BIBLIOGRAPHY

- Bulmer, E. (1927). *Lancet* 2, 168.
 — (1932). *Ibid.* 2, 720.
 Chiesman, W. E. (1932). *Ibid.* 2, 722.
 Cullinan, E. R., and Price, R. K. (1932). *St. Bart's Hosp. Rep.*, 65, 185.
 Finsterer, H. (1933). *J. chir. (Paris)*, 42, 673.
 Finsterer, H. (1936). *Lancet*, 2, 303.
 Gordon-Taylor, G. (1935). *Ibid.* 2, 811.
 — (1937). *Brit. J. Surg.*, 25, 403.
 — (1943). *British Medical Journal*, 1, 504.
 Jones, F. A. (1943). *Ibid.* 1, 689.
 — (1947). *Ibid.* 2, 441, 477.
 Lenhartz, H. (1904). *Dtsch. med. Wschr.*, 30, 412.
 Marriott, H. L., and Kekwick, A. (1935). *Lancet*, 1, 977.
 Meulengracht, E. (1934). *Acta med. scand.*, Suppl. 59, 375.
 — (1939). *British Medical Journal*, 2, 321.
 Ogilvie, A. G., Cardoe, N., and Bentley, F. H. (1952). *Ibid.* 2, 304.
 Tanner, N. C. (1951). *Edinb. med. J.*, 58, 293.
 Turnbull, G. C., and Sagi, J. H. (1939). *Amer. J. digest. Dis.*, 6, 92.
 Winkelstein, A. (1933). *Amer. J. med. Sci.*, 185, 695.
 Woldman, E. E. (1936). *Rev. Gastroent.*, 3, 27.
 — (1937). *Amer. J. dig. Dis.*, 4, 428.

STANDARDS OF FITNESS AMONG DRIVERS OF COMMERCIAL VEHICLES

A SOCIO-MEDICAL INVESTIGATION BASED ON WARTIME RECORDS OF CIVILIAN MEDICAL BOARDS

BY

JOSEFINE WEBB,* M.B., D.P.H., D.I.H.

(From the Social Medicine Unit, University of Oxford)

A recent lecture by the senior medical officer of the London Transport Executive describes in detail the steps taken to ensure that the drivers of London's motor-buses are healthy when recruited and maintain a satisfactory standard of fitness throughout their period of service (Norman, 1954). This leads one to consider what comparable steps are taken with reference to other professional drivers. So far as public service vehicles are concerned, the precautions taken seem to be adequate. The licensing authority, before granting permission to drive a bus or a coach, requires the applicant to have a general medical examination (including tests of vision) and to pass a special driving test. Many of the larger bus companies, including London Transport, conduct their own medical examinations and have even higher standards of vision and health than the statutory licensing authorities.

In contrast, no medical test is required of drivers of commercial vehicles, and inquiries into their fitness to drive are both limited and ill-defined. Whatever the type of vehicle may be—and it may be anything from a three-wheel van to a five-ton lorry—the applicant for a licence has merely to answer four questions regarding the state of his health and declare the answers to be true. The four questions (which appear on all driving licence forms) are well known:

1. Do you suffer from epilepsy or from sudden attacks of disabling giddiness or faintness?
2. Can you read at a distance of 25 yards in good daylight (with glasses if worn) a motor-car number plate containing six letters and figures?
3. Are you without either hand or foot or are you suffering from any defect in movement, control, or muscular power of either arm or leg?
4. Are you suffering from any other disease, mental or physical, or disability which would be likely to cause the driving by you of a motor-car to be a source of danger to the public?

Question 2 is checked by the examiners who conduct the official driving tests. They would presumably also notice so gross a defect as absence of a limb. Otherwise

*In receipt of a grant from the Medical Research Council.

the physical competence of an applicant for a driving licence depends on his truthfulness, his knowledge of his own health, and the construction he puts on the phrase "likely . . . to be a source of danger." Medical men frequently experience difficulty in convincing patients that they are no longer fit to drive, and know that (if they choose) even persons who are obviously a danger to the public can ignore their advice.

At a meeting of the Royal Society of Medicine a doctor stated that one of his elderly patients "who drove a high-powered car at reckless speed" was extremely annoyed at the advice that he should give up driving after he had had three blackouts in one year and had been found to have developed petit mal (Crosby, 1953). On another occasion, a neurologist deplored the number of epileptic and paralytic patients who drive cars, and added, "The patient in every case considers himself entirely fit to drive" (Campbell, 1952).

Present Investigation

To amplify the evidence of these isolated instances the civilian medical board records of 1,276 men who earned their living as drivers of road vehicles were scrutinized. The records, which were compiled during the years 1941-4, were drawn from three areas† and referred to 761 lorry drivers, 406 drivers of vans or other light commercial vehicles, 31 drivers of public service vehicles, and a miscellaneous group of 78 chauffeurs, drivers of ambulances, and A.A. men.

TABLE I.—Professional Drivers of Road Vehicles

Reasons for Rejections	Lorries	Vans	P.S.V.	Other	Total
Eyes:					
High myopia . . .	3	4		1	8
Pathological defects . .	2				2
Ears:					
Defective hearing . . .	5	2			7
Pathological conditions . .	6				6
C.N.S.					
Epilepsy + unconsciousness	3	1		1	5
Neurological conditions . .		2			2
Mental defectiveness . .	4				4
Mental instability . . .	3	3			6
Skeletal:					
Upper limbs . . .	3	3		1	7
Lower limbs . . .	12	9	2	4	27
Other skeletal defects . .	3	2		1	6
Cardiovascular:					
Heart disease . . .	11	4		1	16
Hyperpiesis . . .	2	2		3	7
Varicose veins . . .	7	2			9
Lungs:					
Tuberculosis . . .	5	10	1		16
Chronic chest conditions . .	6	5			11
Abdominal:					
Peptic ulcer . . .	10	9		1	20
Hernia . . .	7		1	1	9
Other . . .		1			1
General:					
Diabetes . . .	2			1	3
Other endocrine disorders . .		2			2
Skin conditions . . .	2				2
Other . . .	5	1		1	7
All disabilities . . .	101	62	4	16	183
No. of men examined . .	761	406	31	78	1,276
Rejection rate . . .	13%	15%	13%	20%	14%

Of these 1,276 men, 28% were under 20 years of age, 43% were between 20 and 34, and 28% were between 35 and 45. At the end of the medical examination each man was graded according to his general standard of fitness. Briefly these grades were: (1) fit for all forms of military service; (2) minor or remediable defects; (3) fit for light duties only; and (4) not fit for any form of military service. In practice men in Grades 1 and 2 were called up for national service, and men in Grades 3 and 4 were rejected. Ninety-nine of the professional drivers were placed in Medical Grade 4 and 83 in Medical Grade 3, making a total rejection rate of 14%. The main reason for down-grading was identified in every case, and the results are summarized in Table I.

†Essex, 577; Leicester, 273; Northampton, 426.

Needless to say, the records of the men who were rejected did not specifically state that the examinees were not fit to drive. It is apparent, however, from what was discovered at the civilian medical board examination that the four questions on the standard driving licence form had, either intentionally or from lack of medical knowledge, been incorrectly answered by several men. Thus question 1 (epilepsy) should have disqualified 5 of the group, a further 49 were either unaware that they had defective eyesight or had chosen to hide the fact, and 34 had failed to state that they were suffering from defects of "movement, control, or muscular power" (provided, that is to say, none of the men were holders of "cripple" licences).

The fourth question on the driving licence form is extremely difficult for anyone to answer correctly. For, besides assuming a lively social conscience on the part of every applicant, it demands much more medical knowledge than most people possess. Even members of the medical profession are not unanimous about which diseases should be described as "likely to cause the driving of a car to be a source of danger to the public." Dr. Norman, for instance, considers that any condition that may cause either momentary attacks of unconsciousness or giddiness, or increased liability to fatigue, is potentially dangerous. If this is the standard of health expected for all professional drivers of road vehicles, then none of the national service rejects should have been holding a driving licence. For, whatever the nature of their complaints, the fact that they had (in the middle of a war) been found unfit to serve in the armed Forces was a sure indication that they at least suffered from "increased liability to fatigue."

If, however, a lower standard of health is acceptable then an arbitrary selection of the diseases which apply to the fourth question would have to be made. If, for instance, it is considered that only pathological conditions of the eyes, deafness, mental defectiveness, and instability, neurological disorders, diabetes, and cardiovascular diseases (other than varicose veins) are "likely . . . to be a source of danger to the public," then only 53 of the 172 men who were rejected need have answered the fourth question in the affirmative. Even so, the total number of drivers who fell below the (presumed) standard of fitness for holders of ordinary driving licences would be 143, or one in eleven of the total group.

Vision (Table II)

Included in the civilian medical board examination was a vision test, based on the well-known Snellen type, and performed, if necessary, with or without spectacles. An

TABLE II.—Visual Standards Among 1,276 Professional Drivers

Below Standard Required for	Lorry	Van	P.S.V.	Other	Total
P.S.V. licence*	31	15	—	3	49†
L.T.B. (re-employment)‡	66	28	1	4	99
L.T.B. (initial employment)‡	103	63	4	8	178
	13.5%	15.5%	16.1%	19.3%	14.0%

* That is, Snellen type 6/12: 6/36, or ability to read a motor-car plate at 25 yards.

† Including 8 men with severe myopia (6/60 both eyes) and 22 who were blind in one eye.

‡ The corresponding figures include men who would have failed the easier tests.

ophthalmologist's report was obtained in all cases of eye disease and for all men whose corrected vision failed to reach either 6/12:6/12 or 6/6:6/36 Snellen type. Some of the drivers with defective vision did not wear spectacles and others were not fully corrected by the spectacles they were wearing. Thus there were three men with 6/60:6/60 who had no spectacles, four who had 6/60:6/36 after correction, and four whose good eye could not be improved beyond 6/24. The overall rate for standards below the one regarded as safe for driving was 3.8%.

The standards of vision required by the London Transport Board at their initial and re-employment examinations are respectively 6/9:6/12 (without spectacles) and 6/9:6/36

(with spectacles). This means that 178, or 14%, of the men examined by the civilian medical boards would not have obtained employment as a London bus driver and 99, or 8%, would, in spite of being experienced drivers, have been transferred to other jobs.

Types of Vehicles.—The all-causes rejection rate was highest for the miscellaneous group and lowest for the drivers of public service vehicles, but the difference between these men and the group of lorry drivers was marginal. Failure to reach the licensing authority visual standard was roughly the same for lorry drivers, van drivers, and men in the miscellaneous group, but there were no drivers of public service vehicles with vision below 6/12:6/36.

Accidents Due to Commercial Vehicles.—For the two years 1948 and 1949 the Registrar-General has analysed 7,999 deaths on the road by victim and vehicle involved (Registrar-General, 1950, 1951). From this analysis it appears that the number of pedestrians and pedal-cyclists killed in road accidents was 5,541 (see Table III). Of these,

TABLE III.—Analysis of 7,999 Deaths on the Road by Victim and by Vehicle Involved

Vehicles involved, other than that Carrying Victim	Victim was:							Total of First 3 Cols.
	On Foot	On Pedal Cycle	On Motor-Cycle	In Private Car	In Bus	In Motor Goods Vehicle	In Other Type of Vehicle	
Goods transport vehicle*	1,568	471	375	326	19	137	125	(2,414)
Bus, tram or train	702	167	72					(941)
Private car	1,190	394	245					(1,829)
Motor-cycle	247	35	42					(324)
Pedal-cycle	164	37	24					(225)
Coaches and taxis	129	29	16	179	142	247		(174)
Other vehicles	63	13	27					(103)
No other vehicle	—	332	477					(809)
Total	4,063	1,478	1,278	505	161	384	125	(6,819)

* In 1954 there were 945,127 licences issued for goods transport vehicles.

2,039 were knocked down by goods transport vehicles, 869 by buses or trams, and 158 by coaches or taxis. Thus, in more than half of the pedestrian and pedal-cyclists' deaths, the mechanically propelled vehicle was in charge of a professional driver.

Discussion

Compared with men in other occupations, the percentage of physically defective drivers is slightly below average (Stewart, Webb, and Hewitt, 1955). But, considered in relation to the number of licences issued annually to goods transport vehicles (just under one million in 1954), it suggests that there are—not counting private-car owners—a formidable number of potentially dangerous drivers on the roads. It is possible that some of the men who were examined by the civilian medical boards had applied for, and been given, the special licences issued to physically defective people. There may also have been a number of cases where driving experience outweighed other deficiencies, for opinion varies on how much different defects affect a man's competence as a driver. Nevertheless, the fact remains that the final decision in this matter rests not on an unbiased assessment of fitness, but with the man who is applying for a licence. Whether or not he passes as fit depends entirely on his veracity, his self-knowledge, and his ability to answer certain difficult medical questions. In these circumstances there is nothing to prevent a man with a serious defect (or vision that has deteriorated to danger levels since he first passed his driving test) from driving a heavy lorry to the public danger. Civilian medical board records support the view that this source of public danger actually exists.

Viewed from the angle of road safety, we cannot afford to be complacent about the fact that the percentage of physically defective men who earn their living as drivers is not exceptionally great. There should be no such men.

Those interested in reducing the appalling number of deaths on the road might do well to press for a radical revision of the present system of granting driving licences to professional drivers.

Summary

Civilian medical board records of 1,276 professional drivers were examined for causes of rejection from military service. Physical defects and impairment of vision found were considered in relation to the declaration of physical fitness made on the application form for a driving licence.

REFERENCES

- Campbell, A. M. G. (1952). *British Medical Journal*, 1, 489.
Crosby, G. T. V. (1953). *Lancet*, 1, 75.
Norman, L. G. (1954). *Trans. Ass. industr. med. Offrs.*, 4, 3.
Registrar-General (1950, 1951). Statistical Review for 1948 and 1949. London.
Stewart, A. M., Webb, J. W., and Hewitt, D. (1955). *Brit. J. prev. soc. Med.* In press.

HYDROCORTISONE OINTMENT IN THE ECZEMAS

BY

RONALD CHURCH, M.A., M.D., M.R.C.P.Ed.

Senior Registrar, Rupert Hallam Department of
Dermatology, Royal Infirmary, Sheffield

Cortisone has been used with dramatic effect in diseases of the skin. Unfortunately, the side-effects of cortisone therapy are hazardous and limit its use in dermatological practice to potentially fatal illnesses such as pemphigus, disseminated lupus erythematosus, and exfoliative dermatitis. The local application of cortisone has little or no anti-inflammatory effect on the skin, though it has been of value as an ophthalmic application, being readily absorbed through the conjunctiva.

Hydrocortisone has been found to exert anti-inflammatory effects when applied to the skin as well as when administered systemically. No systemic effects have been reported in the hundreds of patients who have used hydrocortisone ointment, and Smith (1953) found no significant change in the circulating eosinophil count when ointment containing 150 mg. of hydrocortisone was applied to normal or diseased skin.

Literature

Sufficient reports on the use of hydrocortisone ointment have been published for some assessment of the type of case in which it is of most value. With one exception (Goldman and Preston, 1953) the accounts have been enthusiastic.

There is general agreement that the ointment is of no value in psoriasis, lichen planus, pemphigus vulgaris, generalized exfoliative dermatitis, and alopecia areata. Evidence of the response of chronic discoid lupus erythematosus is conflicting; Sidi and Bourgeois-Gavardin (1953) report improvement or healing in seven cases, while Sulzberger *et al.* (1953) found only slight improvement in one of five cases, and other observers have observed the same lack of response.

The effect of hydrocortisone ointment in atopic eczema has been extensively studied (Sulzberger and Witten, 1952; Sulzberger *et al.*, 1953; Robinson, 1953; Sidi and Bourgeois-Gavardin, 1953; Malkinson and Wells, 1954; Witten *et al.*, 1954), and the results have shown a remarkable uniformity, about two-thirds of the cases responding in each series. McCorrison (1954), in a series of 104 cases, obtained even

better results and records a good response in each case. Most observers found that response was apparent within a week and that benefit was sometimes visible within 24 to 48 hours from the beginning of treatment.

Several series were controlled by the use of the "symmetrical paired comparison" method, and it was noted that some improvement often occurred on the side of the body on which the inert ointment was used. Also in cases using hydrocortisone on one area only, improvement was observed in remote areas. Systemic absorption or contamination with hydrocortisone has been suggested as the cause, but a more likely explanation is the "sympathetic" improvement which is also seen with other forms of local treatment.

McCorrison found that 60% of cases of atopic eczema maintained improvement on stopping treatment, but others (Robinson, 1953; Malkinson and Wells, 1954) have observed a relapse in most cases, or even an exacerbation.

The treatment has been found most effective in eczema or dermatitis affecting the eyelids, pinnae, and ano-genital regions (Sidi and Bourgeois-Gavardin, 1953; Alexander and Manheim, 1953; Malkinson and Wells, 1954), probably because of improved absorption from these areas. Acute contact dermatitis, lichen simplex, nummular eczema, and seborrhoeic dermatitis are also reported as responding to hydrocortisone ointment. Sidi and Bourgeois-Gavardin (1953) warn against the danger of secondary infection in acute contact dermatitis; they also state that the antipruritic effect is slight in cases in which much lichenification is present.

The American work has been criticized on the grounds that the patients were selected private patients who knew they were having some special remedy applied. In the present series the patients were hospital patients who were aware that they were receiving a special remedy, and the control cases were, of necessity, under a similar impression. Those patients were selected whose diagnosis was firmly established and in whom the areas affected were not too extensive.

Method

A series of 105 cases of various types of eczema and dermatitis were treated with an ointment containing 1% hydrocortisone acetate; in a few of the more resistant cases 2½% hydrocortisone was used. The base consisted of anhydrous lanolin, petrolatum, and mineral oil ("cortef" ointment).

A further 23 cases of eczema were used as controls, at the beginning of the trial alternate patients being issued with the ointment base in a similar packing and given the same instructions.

Patients were instructed to use a thin smear of the ointment twice daily, to avoid soap and water on the affected areas, and to use liquid paraffin or olive oil for cleaning.

Results

Nummular Eczema.—This was separated from other endogenous forms of eczema on account of its distinctive pattern. Of the 25 cases treated, 18 had had previous treatment with x rays and tar preparations without healing. Ten healed completely, most within one week, 11 improved but did not heal, three showed no response, and one became worse under treatment. Five cases which had healed or improved relapsed within seven to ten days of stopping treatment. Three of the 10 controls showed some improvement, and the remaining seven became worse.

Eczema.—This group contained an assortment of cases of eczema which were considered to be endogenous and which affected various areas of the body. Of the 24 patients treated, 17 had had previous treatments without healing. Eight healed completely, eight improved, three showed no response, and five became worse; one of the last-named appeared to be aggravated by the ointment. Of the six controls, one healed, two remained static, and three became worse. Half of those not responding to treatment had