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**A SURVEY OF BUS CREW SCHEDULING PRACTICES**

by

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# A SURVEY OF BUS CREW SCHEDULING PRACTICES

## ABSTRACT

A survey of the crew scheduling practices within the bus industry was conducted. Eleven undertakings in England and Scotland participated. A wide variety of fundamentally different practices was exposed.

Users of computer methods for constructing crew schedules are most likely to be large operators of intensive urban services. In addition to this use as an operational tool, a very flexible program could find wide use, for example, in estimating the cost of altering scheduling rules.

Apart from SELNEC PTE, no potential users of the RAE bus crew scheduling program were identified in the course of the survey.

## 1. INTRODUCTION

During 1968, the Ministry of Transport supported a feasibility study on the application of computer methods to the construction of bus crew schedules. A report was produced in December of that year by Business Operations Research (Services) Ltd.<sup>1</sup> under contract to the Ministry. Work on the project continued in 1969 when the Royal Aircraft Establishment, Farnborough, undertook the construction of a computer program to generate crew schedules for the Northenden Garage of Manchester City Transport. This work was funded and monitored by the Transport Research Assessment Group (a joint Ministry of Transport and Ministry of Technology body). A program was produced<sup>2,3,4</sup> and has been passed on to SELNEC PTE (which includes Manchester City Transport) who have since modified it considerably to meet changing circumstances. The program produced by the RAE was called BUSCREW. During 1969, a preliminary questionnaire survey<sup>3</sup> was made by RAE of crew scheduling practices in the bus industry with a view to determining the applicability of BUSCREW in undertakings other than SELNEC PTE. The questionnaire was constructed so as to elicit details of the rules under which schedules were drawn up (e.g., signing-on and -off times\*). In consequence, the variety of approaches to scheduling which exists in the industry was not revealed. For example, it was not realised that duties containing more than two or three pieces of work were common in some undertakings and the questionnaire was not designed to bring this point out.

During late 1970, a study was made by TRAG of the requirements of a program which could construct crew schedules for a garage at another undertaking which the preliminary questionnaire survey showed to be similar to Northenden Garage from the scheduling point of view. It was concluded that a major reconstruction of BUSCREW would be needed and that the best approach was probably to re-write the program. Before embarking upon this work, it was deemed wiser to establish in broad terms what were the practices of the bus industry in the field of crew scheduling in order that some sensible flexibility could be incorporated into a revised program, and a new survey was planned with this objective. In view of the shortcomings of the preliminary questionnaire survey, it was decided to conduct the new survey by making personal visits to a number of bus operators. A secondary objective was to examine the scope for use of the existing BUSCREW program and to discover operators' attitudes to the use of computer methods in the bus industry.

Undertakings were selected largely on a geographical basis. It seems likely that the geography of an area, in the widest sense of the word, has some effect upon the type of service demanded by passengers and that this

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\* See Glossary of Terms, Appendix 12.

could ultimately have some influence on the crew scheduling practices in the area. For example, a heavily industrialized town would be expected to have highly peaked weekday services, which would make the use of spreadover duties necessary. On the other hand, the service in a rural area would be less likely to be heavily peaked, thus reducing the requirement for spreadover duties. It was found that the geography of an area did have some effect upon the scheduling practices, but this was rather less than might have been expected. On the other hand, this method of selecting operators was successful in providing a set of undertakings with a wide variety of scheduling traditions. A total of 13 undertakings were invited to participate in the survey, of which 11 agreed to help.

In the following Sections, the way the survey was carried out is described. Section 2 outlines the method of conducting the visits. The participants in the bus industry are listed in Section 3, while Section 4 presents a number of general observations, which include some impressions which were gained in the course of the survey, but which are difficult to substantiate by chapter and verse. The variations in particular areas of crew scheduling practices are brought out in Section 5. Details of the practices in individual undertakings appear in Appendices 1-11.

It should be added that the main interest was in the general philosophies behind the scheduling and in the rules to be satisfied. Details of how the scheduling staff constructed their schedules (i.e., the 'tricks of the trade') were not sought.

It is important for the reader to remember that *the practices described in this Report were current at about the time of the visits to the undertakings, but they are not necessarily still in force.*

## 2. THE QUESTIONNAIRE

The means of eliciting information was to ask in a face-to-face meeting a prepared set of questions with the primary object of stimulating conversation on crew scheduling. Another reason for using prepared questions was to ensure that all important points were covered. The questionnaire underwent a process of evolution and refinement as the range of approaches to crew scheduling became more apparent and the significant parameters of the various scheduling philosophies emerged. The set of questions finally evolved is given in Appendix 13. Some questions were more appropriate to some undertakings than to others, and so were either omitted completely or else modified to suit the circumstances.

## 3. PARTICIPANTS IN THE SURVEY

The 11 undertakings which participated in the survey are listed below in the order in which they were visited.

### 3.1 Aldershot and District Traction Co. Ltd.

This company operated mainly in a suburban and semi-rural area from which many people commute daily to London by train. The garage at Guildford was selected as representative. This company was a member of the British Electric Traction (BET) Group of companies prior to the formation of the National Bus Company (NBC), and was visited at the suggestion of NBC. On 1 January 1972 this company amalgamated with the Thames Valley Traction Co. Ltd. to form the Thames Valley and Aldershot Omnibus Co. Ltd.

### 3.2 City of Oxford Motor Services Ltd.

City of Oxford Motor Services Ltd. was suggested by NBC to be an undertaking which contrasts strongly with Aldershot and District from the scheduling point of view. This is also an ex-BET company. It operates both within the City of Oxford and in the surrounding country districts. Oxford contains substantial industrial areas.

### **3.3 Western National Omnibus Co. Ltd.**

This company operates the bus services over a large area which contains Penzance, a small seaside town which has a large holiday industry. Prior to the formation of NBC, Western National was a member of the Tilling Group of companies.

### **3.4 Reading Corporation Transport**

This undertaking was selected because Reading is a medium-sized county town. The bus operator has been financially successful in recent years and has much experience of bus only lanes.

### **3.5 Glasgow Corporation Transport**

Glasgow Corporation Transport was invited to participate as it is a large municipal undertaking in Scotland.

### **3.6 W. Alexander and Sons (Midland) Ltd.**

W. Alexander and Sons (Midland) Ltd. operates in the Scottish Midlands and has some medium-sized Scottish towns in its territory, including Falkirk.

### **3.7 Eastern Counties Omnibus Co. Ltd.**

This is an ex-Tilling company which is now a member of NBC. It has a large area of operation, and part of its work is running the City services in Norwich. Norwich is a large and exceptionally isolated free-standing town.

### **3.8 Southern Vectis Omnibus Co. Ltd.**

Southern Vectis Omnibus Co. Ltd. operates on the Isle of Wight. An island presents several interesting problems to a bus operator, including the necessity to provide connecting services with the mainland ferries. This company is also a member of NBC, having been a member of the Tilling Group.

### **3.9 Highland Omnibuses Ltd.**

This company provides the bus services in the Highlands and islands of the North-West of Scotland. Its headquarters are at Inverness, a small, free-standing town which has some seasonal tourist trade.

### **3.10 Borough of Chesterfield Transport Department**

This is an undertaking which operates in an area where coal mining and steel-making are the primary industries.

### **3.11 Grimsby Cleethorpes Transport**

This operator was selected because it serves a port area.

In addition, some information has been obtained from a number of other English bus operators, including SELNEC PTE.

#### 4. GENERAL OBSERVATIONS, AND IMPRESSIONS GAINED

The survey team was well received at the undertakings visited. The managements were interested in the project and some expressed the view that an operational program could be a useful tool, particularly when evaluating the cost of modifying the rules and agreements which affect crew scheduling. Apart from this, the impression was given that there are few scheduling problems which justify the employment of computer methods. Most undertakings appear to have adequate resources to be able to produce new schedules when required. Indeed, none but the largest operators employed staff who were engaged on full time production of bus and crew schedules. The main factors delaying the implementation of new schedules are that the Trade Unions normally require at least 10 to 14 days' notice of intended changes, and even longer when the new schedules are not entirely acceptable, and that when changes in the public timetables accompany the new schedules, objections are frequently lodged with the Traffic Commissioners and the procedure to be followed in this event may take several months to complete. The Traffic Commissioners appear to be much respected by the bus operators and they are usually as helpful as their terms of reference permit.

Every undertaking was in some way different from all of the others from the scheduling point of view. This is further emphasized by the constant state of change in which many found themselves. As far as crew scheduling is concerned, there appears to be a continuous dialogue between management and unions, and it is hardly surprising that agreements vary both in word and in interpretation almost from week to week. For this reason, it is important to remember that the reports and comments on the practices of a particular undertaking refer only to the situation prevailing at about the time of the survey visit, and that things may be different now. Nevertheless, there are some fundamental aspects of scheduling which are unlikely to change rapidly within individual undertakings and one can therefore expect some results of the survey to be valid for some time to come.

The fact that the bus industry was in the past even more fragmented than it is at present was illustrated not only by the variety of scheduling practices, but also by the different uses of particular words in schedules departments. For example, a 'straight' duty in SELNEC PTE is one which contains two or more pieces of work and a paid meal break, whereas to many schedulers it means a duty comprising only one piece of work. A consistent use of words has been maintained in this report, and a glossary of terms is given in Appendix 12.

A particular difficulty of this type of exploratory survey work is in asking all of the right questions. The persons interviewed could be completely forthcoming and anxious to help, but because they had become so immersed in their own undertaking's circumstances, they had unconsciously assumed that what were to them second nature, were universal practices within the industry, when in fact they were not. This was encountered on re-visiting two of the operators to make a study of the applicability of BUSCREW to their schedules. In both cases, it was not until the second visit that it was discovered that 100 per cent of the work was scheduled whenever a major rescheduling exercise took place, in contrast to, for example, Northenden Garage at Manchester where a substantial portion was left unscheduled for use as voluntary overtime.

No attempt was made to assess the efficiency of any schedules. However, productivity schemes do release the schedulers from constraints which give rise to a requirement for an excessive number of paid hours to cover the bus workings, and enable them to produce significantly better schedules. On the other hand, a set of rigidly applied, but well constructed, agreements could give very small signing on and off, and other allowances, and again permit a set of bus workings to be covered very efficiently. This arrangement has the advantage that any scheduler is constrained to produce good schedules. Examples of both of these situations were encountered in addition to others where the agreements were of such a nature that the efficiencies of the schedules were significantly impaired, even when they had been constructed by extremely competent schedulers.



Many different bus crew scheduling practices were identified in the course of the survey, but there undoubtedly exist more which were not exposed, possibly even in some of the undertakings visited. An underlying impression, is that sometimes the ideal situation was presented as fact whereas it was not completely realised in practice. This was not of course an attempt to be misleading but simply a statement of an aim that was always in the operator's mind.

## 5. DIFFERENCES IN DETAILS

A discussion of differences in the details of the schedules is presented in this Section. In each subsection the practice at Northenden Garage is also noted.

### 5.1 Number of Pieces of Work in a Duty

The duties in some undertakings normally consist of two pieces of work separated either by a meal break or, in the case of spreadover duties, by a long break. Elsewhere, duties may be made up of more than two pieces of work. In some places there is no prescribed maximum, although there is a practical upper limit. The largest number of pieces of work found in a duty was 8. At the other end of the scale, in one major undertaking (not included in the survey) many duties are one piece duties.

At Northenden there is a preponderance of two piece duties. However, spreadover duties occasionally contain as many as four pieces of work and some three piece straight duties exist.

### 5.2 Drivers' Hours Regulations

At the time of the survey, Drivers' Hours Regulations were defined in the Transport Act 1968, the Drivers' Hours (Passenger Vehicles) (Exemptions) Regulations 1970 and in the Drivers' Hours (Passenger Vehicles) (Modifications) Order 1970. There were two ways in which a stage-carriage operator could satisfy them. A stage-carriage driver was required either to have a refreshment break of at least 30 minutes after at most 5½ hours continuous work or else to have an accumulated total of at least 40 minutes non-driving time during an 8 hour shift, or at least 45 minutes non-driving time during a shift of 8½ hours duration. Other requirements were that driving time during the working day must not exceed 10 hours. Also, the working day must not exceed 11 hours on duty and spreadover may not be greater than 14 hours. Drivers' Hours Regulations also govern the minimum length of rest periods between working days, time on duty in a working week, rest days and part-time driving conditions.

The main impact of these regulations on daily scheduling is in the area of the statutory breaks. Some operators use only the meal breaks option, and others the accumulated breaks option. In the latter case, layover time is counted as non-driving time for the purposes of the Act. A few operators construct duties to satisfy whichever option is appropriate. Generally speaking, local agreements were well within the legal limits governing duty lengths and spreadover.

The practice in SELNEC Northenden, is for the meal break option to be used.

The Drivers' Hours (Passenger and Goods Vehicles) (Modifications) Order 1971 has come into effect since the survey and has modified the statutory requirements which were current at that time.

### **5.3 Meal Break Payments.**

The way in which a meal break is paid affects drastically the compilation of crew schedules. If any part of a break is paid, then the paid part is reckoned to be time on duty for the purposes of Drivers' Hours Regulations. If, for example, a meal break is paid right through, then once the first part of the duty has been selected and since duty lengths are usually fairly closely defined by local agreement, the choice of which bus a man moves to after the break can be fairly restricted. On the other hand, if meal breaks are unpaid, then the choice of the second bus is greater because the length of the meal break is not so critical.

In undertakings which adopt the meal break option of Drivers' Hours Regulations a large number of meal break payment schemes exist. Some pay a meal break right through so long as it does not exceed a certain length. Others do not pay for meal breaks. Another practice is to pay for the time by which a break exceeds an agreed length. Some undertakings pay only the first 30 or 40 minutes of a break. One operator pays the first 25 minutes of a meal break plus any time in excess of 45 minutes. There are yet other ways in which meal break payments are calculated.

At Northenden, meal breaks are paid right through.

### **5.4 Travelling Time.**

From time to time in the course of their duty, platform staff are required to travel between relief points, signing on/off points and canteens whilst not actually driving or conducting. The time taken for this may or may not be paid depending upon the local agreements. If it is paid, then either the actual time spent travelling (including waiting time and walking time) is paid or else a nominal time is agreed (which is usually an average time for the journey) and is paid. Paid travelling time is reckoned to be time on duty. There are various schemes of payment of travelling time. For example, the Borough of Chesterfield Transport Department allows travelling time from the Town Centre to the Garage equal to the layover time allocated to the service which has just been worked. At another undertaking (not a survey participant) where only meal breaks of less than 1 hour are paid through, platform staff who come off at a particular relief point for a meal break and return to it to resume work, are paid an additional 14 minutes travelling time between the relief point and the canteen.

The practice at Northenden Garage is for nominal travelling time to be paid.

### **5.5 Relief Times.**

For the purposes of constructing crew schedules, the changeover time, when one crew relieves another, can be taken to be either a fixed time for each bus (eg its arrival or departure time) or to be any time during a layover period. In some cases, the relieving crew arrive at relief points an agreed time before the relief time. This is usually to ensure that the vehicle is never left unattended on the road, as local police sometimes demand this.

The schedules constructed for Northenden Garage take the departure times of buses from relief points to be the changeover times.

### **5.6 Route Changing.**

Some operators agree that crews must change routes after a meal break. In other cases, any route can be worked after a break. Another common occurrence is that if a 'hard' route is worked before a break, then the one worked afterwards must not be 'hard'.

At Northenden, any route can be taken over after a break, but consecutive hard routes were disliked and were best avoided.

### **5.7 Start and Finish of Duties.**

In addition to driving vehicles and collecting fares, platform staff often have additional tasks to perform. For example, drivers are often required to check and fuel their buses before taking them out of the garage and conductors have to 'cash up' at the end of their duties. One man operators (OMOs) may well have to perform both tasks as part of their duties.

Signing on and off allowances give the staff time to do this additional work and they are therefore often different at the beginning and end of a duty. They are often different for drivers, conductors and OMOs. Additionally, the allowances may differ according to the location of the relief point. This is occasionally attributable to a travelling time content. Another example is that of a driver who takes over a bus on the road who might have no signing on allowance, but who would have been eligible for an allowance for checking the vehicle had he taken it out of a garage. The signing on and off duties vary considerably from company to company. In some undertakings, maintenance staff will attend to checking and fuelling the buses whereas in others, not only is the crew responsible for these items, but is also required to clean the bus.

Some of the tasks associated with signing on and off can only be done at particular places. For example, conductors and OMOs normally collect their ticket machines from the depot at the start of their duties and return them to the depot together with the day's takings at the end of their duties. Thus, they can only sign on and off at a point with cash facilities. At one undertaking, cash is paid into the Giro system at Post Offices, thus obviating the need to travel to the depot at the end of a duty. As far as drivers are concerned, in some places they can start and finish their duties at any designated start and finish points, which are not necessarily depots. Elsewhere, particularly in rural areas where long routes exist, duties must start and finish at the same place.

At Northenden staff sign on and off at their depot, but may start and finish their driving or conducting tasks only at some of the relief points.

### **5.8 Amount of Work Scheduled.**

Some operators insist that 100 per cent of the work is included on the rosters. Others schedule as much as is conveniently possible and either offer the unscheduled work as voluntary overtime (ie men may apply to do it) or else associate it with particular duties as optional overtime (ie staff may decline to do it). The latter method enables the overtime to be shared fairly amongst the staff and ensures that Drivers' Hours Regulations are not violated. At some depots including Northenden, some of the work is left unscheduled and is offered as overtime.

### **5.9 Types of Duties.**

One way of classifying duties is to describe the structure, eg straight duty or spreadover duty. Another is to relate the duty to the time of day, eg early, middle and late duties. Sometimes this second classification includes spreadovers as a distinct type, but this depends upon the undertaking. The proportions of the various types of duties under this classification are normally governed by the rostering scheme of the operator. However, the bus movements do not always lend themselves to a set of crew schedules having duty types in the desired proportions. Indeed, there is often a further requirement that cycles of duties are (say) 12 or 13 weeks long, and this constraint means that the required number of each duty type is specified precisely. Thus, anomalies do arise between required and actual numbers of duties, as well as problems due to imbalances between the duty types. One solution to these problems is to apply the classification of duty types loosely so that some flexibility becomes available. Another more frequently used device is to introduce duties which contain some standby time or have complete standby duties to make up any shortfalls in the numbers.

In addition to the roster requirements, local traditions may govern the proportions of duty types. A frequent occurrence is that spreadover duties are not allowed, or else they are so disliked that a local agreement exists limiting them to a certain proportion of the roster. Elsewhere, spreadover duties may be welcomed by the crews because the spreadover payments enhance their wages.

The practice at Northenden is for there to be as far as possible equal numbers of early duties (which finish before 15.00\*), middle duties (finishing between 15.00 and 20.00) and late duties.

### 5.10 Weekend Working

The passenger demand at weekends is different from the rest of the week. The primary difference is that the morning and evening peaks largely disappear and are replaced by a relatively constant 'plateau' of demand between about 10.00 and 18.00 on Saturdays. On Sundays demand is much lower, and generally speaking there is very little passenger movement before about 14.00. Another effect is that few contract buses (ie school and works services) run during the weekend. However, particularly where there is a significant holiday industry, there is often an increased demand for weekend tours. As a consequence, the services are modified to suit the different demand and so the crew schedules are also different at weekends. The reduction in the peaks usually leads to a reduction in the number of spreadover duties on Saturdays and Sundays. The fact that few buses run on Sunday mornings means that the vehicles are on the road for a shorter time than during weekdays. This leads to either longer duties on Sundays which cover a bus from leaving the garage until its return to the depot about 9 hours later or else to shorter duties of the order of 5 hours duration so that two duties cover a bus which is out for 10 hours or so.

At Northenden, only a few spreadover duties are worked on Saturdays and there are none on Sundays. On Saturdays, there is a greater proportion of middle duties. Saturdays duty lengths are much the same as during the week, but work content tends to be lower. Sunday duties are slightly shorter.

## 6. CONCLUDING REMARKS

There is an unexpectedly wide range of crew scheduling practices within the bus industry. Some of the more important features are displayed in Table 1. It seems unlikely that a single computer program would be able to deal satisfactorily with every undertaking's scheduling requirements.

The preliminary conclusion concerning the RAE program BUSCREW was that it might be applicable to four of the undertakings visited, all of which were municipally owned. However, for reasons unrelated to scheduling, two were not suitable for a test exercise. Second visits were made to the other two undertakings where BUSCREW appeared to be applicable. In both cases, the return visit showed that 100 per cent of the work was scheduled when new schedules were prepared, and so neither operator was a potential user of BUSCREW.

There appears to be little call from within the bus industry for computer programs to construct duty schedules. Except in the largest undertakings there are few full time schedulers. It was frequently said that what makes a scheduler good is 'local knowledge', whereas analytic ability and inventiveness are of secondary importance. Scheduling appears to be less of a specialist trade than one might at first expect. There is one fairly large undertaking where the union representatives (who normally work on the buses) do a substantial amount of schedule preparation whenever a large change is in hand. The management is satisfied that they produce good schedules and attributes this to the men's vast amount of local knowledge.

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\* In this Report, times are given on the 24 hour clock. Thus 15.00 is 3.00 p.m. and 08.30 is 8.30 a.m.

The larger undertakings do require specialist schedulers, partly because their operations are more complicated than those of others and partly because more schedules need to be compiled. Once again local knowledge is held to be a valuable asset. However, there does appear to be a problem in attracting suitable personnel to this work to replenish natural wastage. For this reason, computer scheduling might be of use to a few major operators in the day to day production of schedules.

A second aspect of computer crew scheduling is that a program could be used to estimate the effects of modifying working agreements or to evaluate the costs of crewing a new set of vehicle schedules. It is in these areas that computer crew scheduling could have its greatest value. A program or a suite of programs which can be quickly and easily modified to take varying details into account is essential to achieve this. BUSCREW, being a prototype program, possesses little flexibility, and is therefore not suitable as the basis of such a project, but it has, nevertheless, demonstrated that it is possible to compile bus crew schedules by computer.

SELNEC PTE have made considerable alterations to BUSCREW partly to deal with changing circumstances at Northenden Garage and partly to make the program applicable to other garages within the Executive, some of which have substantially different scheduling practices. Some trial runs have been made by SELNEC PTE using data from other undertakings, with encouraging results. Discussions have taken place between SELNEC PTE and the Trade Unions on computer crew schedules.

## 7. ACKNOWLEDGEMENTS

The author wishes to express his thanks to the many people in the bus industry who were prepared to participate in the survey and who patiently gave so much of their time to assist in its production. Mr. R.W. Dickinson of SELNEC PTE acted as a technical adviser during the survey and his assistance has contributed much to the project. Mr. T.R. Walsh of TRAG was present at many of the interviews and his presence and assistance were much appreciated.

The work described in this Report formed part of the programme of the Transport Research Assessment Group (Head: Dr. M.H.L. Waters).

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9. Table 1 Summary of main findings

Name of Undertaking	Depot selected for examination	No. of Vehicles OMO Crew	No. of Staff at the Depot OMOs Crew Conductors Drivers	Types of Roster	No. of pieces of work in a duty	Option taken to Satisfy Drivers' Hours Regulations	Do duties include periods of standby time?	Are there spreadover duties?	Length of meal break (in minutes)	Meal break payments
SELNEC PTE	Northenden	51 90	96 120 120	OMO Crew Z roster (for sick and long serving employees)	Normally 2 Some 3 Few 4	Meal break	No An 'enquire' system is used	Yes	30 - 59	Through up to 59 minutes
Aldershot & District Traction Co.Ltd.	Guildford	30 28	60 52 52	OMO Crew	Normally 2	Meal break and cumulative breaks	No. A call out system is used	No	Generally none	Excess over 40 minutes
City of Oxford Motor Services Ltd.	Cowley Road	- 49 - 49	106 82 82	Generally each route has a separate roster	Normally 3	Meal break	No	Yes. They are disliked	30 - 120 (3 hours for a long duty)	First 30 minutes
Western National Omnibus Co.Ltd.	Penzance	15 17 (Summer 1970)	25 44 41 (Summer 1970)	Drivers Conductors	Any number	Usually cumulative breaks	No	Yes. Less than 10%. Disliked.	-	First 30 minutes of a layover period
Reading Corporation Transport	Garage (Mill Lane)	- 76 - 33	148 drivers 51	OMO Double Deck (ie Crew)	Ideally 2 but some have more	Meal break	Yes. Called 'emergency'	Yes	30 - 50 (Preferably)	Paid through
Glasgow Corporation Transport	Possilpark	42 69	100 130 140	OMO Crew	Normally 2 but some 3 piece spreadovers	Meal break	No	Yes	40 minimum	Unpaid
W. Alexander & Sons (Midland) Ltd.	Falkirk (Larbert Road)	89	12 107 107	Small blocks of duties	2 or 3	Meal break and cumulative breaks	No	Yes	-	Paid only if less than 30 minutes (except for Circle Route) Excess over 1 hour is paid if away from home depot
Eastern Counties Omnibus Co.Ltd.	Norwich	224 (including outstations)	157 236 234 (+9 express)	Groups of routes	Normally 2. Rarely more than 3.	Meal break	No. Call out system	Yes	15 - 60	Paid only if less than 30 minutes
Southern Vectis Omnibus Co.Ltd.	Whole of undertaking	34 single deck 8 double deck 100 48 coaches	53 single deck 7 double deck (Mid-season 1971) 132 132	OMO (single deck) OMO (double deck) Crew	Rarely less than 3. Up to 8.	Usually meal break.	Yes	Yes but disliked. Few	30 - 60	Paid through except on scheduled overtime and spreadover duties
Highland Omnibuses Ltd.	Inverness	40 stage carriage 20 coach hire, tours etc.	19 37 37	Town OMO Town Crew Country OMO Country Crew Spares, Tours, etc.	Mostly 2, except relief shifts	Mainly meal break.	Yes	Few	More than 30	Unpaid
Borough of Chesterfield Transport Department	Garage (Sheffield Road)	73 64 (2 coach)	110 115 87	OMO Main OMO Spreadovers OMO Night Duties Crew Main Crew Spreadovers Crew Consideration Duties (for old and sick)	Normally 2	Meal break	No	Yes	No agreement	Paid if less than 30 minutes. Excess over 60 minutes is paid.
Grimsby Cleethorpes Transport	Garage (Victoria Street)	42 56	60 108 108	3 for convenience but OMOs together	95% of duties have 2 pieces Spreadovers up to 4.	Meal break	Yes	Yes	No agreement	Paid if less than 30 minutes. If greater than 1 hour, either excess over 1 hour is paid or a spreadover penalty is paid whichever is the least.

## 10. APPENDIX 1 : ALDERSHOT & DISTRICT TRACTION CO. LTD.

Date of visit: 11 March 1971

The Aldershot & District Traction Co. Ltd. operates from 5 main garages (Aldershot, Alton, Guildford, Hindhead, Woking) plus a number of outstations. All of the garages except for Aldershot have signed a productivity agreement based on the draft agreement produced by the National Council for the Omnibus Industry. Guildford garage is representative of an Aldershot and District garage. Both local and country (i.e., semi-rural) services operate from Guildford and this garage also experiences problems with staff shortages. A local problem is that the depot is a long distance from the centre of the City where the major relief point is situated. The size of fleet operating from Guildford is about 60, comprising 28 conventional two-men buses and 30 OMOs. The OMOs cover about 44 per cent of the mileage. 52 crews operate the conventional buses, there being 46 shifts, 4 holiday reliefs and 2 sick relief duties. The corresponding figures for OMOs are 60, 52, 5 and 3.

There are 2 relief points for the Guildford based buses, namely the Garage and Woodbridge Road. The Farnham Road and Onslow Street Bus Stations are separated by a footbridge over the River Wey. London Country Buses also use one of them. Canteens are situated at both the Garage and at Onslow Street Bus Station, that at the latter being a commercial concern. The hours of opening are about 08.00-16.00. Boxes are collected and returned only at Woodbridge Road. Actual travelling times are paid. A duty may start or finish at either point.

The operations are not very peaky. There are slight daily variations in the timetables. Saturdays are different, especially with respect to school and commuter services. Sundays are, of course, different again.

No full-time schedules staff are employed at Guildford, but Aldershot and District does employ one man and an assistant at Aldershot for scheduling duties in the western area. It has not been necessary to have a scheduling section because the time-tables have remained the same for several years, with the exception of the major changes in July 1970. During the period of change in 1970, the time taken from the completion of the time-tabling to the end of consultation with the unions was about 6 weeks. However, this is an exceptionally short time. Circumstances demanded quick action. Small changes are normally saved up and effected in batches. A fortnight is the minimum time in which to implement a scheduling alteration. Small changes occur at the rate of about 20 per annum at Guildford.

The operation of the productivity agreement in this company means that there are virtually no constraints on the duty structures apart from Drivers' Hours Regulations and National Agreements. However, duties are normally made of two pieces of work. No spreadover duties are operated. The breaks are mainly determined by the cumulative breaks' option. Where a meal break is given, the excess over 40 minutes is paid, but otherwise they are unpaid. Slack times are paid, as are actual travelling times. Signing on and off times at Guildford are 5 minutes for 2-man crews and 10 minutes for OMO drivers. 3 minutes walking time between the two bus stations is paid if appropriate.

A call-out system is operated by Aldershot and District. A call-out or a call-back merits a minimum payment of 3 hours work, or 5 hours for rest day working. Time and a half is paid for the rest of the overtime. A guaranteed day is 6 hours, 20 minutes.

## 11. APPENDIX 2 : CITY OF OXFORD MOTOR SERVICES LTD.

Date of visit: 20 April 1971

City of Oxford Motor Services Ltd. operates in a highly competitive labour market which is dominated by the motor manufacturers. In order to be able to attract sufficient crews for the company to continue to operate, several steps have been taken. The company and unions have signed a productivity agreement and a 51 hour week is normally worked. The company intends to convert to total one man operations as soon as vehicle deliveries allow. The adoption of the productivity agreement and the one man operations results in a wage which makes bus crewing with City of Oxford Motor Services a more attractive job.

At present, all country services are OMO and overall there are only about 100 conductors still employed by this company. South Midland Motor Services Ltd. became part of City of Oxford Motor Services on 1 January 1971. The services are gradually being integrated.

City of Oxford Motor Services operates from 11 garages comprising 1 main garage, 5 country garages and 5 dormitory garages. One agreement is worked throughout the undertaking, but there are local colourations. For example, at one garage a large proportion of the men are elderly and therefore require less exacting duties. At another, many of the men prefer to be well paid rather than to have an easy job. Each garage is scheduled separately as far as the crews are concerned, but the vehicles are interchangeable because full maintenance facilities are not available at every garage. At the Oxford depot, as far as possible, each route is scheduled separately and on the whole, men stick to the same route. However, men are detailed and switched from route to route where necessary in accordance with day to day operational requirements.

City of Oxford Motor Services operate about 260 vehicles of which 98 are based at the Oxford Garage. Overall, about 70 per cent are OMOs. At Cowley Road the split between OMOs and conventional buses is about 50/50. The Cowley Road operations are not excessively peaky, about 90 buses being on the road at peak hours and about 60 running at most times during the day. At Oxford, whenever a man is being paid, an attempt is made to find him work, rather than to have him sitting around doing nothing. This might mean that extra buses are run, but this is acceptable because it could generate extra revenue to help meet the man's wages. An additional benefit is that morale is higher if a man is not doing nothing. At Cowley Road 82 conventional crews are required plus 106 men to run the OMOs. The time-tables are the same Monday-Saturday with the exception that fewer contract buses run on Saturday. A major time-tabling and routeing change was due to take place on 10 October 1971.

The working agreements are pretty flexible and awkward points are always open for negotiation.

A Senior Traffic Assistant is employed. He is responsible for vehicle scheduling and licensing. 3 schedules staff are also employed. One is engaged on crew scheduling almost full time, and the others spend about 50 per cent of their time in this work. When necessary, the management do some scheduling and other men are from time to time seconded to do schedules work. Re-scheduling takes from 1 day to 3 weeks, depending upon the size of the task. Schedulers are paid about £20 a week. The main delay in implementing a new schedule is in observing the statutory procedures of the Traffic Commissioners. This takes upwards of 9 weeks. If objections are raised, this process can take up to a year to complete. City of Oxford Motor Services make major alterations to their time-tables about once a year, but the Company would prefer to make biannual revisions because of the rate at which travel demand varies.

There are 3 relief points for the Cowley Road Garage; Queen's Lane, Gloucester Green and Cowley Road. Canteens are situated at each point. They are able to keep open for long hours, because vending machines are used. The Gloucester Green canteen is open from 05.00 to 22.30, and the others from 05.00 until 24.00. Meal times, however, are expected to be practical (e.g., breakfast before 09.00) and near the middle of a duty. Duties can start or finish at any of the relief points. Up to 40 buses can be ranked at Gloucester Green. Most reliefs take place at Queen's Lane. Actual travelling time between points is paid.



The duties compiled by this undertaking normally contain 3 pieces of work, but any number is acceptable. Three types of duties are worked, namely early duties (which finish before 14.00), late duties (which start at about 14.00) and long duties (which run from about 06.00-07.00 until about 18.00-19.00). Spreadover duties are not liked. On Sundays 38 normal length duties are worked from Cowley Road. There is no restriction on which bus a crew can move to, but in general they stay on the same route.

There is no minimum length imposed on a piece of work, but normally they are not less than 3 hours. Duties should contain at least 6 hours 40 minutes work. Long duties are permissible up to the legal limit, but it is not liked if they extend over more than 12½ hours. A minimum payment of 7 hours is made per duty. Meal breaks must exceed 30 minutes, but should be shorter than 2 hours, except for long duties, where up to 3 hours meal break may be given.

Overtime is assessed on a weekly basis. Anything over 40 hours is overtime. Odd pieces of work are on offer for overtime. Any of these which are longer than 40 minutes command a minimum payment of 3 hours at overtime rates. Therefore, as much work is scheduled as possible. The company imposes no upper limit on the amount of work a man can do, insofar as it is consistent with Drivers' Hours Regulations. Normally a 51 hour week is worked. Only the first 30 minutes of a meal break is paid.

A complicated system of sign on/off allowances is used.

## 12. APPENDIX 3 : WESTERN NATIONAL OMNIBUS CO. LTD

Date of visit: 13 May 1971

The Western National Omnibus Co. Ltd. is a large subsidiary of the National Bus Company and has a very large area of operation, which includes the greater part of Devon and the whole of Cornwall, about half of Somerset and part of Dorset, as well as long distance express services from London and elsewhere to Bournemouth and the South West. Western National operates 639 buses and 215 coaches including the Royal Blue express coach services whose main depot is at Bournemouth. This account applies only to the pre-1971 situation, and to some extent, the emphasis is on practices at Penzance.

Western National operates from 28 garages plus a number of outstations. There is one agreement between the Company and the National Union of Railwaymen, which to some extent is open to local negotiations. In general, each garage is scheduled separately although there is a certain amount of intergarage working on some trunk routes. In a few instances trunk route drivers work to another depot, and then take out local services before finally returning to their home garage on the trunk route. Drivers (OMOs and crew-bus drivers) are all on one roster at some garages. Conductors are rostered separately.

One-man buses have been introduced progressively by Western National since 1957. At the end of 1970, 55 per cent of the stage carriage mileage was OMO. The 362 single-deck buses operated by this company are OMO, as are 10 of the 277 double-deckers. OMOs are mainly well accepted by crews. The OMO running times generally are the same as for crew worked buses, except that there is a minimum layover of 5 minutes at terminal points. The overall fleet size has decreased by about 20 vehicles per year for some years.

The pattern of services operated contains peaks which are caused by workers and school traffic. The timetable is not the same every day of the week. Market days are responsible for much of this variation. The Saturday time-tables are less peaked than at weekdays, and on Sundays, the services are reduced.

There is a Traffic Assistant in charge of the Schedules Section. The full complement of the Section is 7 men of whom 2 are responsible for Cornwall and 2 for South Devon. One man is allocated to each of Somerset and Dorset, North Devon, and Somerset and East Devon. One member of the section also deals with express schedules.

This undertaking serves a very seasonal demand for buses. During the summer months, the services are expanded to cater for the additional needs of holidaymakers. Operations include private hire and excursions. The summer time-table operates for 13 weeks. The main effort of drawing up efficient schedules for the winter services has to be concentrated into the summer months (i.e., from the beginning of June until the beginning of September). This is a particularly difficult period because not only does a lot of work have to be performed in a short time (for example, the revised schedules have to be in the depots and available for scrutiny by union representatives by the end of July), but also schedules staff summer holidays have to be fitted in. It is not regarded as good practice to alter a time-table once it is in operation except when seasonal time-tables are introduced. Services are only changed when it is absolutely necessary (e.g., when a factory alters its hours or when a new school opens). It is felt that the demand pattern varies so slowly from year to year that generally it is sufficient to modify the previous year's time-tables rather than to make a total revision each time.

Duties may contain a variety of journeys on different services. Straight duties, short split duties and spreadover duties are worked. Spreadover duties are not liked by the crews. At Penzance, less than 10 per cent of the duties are spreadovers. Early, late and middle duties are recognised, but are only loosely distinguished. As a general rule, early duties start before 08.00 and late duties start after 15.00. Spreadover duties are ones where the spread is of 9½ hours or more. The payments for spreadover duties are 15 minutes for up to 10½ hours plus 15 minutes for every additional 30 minutes spreadover. Very few spreadover duties are operated on Sundays.

The daily guarantee is 6 hours 20 minutes. A 40 hour week in 6 days is guaranteed. The duty length is determined by Drivers' Hours Regulations and negotiations with staff. Layovers of up to 30 minutes are paid. If a layover exceeds 30 minutes, it may become an unpaid rest period. Unpaid breaks are usually taken at depots. Express drivers are paid for refreshment stops between terminal points of the service.

An enhanced rate is paid for time worked in excess of 40 hours in a week. In addition, rostered overtime is available, and this is usually linked with particular duties. The main purpose of this is to ensure that drivers comply with the regulations regarding Drivers' Hours. Unforeseen overtime also occurs. Rostered overtime has a guaranteed payment of 3 hours at time and a half. Rest day working commands payment of at least 5 hours at overtime rates and may be rostered by request during the summer.

Men largely work a week of the same duties. The week normally contains payment for 40 to 42 hours work, although longer weeks are sometimes asked for. At the Penzance depot during the winter 1970-71, crew drivers average rostered week was 41 hours, the actual lengths of week varying between 38 hours 18 minutes and 43 hours 21 minutes. The OMO drivers' weekly duties varied in length between 37 hours 18 minutes and 44 hours 12 minutes, the average being about 43½ hours. The corresponding figures for conductors are 37 hours 30 minutes, 42 hours 17 minutes and 40 hours respectively.

At Penzance there are two relief points, 1.1 miles apart, at the Bus Station and at the Garage. A canteen is situated at the garage. It is run by the Staff Social Club, and its opening hours are normally adjusted to suit the duties.

At Penzance, the duties generally comprise two pieces of work, the break being near the middle. In Western National, conductors are allowed 20 minutes signing time per day, but both signing on and off must take at least 5 minutes. Each depot decides how it likes to split the 20 minutes. At Penzance 10 minutes is taken at each end of the duty. Drivers signing on at a garage are given 15 minutes for checking the bus. On signing off at the garage, 15 minutes is paid for moving the vehicle for fuelling and washing purposes. Five minutes is the allowance for taking over or coming off a bus in service. OMO drivers get a total allowance of 30 minutes per day for signing on and off. An additional 4 minutes allowance is given to crews at each end of an unpaid break. OMO drivers are given 6 minutes. Men start and finish their duties at the same point. The actual travelling times are paid between relief points, also any related waiting time.

During the winter of 1970-71, 29 buses and 1 coach were operated in the Penzance area (including outstations). Fifteen were double deck crew buses and the remaining 14 were single deck OMOs. During the 1970 summer, an additional 2 crew buses and 1 single deck OMO were run. A total of 57 drivers, of whom 22 were one-man drivers, and 34 conductors were rostered during the 1970-71 winter. These figures include 2 emergency spare crew duties and 1 emergency OMO duty. The corresponding figures for the summer operations of 1970 are 69 drivers of whom 25 were one man drivers, and 41 conductors. The increase in the number of drivers was to cover additional coaches for Express Services and tour work.

### 13. APPENDIX 4 : READING CORPORATION TRANSPORT

Date of Visit: 25 May 1971

Reading Corporation Transport has the distinction of being a bus operator whose patronage is increasing. Between 1 April 1970 and 28 February 1971, the number of passengers carried increased by 1.39 per cent nett, in spite of a loss of patronage caused by fare increases which were introduced on decimalisation (on 21 February 1971). This is, however, recovering gradually. The fares are low, having remained more or less constant since 1958. For example, in December 1958, the fare for a 5 mile journey was 8d. The immediate post decimal fare for a 5 mile journey was 4p. (9.6d). Another important feature of the operations in Reading is the extensive use of bus lanes in areas of severe traffic congestion. This gives rise to a substantial increase in reliability of the services, and obviously allows a reasonable speed to be maintained. Both of these features have attracted more passengers.

Reading Corporation Transport operates 109 vehicles, although no more than 94 are on the road at any one time. About 70 per cent of the vehicles are OMO, the remaining 30 per cent being two deck crewed buses. The undertaking hopes to introduce 10 new double deck OMO buses shortly. A further 20 are on order.

A total of 148 drivers and 51 conductors are employed in this undertaking, although 135 drivers' and 38 conductors' duties are worked during weekdays.

The timetable is the same Monday to Friday. It is fairly peaked, there being about 44 buses on the road during the middle part of the day and 94 at the height of the morning peak. The evening peak is less pronounced, there being 85 vehicles running at its height. On Saturdays, higher frequencies are operated at midday. The Sunday services are less frequent, but it has been found necessary to run duplicate buses on route 17. (This route has an afternoon headway of 6 minutes during weekdays, 7-8 minutes on Saturdays and 20 minutes on Sundays).

The main need for rescheduling arises out of staff shortages. Other causes are the introduction of one-way systems, and the acquisition of new vehicles. One man is employed to draw up the schedules, but this part of his work does not occupy him full time. It takes several weeks to plan and implement an alteration. The administrative requirements take up most of this time. Minor alterations are needed every few weeks. There are normally about 2 major alterations a year. During the introduction of the one way schemes, substantial reorganisation of the schedules occurred at intervals of about 3 months.

A 6 day/48 hour week is normally worked by the crews, although about 1 week in every 8 to 10 is 5 day with Saturday and Sunday off. As far as possible, the duty during this week is a long spreadover duty, and the following week has Monday as the rest day. The pattern of lines in the roster is early-late-spreadover-early. The men work the same duty throughout the week. Crew duties and OMO duties are on separate sheets.

The duties ideally consist of 2 pieces of work, although 3 or more piece duties are allowable, and do exist. Duties are recognized as early, late, middle or spreadover duties. Every spreadover duty carries the same fixed penalty, and it is preferred that it starts after 06.30. A few spreadover duties are operated on Saturdays, but none occur on Sundays.

Straight duties should be between 8 hours and 10 hours long, although an effort is made to keep them less than 9½ hours in duration. The minimum length of meal break is 30 minutes, but anything over 50 minutes is avoided. Meal breaks are paid right through. Spreadover duties command a minimum payment

of 8 hours. The spreadover must not exceed 12½ hours. The length of the break is not defined by agreements. Some duties contain 'emergency' periods, during which the men may be called on to crew buses to take children from school to the swimming baths, or to serve the spectators at speedway meetings or football matches, etc.

Overtime payments are made from scheduled work in excess of 8 hours a day and for working unscheduled overtime. Spreadover payments are not included.

Reading Corporation Transport operates from one depot. The workshops are separate. A canteen is open at the Depot to serve both garage employees and crews. Many cafes are available in the town. There are 13 relief points. Many of these are paired points (ie one side of the road is distinguished from the other). The garage is the only signing on and off point, with the exception that crew drivers do not have to sign off there.

An OMO driver gets 20 minutes signing on time at the depot, but only 15 minutes if he takes over on the road. Crew drivers and conductors have 10 minutes signing on allowance, plus 5 minutes walking time if taking over in the town. Conductors and OMO drivers have 10 minutes signing off time, plus 5 minutes walking time where this is appropriate. Crew drivers are paid no signing off time.

## 14. APPENDIX 5 : GLASGOW CORPORATION TRANSPORT

Date of Visit : 17 June, 1971

Glasgow Corporation Transport is a large bus undertaking owning about 1,200 vehicles and operating from 11 depots. It is also responsible for the Glasgow Underground. A total of 68 bus routes are operated by Glasgow Corporation of which 34 are OMO routes. Exactly one third of the scheduled vehicles are OMO. There are 1,260 crew duties and 600 OMO duties.

Twenty people are employed in the Scheduling Department, 12 of whom spend some of their time constructing duty sheets. Some female scheduling staff are employed. A formal training scheme for schedulers is in operation. An initial period of 6 weeks formal training is followed by practical training which lasts for about a year. It is felt that it is only after two years' experience that a scheduler becomes competent, and this leads to problems because the ubiquitous high turnover of young female staff means that few competent schedulers are produced, and often they do not stay for long.

The peak schedule is for 960 vehicles compared with about 500 off-peak. A small midday peak exists. The timetable is the same for every week-day. On Saturdays and Sundays, fewer buses run. The Saturday peak runs from about 10.00 until 18.00. On Sundays, fewer buses run before 14.00 than thereafter. The main changes of timetable occur when the frequency is reduced or running time is altered. Timetable changes, do, of course, make work for the schedules department. Introduction of OMOs and the preparation of schedules for Fair Holidays, Christmas and New Year keep the schedulers fully occupied, and in fact some of them are working overtime throughout the year. In 1970, 10 schedules changes were made, and it was anticipated that in 1971 11 would be required, mainly because of the expanding use of OMOs. A frequency change typically requires about one week to timetable. At least 8 weeks notice of major changes must be given to the Traffic Commissioners. Thus, a change of headway takes a minimum of 2 months to implement. The crew scheduling part of the exercise is the most time consuming part, the length of time depending upon the person concerned and on the nature of the change being made.

A guaranteed week of 40 hours is paid for 5 days work. Normally, a 5-day week plus one rest day's work is practised, although the rest day's work is not always available for conductors. A 5-day week usually contains 39½ to 40 hours work. Anything over 40 hours is paid at overtime rates. A full day's duty worked on a rest day is paid a minimum of 8 hours at time and a half, regardless of the length of the duty.

Where a route is operated by vehicles from more than one garage each vehicle has 1 relief point, which is a convenient point close to its own garage. Apart from these jointly worked routes, each route has only one relief point. All garages work to roughly the same agreement, and each is scheduled separately. OMOs and crews are scheduled independently of each other.

In general, duties contain 2 pieces of work. Duties are recognised as early duties and late duties, some of which have long spreadovers and carry penalty payments. Early duties start from about 04.30 onwards and finish mainly between 14.00 and 18.30. The regular Monday to Friday services operate from about 06.45 and many of the duties have spreadovers ranging between 11 and 12½ hours. About 30 per cent duties are penalty-paying spreadovers. Late duties start at about 15.00 - 16.00 and continue until 24.00 or so, when the buses run back to the garage. Of the crew duties, about 25 per cent have a spreadover in excess of 11 hours. About 38 per cent of the spreadover duties are 3 part duties which contain a piece of scheduled work starting at approximately 11.00 and terminating at about 13.00. Spreadover payments comprise 5 per cent of Glasgow Corporation Transport's wage bill. Spreadover times are governed by Drivers' Hours Regulations and by the National and Local Union agreements.

On Saturdays spreadover must not exceed 10½ hours and on Sundays 10 hours. However, early starting or very late finishing duties should not exceed 9 hours spreadover.

The minimum acceptable length of a piece of work is 1 hour. The maximum length is 5½ hours, although in practice none exceeds 4¾ hours during the week. Since each duty commands a payment of 8 hours, duties are constructed to be of as close a duration to 8 hours as possible. They are subject to a maximum work content of 8 hours 25 minutes, and no minimum is specified. Breaks of less than 40 minutes (excluding travelling times) are paid (the time being called run-on time) but otherwise they are unpaid.

Signing times for crews are 15 minutes 'on' and 10 minutes 'off' at the garage, and 10 minutes 'on' and 'off' on the road, plus travelling time where this is applicable. OMO drivers are given 5 additional minutes signing on and signing off allowances.

Spreadover allowances are 2 tenths of an hour for spreadovers between 9 hours 8 minutes and 9 hours 30 minutes plus 2 tenths of an hour for every additional period, or part of a period of 12 minutes, up to a maximum of 3.2 hours for a 12½ hour spreadover duty. As much work as possible is rostered.

Possilpark is one garage of Glasgow Corporation Transport. There are 4 relief points, namely Garage Gate, Saracen Cross, Springburn Terminus and Round Toll. All men sign on and off at the garage, but they may start or finish the bus working part of their duties at any of the relief points. Ranking of buses is not practised in Glasgow. Of the crew duties Mondays to Fridays at Possilpark, duties 1 - 28 are earlies. They start between 04.44 and 06.16 and finish between 13.30 and 15.34. Spreadover duties (29 - 63) sign on between 06.22 and 07.45 and sign off between 17.52 and 20.14. There are 4 late type duties (64 - 67) which start at about 12.00 and run on until about 21.00. The remaining 25 duties (68 - 92) start between 14.00 and 16.00 and finish between 22.42 and 00.02.

## 15. APPENDIX 6 : W. ALEXANDER & SONS (MIDLAND) LTD.

Date of visit : 18 June 1971

W. Alexander & Sons (Midland) Ltd. is a large subsidiary company of the Scottish Bus Group. It operates a total of 853 vehicles over an area which is roughly bounded by Glasgow, Helensburgh, Pitlochry Perth and Falkirk. W. Alexander & Sons (Midland) Ltd., operates not only local and country services in this area, but also tours, seasonal express services to Aberdeen and Inverness and town services in Stirling, Falkirk and in the City of Perth. The southern part of the region is relatively densely populated and, in general, the further north the sparser the population.

W. Alexander & Sons (Midland) Ltd., has fifteen depots distributed through its area of operation (including Callander). Two clerks are employed in the scheduling section of the Traffic Office, but only part of their time is spent in crew scheduling. Some District Traffic Superintendents do their own scheduling but, except when only a minor change is made, they have to submit new or revised schedules to Head Office for checking. Two clerks are generally adequate to deal with this work.

Drivers and conductors in the employ of W. Alexander & Sons (Midland) Ltd., work a five-day scheduled week, Monday to Friday, and work voluntarily at weekends. Provided a traffic employee complies with certain conditions Monday to Friday, Saturday working is paid at the rate of double the hourly rate and on Sundays at time and a half the normal rate. This method is successful in covering weekend working except for late duties on Sundays when there is a shortage of conductresses at certain depots, and also when attractive events, such as football matches, take place. The Sunday problem is partially overcome by increasing the OMO working on Sundays. In fact, over 50 per cent of Sunday working is OMO.

The depots all work to the same agreement, and in general, each one is scheduled separately. At Larbert Road Depot in Falkirk, urban and rural services are scheduled independently. Drivers' Hours Regulations are satisfied in many different ways. Some duties satisfy them by means of accumulated breaks or layover time. Others have meal breaks, but not necessarily at canteens. Where the bus has a built in break of thirty minutes, then the break may be taken sitting in the vehicle. Drivers from the Larbert Road Depot may start and finish their duties at the bus station some two and half miles away. Conductors must collect and deposit their equipment and cash at the depot. Nominal travelling times are paid. This may vary at other garages. Parking occurs at the Falkirk Bus Station, and an attendant is employed to control it. The canteen is run by staff and is opened to suit themselves.

There are 89 vehicles operated from Larbert Road. The driving establishment is 119, of whom 12 are OMO drivers. There are 107 conductors.

The main peaks in the Monday to Friday timetable occur between 08.30 and 09.00, and at about 16.00. A small mid-day peak also occurs. The timetable varies from day to day, particularly on Fridays when some factories close early and works' buses have to be advanced. Some rural services do not operate on every week-day. Indeed, some routes only operate one day a week. On Saturdays, services may operate at different frequencies from week-days. On some routes, more buses run, on others, less, and some frequencies remain the same as on week-days. The Saturday peak lasts from about 12.00 until 18.00. On Sundays, the frequency of services is about half the week-day value. A few buses run in the morning, but rather more are on the road on Sunday afternoons.

The main problem in introducing major timetable changes is that local authorities are prone to object. Minor changes occur roughly every other month. It is estimated that to construct a complete set of good duty schedules for Larbert Road Depot takes about one week to ten days full time work.



This includes Monday to Friday duties plus Saturday and Sunday schedules. Only one or two major changes are made in a year.

The duties worked in W. Alexander & Sons (Midland) Ltd., are normally made up of two or three pieces of work. They may be divided into lates, middles, earlies and spreadovers. Middle duties normally start between 12.00 and 13.00 and finish between 20.00 and 21.00. Penalties are paid for spreadovers exceeding nine and a half hours, but spreadover greater than 11 hours is not liked. Few spreadover duties occur at weekends. There are no restrictions on which bus a crew moves to. The minimum amount of work in a duty is 6 hours 20 minutes (five hours on rest days). Straight duties cannot exceed eight and a half hours. Spreadovers do not normally exceed 11 to 11½ hours.

A payment of 40 hours is guaranteed for a five-day week. Anything scheduled in excess of 40 hours is paid at time and a half. Call outs have a guaranteed payment of three hours. Payments are calculated on the basis of time and half for time actually worked plus make up time to three hours at normal rates (eg a call out of two hours would merit a payment of two hours at time and a half plus one hour at the standard rate which equals four hours). Spreadover payments are as follows: 15 minutes for spreadovers between 9 hours 30 minutes and 10 hours 29 minutes plus 15 minutes for every 30 minute period worked over 10 hours 29 minutes. For example, the spreadover payment for a duty having a spreadover of 11 hours 15 minutes is 45 minutes.

Breaks are only paid if they are less than 30 minutes, except that men who work the Circle Service in Falkirk are given a paid 30 minute break. The justification for this paid meal break is that there is no lay-over time in the duty owing to the continuous operation of the vehicles. If a man is booked off for more than one hour away from his home depot, then time over the hour is paid.

Signing on and off time total 15 minutes for crew drivers and conductors. OMO drivers are given a total of 30 minutes signing time. Travelling time is added for conductors and OMO drivers, so that a conductor taking over a bus at one of the non-depot relief points in Falkirk is given 20 minutes between booking on and taking over the bus.

The Duty Roster is comprised of small blocks. In the event of a man dropping out of a block, interested employees may bid for this place. If there is competition for a particular place, then the senior contender gets it.

## 16. APPENDIX 7 : EASTERN COUNTIES OMNIBUS CO. LTD.

Date of visit : 25 June 1971

The Eastern Counties Omnibus Co.Ltd., has a very large operational area embracing all of Suffolk, Norfolk, Cambridgeshire Huntingdonshire and the Soke of Peterborough in addition to serving parts of Lincolnshire, Hertfordshire, Essex and Bedfordshire. In all, about 10,000 square miles are served by this undertaking. A preponderance of East Anglia is rural, and this is reflected in the operations of this company. However, Eastern Counties does provide the town services in Norwich, Cambridge and Peterborough. The fleet size is 720 which is in process of reduction to 645. Over 50 per cent are OMO, of which there are only a few double deck OMO vehicles. There are four major depots at Norwich, Ipswich, Cambridge and Peterborough. There are garages at Great Yarmouth and Lowestoft in the Norwich area, at Bury St. Edmunds in the Ipswich area, at Kings Lynn and Wisbech in the Peterborough area and there is a garage in the Cambridge area at Ely. There is also a garage at March which is regarded as belonging to both Cambridge and Peterborough. In addition to these depots, there are 60 out-stations in places such as Cromer, Saxmundham, Felixstowe, Newmarket, Hunstanton and Market Deeping, where there is a degree of supervision and at other locations such as East Dereham, Woodbridge and Southwold, where there is not. Operations are very peaked, there being over 600 buses out during the peaks. About 15 per cent of passengers are schoolchildren, though there are children travelling at off-peak times, so demand is different during term time from the holiday periods.

In the past, the working agreements have caused the schedules to be rather inefficient. However, a productivity agreement was due to go into operation in Norwich and its outstations shortly after the visit and some of the new arrangements are described below.

The scheduling section is headed by the Chief Traffic and Planning Assistant who in addition to an Outside Planning Assistant, has two personal assistants. The Chief Schedules Clerk is also responsible to him. The Chief Schedules Clerk is in charge of 3 Second Grade Schedulers and 6 others. The Schedules Section costs about £10,000 - £12,000 per annum plus overheads. Scheduling is a problem for Eastern Counties, which to a large extent is due to the vast expanse of sparsely populated rural areas which have to be served. It creates a communication problem and often causes delays in the implementation of new schedules. A large amount of paperwork has to be done during a rescheduling exercise, and this can cause some delays.

Broadly speaking every garage works to the same agreement. Each garage is scheduled with its out-stations. Inter-garage scheduling is not ruled out, but is rarely practised.

The Norwich Garage is in Surrey Street. A total of 224 vehicles operate from Norwich and its out-stations. The services require 236 crew drivers, 234 conductors, 157 OMO's and 9 express drivers. In addition 30 spare drivers and 17 spare conductors are provided, making a grand total of 432 drivers and 251 conductors. Relief points are at Tombland, Bank Plain, Castle Meadow, Bonds (All Saints Green) and the Bus Station, which are all fairly close to one another. The relief point at Thorpe Station has been closed down since the visit. Ranking is not practised because police regulations require that all buses on the road be attended. All points are refreshment points, and duties can start or finish at any of them, subject to conductors and OMOs collecting equipment or cashing in at Surrey Street. A 5-minute standby used to be observed, but the productivity agreement has reduced this to 2 minutes. Conductors nominally deposit their equipment at Surrey Street during a refreshment break and are paid a travelling time allowance to do so. (This practice has been abolished since the visit.)

Duties normally comprise two pieces of work. Duties containing more than 3 bus workings are rare. The routes used to be divided into 4 groups and only 10 per cent of the work could be interchanged between them. A feature of the new system is that no more than 2 split duties can be worked during a week.

Refreshment breaks are at least 15 minutes long, and are paid if they do not exceed 30 minutes. The maximum break is 1 hour for through duties. Sunday working is entirely voluntary overtime. Except at outstations, duties on Sundays are not less than 5 hours long and in fact most the work is rostered, but the staff can refuse it if they wish. There are no spreadover duties on Sundays. Crews prefer to change routes after their meal break.

Maximum length of a piece of work is about 4¼ hours. Minimum duty lengths are 6 hours 20 minutes in a 6 day week and 7 hours 36 minutes for 5 day working. The management will not pay more than 30 minutes make-up time. Maximum work content in a duty is about 7 hours 30 minutes, except for 5 day working when it is about 8 hours 40 minutes.

The guaranteed week is 40 hours, any work over 40 hours being overtime. Spreadover payments are made for spreads in excess of 9½ hours. A call out guarantees 3 hours work. Drivers are given a total signing time of 15 minutes. Conductors are paid 10 minutes signing on time and 10 minutes to sign off. OMOs have a total signing time of 35 minutes, with the proviso that at least 10 minutes be taken at each end of a duty.

## 17. APPENDIX 8 : SOUTHERN VECTIS OMNIBUS CO. LTD.

Date of visit : 1 July 1971

The major bus operator on the Isle of Wight is the Southern Vectis Omnibus Company Ltd. The Island is truly a microcosm of England. It is basically rural with several small towns. Features include industrial estates, school complexes, a group of prisons and various areas which cater mainly for holidaymakers, including chalet sites and hotel areas. Points of entry to the Isle of Wight include Yarmouth, East and West Cowes, and Ryde. An important aspect of Southern Vectis' services is co-ordination with the boat services to the mainland. Unfavourable weather conditions can disrupt the ferry services and this, in turn, upsets the bus services which meet the ferry. Generally, a bus which takes passengers to a ferry waits for passengers arriving from the mainland, and this can entail lengthy waiting times in the event of a delay to the boat. Southern Vectis' services are essentially rural with holiday traffic added during the summer months. This Company operates a high season timetable from June to September, with mid-season operations during the three or four weeks on either side of this period. Peaks in the operations are due largely to schools, so there are differences in term and out of term. During the high season out of term, a histogram of the number of buses out during different periods of the day is plateau-like, the peak running from about 09.00 until 18.00. The summer plateau is higher than the winter peaks, during which about twice as many buses are out as during off-peak. Weekday services are almost the same every day of the week. Saturday workings are much the same as during the week, except that the morning and evening peaks disappear, and during the summer, some augmenting takes place. Evening services are similar to Sunday services, which are reduced from the weekday levels. Delicensing vehicles during the winter months is necessary for Southern Vectis. During the winter of 1970-71, 29 coaches and 31 double deck crew buses were delicensed. The size of fleet in 1971 was 190, there being 48 coaches (for tours, private hire, contract) 34 single deck OMOs, 8 double deck OMOs and 100 crew buses. During the winter, nearly all operations could be OMO but are not because of the present necessity to retain some regular conducting staff for the summer peak operations. Three categories of platform staff are employed. Permanent Staff, Casual Availability Staff (many of whom are OMOs who take work when it is offered to them) and Casual Summer Staff ( who are often students and who are mainly conductors).

Southern Vectis operates from 3 main depots at Newport, Ryde and Shanklin. At Freshwater there is an outstation of Newport and at Ventnor there is an outstation (with no fuelling facilities) of Shanklin. As far as duty compilation is concerned, all work to the same rules (one Branch of the National Union of Railwaymen covers the whole Island). In practice, the main depots are crew-scheduled separately, but there is no reason why the whole of Southern Vectis' scheduled operations should not be scheduled as one. There is, however, inter-depot vehicle working. The crews prefer to have a variety of routes in their duties so as to share the difficult routes. On the whole, duties contain a meal break, which is paid. 99 per cent of the meal breaks are taken at the home depot, otherwise they are at a major depot. Canteens, which are operated under contract to the company, open to suit the duties. Relief points are at major depots. Men always start and finish at the same place. Conductors book on at bus stations and drivers sign on at garage or bus station, as appropriate. Off peak, some buses are parked at the bus stations.

Crews, single deck OMOs and double deck OMOs are scheduled separately at the men's request. There is a separate coach sheet. During the first mid-season period of 1971, the rotas contained 132 crew lines, 53 single deck OMO lines and 7 double deck OMO lines. In the summer, 50 single deck OMO and 10 double deck OMO rota lines were due to be operated.

The schedules office comprises 2 clerks and 1 senior traffic employee. Their work includes road service licensing. At least 4 major crew scheduling changes occur every year. Most effort is expended between October and Christmas in preparing crew schedules for next summer. Bank Holiday arrangements are usually based upon Sunday duties, but they require some work to make them more suitable.

Duties rarely contain just 2 pieces of work, and many contain up to 4 or 5 pieces. One duty which covers meal breaks contains 8 pieces. Straight duties generally have a paid break, but some satisfy Drivers' Hours Regulations by means of accumulated layover time. Scheduled overtime has unpaid breaks. Spreadovers are not liked. The only two occur in winter. No before-duty overtime is allowed. The evening peak is covered by scheduled overtime. Starred rest day working is operated by Southern Vectis, during the summer. This occurs at fortnightly intervals in the rota.

Rota lines are mixed, and may contain early, middle and late duties in addition to scheduled overtime and spare duties. Different duties are worked every day. Roughly speaking, early duties finish before 16.00 and middle duties by 21.00, but the distinction is rather indefinite. The first duty signs on at 05.10. On Thursdays, a late boat is served by the last duty which signs off at 01.10.

Drivers do not like pieces of work to be longer than 3 hours. Minimum duty length is 6 hours 20 minutes but in practice it comes out at 6 hours 40 minutes. Maximum duty length is 8½ hours, but it can go up to 11 hours, with scheduled overtime. The statutory meal break must not be less than 30 minutes long, and does not exceed 1 hour. Duties with scheduled overtime normally have a break between 12.00 and 14.00.

Overtime payments are assessed on a weekly basis plus scheduled overtime plus offered overtime. Spreadover payments are in line with the National Agreement. Other duties are paid through from start to finish. If a break exceeds 1 hour, then the man reports for availability duty (ie he is on standby).

At the garage a driver gets 15 minutes signing on allowance and 10 minutes to sign off. On the road he gets 10 minutes signing on allowance and 15 minutes to sign off. Conductors get 10 minutes on and 15 minutes off. OMOs get 20 minutes signing on allowance and 15 minutes to sign off for an early duty, and vice versa (15 and 20) for a late duty.

## 18. APPENDIX 9 : HIGHLAND OMNIBUSES LTD.

Date of visit : 7 July 1971

Highland Omnibuses Ltd., is the subsidiary of the Scottish Bus Group which serves the area north of a line from Oban to Nairn, including the Islands. Express services are operated to Edinburgh and Glasgow. An important consideration in Highland Omnibuses' operations is the linking with the other modes of transport in the area. Attention is paid to providing co-ordinated bus services within the company and to co-ordinating with other bus operators. The same service is operated throughout the year. No service peaks occur except in the larger towns in the area, such as Inverness and Fort William, where the peaks are mainly due to school-children. The re-organization and closure of schools calls for the modification of some of the services from time to time. The general run-down of the bus industry also gives rise to the alteration or withdrawal of services. Objections are frequently lodged with the Traffic Commissioners and this causes the main delays in the implementation of service ( and therefore crew schedule) changes.

Each of the seven districts of Highland Omnibuses has its own District Traffic Superintendent. The districts are Inverness, Aviemore, Fort William, Oban, Dingwall (this district stretches from the well-populated Black Isle in the east across to the West Coast), Thurso and Portree (on Skye). This district includes the Isles of Lewis and Harris. The main workshops are located at Inverness. There are other garages in the Inverness area, including one at Nairn. The company employs one Schedules Clerk. Weekend working is voluntary and all volunteers must state their willingness to work before Thursday mornings. The scheduler spends Thursday and some of Friday every week preparing the weekend duty sheets.

Highland Omnibuses operates a total of 300 vehicles of which 248 are single deck OMOs and the remaining 52 are double deck crewed buses. In practice the single deck vehicles can be operated as either crew buses or OMOs. In the Inverness district there are 40 vehicles for stage carriage use and 20 for coach hire, tours, etc.

Generally, the National Agreement is observed within Highland Omnibuses with a few local variations.

In the Inverness and Nairn district, each garage has its crews scheduled separately. In Inverness there is a country sheet and a town sheet, and each is divided into OMO and crew operations. Some country men include town working in their duties, but the opposite does not occur. One relief point is at Academy Street, which is just round the corner from the Bus Station, and the other is at the Bus Station itself. Main layover points are at the Inverness hospitals and at Dornoch. The duties are mainly of the meal break type, the break being taken at the Bus Station, where there is a crew room which contains an automatic meal vendor. The country sheet contains 13 OMO duties and 8 crew duties. The figures for the town sheet are 6 OMO and 29 crew duties. There are additional spares and tours sheets.

The timetable is not the same every day of the week. During weekends, there are more buses on Saturday and less on Sunday than during the week. There is a post noon peak during the week, and this extends from 12.00 until 18.30.

Duties are mostly made up of two pieces of work, except for relief shifts which may contain many pieces. Most duties are either earlies or lates. There are a very few middle duties (from about 11.30 until 19.45). A few spreadover duties exist, mainly on country services on Sundays. They are normally classified as early duties because they start early.

Weekend working is all voluntary. A payment of 5 hours is guaranteed for a weekend duty. Much of this work is tours work. Weekend rates of pay are double time for Saturdays and time and half for Sunday working.

Maximum duty length is 8 hours 40 minutes. Spreadover duties are guaranteed a payment for 7 hours 20 minutes plus penalty payments. Minimum average duty length over a week is 7 hours 36 minutes (ie 38 hours in 5 days), but a 40 hour 5 day week is guaranteed. Meal breaks exceed 30 minutes and are unpaid. Breaks of less than 30 minutes are paid through and are not considered to be meal breaks. Meal breaks maximum length is not specified. Spreadover payments are made according to the National Agreement. In addition to weekend working rostered work in excess of 40 hours in a week is paid at overtime rates.

Signing on time for drivers at the garage is 20 minutes. This includes 5 minutes for checking the vehicle, 5 minutes to present the time card, 5 minutes running time to the stand at the Bus Station, and 5 minutes standing time at the Bus Station before departure. Drivers get no signing on time in the town. 10 minutes signing off time is paid to drivers. Conducting staff sign on and off at the Bus Station and get an allowance of 10 minutes at the start and finish of a duty. OMO drivers get the drivers' allowances plus the conductors'. All cashing is done at the Bus Station. The allowances include time for loading parcels, parcel-carrying being an important part of the services provided by Highland Omnibuses. As much as possible of the work is scheduled. Some duties are made up to time by including some 'spare'.

Drivers and conductors move in opposite directions in the rosters, because most of the conducting staff is female. The duties are alternately early and late so that one week contains 3 of one type and 2 of the other to give a total of about 40 hours. Middle duties are normally classified as lates. The late duties all finish at about the same time (23.30 - 23.35). Earlies finish between 15.00 and 16.00.

## 19. APPENDIX 10 : BOROUGH OF CHESTERFIELD TRANSPORT DEPARTMENT

Date of visit : 22 July 1971

Chesterfield is a medium sized town in an area where coal mining and iron and steel making are major industries. The Borough of Chesterfield Transport Department was due to introduce new schedules three days after the visit, on 25 July, and it is these which are described below. The main characteristic is that Sunday workings are 100 per cent OMO.

The undertaking owns 139 vehicles, including two coaches but cannot reduce this number because of vehicle unreliability. The Borough of Chesterfield Transport Department operates from a very new garage and office complex. It makes a modest profit (£11,967 in 1970-71). A very low operating cost of 18.9p/mile is achieved.

The Borough of Chesterfield Transport Department co-operates with the other operators in the area - East Midlands Motor Services Ltd., Sheffield Corporation Transport Department and Midland General Omnibus Co. Ltd. An unusually large proportion of its working is under contract, notably in providing colliery buses for the National Coal Board.

The fleet of 139 comprises 65 single deck OMOs and 72 double deck buses, of which 8 are OMO, plus 2 coaches. Peak requirements are 55 single deckers and 53 double deck buses, but extraneous operations can increase the total number of buses out in the peak to 119. A total platform staff of 312 is required, there being 110 OMOs, 115 crew drivers and 87 conductors. Some crew drivers can work OMOs. There are 103 working weeks plus 7 spares for OMOs and 68 scheduled crew weeks plus about 15 spares. In Chesterfield, there is a small imbalance between morning and evening peaks. The larger peak (which occurs between 15.30 and 17.30) is caused by schools closing at about the same time as the change of shift at steelworks. During the evening peak, 70 buses operate scheduled services and 48 specials. Friday has a particularly difficult evening peak because many offices also close at about 16.00.

The unbalanced peaks mean that rest days must occur during a late week, so that rest day working can be utilized. In a fortnight there are 8 late duties and 6 earlies.

A significant lunch time peak of 55 occurs, there being 40 buses out at about 12.00 just before the peak begins. It is possible to cover the midday peak with split duties, because some of the peak buses go on to do a colliery run and then a school trip, thus making a reasonably sized piece of work.

On Saturdays, there are no school or colliery workings, but the services are operated more intensely during the peak (10.00 - 18.00). However, the Saturday demand is showing signs of dropping off because of the trend for Friday to become the main shopping day of the week. On Sundays, most buses start at about 13.00.

A feature of colliery working is that the first buses come out on the road at 03.45 and the last go back to the garage at about 01.00 next day. A night shift for OMO's running from about 00.00 until 07.30 covers the early work, and provides men to move the vehicles inside the garage when required for maintenance purposes.

There are six rosters operated by the Borough of Chesterfield Transport Department. The three OMO rosters are for spreadover duties, for the night shift, and the main working. Conductors and drivers move in opposite directions on the crew rosters. The main crew roster contains earlies and lates. There is a spreadover crew roster and a consideration roster with about 6 lines on for the old, the lame and the infirm. Each roster provides its own spares. New entrants are put into gaps as they appear. Rosters contain multiples of 12 lines in order that one Saturday in 12 is off. The rosters aim for 40 hours' work in 5 days. A man can opt out of the 6th day working.



The schedules department comprises one scheduling clerk and one trainee. When a major re-scheduling exercise takes place, the Assistant Traffic Superintendent also helps. A major change of schedules takes at least 10 weeks to process. Negotiation with the Union causes the main delay. Five changes are expected during 1971 and these are occasioned by the introduction of OMOs. At present, 57 per cent of the mileage is OMO. It is an aim that all early morning, late evening and all of Saturday working in Chesterfield should eventually be OMO.

The Borough of Chesterfield Transport Department operates from one garage. Crew buses and OMOs are scheduled separately. Some attention has to be given to ensuring that acceptable 'consideration' duties are included. There are 8 relief points in the town, plus one on each side of Sheffield Road outside the depot. A mobile canteen is operated in the town, and it is opened to suit the schedules. Drivers can start and finish their duties at any of the relief points. Conductors and OMOs start and finish at the depot and are paid travelling time.

Duties usually contain 2 pieces of work, but some 3 piece duties do exist. During weekdays there are early duties, late duties and spreadover duties only. Over weekends, there are no splits, but some straight duties run between about 09.00 and 18.00. Early duties normally finish before 14.30. Some of the spreadovers cover morning meal breaks. Any break less than 30 minutes long is paid. Break time in excess of 60 minutes is also paid. There is no specified minimum length of a piece of work, but a practical limit of 2½ - 3 hours is preferred. The maximum length is 5½ hours, except on heavy workings where 3½ - 4 hours is the maximum acceptable to the Unions. Minimum duty length is 7½ hours, and the maximum length 8 hours 40 minutes except on Sundays where some duties may even exceed 9 hours 10 minutes. Spreadover payments start at 9½ hours and are in accordance with National Agreements. Maximum spread is 12½ hours. Spreadover duties normally finish before 18.30.

A 5 day 40 hour week is guaranteed. Overtime is paid for scheduled work in excess of 40 hours, sixth day working and for operating work put on offer.

Signing on time is 10 minutes at the depot which is made up of 5 minutes reporting time and 5 minutes to travel to the Town Centre. In town, only conductors are paid signing time. They get 5 minutes plus travelling time from the depot to the Town Centre. OMO drivers get an additional 5 minutes. For ending a duty at the Town Centre, conductors and OMOs are paid 10 minutes signing off time plus travelling time to the depot. Crew drivers get nothing. The travelling time is the amount of layover at the Town Centre associated with the service being worked. The average is 5 minutes. Drivers finishing at the depot are allowed this amount of time to drive the bus up from the Centre. Conductors get an additional 10 minutes to cash up.

## 20. APPENDIX 11 : GRIMSBY CLEETHORPES TRANSPORT

Date of visit : 29 July 1971

Grimsby Cleethorpes Transport is a municipal undertaking which owns 98 vehicles, which are operated from one depot. All of the 42 single deck buses are OMOs and the 56 double deckers were operated as crew buses at the time of the visit although 21 of them were already converted for one man operation.

There are three peaks in Grimsby Cleethorpes Transport operations. In addition to the main morning (08.00 - 09.15) and evening (16.30 - 18.00) peaks, there is one in the middle of the day (11.30 - 13.30). Typically, 74 buses are required for main weekday peak operations against 52 during off-peak conditions. After about 18.00 some double deck buses are run in to the garage and replaced by single deck OMOs on the road. Monday to Friday operations are the same every day, but Saturdays are different and Sunday services are reduced, especially in the morning (Sunday morning working requires 26 buses and 'loses through the nose'). An all night service is provided to the railway depot and Docks at Immingham. The timetable operated by Grimsby Cleethorpes Transport undergoes infrequent basic changes. However, some alterations are made to accommodate school holidays. At the time of the visit, work had just begun on the revised schedules for the autumn school term which started on September 5.

The schedules section comprises a Schedules Officer and a Deputy Schedules Officer.

There are 3 duty sheets for crew working. This division of the crew roster is for convenience only, and there is no route dividing. The OMOs are all on one sheet. There is a total of 108 lines on the crew rosters and 60 on the OMO roster.

There are 4 relief points, but some of them are multiple points with walking times between them. Three relief points are in Town and the fourth is at the Market Place in Cleethorpes. Conductors and OMOs must sign on and off at the depot. Drivers may sign on and off at their relief point. Travelling time is paid where appropriate, but this is kept to a minimum. One occasion on which it can be paid is when a man comes off at Cleethorpes for his meal break. 15 minutes is paid for him to travel to Town for his meal. If he has to go back to Cleethorpes after the meal break, a further 15 minutes travelling time is allowed. The canteen is run by a Committee elected by the employees, providing meals for all staff between 06.00 and 21.00 each weekday.

Every duty carries a payment of at least 7 hours 36 minutes and a 40 hour 5 day week is guaranteed. Average duty length is 8 hours 5 minutes plus a 45 minute meal break. Sixth day working is guaranteed but optional. In practice nobody ever refuses early sixth day duties, but a few occasionally refuse a late duty on the sixth day. The majority of lines contain the same duty every day. However, there are 9 lines on each duty sheet which cover the rest days. On crew rosters, drivers and conductors move together. Sunday working is paid at 2¼ times normal rate before 13.00 and Saturday working after 13.00 is paid at time and a quarter. Sixth day working and rostered work in excess of 40 hours a week is paid at time and a half. Breaks of less than 30 minutes are paid through. If a break is between 30 minutes and 1 hour in length it is unpaid. If it exceeds an hour then either the time over the hour is paid or the spreadover penalty is paid (if applicable), whichever is the least. Spreadover penalties are specified by the National Agreement. Signing on and off times are 10 minutes plus travelling time.

Ninety-five per cent of the duties are two-piece. Spreadovers might contain 3 or 4 pieces of work.

Some duties include some standby to make up the time. The one night shift contains about 5 hours work. The man then goes on standby.

Early duties run roughly from 06.30 until 15.00. Late duties start at about 15.00 and finish about 23.30. There are some middle duties. There are 17 spreadover duties. One type of spreadover duty runs from about 07.00 until 16.50 and the other type roughly between 08.00 and 18.30.

Duties only have to satisfy Drivers' Hours Regulations as far as lengths of pieces of work etc., are concerned. However, the minimum practical length of a piece of work is about 2½ hours.

## 21. APPENDIX 12 : GLOSSARY OF TERMS

**Box.** Conductor's or OMO's box for carrying money, ticketing machine and documentation (Waybills, timetable, fare table, etc.).

**Call back, Call out.** System whereby drivers or conductors who are off duty can be called upon to work in place of someone who is unexpectedly absent or to cover some unscheduled overtime.

**Cash up.** Conductor or OMO counting day's takings and submitting to the office.

**Cumulative Breaks Option, Cumulative Layover Time.** Means of satisfying Drivers' Hours Regulations where giving a meal break is not suitable. At the time of the survey, breaks must total at least 40 minutes during an 8 hour straight-through shift or 45 minutes in an 8½ hour shift. (See Section 5.2).

**Dormitory Garages.** Places for parking buses overnight, not at a depot. Sometimes they are little more than pub yards.

**Duty.** A day's work for platform employee. Normally, this term excludes scheduled or optional overtime which is sometimes associated with a particular duty.

**Layover.** Time when a vehicle is scheduled to wait at a point (usually on the road at the end of a route). This enables timetables to be run at regular intervals (eg every hour on a route which takes 50 minutes to complete) or late running to be made up.

**Line.** On a roster, a week's work for one member of the platform staff is set out along a line. Thus the set of duties for a driver, or conductor, or a crew (depending upon the particular roster) for one week is often called a line.

**National Agreement.** This is the National Conditions Agreement adopted by the National Council for the Omnibus Industry on 9th October, 1947, and subsequently amended by NCOI resolutions. The spreadover payment scheme proposed in Clause 2(b) of the Agreement is summarised as follows:

for spreadover time between 9 hours 30 minutes and 10 hours  
29 minutes, ¼ hour spreadover payment:

for spreadover time between 10 hours 30 minutes and 10 hours  
59 minutes, a total spreadover payment of ½ hour:

for spreadover time between 11 hours and 11 hours 29 minutes,  
a total spreadover payment of ¾ hour:

and so on, the total additional payment increasing by ¼ hour for each ½ hour subsequently worked.

**OMO.** One man operator or one man operated bus or one man operated.

**Outstations.** Small garages (including dormitory garages) which operate in an area which includes a larger depot.

**Peak Factor.** The ratio of the number of buses running during the peak period to the number running during the daytime off-peak period.

**Piece of Work.** For the purposes of this paper this means the work done between getting on a bus and leaving it, either at the end of a duty or for a meal break or to take over another bus.

**Ranking.** Parking the bus at a place other than the depot. Usually, the bus is parked at a terminal point or in a bus station, but may in some instances be left unattended in the road.

**Relief Point.** A place where the crews of a bus can be changed.

**Rest Day Working.** Starred Rest Day, etc. There are some days when a man has a duty on his line of the roster, but it is not obligatory for him to work it. Such a day is called a *rest day*, *starred rest day*, *red rest day*, etc., and the duty is called a *rest day duty*.

**Roster or Rota.** A list showing the order in which duties are performed. Often, the duties for a whole week are displayed on a *line*. Details of the duties are sometimes given on the roster and sometimes on separate sheets of paper, and each duty is given a number on some other identifying code. An accompanying list shows which crews will be working which lines during a particular week. Usually, staff work down the roster line by line.

**Sheet.** The sheet of paper a roster is printed on; often used as a synonym for 'roster'.

**Signing on/off.** Signing on time is to allow drivers to check their vehicles and conductors to check their boxes. Signing off time is for drivers to do any agreed tasks on the vehicle (eg fuelling, cleaning, etc) and for conductors to cash up. The allowances are agreed, locally, as are the tasks, to be done during the signing times. Several undertakings include time taken for the bus to travel between the depot and the start of its operating route in the signing times.

**Spare.** Spare time in a duty is when a man has no specific work allocated to him. He is there to fill in gaps left by unexpected absences or to do any work which is not scheduled. Some undertakings include duties which are completely spare. Other names are *standby* and *emergency*.

**Split.** This can mean either a duty incurring a spreadover penalty or else a normal duty containing more than one piece of work, depending upon the tradition of the undertaking concerned.

**Spreadover.** The time between signing on at the start of a duty and signing off at the end of it. If the spreadover exceeds an agreed figure (which is usually about 9½ hours), then the duty becomes eligible for extra payment or spreadover penalty/ payment. Such a duty is called a spreadover duty, or a split duty.

**Straight Duty.** This can mean either a duty comprising one piece of work or a duty which is paid through (i.e., all breaks are paid as if they were worked). In this Report the latter meaning should be taken.

**Through Duty.** A duty comprising one piece of work.

## 22. APPENDIX 13 : THE QUESTIONNAIRE CHECK LIST

### Section I. General Information

1. How many garages does this undertaking operate from?
2. Do they all work to the same agreement?
3. Is each garage scheduled separately as far as crews are concerned?
4. If not, please elaborate.
5. Are all crews from one garage or set of garages all scheduled together, or are crew movements restricted within certain groups of routes?  
  
If the latter pertains, please elaborate.
6. Select one garage or group of garages for a more detailed examination.
7. How many relief points are there?  
  
Please name the relief points and state whether they are:
  - (a) a garage
  - (b) a meal break point
  - (c) a start/finish point
  - (d) a signing on/off point
8. Does your undertaking practise 'ranking'? If so, where, and what is the maximum number that can be ranked there at any one time?
9. Please explain your canteen system, with opening times.
10. Are travelling times allowed (and paid for) between:
  - (a) Relief points and canteens
  - (b) Relief points and signing on/off points?  
Please give other relevant details.
11. What size of fleet is operated? Split into OMO and crewed buses.
12. How many staff do you require as:
  - (a) Crews
  - (b) OMOs?
13. Please will you indicate the peakiness of your normal weekday workings?
14. Are the vehicle movements the same every day of the week?

15. How do the weekend services differ from weekdays?
16. Are your working agreements likely to undergo any changes in the foreseeable future? If so, please elaborate, if you are in a position to do so.
17. What staff do you employ to perform crew scheduling operations?
18. How long does it take to draw up a typical new crew schedule?
19. What time elapses between recognizing the need to alter the vehicle timetable and implementing it on the road?
20. How frequently do you make alterations to the crew schedules?
21. Are any major changes in the timetables likely to occur in the near future?
22. Is there any other relevant background information?

## **Section II. Detailed duty structures**

23. How many pieces of work normally make up a daily duty?
24. Please indicate what types of duty you operate, in particular, are spreadover duties operated?
25. Please specify the distinctions between the various classes of duties which are recognized for the purposes of rostering.
26. Are time limitations placed on any of these duties? (e.g., spreadover duties must start at 07.00 and finish before 19.30).
27. Are there limitations on the percentages of the various classes of duties?
28. What differences in duty types occur at weekends?
29. Are there any restrictions on which bus a crew can move to?
30. Please state, where applicable:
  - (a) minimum length of a piece of work
  - (b) maximum length of a piece of work
  - (c) minimum length of a straight duty
  - (d) maximum length of a straight duty
  - (e) guaranteed length of a straight duty
  - (f) minimum length of a meal break
  - (g) maximum length of a meal break
  - (h) minimum amount of work in a spreadover duty
  - (i) maximum amount of work in a spreadover duty
  - (j) minimum allowed spread of a spreadover duty
  - (k) maximum allowed spread of a spreadover duty
  - (l) minimum length of break in a spreadover duty
  - (m) maximum length of break in a spreadover duty
  - (n) guaranteed amount of work in a spreadover duty

31. Are there any other points concerning duty structures which have not been covered in this section?

### **Section III. Payments**

32. Is there a minimum guaranteed payment for a duty?
33. How is overtime assessed?
34. How do you calculate spreadover payments?
35. How do you calculate meal break payments?
36. Are short breaks between buses paid?
37. Please specify signing on and off allowances.
38. Are there any other points concerning daily duty scheduling which have not yet been covered?

### **Section IV. Rostering**

39. Please will you explain your rostering system?



## ABSTRACT

**A survey of bus crew scheduling practices:** R D ANDREWS: Department of the Environment, TRRL Report LR 576: Crowthorne, 1973 (Transport and Road Research Laboratory). A survey of the crew scheduling practices within the bus industry was conducted. Eleven undertakings in England and Scotland participated. A wide variety of fundamentally different practices was exposed.

Users of computer methods for constructing crew schedules are most likely to be large operators of intensive urban services. In addition to this use as an operational tool, a very flexible program could find wide use, for example, in estimating the cost of altering scheduling rules.

Apart from SELNEC PTE, no potential users of the RAE bus crew scheduling program were identified in the course of the survey.

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