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THE INDUSTRIAL COMMISSION OF OHIO

DIVISION OF SAFETY AND HYGIENE

March 18, 1959

Mr. James H. Fluker, Superintendent
Division of Safety and Hygiene
Columbus, Ohio

Re: Goodyear Tire & Rubber Company
Akron, Ohio

1. On March 12 a visit was made to the above named company to check on three departments. This visit was made as a result of a letter received from Mr. H. H. Ferguson, Chairman Safety Committee, Goodyear Local #2, URCLAPWA.

2. Contact was made with Robert Manning, Safety Director; Robert W. Fickes, Assistant Safety Director; H. H. Ferguson, Chairman Union Safety Committee; H. A. Embleton, Member of Union Safety Committee; and Art Minson, Member of the Union Safety Committee.

3. The company manufactures rubber tires, belts, and allied products.

4. The first problem under consideration was a condition in Department 272-A at the Belt Building tables. In this department large conveyor belts are built. When the belts come off the rolls and onto metal tables sometimes there are imperfections on the surface and it is necessary to hand brush an appropriate compound or solvent on them. This work is done in a room approximately 600' x 120' x 60' to the roof. The operation takes place in approximately 100' of this room. Although there is no mechanical ventilation in the room, there is a decided air movement at the tables due to exhaust fans in other rooms. Replacement air comes from leakage and from a few of the windows that were open. There are many windows in the building.

5. In the past month the company discontinued using a cement which is reported to be a sticky substance and started to use a pure solvent. It is reported that the thinner in the cement is the same as the solvents now used. The solvents now used are:

   Robine, which is toluene, flash point 40°F
   Mekol, which is methyl ethyl ketone, flash point 30°F
   Odine, which is a deodorized gasoline, flash point -15°F
   Texine, which is a deodorized gasoline, flash point -15°F

6. This material is applied by an employee dipping a hand swab into a safety can, depressing the screen, getting it saturated with the material, then rubbing it over the surface of the belt. The hand swab is a block of wood with cloth on one side and a handle on top. When an employee on one side of the table has reached as far as he can he passes the swab to an employee on the other side who finishes the swabbing operation.

7. They were not doing this work at the time of the visit but employees accommodated by swabbing a 6' section of the belt, the belt being about 5' wide. The material used was Odine which is a deodorized gasoline. Gasoline is reported to have a flash point of -45°F. It is probable that the Odine contains less of the extremely volatile constituents of gasoline and probably would have a flash point of hexane, approximately -15°F.

8. A sample was taken in the breathing zone of an employee who was on the down wind side of the table when the Odine was applied. The sample, which was taken with an LKB gas tester, indicated between 200 to 400 parts per million. This corresponds to between .02 and .04%. The lower explosive limit of gasoline is 1.3%. In other words, there would have to be 1.3% gasoline

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vapors in the breathing zone of an employee before a flash fire could occur at that point. It will be observed that the concentration in the breathing zone is about 1/20 of the lower explosive limits. The maximum allowable concentration for gasoline, according to Bulletin 203 of the Industrial Commission, is 750 parts per million. At the point at which the solvent is applied, the concentration would be well in excess of the lower explosive limit. In event of a fire there would be a flash at the point at which the solvent is applied but the flame would not be propagated to the point where it would engulf an employee.

9. A solvent is used only about 1% of the time.

10. Static electric sparks could be heard cracking where the belts came off rolls and separated from the cloth. It was impossible for one person to put his hand on the moving belt and another person to touch him and get a very strong static shock. The company reports that all tables and other equipment are grounded and the grounding has been tested by their electrical engineers.

11. Mr. Manning checked the records of the Fire Department on this company and they reported that they have had no fire in the belt department since January 1. Employees, however, report that they have 2 or 3 flash fires per week in this department. These flash fires could occur and the fire department not be notified.

12. It is recommended that an electrical engineer for the company make a complete study of the static electricity and develop a method for eliminating it. This study should be completed in 2 weeks.

13. Department 245. In Department 245 a compound known as Amax is made on a pilot plant basis. This material is an anti-scorch accelerator. The chemical name of the substance is not mentioned in this report because it is considered secret. According to the company, it is a primary irritant but employees do not develop a sensitivity to it. It is particularly irritating to the eyes. Employees in this department are provided, if they so desire, with chemical type goggles in order to keep it out of their eyes. They were not wearing such goggles. The method of packaging consisted of an employee hand scooping the material which was in a flake or powder form from a drum into a bag. His exposure to dust was quite heavy. It is recommended that a Syntrone feeder, which the company has on hand, be used immediately to replace hand bagging. If the operation is made permanent, a regular bagger should be provided.

14. Also in Department 245 there is a scrubber, approximately 30" in diameter and 20' high, which is used for the removal of oxides of nitrogen created in a chemical process in this plant. This scrubber is filled with stainless steel saddles and the solution consists of sodium hydroxide. Sodium Nitrite and other products, which are formed in the scrubber, are captured and reused. The purpose of the scrubber is to keep a negative pressure on the vessels so that the oxides of nitrogen do not escape into the air. It is designed to handle approximately 280 cubic feet per minute of air. This scrubber has only been in operation since the first of the year and all the "bugs" have not been eliminated. Occasionally too high a volume of air goes through and alkali mists escape through the stack.

15. It is recommended that steps be taken to see that the scrubber is operated properly and that the controls and dampers are properly set.

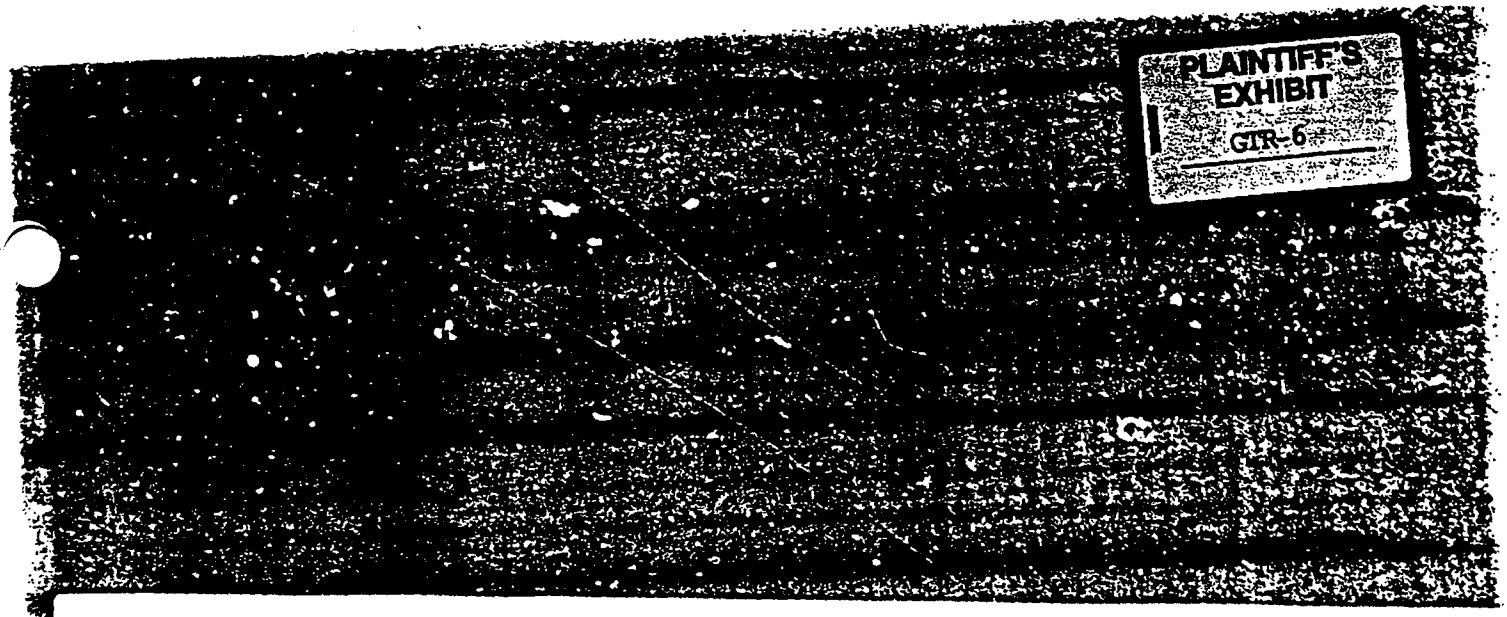
16. It was a pleasure to visit this plant and the cooperation extended by both management and labor is greatly appreciated.

Very truly yours,

DEWITT HUFFMAN
Industrial Hygiene Engineer

DH/bm

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William D. Kaye
Supervisor, Microfilming Unit

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