

maintenance. Even the best respirators, poorly maintained, offer little or no protection. While in Florida to view the use of pesticide respirators in the field and in pesticide formulating plants, we found in most cases they were very poorly maintained. They did not give any protection.

*Schults:* About ten years ago I heard you say that the respirator business was going to pot, and the Bureau of Mines was leading the way. In view of the new meaning of the word "pot," the old statement has a most interesting new twist, and we categorically deny the accusation is true.

*Firenze:* Our concern is for those people working in contaminated atmospheres where the nature and extent of the hazard are unknown or are difficult to determine. Firefighters cannot take the time nor do they have the facility to sample the environment to which they are subjected; consequently they often expose themselves to concentrations of contaminants outside the protective limits of their respiratory equipment. For this reason, equipment of this type should be carefully chosen to assure protection against high concentrations of gas, particulate matter, or a lack of oxygen in the atmosphere. Having the right man to select breathing equipment for the organization is crucial. In many instances, such people are lacking sufficient technical ability and information required for the task, thus making faulty decisions. Some of these faulty decisions have caused deaths. In one case, where 14,000 firemen were involved, the officer responsible for the purchase of respiratory equipment selected canister-type apparatus. After an unfortunate fatality occurred, his decision was reversed and self-contained equipment was purchased.

At this time there is a need for better self-contained breathing equipment. Innovations combining lightness and durability with greater capacity would make this type of apparatus more efficient. There is a major short-coming in today's self-contained equipment. In the event the wearer becomes pinned or unconscious there is no provision designed into his breathing equipment to automatically vent to the atmosphere when the air supply is exhausted. Some type of an emergency venting system is needed. Respiratory equipment manufacturers should consider this problem in the design of newer devices.

*Burgess:* When I first entered the field of environmental health about twenty years ago, I rather thought that engineering control methods would improve and the usefulness of respirators would be limited by 1970. Quite the opposite has occurred. We seem to be faced with more and more cases when respirators are necessary. As the need for respirators increases, design and innovation must keep pace.

*Question:* With all your comments about air pollution compounds damaging respiratory systems, I am surprised you did not condemn the tobacco industry.

*Answer:* As Manager of Health and Safety and not far from the Roswell Park Cancer Research Center, we have read much scientific information that our number one killer is cigarette smoking. Probably five to six times as many people are killed by cigarettes as by automobiles, yet you know the slaughter on the roads. I will admit I am at a loss to know why we do so little about this source of deliberate air pollution. Perhaps it ties in with something I read about six years ago: the author said the strongest force in the world is not the nuclear bomb but human inertia; meaning it is difficult to change any of us from what we are doing at a particular moment.

*Question:* Does the National Academy of Sciences sponsor research on respiratory protection devices?

*Answer:* No, the NAS does not. The National Academy of Engineering recently completed a study for the U. S. Bureau of Mines involving both rescue and survival equipment and techniques.

*Question:* What is the best satisfactory method of combining prescription safety glasses with a full face mask, or full chin respiratory protection?

*Answer:* With a hood covering the whole area, any glasses can be worn. If needed in a full face piece, we suggest they be mounted completely inside the face piece.

*Question:* What is the status of the approval of agricultural respirators?"

*Answer:* For the past two years (since the Department of Agriculture discontinued the testing of respirators), there has been none. The Bureau of Mines in Washington has the problem under study, and should render