

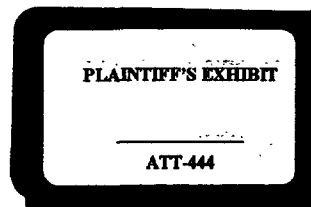
Subject: MOTOR VEHICLE MAINTENANCE - BRAKES AND CLUTCHES

GL: 77-07-024

date: July 7, 1977

gl. 77-07-024

file no. [other



American Telephone and
Telegraph Company
195 Broadway
New York N Y 10007
Phone (212) 393-9800

to: All Plant Staff Heads, Copies to Company Safety Coordinators

from: Director, Outside Plant, Safety and Supplies

synopsis: Transmits the procedures that must be followed when performing motor vehicle maintenance operations involving brakes, clutches and brake drum removal. These procedures are necessary to protect employees from possible airborne asbestos fibers.

* * * * *

This letter transmits the work procedures that should be instituted at all Telephone Company garages in order to assure that our employees are not exposed to airborne asbestos fibers.

At the present time the Environmental Health and Safety Group at Bell Telephone Laboratories is making an evaluation of commercially available vacuum cleaners intended for the usage outlined in the attached procedures. Until a vacuum cleaner can be recommended, interim steps should be taken as follows:

- 1) Brake drums and shoes should be thoroughly wiped with a damp cloth.
- 2) Floors should be damp-mopped.
- 3) All cleaning with compressed air and all cam-grinding should be stopped immediately.

The details of the necessary medical surveillance program are being transmitted to the Operating Company Medical Directors by means of a Medical Surveillance Directive.

Recommendations regarding selection of vacuum cleaners will be transmitted as soon as the testing has been completed. Questions regarding these procedures may be addressed to Mr. J. M. Degen on 201 221-3283 or Mr. John MacDougall on 201 221-3271.

A handwritten signature in cursive script, appearing to read "M D Baker".

M. D. BAKER
Director - Outside Plant, Safety and Supplies

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AT&T

M. B. Bond, M.D.
Corporate Medical Director

American Telephone and
Telegraph Company
295 North Maple Avenue
Basking Ridge, N. J. 07920
Phone (201) 221-2465

July 11, 1977

TO MEDICAL DIRECTORS:

Attached is a copy of GL: 77-07-024 sent to all Plant Staff Heads and Company Safety Coordinators on the subject of Motor Vehicle Maintenance- Brakes and Clutches.

This work practice specifies the procedure to be used for the safe handling of vehicle brakes and brake shoes. The amount of asbestos dust that may be present in this operation is of a low but nonetheless significant amount.

The recommended medical surveillance techniques are specified in the second attachment, which are being sent only to Medical Directors. In the GL itself, recommendation is made that those in the Company concerned with motor vehicle maintenance should discuss the medical surveillance requirements with the Medical Director.

In those Companies where no vehicle maintenance on Company premises is performed, either by employees or contract mechanics, involving brakes, clutches and brake drum removal, this medical surveillance program is not necessary.

Please be prepared to furnish to me annually the numbers and job titles of employees in the Asbestos Medical Surveillance Program in your Company.

If you have any questions, call Dr. James Dunn (201) 221-2445 or Dr. Richard Stone (201) 221-2462 or me.

Attachments

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SWBT 002341

1. GENERAL

1.01 This section covers the procedures that must be followed when performing motor vehicle service operations involving either brakes or clutch. These procedures apply to all vehicular work necessitating removal of the brake drum and all work on clutches and manual transmissions that involves the clutch, pressure plate and housing assembly. This includes but is not limited to: brake repairs, (adjustments, inspections, and replacements) work on wheel bearings and axles, clutch replacement, transmission removal, and hub or drum removal.

1.02 As a result of recent investigations on brake service operations, these procedures are necessary to protect employees from possible exposure to airborne asbestos fibers. Although studies have shown that most of the original asbestos content of brake lining material is decomposed during braking due to thermal degradation, some actual asbestos fibers can be found in the residual dust. In addition, new brake and clutch lining material contains asbestos fibers that could become airborne if the linings are abraded.

2. DUST REMOVAL

2.01 When work is done on brake drums and clutches, all loose dust shall be cleaned from brake drums, brake backing plates, brake assemblies and clutch assemblies using an industrial type vacuum cleaner equipped with a high efficiency filter system. An ordinary shop vacuum cleaner is not adequate for this purpose. A vacuum cleaner/filter system designed for this specific usage should be used. After vacuum cleaning, any remaining dust or grime shall be removed using a rag soaked in water and wrung until nearly dry.

UNDER NO CIRCUMSTANCES SHALL COMPRESSED AIR OR DRY BRUSHING BE USED FOR CLEANING, NOR SHALL BRAKE DRUMS BE STRUCK ON THE FLOOR TO REMOVE ACCUMULATED RESIDUE.

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5.02 The detailed instructions for the medical surveillance program should be obtained from the Company Medical Director.

SWBT 002333

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MEDICAL SURVEILLANCE DIRECTIVE FOR
OCCUPATIONAL EXPOSURES
ASBESTOS (MSD 1.00)

- 1.00 General: Employees who are exposed to concentrations of asbestos fibers exceeding 0.1 fibers greater than 5 microns in length per cubic centimeter on an 8 hour time weighted average (TWA) basis shall be given medical examinations as described below.
- 1.01 Specific: Motor vehicle mechanics performing work operations described in GL 77-07-024 and their immediate supervisors shall be given medical examinations as described below.
- 1.02 Medical Examination Content: A comprehensive medical examination shall include, as a minimum, a chest roentgenogram (posterior - anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease and smoking habits, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV_{1.0}).
- 1.03 Medical Equipment: A single breath wedge bellows spirometer of at least 7.5 liters capacity and equipped with the means to produce a permanent record is minimally adequate for the measurements of FVC and FEV_{1.0}. Periodic calibration techniques for all spirometers are recommended.
- 1.04 Frequency: Medical examinations shall be made available as follows:
- (1) PREPLACEMENT: Preplacement examinations shall be made available to each employee within 30 calendar days following his first employment as a mechanic or supervisor.
 - (2) ANNUAL: At least annually thereafter a comprehensive medical examination shall be offered to each mechanic or supervisor.
 - (3) TERMINATION OF EMPLOYMENT: Within 30 days before or after the termination of employment (or change of job assignment) of any employee engaged as a mechanic or supervisor, a comprehensive medical examination shall be made available.
- 1.05 Record Retention: Complete and accurate records of all such medical examinations (including x-rays and specific test results) shall be retained for at least 20 years.
- 1.06 Access to Records: The results of the medical examination should be discussed with the employee.

The contents of the records of the medical examinations required by this section shall be made available upon written request, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician.

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SWBT 002346

Subject: Motor Vehicle Maintenance - Protection Against
Exposure to Asbestos Fibers

GL: 78-08-045

date: August 7, 1978

file no. [gl: 78-08-045
other:



American Telephone and
Telegraph Company
195 Broadway
New York, N Y 10007
Phone (212) 393-9800

to: Plant Staff Heads and Assistant Vice Presidents Operations Staff
Copies to Corporate Medical Directors and Safety Coordinators

from: Director - Outside Plant, Safety and Supplies
Medical Director - Research

synopsis: Transmits further recommendations and procedures for protecting
employees from excessive exposure to airborne asbestos fibers while
performing maintenance operations on brakes and clutches in Company-
owned motor vehicles.

G.L. 77-07-024 transmitted procedures which were to be followed in
all Telephone Company Garages to assure that employees are not
exposed to possible airborne asbestos fibers.

This letter provides further recommendations and procedures for
protecting employees from excessive exposure to airborne asbestos
fibers while they are performing routine maintenance operations
on brakes and clutches in Company-owned motor vehicles. These
recommendations and procedures have been reviewed by the Bell
System Occupational Health Working Group, and are based on field
measurements and evaluations performed by the Environmental Safety
and Health Staff of Bell Telephone Laboratories.

The present standard promulgated by the Occupational Safety and
Health Administration (OSHA) for exposure to airborne asbestos fibers
is 2 fibers per cubic centimeter based on an 8-hour time weighted
average. However, these procedures have been designed to limit the
employees' exposure to airborne asbestos fibers to less than 0.1
fibers per cubic centimeter, a level now under consideration by the
National Institute for Occupational Safety and Health (NIOSH).

The history of asbestos as a proven carcinogen, the strictness of
the OSHA standard, and the difficulty of controlling airborne asbestos
fibers freed during normal brake and clutch maintenance operations
strongly suggest that this work be contracted to an outside supplier
where at all possible. The contract should ensure that all brake
and clutch maintenance activity, including inspections to determine
whether brake shoe replacement is necessary, is performed on the
contractor's premises. This procedure eliminates all danger of
exposing telephone company employees to airborne asbestos fibers
arising from this source.

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NOTICE

Not for use or disclosure outside the
Bell System except under written agreement.

SWBT 002334

ASBESTOS FIBER PROTECTION

GENERAL SHOP PROCEDURES

General shop procedure to be followed when working with brakes and clutches and associated components on Company-owned fleet vehicles.

GENERAL

Special Attention: Towels, Cloths, Rags

Shop towels, rags and keyback towels used in brake and clutch service work shall not be mixed with normal use shop service towels. All cloths, rags and towels contaminated with asbestos fiber dust and material shall be placed in a separate plastic container bag. The bag holding contaminated material shall be plainly identified as holding asbestos-fiber-contaminated contents. The contaminated material bag shall be sealed and placed in a designated area for disposal.

Rented towels and material shall be identified as contaminated and placed for the rental service person to handle.

Throw-away material, i.e., rags, "baled type", keyback type towels, paper types, etc., shall also be bagged, identified and placed in a designated disposal area for the trash hauler.

EQUIPMENT

Vacuum Cleaners

The following industrial hygiene specifications are recommended for vacuum cleaners used for brake and clutch work operations in the Bell System. Such vacuum cleaners:

1. Shall be an industrial type equipped with a high efficiency filter system (99% efficiency for 0.3 mm diameter aerosols). Plastic disposal bags, with asbestos warning labels attached, shall be provided with each set of vacuum cleaner filters. An approved National Institute for Occupational Safety and Health (NIOSH) single use, disposal respirator for asbestos dust shall also be provided with each set of filters. At present the following are recommended: 3M Co. #8710 and American Optical R1050.
2. Shall be equipped with a heavy duty U/L approved motor rated at a minimum of 50 inches of suction (water gauge) and a minimum flow rate of 100 cubic feet per minute.

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When vehicle is positioned (follow recommended shop safety practices), the following outlined procedures must be followed. (DO NOT USE AIR PRESSURE TO REMOVE OR DISLODGE DUST.)

Front Axle - Drum Brakes:

Remove wheel covers and wheels from selected points of work function. Place wheels in an unused and safe space. Use the vacuum to remove loose brake dust and particles accumulated externally.

1. Remove spindle dust cover, cotter pin and nut lock (if used), retaining nut and tongued washer. Place these items in the wheel covers adjacent to the work operation.
2. Rock hub and brake drum assembly, grasping top and bottom portions, slightly to loosen the outer wheel bearing. Remove bearing and place in the dust cover removed in step 1.
3. Lift the hub and drum assembly carefully from the spindle unit.

NOTE: Avoid dragging this assembly on the spindle.

DO NOT DROP OR BOUNCE THIS ASSEMBLY ON THE FLOOR.

4. Wheel, hub and brake drum assembly may be removed as one unit; if care is exercised, or a dolly is used for removing heavy wheels. In addition, exposed areas should be vacuumed prior to removal.
5. Place the hub and drum assembly, or wheel, hub and drum, on the floor surface with the inner bearing, seal and open drum area facing up. A clean shop towel should be placed over the inner bearing to reduce contamination.

Remove accumulated brake dust and other foreign contaminating particles from the drum assembly with an approved industrial type vacuum cleaner equipped with a high efficiency system.

- Do Not use a standard type industrial vacuum unit. (See recommendations under Vacuum Cleaners preceding.)

Front Axle - Disc Brakes:

1. When vehicle has been placed in working position, use a high efficiency industrial type vacuum cleaner to remove loose brake dust and other loose particles from both front wheels. This must be done prior to removal of wheel covers and wheels from each hub assembly.

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Do Not use air pressure to clean area of maintenance.

Use the special vacuum cleaner to clean components during disassembly and assembly.

Dispose of contaminated material (rags, parts, etc.) as described in the Special Attention notation preceding.

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