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NOTES ON NAVAL MEDICINE IN THE NETHERLANDS,
BELGIUM AND DENMARK

BY

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NOTES ON NAVAL MEDICINE IN THE NETHERLANDS, BELGIUM,
AND DENMARK

The purpose of visiting selected military installations in the Netherlands, Belgium, and Denmark was to determine the type of medical problems associated with recruit training and to survey the operations of any special organizational components responsible for research and preventive medicine. Some information on recruitment and training of medical officers was also obtained.

NETHERLANDS

On arrival at Amsterdam, I was met by LCDR W. Creighton, MC, RNN, who is the senior medical officer for the Royal Netherlands Marines and is on the Staff of the Medical Director General, Ministerie van Defensie Marine, Duinroosweg 7, The Hague. After a stop for lunch at the Marine Barracks, Rotterdam, we drove to the Marine Barracks at Doorn (Van Braam Houckgeest kazerne) where we were met by the senior medical officer, LCDR T. de Boorden, MC, RNN. The recruit input at Doorn is about 150 men every other month and the training cycle is of six months' duration. Recruits have been through selection examinations prior to arrival, including physical examination, stringent neuropsychiatric evaluation, aptitude testing, etc. On arrival they are divided into training units and assigned to barracks. There is contact with seasoned recruits in messing and recreational areas.

Physical and mental standards for the marines are higher than for most other military personnel, so there are few medical problems during recruit training. No specific rates were available, but the respiratory disease incidence was of a magnitude low enough to be "no problem." There is a seasonal fluctuation, with most admissions (perhaps 20-30) in January. The experience at the barracks tends to parallel that of the surrounding civilian community and no particular association with training cycles has been noted. By the fourth week, recruits are allowed to leave the barracks in the evenings and at weekends.

The major potential medical problem is that associated with smallpox vaccination. Since the end of WWII, the percentage of primary vaccinations among military recruits has declined greatly, but is still near 30%. Vaccination is given on the second day after arrival, and recruits are in a light-duty status for the next 18 days.

Therefore the training cycle really begins on the third week after arrival. Other immunizations include diphtheria-tetanus in the fourth and eighth weeks, and cholera, typhoid, and paratyphoid A and B during the fifth, sixth, and seventh weeks. All recruits are skin-tested with tuberculin during the first week, and those with negative reactions are given BCG vaccine during the sixth week. Administration of BCG to negative reactors is by permission, but nearly 100% receive it.

Minor injuries, strains, sprains, contusions, occasional simple fractures, etc., common to physical activity are seen; however, physical fitness is started early and is graduated so that injuries associated with training are of minor significance to the medical workload. Neuropsychiatric losses after acceptance into the Royal Netherlands Marines appear to be minimal.

Capt. N. Julsing, MC, RNN, Commandant, Marine Hospital, Overveen, Netherlands, arranged a conference with Dr. G.J.J. Veening, a civilian consultant in pulmonary diseases, and with Dr. W. Nanning, an army specialist in hygiene and bacteriology, who has part-time duty at the Marine Hospital. Army recruits receive immunizations similar to marines, but on a different schedule, with smallpox delayed. All army recruits receiving primary vaccination simultaneously receive hyperimmune gamma globulin, but still are on light-duty status for 18 days.

An interesting outbreak of tuberculosis which occurred six years ago was described. An active case was discovered in an army recruit and the population of the camp was surveyed. Fifty-one of fifty-five recruits occupying the barracks from which the active case came converted to tuberculin-positive. Ultimately, 284 tuberculin converters were located. They were divided into two groups, one receiving Isoniazid and the other receiving placebos. During the following year, there was one case of disease in the treated group and 13 cases of active tuberculosis among the placebo-treated group.

Acute respiratory disease has been investigated at one army camp with a recruit input of approximately 2000 men every two months. The primary training is of two months' duration, but a large proportion of trainees return to the same camp for two months' advanced training. These advanced trainees annually experience significant outbreaks of adenovirus disease during the winter season (Dec-Feb). The recruits who leave after the basic two months and those who spend the two months for primary training in other camps do not experience similar epidemics of adenovirus infection.

The Royal Netherlands Naval Training Camp is located at Hilversum. A separate command, the RNN Medical Examination and Selection Center, is adjacent. Cdr. W. Koppenol, MC, RNN, is the senior medical officer and in charge of medical selection. Lt. G. Fedder, MC, RNN, is responsible for the dispensary at the Training Center.

All personnel, commissioned or enlisted, entering the Royal Netherlands Navy go through the Medical Examination and Selection Center, where they are subjected to thorough physical and psychological examinations and aptitude and performance evaluations. The candidate must meet high standards, and there is close coordination to ensure that the man entering a specific career pattern, as determined by the selection personnel, meets medical requirements. After enrollment and registration, the new enlisted recruit will eventually report to the Training Camp for nine weeks of basic training.

Approximately 70 new recruits arrive each week. They are housed in non-standardized barracks which contain toilet and shower facilities (not adequate by US standards). They eat in a large general mess, separate from school students and permanent personnel.

Medical problems of naval recruits are similar to those of marine recruits, and the dispensary medical officers have no etiologic diagnosis of respiratory diseases. Statistics on respiratory disease provided by the dispensary are as follows for an average population of 1500 personnel (not limited to recruits):

<u>Time</u>	<u>No. Admissions</u>	<u>Man-Days Lost</u>
Oct '65-Jan '66	271	700
Jan '66-Apr '66*	450	1900

* During this period there was a national epidemic of Influenza A and B.

Medical officers have detected no increase in respiratory disease associated with a particular time after arrival.

Immunizations are the same as those given to marine recruits, except that hyperimmune globulin is routinely given with primary smallpox. If there is no history of allergic diathesis, loss of consciousness, no family history of convulsive disorders, etc., the recruit receives 2 ml of the globulin, but if the individual or family history is at all questionable, 6 ml is administered. The 18-day light-duty period is similar, so physical stress occurs only during the last five weeks of the training cycle.

Both navy and marine recruits must be swimmers. If the standard test is not passed after a few practice sessions, mandatory classes are attended until it is passed.

No separate organization exists within the Royal Netherlands Naval Medical Service for preventive medicine or research. Epidemiological consultation is provided by the Army and by civilian health agencies. The preventive medicine philosophy of the medical officers seen was not unlike that in the US, namely, sanitation, immunizations, chemoprophylaxis, and case isolation. The major difference is in the use of BCG for tuberculosis control and the use of intro-urethral potassium permanganate instillation in the "aid centers" for VD control.

Both line and medical officers stated that the incidence of VD was exceptionally low, but again no statistics were given.

The Dutch Government will finance medical school for selected individuals and the student signs a ten-year obligation. Alternately, a physician may enter the armed forces for a ten-year obligation and be directly reimbursed for an equivalent sum.

This writer was highly impressed by the personnel. This relatively small force of about 20,000 men, including approximately 3000 marines, appears to have excellent medical support.

BELGIUM

My host was Lt. Col.--Médecin E. DeVlies, ZDSS, Hôpital Militaire d'Ostende, Godtschalkstraat, Ostend, Belgium, Head of the Medical Service of the Belgian Navy. In spite of his non-naval rank, DeVlies wears the naval uniform and is a graduate of the Management Course, US Naval Medical School, National Naval Medical Center, Bethesda.

The first day of my stay included a visit to a new center located on a hill overlooking the beach at Ostend. Its primary purpose is rehabilitation, emphasizing physical medicine. The hydrotherapy, including pools, tanks, etc., utilizes sea water with essentially unaltered mineral content. Special diets and a true sauna bath are available. Physical facilities are outstanding, and one could almost enjoy being ill in such a place.

The Royal Belgian Navy has a strength of approximately 5000, with about one-third on sea duty. About 1200 recruits are trained annually at the Naval Training Center near Bruges. The primary training cycle lasts two months, and approximately 200 new recruits arrive every other month, so there is a 100% population turn-over in the recruit training area. The barracks are somewhat crowded but still have nearly 60 sq ft/man. Toilets and shower facilities are communal, but each barracks has minimal toilet facilities for night-time use. Wash rooms are located within the barracks. Recruits eat in the same mess hall as do school students and permanent personnel, but at a separate sitting. Prior to arrival, recruits have had military service screening examination at a central center in Brussels and a second examination by medical officers serving with the Navy. Navy standards are higher than the Army's; also, the Navy has two sets of standards -- sea duty or shore duty -- but are gradually establishing a single medical standard so that all personnel will be physically fit for sea duty. Mandatory service is 12-18 months, and voluntary enlistments for as short as two years. The short period of service may account for the minimal losses due to emotional problems.

Recruits are immunized against tetanus and typhoid-paratyphoid A and B during the first week; yellow fever during the second; repeated inoculation against tetanus is given during the fourth and fifth weeks, and the second typhoid-paratyphoid is administered during the third week. Smallpox vaccination is given at a convenient but variable time, the only restriction being an interval of 14 or more days in relation to any other immunization. The incidence of primary vaccination among the military age population is almost nil because of compulsory pre-school vaccination.

As in Holland, recruits are allowed some evening and weekend liberty, so the respiratory disease experience at the Center tends to parallel closely that of the population of Belgium. One medical officer is of the opinion that administration of vitamin C reduces respiratory disease, so all recruits are given a 500-mg tablet every morning during the period 1 October - 31 March. No controlled study has

been performed, but graphic representation of data from 1965 shows an apparent downward trend in admission rates during the past six years, during which vitamin C was administered. (Crude data were not available, but the graphs were unconvincing to this writer.) The most interesting thing to me was the trend toward an upswing in the graph at periodic intervals corresponding with the bi-monthly recruit input. One must agree with the medical officers that respiratory disease is not a major problem but is of some significance during winter months. I suspect that close analysis of data might reveal an increased incidence of reported respiratory disease about two weeks after arrival of a new complement of recruits, as happens in our own training centers at Great Lakes and San Diego.

The Royal Belgian Navy Medical Service is very small and has no separate organization responsible for preventive medicine or research, but some programs are under way. All shipboard personnel report to Ostend for a physical examination every two years and this "early disease detection" campaign is being expanded as rapidly as possible to include all personnel. A hearing conservation program with serial audiometric surveys is conducted. There are no preventive medicine specialists in the armed forces medical services, but laboratory support is available at the central laboratory of the Military Hospital, Brussels. Consultations can be obtained from civil health officers. If epidemics occur, control measures are contained in an official Manual of General Orders. These orders specify sanitary precautions for bed spacing, ventilation, dishwashing, terminal disinfection, isolation of cases and quarantine of contacts for several communicable diseases (including meningitis, scarlet fever, polio, etc.), and vaccinations or revaccinations. Tuberculosis control is based on annual photofluorograms and radiographic studies of case contacts; no tuberculin skin testing is done. VD control depends on repeat medical inspection; upon return from liberty personnel report to sick bay if there has been a possible exposure and return daily for two weeks. If symptoms arise, treatment is provided.

No organized research program exists. Some information regarding temperature, humidity and noise aboard ship has been collected. A pressure chamber has been constructed and will eventually be installed, probably at Ostend. Medical officers are being sent to Marseilles for a brief training course, but I am afraid considerably more training will be required if serious research is contemplated.

Lt. Col. DeVlies is an able administrator and has been successful in gradually increasing the allowance of medical officers for the naval service. Recruitment is difficult, but six of the seven years of university study for medical qualification can be done in an active-duty status for selected students. The obligation was said to be nine years following graduation for the full six-years' support. Medical officers are essentially half-time except while at sea, so private practice can supplement their service salaries.

DENMARK

Surgeon Rear Admiral M. Winge, Forsvarets Lækekorp, Hovedvagtsgade 6, Copenhagen, Surgeon-General and Director of Naval Medical Services, conferred with me and arranged visits to the State Serum Institute, the Naval Training Center, and the Joint Medical Corps School.

The Surgeon General of the Danish Armed Forces is either a Rear Admiral or Major General and also holds the position of Director, Medical Services, for his parent branch. The Director of the Medical Services for two services are Colonels or Captains and the equivalent rank of the third branch providing the Surgeon General holds the title "Deputy Director (Branch) Medical Services." At present, Surgeon Capt. H. Tramsen is Deputy Director, Naval Medical Services.

Surgeon Commander P. Holm-Pedersen is the senior medical officer at the Recruit Training Center at Avderød. The physical facilities are new and very modern. New recruits arrive quarterly for primary training of just under three months. They are berthed in spacious barracks providing at least 72 sq ft/man and contain adequate washing, shower, and sanitary facilities. Each training company of approximately 60 men occupies one building. Messing of recruits is by company in a separate wing of the mess hall. There is one recreation center serving the Training Center, so recruits of different companies and other personnel can mingle. The quarterly input averages 600 personnel, and the medical officer stated that there is an increase of admissions during the second week of training. The increase is most noticeable in March.

On arrival, recruits are given a screening physical examination only, but records of the examination conducted at the central induction center are available. Smallpox vaccination is performed the first day, and there is no restriction of activity. Recruits who will ultimately be assigned to Greenland or to NATO commands are immunized against typhoid and paratyphoid A and B. Diphtheria, tetanus, and polio immunizations are voluntary for all personnel, and few recruits refuse. There is minimal neuropsychiatric evaluation of recruits and approximately 30-40% of recruit loss from the Navy is due to neuropsychiatric disorders.

The Danish Armed Forces have no organization for medical research or preventive medicine. Needed research is conducted by universities and/or organizations like the State Serum Institute, which provides blood and blood-product services and biologicals to the armed forces. Most immunizing agents are prepared locally and standards for imported products with low usages are established and controlled by the Institute. Dr. Sv. Tulinius of the Serum Institute is advisor to the armed forces on epidemiological matters and other members of its staff may be consulted on specific problems. Tulinius tends to be conservative on mass immunization and mass chemoprophylaxis programs, and this philosophy is undoubtedly reflected in the armed forces.

Denmark has universal military training, so all physically qualified physicians do serve. Medical training requires seven years. After three years at university, three months of basic military training is required. Upon graduation, an additional three months' training is provided at the Joint Medical Corps School, where military medical subjects and additional military training are presented. About 20-22 physicians are selected for the navy each year and spend six weeks at the Medical Corps School and six weeks at the Naval Academy learning military subjects (customs, courtesy, traditions, law, navigation, damage control, etc.). Upon completion of this three-months' training, physicians must serve on active duty for eight and one-half months. Active service may take place immediately after attending the Medical Corps School or may be delayed for several months.

The Joint Medical Corps School, located on the outer edge of Copenhagen, is new and very modern. It is commanded by Lt. Col. P. Aagaard Petersen, an infantry line officer who now wears medical department insignia. Maj. K. Henningsen is Principal Medical Officer. The School trains all medical officers in military medicine and offers four months' training to enlisted personnel in laboratory procedures, nursing

care, field medicine, and additional military training.

There are very few full-time medical officers in the Danish armed forces; even the Deputy Director, Naval Medical Service, has a private practice. The current trend in this wonderful country is to "civilianize" medical support of the armed forces to the greatest possible extent.

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