

What the ACGIH has done for industrial hygiene*

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Some of the old-timers among us can probably remember that ACGIH meeting in 1948, which was held in Boston. At the last minute someone got the idea that it would be a good thing to have a banquet, and as I recall, we did have one at the Old Oyster House of the famous seafood. Of course, no banquet is complete without some formal entertainment, but since our treasury, as usual in those days, was very low, I was persuaded to furnish the entertainment in the form of an account of my adventures in South America, where I had spent nearly all of the previous year as a consultant for the Institute of Inter-American Affairs. As I recall that event, our treasury was so low that I even had to pay for my own dinner. Utile did anyone think at the time that we were actually ten years of age.

With the exception of a few of the old guard who are here tonight I don't suppose that very many people remember how the ACGIH got started, and how it grew to its present stature, and, believe me, it does have stature. I shall assume the prerogative of an anniversary speaker and turn the pages back for a few minutes to give you a lime history of our organization and why it was created in the first place.

The ACGIH was really born of necessity. Prior to 1936, industrial hygiene activities in the United States were confined to research work, both in the laboratory and in the field, by the U.S. Public Health Service, the United States Bureau of Mines and one or two universities. Very little application of these findings was in practice in the States, because at that time there were only five States and one city engaged in official industrial hygiene work. In all probability, this limited work in industrial hygiene also accounted for the paucity of instruction in that branch of public health.

Now, as most of you know, the actual responsibility for safeguarding the health of our labor force rests chiefly upon State and local governments. In 1936, when funds were made available by the Social Security Act for the development and extension of all phase 3 of public health work, the U.S. Public Health Service, in cooperation with the

Conference of State and Provincial Health Authorities of North America, inaugurated a program designed to establish active industrial hygiene work in State and local health departments.

One of the most pressing problems presenting itself at that time in the development of industrial hygiene services in State and local governments was the lack of trained personnel to evaluate and control the then inevitable hazards associated with industrial work. The burden fell primarily upon the Public Health Service, because of its long experience in industrial hygiene work and its administration of social security funds for this purpose.

Realizing the urgency of the problem, and believing that some standard method of procedure should be set up for the guidance of industrial hygiene workers, the Public Health Service decided to give a short course of instruction to personnel selected by the various State health departments for work in this field. Accordingly, a four-week seminar was held during the summer of 1936, which consisted of lectures on industrial hygiene administration, health hazards, control methods, and similar subjects, as well as laboratory demonstrations of instruments used for investigative and control work. In the summer of 1937, a second seminar was held, since the number of persons engaged in industrial hygiene had increased from approximately forty to more than a hundred. Since these seminars could do no more than introduce the public health worker to industrial hygiene, additional training facilities were furnished by the Public Health Service. This training took the form of cooperative field investigations in various States. For example, studies were conducted in West Virginia, with the industrial hygiene personnel of

* Presented at the banquet of the ACGIH on the occasion of the 20th Anniversary meeting of this organization at Atlantic City, NJ, April 20-22, 1958. Published in the *Am. Ind. Hyg. Assoc. J.* 19:338-344 (1958). Reprinted by permission of the American Industrial Hygiene Association.

that State, on the health of workers in the ceramic industry. Asbestos was studied in North Carolina and South Carolina. The hazards in the hatters' fur carrying and felt hat industry were investigated in Connecticut, and, in 1939, three studies were conducted in cooperation with the Utah State Board of Health, on the problems in the metal and coal-mining industries, and in metal smelting and refining. Such studies served a dual purpose. The United States Public Health Service was fulfilling its function of conducting basic research, since these studies yielded information which could be applied on a national scale, and, at the same time, the State personnel had an opportunity to receive training in the practice of industrial hygiene and to make a good start in the evaluation and control of health hazards in the industries of the State in question.

During the last week of the second seminar in 1937, we came to the conclusion that we should continue these annual seminars but perhaps hold them under the auspices of a non-official organization, similar to the annual Conference of State Sanitary Engineers, which meets yearly with the Division of Sanitary Engineering of the United States Public Health Service. As a matter of fact, in writing the constitution for the ACQIH, we used the constitution of the Conference of State Sanitary Engineers as a guide. An organization of this sort can very often accomplish things which an organization of more official character is unable to do, because of certain limitations imposed upon official organizations. Two organizations which illustrate this point are the Conference of State & Territorial Health Officers, which is an official organization meeting with the Surgeon General of the Public Health Service every year by an act of Congress as in contrast to the non-official State and Provincial Health Authorities of North America. The latter very often makes statements and takes action on matters which the former would not dare to do, even though the same people are talking.

The first annual meeting of our Conference was held in Washington June 27-29, 1938. By that time, believe it or not, we had been able to organize twenty-eight industrial hygiene units throughout the various States and at the first meeting these units were represented by forty-three members, one associate, and six guests. The Executive Committee held its first meeting in my home, and that year the custom began of making the Executive

Committee meeting, a dinner meeting, except that in this first year the dinner was held after the meeting at a well-known suburban restaurant known as "Mrs. Kay's Toll House Tavern." We had several drinks at my home following the meeting and those must have stimulated all of us to go "all out" on what we ordered, which as I remember, consisted mostly of what all good Americans like; beefsteak, baked potatoes, apple pie, and so on, washed down with sparkling Burgundy. When the bill appeared, it was passed on to me, since I had done all the arranging and was the secretary-treasurer. Much to my consternation, the bill was more than I could pay and then and there I instituted the custom, which I see still holds, of making the Conference pay for the dinner of the Executive Committee. In this particular instance, in order to pay the bill, I began collecting dues from the Executive Committee members and was just barely able to make out with what I collected and with the money I personally had in my pocket book. In those early days our treasury was always bare. As a matter of fact, even two years later, in 1940, the balance at the end of the year was only \$19.05 and so it went along for a good many years, until our Industrial Ventilation Committee put us in the "black." In reviewing the 1957 Transactions, I noted that the membership last year reached an all-time high of 374; (today it is more than 400) and that the Conference had a fat balance of six thousand three hundred and eighty-two dollars and seventy cents. Of course, the dollar is not worth today what it was twenty years ago, but even so, six thousand and some dollars is not "just hay."

With this much of a background on the early beginnings of our Conference, we might very well ask ourselves whether we, as an organization, have followed the road carved out for us by the founding fathers and what we have done with the heritage left us by the organizers of our association. The objectives of the Conference as set forth in the Constitution in 1938 and reaffirmed in the revised Constitution in 1951, tell us to go forth and,

"promote industrial hygiene in all its aspects and phases; to coordinate industrial hygiene activities . . . by official federal, State, local and territorial industrial hygiene agencies; to encourage the interchange of experience among industrial hygiene personnel in such official organizations; to collect and make

accessible to all governmental industrial hygienists such information and data as may be of assistance to them in the proper fulfillment of their duties . . ."

Now, just how did the Conference proceed to achieve the **above objectives**? And how **well have we succeeded**?

At the time the Conference was created twenty years ago, there had already been amassed a considerable **backlog** of valuable information concerning the health **hazards** associated with exposure to some of the classical occupational hazards and the means of controlling them. The spectacular radium dial painting cases had already been studied and regulations drawn up for the safe **use of radium paint** in industry. The classic studies of Leonard Greenburg on benzol poisoning in industry focussed our attention on this extremely useful but **very dangerous solvent**. Then, **too**, by that time we had behind us the investigations of the Division of Industrial Hygiene of the United States Public Health Service concerning the dusty trades and the Silicosis Conference which did so much to publicize the notoriously **bad working conditions** on some of our industries where silica and its compounds were encountered. The first reports on the result of the National Health Inventory were being issued about that time and these included the Occupational Morbidity and Mortality studies which the Industrial Hygiene Division of the Public Health Service had worked out.

The Conference had no more than begun to learn how to walk when, in 1940, it was obliged to concern itself with the tremendous problems brought about by the defense effort which our country was making at that time. World War II taxed the energies of every organization and of every able bodied man and woman. Even before the "Day of Infamy," those of us in public health activities related to defense measures realized that the military had priority on manpower and for that reason it was up to the Public Health Service to jump into the breach with **lease-lend** equipment and personnel. At the height of the war, we had as many as seventy professional individuals on loan to the various States to help them carry on industrial hygiene work in the war effort.

The old maxim "It is an ill wind that does not blow some good" perhaps holds more truth for

industrial hygiene than for many other activities. It seems almost axiomatic that national crises involving social and individual hardships and sacrifices often result in progress which would not have occurred otherwise, or at least would have been delayed. Industrial hygiene got its real beginnings in this country at the time of World War I and got off to a good start at the time of the depression which began in 1929 and which resulted in many social security benefits, including those for industrial hygiene and public health. World War II gave us the opportunity to demonstrate that our profession is here to stay. The obvious need for healthy manpower, and safe and healthy working conditions was our cup of tea, as they say in literary circles.

In looking back over the past two decades of the activities of our Organization, we can really be proud of many of our accomplishments. Starting with practically no trained professional personnel we were able in a relatively brief period to muster several hundred persons who with a limited amount of training and experience could cope with the many problems inherent to our war effort. The war also gave us an opportunity to organize and develop industrial hygiene units where they had never before existed, so that by the end of the war we had in this country a network of such units established throughout the Union, in nearly every State, in large industrial cities and in several countries.

Now, I feel that we were able to accomplish all these things because from our very beginning we realized that our real strength as official agencies lay not in large numbers but in our ability to work uniformly and as a team, that we had to operate among forty-eight States. Each perhaps with different legal requirements as to industrial hygiene practices.

From the very beginning of our organization we realized that one of the major functions of our group was the development of standard practices among the various units. For that reason, even during the first year we organized various standing committees to deal with problems of administration, such as those concerning professional qualifications of industrial hygiene personnel, which were very useful in giving our people status within the Merit Systems which were then being developed in the States. It was in those days too that the

Committee on Threshold Limits began to function and, as all of you know today, this very important work has resulted in the annual review and publication of limits of several hundred toxic substances with which the industrial hygienist has to deal in his daily work. The work of this committee has been recognized by the publication of its findings annually and their use throughout the world. The general industrial hygiene code developed by the Committee on Uniform Codes as well as those covering special exposures, or industrial processes, have also achieved national status. Other accomplishments of this character deal with such subjects as standard methods of analysis, instrumentation, the uniform reporting of industrial hygiene activities and the uniform collection of occupational disease reports. Perhaps the most outstanding accomplishment of the Conference resulted from its Committee on Industrial Ventilation, which won the first award of the Conference for its outstanding work. To say nothing of the fact that the fruits of the committee's work — the *Manual of Industrial Ventilation* — has put our group on a sound financial basis. Other accomplishments of the Conference have resulted in the development of standard labelling procedures and uniform administrative practices, such as the promotion of small plant health services, uniform records and reports in industry and workers' health information. Today our standing committees are concerned with such additional problems as agricultural health, air pollution, the epidemiology of occupational diseases, and ionizing radiation.

In this manner, I think we did a pretty good job of achieving the objectives of the Conference with respect to the coordination of industrial hygiene activities, with the collection and dissemination of information, and through our annual meetings we were able to encourage the interchange of our experiences. Our various committees and the results of their work filled a vacuum, since the ACGIH was the first to gather the mass of data needed.

I also believe that our Conference, made up as it is of a variety of public health workers, has demonstrated that industrial hygiene is not the exclusive monopoly of any one profession but requires, for its successful application, the collaboration of various public health specialists, such as physicians, engineers, chemists, nurses, physicists, and others. Each of these has a specialized

function to perform, but essentially they work as a team, each contributing his skill to the study of the hazard and its eventual control. This team approach has been one of the major contributions of the United States to the advancement of industrial hygiene as we know it today.

So much for the credit side. If I were to list anything at all on the debit side, it would be perhaps to mention that the State and local industrial hygiene units do not appear to be as strong and as vigorous as they were at the end of the war. Undoubtedly, this is due to two facts. We have lost many persons from the States to industry, and the various branches of the Defense Department, such as the Army, the Navy and the Air Force, have now developed their own industrial hygiene services. Many of the industrial hygienists among the latter originally came from the civilian agencies. The Atomic Energy commission also has drawn heavily upon Conference members. The emphasis on air pollution control with the creation of special commissions or authorities to handle this problem has also been a drain on the State and local industrial hygiene units. This is all to the good for the industrial hygiene movement, but has considerably weakened the State and local hygiene work. I think this Conference with the cooperation of the United States Public Health Service should accept the responsibility for strengthening the various State and local units in Industrial hygiene and should develop a program so that we can once again have strong and dynamic agencies giving services to industry.

I also seem to sense a trend to deviate a bit from the original charter laid down for us by the founding fathers in the nature of our annual programs. Quite early in the life of our association, we realized that in order to keep the Conference meetings from becoming just another reunion of a professional society and also to keep it within the organizational objectives of an official organization meeting to discuss mutual problems with the United States Public Health Service, it was necessary to set aside time for a conference with the staff of the Division of Industrial Hygiene of the Public Health Service. In this manner the Sunday preconference program developed, which consists in concurrent sessions of physicians, nurses, chemists, and engineers who meet to discuss technical problems in their respective

fields, and then the night session at which administrative discussions are held to iron out problems of legislation, salaries, relationship with other governmental agencies, and so on. In this way we could sort of let our hair down (those of us who had hair) or, to put it in another way, we could wash our dirty linen in private. I am very pleased to see that these pre-conference sessions on Sunday are still a useful and highly successful item on our annual agenda.

However, there is still the tendency to devote anywhere from one to one-and-a-half days of our limited annual meeting time to the presentation of strictly scientific papers, which I think would be better received at the AIHA or Industrial Physicians' sessions, thus giving our Conference more time for the discussion of solutions to some pressing administrative problems.

From this brief review of the history, early struggles and accomplishments of the Conference over the past two decades, it is evident that we, as an association, although small in numbers by comparison with other organizations of this type, have made an important impact on the industrial hygiene of our country. We may very well ask ourselves at this point what should be our role today and in the immediate future in these rapidly changing times? And they are changing, particularly in attitudes and concepts on the part of our clientele, that is management and labor.

Twenty years is such a short time, that it is easy for me to recall the attitude of management toward industrial hygiene and toward us as protagonists of this discipline. I can very well remember that as a member of the United States Public Health Service and without legal authority to enter industrial plants, I had a hard time convincing industrialists to cooperate in our investigations of health hazards. I still remember a very amusing incident that happened to me during the time when we were studying the hazards associated with sandblasting. I called on one factory in Connecticut and tried to persuade the owner to let me come there and study certain sandblast operations which I was anxious to add to the data we were collecting. He was very dubious about letting me come in and take some samples of air, saying that he was suspicious of any scientific studies and of so-called scientists. Finally, after a considerable sales talk on my part, he said:

"Well, all right, young man. You can come here and do these studies; but, you must come yourself. I don't want any of these college boys coming around here!"

The same difficulties but from a different viewpoint were experienced with labor. Organized labor had had its troubles with management in that from time to time a worker was fired, or not hired, on supposedly health grounds, when sometimes it was due to the fact that a particular worker was considered undesirable because of his union activities. Obviously, with management taking such an attitude, labor fought the physical examination, since it felt that at times it was not used for the purpose intended, that is to assess a man's physical condition and to place him in the job he was physically and mentally qualified to perform.

I can recall the time when labor contracts specifically stated that the physical examination would not be pre-requisite to employment. As result of such a labor attitude, management was at times forced to employ disabled persons who could not be properly placed because of a lack of information on their health status. There were cases of epileptics working on ship construction in places where they were a danger to their fellow workers and to themselves. Many of our early investigations were made difficult for us because of the time wasted in trying to convince labor to submit voluntarily to a physical examination, which we needed in our studies of the relationship between health and working conditions.

I should like to relate one little incident to illustrate the suspicious feeling which prevailed between management and labor in these early times. One day I was inspecting a metal mine in the Far West in connection with one of our silicosis investigations. My guide, the superintendent of the mine, and myself had stopped in one of the levels in the mine to rest a bit and to smoke a cigaret. The level below us was very near; so close that we could hear a couple of miners talking. As near as I recall the conversation between the two miners, it went something like this:

"Say, Bill, what do you think of this notice the company put up, that every man that has worked for a year will receive ten silver dollars as a bonus for Christmas?"

The second miner replied, "Well, I'll tell you, **Red**. I'm a bit suspicious of all **this**. I just can't picture the company giving anything away for nothing. And you **mark** my words, we are going to pay for this one way **or** another!"

Well, those times have **changed** for the **better** and **we** as a group certainly played a part in bringing about the changes. **To** understand the new viewpoint of management, one only **has** to pick up the annual **Transactions** of the Industrial Hygiene Foundation. In **1935**, twenty companies met for the first time to **organize** an **association** to combat silicosis. **Today**, this organization **of** industrialists can count over four hundred in its memberships, and its annual meetings are a bright **star** in the industrial hygiene constellation. Although this organization **still** continues to **give** **services** to members on some of the older problems in **our** field, such **as** the classic occupational diseases, in late years it also **has** **concerned** itself with such important problems **as** noise, atmospheric pollution, radiant energy, sickness insurance, mental health, social **security**, the older worker in industry, the impact of automation on health, and the general field **of** labor and management relationships. Management realizes only **too** well that if it does not **show** **as** much concern for the men who operate machines **as** it does for those very machines, it will not realize the full potential of the new technology.

Labor also, has come of age and **is** showing a **greater** concern for social security for its workers and now considers **this** **as** but an extension of its traditional preoccupation with wages and hours and working conditions. That is why we find **today** many health and welfare programs written **into** collective bargaining contracts. Recent studies made by the United States Public Health Service show that practically **every** major union in the **country** had negotiated to some extent pensions, **or** health and welfare provisions, for their members. **Labor** **too**, has now endorsed the physical examination as a prerequisite to employment and job placement recognizing that in the long run **it** **is** a benefit to the worker and not something to be feared.

In view of these changing concepts in occupational health on the part of **both** management and labor, **we** might very well ask ourselves **whether** or not our role as government officials has **changed**

in anyway. **To** **begin** with, I think **we** should bear in mind that although management **has** **assumed** greater responsibility **than** ever before in occupational health, and although labor now realizes that it has much to gain in cooperating more fully in occupational health programs, the role of the government industrial hygienists **has** far **from** lessened but has actually increased, and will **continue** to **grow**.

It is **true** that many of the large industries **have** developed their **own** industrial hygiene programs, but **we** still have with us the smaller plants where the bulk of the labor force **is** employed. **These** smaller plants — and some of them are not so small — **still** look to us for **guidance** in the solution of their health problems. And even the larger industries need our help in assuming their newer responsibilities, such **as** in the **fields** of total coverage medical care **plans**, retirement **provisions**, the problem of the older worker and rehabilitation. Also, some of the older occupational disease problems are still with us and to these we may add the new ones, such **as** air pollution and **the** **insecticides**. Then there are the problems posed by the ever increasing use of radioactive substances in industry.

In order to make use of the available **resources** to the utmost, **we** should begin to consider seriously a plan to integrate **administratively** the means at our disposal which exist within **our** local health departments, the small plants, and certain governmental agencies with a stake in the industrial hygiene claim. Instead of just striving for a peaceful co-existence with local health departments and our **sister** governmental agencies, **we** should **study** ways and means to integrate our **work** in such a manner that **we** can present a united front and in this way render better and more adequate services, and perhaps really begin to make a dent in the perennial problem of the small plant. I am confident that with the right approach you will **receive** a real welcome and a will to **work** in a cooperative manner on the **part** of these groups.

It should be quite obvious from this brief look at the **future** that our Conference has a tremendous **job** ahead of it and **we** must prepare **ourselves** to meet the demands which industry will be making **for** our services. I suppose **too**, that **we** must be prepared to continue losing some of our **best**

personnel to industry unless we make an earnest drive to make government jobs really attractive, and I do not mean just from the view point of take-home pay alone. I know that many of the State jobs pay very poorly and, to make things even worse, have very inadequate retirement plans. One of the reasons that United States Public Health Service has been able to hold on to many of its officers has been the provision of a career service with fairly adequate salaries and excellent social security benefits, including retirement pay and medical care for dependents. I am all for having the Conference appoint a standing committee with some dynamic individuals on it who will develop a plan of action to solve this problem of a career service for our State and local industrial hygiene personnel.

As you know, I have come some four thousand miles to be with you all and to take a backward look at our Conference to see what we have accomplished and what the future holds for us. It is not all so backward either, since we were only striplings when World War II sneaked up on us and put us to the test. You are just now growing a good beard and have acquired the responsibilities which go with that adornment. Your influence has gone

beyond the United States, since, as you know, several of your colleagues are now working in Latin America. We now have about twelve countries south of the Rio Grande which boast of modern industrial hygiene programs, comparable to any of those in our own country. There is much to be accomplished in those countries, since they are only now beginning to industrialize and to experience the problems which faced us some twenty years ago when this Conference got its start. Perhaps that is one of the reasons why I find my work in Latin America so satisfying, for I can truly say, "This is where I came in."

John J. Bloomfield, more familiarly known to industrial hygienists as "Jack," was a pioneer in the development of industrial hygiene in the United States, and has been a leader and "sparkplug" in the field since those early days. He has transferred his pioneering and "sparkplugging" to South America, but continues to be a leader even here. This year, "Jack" was the recipient of the Cummings Memorial Award at the A.I.H.A. annual dinner. On the preceding evening, he was the honored guest and speaker at the Twentieth Anniversary Banquet of the American Conference of Governmental Industrial Hygienists.



Threshold Limit Values — Discussion and Thirty-five Year Index in Recommendations

Edited by:

Marshall E. LaMier

**AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
CINCINNATI, OHIO
1984**

The Annals series will present the latest state-of-the-art information on research and practical applications of science in the field of occupational health. Each issue will be the proceedings of an important symposium, conference, or meeting sponsored by the American Conference of Governmental Industrial Hygienists or other leading professional organizations in, or allied with, the occupational health field. Contents will deal with subjects of current interest. The Annals series will become a valued addition to the international scientific literature.

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Library of Congress Catalog Card No.: 84-70955

Printed in the United States of America

ISBN: 0-936712-51-1

CODEN: ACGIH2 9 1-335 (1984)