the periodic examinations and which men had been certified as having asbestosis, together with the date of certification and degree of disability. Information on certification is complete up to 1975 on all men, including those who had left the factory.

The diagnosis of asbestosis is based upon the presence of physical signs of pulmonary fibrosis, radiological appearance and lung function defects. McVittie (1965) indicated that the Pneumoconiosis Medical Boards diagnosed asbestosis in the presence of a history of adequate exposure, on the finding of end-inspiratory basal rales, finger clubbing, radiological abnormality and reduction of lung function such as transfer factor and vital capacity. Adequate exposure plus two of the other relevant criteria listed above is sufficient for diagnosis but the Board must be satisfied that the individual is disabled, before certifying asbestosis.

It has been the practice of the factory medical officer to examine all asbestos workers routinely every two years, and to advise them to change to less dusty jobs if he believes that they are developing symptoms or signs of early asbestosis. He bases his suspicions on the finding of basal rales or crepitations, radiological changes of varying degree, a falling gas transfer factor, and restrictive changes in lung volume or ventilatory capacity. This condition is referred to as 'possible asbestosis' and is a diagnosis based on signs insufficient to attract Disablement Benefit. The company has supported this policy by paying workers with possible asbestosis, who change jobs, a guaranteed basic wage plus an *ex gratia* payment.

Workers were given chest radiographs every three years from 1951 until 1967 and every year since then. Lung function tests were introduced in May 1967 and are carried out every two years.

The most recent radiographs were read in random order, and without knowledge of the men's identities or job histories, by four readers independently using the ILO/UC 1971 classification (International Labour Office, 1972). The four readings of small opacities were combined by scoring the categories 0/0, 0/1, . . . , 3/4 as 0, 1, . . . , 10 and taking the average score. In most instances the profusion of irregular opacities exceeded that of rounded opacities, but whichever type gave the higher reading was that which was averaged; there were only five films in which the profusion of rounded opacities was the greater, and in all of these the average profusion was 0/1 or less.

The factory medical officer had originally diagnosed 60 cases of possible asbestosis. A clinician (JCG) reviewed the medical data for each man without knowing his occupational history, and noted where his opinion on the presence or absence of possible asbestosis differed from that of the factory medical officer. There were 12 men, placed by the latter in the possible asbestosis group, but for whom none or only one reader had recorded a profusion of small opacities of 1/0 or more, and there were 37 men whom only the clinician had placed in this group, for whom at least two readers recorded 1/0 or more. The clinician and factory medical officer examined the complete medical files of these 49 men together and reached agreement on a diagnosis. Seven men were removed from the possible group and five were added to it. The most common reason for considering a case not to be possible asbestosis was that it was thought more likely that the signs were attributable to other disease. This shows that the diagnosis of asbestosis cannot be made without considering all the clinical evidence, and sole reliance cannot be placed on any single feature used for diagnostic purposes.

DUST EXPOSURE

Details of all the jobs performed by each man were noted by an independent industrial hygienist (SAR) who visited the factory and examined the employment records. In all, 236 job descriptions were used. For each job description a dust level was calculated for each year by taking the average of the levels measured at the static dust sampling locations in the area where the job was carried out. In all, 64 sampling locations had been used over the period 1961–72.

Fibre counts were not available for 1951–60, but thermal precipitator particle counts were available for 1952 and 1960. The fibre counts for 1951–55 were taken as those of 1961 multiplied by the ratio of the 1952 to the 1960 thermal precipitator measurements. This ratio was dependent on job, ranging from 1·4 to 3·4 (British Occupational Hygiene Society, 1968). The counts for 1956–60 were taken to be the same as 1961–65. There were no dust measurements before 1950. For 1933–45 the concentrations were taken to be 1·5 times those in 1951 and for 1946–50 as 1·25 times the 1951 values. These concentrations, particularly for the early years, are probably underestimates of the actual concentrations (British Occupational Hygiene Society, 1968).

Some men were coded as doing more than one job at the same time; the dust level in these cases has been taken as the mean of the concentrations for the different jobs. When a man was away from the factory, or at the factory but working in a job away from the production area, it was assumed that he was not exposed to asbestos.

As an indication of the dust conditions within the factory Table 1 gives the mean dust level and the percentage of men in the study within the ranges