Norwegian Industry and Health Promotion 1910-1967

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SUMMARY

Introduction. I.—Occupational health service, its roots and motivations. II.—Health, security and well-being. The individual health control at Freia. Individual health control at Christiania Portland Cement Factory. Industrial hygiene and the collective work environment. Industry and health promotion. Conclusion.

RESUMEN

Se estudia el desarrollo de los servicios de salud ocupacional en Noruega a través de los ejemplos de sendas fábricas de chocolate y cemento. El estudio muestra cómo los servicios de salud industrial estuvieron determinados por diferentes motivos o posiciones ideológicas. Entre estos destacaron la presencia de una filosofía social y política, la del estado del bienestar como una alternativa al socialismo, y la de una política estatal preocupada por la construción de una sociedad opulenta y el incremento de la producción. Todo ello condujo a un interés creciente por la influencia del factor humano en la industria, en la que al médico empleado le cumplía el deber de contribuir a conformar un trabajador satisfecho, consciente y productivo en un ambiente de trabajo sano.

INTRODUCTION

In Norway the history of the occupational health service starts at the end of the 17th century. The new mining industry brought changes in social and hygienic conditions and engaged doctors who mainly worked

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with treatment and cure. They had little responsibility for hygiene and prevention.

About 1910 the old works doctors disapeared. They were no longer needed. According to the Sickness Insurance Act (1909) a number of workers were given free medical treatment and money during illness. At the same time industry paid more attention to work environment and hygiene. The time had come for a modern industrial health officer (1).

1917 was a turning point. The first modern industrial medical officer was employed at A/S Freia Chocolate Factory. In the year to come Norwegian industry developed a range of voluntary social measures. The occupational health service was only one amongst various measures as housing, pensions, profit-sharing, welfare officers, etc.

Why did Norwegian industry engage medical officers? How did the arrangement work out in different factories? In what way did industry influence the development of Norwegian health policy?

In this article I want to explore the development of occupational health by making a case study of A/S Freia Chocolate Factory in Oslo and Christiania Portland Cement Factory (CPC) in Slemmestad, a village thirty kilometers south of Oslo. A study of these two factories show how different motives and ideological positions promoted the industrial health service. I will argue that the development at Freia was a result of the managers' (Johan Throne Holst) social and political philosophy. He widened the goals of his business to include not only profits and efficency, but also social and political responsibility — *noblesse oblige.* He wanted welfare capitalism as an alternative to socialism and state policy in building the affluent society (2).

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(1) NATVIG, Haakon; THIIS-EVENSEN, Eyvind (1983/1989). *Arbeidsmiljø og helse. Yrkeshygiene og bedriftshelsetjenestens frembrudd og utvikling i Norge. (Work Environment and Health. Industrial Hygiene and the Foundation and Development of the Occupational Health Service)*, Oslo, The Norwegian Association for Medical Officers, p. 74.

(2) Occupational welfare and welfare capitalism is analysed in several works. See for example, BRANDES, Stuart (1976). *American Welfare Capitalism 1880-1940,* Chicago/London, Chicago University Press, 210 pp.; BRODY, David (1968). The Rise and Decline of Welfare Capitalism. *In:* John Braeman; Robert H. Bremer; David Brody (eds.), *Change and Continuity in Twentieth-Century America: The 1920's,* Ohio, Ohio State University Press, pp. 147-178; EDWARDS, Richard (1979). *Contested Terrain,* New York, Basic Books Inc., 261 pp.; LAZONIC, William (1990). *Competitive Advantage on the Shop Floor,* Cambridge Mass./London, Harvard University Press, pp. 240-251;

But the occupational health service must also be seen as a means to improve the production. Cleanliness had high priority in a chocolate factory were the products had to be of the best quality.

When CPC got a medical officer thirty years later, no one mentioned welfare capitalism. The motives were more rooted in the strong productivity strategy which developed in Norwegian industry after the Second World War. The need for increased production also resulted in a growing interest in the human factor in industry. Every worker should be accepted as an individual so that he could feel physical and psychical well-being. The medical officer should help to shape a satisfied, rational and productive worker in a healthy work environment.

I. OCCUPATIONAL HEALTH SERVICE — ITS ROOTS AND MOTIVATIONS

The first modern occupational health service was established on the initative of Freia Chocolate Factory. Johan Throne Holst, the manager, wanted to make Freia a leading factory both socially and commercially. He had housing policy very much at heart and in 1910 he started to build a garden city for his employees. Few years later Throne Holst wanted to expand his building project, but the municipality refused to cooperate. He was very disappointed, but he didn't stop dreaming of Freia as an ideal factory. He found new solutions.

Throne Holsts brother, Peter F. Holst who was a doctor, introduced him to Carl Schiøtz, an active doctor who put great efforts into promoting nutrition and hygiene. Throne Holst knew about Schiøtz' doctoral thesis about mass-examination of Norwegian school children, and he asked him to carry out systematic examinations of his employees (3). Throne Holst stressed that hygiene was a very important question. In his ideological writing from 1914, *Industry and Industrial Problems,* he claimed that «the

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MELLING, Joseph (1991). Industrial capitalism and the welfare of the state: the role of employers in the comparative development of welfare states. A review of recent research. *Sociology, 25,* 219-239.

(3) STRØM, Axel (1975). Bedriftshelsetjenesten i Norge - bakgrunn og prinsipper (The Occupational Health Service in Norway - Background and Principles). *In:* Øivind Larsen (ed.), *Forebyggende medisin (Preventive Medicine)*, Oslo, pp. 150-157.

people who neglect their hygiene will sooner or later collaps» (4). He linked personal hygiene to national economic questions. A poor personal hygiene weakend the nations' health and had bad consequences with regard to production and competitive power — both important elements in the philosophy of welfare capitalism. To promote occupational welfare the industry needed profit.

Throne Holst and Schiøtz met in mutual interests. They both had ideas which they wanted to test and made Freia a starting point of a social experiment. Throne Holst wanted to try out his social political ideas, while Schiøtz worked hard to promote hygiene and preventive medical work. At Freia he was given free hands and he translated his ideas into practice.

Protection of the workers had become a main issue in the previous years. Work environment was a crucial question. Schiøtz claimed, however, that collective public measures crowded out the individual humane hygiene. All remedies had to be used to make the human being healthy and to increase its capacity both physically and intellectually. Research concerning protection and environment was important, but it had to be done in co-operation with clinical-medical examinations of the industrial worker.

Schiøtz build up the occupational health service according to new principles. He used the same methodes as he had used in examining schoolchildren. His task was not to cure but to do preventive and consultative medical work. He commented on the workers health and their ability to work. He worked for the improvement of work conditions and he tried to stimulate the workers to a healthy and hygienic way of life. The main purpose was to give the factory a strong and healthy working staff.

It took years before doctors and managers became interested in the occupational health service. Freia was alone for nearly twenty years (5). Some officers in the State Labour Supervision tried, however, to spread the gospel of occupational health. They wanted the public supervisors to promote hygiene in the factories. Traditionally these supervisors had been more

(4) THRONE HOLST, Johan (1914). *Industri og industrielle problemer,* Kristiania, H. Aschehough & Co., p. 4.

(5) BRUUSGAARD, Arne (1943). Bedrifshelsetjenesten (the Occupational Health Service). *Liv og Helse (Life and Health), 10,* 51-52.

interested in making technical improvements than in improving the workers health (6).

In the early thirties doctors took more interest in the question of occupational health. Schiøtz' work at Freia and his teaching at the university gave results. When Schiøtz died in 1938 four doctors who had been Schiøtz' students, continued his work. Some of them were radicals, like Arne Bruusgaard and Axel Strøm (7), and all of them had got their education during the expansion of social medicine in the thirties.

One of them, Eyvind Thiis-Evensen, worked out directives for the occupational health service in his lecture for the doctoral thesis in 1941. He wanted all enterprises with more than fifty employees to establish the arrangement. He proposed that all directives should be made by the Professor of hygiene at the University of Oslo and the chief officers in the State Labour Supervision.

In 1943 eleven enterprises had engaged an industrial medical officer — only two in 1940. The arrangements differed and in several factories neither the managment, workers nor the doctors were satisfied. During 1943 the periodical *Liv og Helse* (Life and Health) published a number of articles concerning industrial medical officers and got positive response from a number of enterprises. At the end of 1943, fiftyfour enterprises had got an occupational health service build on Schiøtz' model.

The need to find similar directives increased during 1943, and Bruusgaard, Natvig, Strøm, Thiis-Evensen and Eiler H. Schiøtz (Carl Schiøtz' son) joined together in the Association of Industrial Medical Officers. They wanted support from the medical establishment but the Norwegian Medical Officers Association was out of function because of the war. Instead they started a co-operation with the Norwegian Hygiene Association (8). The war limited their work, but they managed to publish brochures which gave advise to doctors who wanted to practice as industrial medical officers. During 1944 the association distributed two brochures to all the members

(6) NATVIG; THIIS-EVENSEN (1983/1989), *op. cit.* (n. 1), p. 60.

(7) NORDBY, Trond (1989). *Karl Evang. En biografi*, Oslo, H. Aschehough, p. 55 and p. 182. Arne Bruusgaard was one of the committe members of the first board of the Socialist Doctors Association from 1931. Axel Strøm was a member of the association.

(8) The Norwegian Hygiene Association was, however, an association within the Norwegian Medical Officers Association.

of the Norwegian Hygiene Association. They also made a standard contract for industrial medical officers.

When the war was over Bruusgaard discussed the future of the occupational health service with one of the Workers' Associations on a conference in spring 1945. The workers had two main objections. They feared that workers would be decleared disabled for medical reasons and they feared that the industrial medical officers would serve the employers interests more than the workers (9). The Association of Industrial Medical Officers found the objections legitimate and suggested the establishment of a secretariat with representatives from the Trades Union Congress and the Norwegian Employer's Federation. Bruusgaard claimed that it was impossible to secure the arrangement without support from the two organisations. During that summer Bruusgaard got in touch with the secretary of the Trades Union Congress, Konrad Nordahl. He showed some interest but didn't suggest a co-operation. The office manager in the Employer's Federation was reserved. The question of co-operation was allowed to rest. Instead the Association of Industrial Medical Officers concentrated on getting support from the Medical Officers Association. In september 1945 the subject was put on the agenda of the association's yearly conference and it was in principle approved. In February 1946 the Association of Industrial Medical Officers tried once again to establish a co-operation with the Trades Union Congress and the Employer's Federation. In the mean time both organisations had made a closer examination in enterprises which had engaged industrial medical officers. The experiences were positive, and the Board of Industrial Medical Officers was established on May 22 1946 with representatives for the Trades Union Congress, the Norwegian Employer's Federation and the Association of Medical Officers (10). Haakon Natvig was elected president of the board.

Why was there an increased interest in the question of the occupational health service from 1943? How was it possible after such a short time to establish a new board comprising traditionaly contending parties?

Haakon Natvig has claimed that the time for it had come (11). Experiences from different enterprises showed that the occupational health service was a practical and economical solution to the question of both health and

(9) NATVIG; THIIS-EVENSEN (1983/1989), *op. cit.* (n. 1), p. 90.

(10) *Ibidem,* p. 106.

(11) NATVIG, Haakon (1953). Bedrifshelsetjenestens fremtid (The future of the Occupational Health Service), *Liv og Helse, 19,* 104-107.

work environment (12). The industry had to show the way together with doctors. «We cannot wait that the State in near future will be able to arrange such a health control» (13).

The increased interest in the question must also be seen in conection with the employers' wish to reduce the sickness rate by stronger control. The sickness rate was increasing and some enterprises used the medical officer as a 'policeman'. Other factories had problems with certain diseases like tuberculosis, silicosis and lead poisoning. By establishing a permanent health supervision the managers wanted to make an effective campaign against diseases. But in many cases employers had acknowledged a wider social responsibility for their employers during the war. «Since we have been poor in other respects, it seems that the interest in good health and working power has increased» (14). From the doctors point of view the work as industrial medical officer was well paid and gave interesting work.

The Board of Industrial Medical Officers was founded in a time when everybody wanted to reconstruct the damages of the war. Both the board and the agreement on Production Committees was «a promising evidence that the will to co-operate was stronger than conflict on interests» (15). To improve the popular health and the workers social circumstances it was necessary to combat illness and to improve the hygienic conditions in industry. While infant welfare clinics and health control of schoolchildren was a good service for children, adults had next to nothing. The health service was causal (16). Most of the population had free health examination and treatment, but there were no good preventive services. Regular examination of apparently healthy people was one of the main purposes in preventive medical services. These services had to be expanded and be offered to the majority of the working population.

The occupational health service expanded between 1947 and 1949. No other social health service had any similar development in such a short time. In 1952 about 500 enterprises had an industrial medical officer, that is 7,7% of industrial enterprises with more than five employees (17). The

(12) *Ibidem.*
(13) BRUUSGAARD (1943); *op. cit.* (n. 5), p. 51.
(14) *Ibidem,* p. 52.
(15) *Liv og Helse, 13* (1946), 153.
(16) BRUUSGAARD (1943), *op. cit.* (n. 5), p. 51.
(17) NATVIG (1953), *op. cit.* (n. 11), p. 104.

percentage varied between 1,8% till 16,9% in different parts of Norway. The arrangement was most common in counties around Oslo. Around 1965 about 1.500 enterprises were covered by the occupational health service (18).

This development corresponded with greater interest in the human factor in industry. In addition more and more managers realised that they had social responsibility. However, the main reason for the expansion must be seen in connection with the growth of the rational and productive society. The employers had to increase productivity by getting a strong and healthy workforce. Not only technical means of production had to undergo rationalisation, but the workers too. In this work the industrial medical officer had to make a «healthy and proper rationalisation of the main means of production — the human beeing» (19).

II. HEALTH, SECURITY AND WELL-BEING

The individual health control at Freia

When Schiøtz started to work at Freia he organized the health service according to his own ideas and principles. The lines he layed down were later followed by the Board of Industrial Medical Officers. New methods were drawn up: individual health control, registration of absence and hygienic work. For several years the modern factory doctor concentrated on the individual health control (20). It was necessary to examine the human being before further control of the hygienic conditions. When the doctor had analysed the workers and their diseases it was easier to find connections between illness and work environment.

Schiøtz worked as a part time doctor with two working hours a week. All employees were examined once a year. Schiøtz called for six to eight workers every time. Both men and women were stripped to the waist, but the women kept the bra. The workers gave information about previous

(18) NATVIG; THIIS-EVENSEN (1983/1989), *op. cit.* (n. 1) p. 145.

(19) *Liv og Helse, 13* (1946), p. 153.

(20) STRØM, Axel (1957). Fravaeret ved en norsk bedrift i etterkrigs°°arene (Abscence within a Norwegian factory in the after war period). *Sosialt Arbeid* (Social Work), *10,* 209-220.

work and illness. Schiøtz examined hands and teeth. Freia was a nutrient factory and Schiøtz paied great attention to personal hygiene. Furthermore he examined the skeleton and feets. He sounded heart and lungs, measured height and weight. If a worker was ill he was sent to a general practitioner or a specialist. Schiøtz had made an agreement with the Board of Health in Oslo in case of tuberculosis.

The examination method was very simple. Few methods existed which were usable for mass-examinations. Schiøtz based his diagnosis on «a practiced eye», which was efficient according to the clinical picture of the time. The most common illnesses were eczema and dermatitis, angina, diphtheria, bronchitis, consumptives and rheumatism. Caries was also a serious problem. In spite of a simple and maybe imperfect examination Schiøtz' methods represented something new. Schiøtz, created the basis of a systematic health control of grown up people (21).

When Axel Strøm followed Schiøtz in 1938 he developed the examination methods further. The workers undressed and Strøm used half an hour on every worker. He made an urinalysis and he took a blood test and a Pirquet-test. He measured the blood pressure. Every employee got their own book where Strøm marked information about illness and results of the examination. Did the doctors' work give results? How were the health conditions at Freia?

In spite of the industrial medical officer and other welfare measures the sickness rate at Freia was very high. Investigations of abscence and surveys on diseases got high priority. Strøm planned a survey on the sickness rate when he started his work in 1938. Because of the war it was impossible to bring it about in the way he had wanted. However, he registred the abscence and he presented the results in the periodical *Sosialt Arbeid* (Social Work) in 1949. Few years later he made a new survey which he presented in the same periodical in 1957. At that time abscence in industry had become a serious social and economical problem.

The abscence at Freia increased dramaticaly between 1940 and 1947. Every year the sickness rate was higher for women than for men. In average

(21) Interview Haakon Natvig 27.2.1991. See also NATVIG; THIIS-EVENSEN (1983-1984), *op.cit.* (n. 1), p. 78 and NATVIG, Haakon (1972). *Den norske Bedriftslegeordningen - i fortrid og fremtid* (*The Norwegian Occupational Health Service - the Past and the Future*), Oslo, p. 5.

the number of days off for men was 4,6 in 1940 and 25,4 in 1947. For women the number increased from 17,4 days in 1940 to 55,0 days in 1947. The sickness rate at Freia was far above the average compared to other enterprises (22). Strøm claimed that the sickness rate had to be seen in connection with the special conditions under and after the war. He expected the rate to decline when life became more normal. This did not happen to the extent he had assumed. In 1955 men had, on average, 22 days off while women had 39 days. How can we explain this development?

One problem was cutting work, but abscence because of illness dominated. Married women had higher sickness rate than unmarried. For women 92,3% of the days off sick owed to long term abscences, that is abscence more than four days. Strøm tried systematicaly to analyse the causes behind long term abscences. They could indicate bad health or bad conditions at work. When one of the workers had been away for weeks, Strøm asked for the causes. On this basis he tried to systematize the main causes. Five groups of illness dominated: 1) sickness of the respiratory system, 2) sickness of the organ of locomotion, 3) accidents. This pattern was repeated for years. When Strøm made a new survey in 1954/55 he registered an increase in 4) mental diseases and 5) sickness of the digestive organs.

In the first cathegory influenza and fever dominated and in the second cathegory myalgia with pain in the shoulder-neck-arm region and lumbago and sciatica (23). The third cathegory included damages which the workers got outside the factory. Contusion, fractures and wounds were the most frequent problems. Cathegory four increased at the same time as myalgia became the main illness. Nervousness gave myalgia and myalgia increased nervous symptoms. Neuroses, neurasthenia, insomnia and depressions dominated this cathegory, but behind these problems Strøm found that the main cause often was over-exertion and fatigue.

Strøm's analysis gave first of all information about the character of the illness, but he also tried to find the causes behind the high sick rate. In 1949 he claimed that the main cause was the social and economical circumstances. Freias workforce was mainly composed of women and the abscence rate was a result of double work — at home and in the factory.

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(22) STRØM, Axel (1949). Fravaershyppigheten ved en norsk bedrift under og etter kriegen (The asbcence rate in a Norwegian factory during and after the war). *Sosialt Arbeid, 1,* 1-15.

(23) *Ibidem,* p. 7.

Married women lived under worse social conditions and they often lived far away from the factory.

Strøm claimed that conditions in the factory were less important. Freia had improved the hygienic work and spred information about protection. The sickness rate was discussed on mass-meetings and in the Production Committee. Both the management and the shop stewards took the question seriously. One industrial psychological factor pertaining the abscence rate was, however, the frequent move of the workers from one department to another (24). This strategy created unstability, unrest and dissatisfaction.

Individual health control at Christiania Portland Cement Factory

CPC was, in many ways, different from Freia. The factory was situated in a village and its social program didn't expand until after the second world war. Then one of the main purposes was to create good working condition and a safe and harmonious environment. This was necessary from both a productive and economic point of view. Good health was crucial.

In 1947 the management at CPC engaged an industrial medical officer and a factory nurse for the first time. Health control of the workers followed directives which were worked out by the Board of Industrial Medical Officers. All applicants had to go through a thorough examination before they were accepted and all the workers were examined once a year (25). Like Strøm at Freia, the medical officer made surveys on the abscence rate. According to the contract he was to report any serious misuse of abscence to the management. He was to educate each employee and to advise workers in need. In that way he could sort out what diseases were caused by the work environment. How shall we describe the health condition at CPC?

About 1950 the sickness rate was high. The medical officer registered few healthy people, but it was difficult to make good statistics with regard to the clinical picture. Some workers had more than one disease and did

(24) STRØM (1957), *op. cit.* (n. 20), p. 219.

(25) The following sections are based on A/S Christiania Portland Cementfabrik, archive 1992-1968 IV, file 228 and VII, file 76.

not fit in to the standard tables. Others had less serious diseases like flatfoot, varicose veins and myopia. The most important problems were tuberculosis, illnesses of the respiratory system and illnesses of the organs of locomotion like lumbago and sciatica. To fight tuberculosis all newcomers were X-rayed by a lung specialist. Engebrigtsen paied much attention to preventive medical work. Further more he tried to isolate the sources of infection and to vaccinate the Pirquet-negatives. Those who suffered most from cold got a vaccination, and workers who had lumbago or sciatica — about 40% of all employees — got instruction with regard to working posture. Accidents was a serious problem. Comparing statistics with those from american cement factories, the doctor was «dispirited» and he tried to co-operate with the Security Committe in giving high priority to protective work.

The health condition improved during the fifties. The industrial medical officer showed a «very good statistic», wrote the newspaper *The Daily Post* in 1954. It showed 3,57% days off because of illness and 0,45 because of absenteeism (26). The general health condition was good, but the clinical picture had changed. Back-problems which had previously dominated, were outrivalled by heart diseases and tuberculosis was replaced by emphysema and tumors. The increase in heart diseases coincided with automation. The workers got less exercise at work. Heart diseases became the most important illness in the sixties with cancer as number two (27). Engebretsen tried to use Aurol, a concentrate with unsaturated fatty acids. Several workers used the concentrate, but the product was withdrawn from the market. The experts disagreed on the consequences. However, they agreed on the importance of nutrition and the industrial medical officer recomended the workers to eat fish and cod-liver-oil and to exercise.

Industrial hygiene and the collective work environment

Schiøtz and later the Board of Industrial Medical Officers underlined that the doctors work was 1) to work out individual health control and 2)

(26) *Dagbladet*, 30.10.1954.

(27) STRØM (1975), *op. cit.* (n. 3), p. 154. See also IBSEN, Hilde (1989), *Med kunnskap — mot kreft. Norsk Forening til Kreftens Bekjempelse* (The Norwegian Association for Fighting Cancer 1938-1989), Oslo.

to be the hygienist of the factory. These two purposes were crucial and closely related to one another.

«In examining a patient belonging to the people, it is a doctor's duty to ask what kind of work they have», claimed Bernardino Ramazzini (1633-1714), the founder of industrial hygiene (28). But it took a long time before modern industrial hygiene forced its way. Other questions concerning hygiene were more immediate. In the 19th century problems with removal of refuse and the fight against infectious diseases got great attention (29). The authorities established health boards. Early in this century hygienic problems were, however, treated in a wider economic and social context. Attention was paid to living conditions. Public health became more specialized and linked to other social political questions. In the years to come the hygiene movement found its way to the factory. Industrial hygiene was necessary to promote health and welfare in industry. Both managers and doctors paid attention to the connection between the workers well-being and their productivity. But the development was too slow, some claimed. Karl Evang asked for stronger involvement, specially from the medical officers. The working people did valuable work and they deserved good working conditions.

> «Industrial hygiene is a very important question concerning health which has not yet become a part either of the common consciousness or of the medical officers. [...] This is very astonishing» (30).

Since the end of the 18th century the State and the local authorithies had done efforts to improve the work environment. To a certain extend industrial hygiene was a part of the work done by the State Labour Supervision and its local divisions. But the instructions were advises more than directives. In practice every factory could, more or less, interprete the text according to their own ideas. The industrial medical officer, however, played an

(28) LORANGE, Olai (1931). Yrkessykdommer og bedriftshygiene (Occupational diseases and occupational hygiene), *Sosialt Arbeid, 5*, 142-149 (p. 142).

(29) *Industri og Forskning* (Industry and Research) (1938), Oslo, Johan Grundt Tanum, p. 56. See also HAAVE, Per (1990). *Ernaeringsspørsm^oalet i norsk politik fra 1930-^oarene til 1946. Profejonskrav, naersinteresser og institusjonsutforming* (Nutrition in the Norwegian Political Debate from 1930 to 1946), Ph.D. University of Oslo, p. 11 and JONES, Greta (1986). *Social Hygiene in twentieth century Britain,* London, Croom Helm, p. 5.

(30) EVANG, Karl (1936). Yrkeshygiene (Occupational Hygiene). *Æsculap, 17*, 165-168.

important part in the field of industrial hygiene. Let's go back to Freia again.

Carl Schiøtz was in a broad sense interested in hygiene. Hygiene was an important part of his protective work and his fight against work accidents. Schiøtz wrote a text book on the topic where he treated industrial hygiene in one chapter. The question touched upon both social and technical conditions in the factory. It also concerned mental hygiene. The intellectual and physical development of the human being was connected to a healthy work environment. The management and Schiøtz, later Strøm, emphasised early industrial hygiene. The doctor inspected a part of the factory once a week. In the course of one month every department was checked. But even if Freia, in many ways, was a pioneer factory within industrial hygiene, sanitary problems were not easily solved. For nearly thirty years Strøm made continuous complaints. As late as the sixties he wrote about regression in hygiene. The factory was sordid and messy. It was in no way a good example. Strøm feared a general degeneration.

Lack of cleaning and bad ventilations were common problems which also influenced the workers health. The workers in the boiled sweets department complained about laxness after work. The menthol steam was troublesome. Strong gass which was not ventilated irritated workers' respiratory passages. The light condition was also bad. Some rooms had no daylight and the workers got different health problems because of bad conditions. Myalgia was the main problem among femal workers. One reason was bad working conditions such as old chairs and wrong working posture. Strøm brought this problem up with the management. The workers got new chairs according to the best standard available and in 1947 the factory employed its own physiotherapist who gave individual therapy and supervised the work process and the working posture (31).

Even if not every problem was solved, Strøm worked hard to improve the sanitary conditions at Freia. He practised strong control and reported regulary about his work to the management. He saw that defects were amended. As the factory's hygienist he tried to attend to the management 's and the workers' interests in having good working conditions.

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(31) Inspection book for Freia 1917-1969, report 1936 and 1951, Strøms'report 1947.

Industry and health promotion

The modern occupational health service developed quickly at the same time as the public health service expanded. But the arrangement has since its commencement been independent of public measures. In 1945 the Employer's Federation, the Trades Union and medical officers created the occupational health service on a voluntary basis. Big industrial enterprises lead the way and developed a systematic health service for working people and stronger inspection of the work environment. In what way did the industry influence Norwegian health policy?

When Carl Schiøtz started his work at Freia the most serious health problems were bad nutrition, infectious deseases, bad living conditions and lack of hygiene. With existing methods it was possible for the industrial medical officer to find the right diagnosis with regard to the common diseases, for exemple dermatitis and diseases of the respiratory system. A serious problem at Freia was caries. Both Schiøtz and Strøm worked hard to improve the workers' dental health, and their efforts gave results. Schiøtz also had an arrangement with the division of tuberculosis at the Board of Health in Oslo. In the early phase of the occupational health service the arrangement gave results. In spite of simple methods it was possible to discover illness and bad hygiene.

When the occupational health service expanded after 1945 both workers and medical officers were sceptical. One criticism was that examiniation of grown up people who felt well was «unnecessary fuss». The workers feared that the doctor would become a controlling body in the employers service. But criticism faded. The experiences from pioneer enterprises were good. In 1952, however, Strøm questioned the importance of the occupational health service. He claimed that idealy the occupational health service ought to be «a part of the work to carry out a systematic health control in all ages and for all classes and to create the best possibilities as regards health and social conditions» (32). In this field the industrial medical officer did important work. Strøm also claimed that industry, by establishing occupational health service, promoted better hygiene and well-being. But in what way was it possible to conquer illness?

(32) STRØM, Axel (1952). Bedriftshelse (Occupational welfare). *Sosialt Arbeid, 2,* 73-78.

As we have seen, the sickness rate at Freia increased after the second world war. At that time there had been a medical officer at the factory for nearly thirty years. Based on his own experiences Strøm could not find a good answer, and in general it was too early to study the connection between the occupational health service and the sickness rate. The arrangement had, however, created an understanding of a healthy way of life (33).

In the fifties and sixties the clinical picture changed. Chronic diseases like cardiovascular diseases, malignant tumors and myalgies dominated. Mental diseases and difficulties of adjustment also increased (34). The demand for a healthy work environment was strengthend. The environment had to be stimulating and pleasant. Did the industrial medical officers adjust to this development?

A study of Freia and CPC shows that the medical officer and the management tried to follow the social development. When the claim for stimulant and well-being increased, Strøm and Engebrigtsen co-operated with the management, for exemple, in trying to promote rehabilitation within the factory.

CONCLUSION

In my analysis of the occupational health service I have focused on the motives behind the arrangement, how it was organized and in what way industry influenced Norwegian health policy.

My case study has shown that the occupational health service — like other industrial welfare measures — has many-sided explanations (35). In the first place it was a part of the welfare capitalist movement which also took place in other western european countries and the USA. The welfare philosophy which developed at Freia was originally ideological and visionary. Throne Holst was radical in his youth, but went conservative after some

(33) *Ibidem.*

(34) STRØM (1975), *op. cit.* (n. 3), p. 154.

(35) Some viewpoints are that occupational welfare developed as a new strategy in the transition from paternalist to corporate management, that occupational welfare was a part of ethical or philantropic management and a weapon against trade unions. *Cf.* note 2.

years as Freias' manager. But he was still ideological and as a struggle against socialism he wanted to build a society without a proletariat. In that world, however, the working class culture was lost. An important element in the welfare capitalist ideology was profit. It should not only enrich the factory owner, but be used as a means to serve the nation. Healthy and strong workers were productive and necessary for the competitive power.

In the second place the occupational health service was a part of the strategy to increase production and to rise the popular welfare. Workers who felt safe and well-being were effective and loyal. A great many factories build up occupational welfare measures after the Second World War — CPC is just one exemple. During the fifties and sixties the occupational health service became the most common welfare measure in addition to pension systems.

In the way the occupational health system was practised we can follow the principles from 1917 up to these days. The arrangment has focused on collective and individual hygiene and preventive medical work. But a subject of debate among medical officers has always been wether the occupational health control has been nothing else than «meat inspection».

It is difficult to make a comprehensive evaluation of industry as health promoter. But the analysis of Freia and CPC shows that the occupational health service was important in the development of industrial hygiene. The arrangement forced better sanitary conditions, well-being and security. It is, however, more difficult to asses the extent to which the occupational health service has reduced illness. But the industrial medical officer has probably contributed to reduce occupational diseases and injuries. Serious diseases have been discovered early. The workers have got free regulary health control and opportunities to ask for advice.

With the occupational health service, industry took an initiative which has benefited most working people. Axel Strøm claimed in 1975 that the occupational health servie would never have developed if industry had not lead the way (36). Neither the Public Health Administration nor the Medical Officers Association showed interest in the arrangement. The post-war Health Minister, Karl Evang, never gave the industrial medical officers any status. Thiis-Evensen claimed that he even prevented an adequate development

(36) STRØM (1975), *op. cit.* (n. 3), p. 157.

of the occupational health service (37). He, like the Medical Officers Association, might have feared competition in relation to the general practitioners and their economic basis. When the Report from Parliament on the Primary Health Service was presented in 1971 the occupational health service was scarcely mentioned. But the Board of Industrial Medical Officers took action and the arrangement was given more attention. The Trades Union has, however, been positive. In the seventies it wanted the arrangement to expand. The Employers' Federation also agreed on the importance of the occupational health service.

When Thiis-Evensen wrote his article in 1975 he hoped that the Medical Officers Association would give more attention to the arrangement in the future. He was sure the occupational health service would continue to expand, and he hoped that the public health would take over the administration when the authorithies were ready. It would, however, not happen in the near future (38). In the mean time doctors with particular social interest had an important task: to promote preventive medicine together with the industry.

(37) THIIS-EVENSEN, Eyvind (1975). The Industrial Medical Office — an Outsider in Norwegian Public Health?, *in:* Larsen (ed.), *op. cit.* (n. 3) p. 159.

(38) *Ibidem,* p. 163.