

Another Fog Study

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A two page summary of research done by Dr. Jacqueline M. Moline from the Mount Sinai-Irving J. Selikoff Center for Environmental and Occupational Medicine^[1] investigated the health complaints of 25 pit musicians at the *Beauty and the Beast*. These musicians are exposed nightly to pyrotechnic emissions, glycol fog mists, and other air pollutants.

A questionnaire was used to determine which symptoms the musicians attributed to fumes and fog. The percentages of musicians that listed runny or stuffy noses, cough, shortness of breath, tearing or strained eyes, and sore or dry throats ranged between 41 and 59 percent. These are very similar to the percentages claimed by performers in the other two major studies,^[2,3] and they support those results.

Dr. Moline's initial medical investigation on October 23, 1996 included a physical examination and spirometry (measurement of lung capacity) before and after a matinee performance. A follow up study three weeks later included repeat post-performance spirometry and physical examination. Dr. Moline reported her findings as follows:

An analysis of the pulmonary function tests showed that there was a statistically significant decrease in forced vital capacity from pre- to post-performance. In addition, there was evidence of a decrease in measurement of small airway function ... in 16 of 25 (64%) individuals. When current smokers were excluded (smoking is the most common cause of decrement in small airway function), 13 of 22 (59%) of musicians exhibited abnormalities in their small airway function. Of the fourteen musicians who were present on both screening days, 10 of 14 showed small airway dysfunction.

The conditions for the musicians in the music pit at "Beauty and the Beast" are unhealthy. A large percentage of the musicians are suffering from symptoms related to the irritative effects of the work environment. Several musicians now require medical care and medication to treat their symptoms which have developed or worsened since taking part in this production.

Clearly special effects are harming the musicians. The same also is true for the singers, dancers, and anyone else who is exposed repeatedly. A coordinated effort is needed to protect these people. Producers must plan to use special effects only in venues with ventilation systems capable of drawing fog and smoke away from audiences and music pits. Manufacturers must be sure their fog machines control and minimize the temperature of vaporizers. Special effects directors must choose the least toxic effects and use the least amounts necessary. Stage directors must block the performers' actions away from heavily fogged areas.

References

- 1) Letter Report: "Beauty and the Beast", Jacqueline M. Moline, MD, MSc., Mount Sinai-Irving J. Selikoff Center for Environmental and Occupational Medicine, New York City, January 17, 1997.
 - 2) Study begun in 1990 for Actor's Equity and the League of American Theaters and Producers. The report went through four versions. The Final Report was released in August 1994. (HETA 90-355-2449).
 - 3) "Health effects of glycol based fog used in theatrical productions", Harry H. Herman, Jr., report to Actor's Equity Association, July 1995.
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