HEALTH HAZARD EVALUATION REPORT 72-19-16

HAZARD EVALUATION SERVICES BRANCH

DIVISION OF TECHNICAL SERVICES

Establishment: Continental Airlines
Los Angeles, California

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AUGUST 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
CINCINNATI, OHIO 45202

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SUMMARY DETERMINATION

Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6), authorizes the Secretary of Health, Education, and Welfare, following a written request by any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The National Institute for Occupational Safety and Health (NIOSH) received such a request from an authorized representative of employees regarding exposure to tobacco smoke at the Continental Airlines maintenance building, Los Angeles International Airport.

The complaint from an employee that he was allergic to the tobacco smoke being generated by his co-workers was looked into by NIOSH physicians and industrial hygienists. This problem is resulting in disputes between the employee, the union, and management. The request was an unusual one but it was decided to investigate the problem even though tobacco smoke has no standard promulgated by the U.S. Department of Labor. The physicians tried to determine if the employee was suffering from a true allergic disorder or if the tobacco smoke was irritating some pre-existing respiratory condition. The industrial hygienist surveyed the work site to determine if any known respiratory irritants were being used and noted the overall general ventilation and working conditions. The physicians could not establish that the employee was suffering from a true allergic disorder from tobacco smoke but acknowledged that tobacco smoke could be causing him some irritation. Only minute quantities of chemicals were being used in the reverse thrust repair area of the maintenance building. The work site was large and open to other sections of the building. Make-up air was provided and ventilation did not seem to be a problem. Overcrowding of employees was not a cause of concern in this section of the building. Recommendations were made to management to further define the employee's medical case and for all sides concerned to work out a reasonable solution to this dispute.

Copies of this Summary Determination as well as the Full Report of the evaluation are available from the Hazard Evaluation Services Branch, NIOSH, Cincinnati, Ohio 45202. Copies of both have been sent to:

a) Continental Airlines, Los Angeles, California
b) Authorized Representative of Employees
c) U.S. Department of Labor - Region IX

For purposes of informing "affected employees", the employer will promptly either (1) "post" the Summary Determination in a prominent place near where affected employees work for a period of 30 days or (2) provide a copy of the determination to each affected employee.

I. INTRODUCTION

Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 699(a)(6), authorizes the Secretary of Health, Education, and Welfare, following a written request by any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The National Institute for Occupational Safety and Health (NIOSH) received such a request from an authorized representative of employees regarding exposure to tobacco smoke at the Continental Airlines maintenance facility at the Los Angeles International Airport, Inglewood, California.

II. BACKGROUND HAZARD INFORMATION

A. Standards

There is no definite occupational health standard promulgated by the U.S. Department of Labor applicable to the particular substance (cigarette or cigar smoke) of this evaluation. Hundreds of individual compounds have been isolated in tobacco smoke, but they are found only in trace amounts. Some of these compounds may have standards.

B. Toxic Effects

Many questions remain unanswered about the subject of tobacco smoke and health, but it is generally agreed upon by the medical profession that smoking of cigarettes increases the risk of lung cancer and cardiovascular disease. Cigarette smoke is also an irritant which can trigger symptoms consistent with upper respiratory disorders. At the present time, there is some evidence that links tobacco smoke and the development of a true allergic disorder. However, much of the work is inconclusive and further research is needed.

III. HEALTH HAZARD EVALUATION

Representatives from the National Institute for Occupational Safety and Health were not certain how to respond to the health hazard evaluation request concerning tobacco smoke because it did not seem to come under the "substance" category alluded to in Section 20(a)(6) of the Act. However, it was decided to visit

the Continental Airlines maintenance facility to determine if tobacco smoke was accumulating unnecessarily in a confined work area or if some other substance was being used which might be the cause of the employee's complaint of upper respiratory distress.

In early April of this year, two NIOSH physicians, Drs. Walter J. Finnegan and Peter S. Herwitt, interviewed the affected employee and the Medical Director of Continental Airlines, Dr. I. Their findings and conclusions will be outlined below.

On June 1, 1972, NIOSH representative Melvin T. Okawa surveyed the work site to determine if any known respiratory irritants were being used in the area. Mr. , Director of Safety, Mr. , the affected employee, and a representative of the union were present during the survey of the work area.

Results:

Mr. is a mechanic who has the responsibility of repairing reverse thrust units for jet aircraft. He works with 6-8 other employees in an open area. This section of the maintenance facility has about a 20 foot ceiling and the floor area is approximately 2,000 square feet. He positioned himself about 8 feet from his nearest fellow worker. Fresh air is brought into the work area by a large duct near the ceiling and the entire section of the plant is open to other parts of the building. Mr. works with small quantities of acetone, methyl ethyl ketone, and paints. These compounds did not present a problem since their use was quite limited. The union had requested in the past that this area be designated a smoking area since smoking would not constitute a safety hazard. This request was granted by the company several years ago.

The findings and conclusions of Drs. Finnegan and Herwitt are detailed below:

Several months after starting work in the shop area(about 2 1/2 years ago), Mr. noted the insidious onset of an essentially non-productive cough without associated allergic or more severe respiratory symptoms, notably sneezing, rhinorrhea, wheezing, or dyspnea. However, his personal physician suspected an allergic etiology for this cough and concluded that tobacco smoke was the offending agent, after a historical review

had ruled out the common potential allergens and the patient had noted increased symptoms when around tobacco smoke. A diagnosis of "allergic rhinitis and pharyngitis secondary to tobacco smoke" was made and Mr. was instructed to take Chlortrimeton (chlorpheniramine maleate, an antihistamine) as needed to decrease symptoms. For almost two years now, he has been taking 8 milligrams (mg) of Chlortrimeton every two hours while at work or in another smoky environment. (This is a rather high dosage, as the manufacturer recommends taking 8 mg at no more frequent intervals than 8 hours; consequently, the probability of significant side effects--viz., sedation--is greatly increased).

On March 7, 1972, Mr. personal physician wrote a letter to Continental Airlines asking that Mr. be transferred to a work area where smoking is prohibited. On March 23, 1972, Dr. concurred with this suggestion--for both health and safety reasons. Apparently this transfer could not be effected because of rigid stipulations in the union contract regarding bidding, seniority, etc. Consequently, Mr. n (Manager of the power plant overhaul section), followed Dr. alternative suggestion to require Mr. to take sick leave while so heavily medicated. Subsequent to this action, Mr. personal physician advised him to discontinue medication while at work and, on March 29, Dr. recommended that Mr. be returned to his present job. This was done; Mr. is now working and continues to wear a respirator full-time on the job.

Dr. told us that he has examined Mr. on several occasions and has found no clinical signs (e.g., boggy mucosa, rhinorrhea, wheezing), of an allergic disorder. Furthermore, he is not aware of any published data regarding a true allergic sensitization to tobacco smoke, although he acknowledges that smoke is an irritant and might aggravate a pre-existing allergic condition. He states that he has encouraged Mr. on multiple occasions to discontinue the antihistamine and return for examination when he becomes symptomatic, in an effort to document the nature and severity of his complaint. Mr. has not done so.

Although Mr. states that the union "is willing to allow a transfer...but the company refused to allow it," both Dr. and Mr. claim that the company is unable to do so because of union resistance. This alleged union refusal is apparently based on two factors:

1) Fear of establishing a precedent for making ready exception to contract agreements.

2)

The potential solution of prohibiting smoking only in Mr. immediate work area is claimed to be impractical by the company, as the union would balk at such a restriction in an area where not otherwise required as a precautionary safety measure.

In view of the lack of a simpler solution, it appears that the only route left to pursue was that of determining whether or not an occupational hazard exists. We must conclude that there is a distinct paucity of evidence linking tobacco smoke to the development of a true allergic disorder. Although the "Report of the Surgeon General's Advisory Committee on Smoking and Health" (PHS Publication No. 1103, 1964) alludes to several alleged cases of allergy to tobacco smoke as a possible infrequent cause of asthma, the references are all 20 to 50 years old and not overly convincing. Furthermore, no mention of allergic rhinitis and pharyngitis secondary to tobacco smoke is made, and not one of the many authoritative medical and occupational health textbooks published in the last decade makes note of such a condition. We recognize that this exposure is undoubtedly annoying and irritating to the subject's upper respiratory tract, but the severity of the condition and its alleged occupational etiology are certainly subject to conjecture. Without additional evidence that some occupational hazard, such as a carbon monoxide elevation above the threshold limit value, exists in the workplace, it is impossible for us to state that Mr. or his co-workers are being exposed to more than a nuisance factor.

We can readily empathize with Mr. and would like to see a solution found for his plight. Unless management and labor take the initiative to discourage smoking--either by persuasion, prohibition, or segregation of smokers, Mr. and others who share his discomfort may have to bear with it. We are at an impasse; it is beyond our power under the law to effect a job transfer or to compel Mr. co-workers to discontinue smoking. The logical answer remains in finding understanding, enlightened minds on both sides of the labor-management fence; we would hope that such an effort will eventuate in a job transfer to a non-smoking area for this earnest young man.

Summary:

There was no evidence that known respiratory irritants were

accumulating in the work area resulting in Mr. respiratory condition. The reverse thrust repair area was open to other section of the plant and there seemed to be adequate air movement for the prevailing working conditions. The use of toxic compounds was limited in this section of the maintenance building.

The findings and conclusions of the NIOSH physicians, Drs. Herwitt and Finnegan were discussed in detail above. They admit that tobacco smoke is undoubtedly irritating to Mr. but conclude that there is a lack of evidence that he is suffering from a true allergic disorder. They feel that efforts should be made to relocate Mr.

A recent U.S. Public Health Service publication, "The Health Consequences of Smoking - A Report of the Surgeon General: 1972," contains a chapter on tobacco smoke and allergic disorders. It was concluded that tobacco smoke can contribute to the discomfort of many individuals. It exerts complex pharmacologic, irritative, and allergic effects. The clinical manifestations of each of these conditions may be indistinguishable from one another. It was also evident that many studies were inconclusive and that more work is needed in this area.

There is no single test or observation that can be used to determine whether an individual is suffering from a true allergic disorder from a substance. However, fulfillment of the following criteria constitutes good evidence that an allergic disorder exists:

1) Demonstration that the substance is antigenic.

2) Demonstration that the substance can elicit signs and symptoms upon exposure which subsequently disappear upon removal of the substance.

3) Demonstration that the immunologic event is related to the clinical event.

RECOMMENDATIONS

1) It is recommended that medical studies be conducted to determine whether Mr. has a true allergic disorder associated with tobacco smoke, i.e., his case fulfills the three criteria outlined above.

2) If it can be demonstrated medically that Mr. has a true allergic disorder, management should relocate him to a nonsmoking area of the plant.

3) If it cannot be demonstrated that Mr. has a true allergic disorder associated with tobacco smoke, he (Mr.) must be resigned to the fact that he must work in less than optimum conditions and should pursue normal union channels for bidding on other jobs.