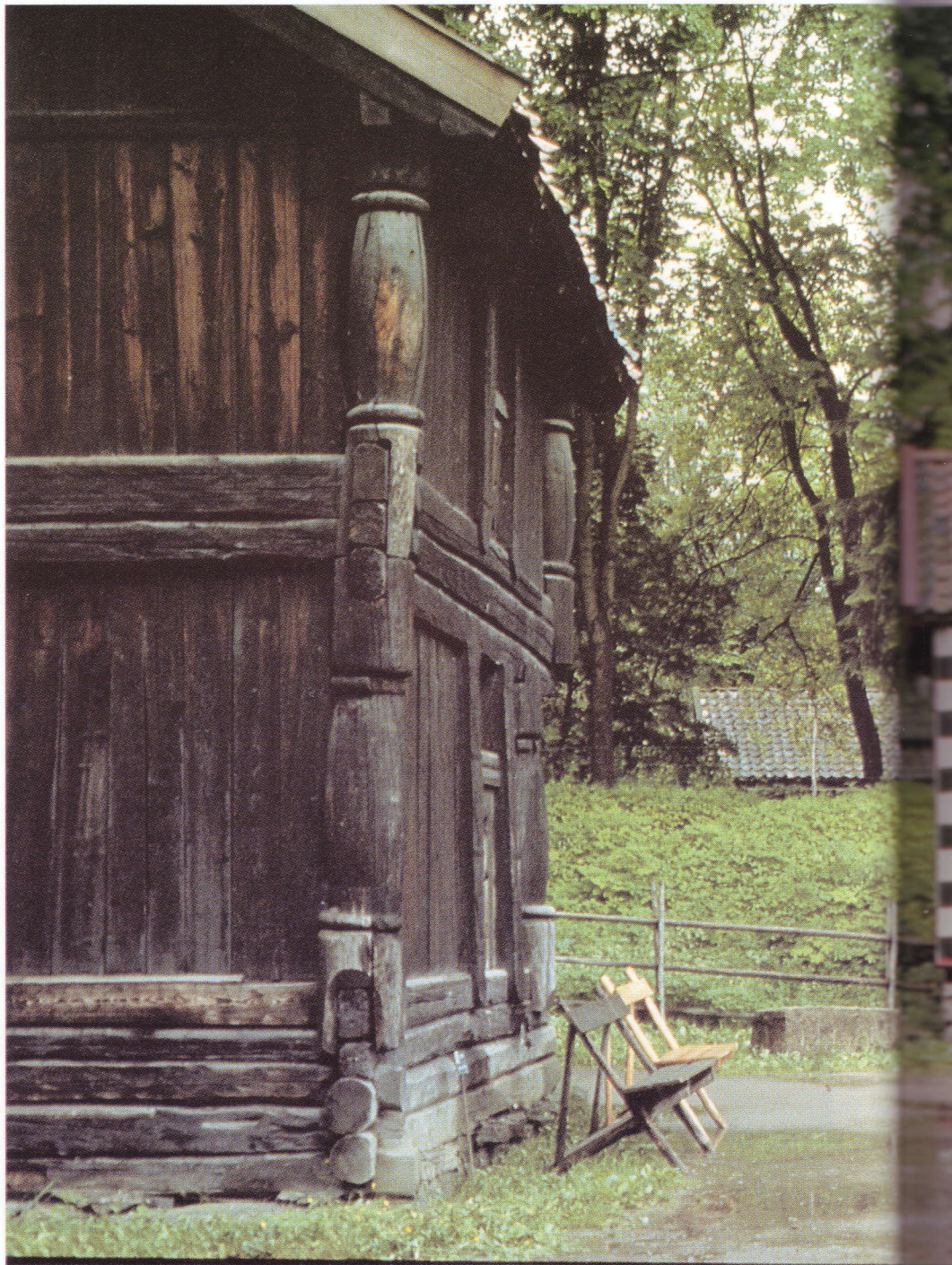


The Norwegian Folk Museum at Bygdøy

The Norwegian Folk Museum, Norway's largest museum of cultural history, was founded in 1894 by Hans Aall. Aall, who was barely twenty-five years old at the time, was later appointed its first director.

The Museum is a national institution, and accordingly aims to show how the people of Norway, from town and country, rich and poor alike, have lived and worked from the Reformation (16th century) to the present day. The open air section, the oldest collection of its kind in the country, is 140,000 square metres (3,500 acres) in extent and comprises some 140 old buildings, transported to the site from all over Norway. The rural dwellings are grouped together by region of origin, while the urban houses have been laid out to form an "Old Town". The collection includes a number of buildings from the Middle Ages, among them Gol stave church (c. 1200) and Raulandstua, one of the oldest wooden dwellings extant in Norway and Henrik Ibsens study from the 19th century. The museum also has a large Pharmacy museum with herb garden attached. In summer a Roman Catholic mass or an Evangelical Lutheran service is held in the church on Sundays.

The indoor section, which comprises more than 225,000 exhibits, contains furniture, household fittings and utensils, examples of the "rose-painter's" and wood-carver's art, clothing, and tapestries and other woven work for decoration and everyday use. Farming implements and logging gear illustrate the development of the agricultural and forestry industries, and a collection of gear, trappings and conveyances provides an interesting picture of the history of transportation in a country whose ro-



"Cappelen - stua", Telemark.

ads for long defied wheeled vehicles.

There are also music and ecclesiastical sections, in which recitals are held on the Museum's own instruments.

The Lapp section provides a fascinating insight into the ancient culture of this ethnic group, a culture which was based on hunting, fishing and

reindeer herding, and it also houses examples of Lapp art and handicrafts, the work of both men and women. This opened in 1990.

The museum boasts a restaurant and a centrally located café where lighter meals and refreshments are served. On Sundays and selected evenings in summer displays of folk-

dancing are staged by visiting troupes, as well as by the Museum's own dancers.

Norwegian Folk Museum - Well Worth a Visit!

Regular events during the summer:

- Folk dancing with the museum's award-winning dance group and dancers from the district teams in Oslo. Every Sunday from the 20th May to 8th September.
- Baking over open fire featuring "lefser" - Norwegian griddle cakes, and flat bread, in the old buildings of the Outdoor Museum.
- Horse and cart rides.
- Church Service in the Stave Church every Sunday.
- Guided tours in Norwegian and English daily throughout June and July.
- Demonstration of old handwork (bookbinder, potter, silversmith). Also woodcarving in July, and various homecraft activities.
- The museum also has a number of other events, such as concerts, market days, lectures etc.

Further information available on application to:

Norwegian Folk Museum
Museumsveien 10
0287 OSLO 2
Telephone: 02/437020

Free parking!!



The Viking Ship Hall

By E. K. Hougen, Museum Lecturer

The Viking Ship Hall is one of the world's most unique museums. The two thousand year old ships from Oseberg and Gokstad are the only completely preserved ships from the time of the vikings.

The ships have been pulled ashore and used inland as burial ships at the funeral of wealthy people. (The dead were buried fully clothed in their beds inside a burial chamber, which was built over the poop). In the Oseberg ship two women were buried - a "queen" and her slave - who died about 850 a.d.

The ship was built from oak, for rowing and sailing. With helmsman and lookout man it must have had a crew of more than 30 men. The stems are decorated with carved animal figures, the forward stem terminating in a snake head.

The Oseberg ship was first and foremost a royal luxury craft, hardly suitable for operating on the open sea.

The Gokstad ship was built 50 years later. The design is far better and sturdier than that of the Oseberg ship, and is eminently suited to ocean sailing and navigating in heavy sea. This was fully proved in 1892 when a replica of the ship sailed across the Atlantic from Bergen to the World Exhibition in Chicago (the replica is now being exhibited at the Lincoln Center in Chicago).

In the Gokstad ship the remains was found of a powerfully built, 60 year old man, who died about 900 a.d. Among his grave possessions he had three small boats (these boats and the burial chamber are on exhibition at the museum).

Most of the objects at the Viking Museum stem from the Oseberg site, the richest burial finds from the age

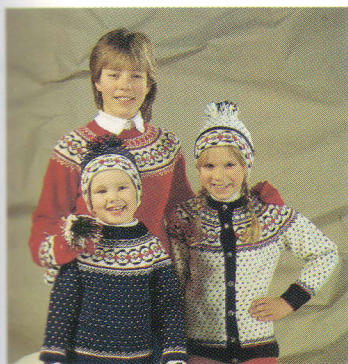


The "Oseberg"-ship at the Viking Ship Hall at Bygdøy.



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of the Vikings. The wagon, the sledges and the animal head posts are wholly unique.

The Oseberg Wagon is copiously carved in animal ornamentation, figural motifs and heads of men. The design of the wagon does not permit it to make turns. It was probably not intended for everyday practical use, but rather used at religious processions and rituals.

Three of the Oseberg queen's gorgeous sledges are being shown at the Viking Ship Hall, these also with lavish wood carvings of clawing, grimacing and biting fabled animals, which are writhing and entwining. Originally the decorations have had a greater impact: The sledges were once painted, the carvings in dark colours against a light background.

Five animal head posts were found

on the Oseberg site, four of which are being shown. The heads are all carved with open jaws, bare teeth, ready for striking. Their function is not known. They probably belonged to the ceremonial paraphernalia of the King's estate and were carried around at religious processions and ritual observances.

Ships, wagons, sledges and animal head posts are the main attractions at the Viking Ship Hall. But there is a number of other items that will evoke visitors' interest. The furnishings of the viking ship graves include not only exquisite artifacts, but most of the articles of everyday life: Textile tools, kitchen utensils, furniture, shoes, combs and equestrian equipment.

Opening hours: 10.00 a.m. - 6.00 p.m. until September 1st.

Entrance fee: 15,-, children 5,-.



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AFNORTH Magazine has concentrated on the courses situated within two hours drive from Oslo.

Drøbak Golfklubb

Drøbak. Par 70. 18-hole course. Proshop. Driving range, hire of clubs and equipment. Greenfee: 200,- NOK. 40-50 minutes drive from Oslo. Re-

quirements for playing: Greencard. Telephone: 09 - 93 16 80.

Groruddalen Golfklubb

Grorud. 9-hole course. Par 54. Proshop. Driving range, hire of clubs and equipment. Greenfee: 120,- NOK. The course is situated a short drive north of Oslo.

Telephone: 02 - 10 64 37.

Hedmark Golfklubb

Elverum. 9-hole course, 18-hole course finished autumn 1991. Par 72. Proshop and cafeteria. Driving range, hire of clubs and equipment. Greenfee: 150,- NOK. Two hours drive from Oslo.

Telephone: 064 - 13 588.

Borre Golfklubb

Horten. 18-hole course. Par 73. Proshop and restaurant. Driving range, hire of clubs and equipment. Greenfee: 200,- NOK. Short-term membership up to three years is possible for personnel stationed in Norway. One hour drive from Oslo. Demands to Hcp: Green card.

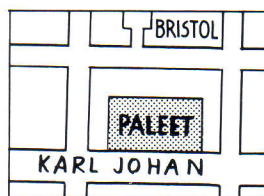
Telephone: 033 - 73 210.

Borregaard Golfklubb

Sarpsborg. 9-hole course. Proshop. Driving range, hire of clubs and equipment. Par 65. Greenfee 120,- NOK. Two hours drive from Oslo. Demands to official handicap.

Telephone: 09 - 15 74 01.

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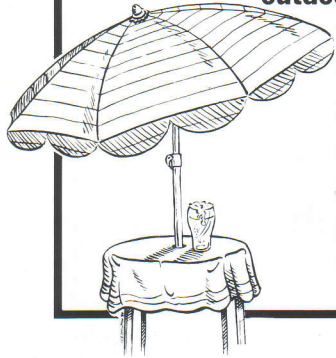


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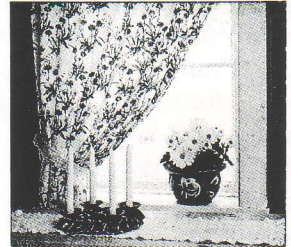
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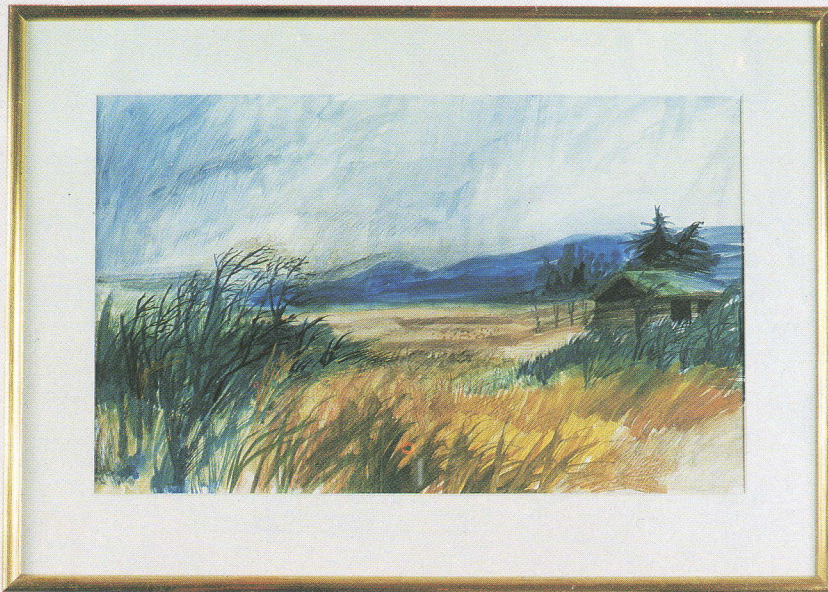
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Bærum Golfklubb

Lommedalen. 18-hole course. Proshop and cafeteria. Driving range, hire of clubs and equipment. Par 71. Greenfee 150,- NOK. Twenty-five minutes drive from Oslo. Demands to playing skills. Green card. Telephone: 02 - 51 30 85.

Kjekstad Golfklubb

Røyken. 18-hole course. Par 67. Proshop and cafeteria. Driving range, hire of clubs and equipment. Greenfee: 150,- NOK. Thirty minutes drive from Oslo. Requirements for playing: Greencard. However, playing in the weekends demands official Hcp. Telephone: 03 - 28 88 50.

Onsøy Golfklubb

Fredrikstad. 18-hole course. Par 72. Proshop and cafeteria. Driving range,

hire of clubs and equipment. Greenfee: 170,- NOK. About two hours drive from Oslo. Telephone: 09 - 33 35 55.

Oppegård Golfklubb

Sofiemyr. 9-hole course. Par 72. Proshop. Driving range, hire of clubs and equipment. The course is situated south-east of Oslo, about 15-20 minutes drive. Telephone: 02 - 99 18 75.

Oslo Golfklubb

Bogstad. 18-hole course. Par 72. Proshop and restaurant. Driving range, hire of clubs and equipment. Greenfee: 250,- NOK. Greenfee playing only before 1400 hrs on weekdays and after 1400 hrs in weekends. Requirements for playing: Max. handicaps of 24 for men, 32 for ladies. Telephone: 02 - 55 44 02.

Skjeberg Golfklubb

Skjeberg. 18-hole course. Par 72. Proshop and cafeteria. Driving range, hire of clubs and equipment. Greenfee: 130,- NOK. 11/2 - 2 hours drive from Oslo. Telephone: 09 - 16 63 10.

Vestfold Golfklubb

Stokke near Tønsberg. 18-hole course. Par 73. Proshop and cafeteria. Driving range, hire of clubs and equipment. Greenfee: 180,- NOK. Requirements for playing: 28 for men, 36 for ladies. 1,5 hours drive from Oslo. Telephone: 033 - 65 655.

Østmarka Golfklubb

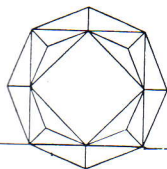
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Try some Angling in Oslo-Marka!

By Wanda Widerøe

Fishing in the whole land area around Oslo (shortly called Marka) is being organised and taken care of by OFA (Oslomarkas Fiskeadministrasjon) since 1936 through voluntary work. Their work areas include Nordmarka, Lillomarka, Bærumsmarka, Østmarka and big parts of Krokskogen.

Together this involves 11 local authorities and four counties and more than 200 small and large lakes, among which 40 are mainly trout lakes. Their work is, through several activities, to maintain the good fishing in this area. This is done by adding lime, fish stocking, test fishing, clearing lakes and brooks, and especially important it is to take care of spawning brooks.

Even if there are several lakes

which need to be limed each year due to acidic precipitation, the soil in itself is many places so rich in lime that the lakes neutralise themselves. For the people in OFA the fish stocking is the climax of the year. This mostly happens during May/June, but also a little in the autumn. During 1990 almost 70000 fry and breded fish were stocked.

OFA receives its income mainly through the selling of fishing licences.

Rules for fishing

Some lakes in Marka are restricted areas since they are drinking waters. Here, bathing or fishing is not allowed.

One is not allowed to catch trout less than 25 cm. Fish in this category shall be taken carefully off the hook and thrown out again. Nor is it allowed to fish in brooks and rivers during the month of October. Then the





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fish is spawning. In some lakes it is not allowed to fish with spinner and gobbler. Which lakes these are, may be seen on the back of the fishing licence. Against payment of an additional fee you may in several lakes fish from a boat. These lakes are also noted on the back of the fishing licence.

It is very important that you call OFA if you should catch a marked fish.

Big fish

There **is** big fish to be caught in the lakes of Marka! A record trout weighing 10 kilos was caught some time ago in Bjørnsjøen, and just last year there were reported several fish weighing in at 4, 5 and 6 kilos. Even if the usual size is about half a kilo, it is not unusual to catch fish weighing around one kilo even in the smallest lakes.

Brook trout are stocked into lakes which are so acidic that ordinary trout cannot survive. It may be caught with fly, maggot or spinner. It will seldom grow larger than 3/4 kilo, however, it has a fine red meat, and it is a delicious fish to eat.

Canada trout are stocked in Lut-

vann in Østmarka. This is a fish which grows old and big, several more than 2-3 kilos are caught, preferably on gobbler. **Char** is very common in many of the larger lakes, but this is mostly fished during ice-fishing. **Gwyniad**, which is also plentiful in the larger lakes, is difficult to hook, but it is sometimes caught on fly or "mormyska". **Pike**, one usually finds in the lakes nearer Oslo, like Bogstadvannet, Sognsvann, Østervann, Steinbruvann, Nøkle vann, Harestuvannet and others. This one you catch best on gobbler or bait. The largest samples of **Perch** you will also find in the larger lakes just mentioned. Perch is preferably fished on maggot. Small perch is a very common fish for the ice-fishers. **Eal** exists in the lower parts of the water courses. By paying a separate **crawfish** fee you may actually catch these in some lakes, though only within the borders of the municipal forests of Oslo. The best crawfish lakes lie in Rausjømarka.

Buy fishing map!

If you are going on a fishing trip in

Marka, a special fishing map, published by OFA is recommended. In the map you will find a lot of important information; wood paths, catering places and forest roads etc. are also mapped.

Scale: 1:100000.

Remember that everybody above 12 years must buy fishing licence!

Prices for fishing licence for 1991:

Senior	Kr.150,-
Junior(12-15 years)	Kr. 75,-
Pensioners/disabled	Kr. 75,-
4-days card, senior	Kr. 50,-
" , junior	Kr. 25,-
Addition for boat fishing	Kr. 75,-

Remember that you must also pay the "Statens Fisketrygdavgift"(not for persons below 16 years).

You may have OFA's fishing licence in sports shops, in the cottages in Marka and at "Skiforeningen" in the VM-house at Holmenkollen.



The Knife - Just as Inevitable as the Packet of Sandwiches

By Øystein Køhn

I would like to take a closer look at how a good knife for tour and everyday use actually should be like and what you may have for cheap money. Due to limited space I have been concentrating on Norwegian sheath knives this time.

The origins of today's sheath knife are from long traditions in its use in whittling work. What is primarily distinguishing the Norwegian knife from most foreign models is the construction of the blade. In forged knives three layers of steel are used. One piece of hard, carbon-rich steel is forged between two layers of softer, tougher steel (iron). This yields a sharp and durable knife which will not break during heavy sideways strains. Due to its thin edge-steel, it is easier to sharpen than an equivalent blade made purely from carbon steel.

Today you may buy good, handmade knives for 300-400 kroner up to several thousands. While handmade knives nearly always are made from three-layered steel, most factory made knives are made from stainless one-layered steel. (Helle has some models with laminated, three-layered steel).

The handmade sheath knife

The art of knife-making has got an enormous boost in later years, and across the entire country we have skilled knife-makers who make good knives for daily use. Some knife-makers keep a very high level of craftsmanship and quality. Mainly we may differentiate between finery knives and knives for daily use.

In the finery knife selected woodworks are used in the handle with ferrules made of silver or gold, often with exquisite engravings and wood-carvings or imprinted decorations all over the sheath. From olden times this was a knife for weddings and celebrations; a natural part of the clothing.

The knife for daily use is simpler; a tool for the different tasks of the day. The decoration is naturally not so sophisticated, and you rarely see ferrules of precious metals on such a knife. The design of blade and sheath is to some extent dependent on where in the country it was made, however, in later years these dis-

tinctions are more blurred.

The factory-made knife

Even if the skilled trade of knife-making has long traditions in Norway, we must not forget our knife factories like Helle and Brusletto, being cornerstone companies. Through several generations they have produced good knives for daily use in accord with Norwegian user traditions. With a knife from one of these producers you are guaranteed a good product, even if I am inclined to question the design of some models. Big knives or models having a cured blade, are rarely useful in everyday life.

The Lapp knife

Lapp knives are also traditional Norwegian knives. There are, however, many people who think that quality is proportional to the size. This is fundamentally wrong as a big knife is considerably more difficult to use than an equivalent smaller one. Neither are there many people possessing the Lapps' skill at using them.

If you have a huge Lapp knife, I recommend this as a cutting tool and that you also have a smaller everyday knife in the belt.

Lapp knives come in many sizes and shapes. Common to most of them are brass ferrules and handles made from masure-birch.

What should a good knife for daily use look like?

A good knife for daily use should not be too big, and blade should have a straight forward design with straight back and straight cutting edge. If the edge curves too much, the knife is more difficult to use in traditional whittling work. All in all the length ought to be between 15 and 22 cm, while the handle makes some 10-12 cm.

While some prefer finger guard (finger

protection between blade and handle), more experienced users usually cannot stand this outgrowth. For children and unskilled people, however, it may be a good protection against hurting themselves. The handle must fit well and be steady in the hand without gnawing or irritating. Handle and ferrules should be without sharp edges and have an even surface. An oval cross section fits best in the hand. With such a design it is little danger that the knife should twist or slide during work. Most knives have wooden handles, but pressed laminates from birch bark or leather also give good results. Some prefer handles made from bone, or a combination of horn/ bone/ wood/ plastic. On cheap knives we often find plastic handles.

The knife should fit well in the sheath without any need for jerking it out. An extra safety device is a fastening strap over the handle or top button. The sheath must be good. I prefer those sewn in tough leather. If it has sewing on the side, you must make sure that it is not cut when you put the knife back in place. Make sure that the belt attachment also is of good quality.

What should I choose?

The perfect model covering all use is not yet made. The good whittling knife is not long enough to cut bread, and the bread knife is not well suited for cutting fish etc. Actually I would recommend two or three knives. A little sheath knife for everyday use and a slightly larger model with long, thin blade suited for cutting bread and the like. In addition it might be wise to have a heavy duty knife or tour awe for cutting branches, wood etc. Don't exaggerate, however, a skilled user of knives may solve most problems with one single knife.

The steel's hardness

Many users of knives are very preoccupi-

ed by the steel's hardness, and a usual misunderstanding is that the quality is better the harder the steel is. The hardness is measured according to the Rockwell C-scale.

If the steel is too soft, the edge will soon become blunt, and it is easily damaged. If the steel is too hard, it is next to impossible to sharpen it, and it is easily dulled and may even break. It is therefore important to find the right compromise. Thus it seems that 57-60 on the Rockwell C-scale is ideal for a good everyday knife.

Why bad knives actually are bad

When we speak about bad knives, it is usually meant cheap, fashionable or trendy models like batanga or survival models. These have low value in terms of usefulness because the shape of the blade makes it impossible for "ordinary knife use". It is too

large, and it is faceted in a way making it difficult to work with. The steel is of low quality, and loses its edge, or it is so hard that it is impossible to sharpen. The spine of the blade is also so short that the knife breaks between the blade and the handle. The knife is overloaded with so-called survival equipment of no useful value etc.

There are, however, several very good foreign knives of other kinds having very high user value. Even sworn Norwegian knife enthusiasts must admit that there are other models than the Norwegian sheath knife.

Take care of your knife

You become fond of a good knife, and in order to make the most of it, it should be treated with care.

* Always keep the edge sharp. It is much more difficult to sharpen a maltrea-

ted edge than to hone it regularly, just slightly with the whetstone.

* Don't ever put a wet or dirty knife back into the sheath. Wipe off any fat or food remnants from the steel.

* Don't hit the back of the knife in order to cut wood.

* Don't put heavy sideways strains on the knife, then the blade may break.

* Never cut in metals, stone or other things which may dull or damage the edge.

* Sit or stand - don't walk or run - when you use knife.

* Whittle away from you - never towards somebody.

* Don't play with knives; then accidents may be avoided.

* Remember that the knife is a tool, not a weapon. Stilettoes, batangas (butterfly models) and others are not allowed in Norway.

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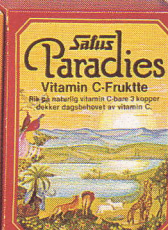
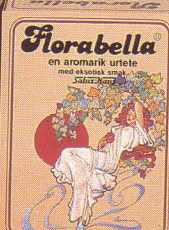
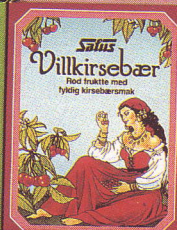
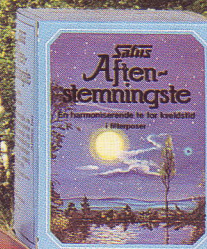
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