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DEVELOPING A RESEARCH BASE FOR THE PLANNING OF TOURISM IN THE REGIONS OF SCOTLAND.

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Roger Carter
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Preface

Objective

The objective of this study is to examine the nature and methodology of basic research required for the development of strategic plans for tourism in the regions of Scotland.

Format of Thesis

Part 1 establishes the background for the consideration of research requirements for strategic tourism planning in the regions of Scotland.

As a general introduction, Chapter 1 outlines the various aspects of basic tourism research, and shows how they relate to each other and to other parts of the strategic planning and development process which fall outside the scope of this study. As a necessary basis for defining in subsequent chapters the nature of the research required for evaluating the impacts of tourism, a brief examination is made of the types of objectives which are likely to be generated for regional tourism planning by the various organisations which would be involved.

Chapter 2 provides a critical analysis of existing studies which are of significance as regards the design of tourism research programmes or the methodology of the individual aspects of research defined in Chapter 1. The lessons derived from these previous studies play an important part in the design of the proposals for future research detailed in Chapter 5.

Part 2 is a reasoned account of the formulation and testing of a methodology for one of the initial elements of such a programme - namely, an analysis of the existing patterns of demand.

Chapter/

Chapter 3 is concerned with the development and application of the methodology of the survey work and Chapter 4 illustrates how the demand data collected was analysed to meet two separate requirements of the planning process - firstly, for demand data which can be incorporated into supply-demand assessments; secondly, to obtain an understanding of the present nature and patterns of tourism, as one basis for assessing future demands. In both chapters the relative merits and weaknesses of the work are outlined and conclusions drawn for future work.

Developing the conclusions of Parts 1 and 2, Part 3 (Chapter 5) formulates proposals for future work on each aspect of research required to meet the needs of regional tourism planning studies within Scotland. Some of the proposals are illustrated by reference to studies being sponsored by the Scottish Tourist Board as part of its current long-term research and planning programme. These are studies in which, through the author's involvement in their design, there has been an attempt to incorporate the principles recommended in this Chapter.

Definition

Tourism is here taken to be synonymous with holiday-making involving a stay away from home. It thus forms one part of the wider field of recreation, and in terms of resource use, tourism thus defined has much in common with recreation from home. Studies concerned with resources for day recreation may therefore have a direct relevance to tourism, while many other studies, particularly in North America, have covered the whole field of recreation including tourism, without attempting to draw what may sometimes prove to be a slightly artificial dividing line.

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Developing a research base for the planning of tourism in the regions of Scotland

Summary

This study examines the nature and methodology of basic research required for the development of strategic plans for tourism in the regions of Scotland.

The first part of the study forms a broad introduction. The components of basic tourism research are defined and placed within the overall context of the tourism planning and development process. Since the nature of research required is in part dependent on the objectives of the organisations involved in the planning process, a brief appraisal of those organisations, their functions and aims is undertaken.

The final part of the introduction is a review of the methodology of the most important previous research studies falling within the scope of this work, as a basis for identifying methods which might be satisfactory within the Scottish context.

In the second part of the study, a methodology is developed and tested for one particular aspect of tourism research - the survey and analysis of existing patterns of demand. A full scale survey was mounted for the Highlands and Islands region, adopting the cordon survey method, which had been used very little in tourism research prior to the start of this study. The method and justification for it are explained and evaluated critically. The conclusion drawn is that, with modifications, the method can have outstanding advantages and should be adopted for planning research of this type wherever resources permit.

Consideration is then given to the analysis of such data, which, it is suggested, should have two principal purposes/

purposes - to obtain a picture of the balance between supply and demand for tourism resources and for basic community infrastructure used by tourists; and to obtain an understanding of the factors which caused the patterns of demand, as a basis for forecasting the way in which the future changes may occur.

Analysis to achieve these two ends is illustrated by use of the data obtained relating to tourism in the Highlands and Islands. In demonstrating an assessment of the balance between supply and demand for daytime activities, three particular aspects are examined: visiting places of interest, golf, and touring by car. To obtain an understanding of the factors underlying the patterns of tourism, extensive analysis of the relationships between variables is undertaken.

Finally, on the basis of the research reviewed and the work undertaken relating to the Highlands and Islands, proposals are put forward regarding the nature and methodology of future programmes of tourism research for planning at a regional level. Each of the aspects of research, as defined in the introduction, is considered in turn, with proposals being illustrated where appropriate by reference to studies currently being carried out in Scotland. Guidance is given as to the way in which the outputs from each individual piece of research must link together to provide inputs required for strategy generation.

Part 1 Background

Chapter 1

The Planning and Development Context for Tourism Research

1.1 Tourism research in the tourism planning and development process

In 1965, British people took 30 million holidays of four nights or more in Britain, spending a total of £460 million. In 1973 the figure had risen to 40.5 million holidays involving an expenditure of £980 million.(1) In the same period, overseas visitors to Britain increased in number from 3.6 million to 7.7 million, and their expenditure from £193 million to £700 million.

These are an indication of the by now well known phenomenon of the boom in British tourism, the effects of which have been felt throughout the country. With this growth has come a marked increase in awareness of tourism and an accompanying development of strong attitudes towards it, resulting from its social, economic and environmental impacts.

To these developments there has been a slow, phased response from Government. In Scotland, the first significant measure was the issue by the Scottish Development Department in 1962 of Circular 2/1962 to Local Planning Authorities asking them to prepare proposals for tourism development. In general, the planning authorities responded with a notable lack of enthusiasm. Where such proposals were prepared, they were mostly superficial, carrying little weight in terms of implementation. This was partly because the planning authorities had the resources neither to prepare sound research based plans for tourism, nor to undertake or promote the implementation of /

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(1) Estimates based on British Tourist Authority figures.

of the proposals. The necessary research base was entirely absent. Equally there was the fact that tourism cannot be planned effectively at the level of the individual county.

The first step towards a more satisfactory approach to the planning and development of tourism within Scotland occurred as a result of the establishment in 1965 of the Highlands and Islands Development Board, which saw as part of its remit the need to promote tourism, and prepare plans accordingly, for the whole of its region.

Next, in 1966, the Government made available to the voluntary Scottish Tourist Board a grant of £75,000 for a three-year programme of research and planning studies. In 1968, the Countryside Commission for Scotland was established, its remit to promote access (for recreation) to and conservation of the countryside giving it a potentially important role in both planning and development of tourism. In 1969, the Scottish Tourist Board was established as a statutory agency, financed by the Government.

A further important step in the evolution of the machinery for the planning and development of tourism in the regions of Scotland will be the establishment in 1975 of the Regional Authorities, with both structure planning and tourism policy making functions.

Thus by 1975 a vastly improved organisational structure will be available to plan and develop tourism in Scotland. If the opportunities thus presented to prepare effective plans for tourism are grasped, there will develop a need for a substantial amount of basic tourism research, which should be an integral part of the /

the planning and development process. The nature of, and methodology for, such research is the subject matter of this thesis.

It is not part of this study to examine the methodology of other aspects of the planning and development process. However, it is necessary to consider these other aspects in broad terms, in order to define the role which research must play in the process; this in turn helps to establish the nature of certain aspects of the research requirements.

Stated very simply, the main elements of the research and development process are as shown in Figure 1.1. The subject matter of this thesis falls within the box labelled 'Basic Research'. Within this area, the study is concerned with research directly related to tourism; this is elaborated in Figure 1.2, which illustrates inputs to the strategy generation process.

This diagram also shows the relationship between the elements covered by this study and the other inputs to strategy generation. The key elements covered are as follows:

1. an assessment of the existing demand for tourism in a region, to provide:

(a) an understanding of the region's present tourism market, as an input into forecasting,

(b) the patterns of demand within the region for:

- accommodation and catering,
- day and evening activities,
- transportation,
- other /

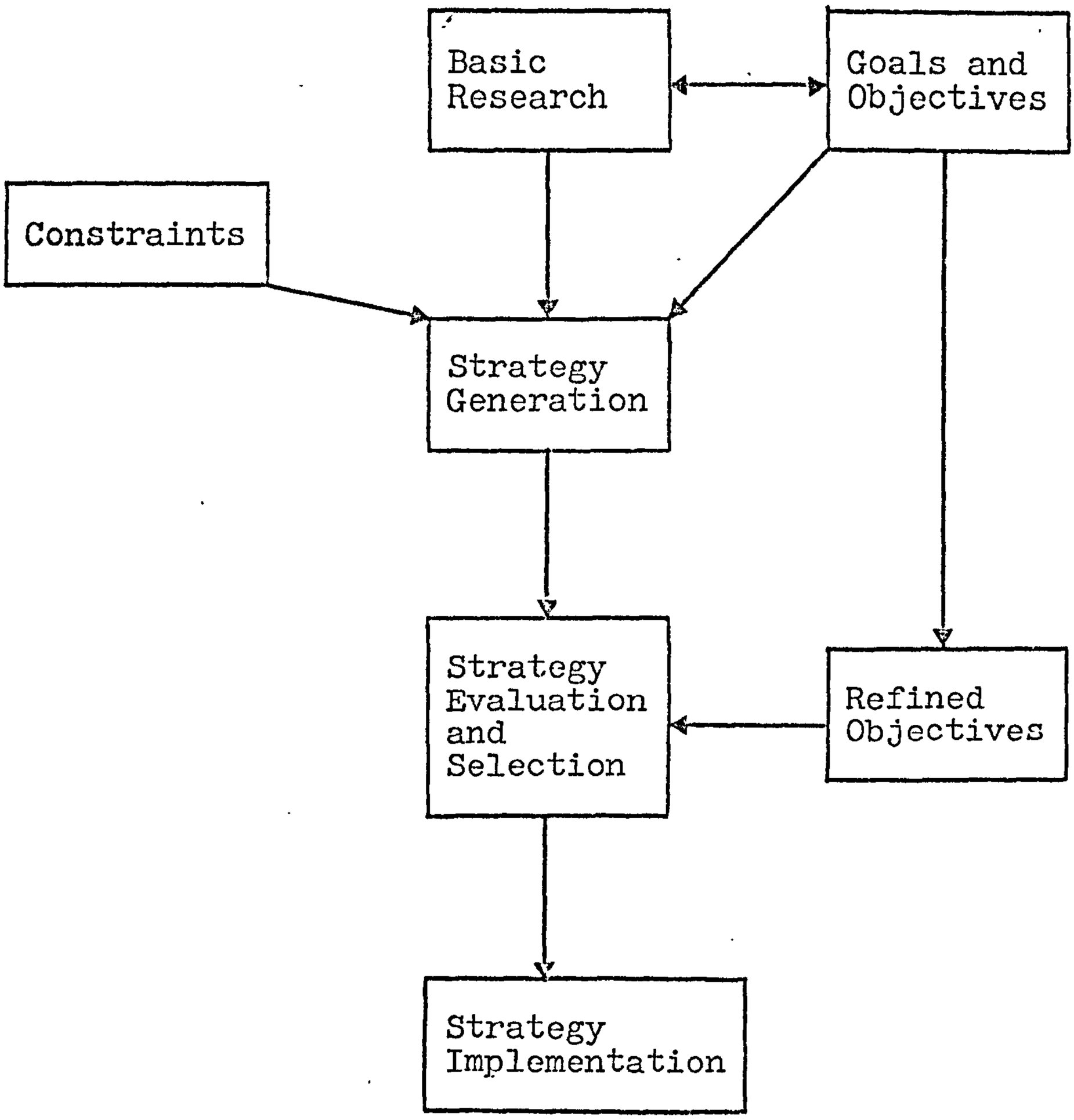

Figure 1.1

Simplified Model of Tourism Planning and Development Process

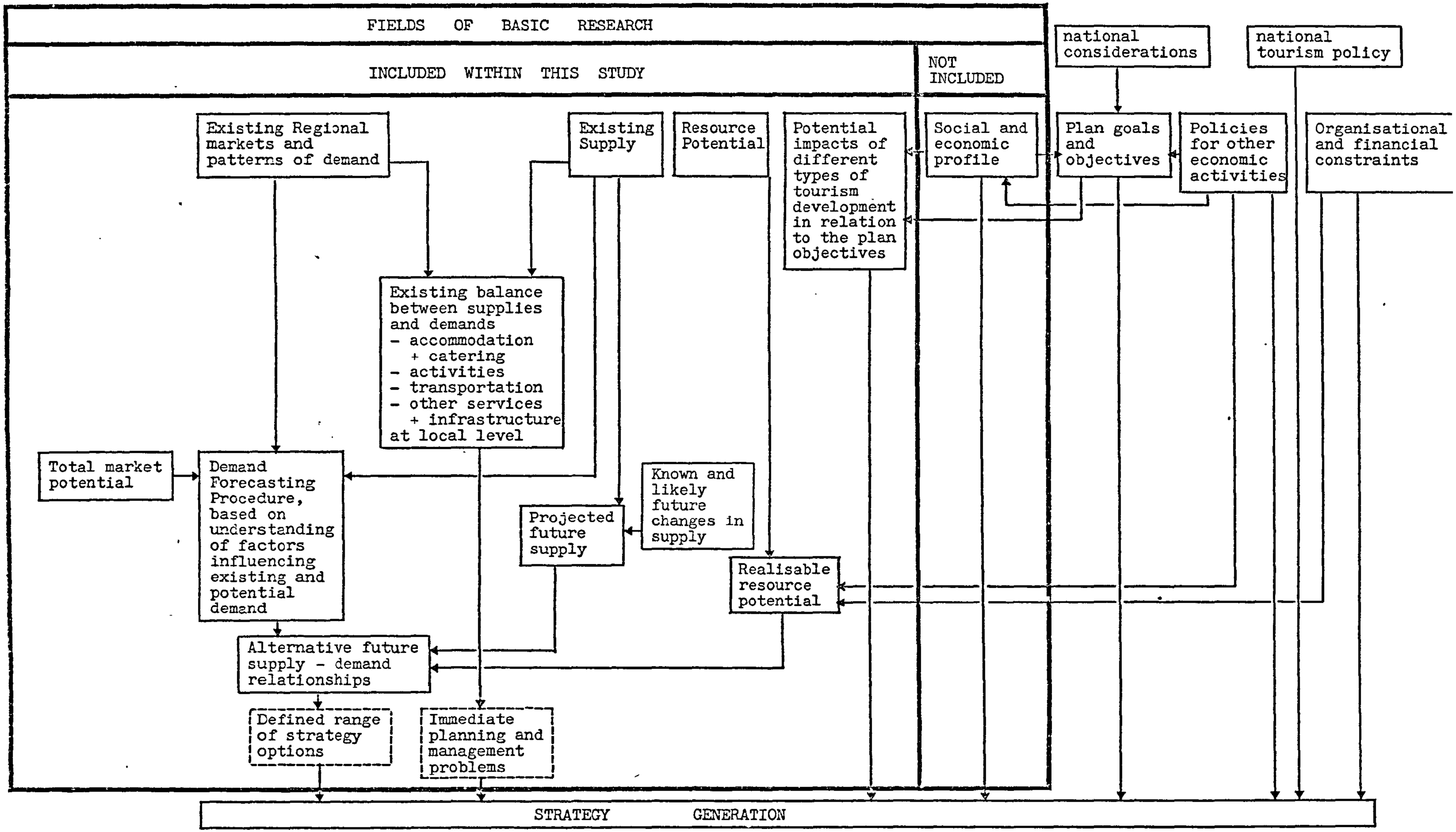

Fig 1.2 Simplified Model of Inputs To Strategy Generation

outcome of research

- other services and infrastructures(1)

2. Analysis of the current patterns of supply of resources and facilities to meet these demands.

3. Calculation of the relationship at a local level between demand levels by type, as established in 1 (b), and corresponding supply, from 2, as a basis for defining immediate tourism management problems; this requires that demand and supply be expressed in comparable units.

4. Development of a procedure for forecasting of demand, based on an understanding of the factors which may influence demand in the future - in particular:

(a) social, economic and technological changes
(b) changes in tourism supply
(c) policies adopted with respect to marketing and information.

Whilst past forecasting studies have attempted to take into account changes of the former types, few have considered the possible effects of alternative marketing and development policies. One reason for this is that very little is known about the way in which such policies may affect demand. However, since planning is concerned with devising future actions to achieve desired ends, knowledge of the extent to which marketing and development may be able to influence demand is essential.

The /

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(1) Any meaningful tourism plans must incorporate consideration of demands on and supply of certain services and facilities which may not be classified as being primarily for tourists. These may be divided into two categories:

(a) public services such as electricity, sewerage, water and health; roads and transportation might also be included under this heading if they are not considered as tourist facilities in their own right,

(b) commercial operations which service the direct tourist outlet - e.g. wholesaling, agriculture, laundry, etc.

The understanding necessary for developing a forecasting procedure must be derived from studies of the existing market (as in 1(a)) and of the total potential market[1]; and may be expressed in the form of a simulation model.

5. Assessment of resource potential either for individual tourist activities or for combinations of activities - taking into account possible constraints on the use and development of the resource.

6. Analysis of the alternative future supply - demand relationships; the forecasting procedure should be used to test the effect of variations in the factors outlined in 4. on the volume, type and distribution of demand, and hence on the supply-demand balance. This will show firstly the possible range of pressures which will have to be accommodated within the strategy, because they will result from factors beyond the control of organisations involved in tourism planning; secondly, the alternative ways in which demand might be influenced by the actions of these organisations - hence the range of strategy options.

7. Analysis of potential impacts of different types of tourism development, in relation to the plan objectives. The nature of this research will obviously be dependant on the type of objectives adopted, a subject discussed further in Section 1.3.

Research information on the likely impacts of different types of tourism development is required not only to guide strategy generation, but also to provide criteria for the evaluation and selection of strategies.

Discussion /

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(1) throughout this thesis analysis of potential markets is discussed in sections dealing with the forecasting procedure.

Discussion in subsequent chapters of past tourism research and of future research requirements for regional planning is related as far as possible to the categories defined above.

1.2 Other aspects of the tourism planning and development process

Given the limited resources of a study such as this, it has been necessary to confine attention solely to basic tourism research. It follows that there are other important aspects of the tourism planning and development process which are not considered, as follows:

(a) The establishment of goals and objectives

In any formal planning exercise, the establishment of goals and objectives is virtually essential for efficient strategy generation and evaluation. The alternative of relying on implicit objectives, as well as being conceptually less satisfactory, is difficult to operate in any situation where a plan has to meet the requirements of more than one organisation. Some consideration is given later in this chapter to the possible types of objectives which the Scottish organisations involved in tourism planning and development may have. However, it cannot be for this study to establish precise objectives - it is essentially for the organisations themselves to do this, possibly after some form of consultation or participation.

(b) Analysis of the social and economic profile of the region

If one objective for tourism is to promote economic and social development, tourism planning studies must consider the existing and projected future social and economic profile of the region as a basis for determining problems and opportunities, to which planning objectives will be related. The profile must, as a matter of course, include an account of the part which tourism plays in the economic and social life of the region. It should also reveal /

reveal constraints, particularly relating to manpower. This type of research should be a basic and integral part of all planning activities.

(c) Assimilation of policies with respect to other areas of economic activity

These policies must be taken into account at a number of levels. Firstly, in determining the role which tourism should play in the life of the region. Secondly, in terms of their likely direct impact on the existing and potential supply of resources and facilities for tourism. Thirdly, in their likely impact on the attractiveness of particular areas, which might in turn lead to changes in tourism demand.

(d) National policies for tourism

National policies for tourism are required to ensure that policies for the different regions are in harmony and together meet the national objectives for tourism. There must be a close interrelationship between strategy development at the national and regional levels.

(e) Analysis of the organisational and financial constraints on planning and implementation of policy

It is necessary here to know:

- whether existing organisations or persons jointly have the powers to take the actions likely to be required to achieve desired ends,
- if such powers are available, whether the relevant organisations or persons are willing and able to co-operate with each other in developing co-ordinated policy, and whether they are likely to have the commitment and finance to take the required action,
- if the response to either of the previous factors is negative, what type of remedial action might be possible?

As will be seen later in this chapter, many organisations have important powers in the tourism field, and there are potentially major problems in obtaining agreement /

ment and commitment to a joint plan. Even if this is obtained, the finance required from either the public or private sector might not be sufficient.

Organisational and financial constraints are therefore important factors in tourism planning and development in Scotland, and must be taken into account, primarily at the strategy generation stage. Otherwise proposals in the final plan relating either to actions to be taken or to organisational and financial changes required, may prove to be unrealistic.

(f) Generation and evaluation of alternative tourism strategies

These two stages of the planning process are relevant to all aspects of planning, and have been the subject of extensive study and debate. It is well beyond the scope of this study to enter the debate regarding the advantages and disadvantages of the alternative approaches. It must suffice here to make two general observations:

1. the strategy generation process will require a synthesis of all the inputs shown in Figure 1.2. It will be essentially concerned to manipulate the options available in terms of the development of demand and supply, in order to maximise the net benefits in respect of the objectives for the plan.

2. the goals achievement method of evaluating strategies developed primarily by Hill (1968) and first introduced in a modified form into tourism planning in Britain by Travis & Associates (1970), does seem to offer the most rational approach to an aspect of planning such as tourism, where social and environmental issues are potentially important. However, organisational constraints are again important, in that parties to the plan must be able to formulate and commit themselves to objectives and the degree /

degree of importance to be attached to each and this may not be realistic.

(g) Implementation

Implementation will require concerted action by many bodies, and the success of this will depend on how well the organisational and financial constraints have been taken into account in the strategy generation and evaluation stages.

1.3 Organisations and Objectives in Tourism Planning

One aspect of tourism research for planning, as outlined in Section 1.1, is that concerned with the impacts of different types of tourism development, which is required to provide a basis for the evaluation of tourism strategies. Such research must be concerned with impacts in relation to the plan objectives. As a background for consideration in subsequent chapters of the type of impact research required, the main organisations which might potentially be involved in the tourism planning and development process in Scotland are now reviewed to determine the likely nature of their objectives. The review also indicates some of the organisational constraints which may influence what can be achieved in implementation and how it may be achieved.

The organisations may be divided into five groups, each of which is discussed in a subsequent section. The groups are as follows:

- organisations with a statutory strategic planning function: the Local Planning Authorities and the Scottish Office,
- Local Authorities other than those with a strategic planning function,
- statutory government agencies directly concerned with tourism,
- other /

- other statutory agencies, which are indirectly involved in tourism,
- non-statutory bodies.

1.3.1 Authorities with a statutory strategic planning function

Since they are concerned with all aspects of strategic planning, the Scottish Office and the Local Planning Authorities must have the role of placing policies for tourism within the context of overall economic, social and environmental policies, thus giving a broad perspective on the objectives to be achieved through tourism.

(a) The Local Planning Authorities

With the Local Planning Authorities, the broad perspective will be provided primarily through the mechanism of the 'structure plan', required under the Town and Country Planning (Scotland) Act, 1969. Following reorganisation of local government in May 1975, the responsibility for this will belong to the Regional and Island Authorities. Policies for tourism will be one aspect of the structure plan, but it is not clear at the time of writing (May 1974) whether the prime role in preparing these policies will rest with the Planning Departments or the proposed Departments of Recreation and Leisure.

Apart from their planning functions, the new Regional Authorities will have various powers relating to tourism, particularly:

- provision of recreation facilities and accommodation, principally under the Countryside (Scotland) Act, 1967; such provision can include country parks, roadside facilities, informal countryside recreation facilities and caravan/camping sites. They will also be able to provide in urban areas facilities, notably for sport and entertainment, which may be used by tourists.

- tourist /

- tourist promotion and information services;

at the time of writing it is unclear whether the Regional Authorities will be involved in this directly or through regional tourist associations (see Section 1.3.5).

- road planning, building and maintenance.

Regional Authorities will be responsible for all roads, apart from trunk roads.

The Regional Authorities will doubtless require that regional plans for tourism should give detailed consideration to policies in each of these areas.

(b) <u>The Scottish Office</u>

The planning role of the Scottish Office takes two forms. Firstly, the Scottish Development Department is the ultimate authority with respect to local planning matters, and this involves:

i. decisions on development plans prepared by Local Planning Authorities,

ii. responsibility for ensuring the implementation by Local Planning Authorities of Acts and Orders relevant to planning.

iii. judgement on planning decisions where these have been referred to or called in by the Secretary of State.

Secondly, the Scottish Office has, potentially at least, the role of producing policies on national strategic issues - economic policies through the Scottish Economic Planning Department and land use issues through the Scottish Development Department. Policies might be implemented by direct government action, by direction to or influencing of the Local Planning Authorities, or through government agencies, particularly the Scottish Tourist Board, the Countryside Commission for Scotland or the Highlands and Islands Development Board (all described /

described in Section 1.3.3), to which the Scottish Office provides funds. The Scottish Office is therefore in a position to establish broad national objectives - social, economic and environmental - for tourism and to see these incorporated within regional plans for tourism.

The Scottish Office does also play a more direct role in tourism development, particularly through its activities in transportation policy. Most important is SDD's position as trunk road authority, responsible for the planning, development and financing of all trunk roads in Scotland. SDD Roads Division also had considerable influence, through its provision of 75% financial assistance to 'principle road' schemes and 100% assistance to Crofter County road schemes, and through their role in establishing and implementing the standards of road planning and design.

Additionally the Scottish Office is directly responsible for the administration of grants under the Countryside (Scotland) Act, 1967, to Local Authorities. However, decisions are normally made on the advice of the Countryside Commission for Scotland.

Other direct responsibilities of the Scottish Office include policy making in respect of historic buildings and ancient buildings maintained by the Department of the Environment; and the management of some Highland estates by the Department of Agriculture and Fisheries for Scotland.

1.3.2 <u>Local Authorities other than those with strategic planning functions</u>

After the reorganisation of local government, Local Authority powers for the provision of facilities for tourism will be concurrent at regional and district level, including districtsin rural regions which will not have /

have any planning functions. Thus, while the regional authorities will be responsible for the overall strategy, the districts may potentially play an important role in the provision of facilities proposed by a strategy. The dividing line between provision by the region and provision by the district is perhaps something which the strategy itself may have to consider. Given a role in provision, districts may require to be involved in the tourism planning process.

1.3.3 The statutory government agencies directly concerned with tourism

(a) The Scottish Tourist Board (STB)

This Board was established as a statutory agency(1) (together with similar Boards for Wales and England, and the British Tourist Authority) under the Development of Tourism Act, 1969. The Act does not lay down any true objectives for the Board, only the policies:

(a) to encourage people to visit Scotland and people living in Scotland to take their holidays there.

(b) to encourage the provision and improvement of tourist amenities and facilities in Scotland.

The Act confers on the Board the following duties and functions:

(a) provision of advice to 'any Minister or public body' including local authorities, regarding tourism in Scotland.

(b) provision of grant and loan assistance to hotels and other tourism development projects.

(c) publicity and the provision of information and advisory services.

(d) various other possible functions (research, establishment of advisory committees, etc.) to assist the Board in carrying out the above functions.

Without /

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(1) previously the Scottish Tourist Board had operated primarily on finance from the private sector.

Without any statutory social and economic objectives, the STB could, through its advisory and executive functions, develop tourism indiscriminately, without recourse to research and planning. However, such action is unlikely to commend itself to Government, and the Board, ideally in conjunction with the Scottish Office, must at some stage set economic and social objectives for itself, against which the effects or likely effects of its actions or proposed actions can be measured.

(b) <u>The Countryside Commission for Scotland</u> (CCS)

The Countryside Commission for Scotland was established under the Countryside (Scotland) Act, 1967 with the following objectives:

> "the provision, development and improvement of facilities for the enjoyment of the Scottish countryside, and for the conservation and enhancement of the natural beauty and amenity thereof",

whilst having regard to:

> "the need for the development of recreational and tourist facilities and for the balanced economic and social development of the countryside".

Since its countryside is one of Scotland's primary tourism resources, and since in many areas tourism is a major user of and pressure on the countryside, the Commission has an important role to play in tourism planning and development.

The Commission's duties under the Act include the following:

- "to keep under review all matters relating to the provision, development and improvement of facilities for the enjoyment of the countryside, the conservation and enhancement of its natural beauty and amenity, and the need to secure public access to the countryside for the purposes of open-air recreation; and to consult with /

with such local planning authorities and other bodies as appear to the Commission to have an interest in those matters".

The functions of the Commission under the Act which can be of greatest importance in a tourism strategy are:

i. "experimental" projects, which the Commission may carry out on its own behalf,

ii. recommendations to the Secretary of State regarding grant-aid to local authorities for countryside projects, including country parks, picnic sites, caravan and camping sites. Types of accommodation other than caravan and camping sites could be grant-aided under the Act, but this has only occurred with one youth hostel,

iii. grants to private organisations "carrying on or proposing to carry on any project approved by the Secretary of State for the purposes of this section of the Act which in the opinion of the Commission is conducive to the attainment of any of the purposes of this Act". In these cases the Commission must be satisfied that "it is preferable that this project should be carried out by a person other than a public body",

iv. provision of publicity and information services relating to the countryside,

v. recommendations to the Secretary of State for the designation of Areas of Special Planning Control,

vi. promotion through local planning authorities of access to open land for open-air recreation, by means of access agreements or access orders. The Commission may request a local planning authority to make such an agreeement and, if this is not done, it may recommend to the Secretary of State that he direct the authority to do so or make the order himself,

vii. promotion of the provision of long distance routes for walking, cycling or riding, by means of recommendations to the Secretary of State, who may pay some or all the costs of provision and maintenance of such routes.

These /

These functions (and those of local authorities under the Act) apply over the greater part of Scotland - 98% of the country is designated as "countryside" for the purposes of the Act; they are therefore relevant in tourism planning in every region of Scotland.

(c) <u>The Highlands and Islands Development Board</u> (HIDB)

The HIDB was established under the Highlands and Islands Development (Scotland) Act, 1965 with the overall goal of:

> "assisting the people of the Highlands and Islands to improve their economic and social conditions and enabling the Highlands and Islands to play a more effective part in the economic and social development of the nation."

One of the central duties of the Board is therefore:

> "to keep under review all matters relating to the economic and social well-being and development of the Highlands and Islands."

The Board thus has a broad social and economic remit, within which a range of more specific objectives could be developed. In practice, the Board has not developed such objectives formally, and it has concentrated heavily on increasing employment in the region as a general measure to increasing prosperity.

The functions of the Board which are relevant to a tourism strategy are to:

i. advise the Secretary of State on matters relating to the Board's functions, and to submit proposals to him when necessary.

ii. provide grant and loan assistance to any project which would contribute to the achievement of the Board's goal.

iii. /

iii. promote development through publicity.

iv. provide advisory services to businesses.

v. carry on business itself.

vi. "engage in such other activity as the Board may deem expedient for the introduction, operation or development, whether by the Board or other persons, of industrial, commercial and other enterprises in the Highlands and Islands."

In practice, HIDB's Tourism Division undertakes much the same activities for the Highlands and Islands region as the STB undertakes for Scotland as a whole, except that its grant-aid powers are wider than the STB's and it has been able to play a more positive executive role by promoting hotel development on the Western Isles and by packaging holidays, principally for off-peak periods. With its extensive functions, the HIDB plays, and will continue to play, an important role in planning for tourism within its region.

1.3.4 Other Statutory Authorities

There are a number of other statutory agencies whose primary role is not directly related to tourism, but who can nevertheless play a significant part in tourism development, primarily through the provision of, or impact on, tourism resources and facilities.

These include the Forestry Commission, the Water Authorities and the Electricity Boards, whose concern will generally be with the use for tourism of resources which they have under their control (with tourism as either the primary or the secondary use), or in controlling and directing the impact of tourism where it impinges on their main functions. In the latter respect, these bodies may wish to introduce into the planning process objectives relating to the impact of tourism on other fields of activity.

Also /

Also under this heading come bodies such as the Crofters Commission, the Scottish Sports Council and the Scottish Arts Council, each of which can influence the development of resources which may cater to some extent for tourism.

1.3.5 Non-Statutory Bodies

There are many non-statutory bodies with a wide range of roles and interests, who should be involved to some extent in the tourism planning process. They include promotional organisations, amenity groups, and persons or bodies associated with the provision and management of tourism resources and facilities.

One group of bodies with a relatively wide interest is the Regional Tourist Associations, established on the initiative and with the assistance of the Scottish Tourist Board, since it became a statutory agency in 1969. The Board divided the country into seven regions (Map 1.1) and by mid-1973 had established Associations in six of these. In the seventh region, the Highlands and Islands, the Tourism Division of the Highlands and Islands Development Board is accepted as the de facto tourist organisation. In most regions, the Local Authorities have provided the majority of the finance for the Associations, particularly the costs of administration and publicity, All the Associations have a membership scheme for the 'trade'.

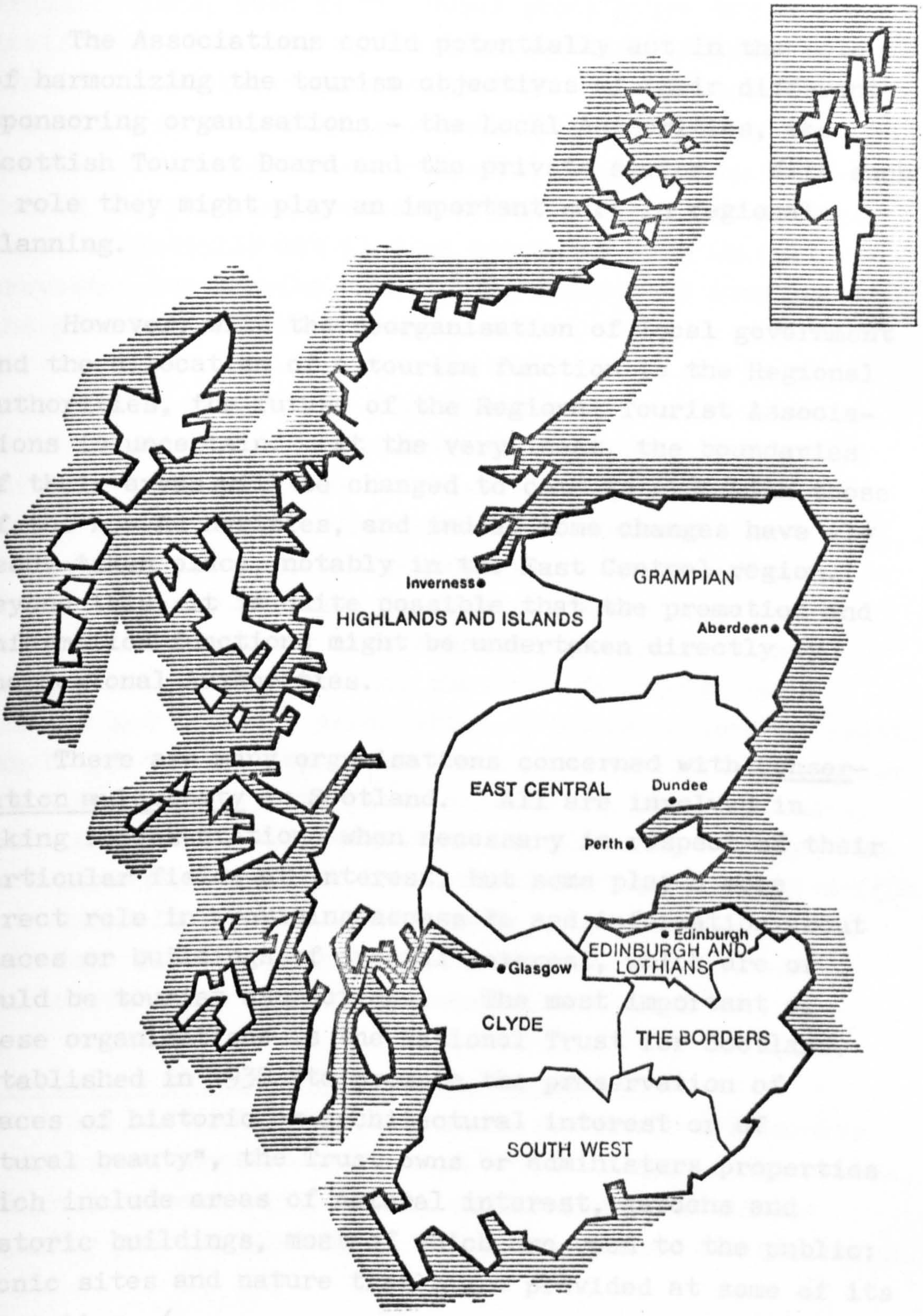
The remit of the Associations has not been seen in terms of any social and economic objectives, but rather in terms of functions specified for them by the Local Authorities and by the Scottish Tourist Board. The principle functions are thus:

(a) publicity

(b) provision of information services

(c) /

Map 1.1 Scottish Tourist Board regions



(c) promotion, through advice and persuasion, of the provision of facilities for tourists by Local Authorities, statutory organisations and private organisations.

The Associations could potentially act in the role of harmonizing the tourism objectives of their different sponsoring organisations - the Local Authorities, the Scottish Tourist Board and the private sector. With such a role they might play an important part in regional planning.

However, with the reorganisation of local government and the allocation of a tourism function to the Regional Authorities, the future of the Regional Tourist Associations is uncertain. At the very least, the boundaries of their areas will be changed to come in line with those of the new Authorities, and indeed some changes have already taken place, notably in the East Central region. Beyond this, it is quite possible that the promotion and information functions might be undertaken directly by the Regional Authorities.

There are many organisations concerned with conservation and amenity in Scotland. All are involved in making representations when necessary in respect of their particular fields of interest, but some play a more direct role in providing access to and information about places or buildings of special interest, which are or could be tourist attractions. The most important of these organisations is the National Trust for Scotland. Established in 1930 "to promote the preservation of places of historic or architectural interest or of natural beauty", the Trust owns or administers properties which include areas of natural interest, gardens and historic buildings, most of which are open to the public; picnic sites and nature trails are provided at some of its properties, /

properties, and these include some important interpretation centres.

In addition to the Trust, there are several other organisations, such as the Royal Society for the Protection of Birds and the Scottish Wildlife Trust, which provide facilities which are heavily used by tourists. Whilst it is obviously important that all relevant amenity and conservation groups should be consulted during the planning process, organisations such as these which potentially may play an important part in the provision for tourism, must be more directly involved in the planning and development process.

Finally, there are many persons and bodies who are, or might potentially be, involved in or concerned with the provision for tourism, primarily for commercial reasons. These include the individual landowner, hotelier, golf club etc.; and the organisations which represent them - e.g. the Scottish Landowners Federation, the Scottish Recreational Land Association, the National Farmers Union for Scotland, the British Hotels, Restaurants and Caterers Association. These private interests can be of crucial importance to the success of any tourism planning strategy, and their objectives, plans and ambitions must be considered within the planning and development process. As with the 'other' statutory organisations considered in Section 1.3.4, these interests may well introduce into the planning process the need to relate tourism to other fields of economic activity.

Conclusions on organisations and objectives

Thus, planning for tourism in Scotland must involve a variety of organisations with a wide range of objectives, and an important and possibly difficult aspect of the planning process must be to agree the composite objectives to /

to be achieved. The organisations which will be centrally involved in regional planning for tourism in the future will undoubtedly be the Scottish Tourist Board, the Countryside Commission for Scotland and the Regional Authorities, and, in the Crofting Counties, the Highlands and Islands Development Board. The STB and the Regional Authorities (and the HIDB for its area) should undoubtedly share a range of objectives concerned with the social and economic impact of tourism on residents of the region - e.g. the role of tourism in providing employment, reducing migration, raising incomes, maintaining or improving local infrastructure and services (e.g. transportation, recreation facilities, health services) etc. The CCS, with its duty to have regard to "the balanced economic and social development of the countryside" should not have difficulty in agreeing to the adoption of objectives of this type.

The STB would probably be required to input certain national economic objectives concerned with, for example, the balance of payments, or the retention of money within the Scottish economy.

As Young (1973) has pointed out, this is potentially an area where problems may arise: "often, the best interests of the region and the national coincide; but sometimes they do not and the region suffers as a result", because too much weight is put on national benefits which are easily measured and understood. Thus, while the Regional Authorities and the CCS might agree to the adoption of such objectives, they should probably pay close regard to the weight to be attached to them.

Just as the STB may wish to introduce certain national tourism objectives, so the Regional Authorities and the HIDB may have special objectives concerned with the relationship between tourism and other areas of economic activity.

In /

In considering any particular region, the CCS alone has an accepted social obligation to promote the provision of facilities for recreation in the countryside for British people from outwith that region. Insofar as this may lead to tourism development having beneficial consequences for the inhabitants of the region, this is likely to be an objective acceptable to both the STB and the Regional Authorities. Indeed it could justifiably be argued that the STB should have a similar social objective - namely to provide appropriate holiday opportunities to satisfy the holiday <u>needs</u> of the Scottish or (more questionably) British people.

The CCS and the Regional Authorities should share objectives concerned with the conservation of the countryside. Whilst these objectives may not be a <u>primary</u> goal of the STB, they should be acceptable to the Board as objectives for regional planning, since they are concerned with the conservation of Scotland's primary tourism resource. Indeed it might well be Board <u>policy</u> for the purposes of tourism development to promote conservation over a much wider field - e.g. architectural conservation, conservation of the Gaelic language and culture.

It should thus be possible to achieve broad agreement between the main agencies on a wide spectrum of social, economic and environmental objectives for tourism policy. To these may need to be added objectives relating to the aims of the other organisations discussed in this Section, since it may be fundamental for plan implementation that such objectives are taken into account. The range of the objectives is the essential point which tourism research must take into account in providing criteria for the generation and evaluation of strategies.

Whilst /

Whilst it may be relatively straightforward for the organisations to decide on the nature of the composite objectives to be adopted in planning for tourism it may, as indicated above, be more difficult for them to agree on the relative importance to be attached to each; such agreement, be it explicit or implicit, will be necessary at the stage of strategy evaluation. The Scottish Office, with its overview of economic and physical planning and its financial control of STB and CCS, may have to act as arbiter where differences arise.

Chapter 2

Previous Tourism Research relevant to Tourism Planning at the Regional Level

2.1 The purpose of this chapter is to review previous studies in order to assess the development of methodologies within each of the aspects of tourism research for regional planning, as outlined in Chapter 1. The aim has not been a comprehensive examination of all the existing tourism research, but a critical account of research which has made an important contribution to the development of methodology.

As far as possible, studies have been grouped according to the aspect of research covered. However, a number of studies have covered more than one aspect. Programmes of research, which have included all or most of the aspects, are therefore considered as the first part of the review (Section 2.2). No such programme has been undertaken in Britain(1) and the cases examined here are drawn entirely from North America.

This is followed by a section (Section 2.3) on tourism planning studies in Great Britain and Ireland. These have been more limited in their basic tourism research than the North American programmes, but they have nevertheless usually attempted to cover various aspects, particularly existing supply and/or demand, and, to a lesser extent, potential resources.

Thereafter, studies relating to each aspect of tourism research are considered, as follows:

- research /

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(1) One such programme is currently under way at the Scottish Tourist Board, to which reference will be made in Chapter 5.

- research on the existing market and patterns of demand within regions (Section 2.4),
- assessment of the current supply of tourism resources and facilities (Section 2.5),
- development of a demand forecasting procedure and analysis of future demand-supply relationships (Section 2.6),
- assessment of potential resources (Section 2.7),
- analysis of potential impacts of differenttypes of tourism development (Section 2.8).

Except in the case of research on the existing market and patterns of demand, it is necessary to refer to North American research for some of the important methodological developments.

2.2 Research Programmes

The most significant attempts in this field to make a thorough research appraisal, as a basis for strategic planning, derive from North America. Research there has tended to relate to the whole field of outdoor recreation, with little attempt to draw a dividing line in planning between home-based recreation and tourism. This is a reflection of the fact that the functions of the relevant central and local government agencies in those countries (e.g. the US Bureau of Outdoor Recreation) usually relate to outdoor recreation as a whole.

In the United States the major research programme to date is that of the US Outdoor Recreation Resources Review Commission (ORRRC). The commission was established in 1958 and, finding an almost complete lack of data, instituted a very intensive programme of work, reported in twenty-seven study volumes with a total of four thousand pages. There is no doubt that, as a pioneer effort, this research was of immense value, forming a basis for policy and further research throughout the 1960s. It had the beneficial side-effect of 'legitimising' recreation research as an academic pursuit, a fact which has had important repercussions throughout the world.

Whilst /

Whilst the research was of great value, it also had major weaknesses. These seem to have resulted partly from the fact that this was a pioneer effort and had strict time constraints; but perhaps more fundamentally because the research was largely carried out for its own sake and was not directly related to the requirements of national and regional planning. This resulted in relatively loose co-ordination of the component studies, such that they did not form a wholly integrated research programme. This work was essentially a 'crash' programme, with numerous studies on a wide range of topics being started over a relatively short period of time. There was not apparently, a close liaison between the studies, and only occasionally did one study follow on logically from another. The result is that the studies, whilst they covered a large part of the field and were often of great value in themselves, could not be related in detail to form a full composite picture. The ORRRC research therefore stands as a series of studies, rather than as an integrated programme meeting the full requirements of strategic planning.

The ORRRC (1962a) produced a main report 'Outdoor Recreation for America', but, as a relatively slim and non academic document, it did not provide any detailed summary of the research. Indeed as a result of the factors outlined above, it would have been difficult to make any meaningful summary. However Wolfe (1965) provides a useful guide to and comments on the individual studies, including a table showing which reports relate to which subjects.

Since the late 1950s many outdoor recreation plans have been produced in the United States for individual States and for smaller areas, but up until the mid-1960s the research tended in general to be incomplete and inadequate, with questionable methodologies and poor base data, rarely collected for the purpose. Chubb (1967) has documented these facts and shows that only the plans for California /

California (California Public Outdoor Recreation Plan Committee, 1960) and Wisconsin (Wisconsin Department of Resource Development, 1966) went right through the process of relating supply and demand in a 'reasonably quantitative manner' and predicting future needs in 'fair detail'. Even in these two cases the data were poor, being derived in the first case from visitor counts and in the second from national data of the ORRRC 'with modifications where more refined data for Wisconsin were available'.

Since the mid-1960s the quality of research at this level in the United States has increased considerably, partly as a result of increasing recreation pressures but equally because of the activities of the Bureau of Outdoor Recreation, established in 1962 following the recommendations of the ORRRC.

> "The Bureau of Outdoor Recreation has made it clear that quantitative analysis in which demand is related to supply in a numerical way is essential for statewide recreation plans filed with the Bureau in order to qualify for federal grants under the Land and Water Conservation Act." (Chubb 1967)

The most notable methodological developments occured in Michigan where in late 1963 the Department of Conservation commissioned Michigan State University to undertake the Michigan Outdoor Recreation Demand Study (MORDS) (Milstein and Reid, 1966). Seen initially by the sponsors as essentially a trend projection exercise, this evolved into a pioneer exercise for developing and testing the application to recreation of complex spatial modelling, as a basis for making planning decisions at the State level. It introduced into recreation research the use of systems analysis, 'the process of formulating and solving a set of mathematical equations intended to represent the behaviour of a collection of components which function interdependently' (Milstein and Reid 1966), which had previously been used mainly /

mainly within urban transportation studies. Ellis and van Doren (1966) explain the concept by citing electrical systems as an analogue - the origins of recreation demand (population centres) acting like current sources, with the flow of recreationists like electrical current 'seeing' various paths of differing 'resistance' and so distributing itself across the network in a 'minimum energy' fashion, returning to 'ground' at the destinations.

The study proposed that, as an initial step, a complex recreation system should be broken down into three classes of 'simple components':

- origin areas
- transportation links
- destination areas.

The next step was to formulate two sets of mathematical relationships. The first set was to describe the <u>behaviour</u> of the simple components with one type of formula applying to all the components within the same class - only the numerical values of components within the same class differing. The second set of relationships described the <u>inter connection</u> of the components, utilizing the theory of linear graphs.

Once these two sets of mathematical statements had been established, a set of system equations could be derived, the solution of which provided the end result.

Data relating to campers using the main Michigan State parks in 1964 were used in the MORDS to test and calibrate the model, in terms of the relationship between actual and predicted attendances at the parks. The origin flows used for the model in this case were the <u>actual flows</u>, since it was felt that the origin model needed to be further refined. When comparing actual with predicted attendances, the 'best' version of the model had a root mean square error of 19.8%, which was found to be slightly lower than the range attributable /

butable to random, non-systematic occurences. This model was then used in experiments to test the effects on camper movements of the removal of tolls on the main bridge in the State (the Mackinac Bridge), of increasing population combined with constant participation, of increasing population combined with increasing participation, and of changes in capacity levels.

Although the report on the MORDS only refers to development of a systems model, those working on the study also undertook a comparison of the results obtained by using this model with those obtained by using the more traditional gravity model approach, which involves a standard formula for modelling the inter-action between each pair of origins and destinations. Ellis and van Doren (1966) summarise the results of this work, showing that the systems model had substantially better results.

Thus the MORDS made a fundamental contribution to the development of methodology for forecasting the spatial distribution of demand in such a way that it could be compared with supply. The end product of the study was still, however, a long way from meeting the full needs of the recreation planning process, because:

1. no modelling of demand generation had been undertaken; the use of actual flows meant that there was no way in which new recreation facilities or transportation links could act to increase expressed demand by releasing latent demand. Duffield (1973) argues that the available supply is an important influence on the level of expressed demand (a hypothesis substantiated in part by the survey of leisure activities in North West England (North West Sports Council, 1972)) and that an attempt should be made to model total demand potential within a systems model of the MORDS type, or at least to incorporate a surrogate variable, such as total population.

2. /

2. the model was developed only for camping in State parks and was, therefore, only of limited direct value; whilst the broad structure of a model developed for one activity may be applicable to another, the mathematical modelling of the component 'behaviour' and of the inter-relationship between components will be unique to each activity. In the MORDS case, even the broad structure of the model developed was of limited wider applicability, since it included only State parks as destinations.

3. no procedure for evaluating alternative strategies was considered - indeed the report admits that 'nowhere does anyone appeared to have clarified precisely what it is that an outdoor recreational system should be optimising'; the implication is that evaluation would be essentially intuitive.

The MORDS did, however, achieve its objective of developing an analytical approach and methodology for subsequent use in State planning. Subsequently, the model was developed into a form where it could be readily and easily used by the Recreation Resource Planning Division of the Michigan Department of Conservation.

This work was reported in a three part report, 'Outdoor Recreation Planning in Michigan by a Systems Analysis Approach' (Ellis, 1966 a, 1966 b; Chubb, 1967). It involved:

- respecification of the model to simulate the State recreation system as a whole, rather than the limited system involving only State parks developed in MORDS;
- the development of a computer mapping program to show results visually;
- proposals as to how the model might be used in the full recreation planning process, by dividing recreation activities and resources into 12 groups and formulating separate models for each groups;
- /

- a 'full scale trial' of the approach for one of the proposed twelve groups, boating.

After calibration, the model of 1965 boating activities had a 19.2% standard deviation - i.e. similar to that of the MORDS simulation, but for a more complex model. This was judged to be successful and recommendations were made for extending model development and use to other activity groups. Thus the study produced a boating model which could readily be used in the State planning process, but it did not in fact achieve any improvement with respect to the three main areas of weakness in the MORDS - i.e. the lack of a modelled demand generation component, the absence of calibrated models to cover activities other than the one case study activity and the omission of a rigorous evaluation procedure.

Despite these limitations, the work in Michigan was undoubtedly of major importance in developing a model which was conceptually suitable for dealing with patterns of recreation. It was, however, recognised (Chubb 1967) that the approach developed potentially posed a number of practical problems - the volume and detail of data required, the highly specialised personnel necessary (notably for programming) and the need for access to sophisticated computer facilities. The latter is now less of a problem but the first two factors are still relevant, and can only be overcome by substantial financial resources.

A study carried out at the same time in California (State of California, Department of Parks and Recreation, 1966) avoided such heavy financial commitments but was nevertheless a substantial improvement on earlier studies. On the basis of analysis of existing participation rates from previous household surveys in the Western States of the USA, levels of participation in each metropolitan area were calculated by reference to the socio-economic characteristics of its population, both existing and projected /

projected. Demand from each origin area was then 'distributed' to time zones, by reference to empirical data on recreation travel characteristics. For each destination area, the aggregated demand from all origins was calculated and compared with supply.

The basic approach of this study is open to the criticism of over-simplification, notably because:

(a) to base participation rates for individual towns and areas on data relating to a group of States, albeit with adjustments for socio-economic variations, is of doubtful validity. The rates calculated were neither expressed demand, which would have had to take into account local circumstances (notably supply), nor total (including potential) demand, which would have needed to be based on participation rates in areas of plentiful supply.

(b) it was similarly unjustifiable to apply generalised travel distance characteristics to all areas and to assume that these characteristics would remain constant in the future; and if the concern was with the distances which people were happy to travel, as against the distances which people did travel, then analysis should again have been related to areas of plentiful and well distributed supply.

However, the approach was, at least, systematic and relatively straightforward. Being computer based, it was also easily used and updated.

Research in other States has also improved in sophistication since the early 1960's, but methodology has generally been more akin to that adopted in California than that in Michigan (see the US Bureau of Outdoor Recreation's annual publication 'Outdoor Recreation Research; a Reference Catalogue'). There has also been a trend to collect /

collect 'demand' data for the area under consideration by purpose designed interview surveys, rather than relying on national surveys or other *secondary sources* such as the California study used. For example the Texas Outdoor Recreation Plan Study (Texas Parks and Wildlife Department, 1972) involved two home interview surveys of 7,500 interviews each (each survey looking back over six months, and together covering a full year), and 7,800 on-site interviews. On the basis of this data, a multiple regression model was formulated for predicting levels of future demand. In this study, as in many others, the intention was apparently that proposals should be based simply on demand projections, with no apparent recognition that demand might be influenced by policy.

In Canada recreation research remained at a relatively crude level until the late 1960's, when two major studies were established -

the Canadian Outdoor Recreation Demand Study (CORDS) and the Ontario Tourism and Outdoor Recreation Plan Study (OTORPS). These studies, which both started in 1967, are each of considerable methodological importance, although markedly different in approach.

The CORDS is methodologically significant because it established clearly at the outset, in a study design by Knetch (1967), the framework for a long term integrated programme of research on tourism and outdoor recreation, involving many different components. Knetch's proposed aim was 'an understanding of the relationships inherent in recreation behaviour and the ability to forecast the effects of proposed alternative action.' The design was greatly concerned about the distinction between 'Demand' and 'Participation' - "Participation is dependent upon demand, but it is also dependent on supply. In fact, participation rates seem more likely to vary with the supply /

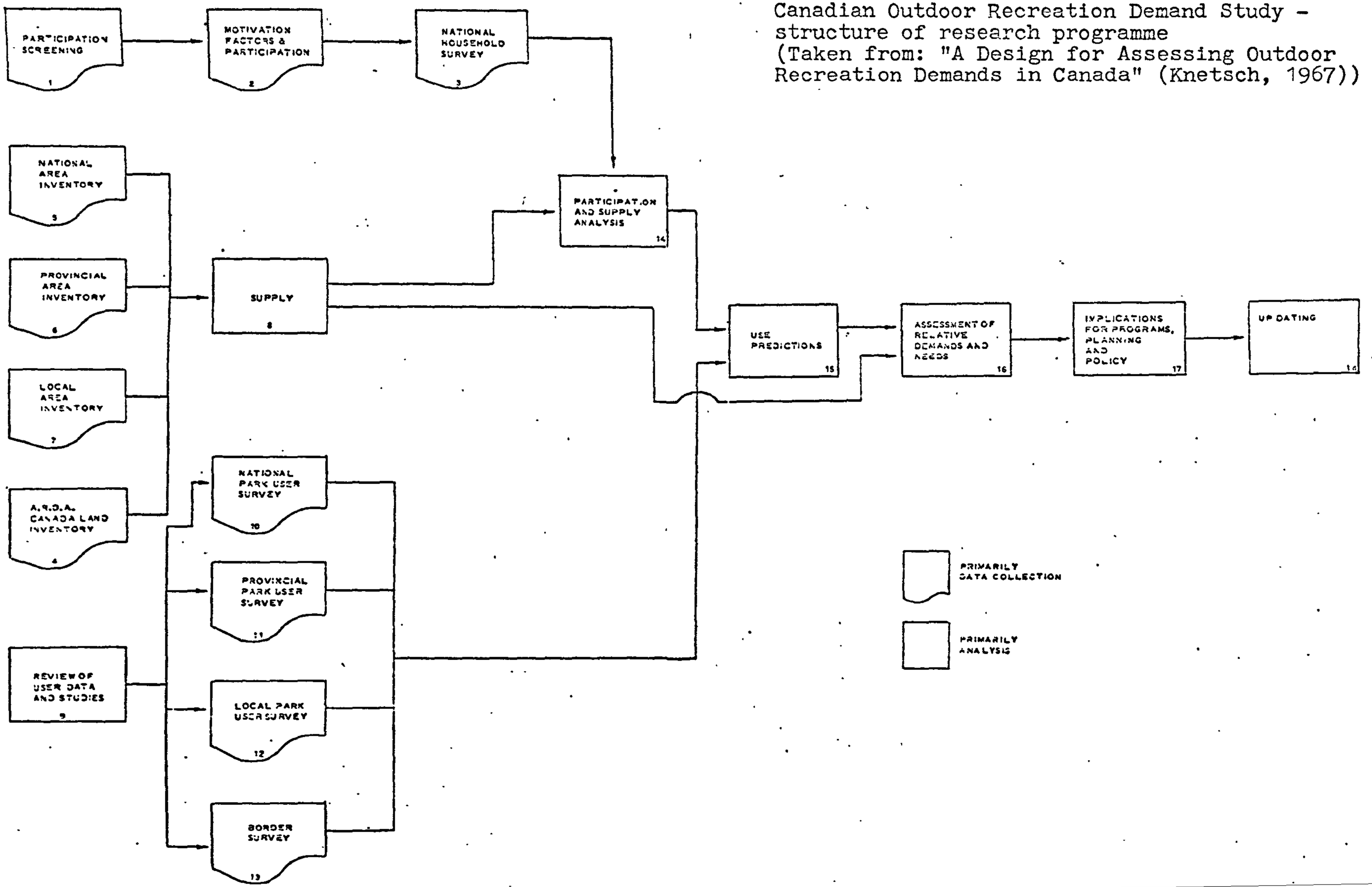


Figure 2.1

Canadian Outdoor Recreation Demand Study - structure of research programme
(Taken from: "A Design for Assessing Outdoor Recreation Demands in Canada" (Knetsch, 1967))

supply of opportunities than with demand factors." Knetch concluded that "The single most serious and most fundamental deficiency in most demand surveys and studies is that they do not provide any means of determining how recreation use will respond to changes in supply." The influence of supply on demand, the importance of which has also been noted by Duffield (1973), was thus to be one of the central considerations of the CORDS.

Knetch proposed that the programme of research, illustrated in Figure 2.1, should commence with a major phase of data collection, consisting of:

- household surveys, to determine recreational habits, these to include a depth motivational survey,
- park and recreational user surveys, to ascertain the nature of use of recreational areas and the characteristics of users,
- border exit surveys, to add the non-resident dimension,
- recreational supply inventories.

This was to be followed by an analysis phase consisting of:

- a participation and supply analysis
- a use prediction analysis
- an assessment of relative demands and relative needs
- the development of policy programs and strategy.

It was envisaged that the research would be kept up-to-date by a continuing data collection and analysis programme.

In practise the study has kept largely to Knetch's design. It was formally divided into three phases, the first being the programme of data collection, as set out by /

by Knetch, which was completed by the end of 1971. Phase II, the methodology and analysis phase, commenced during 1970; this work has kept less closely to the lines advocated by Knetch, perhaps inevitably in view of the difficulties in forecasting the precise format of future analysis. Phase II was not so much terminated as merged into Phase III, the programme of continuing data collection and analysis, which commenced during 1973. It was necessary to start Phase III then because the original participation data, collected in 1968 and 1969, was either out-of-date or inadequate.

Although designed as an integrated programme of research, there has not been any major gathering together of the supply and demand data in published form - perhaps an indication that the research undertaken has not been sufficiently well designed to meet Knetch's original specifications. Thus there is as yet no overall product by which to judge the research and the results of individual surveys stand on their own, together with technical memoranda on the analysis of particular aspects of the subject (see CORDS Technical Committee, 1972a, and 1972b). From the original research design and from research undertaken to date, it appears that the forecasts of 'the effects of proposed alternative actions' which Knetch proposed are to be purely in terms of the degree of satisfaction, and will not consider wider social and economic impacts.

The contrast between the approach of the CORDS and that of the OTORPS is marked. The OTORPS, based on a systems modelling approach, is conceptually more rigorous and satisfying, but has certain practical disadvantages. As in the earlier work in Michigan, the emphasis was placed initially on establishing a model framework, followed by the development of a prototype model for one sector of recreational activity. Not until after the successful operation of the prototype did the study proceed to /

to data collection, on the basis that it was only then that the exact data requirements would be known, and that, in addition, it would enable up-to-date information to be incorporated into the model.

Whilst this approach is conceptually sound, there are two major practical disadvantages:

(a) it was six years after the commencement of the study before the first survey results became available, and seven years before the model is due to be operational (OTORPS Committee, 1972) - such delays in the provision of data to meet the immediate problems of planning might well be unacceptable in other contexts.

(b) the model framework had to be developed on the basis of largely unsubstantiated hypothesis, so that it might be necessary to make major changes at the prototype development stage and possibly also during the calibration of the final model.

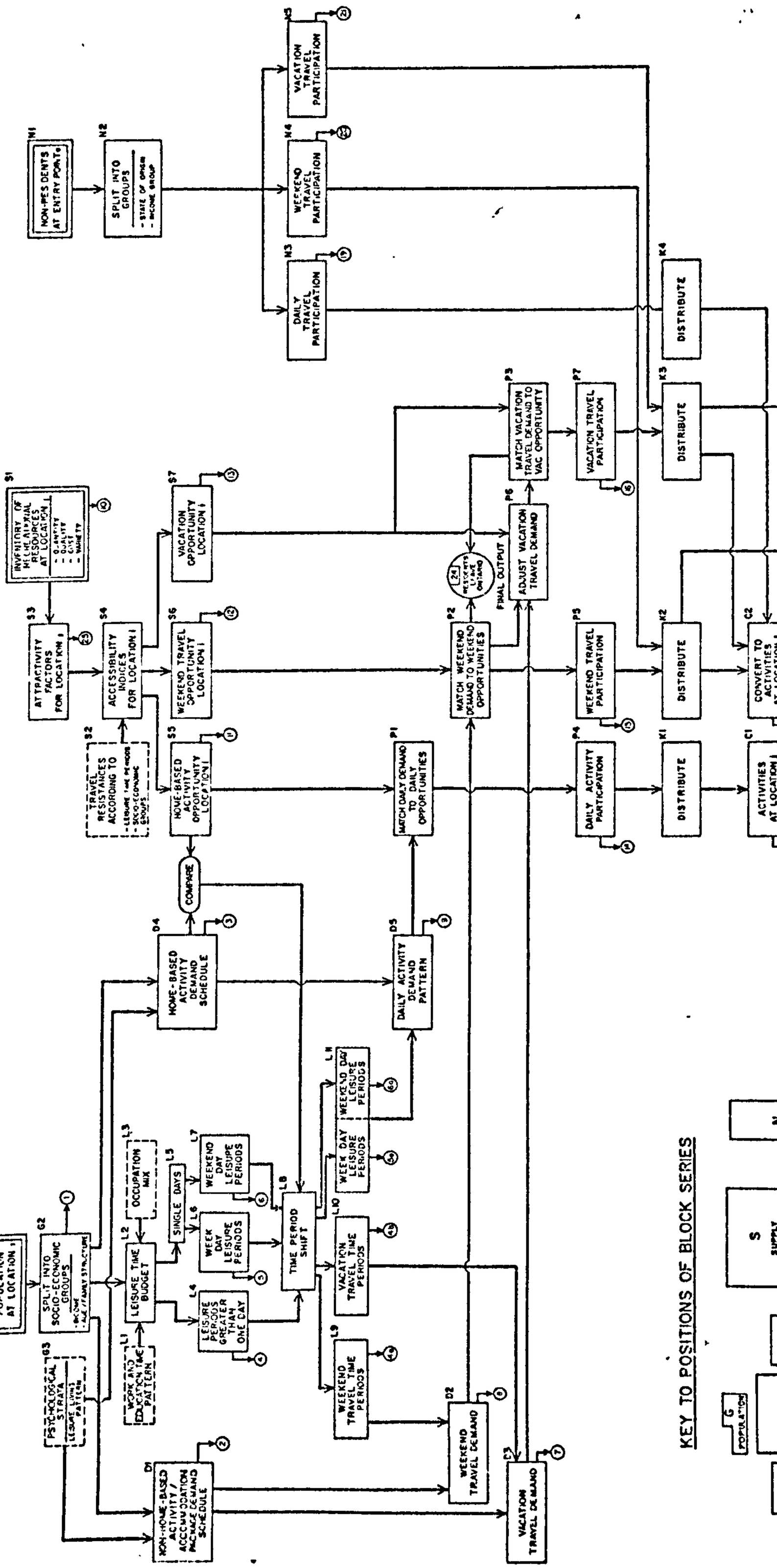
These are disadvantages inherent in the approach and in no way detract from the quality of work undertaken in the OTORPS, which appears to be extremely high. The Study is well documented (see OTORPS Committee, 1972), one of the key documents being 'Tourism and Recreation in Ontario - Concepts of a Systems Model Framework' (Kates, Peat, Marwick & Co., 1970). The term 'systems model' is used here, but it should be noted that the structure of the model is markedly different from the systems model used in Michigan. The overall concept of looking at complex sets of system components is similar, but the model used in Ontario is basically a gravity model, of the type used in urban transportation research - i.e. demand from population centres is established by the model and distributed to destinations on a gravity basis, with an individual equation for each origin-destination pair.

As /

As a gravity model, this model has a number of weaknesses which were not characteristic of the Michigan models. The most important is the loss of interaction between all components in the system; this has a number of consequences, possibly the most important of which is that the simulation of flows between origins and destinations is unable to take into account alternative (including intervening) opportunities. Other consequences include the fact that this system cannot provide, as an output, flows along particular routes. In view of these and other weaknesses in the gravity model, discussed by Duffield (1973), the choice of this type of model for Ontario is somewhat surprising - particularly as Dr J.B. Ellis, who was one of the originators of the network systems model developed in Michigan and who subsequently developed a similar model for Ontario for the Ontario Department of Highways (Ellis, 1967), was one of the team of consultants for OTORPS. It may of course have been that, as a result of his earlier work, Ellis was aware of disadvantages in the network systems model, relative to the gravity model, but such disadvantages are not immediately apparent.

The area in which the OTORPS work has advanced very considerably over any earlier work is in attempting to model the 'demand origin' component. It has been shown that the Michigan models all excluded any modelling of demand generation because it was felt to be too complex to undertake within the available resources; the models were thus designed to accept given levels of demand generation. The OTORPS has tackled the problem and devised a model which conceptually at least seems to meet satisfactorily such issues as the influence of supply on demand and substitution of one activity for another. To do this, the model is of necessity fairly complex, as is illustrated by Figure 2.2, taken from 'Tourism and Recreation in Ontario.'

It /



Kates, Peat, Marwick & Co.

Figure 2.2 Ontario Tourism and Outdoor Recreation Plan Study: Recreation Demand Model (Taken from " Tourism and Outdoor Recreation in Ontario" (Kates, Peat and Marwick, 1970))

It can be seen that the primary demand modelling relates to the resident population of Ontario. Non-resident demand is input to the model as actual or estimated flows, broken down into origin and income groups; estimates would either be on a subjective basis or on an unspecified quantitative basis. The contrast between the carefully quantified and modelled approach to resident demand and the much less precise approach to non-resident demand is not of great concern when demand originates largely within a region. However, in Scotland and its component regions this is not the case; thus in developing a model of this type for such regions, modelling of external demand would need to be incorporated within the model, or, at least, a systematic method of producing the estimates for the external input devised.

The Kates, Peat, Marwick (KPM) report shows a welcome awareness of the place which a model should play in the outdoor recreation planning process:

"We see the recreation system model that will ultimately result from this study as being an important part of the recreation planning process, though it would not actually be the whole process. Initially this process entails the assembly of goals, policies and fundamental data. The model then provides a series of pictures of how the recreation system would perform under the given sets of conditions.

Evaluation and selection completes this process; thus these pictures are assessed and the recreation system selected whose performance best fits in with the overall picture of regional and Provincial development desired."

Figure /

Figure 2.3

Ontario Tourism and Outdoor Recreation Plan Study

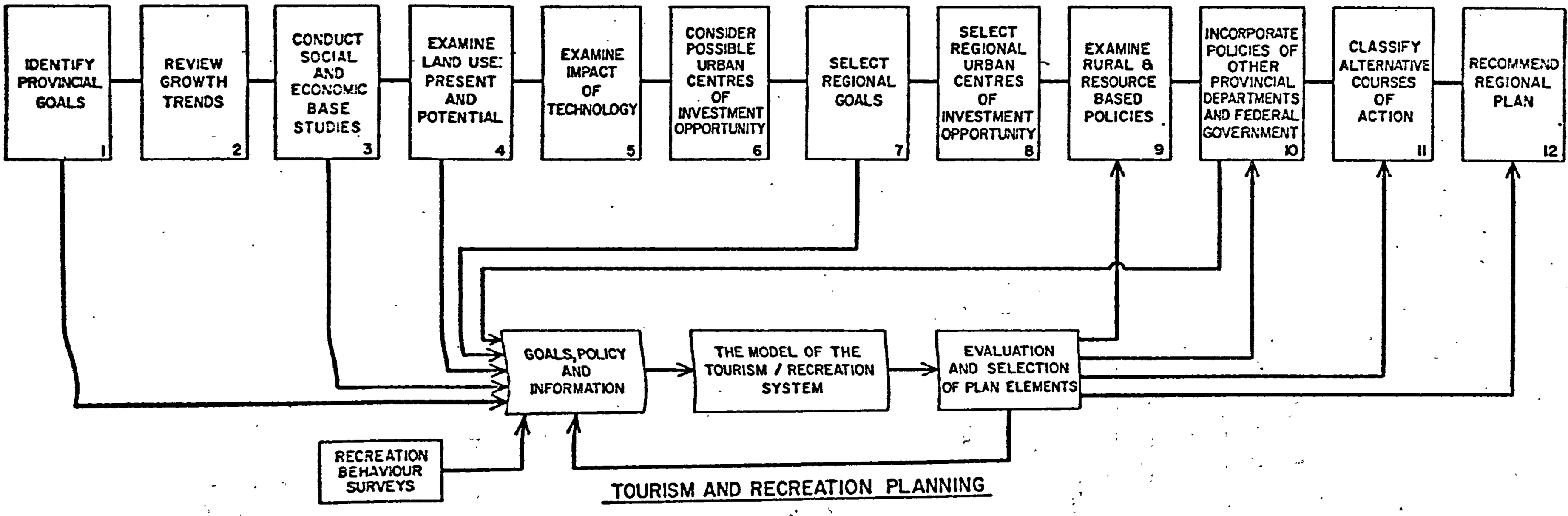
INTEGRATION OF TOURISM AND RECREATION PLANNING WITH REGIONAL DEVELOPMENT PLANNING

(Figure I-2 from "Tourism and Outdoor Recreation in Ontario" (Kates, Peat and Marwick, 1970))

BLOCKS 1 - 12

APPROACH TO PLAN: STAGES IN DEVELOPMENT PLANNING FOR EACH REGION

(FROM: REGIONAL DEVELOPMENT BRANCH DEPARTMENT OF TREASURY AND ECONOMICS. OCTOBER 20, 1969.)



Kates, Peat, Marwick & Co.

Figure 2.3 shows how KPM saw the interrelationships of the recreation planning process and the overall development planning process. KPM stressed the importance of the 'feed back' loops between overall planning and recreation planning.

However, whilst the alternatives which the model produces are apparently to relate to overall planning goals, no detailed consideration is given as to the basis on which the alternatives are to be evaluated. It appears that, having developed detailed models to specify quantified alternative futures, the evaluation is to be made on a subjective basis. It may be that, as the study progresses, evaluation procedures will be developed. Even this is not entirely satisfactory. Evaluation procedures need to be developed, in outline at least, at an early stage if the model is to be designed to produce the type and range of output required.

Thus North American research in tourism and outdoor recreation in general has advanced substantially over the past decade. A number of large research projects have been undertaken or are underway, where an attempt has been made to look comprehensively at present and future patterns of supply and demand. These studies provide very useful lessons for future Scottish research. In general, however, tourism and recreation planning in North America has not incorporated any rigorous evaluation in terms of social and economic impacts, and accordingly there has been an absence of research to develop criteria for such evaluation.

2.3 Tourism Planning Studies in Great Britain and Ireland

In Britain tourism planning research studies have been more limited in scope than North American studies mentioned above. In general, the research has attempted only to establish the present demand and/or supply situation, and /

and planning proposals have tended to be based on intuitive assessments of potential resources. Thorough evaluation is almost entirely absent.

Even the attempts in British studies to relate existing supply and demand have been on a remarkably limited basis. It is necessary to look to Ireland for a good example of a comprehensive approach, to the study undertaken for An Foras Forbartha (1966) and published under the title 'Planning for Amenity and Tourism.' The methodology advocated in this report has been summarized by Dower and McCarthy (1967). The study had many areas of weakness, but it was of major importance in establishing and utilising systematically the concepts of the capacity of tourism resources and capacity thresholds. These concepts were in fact the key to the 'thought-process' used in this study. Resources were divided into ten sectors, each used by some or all recreationists. These were: night accommodation (non-casual), night accommodation (casual), day resources, wet-weather facilities, meal facilities, evening facilities, water supply, sewerage, road capacity, and public transport. The existing capacity in each of these resource sectors was then assessed for each area of Donegal. For most sectors this was straightforward, but:

> "the one category for which existing capacity was not so readily estimated was day resources. This includes natural resources such as beaches and mountains; items of heritage such as historic sites and nature reserves; as well as man-made day facilities such as golf courses. Day resources are thus the meeting point of conservation and development. For them, the estimate of capacity must serve not only to show how much of the resource is needed by a given number of people, but also how many people the resource can take without physical or ecological damage /

> damage to the resource and without change to the character which people expect the area to have, unless that change is deliberate."
> (Dower and McCarthy, 1967)

The approach was therefore to make 'informed guesses' as to the static or momentary capacity (i.e. the number of people that the resource can absorb at any one time) of each type of day resource - the capacity estimate being set at a level "calculated to minimise the risk of physical or ecological damage; and to match the sense of quietness and remoteness which people seek in Donegal" (Dower and McCarthy, 1967). The capacities of all day day resources were summed for each survey area.

The next step was to estimate the demand for these resources from the holiday visitors (group a), day visitors (b), and residents (c). Demand for day resources was taken as being:

$\frac{5}{4}$ (a + b + c/4) people units;

> "i.e. the total day resources should be sufficient to entertain all the night visitors, all the day visitors and up to one-quarter of the local population (e.g. children on holiday) at any one time, plus a one-quarter margin to allow for a bad match between the types of resource available and the desire of people to use them."
> (Dower and McCarthy, 1967)

The 'demand' calculated here was thus a 'required capacity', which could be measured against the static capacity of the day resources to reveal resource shortfalls or surpluses. Demand for the other resource sectors was estimated in a similar way.

The /

The next step in the thought-process was the 'Amenity Budget' which established the financial costs and, in some cases, the environmental undesirability, of expanding tourism in each area of Donegal, according to the capacity thresholds of particular resource sectors. The study thus recognised the need to justify development over certain thresholds, but it did not propose methods of calculating the benefits.

The Donegal Study was valuable for establishing a type of thought-process based on the concept of capacity. But it must be faulted with regard to some of the details of application - certainly for use in an area like the Highlands. The main points of weakness relate to the day resources assessment, and are as follows:

(a) the arbitrariness of the capacity estimates, which, as Dower and McCarthy (1967) said, were only "informed guesses". The estimates seem to be weakest when facilities such as historic houses were all given the same static capacity, whereas in fact the static capacity may have varied greatly.

(b) the fact that the supply-demand assessment took no account of the type of day facilities required by visitors and the amount of time they wanted to spend using each. All day facilities were simply combined together into one group. It is true that 'demand', as expressed in terms of required capacity, was taken to be 25% greater than the actual predicted numbers of persons to allow for poor matching of supply type and demand type, but this is a crude adjustment and unlikely to be fully satisfactory.

To avoid the need for such measures, it would appear desirable that, if there is sufficient survey data to enable it, each day activity should be dealt with separately, demand taking into account participation rates together with frequency and duration of participation.

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In regional tourism studies carried out in Britain, attempts to relate supply and demand have usually been much less rigorous than in the Donegal Study and many North American studies. Direct relationships have usually been analysed only for accommodation (or particular sectors of it), and development proposals have tended to be intuitive and resource-based.

The Scottish Tourist Board sponsored studies of Wester Ross and of Lochaber by Glasgow School of Art (1968 and 1971), and of Deeside/Donside by the University of Aberdeen (1969), fall into this category, as does the Miles-Kelcey (1969) study for the British Travel Association of tourism in South West England.

Similarly the proposals in "The Galloway Project" (University of Strathclyde, Regional Studies Group, 1968) were largely based on intuitive resource assessment, but the study did contain a good analysis of the economy of the region which essentially clarified its problems and the overall part which tourism might be able to play in the economy. Unfortunately it was not able to proceed to undertake any analysis of the relative impact, either of different types of economic activity or of the different types of tourism. Thus no evaluation of alternative strategies was attempted.

"Recreation Planning for the Clyde" (Travis and Associates, 1970) involved very little basic research, drawing on earlier studies, particularly the data gathering exercise by Miles-Kelcey (1968). However, two aspects of the study are of particular interest in terms of planning methodology. Firstly it devised as a basis for strategy formulation an interesting outline classification of resource types, adapted from the one proposed in America by the ORRRC. Secondly, it evaluated three alternative strategies with respect to /

to "goals for recreation planning" which had been established. Two main criticisms can be levelled at this evaluation:

(a) the goals achievement analysis, although utilizing a rigorous framework, wasscored largely on an intuitive basis, because research-based evaluation criteria were simply not available;

(b) the three strategies which the study compared were not genuine alternative recreation strategies, since each was based on a different hypothesis regarding industrial development within the region, and reflects the impact of such development on amenity and recreation.

Finally, it should be noted that it was the consultants (under the auspices of a steering committee) who formulated the objectives, and not the sponsors. Ideally this should not be the case, since the sponsors of planning studies, on the assumption that they will be concerned with putting plans into action, must fully accept and commit themselves to the objectives and the relative weightings adopted.

Despite these weaknesses, the study is of major significance as the first tourism planning exercise to introduce the concept of evaluating alternative strategies with respect to planning objectives. This concept is basic to the approach suggested in Section 1.2 for future tourism planning.

2.4 Research on existing regional markets and the patterns of demand within regions

Tourism market research studies fulfil two primary functions for regional planning. The first is to provide data on the existing patterns of demand within the region, which can be related to supply information to reveal the existing /

existing supply-demand balance. The second is to provide an understanding of the existing regional market or of the total potential holiday market for the region, as a basis for assessing the way in which demand may change in the future. Most market studies have concentrated on assessing an existing regional market and, to a lesser extent, the patterns of demand within the region. However, some national studies have provided both data on existing regional markets within Britain, and a picture of the overall British holiday market.

The best known of these national market research studies is the British National Travel Survey (BNTS) which started in 1951 and was repeated in 1955 and each year since 1960. The early surveys were commissioned by the British Travel and Holidays Association, and later ones by its successor bodies, the British Travel Association and British Tourist Authority. This home interview survey, carried out in the autumn each year, has always covered holidays of four nights or more taken by British people at home and abroad. Apart from providing a picture of the British market for longer holidays, regional breakdowns have allowed the calculation of the numbers and profile of holiday visitors to each region of Britain, although the only occasion on which these have been published is in "Patterns of British Holiday-making, 1951-68" (British Travel Association, 1969).

In 1972 the nature of the BNTS was changed somewhat as a result of the introduction of a major new survey, the British Home Tourism Survey (BHTS). This was set up jointly by the national Tourist Boards and the BTA to measure all types of over-night travel in Britain, not just the longer holidays. Since this includes many short trips, a shorter period of recall than that of the BNTS is necessary, so the survey is carried out by including the same questions each month on /

on the NOP Random Omnibus home interview survey, asking respondents about all over-night travel during the previous two months. The data is analysed in a way compatible to the BNTS information including tables relating to the 4+ night holiday sector. The analyses again include breakdowns by destination region.

Although invaluable for plotting the patterns and trends in domestic tourism, the limitations associated with these all Britain surveys must be appreciated. They result principally from the size of the sample, which, although fairly large overall (3,000 - 4,000), does not provide very large sub-samples going to any one destination region - particularly the regions of Scotland. Because of the large sampling error associated with small sub-samples, these surveys cannot therefore be used with any great reliability to provide the detailed picture of the existing regional markets required for within the Scottish regions.

It also has to be recognised that the range of information collected in these surveys, particularly the BHTS, is limited, since the objectives are principally to examine the key features of the existing market. These surveys as they stand are therefore of greatest value in providing an up-to-date picture of the total British tourism market for forecasting purposes (see Section 2.6).

Whatever the purpose of the surveys, there is perhaps scope for more imaginative analysis of the data, particularly that from the BNTS, than has normally been undertaken in the past. The work of Handley and Heape (1972), discussed below under 'Forecasting', indicates some of the possibilities.

The /

The BNTS and BHTS provide information only on the British market. The complementary survey of travel in Britain by overseas visitors is the International Passenger Survey (IPS). This is a very large survey (over 250,000 interviews p.a.) of overseas visitors entering and leaving the United Kingdom, undertaken for the Department of Trade and Industry by the Office of Population Censuses and Surveys (OPCS). It was originally set up to check the effects of tourism on the Balance of Payments, and this remains its main objective. Some information is obtained for other purposes, but it is very limited in extent. For example, prior to 1972 information on destinations within Britain was collected in only three years - 1965, 1966 and 1970 - and even this has never been analysed satisfactorily. The IPS has yet to produce any really useful planning information for Scotland as a whole, let alone the regions within it.

A study of the British market which was concerned directly with the market and patterns of demand in one part of Britain was the survey of holidays in Scotland (by Audrey Hunt (1966)), carried out in 1964 and 1965. Because the survey required to obtain a great deal of information about a relatively small section of the market, the approach was different to that used in the BNTS and BHTS. Here a postal survey of 15,100 respondents was used to filter out a sample of those who had holidayed in Scotland in 1964, for follow-up by personal interview. The response rate to the postal survey was 71.3%; the responding sample was checked against overall population demographics and found to be largely unbiased in these respects; although it was recognised that it may have been more biased in respect of holiday activities.

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In many respects the Hunt survey was very useful, providing detailed information about the holiday party, the nature of the holiday, the patterns of holiday-making, activities, satisfaction and attitudes (both to Scotland and its regions). However, the information on patterns of holidaymaking, although better in its detail than anything produced before or since, did not include the key planning information on bed-nights in each type of accommodation in each area.

Two further limitations inherent in the survey method should be noted:

1. it covered only the British market for holidays in Scotland, and was therefore a partial picture of Scottish tourism. Overseas visitors were relatively few in number at the time of the Hunt survey, but the importance of this market segment has increased substantially since then and is likely to continue doing so. Consequently, the usefulness of the survey method diminishes.

2. even with the large first phase postal survey, only 1,150 respondents taking a 1964 Scottish holiday were located. A sample of this size cannot be utilized to provide the detailed information required in regional planning. A sample of six times this size is probably required, and this implies an initial postal survey of 90,000 people.

The majority of tourism market research at the regional level has been carried out by surveys at sites within the region - for example, the surveys by Butler (1966) in the Highlands and Islands, by the University of Strathclyde, Regional Studies Group (1968) in Galloway, and by PA Management Consultants (1973a, 1973b) in Northumbria and the Lake District. The value of any survey /

survey using this method is open to serious doubt for basic methodological reasons, outlined in Chapter 3. In addition, the actual operation and questionnaire design of such surveys has tended to be poor; in no case have they met the full range of planning information requirements.

One regional market research study which is of some methodological interest is the survey of weekend motorists carried out in the Lake District in 1966 for the Countryside Commission and the British Travel Association (Yapp, 1969; Countryside Commission and British Tourist Authority, 1970). It is of significance because it was the first occasion that a cordon survey approach was used on a large scale for obtaining information from tourists and recreationists. The survey covered three weekends in August and September, including the English Bank Holiday. A sample of traffic leaving the area was stopped between 8.00 a.m. and 8.00 p.m. and provided with a questionnaire for return by post. A 59% response rate was achieved.

The aim of the survey was to examine existing patterns of activity "to provide data on traffic motivation and route patterns for land use/traffic planning and to aid the planning of recreation facilities and landscape conservation with the Park." Unfortunately the detailed design of the survey did not enable the study to fulfill this aim as well as it might have done. There is no evidence of systematic thought having been given to the nature of the information required to achieve the aims. The day visitor aspect was covered reasonably well, but the information collected on holidays in the area was quite inadequate, despite the fact, recognised by the main report (Countryside Commission, 1970), that holiday traffic is responsible for /

for a large proportion of the traffic movements in the park and pressures on the countryside.

There were two basic faults in this respect. Firstly, the fact that the survey only covered traffic leaving the area at weekends. The aim of considering pressures on the area at peak weekend times is reasonable, but by excluding from the survey holidaymakers who may have been in the area at the weekend but who left the area on another day, this aim could not be fulfilled. The holidaymaker sample cannot therefore be taken as representative in any way of all holidaymakers in the area at weekends.

Secondly, questionnaire design also seems to have been related primarily to the day-tripper category. One questionnaire was used for all types of visitor and questions about routes, places visited and activities related only to the day of interview. Whilst these provided the necessary information on planning pressures related to day visitors, the information relating to holidaymakers was quite inadequate, since many would not have been undertaking 'normal' holiday activities on the day they left the region. Additionally, the key tourism planning information about where and in what type of accommodation nights were spent was not obtained. The survey thus illustrates well the necessity to use separate questionnaires for day visitors and for holidaymakers, with the latter being asked about activities undertaken during the whole of their stay in the area.

There was one other overall design fault with this survey. With a postal response rate of 59%, it is probable that the return was biased. In any situation such as this it is important to be able to check the bias in some way, and then, if at all possible, to weight the returns to be more representative. Apparently, no attempt was made to do this.

Another /

Another study adopting the cordon approach was the 1970 survey of "The Touring Caravan in Scotland" by Duffield and Owen (1971b and 1972a). This was primarily a survey of touring caravanners visiting Scotland from England and Wales, carried out by interview at a road cordon at the Border over five weekends during August. 2,700 caravanners were stopped as they left Scotland and asked detailed questions about their holidays, in particular their overnight stops.

In order to obtain a measure of the total volume of caravan traffic in Scotland, including that which originated in Scotland (not interviewed), a further road cordon was established across the Central Belt of Scotland. In this case, the main check covering the period 24th June to 1st October, was by a combination of road traffic counter and camera, which took a photograph of every 'n'th vehicle, triggered by pneumatic pressure from the traffic counter tube. Taken together, the total traffic count and the photographic check enabled the total volume of caravan traffic to be estimated. A sample check on the vehicle number plates enabled the volume of caravan traffic from each origin region passing through the checkpoints to be estimated.

In order to calculate the total volume of caravan traffic coming to Scotland from England and Wales, allowance was made (on the basis of a postal survey, outlined below) for traffic coming outside the survey period and for traffic which stopped short of the Central Belt cordon. To calculate the volume of caravan traffic originating in Scotland, allowance was made for traffic generated north of the Central Belt cordon, assuming the same rate of generation with respect to population as was calculated for Scotland south of that cordon. No allowance was made for touring caravan holidays generated in Central and Southern /

Southern Scotland and taken in those same areas.

To obtain the key planning information on the distribution within Scotland of all touring caravan 'pitch-nights', the researchers utilized information from the Border cordon survey, grossing it up by reference to the figures of total traffic from all origins. Distributions relevant to traffic from south of the Border were thus assumed to apply to Scottish generated traffic.

The postal survey undertaken was of the members of the national caravanning organisations, on the assumption that they are representatives of caravanners as a whole. The purpose was:

(a) to ascertain the relationship between holidays taken in Scotland during the cordon survey period and those taken outside it,

(b) to examine Scotland's position in the overall British market.

There are several important weaknesses in the structure of the surveys and the analysis:

1. the period of interviewing at the Border cordon (weekends during August) was very restricted. The report acknowledges throughout that the data collected relates only to August but, since weekday caravan traffic may be different in characteristics from that leaving Scotland at weekends, the caravanners interviewed may not even be representative of August traffic.

2. the Central Belt cordon was not a complete one and missed certain routes (notably the A814, A81 and A876) which may have carried substantial volumes of caravan traffic. The main report acknowledges the missing routes, but says "there can be little doubt that all but a small minority of holiday traffic leaving Central /

Central Scotland for destinations to the North of the Highlands Line was monitored at one or other of these stations." However this comment is not substantiated and may not be valid.

3. the number plate check at the Central Belt cordon was of even more limited duration than the Border survey - covering only the first and last week-ends in August. In this case, however, the data was taken as being representative of the whole of the period July-September. The fact that the last week-end in August was the English Bank Holiday makes this assumption particularly doubtful.

4. the sample for the postal survey was drawn from the membership lists of the national caravanning clubs, the assumption being made that the members of these clubs are representative of all caravanners in terms of their profile and the characteristics of their holidays. This is unlikely to be the case, and since the postal return was only 50% (leading to the possibility of considerable postal bias), the results of this survey should be treated with caution.

5. caravan holidays generated in Central and Southern Scotland and taken in those same areas were as the report points out, ignored. Likewise, all caravanners coming to Scotland from Ireland, via Stranraer, were omitted from consideration.

6. possibly the most serious potential error was the assumption that the patterns of holidaymaking of the Scottish generated traffic was the same as that of the traffic interviewed in the Border survey. This is most unlikely to have been the case.

Undoubtedly these weaknesses were due in large part to insufficient resources and time for the study - proposals for the study were submitted on May 26th 1970 and accepted on June 22nd, with fieldwork starting on June 24th. The authors of the reports recognise some of /

of the weaknesses, but claim that errors are small. This may be the case with all of the first five listed, but the last one gives cause for greater concern. Additionally, the cumulative effect of a series of small errors could be large.

In methodological terms, the most important aspect of the study was the collection and analysis of demand information in a way that is of real value to the planning process. Firstly, demand was measured in pitch-nights - units which could be and were directly compared with the units of available supply. Secondly, the analysis was (in the supplementary report) undertaken on a 20 kilometre grid square basis, such that local patterns of supply and demand could be established. This is a procedure which desirably should be a feature of future research, with a refinement to a larger scale (10, 5 or even 1 kilometre square) where relevant. As a recognition of the value of this type of analysis in a planning context, and in spite of the weaknesses in the demand data outlined above (which do not seem to have been widely recognised), the results of the 20 kilometre square supply-demand analysis were incorporated into a Technical Advice Note issued to Local Authority Planning Officers by the SDD (1972).

2.5 Assessment of the Current Supply of Tourism Resources and Facilities

Discussion of the Donegal Study (An Foras Forbartha; 1966) has indicated that the main problem in the assessment of currently available supply for comparison with demand is in determining the capacity of 'day resources'. Of the studies mentioned in Section 2.3 the Donegal Study was the only one to attempt to assess day resource capacity systematically and comprehensively for regional planning purposes, though on the basis of "informed guesses" rather than basic research. In Britain, basic research on resource capacities has been /

been limited in nature and it is again necessary to look at North American research for the main methodological developments.

The concepts and research in this wide and complex field have been thoroughly reviewed in two publications - the first and most important by Chubb and Ashton (1969), the second by Tivy (1972). The intention here is therefore to identify the studies of greatest methodological importance. With respect to resource capacity assessment at the regional level, the North American research appears to be broadly comparable in approach to the Donegal Study. Commencing with the California Public Outdoor Recreation Plan (California Public Outdoor Recreation Plan Committee, 1960) a series of state studies, including perhaps most notably the Wisconsin Outdoor Recreation Plan (Wisconsin Department of Resource Development, 1966), have developed, largely intuitively, sets of capacity standards. The Bureau of Outdoor Recreation publication 'Outdoor Recreation Space Standards' (US Department of the Interior, Bureau of Outdoor Recreation, 1970) has gathered together the various space standards being used by different organisations throughout the US; as yet however the Bureau has not itself recommended any particular standards.

The real research effort in this field has necessarily been concentrated initially on the capacity of particular areas or particular types of site. Most of the work has been concerned with estimating ecological capacities(1), the amount of recreation use of a site beyond /

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(1) The various concepts of capacity are discussed in Chapter 5.

beyond which there is unacceptable ecological deterioration. This work falls within the wider field of research on the ecological impact of recreation, in which there has been a substantial number of studies. However, only a few of these studies have attempted to go as far as to estimate the ecological capacity of sites. The following are some of the more important examples:

(a) in order to explain the deterioration of recreation sites, such as picnic areas and camping sites, Orr (quoted by Tivy (1972)) developed two variables - the Potential Pedestrian Impact (PPI), related to the length of pedestrian travel 'desire lines', and the Ground Cover Index (GCI). He then used multiple regression to relate variation in the GCI to the PPI and various physical site characteristics (soil, slope, etc.); he was able to explain 85% of the variation. The equation derived from this multiple regression could then be used to estimate the level of recreation use which would cause the maximum acceptable level of site deterioration; Orr suggests that 30% loss of ground cover might be taken as this maximum level.

(b) Orr's work was subsequently developed by the Division of Recreation and Lands, Rocky Mountain region, into a standardised procedure for capacity assessment on recreation sites in the Rockies - also quoted by Tivy (1972).

(c) Wagar (1964) developed similar relationships using experiments to simulate pedestrian traffic by dropping a weighted block different numbers of times on a sample of varied vegetated plots. It was found that 95% of the vegetation change could be explained in terms of three main factors:

i. intensity of use
ii. percentage of grasses and trailing plants
iii. amount of shade.

(d) /

(d) Ceislinski and Wager (1970) carried out further experiments, this time using a special roller to simulate camping "in equal amounts on 40 small plots representing potential recreation sites throughout the Cahoe National Forest in Northern Utah. Surviving vegetation was related to soil and topographic features by multiple regression procedures. Resultant equations explained up to 64% of the variation in amounts of surviving vegetation" (Tivy, 1972).

Many other studies(1) have been carried out in both Britain and Northern America regarding the impact of particular types of recreational activity on ecosystems at particular sites or particular types of site. These studies relate to the question of ecological carrying capacity, but do not go as far as to suggest methods of calculating capacity or even capacities for individual recreation sites, because of the complexity of the problem (see Chapter 5). This research and the problems inherent in establishing ecological capacities have been thoroughly reviewed by Speight (1973).

Very /

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(1) For example, Bayfield (1972), Burden (1969), Chappell et al (1971), Dotzenko et al (1967), Duffey (1967), Goldsmith et al (1970), Goodier (1967), Internation Union for the Conservation of Nature (1970), Jemison (1967), Kraus (1967), La Page (1967), Lloyd (1970), Perring (1967), Ripley (1962), Streeter (1972), Willard and Marr (1970) - all sources quoted by Speight (1973).

Very much less attention has been given to assessment of perceptual capacity; indeed the work of Lucas (1964) in the Quetico-Superior still ranks as one of the most important pieces of work. It involved social survey research with users of the Boundary Waters Canoe Area. A total of 292 parties were interviewed during 1960 and 1961 and asked a number of questions about their perception of the area. Two main analyses which were used in assessing capacities were:

1. the relationship between the proportion of different types of users who thought each lake was 'wilderness', and the number of users of that lake during the whole 1961 season.

2. the level of use (in terms of the number of other parties encountered in any one day) at which users said that their enjoyment was affected.

Each of the three user groups (canoeists, motor canoeists and motor boaters) had a different conception of the extent of 'wilderness' and of overuse. The perceptual capacity was lowest for canoeists; some of them felt that 'wilderness' (and their satisfaction) diminished where more than about 300 canoe parties used a lake over the whole summer season, or where there were any motor boats at all. Since canoeists were seen as the primary users of the area, this level of use was taken as the capacity threshold of areas to be retained as full 'wilderness'. A second threshold was then determined above which the majority of canoeists felt that a lake was not longer wilderness and that their enjoyment was being diminished. This threshold was 600 canoe parties per annum where there were only canoeists, or a maximum of 200 parties overall if they included motor boat users - i.e. the presence of motor boats greatly reduced the capacity (in terms of the number of user parties) as perceived by the canoeists. These levels were therefore taken as the /

the capacity thresholds of 'half wilderness'.

Lucas's work can be faulted because of the small number in his sample - a fact that was of particular significance when the sample was broken down into the different users groups. It is also not immediately apparent how his approach might be adapted for use in a wider regional planning context within Scotland, where there are few real wilderness areas and where capacity thresholds are more likely to be in hundreds of people per day than per season. Nevertheless, Lucas's work is of relevance to tourism research and planning in Scotland because it has shown that resource capacity thresholds can, in some circumstances at least, be defined from user attitudes, and that, in situations of multiple use of resources, perceptual capacity must be determined with respect to the attitude of the primary user group.

The theme of considering different user groups is developed by Burton (1973) in a study of the perceptions of users of Cannock Chase - a situation somewhat more relevant to Scotland. This study, which is one of very few British studies relating to perceptual capacity, is interesting in that it challenges the traditional notion (perhaps implicit in the concept of perceptual capacity) that the enjoyment of users of a resource decreases with increased crowding. This study involved nearly 500 interviews with visitors to various parts of the Chase on summer Sundary afternoons in 1971. Visitor perceptions were obtained by use of a series of five point semantic scales which either described the landscape or were concerned with evaluation of the recreation environment. Then perceptions were related to the extent of crowding as measured by the number of cars in sight from the point of the interview. No significant relationships were found /

found to indicate that user enjoyment or the quality of the environment were felt to be less where crowding was greater.

This however was explained, in part at least, by the fact that the visitors appear to have divided into distinct user groups with different behaviour patterns and perceptions. Those going to the uncrowded areas had a higher social and educational status and were shown to be much more sensitive to overcrowding. Those going to crowded areas were correspondingly less sensitive to crowding - indeed some positively preferred it. Thus:

> "Each subgroup of the population has its own conception of what constitutes over-use. It is therefore quite meaningless to refer to the perceptual capacity of an area of countryside without first having defined the groups of the population who use it"

This has certain implications for planning:

> "A somewhat paradoxical situation exists: there is 'spare capacity' to absorb recreational use in the areas which are already the most intensively used. On the other hand, the visitors frequenting the less crowded parts of the Chase may already consider the existing levels of use too high: any small increase in use would significantly reduce their enjoyment. The less crowded areas thus have no 'spare capacity' to accommodate more people."

Thus:

> "a small increase in demand from the crowding sensitive section of the population would require a very large increase in the available resources for its satisfaction. In contrast, future demand from the crowding-tolerant visitors can probably be accommodated in the areas of the countryside which are already relatively intensively used."

The /

The Dartington Amenity Research Trust (1973a, 1973b, 1973c), in its series of studies of water recreation areas for the Sports Council, has discussed a further factor which must be introduced into the consideration of the capacity for certain types of recreation - the need to relate the capacity of the different physical elements used by the recreationist in the course of his participation. At the Rickmansworth Gravel Pits, for example, there are four main elements - the main recreation areas, parking or storage areas, access channels and service facilities - with each type of recreationist using some or all of these. If, for a particular type of recreation, one of these elements has a capacity much lower than the others, this becomes the effective capacity of the whole recreation site.

The Trust suggests a thought-process for assessing the carrying capacity - involving initially the calculation of effective perceptual capacity, followed by an assessment of whether this would damage the resource, However, because of the limited resources available to the Trust and, in some areas, the complicating factor of non-recreational use of the water, it was unable to make estimates of capacity for the sites examined.

2.6 The development of a demand forecasting procedure and the analysis of future demand-supply relationships

Consideration of the future is as important to tourism planning as it is to any other type of planning. In respect of possible changes in demand, the key to the future (or alternative possible futures) appears to lie in understanding the past and the present. In some research this understanding has been expressed in a purely qualitative way - i.e. through an appreciation of the way in which various factors do or could influence demand and of the interaction between these factors; hence /

hence, the type of effect which might result from given future circumstances. Other research has attempted to go one step further and express such understanding in a structured way (notably through mathematical models) to enable quantitative forecasts.

Chapter 5 suggests that research to provide an understanding of the past and present as a guide to the future may be divided into three types:

(a) analysis of the <u>existing regional market and patterns of holidaymaking within the region</u>. This area of research has already been considered in Section 2.4. It may be added here that, of the large number of regional tourism market studies which have been carried out in Britain, most are content with description of the existing market and demand patterns; none have provided a thorough understanding of them. Chapter Four's analysis relating to car-borne visitors to the Highlands and Islands is thus attempting to break new ground.

(b) analysis of the characteristics of markets on which the region draws (or might potentially draw), in terms of <u>past holiday behaviour</u>. Many studies have been carried out on the total British tourism market or on overseas tourism markets - two of the British market studies, the BNTS and the BHTS, have already been described in Section 2.4. However, these surveys often do not provide information required to assess market potential for individual regions, partly because the necessary questions are not asked and partly because full use is not made of the information which is obtained. Well thought out analysis can provide a much better understanding of potential markets than has normally been obtained from these surveys. A good example of such an analysis carefully designed to reveal market potential, though not for a region, is the work undertaken by Handley and Heape (1972) /

(1972) using data on sequential holiday decisions obtained in the BNTS. The 1970 BNTS asked about location and type of holidays over the previous five years, which, firstly, enabled people to be categorised in terms of their frequency of holidaytaking, overall and by type of holiday. This showed, for example, that, whereas in any one year the number of adults taking a holiday abroad was only one fifth the number taking a UK holiday, over the five year period the proportion was about one third. This difference in proportions, resulting from a lower frequency of holidaying abroad, indicated to the authors that there was considerable scope for increasing holidaymaking abroad through increasing frequency, as well as through increasing market penetration.

The data was then analysed in terms of the individual's sequence of holiday types over a four year period. This allowed the patterns of progression from one type of holiday to another to be traced. It was also possible to see if there was any trend over the same four year period in the direction of switching betweeen holiday types from one year to the next.

In summary, this piece of research showed how, by thorough and creative analysis, a great deal of information can be obtained from a relatively small amount of data. By analysis of this type much more information on market potential can be obtained from market surveys. Further lessons on the methodology for such analysis may be learned from the recreation research field, particularly in North America - for example, the studies of Bishop (1970), Tatham and Dornoff (1971), Sofranko and Nolan (1972), Lindsey and Ogle (1972) and Knopp (1972).

(c) /

(c) analysis of the markets on which the region draws (or might potentially draw), in terms of attitudes and motivations. This can be used simply to give a better understanding of the existing situation, but also, by examining attitudes in relation to past behaviour, it can help to show the way existing patterns of demand are likely to change and the way demand may be influenced by marketing or development policies.

Very little research of this type in the field of tourism has been published. Studies have been undertaken, but they tend to remain confidential, with limited circulation of reports, e.g. the Canadian Government Travel Bureau's Market Segmentation Study of the US Travel Market, Travel Research International's 'Vacation Travel Attitude Study', and Air Canada's Segmentation of the Los Angelas Travel Market - studies noted in 'Canadian Travel Research Notes' Nos. 14 and 15 (Canadian Government Travel Bureau, 1972a, 1972b).

However, the four studies discussed below give as indication of the types of method of survey and analysis which may be used, and of the type of results which may be achieved. Of these four, the most wide ranging was research carried out in France, the UK and Germany for Air Canada and the Canadian Government Travel Bureau, and reported by Stark (1972). The research was carried out separately in each country along similar, but not identical lines. In each case it commenced with a phase of qualitative work, involving depth interviews and/or group discussions, followed by a main quantitative phase. In France and the UK this latter phase was with people who had holidayed abroad during the previous three years; in Germany the quantitative phase was divided into two, the first part designed to contact a sample of 'potential travellers to Canada' (based on various criteria), to whom the main questionnaire was administered in the second part.

The /

The main questionnaire in each case covered:

"- General holiday behaviour
- Preference and attitudes to various destinations and holiday activities and attractions
- Attitudes and ideas about North America and Canada
- Tourist attractions in North America
- Attitudes to the various elements in a possible North American Tour
- Expenditure patterns
- Future trip plans. "

(Stark, 1972)

In Germany, for example, this required 58 questions, many of which involved rating scales, plus 17 demographic questions. Thus a great deal of information was collected, but it appears from Stark's paper that this was only cross tabulated. If this was the case, then it must count as a weakness, since more sophisticated analytical techniques such as those used in the other motivational studies described below, can greatly assist with the effective handling and interpretation of large amounts of data. Indeed, it may be that, by the adoption of the survey techniques used in the other studies, the whole operation could have been made much simpler.

These other studies were in fact all relatively limited operations, but by careful design and thorough analysis, they yielded a great deal of useful information. The first of these is the Advertising Orientation Study (Masius, Wynne-Williams Limited, 1967) and follow-up Market Segmentation Study (Westminster Research Bureau, 1968), carried out for the British Travel Association. The main survey of 960 home interviews was preceded by three preliminary phases:

1. /

1. group discussions, which principally assisted the researchers to categorise types of holiday as perceived by British people.

2. Kelly Repertory Grid interviews, the purpose of which was to construct a list of factors which explain people's decisions between different holiday types. Fifteen people were interviewed, and presented with a sequence of randomly rotated 'triads' (i.e. groups of three) of holiday types (from those devised in Phase I). For each triad the respondent was asked to say which specific attribute of two of the holiday types made them similar to one another, but different from the third. The responses (i.e. the attributes mentioned) were the basis for a list of 73 factors.

3. a pilot survey, the main aim of which was to test the validity of the factors generated in Phase 2, and reduce them to a list of manageable proportions incorporating all the principal components. Data from the 128 interviews was subjected to factor analysis, which revealed nine distinct groups of factors, and the 73 individual factors were reduced to 28 for the purposes of further analysis.

In the main survey, respondents were each asked to rate six holiday types (selected on a rotation basis from a list of nineteen), together with their 'ideal' holiday, on a scale for each of the 28 factors. The scale ratings of each holiday type against each factor were then analysed to give a 'factor score' for each holiday type with respect to each factor. The factor scores for each of the 19 holiday types together with a score for the ideal holiday were then plotted on a scale for each of the nine groups of factors, so that the positions of the holiday types with respect to each other and to the ideal could be guaged.

In /

In addition to this, an analysis was also undertaken to estimate the importance of each of the nine groups of factors in the holiday decision. Advertising objectives for each holiday type were then determined by the importance of any given factor group in the holiday decision, weighted by the distance of the holiday from the ideal on that factor scale.

In a supplementary report the Westminster Research Bureau (1967) undertook a market segmentation analysis to establish whether the market divided into distinct groups with respect to ideal holidays and socio-economic profile. A cluster analysis of just under half the sample revealed six very distinctive groups, corresponding almost completely to life cycle stages.

Certain weaknesses are apparent in this whole research study. Firstly, the samples used were not large at any stage, and that used for the segmentation analysis was certainly too small to be entirely satisfactory. Secondly, the data collected were limited in scope and whilst they served the purposes of the advertising orientation analysis, they were really too limited for the segmentation analysis. The supplementary report itself points out that further information on the preferences for and prejudices against each type of holiday was required for this analysis, as was additional information on past and prospective holiday behaviour. Since a segmentation analysis is potentially an invaluable part of any attitude survey in enabling the identification of functional market segments, it would be desirable to ensure that similar studies in future obtain the full range of information required to achieve maximum benefits from such an analysis.

The /

The other two motivational studies were even more limited in scope and were similar to each other in method - both used Kelly's Repertory Grid in the interview and a form of cluster analysis. The method, which was basically a development of that used in the BTA research described above, was established by Research Services Limited. Their developmental research, described by Levens (1972), was aimed at segmenting overseas holiday destinations. The eight destinations used were presented to the 62 survey interviewees in a series of 'triads'; in each case the interviewee was asked to say what characteristics made two of the three destinations similar to each other and different from the third - a procedure similar to that used in the BTA research. Having thus defined a pair of contrasting destination characteristics called a 'construct', the interviewee was asked to classify all the destinations in respect of that construct, before proceeding to the next 'triad'. A total of 1,335 individual constructs (many being similar or identical) were generated, with each destination classified once for each of them.

The first and most basic analysis of this data was to ascertain the number of times any two countries were found at opposite ends of constructs, a large number of times indicating a strong perceived dissimilarity. The eight countries grouped themselves naturally into two groups of four, with relative similarities within groups and dissimilarities between them.

The main analysis involved a factor analysis in which the large number of individual constructs were replaced by three factors which grouped constructs in terms of their 'position' with respect to individual countries(1). The three factors, which each incorporated /

(1) in considering the 'position' of constructs and factors, countries must be conceived as being in a conceptual three dimensional space, in which the relative location of countries is related to their degree of perceived similarity or dissimilarity.

porated a considerable diversity of constructs, were named, somewhat arbitrarily, 'Popularity', 'Cultural strangeness' and 'Economic development'. Each country was then assigned a position on each factor scale, giving a clear indication of the perceived image of the country. Thus the first factor, 'Popularity' had at its positive end:

France, Spain, Italy and Portugal,

and at its negative end (which might be termed 'specialised' or 'not for the masses'):

Yugoslavia, Greece, Turkey and Tunisia.

The second factor, 'Cultural strangeness', discriminated Turkey and Tunisia positively from the other countries.

The third factor, 'Economic development', discriminated France and Italy from the rest.

The final form of analysis in this study was to relate the preferences of interviewees for each country to the perceived characteristics as described above. There was in this case a correlation, but not a strong one, so that preference for individual countries may be influenced "by considerations other than perceptions of national image."

These survey techniques developed by Research Services were used subsequently by Riley (1973) in his study of the images of holiday resorts. The study, involving 60 intervews, was primarily concerned with UK resorts, of which 21 were covered, but four Mediterranean resorts were included for comparison. Because interviewees might have little knowledge of some of the resorts, a variation on the approach used in the Research Services study was adopted here; the first step in the interview was for the interviewees to look at the list of 25 resorts and say which ones they had not heard of or were unlikely to visit.

These /

These were then excluded from subsequent consideration by that interviewee.

The analysis of image 'distance' between resorts provided a basic grouping of resorts related primarily to geographical location. The main analysis produced six main factors(1) which together revealed the image characteristics associated with each of the resorts and groups of resorts. The final analysis in this study was of the definiteness of each resort's image, based on the extent to which it had been excluded from consideration by interviewees in the initial seiving process.

The method used in these last two studies has a great deal to commend it. First and foremost it offers a simple and relatively cheap way to generate large amounts of information on images. The BTA's Advertising Orientation Study achieved similar end results, but through a much more protracted and expensive approach. The second advantage (which it shares with the BTA study method) is that it allows people to generate the image considerations which are important to them, as opposed to asking people to react to predetermined destination characteristics which may or may not be important to them.

Whilst the method allows small numbers of interviews to generate large amounts of data, the problem of sampling error remains, no matter how structured the sample - i.e. the perceptions of those interviewed may differ substantially from those of the population as a whole. The possibility of error could be reduced substantially /

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(1) since principal components analysis was used in this study, rather than the factor analysis used by Research Services, these 'factors' should correctly be called principal components.

substantially if there were a sample of (say) 150. A larger sample would also enable differences in perceptions between different market segments to be established, as a guide to the need for differential promotion between various possible 'target' groups.

A further improvement in the approach would be to incorporate people's perceptions of their 'ideal holiday', as was done in the BTA study. This would be done by asking each person to rate their ideal holiday on each of the constructs which they generate. When factors have been developed from the constructs, the position of destinations against each factor could thus be judged with respect not only to each other but to the ideal. Without this, it may not necessarily be possible to say whether a destination's position is good or bad.

If the ideal destination were considered in this way, it would be desirable to consider the different perceptions of the ideal of different market groups - groups defined, if possible, by a full segmentation analysis along the lines of that in the BTA study (but using additional data on socio-economic status, past holiday behaviour etc.). The ideal destination for <u>each market segment</u> would then be scored and positioned against each of the factors to judge the position of destinations relative to it.

The best approach of all would be to carry out the whole image analysis separately for each market segment - i.e. the positioning of the destinations under consideration, as well as the ideal destination.

One criticism which must be specifically levelled against Riley's study relates to the procedure by which certain resorts were excluded from consideration at the beginning /

beginning of each interview. Whilst it seems perfectly reasonable to have excluded resorts of which a person had no knowledge, it does not appear justified to have omitted them because he was unlikely to visit them. These could well be places of which he has strong impressions - impressions which are no less important because they are negative. To record attitudes to resorts only of people who might visit them seems likely to present a somewhat one-sided picture.

Finally, it must be said that studies using the type of approach adopted by Levens and Riley forms only one part of the attitude/motivation research required. It can serve to provide a context of attitudes, but there will normally be a need to follow this up with further work concentrating on perceptions of the area, region or country in question - of the type carried out for Air Canada and the CGTB (discussed above).

Given the paucity of attitude/motivation research in the tourism field, it might be thought appropriate to turn to work in the wider recreation research field. But here again there has been surprisingly little work - virtually nothing in Great Britain and only slightly more in North America. The United States ORRRC did not carry out any depth motivational research within its vast research programme - only Study Report 20 ('Participation in Outdoor Recreation: Factors Affecting Demand among American Adults'), which examined the effect of various factors on participation, included any consideration of motivational factors. The Canadian Outdoor Recreation Demand Study (discussed above) did incorporate a motivational survey by Crow and Associates (1968a, 1968b), but without breaking any major methodological groud. The study commenced with pilot in-depth interviews, followed by a survey of 1,027 adults. The study looked at patterns of participation /

cipation, available leisure time and leisure needs in relation to a variety of social and environmental factors.

One of the few other examples of motivational research concerned with recreation is by Neulinger and Raps (1972) who undertook a small-scale study of the relative attitudes and activities of Mensa members and non-members, which showed, amongst other things a much more positive attitude towards leisure among Mensa members.

The development and use of quantitative forecasting procedures

The discussion above has centred on studies in the areas of research required to provide the basic understanding necessary for tourism demand forecasting. It is now appropriate to consider studies which have attempted the more hazardous taskof actually producing quantitative forecasts, and in particular to examine research which has attempted to express understanding of demand in the form of computer simulation models.

It must firstly be recognised that in the past resources have only occasionally been available to undertake the detailed research necessary for satisfactory modelling, and consequently most forecasts have been carried out at a relatively superficial level, involving pure 'guesstimates', extrapolation of past trends, or extrapolation of underlying variables as a basis for better estimates. The Edinburgh Hotel Study by Industrial Market Research (1967) is an example of forecasting at this level.

The first attempt in the wider recreation research field to forecast more accurately was by the ORRRC in the United States. Two of the Study Reports were concerned with forecasting of participation, while a third make projections of a number of recreation related variables, /

variables, such as population and transportation. In Study Report 19 (ORRRC 1962b) Proctor used factor analysis:

(a) to relate levels of participation in fifteen activities to thirty background variables,

(b) to provide an index of association between participation, in one type of activity and another, which enabled the fifteen activities to be grouped together where association was high.

On the basis of these analyses it would have been possible to attempt to predict participation quantitatively, for the activity groups identified in (b), if not for the individual activities. Unfortunately no such exercise was carried out, and Proctor merely provided qualitative general forecasts by reference to the variables revealed as being the most important in (a).

Study Report 26 (ORRRC 1962c) was wholly concerned with forecasting quantitatively future levels of participation. It was based upon the use of a multiple regression analysis developed by the Survey Research Centre in a separate study (ORRRC 1962d). In Study Report 26, the multivariate models were used to relate participation rates in sixteen activities to five socio-economic variables - family income, education, occupation, place of residence and age/sex. The five variables were projected to the target dates (1976 and 2000) and the model was run for each activity in each year, to estimate their net effect on participation rates. In addition, the net effect of two additional factors, leisure time and "per capita opportunity to participate" were calculated as a separate exercise. The combined effect of all seven variables acting together was then estimated and related to projected populations /

populations in each year to obtain absolute measures of anticipated participation.

There were a number of relatively minor weaknesses in this work, well described by Burton and Noad (1968), which could all be overcome in subsequent research, if it is carefully thought out. However, there remains a fundamental objection to the type of quantitative analysis used in this and all subsequent similar recreation research - that it assumes that the relationship between participation and background variables will remain constant.

"The National Recreation Survey study report contains detailed analysis which strongly suggests the existence of stable association between socio-economic characteristics of the current population and the rates at which the population engages in outdoor activities. These observed associations were assumed to continue into the future."
(ORRRC 1962c, quoted by Burton and Noad 1968).

Ideally, time series data over a number of years are required to test whether such assumptions are at all valid, but these are rarely available. A key area of doubt is whether such a model can take into account sudden changes in fashion. A possible way to overcome this problem may be to consider activity groups rather than individual activities, on the basis that sudden changes in participation patterns may arise from substitution within activity groups, occasioned perhaps by a major change in supply.

Of the North American modelling studies discussed in Section 2.2, possibly the most sophisticated is the Ontario Tourism and Outdoor Recreation Plan Study (OTORPS). Mention has been made of the fact that, unlike earlier work /

work in Michigan, the OTORPS is attempting to model the demand generation aspect, and the overall structure for doing this has been illustrated in Figure 2.1. The mechanics of the modelling, as proposed in "Tourism and Recreation in Ontario" (Kates, Peat and Marwick, 1970), do not involve multiple regression, but an approach which involves breaking down the population into functional sub-groups. As detailed a breakdown as is possible is thought desirable, including breaks by psychological strata (e.g. effects on participation of environmental factors such as type of dwelling). In reality, however, it is accepted that in the first phases of model development the breaks will be limited to income/life cycle groupings - ones which can be projected relatively easily.

Participation rates within the sub-groups are assumed to remain constant, where time for and access to recreation also remains constant. Changes in absolute participation within sub-groups are taken to result from changes in these latter factors, together with the shift of population between sub-groups and overall increases in population. This approach, which is conceptually similar to multiple regression, is relatively straightforward and has much to commend it.

The supply of recreation opportunities is of course an integral part of the OTORPS model, so that predicted participation can react to changes in supply. The level of supply which is projected for each site can be directly measured against the participation which is predicted for the site by the model output, to give the future supply-demand balance.

In Britain, the use of mathematical models for forecasting in tourism and recreation has been on a very limited scale, mostly employing multiple regression - for example, the work of Duffield and Owen (1970 /

(1970 and 1971a) and the North West Sports Council (1972). Colenutt (Colenutt and Sidaway, 1973) developed a Clawson type exponential demand curve as a basis for forecasting future day visits to the Forest of Dean with population, car ownership and time-distance as the independant variables. Increasing car ownership was thereby assumed to be the factor which led to increasing trip generation rates (i.e. per 1000 head population), while decreases in travel time led to greater accessibility of the Forest. Supply and its future balance with demand was not incorporated into this study.

In British tourism research there are two quantitative forecasting studies of methodological significance, apart from studies concerned solely with transportation (such as the studies undertaken for the Roskill Commission on the siting of London's third airport). These are a forecasting model developed for the BTA and the study 'Hotel Prospects to 1980' prepared for the Hotel and Catering EDC by Cooper Brothers (1972).

The BTA model, described by Barnard (1971), was developed to forecast the number of visitors to Britain from overseas. It consisted of a series of sub-models for each major generator of traffic to Britain, with a multiple regression equation relating visitation to income and population levels in that country, absolute and relative cost of travel to Britain and amount of BTA promotion. The model was run over the years 1968 to 1971 without any spectacular success; Barnard states that simple extrapolation on the basis of moving means gave better results. The reason for the errors in the model was simply insufficient or inaccurate data, which led to the model being a crude one. Barnard argues that, given good data, a model of this type /

type is worthwhile, since it is likely to be able to forecast downturns or sudden fluctuations in traffic better than extrapolation.

The Cooper Brothers study illustrates the difficulties associated with forecasting. It was basically concerned with future hotel investment prospects, but in order to consider future demand for hotels it was felt necessary to analyse demand for all types of accommodation, because of the interaction between them. For the purposes of analysis, the market was broken down into the following segments:

- domestic non-business
- domestic business
- domestic conference
- overseas non-business
- overseas business

Domestic non-business was further sub-divided into:

GB - main holidays
GB - additional holidays (4+ nights)
GB - short holidays (less than 4 nights)
GB - nights spent as part of overseas holiday
GB - nights spent in Northern Ireland
N. Ireland - main holidays within N.I.
N. Ireland - additional holidays within N.I. (4+ nights)
N. Ireland - additional holidays within N.I. (less than 4 nights)
N. Ireland - holidays spent in GB.

For each of these segments the study firstly attempted to estimate the existing (1969) demand (in bed-nights) for each type of accommodation, and in this exercise alone many weaknesses are apparent. The methods used to derive the estimates are outlined in Appendix D of the Coopers report, from which it is evident that with nearly /

nearly all the segments the information available was partly or wholly inadequate. No comprehensive source of information existed at that time either for the domestic or overseas elements. The British National Travel Survey was one of the most reliable and up-to-date sources of information available, but even that did not analyse demand in terms of bed-nights.

In the forecasting exercise itself, only the five main segments were used - domestic non-business was not subdivided. For each of these the report firstly listed all the factors which, it was thought, would affect future demand. When it came to quantitative analysis, however, many of these factors were not taken into account, partly because the changes in these factors could not be forecast and partly because the extent of their influence on demand was not known.

The forecasting of background variables was in fact mainly undertaken for domestic non-business travel. The basic considerations in the calculations were:

population
length of holiday entitlement
participation rate (i.e. percentage of nights during holiday spent away from home)
proportion of holiday nights spent abroad

The actual forecasting process was undertaken intuitively, since no mathematical relationships had been developed to 'explain' any of these factors. The first of the assumptions made was that the participation rate for the population under 65 would remain virtually constant. Thus the number of holiday nights away from home would increase in proportion to the increases in population and holiday entitlement. The effects of increased car ownership were assumed to be subsumed within the absolute increase in holiday nights resulting from /

from increased holiday entitlement. Likewise the effects of increased incomes and other factors (education, occupational structure etc.) were taken as being partly contained within increases attributed to increased holiday entitlement, but also:

"an additional income effect has been included to take account of the effects of increased income not contained in the other variables. A notional 40 million bed-nights (1980) has been assumed" (Cooper Brothers 1972). A similar notional increase was allowed for the 'additional' effect of the other factors.

This is a curious procedure, for while on the one hand the participation rate has been assumed to remain constant, these additional increases over and above those contained within increased holiday entitlement in fact imply that the participation rate increases.

In considering the proportion of holiday nights spent abroad, a wide range of written sources were consulted and discussions were held with the major organisations concerned. The final subjective assessment was that the proportion would virtually double between 1969 and 1980, from 21% to 39%.

The forecasts relating to domestic business and conferences demand were not made by reference to background variables. In both cases a systematic set of calculations was undertaken, using rough estimates of existing demand and assumptions regarding growth rates and other factors affecting future demands. Coopers say of the conference sector: "Lack of basic information.....makes the forecast of demand in this sector particularly unreliable."

In /

In looking at demand from overseas, Coopers used BTA forecasts which assumed 12% p.a. growth in all visitors to Britain between 1970 and 1975 and 10% p.a. growth between 1975 and 1980. These forecasts of growth rates were based on the rapid increases during the late 1960's and did not take account of the marked slackening of the rate of increase after 1970. The BTA published a revised forecast of its growth rate as early as September 1971 (British Tourist Authority, 1971), but this was not taken into account in the Coopers Study, published more than a year later.

The BTA (1973) has since further revised its forecast downwards to 10 million overseas visitors to Britain by 1976. This compares with a figure of 12.7 million used by Coopers. Even the revised figure of 10 million now looks optimistic.

In order to forecast overseas bednights, the visitors were broken down by purpose of visit and an assumed length of stay (lower than the existing figure in all cases except conference visitors) was applied to each group separately.

After forecasting the future levels of demand for all types of accommodation, the next step was to forecast the future split between different types of accommodation. For all the market segments, it was assumed that licensed hotels would take a substantially higher proportion of the bednights and that, except in the case of overseas non-business, unlicenced formal accommodation would take a lower proportion. The assumptions, which have a heavy bearing on future hotel demand, were essentially intuitive, based on the factors considered previously. No consideration appears to have been given to the fact that hotel prices have been rising substantially faster than the cost of living (Scottish Tourist Board 1972) and/

and may continue doing so. Conceivably this could deter some demand and it casts some doubt on hotels increasing their share of the market as assumed.

A final important step in the forecasting procedure was the distribution of future demand. Here the assumption was "that the demands of each type of visitor will continue to be spread in the same geographic pattern as in 1970". In making this assumption, certain other assumptions are made implicitly:

1. that lack of suitable accommodation would not constrain demand in any region to a greater extent than in the base year;

2. that major developments of accommodation or other facilities in particular regions would not increase the tourist traffic to that region disproportionately;

3. that overuse of tourist facilities in particular regions will not lead to those regions becoming less attractive for holidays;

4. that the efforts of the BTA and the Tourist Boards will not succeed in changing the patterns of holidays;

5. that no other factors (e.g. oil pollution, industrial development, etc.) will operate to increase or decrease the attractiveness of particular regions.

Whilst it may be difficult to gauge the likely effect of these factors, it would be wrong to assume that none of them will operate. There must therefore be major qualifications to any forecasts based on such assumptions.

In /

In estimating future peak demand for hotels by price category, two further major and perhaps doubtful assumptions were made explicitly:

(a) "that the relative proportions of tourists looking for hotel accommodation in each price bracket (at 1971 prices) would not change over the next eight years"

(b) "that the monthly pattern of demand would not change".

As a basis for assessing future hotel profitability, the study went on to relate the projected peak demands thus estimated to the projected hotel capacity in each price category. Projected capacity was taken as being existing capacity plus known future changes. An important assumption thus made implicitly was that the price of existing accommodation would remain constant with respect to the cost of living. This is unlikely to be the case, so that the hotel capacity in each of the price groups, at 1971 prices, is likely to change.

It should be noted that in the Coopers Study Scotland was treated as one region - breakdowns within it were only on the basis of type of location and settlement size. Coopers could have undertaken a finer breakdown, but the reliability of the base data and forecasts for these areas would have been highly doubtful. This underlines a major difficulty for regional tourism planning in Scotland - demands must be forecast within a British context, yet great precision of the forecast is required at the G.B. level for any reliability to operate at the regional level.

In summary, the Coopers study reveals clearly the complexities and difficulties of forecasting at a G.B. level/

level and, to an even greater extent, at a regional level. Assumptions and qualitative judgements abound throughout the study, and the cumulative effect of these could be very significant - the error in the forecast of overseas visitors alone could have major implications - especially for London.

2.7 The assessment of potential resources

It has been shown that the development of methodology for the assessment of existing tourism supply for regional planning purposes has been limited in nature. Methodology for the systematic identification and evaluation of potential resources at a regional level has, if anything, been even more neglected. The main problem arises in the identification of natural resources with potential for outdoor recreation activity.

One of the first attempts to develop methodology in this field was by the U.S. Department of Agriculture, Soil Conservation Service (1966) in its "Guide to Making Appraisals of Potential Outdoor Recreation Development". This was concerned only with the evaluation of sites and not with their identification, and did no more than suggest a systematic approach involving subjective evaluation of sites with respect to the key elements which were considered "to exert a major influence on recreational potential" (Tivy, 1972). These elements were climate; scenery and scenic areas; natural areas; historic areas; soils; water; wildlife; population proximity and access; rural ownership and land use patterns. The elements relevant to a particular type of site were to be scored and the sum of all the scores for a particular site taken as its relative potential.

Another /

Another American study which touches on part of the problem is that of Held et al (1969) who were concerned with establishing priorities where different recreational uses are in competition for a potential site. Like the Soil Conservation Service study, this report suggests a systematic approach to subjective assessment, with each potential activity being ranked (with respect to other activities) in terms of its relative popularity; the area of land it requires; the likely quality of the experience; the type and degree of user impact; the availability of alternative sites; and the extent of compatibility with other uses. The ranking for each activity was undertaken for three possible intensities of use (light, medium and heavy). The relative priority between activities is then established by summing the rankings for each activity.

These two techniques are open to criticism on the grounds of subjectivity, but they are of value in developing thought-processes for particular problems. However, the detailed methods of application do not appear to have any particular qualities which make them suitable for application elsewhere.

A North American study concerned with recreational resource assessment at a broader level was the Land Capability Classification for Outdoor Recreation undertaken as part of the Canada Land Inventory (Department of Regional Economic Expansion, 1969). This was concerned to inventory the <u>total capability</u> of non-urban land units for the more popular recreational activities involving use of natural features. Accordingly it did not discriminate between those sites which were already developed and those which were unused (i.e. potential resources), nor was classification dependent on the accessibility/

accessibility of the site or on the available demand. Classification of an area for a particular intensity of recreational use was, however, dependent upon the availability of suitable land for the development of necessary ancillary facilities - car parks, toilets, accommodation etc. The classification did not attempt to take into account the effects of possible major artificial modifications to the land surface.

The classification was subjective, being "of an essentially reconnaissance nature, based on interpretation of aerial photographs, field checks, and available records", and was related to purpose defined areas. It simply identified the recreational features of each land unit and the relative importance of each, with a summary indication of the potential intensity of use of the whole unit, ranging from very high to very low suitability for outdoor recreation. Thus the product of this work has many limitations, but it is nevertheless a very useful first step in the recreation planning process.

The only attempt in the British context to undertake a detailed assessment of resources over a wide area has been the series of beach studies which has systematically covered the whole coastline of the Highlands and Islands, carried out by the University of Aberdeen, Department of Geography (1969, 1970a, 1970b, 1971, 1972a, 1972b, 1973a, 1973b). These studies are limited in scope in that they have confined themselves to looking at the beaches and their immediate hinterlands. On the other hand, they have examined each area in great detail, looking at the physical background, the ecology and the human use. The studies were not specifically orientated to examining recreational use of the beaches, but/

but potential for recreation is brought out. Their primary value is likely to be at the local management level. The detail of resource analysis undertaken is unlikely to be feasible (or necessary) for most strategic planning studies.

A piece of research which is more directly relevant to the requirements of strategic planning is the broad identification and evaluation of development potential undertaken by Duffield and Owen (1970, 1971a; see also Owen, 1972, 1973) as part of their studies of recreation in Lanarkshire and Greater Edinburgh. Owen (1972) states:

> "The aim of the classification was to provide a systematic and objective assessment of potential resources which could serve as the necessary foundation for [outdoor recreation] planning".

In practise Duffield and Owen concentrated on identifying 'recreation environments', areas which, potentially at least, were able to support a range of countryside recreation activities. They did this for two main reasons:

(a) the general desirability in planning terms of grouping countryside activities together
(b) the 'recreation environments' thus delimited would be the type of areas which planning authorities would wish to identify for use as country parks.

The assessment was seen as a first phase 'broad brush' exercise to identify areas which were potentially suitable for recreational activities in terms of their physical resources/

resources and accessibility. It was recognised that these areas would then need to be examined much more closely to take into account the full range of localised constraints, such as planning restrictions, attitudes of land owners, etc.

The assessment was based on 2km grid squares. Four broad criteria were used in defining squares as 'recreation environments':

1. ability to support land based recreation activities
2. ability to support water based recreation activities
3. scenic quality of the area
4. ecological quality of the environment.

For each square each of these factors was graded, based on a detailed sub-set of criteria (see Duffield and Owen, 1970, Appendix 2.1). The grades were then expressed as scores out of 100, and the scores for each factor summed, giving a theoretical maximum of 400. The aggregate score out of 400 was taken as a measure of the 'recreation environment'.

Demand, which is another factor to be considered in evaluating site potential, was also assessed in the Lanarkshire and Edinburgh studies in terms of patterns of existing day recreation demand and of potential demand as expressed in 'population pressure' (1). However, in the study reports these were not related directly to the recreation environments identified, and this/

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(1) Since the studies were concerned only with the the recreation of residents of Lanarkshire and Greater Edinburgh, existing and potential demand from tourists was not considered.

this must be counted as one of the weaknesses of the reports. Another criticism might be of the importance attached to ecological quality in evaluating potential. It could be argued that this is not a necessary attribute for a site offering a range of recreation activities, or even that such sites should deliberately be kept out of areas of ecological importance.

The researchers were obviously aware of and sensitive to these two weaknesses in their approach, for Owen (1972) shows how, having transferred all the data to a computer mapping system, they produced further maps to answer these specific points. Maps were firstly provided to show the relationship between recreation environments and potential demand, by relating different grades of the former to the available population within 10 miles (in one analysis) and 30 miles (in another). Secondly, the process of identifying recreation environments was repeated using alternative scoring systems; one of the changes made was to give squares with ecological quality a negative score, on the basis that the higher the ecological value, the greater the argument against using a site for recreation. Another change made was to weight scenic values more heavily on the basis that this is one of the most important attributes.

The flexibility in weighting and combining factors thus made available by the computer system also helps to overcome a further argument against a resource assessment approach of this type - namely, the inevitable arbitrariness of the relative importance assigned to different factors. Sites which consistently appear as being of high quality when different sets of values are used can be accepted with some confidence.

Duffield/

Duffield and Owen's work is without doubt an invaluable pioneering effort in the field of potential recreation resource assessment, and offers great scope for further development, as is suggested in Chapter 5. Although the assessment in Greater Edinburgh and Lanarkshire was used only to locate 'recreation environments', the approach could be used to identify areas with potential for certain individual activities (e.g. pony trekking), if the required data relating to necessary site attributes were available. If the same approach were to be used for assessing potential resources for tourism (rather than just for day recreation), then it would be necessary to find some measure for potential tourism demand, equivalent to 'population pressure' as a measure of residential demand.

More recently similar work has been carried out in Sherwood Forest (Zetter, 1974) and in South Wales (Countryside Commission, 1974). The techniques used, derived from earlier sub-regional planning studies in Notts/Derby and Coventry/Solihull/Warwickshire and given the formal title of Potential Surface Analysis, again involved scoring of individual squares in terms of their attributes with respect to accessibility, relationship to population, and the quality and variety of attractions for informal recreation. The work was perhaps more rigourous than that of Duffield and Owen in that the criteria used for scoring were more systematically related to objectives and the weightings used were based, in part at least, on some evidence - albeit surveys of country planning staff.

The approach was basically to consider all the factors together simultaneously, although experiments were /

were carried out with the weightings, including the use of zero weightings. Thus the application of the technique here did not use the more logical approach adopted by Duffield and Owen of looking firstly at the quality of the basic resource, before introducing factors such as accessibility and relationship to population which are essentially constraints on the use of the resources.

2.8 Analysis of potential impacts of different types of tourism development

Evaluation of the likely impacts of different types of tourism development, as a basis for choosing between alternative future policies, is the final aspect of tourism research which must be incorporated within regional tourism planning research programmes.

Reference has already been made in Chapter 1 to the wide range of objectives to which impact research must relate (and to the likely variation in emphasis which would be given by different organisations to particular factors), and in this chapter to the one tourism planning study, "Recreation Planning for the Clyde" (Travis and Associates, 1970) which has adopted a type of evaluation procedure which is well suited to the requirements of regional studies. If the evaluation is to be objective rather than subjective, as in the Clyde study, then wide ranging research evidence is needed in the fields of social and environmental as well as economic impacts of tourism. However, very little policy orientated research has been undertaken in any of these fields, and what there is has largely been concerned with economic impact alone.

Literature/

Literature on the economics of tourism has been well reviewed by Archer (1973) and Richards (1972). Archer's review is the more relevant to the subject of this thesis because it is concerned primarily with the regional impact of tourism, while Richards' is more concerned with examining the position of tourism within the economy, particularly at a national level - his viewpoint is more that of the national economic planner looking at the part that tourism (as a single entity) plays or can play within the overall economy. Richards work is of direct relevance to the determination of national policies and objectives for tourism, and while this forms an input to regional tourism planning, it is not part of the field of study, as defined in Chapter 1.

As the two reviews reveal, studies attempting to quantify the economic impact have to date concentrated largely on a multiplier approach. The overall tourism multipliers which have been produced have been of variable quality, with many "problems of basic data, misplaced aggregation and methodological errors" (Bryden, 1973).

Apart from such problems, there are, as outlined below, important conceptual weaknesses with the use of multipliers. Leaving these aside for the moment, it is important to appreciate the way in which multipliers might be used in planning. A single tourism multiplier on its own is of little value for policy decisions, since it simply shows the extent to which money recirculates within the regional economy. If the multiplier is to be of any value in determining strategy, it must be possible to draw comparisions, either between tourism and other economic activities (for overall economic/

economic planning) or between different types of tourism (for tourism planning). Further, the multiplier is only designed to show the size of economic benefits resulting from a given increase in demand. It must be used in conjunction with information about the costs of achieving that increase in demand.

The tourism planner's requirement for multipliers relating to different types of tourism, has rarely been satisfied. The reviews mentioned above indicate that there have been only two studies which have attempted any such analysis. The first was by Gamble (1965) in Pennsylvania, which divided recreationists into three groups - hunters and fishermen, tourists, and second home owners. The second was a study by Archer himself in Anglesey, which tested the use of both input-output and ad hoc multiplier approaches to assess impacts for four accommodation user groups - users of hotels, bed and breakfast, caravans and tents. The two methods produced slightly different income multipliers for each group, but the relative order of magnitude remained similar, with the input-output model (which records more accurately the secondary indirect effects of tourist spending) producing the higher multipliers, except in the case of campers where the higher figure derived from the ad hoc multiplier is explained as a result of an erroneous assumption. Differential employment multipliers were also calculated, the model being adapted from the income multiplier.

Archer shows how the input-output approach can be used to produce further useful information - namely the magnitude of the overall direct and indirect impact of the spending of different tourist groups on both income and output of different sectors of the economy. This has two implications - firstly, it enables the planner to see/

see the overall nature of the impact; secondly, it enables him to forecast the required increases in output of different goods and services which would result from different types of tourism development - information which is essential if any form of threshold analysis is to be undertaken during the planning process.

Bryden (1973) in his study relating to the Carribean, casts considerable doubt on the validity of multipliers. They cannot, he says, be used "to measure the benefit or the potential benefit from the expansion of tourism to the economy as a whole over the longer run", since they embody important conceputal weaknesses. The most fundamental is that multipliers were conceived to be used in situations of under-utilisation of resources, particularly labour and existing stock of capital, when there would be no major opportunity costs arising from an increase in demand, and the multiplier would indicate the increase in real incomes. In fact, such under-utilisation rarely occurs, so that real opportunity costs arise; these are likely to include the importation of goods which would otherwise have been made or grown within the region. The change in the extent of importation will vary with the extent of utilisation of resources - i.e. the multiplier will tend to decrease with increasing utilisiation.

Bryden's other main criticisms concerns the application rather than the concept of the multiplier - namely, that the majority of previous multiplier calculations did not take into account remittance of profit to owners outside the area, and of wages by workers staying and working in the area temporarily. Such factors can, however, be incorporated into a multiplier fairly easily.

Bryden/

Bryden implies that there is no way of relating multipliers to opportunity costs and therefore proposes a new method which is basically a thorough accounting system for measuring the costs and benefits of tourism to the community. He applies this method, which he calls 'social cost-benefit'(1), to case studies in the Caribbean and calculates the social returns.

This appears to be the first time that an analysis of type has been undertaken for tourism, and it undoubtedly provides a better basis for decisions than use of a multiplier alone. It does therefore suggest an approach which might be adopted in Scotland. However, the actual method used, based on one developed by Mirrlees and Little (1968), is primarily designed for developing countries, and would therefore require to be adapted. Also, it must be appreciated that the methods still only measures the rate of return in terms of factors which can be quantified in monetary terms.

With respect to economic studies in Scotland, the published work to date has been very limited in scope. The small scale project undertaken by Blake and McDowall (1967) on the economy of St. Andrews attempted to compare the relative effects on the local economy of tourist spending and the presence of the University. It was not orientated to the needs of planning and treated tourism as a single entity. The report of the Galloway Project (University of Strathclyde, Regional Studies Group, 1968), "a study of the economy of South West Scotland with particular reference to its tourist potential" argues strongly for tourism to be seen as a form of regional development, but because of insufficient resources, it was unable to undertake even/

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(1) Bryden's use of the term 'social' does not imply incorporation of social factors, but simply that the method measured economic costs and benefits to the <u>community</u> rather than to the <u>individual</u>.

even an ad hoc multiplier study, and relied purely on background economic information about tourism. However, there are multiplier studies currently under way in Scotland, and these will provide multiplier information for different sectors of tourism, as in the Anglesay study. One of these, relating to Tayside, is discussed in Chapter 5.

Apart from its economic affects, tourism can have a wide range of less-easily evaluated social and environmental impacts which must be given due weight in the strategy generation and evaluation processes. On the environmental side, this chapter (under Resource Assessment) has already looked at the considerable amount of research dealing with the ecological impacts of tourism on individual sites - i.e. research related to the determination of site capacities and management. However, there has been considerably less research concerned with evaluating at a macro level impacts on environmental qualities which might be regarded as important by residents and/or visitors - qualities such as quietness, freedom from crowding and pollution, landscape and townscape quality, and the maintenance of rare species of fauna and flora. On the social side there is a similarly wide range of factors which might be considered - for example, the impact of tourism on community life, culture and personal values, housing, leisure infrastructure, and public services such as health and transportation.

Bryden (1973), writing in respect of the Caribbean, Archer (1973) and Young (1973) have all identified social and environmental issues which should be examined, but systematic research on these issues, as an input to strategy evaluation, appears to be almost entirely absent. Some studies (e.g. PA Management Consultants, 1973a, 1973b) have involved resident surveys which have touched/

touched on some of these issues. However, these have tended to be superficial, giving only the broadest of indications of attitudes towards tourism. The PA studies have arguably contributed less to the evaluation of tourism policies than to developing a public relations case for tourism.

Conclusion

The aim of this review of previous research was not to be comprehensive, but to examine studies in each of the aspects mentioned in Chapter 1 which were significant either for developing research methodology or which revealed important methodological weaknesses that future studies should aim to overcome. In proposing methodologies for future research, subsequent chapters will draw on the lessons to be learnt from these studies.

The most useful lessons regarding the development and operation of research programmes can be derived from the Canadian Outdoor Recreation Demand Study and the Ontario Tourism and Outdoor Recreation Plan Study. The approaches of these two studies differ, as has been discussed, but each has its merits, and possibly future programmes can be devised to combine these merits. The major weaknesses in the programme of recreation research undertaken for the U.S. Outdoor Recreation Resources Review Commission also provides important lessons.

As regards the analysis of existing patterns of demand, the research discussed in this chapter illustrated alternative possible methods. Chapter 3 considers this area of research further in devising a methodology for application in the Highlands and Islands. The studies which are most relevant to the approach which is adopted there are the 'Touring Caravan in Scotland' study by Duffield and Owen and the Countryside /

Countryside Commission/British Tourist Authority study of weekend motorists in the Lake District.

As this review has indicated, the research available on the subject of the assessment of existing resources and their capacity is far from adequate. The An Foras Forbartha study in Donegal usefully established a thought process for such work at area or regional scale, but was open to criticism in its application, particularly on account of its subjectivity. The only objective capacity measurements have been for specific sites or specific types of resource. Ideally, such objective measurement would be carried out on a much wider scale for regional analysis, but there are many problems involved in doing so, and a substantial amount of subjectivity may be required, as discussed in Chapter 5. Likewise in the field of the assessment of potential resources the amount of developmental research is small. The work of Duffield and Owen and the Countryside Commission offers the most promising pointers for future work.

As regards tourism demand forecasting, there are also large gaps in the existing research. Analyses of existing demand have rarely been carried out sufficiently well to provide the understanding necessary for forecasting. Patterns of demand within regions have never been analysed to the full extent necessary, whilst the market potential studies discussed (by Handley and Heape, Air Canada/Canadian Government Travel Bureau, Masius Wynne Williams/ Westminster Research Bureau, Levens and Riley) have each covered just a small part of the methodological ground.

Of the studies which have attempted to produce quantitative/

quantitative forecasts, the Cooper Brothers Study for the NEDO illustrates well the complexity of the problems and the difficulties involved. Despite its many weaknesses the study does illustrate a systematic approach to forecasting in a situation where it was not possible to establish a mathematical model.

The Ontario Tourism and Outdoor Recreation Plan Study has the best example of a tourism research study which as attempted to model both demand generation and distribution. Although the model has yet to be fully tested, its structure is well thought out and it suggests an ideal which might be pursued in Scotland if modelling were to be attempted here. The models developed in the two Michigan studies and in Ellis's study for the Ontario Department of Highways were more limited in that they were concerned only with demand distribution. However, they have apparently been operated successfully and are therefore worthy of detailed study in regional modelling in Scotland.

Research on the impact of tourism, as a basis for strategy generation and evaluation, is a further aspect on which there has been little work to date. Only ecological and economic impacts have been examined in any detail. However, the ecological work has tended to be at the scale of the individual site, and, of the economic studies, only that of Archer in Anglesey has any real relevance to regional tourism planning requirements in Scotland. Bryden's work suggests there may be a need to question whether the multiplier is an appropriate tool in such economic analysis.

Part 2

Analysis of an existing regional market and patterns of demand within a region

Chapter 3

Devising an approach for the Highlands and Islands

3.1 Introduction

Part 1 has indicated the various aspects of research which are required to make up a comprehensive research programme for the strategic planning of tourism at a regional level and shown that in British research published to date no such programme has yet been attempted. Further, British work on individual aspects is of variable quality, usually lacking a rigorous approach; with some aspects, very little work at all has been undertaken. The amount and quality of work available at the time this research was started (1967) was even more limited.

One aim of this study has been to test research methodology within the broad framework of region tourism planning requirements set out in Chapter 1. It was accepted from the beginning of the study that it would not be possible to test all the aspects, and it soon became apparent that each aspect required a major study of its own.

It was therefore decided to concentrate on developing methodology for one particular aspect - the collection and analysis of information relating to the nature and pattern of existing demand(1) - for one case-study /

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(1) The term 'existing demand' as used here implies that part of total demand which is expressed - i.e. consumption. This may also, perhaps more correctly, be termed 'effective demand' (Countryside Recreation Research Advisory Group, 1970).

study region, the Highlands and Islands. The intention, however, was to see this work within a comprehensive framework, such that it would dovetail into the full sequence of studies which is necessary. One of the main faults with tourism research to date is that researchers have tended to see in isolation their studies on individual aspects. They have not in general tried to fit their work into a context of total planning research requirements, whilst those responsible for planning have not influenced research sufficiently in this way.

The reason for choosing to concentrate on the demand aspect rather than the other realistic alternatives, the assessment of existing and/or potential supply, was in part pragmatic, being related to the interest of the fieldwork sponsor, the Highlands and Islands Development Board, in a demand survey.

It might be argued that other aspects of research could have been covered if attention had been confined to a case study area rather than a region. However, when demand data is collected and analysed by the methods adopted in this study (as explained in this Chapter and in Chapter 4), the savings in resources to be achieved by considering an area rather than a region are marginal. Furthermore, the study was concerned with developing methodology for regional research, and methods devised at an area scale might not necessarily be relevant. A practical reason for the approach adopted was that the HIDB wished to see the demand study carried out at regional level.

3.2 The role of studies of existing demand

Studies of existing demand can play a part in two aspects of the overall research framework outlined in Chapter 1:

(a) the quantitative measurement of the levels of demand for tourist services, facilities, activities and associated public infrastructure and services, in such a /

a way that demand can be compared with existing supply to reveal immediate problems for tourism management.

(b) as one of the inputs to forecasting. Chapters 2 and 5 point out that a thorough understanding of the present pattern of tourism within regions is needed for forecasting and that this may be expressed either mathematically (by modelling), or in a qualitative manner. Because of its immense complexity, no attempt has been made here to develop and test demand models - this would be a major study in its own right. However, Chapter 4 does show how, by thorough analysis of the existing market and its patterns of demand within the region, an understanding of the present can be built up, and how this can provide important indicators for the future.

This chapter is concerned with the development and application of survey methodology for collecting data on existing demand in the Highlands and Islands of Scotland. Chapter 4 concentrates on illustrating the utilization of data in the ways outlined above.

3.3 The collection of data on existing demand

The nature and range of data requirements for the purposes outlined above were such that the only conceivable approach was a questionnaire survey. The main point to be decided was the method of administration. The alternatives were as follows:

(a) a home interview survey, along the lines adopted by Hunt (1966), as described in Chapter 2. This approach was rejected partly because of the disadvantages mentioned in Chapter 2, namely:

- the extremely high wastage (and hence expense) necessary to contact an adequate sample:
- the necessary exclusion of foreign visitors;

and partly also because respondents interviewed in their homes several months after their holiday (as would often have been the case), would not have been able to recall sufficiently accurately the full range of details required.

(b) /

(b) <u>day-time surveys at sites within the region</u>. Chapter 2 pointed out that the majority of market research at a regional level has been carried out by this means, and a number of examples were mentioned. However, such surveys are open to serious methodological objections, primarily because of the lack of any sampling frame. In any region it is unlikely that there will be sampling points where the visitors might be taken as representative of visitors to the region as a whole. Essentially the requirement is for one place which all the visitors to the region visit on one occasion only; there is certainly no such place in the Highlands and Islands.

If interviewing is carried out at more than one location, then problems arise as follows:

1. since tourists move around the region, the populations sampled at each point would overlap by an unknown amount, making impossible any combination of results from the different points.

2. even if the populations to be sampled at each centre were discrete, the sample from each place would, before being combined, need to be weighted according to the size of the population which is represented. Since the latter would not be known, the weighting would be impossible.

A further problem is that if interviewing is carried out in a 'neutral' location which people may visit more than once during their holiday, such as a shopping centre, there will be a 'length of stay bias' - i.e. the longer a person stays in an area, the more likely he is to be interviewed, so that the sample is biased towards longer staying visitors who may be very different in their nature and activities from the short stayers. It is possible to make a correction for this, through weighting by the reciprocal of the length of stay, but this is only valid if an individual's chances of being interviewed at a particular /

particular place increase proportionally with his length of stay in the area, which may well not be the case. The problem of length of stay bias has been well explained by Archer (1972 and 1973), who shows that it is rarely that correction of the bias has been undertaken, or the need even recognised.

These problems associated with sampling, together with the fact that this survey method does not allow the sample to be grossed up to give results in terms of total volumes, essential for supply-demand analysis, led to the rejection of the method.

(c) surveys at accommodation units. Here again the principal problem is one of obtaining a sampling frame. Without statutory registration of accommodation, lists will never be comprehensive. No category of accommodation is covered satisfactorily by present lists, but Bed and Breakfast and rented accommodation pose by far the biggest problem. In addition, of course, those staying with friends and relatives would always be excluded.

There is a further practical problem associated with this method - actually contacting the visitors. For example, guests arriving late and departing early the next day might be very difficult to interview. If self completion questionnaires are to be used, problems of low response rates would certainly arise.

There would also be a length of stay bias in the sample if the survey covered only single nights. However, this could be eliminated fairly easily by weighting.

The lack of any sampling frame was the really critical issue with this method and led to its rejection.

(d) surveys of tourists on their way between the Highlands and their home region, using the cordon survey method developed by traffic engineers. This method which, as Chapter 2 has shown, has been used in two British /

tish tourism market research studies (Countryside Commission and British Tourist Authority, 1970; Duffield and Owen, 1971b), and has very considerable advantages as follows:

1. it provides a suitable framework for drawing random samples of tourists:

- firstly, because tourists finally leaving the area along each of the arteries form mutually exclusive groups from which samples can be taken without overlap.
- secondly, because the 'channelling' of tourists along these routes makes it possible to introduce some degree of randomness into the selection of the samples.

2. the total tourist populations travelling along each route can be measured. The sub-samples can then be weighted accordingly and combined to form one sample of all tourists to the Highlands.

3. parties can be contacted as they finally leave the region, when their stay in the region is complete and they are in a position to give full and final details about their visit to the region immediately. This is not possible with surveys <u>in</u> the region.

The main limitation with this survey method is that it excludes holidaymakers whose home is within the cordoned area. In the case of the Highlands with its very small population, this is a limitation which can readily be accepted. However, in regions where a large part of the holiday trade originates within the region, it might well be thought necessary to combine a cordon survey with a home interview survey within the region. This is the approach being adopted in the current Scottish Tourism and Recreation Study, which is described in detail in Appendix 6(1).

The /

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(1) The type of approach adopted by the 'Touring Caravan in Scotland' survey (Duffield and Owen, 1971b) to overcome this problem has been shown in Chapter 2 to be fundamentally unsound.

The conceptual advantages made this the only method which could meet the requirements, and accordingly this approach was adopted. However, at the time, there was virtually no experience available of such an approach in tourism research(1), and it was therefore necessary to break entirely new methodological ground. Practical difficulties, as detailed below, were encountered in the application of the new methodology. But, given the resources, these can be overcome or, alternatively, certain restrictions on coverage can be accepted which reduce the difficulties considerably.

3.4 Restrictions on coverage

Ideally the cordon survey method requires an all-year-round 24-hour check on all important exits - roads, rail, sea and air. There are, however, major problems in achieving such coverage. These are primarily problems of costs, but also there are difficulties associated with the mechanics of contacting and interviewing samples during their journeys and in doing this over a 24-hour day.

The 'Touring Caravan in Scotland' and Lake District cordon surveys were both very restricted in their cover, to the extent that the representativeness of their samples must be questioned (see Chapter 2). Such restrictions were not acceptable for the survey in the Highlands and as comprehensive a coverage as possible was sought - particularly in terms of surveying at checkpoints on all days of the week and over as long a period as possible. However, the extent to which the ideal of comprehensive coverage can be achieved by any survey is in part dependent on the financial resources available.

The /

(1) The only relevant research carried out prior to the start of this work was the Lake District survey, but information on this was not available until 1969.

The amount of money available for the survey work in the Highlands was strictly limited, and accordingly the following restrictions were placed on the coverage:

1. only holidaymakers travelling by private vehicle were included in the survey. This was accepted as a reasonable restriction, because:

(a) they form a very large proportion of the total Highland holiday market; figures given later in this thesis indicate that in 1968 they probably accounted for 90% of the peak season bed-nights. The proportion may have increased slightly since then and is unlikely to diminish in the future unless heavy restrictions on the use of petrol are introduced;

(b) this type of holiday group poses by far the greatest planning problems, as a result of its mobility and the machinery it carries with it;

(c) the holiday patterns of this group, because of its mobility, are more complex than those of any other sector, and were therefore felt to be most in need of researching;

(d) some information, albeit inadequate, existed on the volume and nature of holiday traffic using other modes; this is detailed later in this chapter;

(e) to have surveyed the other modes would have resulted in costs quite out of proportion with the value of the results;

(f) following from factors (a) - (c), the Highlands and Islands Development Board, which sponsored the survey, was interested primarily in research on car travellers.

2. only the peak season period, mid-July to mid-September was covered. This restriction was accepted because:

(a) the primary orientation of the research is towards physical planning and it was therefore of particular/

cular importance to obtain data related to the period of greatest pressure on resources;

(b) coverage of the off-peak period would have been disproportionally expensive, since there is a higher wastage of interviewers time when there are few holiday-makers to be interviewed.

However, this was not an entirely satisfactory restriction, because, in addition to measuring and understanding peak season tourism, one also needs a measurement of off-peak tourism if the viability of new development is to be judged, and an understanding of it if a serious promotional effort is to be put into this area. Coverage over a full season, if not a full year, is therefore highly desirable, but was beyond the resources of this study.

3. only the period 10.00-18.00 hours was covered each day. This was because:

(a) it was thought, on the basis of the limited road traffic figures available at that time, that these hours would cover a very large proportion of the holiday traffic;

(b) resources restricted the field staff to two, who worked as a pair and moved round the checkpoints in rotation (see below). They changed checkpoints each night and there was thus a practical constraint of allowing sufficient time for them to travel the sometimes long distances between checkpoints.

Again this was an unsatisfactory restriction - not so much because of the volumes of holiday traffic passing outside the survey period (which probably only reached significant proportions on Sunday evenings and were taken into account by weighting), but because of the likely distinctive nature of this traffic. Thus traffic leaving the area before the cordon period started might have included relatively large proportions on long-haul trips (for /

(for example, people travelling to the south of England in one day); those leaving after 18.00 hours might likewise have included many living near to the Highlands. Such groups, and their distinctive holiday patterns, might therefore have been slightly under-represented in the sample.

Even within the limited budget available for this survey, it might with hindsight have been possible to have improved coverage with respect to this latter factor, by staggering the hours of survey between the different days at each checkpoint (e.g. 09.00 - 17.00 on day 1, 10.00 - 18.00 on day 2, 11.00 - 19.00 on day 3, 09.00 - 17.00 on day 4 etc.). The early morning and evening hours would stillhave been under-represented, but not so seriously.

3.5 Administration of the questionnaire

Apart from the matter of restrictions on the overall coverage, one of the most important questions to be faced on methodology was whether to carry out full interviews with respondents or ask them to complete a questionnaire. The advantages and disadvantages of different survey methods in recreation research have been described in some depth by Davidson (1970a) and by Burton and Noad (1968). It will therefore suffice to summarise here the main points which were considered in choosing between the two alternatives for this survey.

The primary factor considered was the likely length of a direct interview and the number of responses which it would yield. It appeared that it would take, on average, 15-20 minutes and it was felt that this would be too long to retain a motorist at the roadside and provide too few completed questionnaires. A self-administered questionnaire (s.a.q.) approach was therefore adopted, with questionnaire /

questionnaire return by post, reply paid.

However, it was felt that there were other strong advantages to using an s.a.q. as follows:

1. respondents could complete the questionnaire at their leisure and therefore have time to give more accurate answers. For example, they were required to fill in their route on a map, and in many cases it may have taken some time to do this accurately and possibly involved reference to other documents.

2. respondents might answer more accurately since the anonymity was evident.

3. an s.a.q. avoids the problems of interviewer bias - either in posing the questions or in interpreting the answers; likewise it avoids the possibility of respondent antagonism towards the interviewer.

However, it was recognised that there were major drawbacks to using an s.a.q., the major one being the danger of a low and biased response. Accordingly a number of steps were taken to minimise the bias:

(a) the questionnaire was limited in length to two foolscap sides of questions, plus the route map,

(b) attempts were made to present the questionnaire attractively using a clear layout on brightly coloured paper (a different colour was used for each checkpoint as an aid in administration and analysis),

(c) a carefully worded 'letter' on the front page introduced the survey and questionnaire,

(d) French and German translations were provided where necessary,

(e) space was provided on the questionnaire for tourists to make any comments they wished, as a means of arousing their interest in the survey.

Despite /

Despite these measures, response at 49% was not high[1] and, as indicated in Section 3.8, there was certainly some bias. It would therefore seem desirable in future surveys of this type to introduce further measures to boost the response rates, and two in particular are suggested:

1. the use of incentives; both Davidson (1970) and Burton and Noad (1968) refer to surveys where incentives have been seen to increase response. A recent survey for the Scottish Tourist Board (Gore Huggins, 1972) supports this view; a two phase survey of people who wrote for the Board's 1972 brochure involved firstly a home interview survey in May 1972 with a random sample, followed by a postal survey of those who said they were going to visit Scotland that summer, together with those who had not decided where to go. Twelve AA Road Books of Scotland were offered as lottery prizes for those replying to the postal questionnaire, and, after two reminders, a 93% response rate was achieved. It is therefore evident that even small incentives can achieve very satisfactory response rates.

2. the use of reminders; it is well established that reminder letters or cards bring in additional responses. Davidson (1970) suggests that a typical pattern of response is 40% before a reminder; a further 20% with the first reminder, 10% with the second and up to 5% extra with a third. A problem with the use of reminders for a cordon survey is that the respondent's address has to be obtained, and this may obviously reduce the feeling of anonymity. However, if a lottery prize incentive is being offered, the address must obviously be collected anyway. This adds a further good reason for offering the incentive, It has also been suggested (Scott, 1961) that the use of stamped reply envelopes rather than 'business reply' helps to boost response.

Even /

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1. It compares with a response of 59% in the Lake District survey.

Even with the use of all the measures mentioned above for increasing response, there will still be an element of non-response leading to bias. It is important to be able to measure the extent of the bias, so that, if necessary, weighting can be undertaken to correct it. The steps taken to measure the bias in this survey are described in Section 3.8

Other problems associated with s.a.q. surveys are less fundamental than those of non-response, but nevertheless important. One is the problem of respondents misreading or misinterpreting the questionnaire(1); there is no interviewer available to clarify questions or correct mistakes in answers. This points to the need for the questionnaire to be clearly laid out and for the questions to be unambiguous. An important aid to this is a pilot survey (or surveys). Unfortunately the scale of the pilot for this survey was severely limited by time and weather. However, even the limited number of pilot responses revealed several ambiguities and instances where whole questions were being omitted because of poor layout.

Another problem, associated with postal return of questionnaires, is that of delay, especially where, as in this case, no reminders could be sent. The majority of returns came within three weeks, but some came in several months after issue. The time lag in receiving questionnaires poses certain practical problems as regards coding (particularly of open-ended questions), but a more important consideration is that if analysis is to be undertaken fairly quickly, questionnaires received after a certain date must be discarded.

Thus /

(1) This was encountered in the Highlands and Islands survey, particularly in the question dealing with activities undertaken, as explained in Chapter 4.

Thus, while the use of an s.a.q. approach in this survey resulted in biased response, improvements could be made which would substantially better the results achieved by such a method in future. However it is necessary to question whether in fact the basic decision to use an s.a.q. approach was correct. The decision was based on the assumptions that the questionnaire would take 15-20 minutes to administer and that this would not be acceptable to the respondent.

However, both these assumptions may have been wrong. In two more recent cordon surveys, those carried out for the 'Touring Caravan in Scotland' study (Duffield and Owen, 1971b) and the pilot study for the Scottish Tourism and Recreation Study (University of Edinburgh, Tourism and Recreation Research Unit, 1972) it has been shown that questionnaires of similar length to those used in this
3.6 survey can be administered at the roadside in under ten minutes by fully practised interviewers; and that interviews of this length or even longer (up to 20 minutes) are generally acceptable to respondents.

Thus the interview would apparently have been practicable at the roadside and the number of responses would probablyhave been greater than anticipated. Even so the number of direct interviews would still at maximum have been no more than 60% of the number of postal returns. Had the response been boosted in the ways indicated above, then the postal return method would probably have yielded well over double the potential number of direct interviews.

It would probaly have been better in this survey to have used a direct interview to have obtained a smaller number of less biased responses, rather than the method actually adopted. However, if the postal response rates could have been boosted to 80%-90% (which the more recent evidence /

evidence seems to indicate is possible), then bias would have been reduced considerably and the very much larger numbers of returns would argue for the s.a.q. approach.

In future surveys, the choice between the direct interview and s.a.q. methods will be largely dependent on the nature and lengths of the questionnaire. If the questionnaire is longer and more complicated than the one used here, then consideration must be given to employing direct interviews. It may be best, particularly where the amount of information required is very great, to adopt a compromise and obtain from each respondent the more complex information and profile details by direct interview, and then hand out a questionnaire for subsequent self-completion and return by post, with appropriate measures for boosting the response.

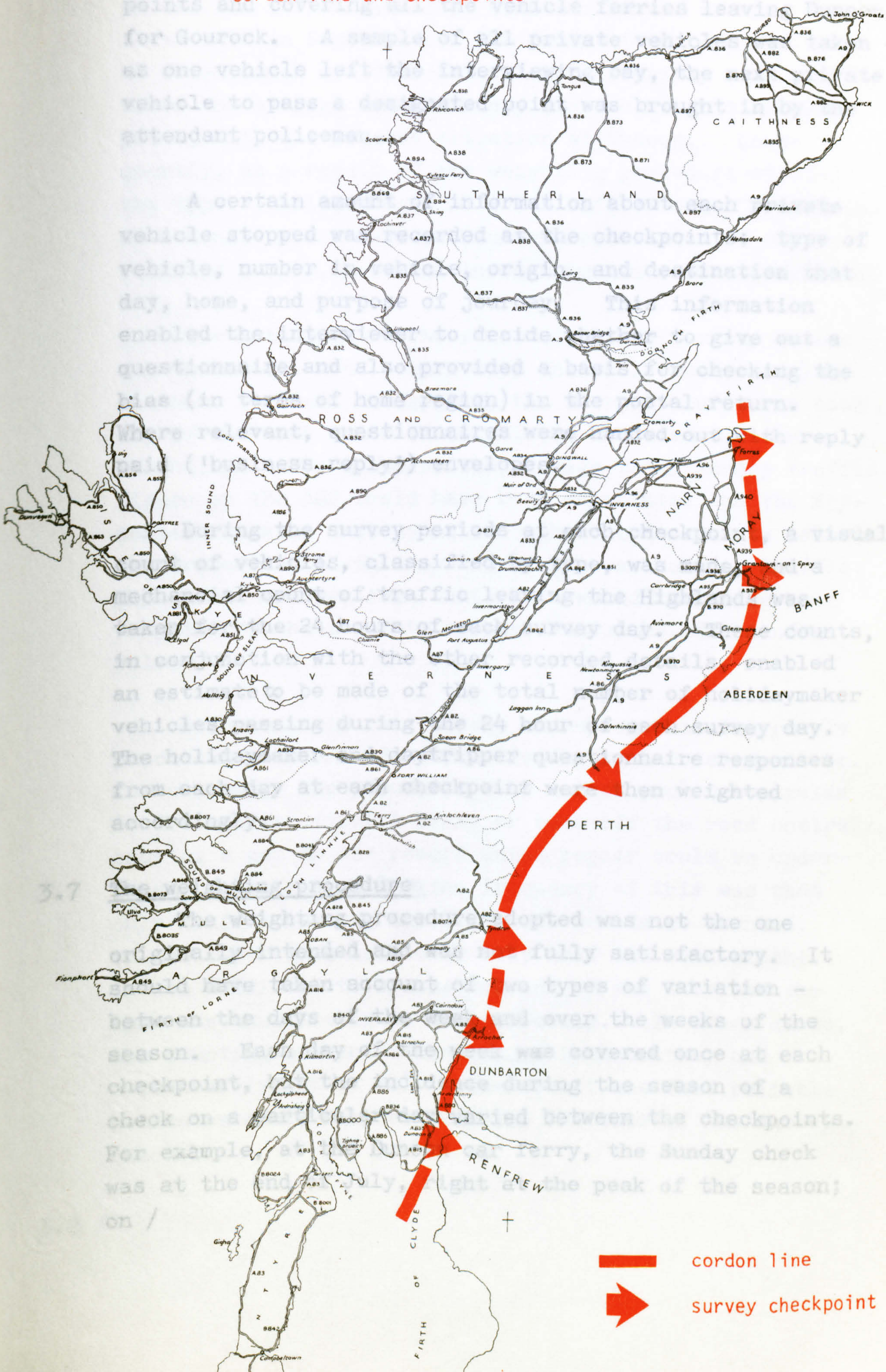
3.6 The survey method - working details

The factors discussed above were together responsible for the overall design of the survey methodology. The following paragraphs describe the working details of the survey, established within this overall framework.

A cordon line was established around the southern edge of the Highlands, so that tourists could be contacted as they passed through the cordon when finally leaving the Highlands after their holiday. The cordon was so arranged that all important vehicle arteries were covered by six checkpoints (see Map 3.1) - five on arterial roads, the other at the Dunoon car-ferry terminal.

Checks were carried out at each of these points on seven days (each day of the week once) spread over the survey period of 8 weeks (20 July to 11 September). A party of two survey assistants moved around the checkpoints in an 8-day rotation (6 days working, 2 days off), working from 10.00 a.m. to 6.00 p.m. at the road checkpoints /

Map 3.1 The Highlands and Islands, showing the survey cordon line and checkpoints



points and covering all the vehicle ferries leaving Dunoon for Gourock. A sample of all private vehicles was taken - as one vehicle left the interviewing bay, the next private vehicle to pass a designated point was brought in by the attendant policeman.

A certain amount of information about each private vehicle stopped was recorded at the checkpoints; type of vehicle, number in vehicle, origin and destination that day, home, and purpose of journey. This information enabled the interviewer to decide whether to give out a questionnaire and also provided a basis for checking the bias (in terms of home region) in the postal return. Where relevant, questionnaires were handed out with reply paid ('business reply') envelopes.

During the survey periods at each checkpoint, a visual count of vehicles, classified by type, was made, and a mechancial count of traffic leaving the Highlands was taken for the 24 hours of each survey day. These counts, in conjunction with the other recorded details, enabled an estimateto be made of the total number of holidaymaker vehicles passing during the 24 hour of each survey day. The holidaymaker and daytripper questionnaire responses from each day at each checkpoint were then weighted accordingly.

3.7 The weighting procedure

The weighting procedure adopted was not the one originally intended and was not fully satisfactory. It should have taken account of two types of variation - between the days of the week and over the weeks of the season. Each day of the week was covered once at each checkpoint, but the incidence during the season of a check on a particular day varied between the checkpoints. For example, at the Dunoon car ferry, the Sunday check was at the end of July, right at the peak of the season;

3.8 on the A82 (Crianlarich) it came at the end of the first week in September. The Sunday traffic count at Crianlarich was therefore almost certainly well below the average summer Sunday traffic at that checkpoint, with the reverse situation at Dunoon. Consequently, as a result of the weighting procedure adopted, the type of holiday traffic which left through Crianlarich on a Sunday would have been under-represented in the weighted sample, and that through Dunoon over-represented.

The intention at the start of the survey was to carry out mechanical road counts over the whole survey period, so that, for each checkpoint, the average traffic on each day of the week could be calculated and used for the weighting. For example, the average total Sunday traffic figure on the A82 would have been calculated and the September check at that point would have been used to calculate the proportion of this average which was holiday traffic. The questionnaires from that check would then have been weighted by the absolute average Sunday holiday traffic volume.

Unfortunately this scheme ran up against the purely practical problems of malfunctioning mechancial counters. In some cases the pneumatic tube (which provides a pulse to the counter itself) broke or came off the road entirely, causing a gap in the record until repair could be undertaken. One reason for the frequency of this was that only traffic leaving the Highlands was to be counted, so the tubes were laid over only half the road width; it was difficult to secure the end of the tube and the tube was thus liable to damage easily. In other cases, the counting mechanism functioned inaccurately and occasionally not at all. The result was that reliable estimates could only be made for the days of the survey checks.

3.8 Bias and the weighting procedure

Another of the major weaknesses in the survey method was the extent to which bias could be checked and corrected by weighting. The response rate was 49.4% - 2,325 returns out of a total of 4,702 holidaymaker questionnaires distributed. Bias in the postal return was therefore almost inevitable. However, the amount of information collected from every party stopped at the checkpoints was very limited, as stated above. It was therefore possible to measure bias only in certain respects. The following paragraphs indicate the extent of bias in these respects and also the need for further measures of it.

Table 3.1 shows the response rates for each checkpoint, and for each 8-day working cycle ('Week'). Five of the six checkpoint response rates fell in the range 45.3% to 53.3%, the exception being that for Dunoon (37.6%) which was considerably lower than the others presumably because tourists from West Central Scotland, who had a relatively low response rate (see below) formed a relatively high proportion of those passing through that checkpoint.

The response rate increased over July and early August, to reach a peak at the end of August, a pattern probably related to the increase in the proportion of English visitors (with higher response rates) over the same period.

The response rate of holidaymakers from each home region is given in Table 3.2 (Col. 1). The rates from the English regions apart from the North West (49.4%) and /

TABLE 3.1

QUESTIONNAIRE RESPONSE RATE BY CHECKPOINT, AND BY WEEK

Checkpoint	Response Rate (%)	Week	Response Rate (%)
	Holidaymakers		Holidaymakers
Dunoon	37.6	July 20 - July 25	44.9
Arrochar	52.5	July 28 - August 2	45.1
Crianlarich	51.8	August 5 - August 10	48.8
Dalwhinnie	48.3	August 13 - August 18	49.4
Grantown-on-Spey	53.3	August 21 - August 26	53.8
Forres	45.3	August 29 - September 3	52.4
		September 6 - September 11	51.4
All checkpoints	49.4	Whole period	49.4

TABLE 3.2

QUESTIONNAIRE RESPONSE RATE BY HOME REGION, AND THE DIFFERENCE BETWEEN THE HOME REGION DISTRIBUTIONS OF PARTIES GIVEN QUESTIONNAIRES AND OF THOSE RETURNING THEM

Home Region	1 Response Rate (%)	2 % of Questionnaires Distributed	3 % of Questionnaires Returned	4 Difference = 2 - 3	5 (2-3) as % of 2	6 % Earning over £1,250
East Scotland	39.2	7.5	5.9	- 1.6	- 21.3	46
North and East Central Scotland	46.1	7.8	7.2	- 0.6	- 7.7	54
West Central Scotland	42.1	12.8	10.8	- 2.0	- 5.6	58
South and South East Scotland	50.6	7.7	7.9	+ 0.2	+ 2.6	64
North England	45.2	7.4	6.7	- 0.7	- 9.5	55
Yorkshire and Humberside	53.0	8.5	9.0	+ 0.5	+ 5.9	61
North West England	49.4	9.6	9.6	0.0	0.0	64
Midlands	56.5	9.2	10.3	+ 1.1	+ 12.0	61
South West England and Wales	51.5	4.2	4.4	+ 0.2	+ 4.8	72
South East and East Anglia	54.5	18.8	20.7	+ 1.9	+ 10.6	74
Europe	53.4	3.5	3.8	+ 0.3	+ 8.6	75
North America	54.0	2.1	2.3	+ 0.2	+ 9.5	89
Rest of World	71.4	1.0	1.5	+ 0.5	+ 50.0	82
All Regions	49.4	100.0	100.0	0.0	0.0	64

Note: For explanation of regions used see Appendix 5

and the North (45.2%) were higher than average, ranging between 51.5% and 56.5%; and from Scotland, except for the South and South East (50.6%), they were lower than average, ranging between 39.2% and 46.1%. Overseas visitors, other than Europeans, had relatively high response rates.

The bias in the home region distribution of the unweighted sample of questionnaires returned (Col.3), as compared with the sample of questionnaires given out (Col.2), is shown in Table 3.2. The absolute difference between the two distributions (Col.4), is in no case more than 2%, and it is over 1% in only 4 cases (East and West Central Scotland, the Midlands and S.E. England); the percentage difference (Col.5) is generally under 10%, except for East Scotland, the Midlands, S.E. England and "the rest of the world" (very small sub-sample). For England as a whole, the absolute difference is only 3.0% (a percentage difference of +5.2%); for Scotland it is -4.0% (percentage difference of -11.2%), and for overseas it is 1% (percentage difference of +15.2%).

Although it is not possible to prove any causal relationship, there is a reasonably strong correlation (coefficient of +0.77) between these response rates and the percentage of the sample earning over £1,250 from each of the regions (Col.6). It can be seen that those from Scotland (South and South East excepted) and North England included relatively few earning over £1,250 and this corresponded with a low response rate. On the other hand, visitors from Southern England, Wales and overseas had higher incomes and higher response rates. As a rule, therefore, a lower than average proportion earning over £1,250

corresponded/

corresponded with a lower than average response rate, except for the Midlands and Yorkshire/Humberside, which had a lower than average proportion earning over £1,250 but a higher than average response rate.

Thus it seems fairly certain that there was some bias, possibly quite large, in the postal response with respect to socio-economic status, and this was probably more serious than the bias with respect to home region. A bias in terms of income certainly seems to be borne out when the income profile of the visitors is compared (in Chapter 4) with that obtained in other surveys. The relationships in the sample between income and other factors, as shown in Chapter 4, indicate that a bias in the sample towards higher incomes would almost certainly have been accompanied by a bias towards larger parties, longer stays in the survey area, fewer different stopping places in that area, and to users of hotels and caravans, at the expense of campers.

It is is evident therefore that further measures of bias should have been made, and it is desirable that, in similar research in future where a postal questionnaire is to be used to obtain most of the information, basic profile and holiday data should be collected at the checkpoints from all those given questionnaires - unless it is certain that the response rate will be at least 80%.

If significant bias is then found in any respect, weighting should be undertaken to correct it. In this survey, weighting was only undertaken with respect to checkpoint and week. The computer programme being used (see Chapter 4) greatly limited the amount of weighting which could be carried out easily in practise. Thus while additional weighting by home region would

theoretically/

theoretically have been possible, the increase in the number of weighting factors from 42 to 378 would have involved a great deal of extra work which was not at the time felt to be justified. Purpose designed computer programmes can make much fuller weighting procedure a relatively straightforward matter.

3.9 Tourist traffic using other mode of transport

In demonstrating methodology, this study concentrated solely on carrying out the cordon survey of private vehicles, for reasons already outlined. Further, it was known that tourist traffic using other modes formed a very small proportion of the total. However, this traffic was thought to have patterns of activity entirely different from that using private vehicles. Since reasonably comprehensive information on the overall patterns of demand was required, such that it could be compared with supply, additional data to show the total volume and distribution of traffic in the other sectors was obtained.

With rail, sea and air, adequate information was relatively easily obtained from the relevant operators (one in each case). However, coach tours posed greater problems because of the large number of operators and the even larger number of operations in Scotland, varying greatly in pattern. Accordingly it was decided to carry out a substantial piece of desk research to obtain information compatible with that from the road cordon survey.

Two sources of information were used - the company brochures, which provided details of the numbers and patterns of operation in the Highlands; and the companies themselves who provided information on passenger numbers

on/

on individual operations.

The first step in the study was therefore to draw up as comprehensive as possible a list of operators running tours to Scotland, using the following bases:

(a) lists compiled by the 1968 cordon survey field-workers, of companies whose coaches passed through the checkpoints.

(b) Scottish Tourist Board lists.

(c) Highlands and Islands Development Board lists.

(d) supplementary information provided by the Traffic Commissioners.

Brochures giving details of tours to the Highlands were requested unofficially from 89 companies early in the 1969 season. A follow-up letter from a private address was sent to those who had not replied within two months. A few of the smaller companies did not reply even then, but it is thought fairly certain that they all come within one of the following categories:-

i. tours to Scotland stopped altogether
ii. tours to Scotland run only occasionally
iii. tours only to Scottish areas outside the Highlands.

Of the 72 companies who replied, sixty-one ran tours to the Highlands - the remainder either did not run tours to the region or only acted as agents for other companies. In December 1969 all companies operating tours to the region were sent a circular asking for the number of passengers on each departure of each tour which they ran to the Highlands during 1969. Some 15% did not reply, so

they/

they were sent a follow-up letter in January 1970. Those who failed to reply to this were telephoned and finally only three companies, all relatively small ones, refused to give the required information. For these, coach tour loadings were interpolated, using results obtained from the other companies.

At this stage the H.I.D.B. provided a new list of coach tour operators running to the Highlands, this being based on information collected by the Board from the Traffic Commissioners. This provided the name of 24 more companies who, it was thought, might have run Highland tours. They were all asked for details of any such tours but only 3 companies replied, these running just four tours between them. It seems reasonable to assume that most of the remainder (all small companies) did not operate such tours and any who did were of minor importance.

Thus a total of 64 companies were covered by the study and these were thought to account for almost 100% of the coach tour traffic in the Highlands. Foreign companies were the only ones from whom no attempt was made to obtain information, and it was believed, mainly on the basis of the road cordon survey, that at that time only one such company was operating tours to the Highlands, and these in very limited numbers.

The data available for the other modes of travel was as follows:

(a) rail - records for each station in the Highlands showing the number of passengers joining and alighting trains, broken down by direction of service, during one week in summer (August 10th - 16th) and one

in/

in 'winter' (October 19th - 25th) - Source: British Rail.

(b) sea - monthly figures for 1969 of the numbers of passengers travelling each way on services between Aberdeen and Orkney/Shetland - Source: North of Scotland, Orkney and Shetland Shipping Company.

(c) air - monthly figures for 1969 of passenger movements (boarding and leaving aircraft combined) at each airport in the Highlands and Islands - Source: BEA.

The utilization of these data is described in Chapter 4.

There are certain other holiday market segments not covered by any of the data mentioned above, for example:

- hitch hikers
- those using scheduled bus services
- those not in a private vehicle or on a coach tour who crossed the Firth of Clyde by ferry
- walkers and cyclists.

However, these segments were known to be small (see for example Social Surveys (Gallup Poll) Ltd., 1969, and British Travel Association, 1969) and the pressures associated with them very limited. Since no information about any of them could be obtained without special survey, it was decided to ignore them.

Conclusion

The survey work for the Highlands and Islands showed that the cordon survey method, with strong conceptual advantages over other possible methods of carrying out regional tourism market surveys, is a realistic method in practice and is to be commended for similar surveys in the future, if the road and transportation network allows it. The precise approach adopted had a number of weaknesses /

weaknesses, but improvements can be made to overcome these. These improvements have been outlined in this chapter and the key ones are summarized in Chapter 5.

Chapter 4

Analysis of the Survey Data

4.1 Introduction

Regional surveys of existing tourism demand, such as the one carried out in the Highlands and Islands, can be used to produce data for two basic purposes:

(a) to measure the existing levels of demand such that a relationship with the existing supply can be established and conclusions for the immediate management of tourism drawn about existing shortfalls or surpluses of facilities - e.g. the type of analysis which was undertaken in the supplementary report of the Touring Caravan in Scotland research (Duffield and Owen 1972a);

(b) to help to provide a thorough understanding of the present pattern of tourism within the region, as a guide to what may happen in the future, given the development of particular markets or new resources.

The aim of this chapter is to illustrate how, in the Highlands and Islands survey, the questionnaire content was decided and analysis undertaken to meet both of these requirements.

It should be noted that the form of analysis possible in this study was somewhat restricted by the programming facilities available for this study at the University of Strathclyde Computer Centre. It was in fact necessary to use a set of standard package programs developed by the Traffic Engineering Section of the Civil Engineering Department, which basically allowed for writing data to magnetic tape, manipulation of data, and cross tabulation. They did not offer the facility for more sophisticated analysis such as principle components analysis, factor analysis etc., which could have been useful for certain aspects /

aspects of the work, and which are more commonly used now than when this analysis was undertaken (1968/69). Undoubtedly purpose designed programs are necessary if data is to be exploited to the full.

4.2 Measuring the Levels of Demand for Supply-Demand Analysis

For the purposes of supply-demand analysis, tourists' direct demand can be divided into two basic categories:

- for night-time accommodation (Section 4.3)
- for daytime and evening activities (Sections 4.4–4.7)

4.3 In analysing demand for accommodation the basic unit for a comparison with supply must be the bednight(1) (i.e. one person for one night) and the aim must be to achieve as fine a spatial breakdown as possible of demand for each type of accommodation. The questionnaire in the Highlands and Islands survey (see Appendix 2) therefore included a question asking which places were stayed in and the number of nights spent at each.

However, the questionnaire did not include a question on the type of accommodation used at each place. The reasons for this were:

i. it was felt that such a question might overload a self-administered questionnaire,

ii. the emphasis during the early stages of the study was on the activity aspect rather than the accommodation.

The previous chapter has indicated that the survey design erred on the cautious side and that additional information /

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(1) An exception to this rule may need to be made in the case of touring caravanning and camping, where it is convenient to measure supply in terms of 'pitches'; demand could relatively easily be measured in the same unit (see Duffield and Owen, 1971b).

information could have been obtained - particularly if some or all of the questionnaire had been administered by direct interview. To have obtained a breakdown of nights by accommodation would in fact have been a relatively straightforward matter - just one extra column on the table in Question 6 would have been required. It is strongly recommended that future regional tourism surveys should attempt to obtain this information.

Map 4

However, the analysis which was carried out for bed-nights overall does illustrate the nature of the analysis which can be undertaken. The stops were coded and punched on to cards as a series of three digit code numbers, each party being allowed (in terms of card space) thirteen different stopping places. Fortunately, no party had more than that. The number of nights at each place (2 digits) was also punched in sequence. The codes used related to specific settlements. Nights spent outside settlements were allocated to the nearest one within five miles(1).

Data manipulation programs were used to calculate the number of bed-nights spent by each party at each stop (= number in party x number of nights at stop) and it was then possible to tabulate the number of bed-nights at each place. The results of this analysis are shown in Table 4.1 and Map 4.1.

The average total number of bed-nights spent in the Highlands and Islands each week during the peak season was shown to be approximately 906,000 - i.e. 130,000 people in the area each night. Table 4.1 shows /

(1) Where there was no settlement within five miles the nights were allocated to a region 'miscellaneous' code.

Map 4.1 The mean overnight distribution of holidaymakers travelling by private vehicle in the Highlands and Islands, July/August, 1968

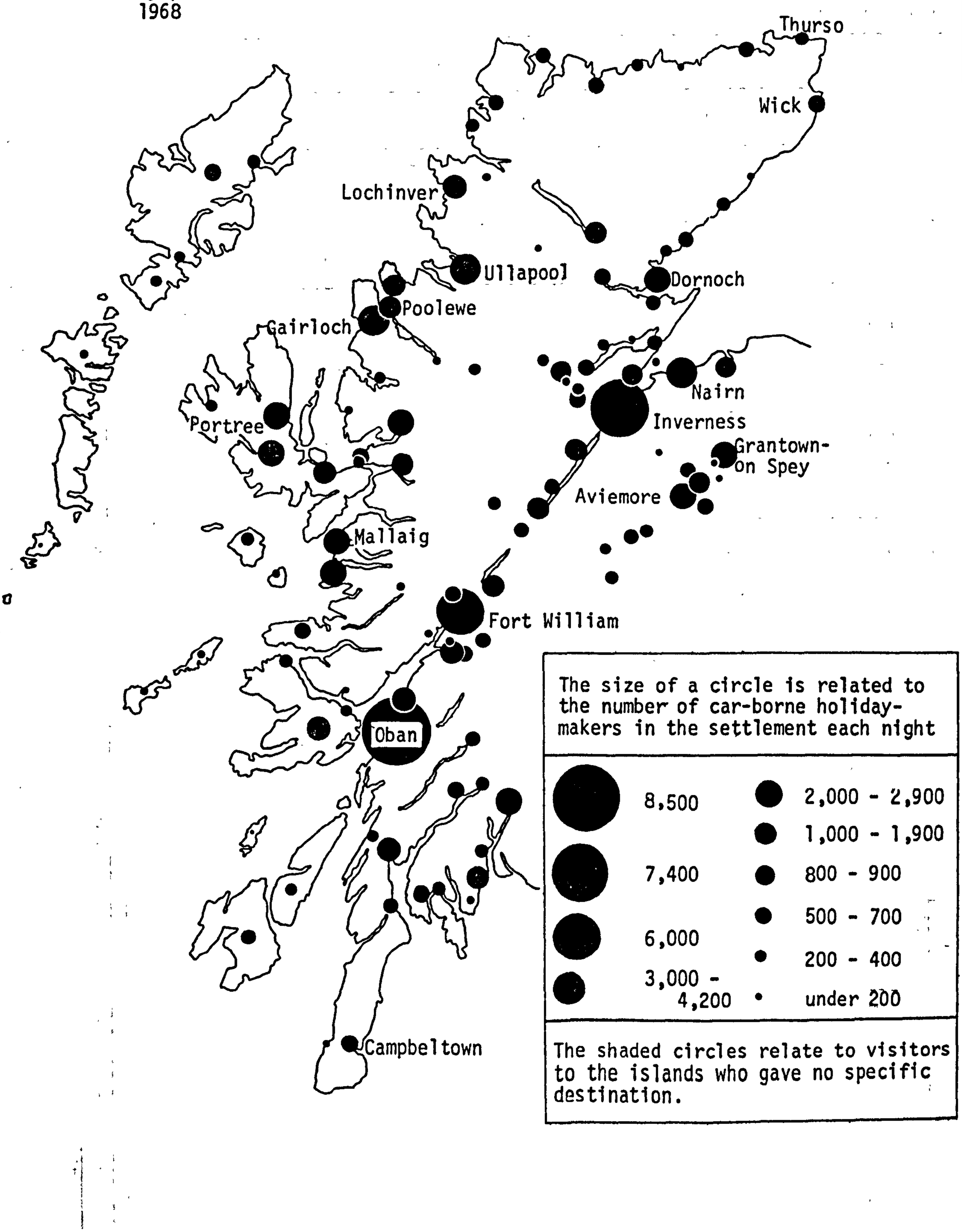


TABLE 4.1

THE MEAN OVERNIGHT DISTRIBUTION OF HOLIDAYMAKERS IN THE HIGHLANDS AND ISLANDS DURING JULY/AUGUST 1968 (PRIVATE VEHICLE HOLIDAYMAKERS) AND 1969 (OTHER MODAL GROUPS)

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
SOUTH WEST HIGHLANDS																		
Ardentinny	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Arrochar	2,800	125	100	-	-	3,000	2	3	1	-	-	2	93	4	3	-	-	100
Ballachulish	1,700	-	-	-	-	1,700	1	-	-	-	-	1	100	-	-	-	-	100
Cairndow	400	-	-	-	-	400	-	-	-	-	-	-	100	-	-	-	-	100
Campbeltown	800	5	-	50	-	900	1	-	1	2	-	1	93	1	-	6	-	100
Colintraive	200	-	-	-	-	200	-	-	-	-	-	-	100	-	-	-	-	100
Connel/Loch Creran/ Port Appin	1,500	-	-	-	-	1,500	1	-	-	-	-	1	99	-	1	-	-	100
Corpach	500	-	-	-	-	500	-	-	-	-	-	-	99	-	1	-	-	100
Crinan	200	-	-	-	-	200	-	-	-	-	-	-	100	-	-	-	-	100
Dunoon	1,500	625	-	-	-	2,000	2	13	-	-	-	1	74	26	-	-	-	100
Fort William	6,000	215	700	-	-	6,900	5	5	9	-	-	5	87	3	10	-	-	100
Glencoe	800	-	-	-	-	800	1	-	-	-	-	1	100	-	-	-	-	100
Inellan	100	25	-	-	-	100	-	1	-	-	-	-	80	20	-	-	-	100
Inverary	900	35	-	-	-	900	1	1	-	-	-	1	96	4	-	-	-	100
Islay	600	-	-	150	-	800	-	-	-	6	-	1	80	-	-	20	-	100
Jura	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Kinlochleven	700	-	-	-	-	700	1	-	-	-	-	-	100	-	-	-	-	100
Loch Awe/Dalmally	700	80	-	-	-	800	1	2	-	-	-	1	87	10	3	-	-	100
Lochgilphead/Ardrishaig	1,700	-	-	-	-	1,700	1	-	-	-	-	1	100	-	-	-	-	100
Machrihanish	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
N. Ballachulish	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Oban	8,500	375	1,150	-	-	10,000	7	10	15	-	-	7	85	4	11	-	-	100
Spean Bridge	1,400	-	-	-	-	1,400	1	-	-	-	-	1	99	1	-	-	-	100
Tarbert/W. Tarbert	500	-	-	-	-	500	-	-	-	-	-	-	100	-	-	-	-	100
Tighnabruaich	700	-	-	-	-	700	1	-	-	-	-	-	100	-	-	-	-	100
Rest of Region	7,000	50	50	-	-	7,100	5	1	1	-	-	5	98	1	1	-	-	100
TOTAL SOUTH WEST HIGHLANDS	39,800	1,435	2,050	200	-	43,400	31	37	27	8	-	30	92	3	5	-	-	100

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
WESTERN ARGYLL/MORAR																		
Ardnamurchan	800	-	-	-	-	800	1	-	-	-	-	1	100	-	-	-	-	100
Arisaig/Morar	2,600	40	200	-	-	2,800	2	1	2	-	-	2	92	1	7	-	-	100
Coll	100	-	-	-	-	100	-	-	-	-	-	-	85	-	15	-	-	100
Corran	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Glenfinnan	100	-	-	-	-	100	-	-	-	-	-	-	96	-	4	-	-	100
Mallaig	2,400	-	250	-	-	2,700	2	-	3	-	-	2	91	-	9	-	-	100
Mull - Craignure	200	-		-	-		-	-		-	-		100	-	-	-	-	100
Tobermory	300	25	150	-	-	2,500	-	1	2	-	-	2	93	1	6	-	-	100
Rest	1,800	-		-	-		1	-		-	-		100	-	-	-	-	100
Rest of Region	2,100	-	50	50	-	2,200	2	-	1	2	-	2	95	-	2	2	-	100
TOTAL WESTERN ARGYLL/MORAR	10,600	65	650	50	-	11,400	8	2	9	2	-	8	94	1	6	-	-	100
SPEYSIDE																		
Aviemore/Coylumbridge	2,500	30	150	-	-	2,700	2	-	1	-	-	2	93	1	6	-	-	100
Boat of Garten	1,200	-	-	-	-	1,200	1	-	-	-	-	1	100	-	-	-	-	100
Carrbridge	600	30	-	-	-	600	-	1	-	-	-	-	92	5	3	-	-	100
Dalwhinnie	400	25	-	-	-	400	-	1	-	-	-	-	91	6	3	-	-	100
Glenmore	900	-	100	-	-	1,000	1	-	1	-	-	1	90	-	10	-	-	100
Grantown	2,200	55	100	-	-	2,400	2	1	1	-	-	2	93	2	4	-	-	100
Kingussie	300	75	50	-	-	400	-	2	1	-	-	-	71	18	12	-	-	100
Laggan	300	5	-	-	-	300	-	-	-	-	-	-	98	2	-	-	-	100
Nethybridge	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Newtonmore	700	40	-	-	-	700	1	1	-	-	-	-	95	5	-	-	-	100
TOTAL SPEYSIDE	9,600	255	400	-	-	10,300	7	7	6	-	-	7	93	2	4	-	-	100

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
LOCH NESS REGION																		
Beauly	1,100	15	-	-	-	1,100	1	-	-	-	-	1	98	2	-	-	-	100
Drumnadrochit/Glen Urquhart	1,100	25	-	-	-	1,100	1	1	-	-	-	1	98	2	-	-	-	100
Forres	1,200	60	100	-	-	1,300	1	2	1	-	-	1	88	4	7	-	-	100
Fort Augustus	1,000	30	-	-	-	1,000	1	1	-	-	-	1	97	3	-	-	-	100
Glen Moriston	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Invergarry	600	-	-	-	-	600	-	-	-	-	-	-	100	-	-	-	-	100
Invermoriston	500	-	-	-	-	500	-	-	-	-	-	-	100	-	-	-	-	100
Inverness	7,400	535	750	600	-	9,300	6	14	11	23	-	6	80	6	8	6	-	100
Loch Ness	500	20	-	-	-	500	-	1	-	-	-	-	96	4	-	-	-	100
Nairn	4,100	90	400	-	-	4,600	3	2	5	-	-	3	89	2	9	-	-	100
Rest of Region	1,200	-	-	-	-	1,200	1	-	-	-	-	-	100	-	-	-	-	100
TOTAL LOCH NESS REGION	18,900	750	1,250	600	-	21,500	15	19	17	23	-	14	88	3	6	3	-	100
CROMARTY FIRTH REGION																		
Bonar Bridge	800	-	-	-	-	800	1	-	-	-	-	1	98	-	2	-	-	100
Contin/Marybank	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Cromarty	600	-	-	-	-	600	1	-	-	-	-	-	100	-	-	-	-	100
Dingwall	900	10	100	-	-	1,000	1	-	-	-	-	1	89	1	10	-	-	100
Evanton	200	-	-	-	-	200	-	-	-	-	-	-	100	-	-	-	-	100
Fortrose/Rosemarkie	1,100	-	-	-	-	1,100	1	-	-	-	-	1	100	-	-	-	-	100
Invergordon	100	20	-	-	-	100	-	1	-	-	-	-	69	14	17	-	-	100
Muir of Ord	200	-	-	-	-	200	-	-	-	-	-	-	100	-	-	-	-	100
Strathpeffer	1,100	340	-	-	-	1,400	1	9	-	-	-	1	76	23	1	-	-	100
Tain	600	-	50	-	-	600	-	-	1	-	-	-	92	-	8	-	-	100
Rest of Region	1,100	-	150	-	-	1,300	1	-	1	-	-	1	88	-	12	-	-	100
TOTAL CROMARTY FIRTH REGION	7,000	400	300	-	-	7,700	5	10	3	-	-	5	91	5	4	-	-	100

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
WESTER ROSS/SKYE																		
Achnasheen	200	-	50	-	-	200	-	-	1	-	-	-	80	-	20	-	-	100
Applecross	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Aultbea	1,100	-	-	-	-	1,100	1	-	-	-	-	1	100	-	-	-	-	100
Balmacara/Loch Duich	1,100	-	-	-	-	1,100	1	-	-	-	-	1	100	-	-	-	-	100
Eigg	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Gairloch	3,800	-	-	-	-	3,800	3	-	-	-	-	3	100	-	-	-	-	100
Garve	200	-	50	-	-	200	-	-	1	-	-	-	80	-	20	-	-	100
Kinlochewe	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Kyle of Lochalsh	800	-	150	-	-	1,000	1	-	1	-	-	1	84	-	16	-	-	100
Loch Carron	2,100	35	100	-	-	2,200	2	1	1	-	-	2	94	2	4	-	-	100
Poolewe	1,200	-	-	-	-	1,200	1	-	-	-	-	1	100	-	-	-	-	100
Rhum	400	-	-	-	-	400	-	-	-	-	-	-	100	-	-	-	-	100
Skye - Broadford	1,200	45					1	1										
Dunvegan	200	15					-	-										
Kyleakin	300	80	1,050	-	-	7,300	-	2	14	-	-	5	81	5	14	-	-	100
Portree	2,000	135					2	3										
Rest	2,200	95					2	2										
Torridon/Sheildaig	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Ullapool	4,200	-	-	-	-	4,200	3	-	-	-	-	3	100	-	-	-	-	100
Rest of Region	5,400	25	-	-	-	5,400	4	1	-	-	-	4	99	1	-	-	-	100
TOTAL WESTER ROSS/SKYE	26,900	420	1,400	-	-	28,700	21	10	19	-	-	20	94	1	5	-	-	100

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage of breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
NORTH REGION																		
Bettyhill/Strathnaver	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Brora	500	-	50	-	-	500	-	-	1	-	-	-	91	9	-	-	-	100
Dornoch/Embo	2,300	115	-	-	-	2,400	2	3	-	-	-	2	94	5	1	-	-	100
Durness	800	-	-	-	-	800	1	-	-	-	-	1	100	-	-	-	-	100
Golspie	300	-	50	-	-	400	-	-	1	-	-	-	86	-	14	-	-	100
Helmsdale/Strath Kildonan	400	20	-	-	-	400	-	1	-	-	-	-	95	5	-	-	-	100
John O'Groats	400	15	-	-	-	400	-	-	-	-	-	-	96	4	-	-	-	100
Lairg/Loch Shin	1,000	-	100	-	-	1,100	1	-	1	-	-	1	91	-	9	-	-	100
Loch Assynt	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Lochinver	1,900	-	-	-	-	1,900	1	-	-	-	-	1	100	-	-	-	-	100
Melvich/Strath Halladale	100	-	-	-	-	100	-	-	-	-	-	-	100	-	-	-	-	100
Rhiconich/Kinlochbervie	400	-	-	-	-	400	-	-	-	-	-	-	100	-	-	-	-	100
Scourie	300	-	-	-	-	300	-	-	-	-	-	-	100	-	-	-	-	100
Thurso	1,000	85	300	-	-	1,400	1	2	4	-	-	1	72	6	22	-	-	100
Tongue	500	-	-	-	-	500	-	-	-	-	-	-	100	-	-	-	-	100
Wick	800	5	300	200	-	1,300	1	-	4	8	-	1	61	-	23	15	-	100
Rest of Region	2,900	35	-	-	-	2,900	2	1	-	-	-	2	99	1	-	-	-	100
TOTAL NORTH REGION	14,200	280	850	200	-	15,500	11	7	12	8	-	11	91	2	5	1	-	100

Settlement	Approximate number of holidaymakers in each settlement of the Highlands on peak summer nights 1968/69, by mode of entry to Highlands						Percentage distribution of holiday-makers in the Highlands on peak summer nights, by mode of entry to Highlands (= Percentage of column total)						Approximate percentage breakdown according to mode of entry to Highlands of holidaymakers in each settlement on peak summer nights (= Percentage of row total)					
	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL	private vehicle	coach tour	rail	air	sea from Aberdeen	TOTAL
WESTERN ISLES																		
Harris - Tarbert	200	10		-	-		-	-		-	-							
- Rest	200	-		-	-		-	-		-	-							
Lewis - Stornoway	500	25	350	350	-	2,700	-	1	5	16	-	2	73	1	13	13	-	100
- Rest	1,100	-		-	-		1	-		-	-							
Uists/Benbecula/Barra	100	35	100	150	-	400	-	1	1	7	-	-	26	9	26	39	-	100
TOTAL WESTERN ISLES	2,000	80	450	500	-	3,000	2	2	6	22	-	2	66	3	15	16	-	100
ORKNEY AND SHETLAND																		
Orkney	600‡	40	100	500	150ø	1,400	-	1	1	23	10	1	43	3	7	36	11	100
Shetland	‡	50	-	400	1,300ø	1,700	-	1	-	18	90	1	-	3	-	23	74	100
TOTAL ORKNEY & SHETLAND	600‡	90	100	900	1,450ø	3,100	-	2	1	40	100	2	19	3	3	29	46	100
ABOARD SHIP*	200	125	50	-	-	400	-	3	1	-	-	-	53	33	13	-	-	100
TOTAL HIGHLANDS	130,000	3,905	7,550	2,500	1,450	145,400	100	100	100	100	100	100	89	3	5	2	1	100

‡ EXCLUDES CAR PASSENGERS TRAVELLING TO AND FROM ABERDEEN BY SEA

ø INCLUDES CAR PASSENGERS TRAVELLING TO AND FROM ABERDEEN BY SEA BUT EXCLUDES COACH TOUR PASSENGERS ON THOSE FERRIES

* DOES NOT INCLUDE HOLIDAYMAKERS EN ROUTE TO ORKNEY/SHETLAND FROM ABERDEEN

NOTES ON TABLE 4.1

1. The accuracy of the figures given in this table varies between the different modal groups. The numbers of private vehicle holidaymakers, because they derive from a sample survey, are subject to sampling error and are thus presented here rounded to the nearest hundred. The possible range of sampling error (which is over and above error due to bias in the sample, which may also have occured here) associated with any figure varies according to the magnitude of that figure, approximately as follows:

number of private vehicle holiday-makers in a settle-ment	approximate range of possible sampling error	
	%	absolute
100	± 100	± 100
600	± 50	± 300
3000	± 13	± 500
6000	± 12	± 700
12,000	± 7.5	± 900
24,000	± 5	± 1100
28,000	± 2	± 900

In contrast, the figures relating to coach tours are based on a sample of almost 100% of tours, and are therefore much more accurate and rounded only to the nearest five.

The figures relating to the traffic using other modes are estimates based on loading figures using assumptions outlined in Appendix 1. The extent of possible error associated with these estimates cannot be calculated.

2. This table does not include a number of minority groups of holidaymakers - see last section of Chapter 3.

shows the breakdown of this 130,000 into the individual settlements and areas. Six settlements had 3% or more of the bed-nights - Oban (7%), Inverness (6%), Fort William (5%), Nairn (3%), Ullapool (3%) and Gairloch (3%).

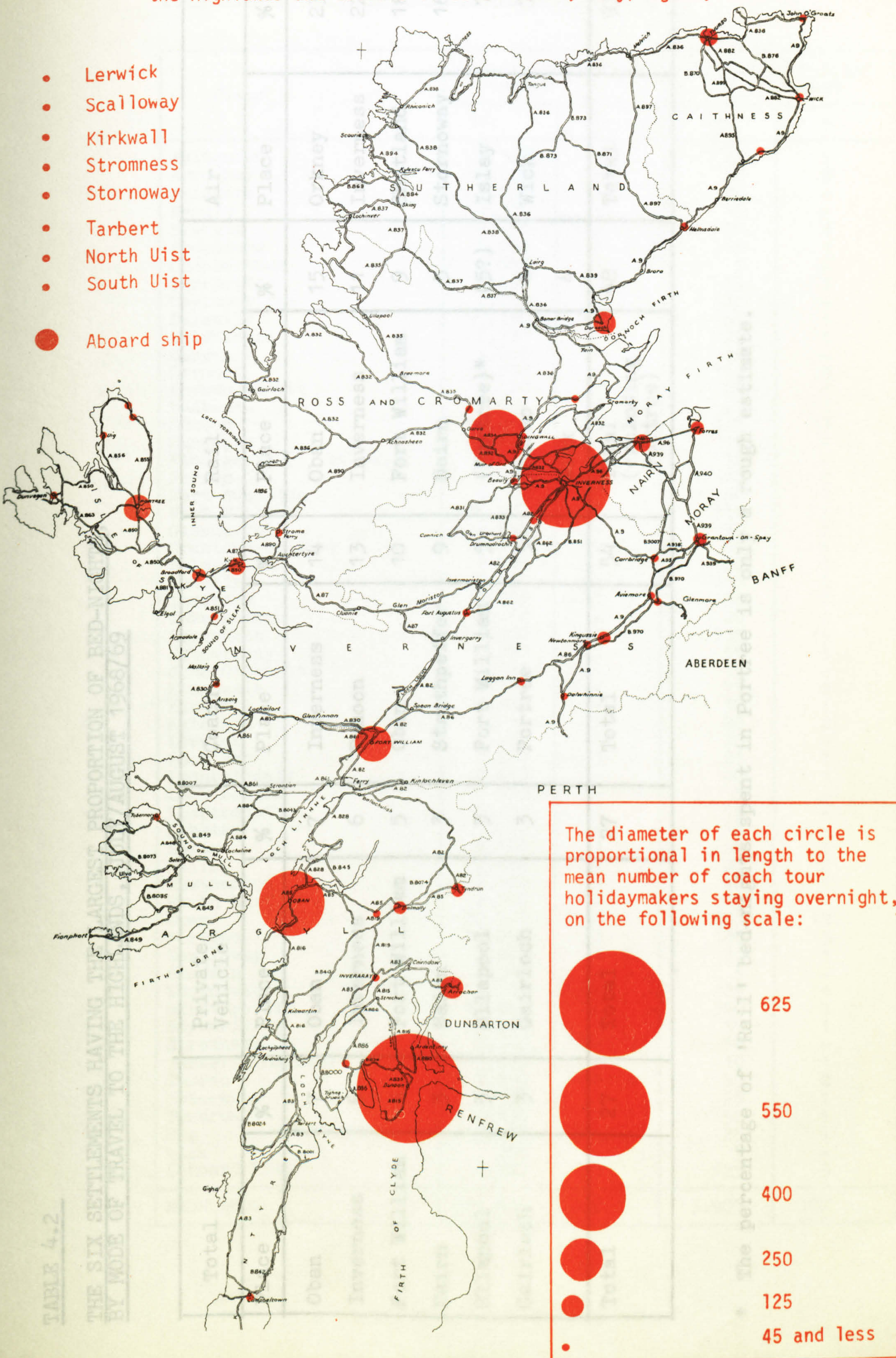
As noted in Chapter 3, it was thought desirable to collect a certain amount of information regarding tourists using modes of transport other than private vehicles in order to set in context the holidaymaking by users of private vehicles. Except in the case of coach tours, the information available about users of the other modes was very limited; in no case was the information as supplied by the operators in a suitable format for any overall comparison of the importance of the different modes. Accordingly the data had to be adapted to some common form for purposes of comparison; the common base chosen was the distribution of bed-nights, since this is the most meaningful indicator in planning terms. The way in which the data was adapted to this common form is described in Appendix 1. The estimated distribution of bed-nights of holidaymakers using each mode of transport is shown in Table 4.1. Table 4.2 summarises which were the most important settlements.

The 1969 distribution of coach tour bed-nights is shown in Table 4.3 and Map 4.2. The number of places (57) where coach tours stayed overnight is much less than the number at which private vehicle parties stayed. This is because the number of places which have hotels of sufficient size to take coach tour parties is relatively small. Thus a number of places received a substantial proportion of the peak season coach tour bed-nights - notably Inverness (14%), Dunoon (13%), Oban (10%) and Strathpeffer (9%). Dunoon and Strathpeffer in particular had a relatively much greater importance in terms of coach tour trade than holiday trade /

Map 4.2 The mean overnight distribution of holidaymakers travelling in the Highlands and Islands on coach tours, July/August, 1969

- Lerwick
- Scalloway
- Kirkwall
- Stromness
- Stornoway
- Tarbert
- North Uist
- South Uist

● Aboard ship



The diameter of each circle is proportional in length to the mean number of coach tour holidaymakers staying overnight, on the following scale:

625

550

400

250

125

45 and less

TABLE 4.2

THE SIX SETTLEMENTS HAVING THE LARGEST PROPORTION OF BED-NIGHTS, BY MODE OF TRAVEL TO THE HIGHLANDS, JULY/AUGUST 1968/69

Total		Private Vehicle		Coach		Rail		Air	
Place	%	Place	%	Place	%	Place	%	Place	%
Oban	7	Oban	7	Inverness	14	Oban	15	Orkney	23
Inverness	6	Inverness	6	Dunoon	13	Inverness	11	Inverness	22
Fort William	5	Fort William	5	Oban	10	Fort William	9	Shetland	18
Nairn	3	Nairn	3	Strathpeffer	9	Nairn	5	Stornoway	16
Ullapool	3	Ullapool	3	Fort William	5	(Portree)*	(5?)	Islay	7
Gairloch	3	Gairloch	3	Portree	3	Thurso	4	Wick	7
						Wick	4		
Total	27	Total	27	Total	54	Total (excluding Portree)	48	Total	93

* The percentage of 'Rail' bed-nights spent in Portree is only a rough estimate.

TABLE 4.3

THE DISTRIBUTION OF COACH TOUR BED-NIGHTS, 1969

Place	Bed-nights whole season		Persons per night July/August	
	No.	%	No.	%
Aultguish	3,320	1	25	1
Arrochar	19,610	4	125	3
Aviemore	1,010	-	10	-
Beauly	1,370	-	15	-
Brackla	2,450	-	20	1
Broadford	6,000	1	45	1
Campbeltown	680	-	5	-
Carrbridge	3,590	1	30	1
Coylumbridge	2,250	-	20	-
Dalmally	7,190	1	55	1
Dalwhinnie	2,720	1	25	1
Dingwall	1,060	-	10	-
Dornoch	15,840	3	115	3
Drumnadrochit	3,120	1	25	1
Dunbeath	2,820	1	25	1
Dunoon	84,020	16	625	13
Dunvegan	1,770	-	15	-
Flodigarry (I. of Skye)	1,180	-	10	-
Forres	6,880	1	60	2
Fort Augustus	3,460	1	30	1
Fort William	30,720	6	215	5
Glendaruel	2,610	-	30	1
Grantown-on-Spey	8,070	2	55	1
Helmsdale	2,680	1	20	1
Innellan	3,050	1	25	1
Inverary	3,960	1	35	1
Invergordon	2,050	-	20	1
Inverness	68,900	13	535	14
Isleornsay	6,870	1	55	1
John O'Groats	1,760	-	15	-
Kingussie	8,670	2	75	2
Kirkwall	3,280	-	30	1
Kyleakin	9,811	2	80	2
Lerwick	1,960	-	20	-
Loch Awe	3,220	1	25	1
Lochboisdale	2,640	-	20	1
Loch Laggan	490	-	5	-
Lossiemouth	2,730	1	15	-
Lybster	1,030	-	10	-
Morar	4,720	1	40	1
Nairn	10,480	2	90	2
Newtonmore	7,120	1	40	1
North Uist	2,130	-	15	-
Oban	50,590	10	375	10
Portree	16,090	3	135	3
Scalloway	3,260	1	30	1
Staffin	360	-	5	-
Stornoway	3,260	1	25	1
Strathpeffer	43,240	8	340	9
Stromeferry	3,820	1	35	1
Stromness	1,120	-	10	-
Tarbert (Harris)	1,405	-	10	1
Thurso	9,590	2	85	2
Tobermory	3,130	1	25	1
Tyndrum	6,430	1	50	1
Uig	3,500	1	25	1
Wick	260	-	5	-
(Aboard Ship)	16,220	3	125	3
HIGHLANDS	521,960	100	3.905	100

trade overall. Over the summer as a whole, Dunoon was in fact the most important settlement for coach tours, partly because of its relatively large proportion of off-season coach traffic, but at the peak season Inverness was marginally the more important.

The distribution of the bed-nights of rail holiday-makers (Map 4.3) is also limited, in this case by the nature of the Highlands rail network. Again (on the basis of the assumptions set out in Appendix 1) certain places received relatively high proportions of the nights - notably Oban (15%), Inverness (11%) and Fort William (9%). The top four rail holiday centres were the same, and in the same order of importance, as the places which were most important overall and for private vehicle traffic.

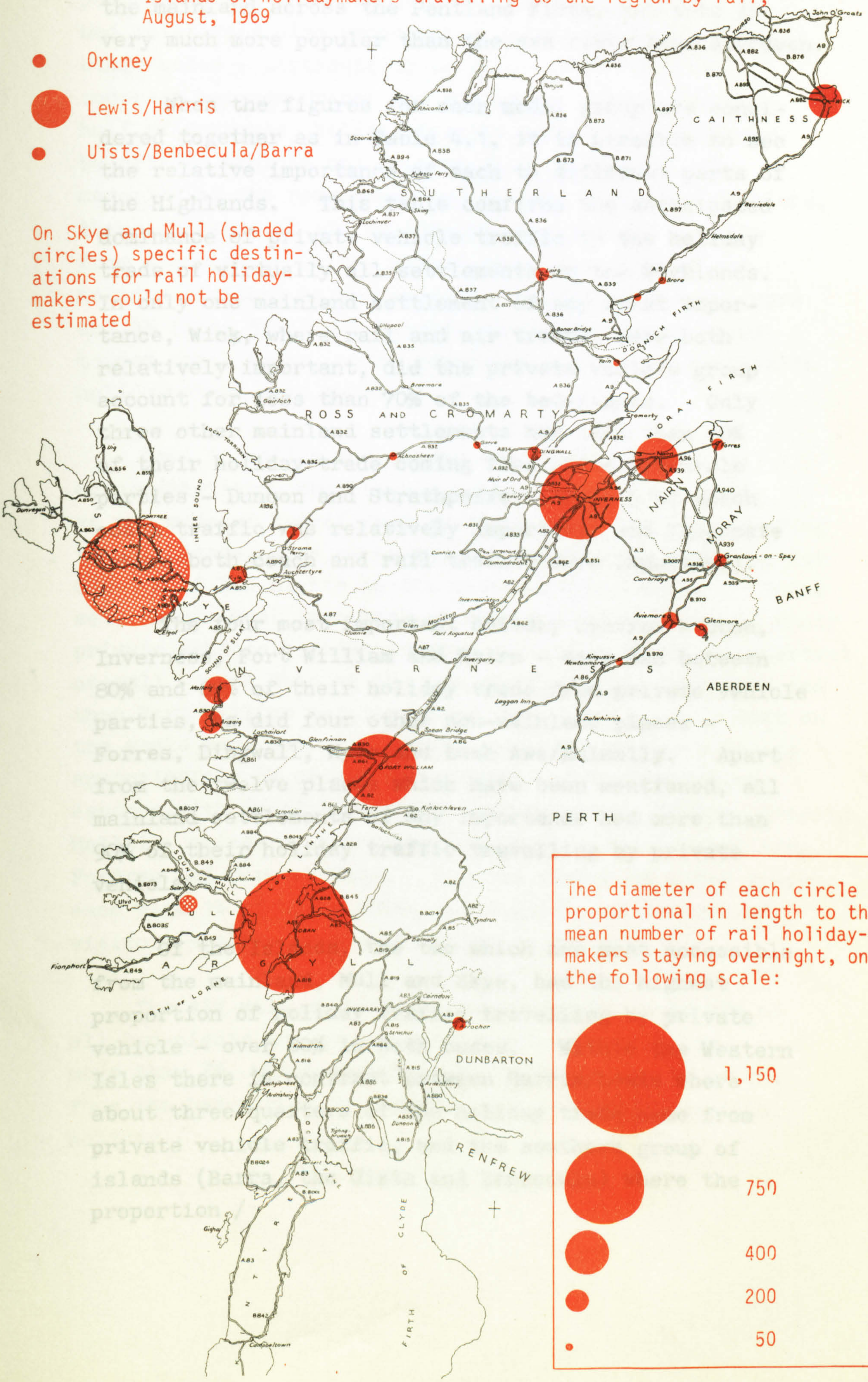
Air transport is of particular importance to the holiday trade of the Islands. Apart from the services to Inverness, Wick and Campbeltown, the British Airways (formerly BEA) 'Highlands and Islands' network is in fact an Islands network. Of the Islands, Orkney, Shetland and Lewis had the greatest volume of holiday air traffic, with Islay also receiving significant numbers. Inverness (Dalcross) airport was second only to Orkney in importance for air holiday traffic, though it may well be that a considerable proportion of this . dispersed in the area round about the town rather than in it - a factor for which it was not possible to make allowance in Tables 4.1 and 4.2. This being so the town of Inverness may have received fewer air bed-nights than Shetland and Stornoway as well as Orkney.

Holidaymakers travelling by sea from Aberdeen to Orkney and Shetland mostly went to Shetland - only 9% went to Orkney. Holiday travellers to that island have the option of travelling the short sea route from the /

Map 4.3 The estimated mean overnight distribution in the Highlands and Islands of holidaymakers travelling to the region by rail, August, 1969

- Orkney
- Lewis/Harris
- Uists/Benbecula/Barra

On Skye and Mull (shaded circles) specific destinations for rail holidaymakers could not be estimated



The diameter of each circle is proportional in length to the mean number of rail holidaymakers staying overnight, on the following scale:

the mainland across the Pentland Firth, and this is very much more popular than the sea route from Aberdeen.

When the figures for each modal group are considered together as in Table 4.1, it is possible to see the relative importance of each to different parts of the Highlands. This table confirms the anticipated dominance of private vehicle traffic in the holiday trade of virtually all settlements in the Highlands. In only one mainland settlement of any great importance, Wick, where rail and air traffic were both relatively important, did the private vehicle group account for less than 70% of the bed-nights. Only three other mainland settlements had less than 80% of their holiday trade coming from private vehicle parties - Dunoon and Strathpeffer (at both of which coach traffic was relatively important) and Kingussie (where both coach and rail traffic were important).

The four most important holiday centres - Oban, Inverness, Fort William and Nairn - each had between 80% and 89% of their holiday trade from private vehicle parties, as did four other non-mainland places - Forres, Dingwall, Kyle and Loch Awe/Dalmally. Apart from the twelve places which have been mentioned, all mainland settlements of any importance had more than 90% of their holiday traffic travelling by private vehicle.

Of the Islands, the two which are most accessible from the mainland, Mull and Skye, had the highest proportion of holiday traffic travelling by private vehicle - over 80% in both cases. Within the Western Isles there is contrast between Harris/Lewis where about three-quarters of the holiday trade came from private vehicle traffic, and the southern group of islands (Barra, the Uists and Benbecula) where the proportion /

proportion was only one quarter. The southern group had relatively high proportions coming by each of the other modes - particularly by air. There is also a contrast between Orkney and Shetland. Just under half of Orkney's holiday traffic entered the Highlands by private vehicle and crossed from Caithness; the majority of the remainder came by air. But for Shetland, three-quarters of its holidaymakers travelled by ship from Aberdeen or Leith, 21% of them (i.e. 15% of all holiday visitors to the islands) bringing their own cars and 4% (i.e. 3% of all holiday visitors) coming on extended coach tours. The remaining quarter of Shetland's holidaymakers came by air.

Thus for all areas except the Western Isles and Orkney/Shetland, the private vehicle was predominant as the mode of travel used by their visitors when entering the Highlands, with car-borne holidaymakers accounting for 80%-90% of bed-nights in the main holiday centres. Hence settlements most important at peak season in terms of their private vehicle holiday traffic were also the most important overall - with Oban at the top of the scale, Inverness and then Fort William not far below (see Table 4.2). Next on the scale came Nairn, Ullapool and Gairloch, each having approximately 3% of all bed-nights. Other important centres with 2% of bed-nights were Arrochar, Dunoon, Arisaig, Mallaig, Aviemore, Grantown-on-Spey, the Loch Carron area, Portree and Dornoch/Embo. A large number of other places, each with 1% of bed-nights, had significant numbers of visitors - these places are shown in Table 4.1.

The six main settlements accounted for only 27% of all bed-nights and no one settlement accounted for more than 7%, while many places received just 1% or 2%. Thus the bed-nights in general, and of private vehicle holiday /

holiday traffic in particular, were widely distributed. However, as has been shown, with holidaymakers using other modes the pattern was more concentrated, particularly in the case of air travellers, where the six major areas (Table 4.2) accounted for 93% of air holiday bed-nights. Rail and coach holidaymakers fell between the extremes, with their six major places accounting for about 50% of the bed-nights.

The total absolute figures of people staying in each settlement each night of the peak season, obtained when the figures for each mode are summed, now provides the figure which can be directly and meaningfully compared at a local level with supply, measured in terms of the number of bed spaces. As indicated above, such demand data would be even more valuable if it could be broken down by type of accommodation to enable supply demand comparisons within each accommodation sector.

Another deficiency in this analysis is that it relates only to the peak season. A picture of shortages and surpluses of demand for accommodation at that time is only one aspect to be considered in planning. The other is the extent to which it would be economic to provide new accommodation to meet the peak demand. For this an equivalent demand picture for each part of the year is required, so that it is possible to see whether to provide extra accommodation (the alternative being to persuade people to come at other times or allow them to be dissuaded at the peak season by congestion) and, if so, how this is to be provided (i.e. private investment, public investment, or private with public assistance).

4.4 In analysing the demand for <u>daytime and evening activities</u>, it is necessary to consider firstly the nature /

nature of activities undertaken and the distribution of participation. For the purposes of obtaining and analysing such data for comparison with supply it is best in the Highlands and Islands situation to make a basic division between the main activity, car based sightseeing (driving for pleasure), and other activities which take place within limited areas (e.g. golf, visiting places of interest).

In dealing with the latter activities, the road cordon survey encountered major problems in obtaining a meaningful measure of demand. Ideally what was required was a measure of participant hours in each activity (i.e. a close equivalent of the bednight). To obtain this it is necessary to know:

the number of participants in each activity
the number of times they participated
the location of each participation
the length of time of each participation.

Clearly obtaining this amount of information for every member of a large and active party within the framework of one self-administered questionnaire was virtually impossible, particularly as this was just one aspect of a wider questionnaire. One of the restricting factors was that, whereas other details in the questionnaire could be taken to apply to the whole party, this was not the case with activities, and it was thought to be important at least to break down participation by the age of the participant.

The limitations imposed by questionnaire length therefore led to concentration on the first of the four aspects noted above - i.e. number of participants in each activity. This was obtained by asking the party to complete a table (see Qu. 8 on questionnaire, Appendix 2) to show, for each of a list of activities, the /

the number of the party in each age group who participated in that activity while in the Highlands (reference was made here to the area as shown on the route map). As well as giving the number of participants it also enabled calculation of the participation rate (i.e. the percentage of holidaymakers participating in an activity) as shown in Table 4.17.

Even obtaining this limited amount of information through an s.a.q. posed problems, because of definitions. Firstly, although people were referred to the area shown on the map, it is possible that reference may have been made to participation outside that area. Secondly, there was definitely some misinterpretation of terms; it is reasonably certain that some people who indicated that they had been 'walking' or 'climbing' certainly had not done so in the sense that the terms were intended, while 'field sports' and 'sailing' were often misinterpretated completely. Some respondents apparently took 'field sports' to include football and suchlike, while the majority who mentioned 'sailing' had, fairly certainly, been sea cruising, rather than yachting. The 'field sports' data has been presented in this chapter without amendment, but in the case of 'sailing' those who had been yachting (this could be decided with a reasonable degree of certainty) were placed in a separate category under 'other activities', and the remaining parties were taken as 'sea cruising' (under sightseeing activities).

This type of misinterpretation is particularly likely with a self administered questionnaire and the need for a more thorough piloting procedure is evident. Additionally the question could perhaps have been asked in an 'open' form (i.e. one where the respondent gives an answer in his own words, with no reminder list of any type), but it is almost certain /

certain that the respondents' own terminology would have led to as much if not more difficulties, aside from the problem of recall.

To convert the participation information into some meaningful measure of demand which could be compared with supply, required that the overall participation rates should be given a spatial dimension. Ideally this should have been done firstly by obtaining rates of participation (in the Highlands) for those who stayed in each local area and multiplying them by the number of people staying in the area each day. Unfortunately the limitations of the computer programs available did not allow a different participation profile to be produced for each area or even for each region within the Highlands. However, rather than assume that the participation rates of visitors to each area were identical with the rate for all visitors to the Highlands, the calculations of the number of participants in each activity in a region took into account the income and origin of the visitors[1] to that region. It should be /

(1) This involved breaking the number of visitors per night in each region down into origin and income groups, and then for each activity, multiplying the Highland participation rate for each origin and income group by the number of visitors in the group. The numbers of participants in each activity thus calculated were then summed for all origin groups and for all income groups. Where the totals for any activity obtained by these two separate analyses differed significantly, they were averaged.

TABLE 4.4

ESTIMATE OF THE MEAN NUMBER OF 'POTENTIAL PARTICIPANTS' FOR EACH ACTIVITY IN EACH REGION AT ANY ONE TIME, JULY/AUGUST 1968

Activity	South West Highlands	Western Argyll/ Morar	Spey-side	Loch Ness	Cromarty Firth	Wester Ross/ Skye	North
visiting places of interest	33,175	8,360	7,675	15,225	5,710	21,680	11,415
sea cruising	2,505	710	610	1,210	465	1,690	955
field studies	1,715	505	450	785	280	1,180	625
day coach tours	1,470	400	310	720	255	980	520
walking	25,245	6,815	6,085	11,905	4,435	17,280	9,180
swimming/ beach	17,800	4,880	4,430	8,415	3,280	12,330	6,600
climbing	6,130	1,630	1,440	2,870	1,060	4,210	2,110
boating	6,180	1,690	1,490	2,910	1,060	4,230	2,160
sea angling	4,760	1,350	1,175	2,245	880	3,290	1,800
golf	2,715	790	735	1,290	555	1,875	1,095
game fishing	2,605	760	665	1,220	505	1,825	1,015
coarse fishing	1,550	390	365	895	280	1,085	550
tennis	950	290	270	450	200	670	585
canoeing	730	250	190	310	130	510	285
outdoor bowls	680	170	180	360	150	490	265
pony trekking	640	180	170	310	120	460	245
riding	320	90	75	150	45	220	110
dance/ ceilidh	4,250	985	1,015	2,080	870	2,710	1,495
theatre/ concert	3,480	910	830	1,710	655	2,355	1,220
cinema	3,065	810	730	1,450	530	2,050	1,110
bingo	510	70	115	270	125	235	145

be recognised that the figures thus produced (Table 4.4) were a measure of participation in the Highlands and Islands as a whole by visitors to each region, and therefore contain a variable element of potential.

The other factors to be considered are those of frequency and length of participation. For example, if it is known that there are 5,000 fishermen in a region, and that, on average, they go fishing once every two days for three hours per day, then the number of participant hours would be:

$$5{,}000 \times \tfrac{1}{2} \times 3 = 7{,}500 \text{ per day}$$

and this is a measure which can be compared with capacity.

Unfortunately, no measure of either these factors was available for any activity from the Highland survey. The alternatives were then either to assume values for the factors and estimate the number of participant hours in each activity, or simply to produce participant/capacity ratios (which, if the ratios for each region are taken at face value, has the effect of assuming that the two factors take uniform values in each region). The examples below relating to visits to places of interest and golf, illustrate the latter approach.

4.5 Visits to Places of Interest

Considerable problems arise in establishing the capacity of places of interest. Firstly there is the problem of actually defining such places. They could be taken to include phenomena such as natural features (e.g. waterfalls, spectacular cliffs, etc.), man-made features (e.g. lighthouses, ski-lifts), and local shops, crafts and industries. However, it is virtually impossible to assess the capacity of many such phenomena, and no attempt has been made to do so. The /

The inventory of resources undertaken here covers only those places which have a finite capacity, are accessible, and are open for viewing by the public. Having decided which places can be included, there remains the problem of assessing capacity. Without a detailed study of every site, its visitation pattern and visitor perceptions, assessments must necessarily be arbitrary. They must also take into account the different hours of opening of the places. The procedure adopted was to place each facility into one of five categories of 'static capacity' - i.e. the number of persons which could be absorbed satisfactorily (in physical and perceptual terms) at any one time(1) was taken to be 20, 50, 100, 200 and 300. If a place was assumed to have a static capacity of 20, then at its peak hour it could absorb 20 visitor hours. Thus the absolute daily capacity would be 24 x 20 = 480 user hours.

However, most places are open for only part of the 24 hours, and within the opening hours there is not a constant pattern of use. The practical daily capacity is therefore the number of users who can be accommodated during the hours of opening such that, at the peak hour of the day, the static capacity is not exceeded. Hence it was necessary to assume a ratio:

$$\frac{\text{total daily visitor arrivals}}{\text{peak hour visitor arrivals}}$$ for each place.

Where the place was open for eight hours or more the ratio was assumed to be five. If the place was open for fewer hours or if accessibility was limited, the ratio was taken to be proportionally less. The static /

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(1) Tivy (1972) indicates that the concept which has here been called 'static capacity' has in America been called the 'momentary capacity' or the 'sustained yield capacity standard'. The figures used here are purely arbitrary and are for illustrative purposes only.

static capacity was then multiplied by the ratio to give practical daily capacity in terms of visitor-hours.

An inventory of resources was drawn up, using a variety of sources of information (Countryside Commission for Scotland, 1969 and 1970; Highlands and Islands Development Board, 1970; Automobile Association, 1970a). The list compiled may not have been complete, but it did contain all sites which are well known or publicised to tourists. Each site thus identified was allocated an assumed static and daily capacity.

In Table 4.5 the assumed daily capacities are summed for each region (Column 2). The number of potential participants in each region at peak season is also given (Column 1) enabling calculation of the ratio of participants to capacity (Column 3) and vice versa (Column 4 and 5). The ratios are similar for all the mainland regions except the Cromarty Firth and Wester Ross/Skye regions. The majority apparently had approximately a quarter of a visitor-hour capacity for each potential participant-day, but Wester Ross/Skye had only half as much supply, and the Cromarty Firth even less.

If the supply and demand figures were accurate and comprehensive, these two regions would therefore stand out as priority areas for the development of new attractions for tourists. This might involve opening up and publicising tourists sites which are not available, accessible or publicised at present, or the development of new man-made attractions - e.g. 'living museums' such as Auchindrain or visitor centres such as 'Landmark' at Carrbridge, or an increase in opening hours where they are limited (as at the Black House /

TABLE 4.5

PLACES OF INTEREST - ILLUSTRATIVE SUPPLY-DEMAND RELATIONSHIPS IN EACH REGION
(Excluding Outer Isles, Orkney and Shetland)

JULY/AUGUST 1968

Region	Mean Demand (potential participants per day)	Practical Capacity (man-hours per day)	Mean Demand / Capacity	Capacity / Mean Demand (hrs/person)	Capacity / Mean Demand (mins/person)
South West Highlands	33,175	8,700	3.7	0.26	16
Western Argyll/Morar	8,360	2,150	3.9	0.26	15
Speyside	7,675	1,700	4.5	0.22	13
Loch Ness	15,225	4,350	3.5	0.29	17
Cromarty Firth	5,710	500	11.4	0.09	5
Wester Ross/Skye	21,680	2,800	7.7	0.13	8
Northern	11,415	3,060	3.7	0.27	16

House, Arnol, Lewis). Alternatively, it is possible that more could be done to enable tourists to see local crafts and industries.

4.6 Golf

In the case of golf the supply is much more clearly defined, in terms of both the number of courses and their capacity. It is appropriate in this case to adopt a slightly different unit of measurement than that used above - the 18-hole round of golf. The reason is that demand is more easily measured and understood in this form and, since the length of time taken for an 18 hole round does not vary greatly it is perfectly practicable to use it as a unit. Absolute capacity can then be taken as the number of rounds which can be started or finished in one hour. The assumption is made for this example that two people can tee-off every five minutes - i.e. 24 rounds can be started during the peak hour(s) (1).

Again the daily pattern of play must be taken into account to assess the practical daily capacity. The ratio:

$$\frac{\text{rounds per day}}{\text{rounds started at peak hour}}$$

was assumed to be 6 for all courses, giving a practical daily capacity of 144 rounds. Expressing a 9-hole round as the equivalent of half an 18-hole round means that /

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(1) This is arbitrarily suggested as the maximum volume of play which might be acceptable to holidaymakers golfing in a rural area like the Highlands. In urban areas where demand is much larger, golfers expect and are likely to accept a much higher volume of play, i.e. the perceptual capacity will be higher. As with all the assumptions in this Chapter, the figure put forward here is only an informed guess and a more satisfactory figure should be made available by the work of Dr D. Nicholls of Cambridge University for the Sports Council.

TABLE 4.6

GOLF - ILLUSTRATIVE SUPPLY-DEMAND RELATIONSHIPS IN EACH REGION
(Except Outer Isles, Orkney and Shetland)

JULY/AUGUST 1968

Region	Mean Demand (potential participants per day)	Practical Capacity (18-hole rounds per day)	Mean Demand / Capacity	Capacity / Mean Demand (rounds/ person)
South West Highlands	2,715	1,296	2.1	0.48
Western Argyll/Morar	790	288	2.7	0.36
Speyside	735	720	1.0	0.98
Loch Ness	1,290	864	1.5	0.67
Cromarty Firth	555	864	0.6	1.56
Wester Ross/Skye	1,875	288	6.5	0.15
North	1,095	1,080	1.0	0.99

that the practical capacity of a 9-hole course is 72 18-hole rounds per day.

On this basis the golf capacity of the regions was calculated in terms of 18-hole rounds, as shown in Table 4.6. As with places of interest, capacity is shown in relation to demand (expressed in terms of the possible daily number of participants of golf for each region during the peak season.) Thus $\frac{\text{supply}}{\text{demand}}$ shows the number of rounds capacity for each possible participant each day. The Cromarty Firth region is shown to have been well off with over $1\frac{1}{2}$ rounds per potential participant day, while Speyside and the North were also well placed with about one round. The Loch Ness region was next with about $\frac{2}{3}$ round.(1)

If a daily capacity of one round for every two potential participants were taken as the minimum desirable level of provision, then by these figures, two regions, Western Argyll/Morar and Wester Ross/Skye could be taken to have had inadequate provision.

Apart from the inadequacies of the data, this regional analysis of supply and demand is not entirely satisfactory, because of the size of the regions used in the analysis. Whereas the places of interest considered in the previous analysis (Section 4.3) were mostly small and well distributed, the number of golf courses in any one region is not large, and they are not necessarily situated to coincide with the location of demand. Thus a region overall may have a reasonable level of provision, while particular centres of demand within that region may not have a course readily accessible. For /

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(1) Any full assessment of supply and demand for golf would have to take non-holiday demand into account, and this is likely to be relatively heavy in the Loch Ness region.

For example, the South West region appears to be moderately well served for golf facilities, but within it Fort William, an important centre of demand, now has no golf course - the nearest one is at Spean Bridge, seven miles away.

To overcome this problem, analyses of this type should be carried out on the basis of smaller areas - areas of under (say) 30 miles diameter, within which it could be taken that the majority of supply is readily accessible to the majority of demand. This is the scale at which data on numbers of participants (or, preferably, volume of actual participation) is required, and should be produced by future surveys. Accurate demand data is not available for such areas from the cordon survey, but for illustrative purposes the potential participants in each region have been allocated to its component areas on the basis of the proportion of the region's person-nights spent within each area. The resultant supply-demand picture is shown in Table 4.7.

According to this analysis, each of the areas in the two 'deficit regions', Western Argyll/Morar and Wester Ross/Skye, had a very low level of provision, but there were also areas outside those regions where the level of provision was low or non-existent, notably the west coast areas from Oban to Fort William and North and West Sutherland. Correspondingly, certain areas were revealed as having outstandingly high levels of provision - particularly Kintyre and, to a lesser extent, Easter Ross, Caithness, Islay and Jura.

Whilst areas of the size indicated above are most suitable for activity supply-demand analysis, it must be recognised that participants (in some activities more than others) will move between areas, and indeed between regions, to participate. Any measure of demand which

is /

TABLE 4.7

GOLF - ILLUSTRATIVE ESTIMATE OF SUPPLY-DEMAND RELATIONSHIP IN EACH AREA
(Except Outer Isles, Orkney and Shetland)

July/August 1968

	Mean Demand (potential participants per day)	Supply (courses)		Practical Capacity (18 hole rounds/ day)	Capacity / Mean Demand
		9 hole	18 hole		
Firth of Clyde Loch Long	468	2	1	288	0.62
Loch Fyne	244	2	-	144	0.59
Kintyre	107	3	2	504	4.71
Oban	906	-	1	144	0.16
Loch Leven	273	-	-	-	-
Fort William	653	1	-	72	0.11
Islay/Jura	64	-	1	144	2.25
West Argyll/ Morar	608	2	-	144	0.24
Mull	182	1	-	72	0.40
Speyside	735	2	4	720	0.98
Forres/Nairn	386	1	3	504	1.31
Great Glen	821	1	2	360	0.44
Dingwall	346	-	2	288	0.83
Black Isle	145	-	1	144	0.99
Easter Ross	166	4	1	432	2.60
Loch Duich	179	-	-	-	-
Lochs Carron/ Torridon	238	1	-	72	0.30
Gairloch	606	1	-	72	0.12
Ullapool	388	-	-	-	-
Skye	432	2	-	144	0.33
Sutherland					
- West	275	-	-	-	-
- North	165	-	-	-	-
- South	440	2	3	576	+1.32
Caithness	220	1	3	504	+2.29

For explanation of derivation of demand figures, see text

is based purely on participation rates applied to holidaymakers staying within an area will therefore never be entirely satisfactory, and the ideal solution, if it is practicable, is for surveys to record the actual location of each occasion of participation.

4.7 Touring by car

In considering the main tourist activity in the Highlands, touring by car, the type of measurement which is appropriate for supply-demand analysis is very different. Since it involves channelled movement, rather than activities taking place within a defined area, it is most suitable to measure both supply and demand in terms of traffic flows.

To obtain traffic flow data in the cordon survey, a relatively straightforward approach was adopted of incorporating into the questionnaire a map of the Highland road network, on which respondents were asked to indicate their routes. It was believed to be the first time that a map of this size and detail had been used and doubts were expressed(1) prior to the survey regarding the likely success of this aspect. In practice the maps were remarkably well filled in (nb. a cross-check was possible with the places stayed in), possibly because of the high average socio-economic status of respondents(2) or the relatively limited nature of the Highland road network which made it fairly easy to identify routes.

In /

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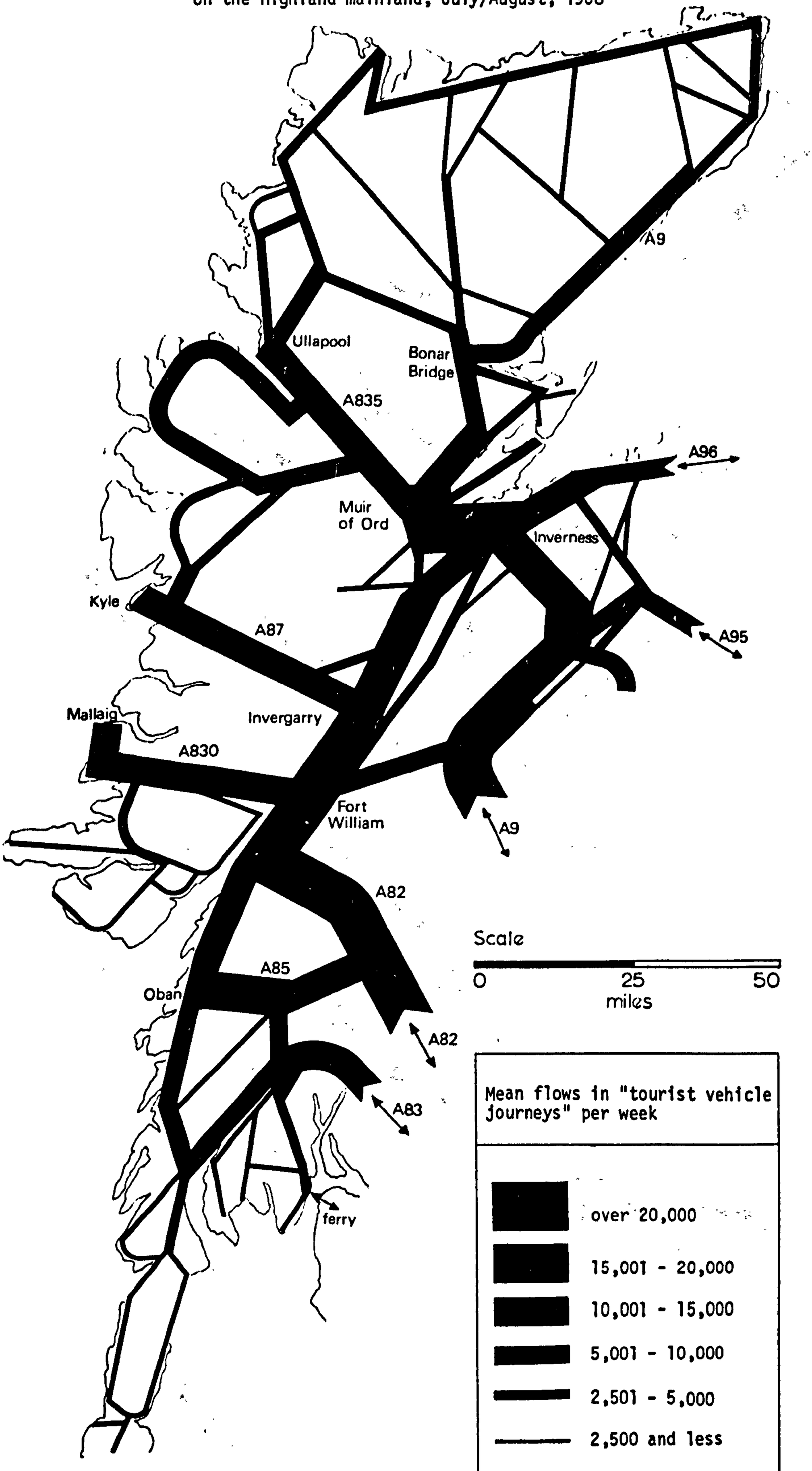
(1) Mr W.M. Reece of the (then) British Travel Association, in correspondence.

(2) It must be recognised that the map may have been a deterent to those of low socio-economic status and thus led to bias in the postal response.

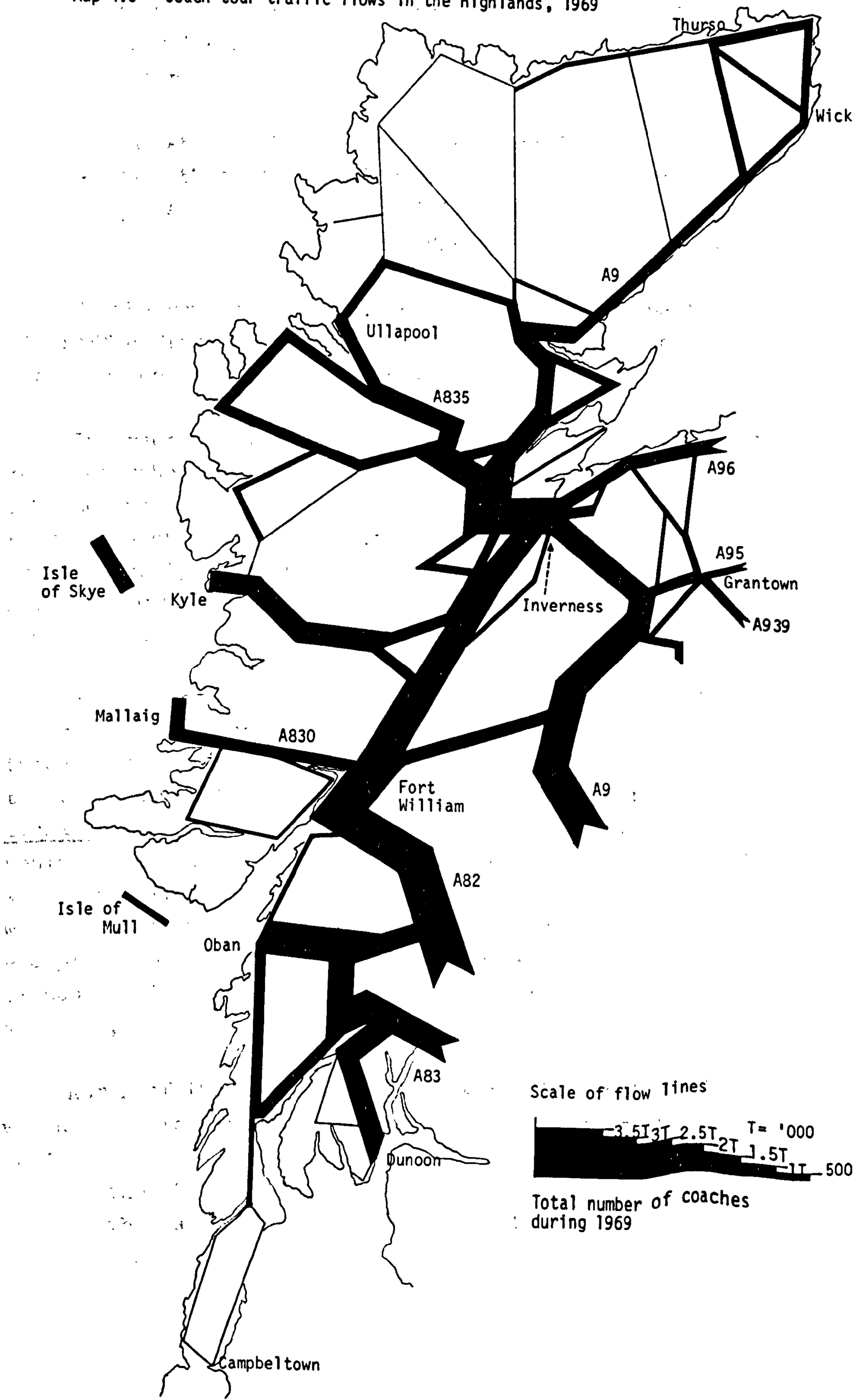
In analysing this data to produce traffic flow figures, the first step was to break the road network down into as small a number of significant road links and nodes as possible - the final network had 117 links, including each important island as one 'link'. Two possible ways of coding the route data were in the form of a sequence of nodes or as a sequence of route links; however, with the computer programs available, analysis of such data either way would have been very difficult and punch card space required to represent a long journey would have been far too great. The alternative adopted was to represent each of the links in the system by one or two fixed, single column 'fields' in which was punched the number of times the party travelled the link in total, where only one field had been allocated, or in each direction, where there were two. The data in each field were then processed to give the total number of 'vehicle journeys' along each link (Table 4.8) which could be broken down by direction, where two fields were used, by origin and by type of vehicle. This information was then used to construct a flow map (Map 4.4) showing weekly volumes of 'tourist vehicle journeys' along each part of the Highland road network.

The pattern of holidaymaker traffic was of two main feeder routes (each with over 20,000 tourist vehicle journeys per week) to Inverness - the A9 through Speyside and A82 through Glencoe and the Great Glen; north of Inverness a single major feeder continued to Muir of Ord. Additionally there were three subsidiary feeders into the area, the most important being the A83 through Arrochar; the others were the A96 to Inverness from Aberdeenshire, and, into Grantown, the A95 which links with routes from lower Speyside and Deeside. From the major feeders lead 'spur' routes which had 10,000-20,000 tourist vehicle journeys per week:

Map 4.4 The mean weekly tourist traffic flows (private vehicles) on the Highland mainland, July/August, 1968



Map 4.5 Coach tour traffic flows in the Highlands, 1969



- to Oban there were two routes (A85 and A828) from the A82, forming a loop which gives an alternative to the section of the A82 through Glencoe,
- the A830 to Mallaig (from Fort William),
- the A87 to Kyle of Lochalsh (from Invergarry),
- the A832/835 to Ullapool (from Muir of Ord),
- the A9/A836 to Bonar Bridge (from Muir of Ord).

On the remaining roads, there was a general pattern of traffic flows decreasing with increasing distance from the feeder and spur routes.

In order to make the supply-demand analysis for roads more comprehensive and realistic, it was thought desirable to include coach tour traffic in the analysis. The route data obtained (as described in Chapter 3) was analysed in exactly the same way as for private vehicles to give a flow map (Map 4.5), showing flows over the whole 1969 season.

As with private vehicles, the A82 and the A9 were the main coach tour feeder routes into the Highlands, though for coaches the A82 was somewhat the more important. Many of the South West coast roads were <u>proportionally</u> more important for coach tours than for private vehicle traffic - in particular, the A83 through Arrochar was a very important third feeder route into the Highlands with large flows to Oban and Dunoon. One important exception to this rule was the A828 between Oban and Glencoe, which carried a substantial flow of private vehicles, but hardly any coaches.

North of the Great Glen there were five routes on which coach tour traffic was of particular importance in 1969:

- the A87 to Kyle of Lochalsh
- the main roads of the Isle of Skye
- the/

Map 4.6 Route links used in traffic flow analysis

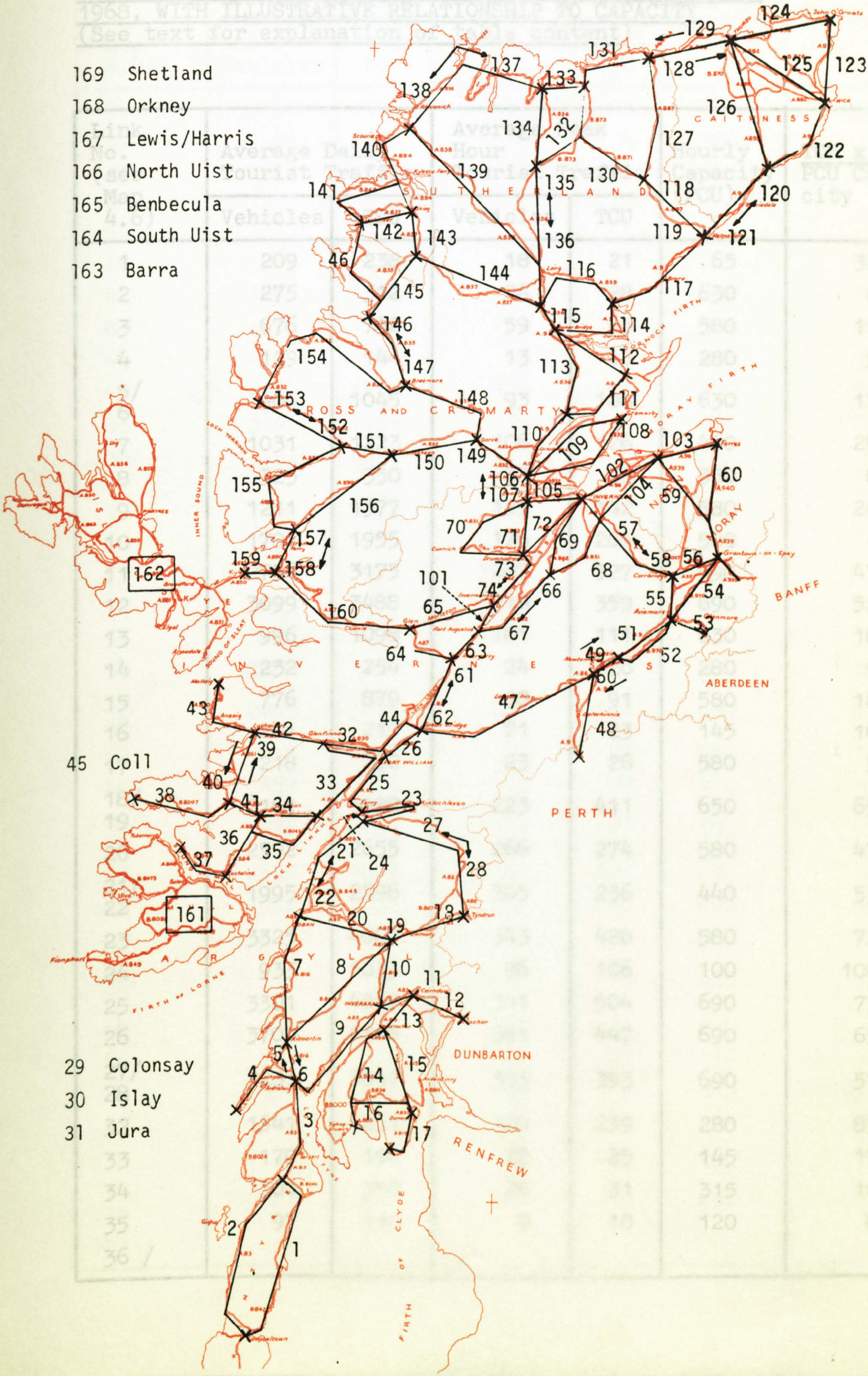


TABLE 4.8

TOURIST TRAFFIC FLOWS ON EACH ROUTE LINK, JULY/AUGUST 1968, WITH ILLUSTRATIVE RELATIONSHIP TO CAPACITY
(See text for explanation of table content)

Link No. (see Map 4.6)	Average Daily Tourist Traffic		Average Peak Hour Tourist Traffic		Hourly Capacity (PCU)	TCU x 100 / PCU Capacity
	Vehicles	TCU	Vehicles	TCU		
1	209	238	18	21	65	32
2	275	312	24	28	630	4
3	676	742	59	65	580	11
4	129	144	13	15	280	5
5/6	904	1045	93	108	630	17
7	1031	1223	106	126	440	29
8	323	350	33	36	580	6
9	1211	1377	125	142	580	24
10	1706	1955	176	201	580	
11	2796	3175	287	327	690	47
12	3099	3488	318	359	690	52
13	996	1098	101	111	630	18
14	232	254	24	26	280	9
15	776	879	80	91	580	16
16	201	219	21	23	145	16
17	218	252	23	26	580	5
18/19	2161	3988	223	411	650	65
20	2592	2655	266	274	580	47
21/22	1995	2296	205	236	440	53
23	3325	4007	343	420	580	72
24	933	1033	96	106	100	106
25	3301	4898	341	504	690	73
26	3700	4348	381	447	690	65
27/28	3231	3817	333	393	690	57
32	1541	1851	200	239	280	85
33	170	196	22	25	145	17
34	300	350	26	31	315	10
35	97	110	9	10	120	8
36 /						

Link No. (see Map 4.6)	Average Daily Tourist Traffic		Average Peak Hour Tourist Traffic		Hourly Capacity (PCU)	TCU x 100 / PCU Capacity
	Vehicles	TCU	Vehicles	TCU		
36	160	186	14	17	65	26
37	47	47	4	4	120	3
38	285	340	25	30	65	46
39/40	420	501	37	27	65	42
41	372	421	33	37	120	31
42	1464	1750	189	226	145	156
43	1335	1554	172	200	225	89
44	433	489	45	51	440	12
47	1354	1534	126	143	280	51
48	3649	4186	338	388	690	56
49/50	3316	3822	308	355	630	56
51	3104	3574	289	332	630	53
52	254	195	24	18	225	8
53	873	1041	81	97	580	17
54	517	573	48	53	280	19
55	3213	3713	299	345	690	50
56	1272	1397	118	130	690	19
57/58	2809	3276	261	304	630	48
59	588	631	55	58	580	10
60	459	505	43	47	440	11
61/62	1978	4636	204	477	690	69
63	2508	1950	259	201	690	29
64	1577	1831	204	236	690	34
65	641	738	83	95	280	34
66/67	614	715	63	74	440	17
68	191	218	20	22	440	5
69	502	559	52	58	440	13
70	350	404	36	42	225	19
71	609	739	63	76	225	34
72	2140	2516	220	259	690	38
73/74	2582	3046	266	313	690	45
101 /						

Link No. (see Map 4.6)	Average Daily Tourist Traffic		Average Peak Hour Tourist Traffic		Hourly Capacity (PCU)	TCU x 100 / PCU Capacity
	Vehicles	TCU	Vehicles	TCU		
101	2411	2846	249	293	690	42
102	1819	2019	169	194	690	28
103	1434	1799	133	166	690	24
104	327	378	30	35	580	6
105	3138	3706	292	345	820	42
106/ 107	3675	4604	341	429	820	52
108	377	411	35	38	580	7
109	242	279	22	26	580	4
110	1850	2186	172	204	690	30
111	532	640	50	60	630	10
112	487	614	45	57	690	8
113	1358	1571	126	146	440	33
114	1055	1264	98	118	580	20
115	782	910	84	97	315	31
116	230	281	91	107	580	18
117	909	1066	84	99	630	16
118/ 119	117	126	13	14	120	12
120/ 121	729	873	68	81	580	14
122	540	661	50	61	630	10
123	475	581	44	54	630	9
124	389	484	42	52	630	8
125	129	154	14	17	630	3
126	192	240	21	26	630	4
127	83	99	9	11	145	8
128/ 129	482	591	52	63	630	10
130	54	59	6	6	145	4
131	435	533	47	63	280	23
132	106	127	11	14	280	5
134	382	472	41	51	280	18
135/ 136	272	328	29	35	280	12
137/ 138	353	425	38	46	315	15
139/						

Link No. (see Map 4.6)	Average Daily Tourist Traffic		Average Peak Hour Tourist Traffic		Hourly Capacity (PCU)	TCU x 100 / PCU Capacity
	Vehicles	TCU	Vehicles	TCU		
139	569	684	61	73	65	112
140	299	372	39	48	315	15
141	495	589	53	63	65	97
142	321	364	34	39	65	58
143	378	453	40	48	120	40
144	615	732	66	78	630	12
145	585	730	76	94	280	34
46	873	1006	94	107	315	34
146/147	775	552	83	59	65	91
148	1743	2037	186	218	630	35
149	1364	1601	176	207	315	66
150	2109	2462	271	318	440	73
151	1003	1322	130	171	225	76
152/153	936	1121	100	120	315	38
154	1311	1536	140	164	225	73
155	1150	1774	123	190	280	68
156	654	733	70	78	120	65
157/158	521	604	56	65	225	29
159	1020	1186	109	127	65	196
160	1916	2224	246	287	690	42
161	1854	2310	239	298	690	43

- the A832 Wester Ross 'circuit',
- the A835/A837 - Muir of Ord - Ullapool - Ledmore - Strath Oykel - Muir of Ord 'circuit'
- the A9 to John O'Groats with a small circuit (Latheron - Wick - Thurso - Latheron) at its northern end.

Coaches for the last three of these routes mostly passed through Beauly, so that the Beauly - Muir of Ord stretch of road had the largest coach flows of any roads in the Highlands. The Fort William - Mallaig road was the only other road north of the Great Glen with substantial coach flows, but it was proportionally much less important for coaches than for private vehicles.

Many roads, particularly the more remote ones, had under 500 coach tour journeys in 1969. These included all the roads in Sutherland, apart from the A9. The low traffic there resulted partly from location, partly also from the restrictions on the size of vehicles allowed to use those roads. Restrictions also applied on other hazardous sections of roads, while ferries to the Islands were used only by MacBrayne's small 24-seater coaches, and the Dunoon car ferry took a maximum length of only 32 feet.

For purposes of the supply-demand analysis, coach tour flow figures were also produced relating to the peak season. Average daily peak season coach tour flows were then combined with the average daily private vehicle flows in two ways:

(a) by simply adding together the figures for the two categories to produce a total tourist vehicle flow,

(b) by a method which took into account the size of the vehicle; this method, which is similar to that used in standard traffic counts, took a coach to represent /

sent three 'tourist car units' (t.c.u.) and also cars with caravans as two t.c.u..

The latter method obviously provides a better measure for supply-demand analysis, and is used in Table 4.8.

On the supply side, road capacity is related principally to traffic speed, road alignment and road width(1). Studies relating to 'normal' rural roads are well established and standard capacities for different conditions of alignment and width are given in the Highway Capacity Manual (Highway Research Board, Special Report 87). But there must be some doubt as to whether these standard capacities can be applied to roads used for pleasure motoring. On the one hand they are based on a relatively high design speed which may not be applicable in this situation; evidence seems to indicate (Carter, 1971) that the pleasure motorist does not require high speeds, so if speeds (by design or otherwise) are thus lower, the physical capacity of the roads is higher.

On the other hand the pleasure motorist's enjoyment diminishes as the apparent volume of traffic increases, so attempts should be made to keep the volume of traffic well below the physical capacity. Ideally a perceptual capacity should be established - i.e. the level of traffic above which the tourist's pleasure of motoring at a 'tourist speed' (perhaps 30 m.p.h.) diminishes rapidly. However, no such measurement exist. It has therefore been assumed that the perceptual capacity at a tourist speed is the same as the physical capacity at higher speeds. So the capacity figure for roads of 18' and over in the Highway /

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(1) Other factors affecting capacity are slope, intersection, condition of surface, composition of traffic and driver behaviour. Note that, as the speed of traffic increases above 23 m.p.h., the physical capacity of a road decreases (Wardrop, 1963).

the Highway Capacity Manual have been adopted for this study.

The capacity of single track roads is very much lower than that of two-way roads. Work by the Road Research Laboratory indicates that, for a traffic speed of 20 m.p.h., single track roads have capacities varying between 100 and 200 p.c.u. (passenger car units) per hour according to alignment. In addition to the categories mentioned above, there are also narrow roads of 10'-12' width, where two-way traffic is just possible. Unfortunately no figures are available regarding the capacity of these roads. It has therefore been necessary to estimate a range of p.c.u. capacities, relative to those of the wider and narrower roads for which figures are available. The range of capacity standards (in p.c.u. per hour) applied here to Highland roads in relation to their width and alignment is summarised below:

		Width				
		single track	10'-12'	18'	20'	24'
Standard of Visibility	poor	65	225	440	490	630
	satisfactory	120	280	580	630	820
	good	145	315	630	690	900

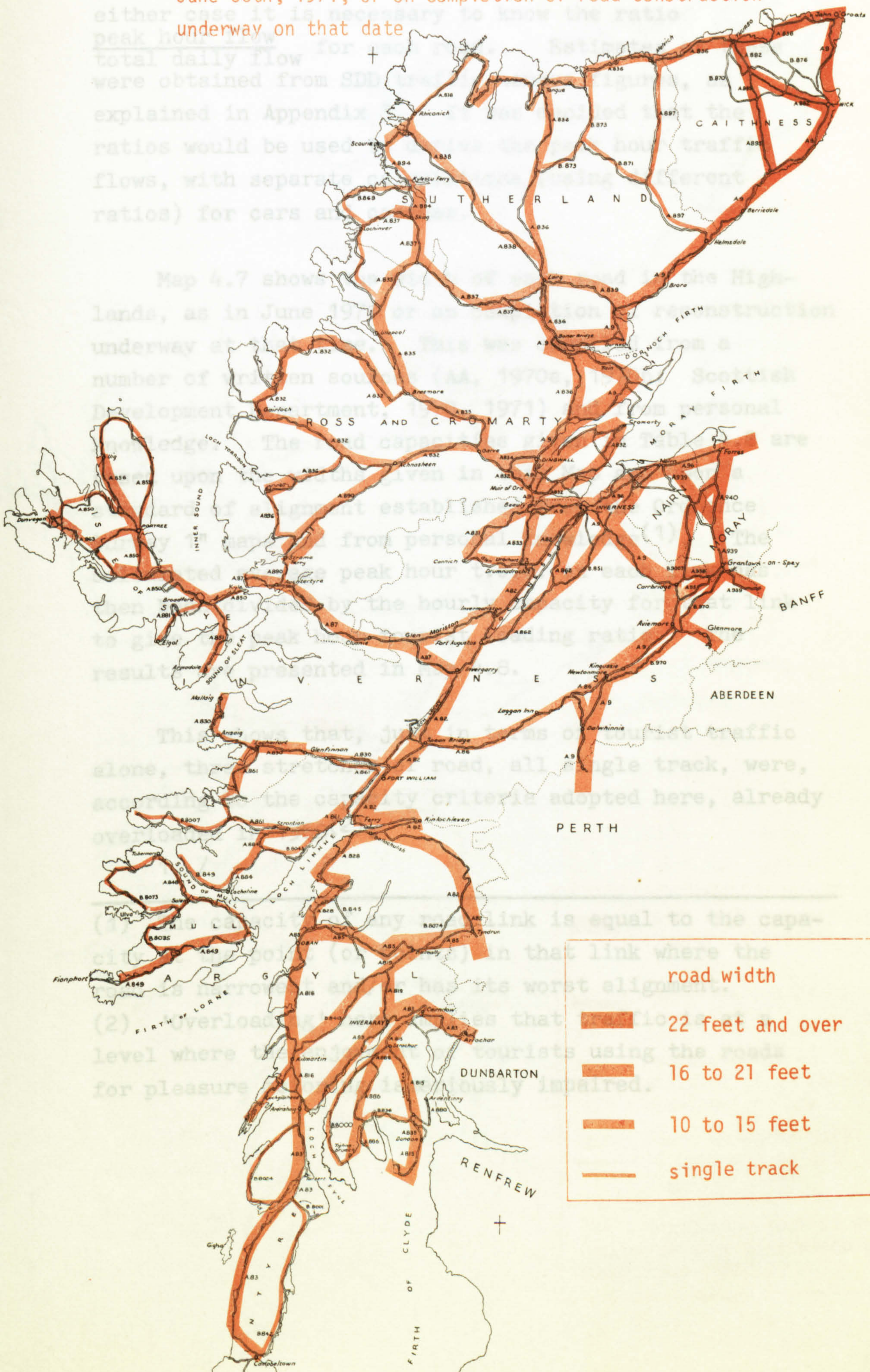
Sources:

Highway Research Board, "Highway Capacity Manual", HRB Special Report No. 87

Road Research Laboratory, "Single Track Roads in the Scottish Highlands", by M.S. Walker, J.W. Tyler and J.R. Lake, RRL Report LR 71, Crowthorne, 1967.

Having established the hourly tourist capacity of each road in p.c.u. and the daily tourist traffic flows of each, it is necessary either to derive a figure for the practical daily capacity (as was done in the previous examples /

Map 4.7 The width of roads in the Highlands and Islands, as at June 30th, 1971, or on completion of road construction underway on that date



road width

- 22 feet and over
- 16 to 21 feet
- 10 to 15 feet
- single track

examples) or estimate the peak hour traffic flow. In either case it is necessary to know the ratio $\frac{\text{peak hour flow}}{\text{total daily flow}}$ for each road. Estimates of these were obtained from SDD traffic census figures, as explained in Appendix 3. It was decided that the ratios would be used to derive the peak hour traffic flows, with separate calculations (using different ratios) for cars and coaches.

Map 4.7 shows the width of each road in the Highlands, as in June 1971 or on completion of reconstruction underway at that time. This was compiled from a number of written sources (AA, 1970a, 1970b; Scottish Development Department, 1970, 1971) and from personal knowledge. The road capacities given in Table 4.8 are based upon the widths given in this Map and upon a standard of alignment established from the Ordnance Survey 1" maps and from personal knowledge(1). The calculated average peak hour t.c.u. on each link has then been divided by the hourly capacity for that link to give the peak hour tourist loading ratio. The results are presented in Map 4.8.

This shows that, just in terms of tourist traffic alone, three stretches of road, all single track, were, according to the capacity criteria adopted here, already overloaded in 1968(2):

1. /

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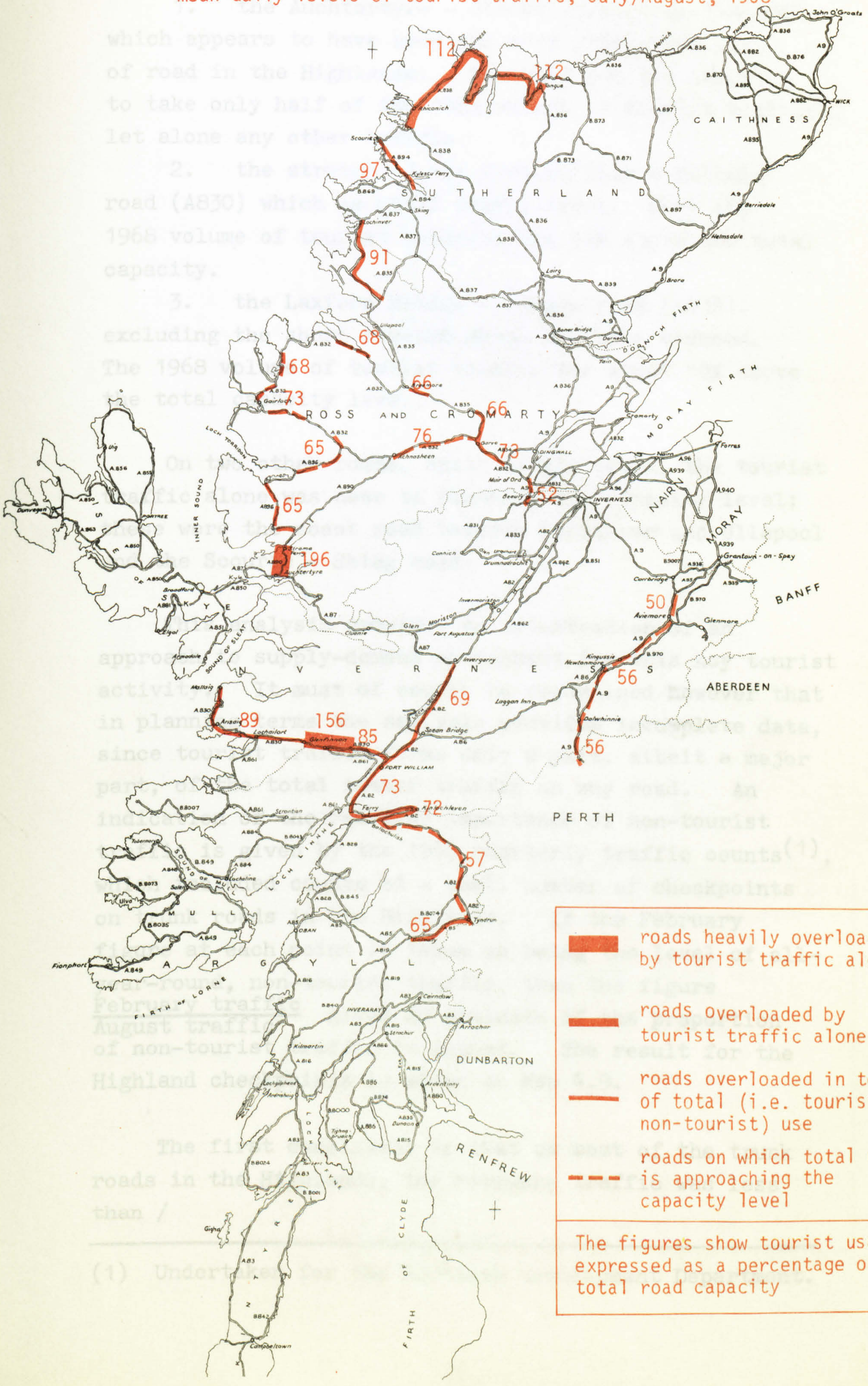
(1) The capacity of any road link is equal to the capacity at the point (or points) in that link where the road is narrowest and/or has its worst alignment.

(2) 'Overloading' here implies that traffic is at a level where the enjoyment of tourists using the roads for pleasure motoring is seriously impaired.

Map 4.8 The overloading of roads on the Highland mainland, based on mean daily levels of tourist traffic, July/August, 1968



roads heavily overloaded by tourist traffic alone

roads overloaded by tourist traffic alone

roads overloaded in terms of total (i.e. tourist + non-tourist) use

roads on which total use is approaching the capacity level

The figures show tourist usage expressed as a percentage of total road capacity

1. the Auchtertyre - Strome stretch of the A890, which appears to have been the most overloaded piece of road in the Highlands. The road had the capacity to take only half of the 1968 volume of tourist vehicles, let alone any other traffic.

2. the stretch of the Fort William - Mallaig road (A830) which is still single track. Here the 1968 volume of tourist vehicles was 50% above the total capacity.

3. the Laxford Bridge - Tongue road (A838), excluding the short stretch which has been widened. The 1968 volume of tourist traffic was about 10% above the total capacity level.

On two other roads, again single track, the tourist traffic alone was near to reaching the capacity level; these were the coast road between Lochinver and Ullapool and the Scourie - Skiag road.

This analysis provides an illustration of an approach to supply-demand assessment for this key tourist activity. It must of course be recognised however that in planning terms the analysis provides incomplete data, since tourist traffic forms only a part, albeit a major part, of the total summer traffic on any road. An indication of the relative importance of non-tourist traffic is given by the 1965 quarterly traffic counts(1), which included counts at a small number of checkpoints on trunk roads in the Highlands. If the February figure at each point is taken as being the level of all-year-round, non-tourist traffic, then the figure $\frac{\text{February traffic}}{\text{August traffic}}$ gives an estimate of the proportion of non-tourist traffic in August. The result for the Highland checkpoints is shown on Map 4.9.

The first conclusion is that on most of the trunk roads in the Highlands, the February traffic was less than /

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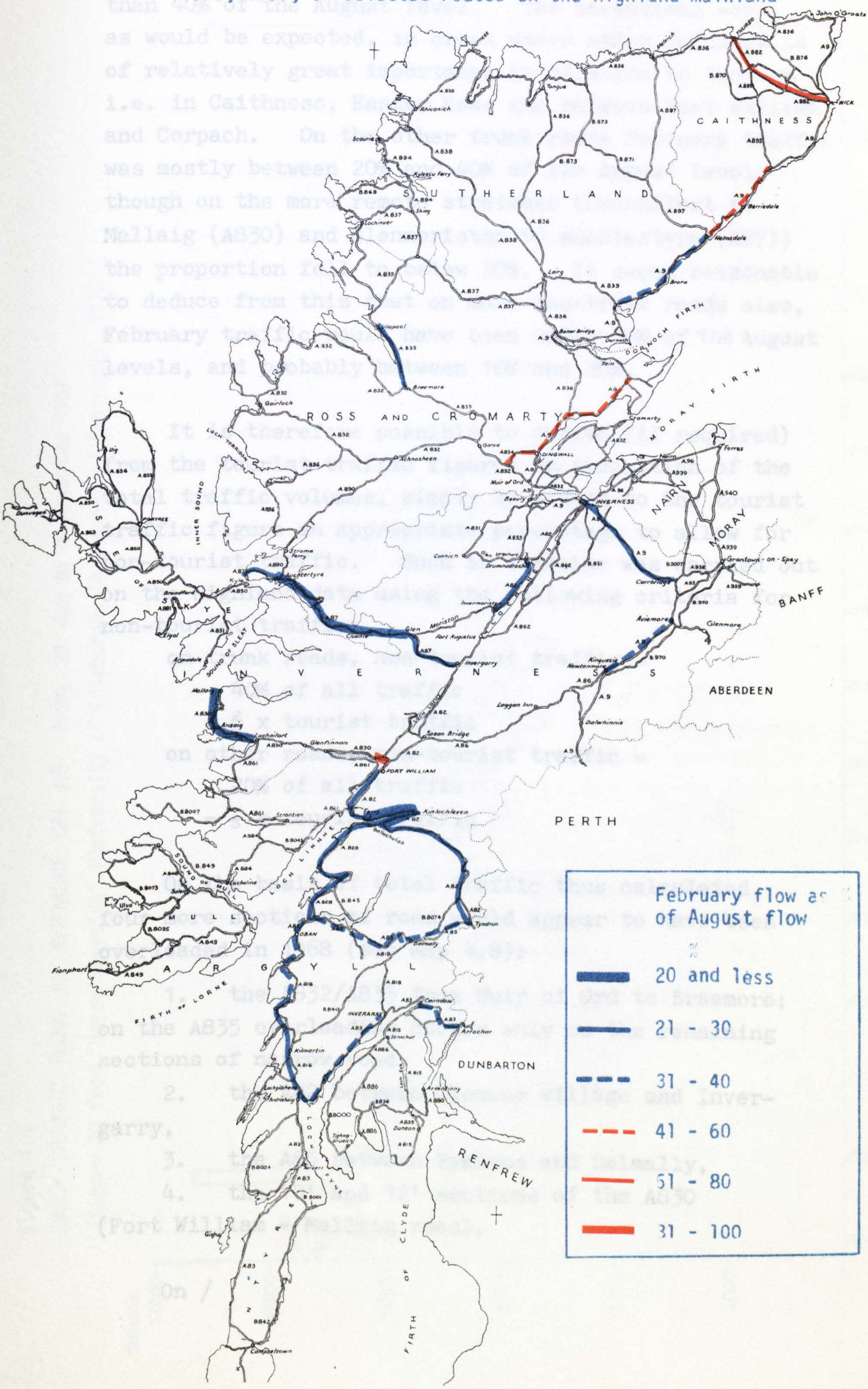
(1) Undertaken for the Scottish Development Department.

Map 4.9 February traffic flows expressed as a percentage of August flows, 1965, on selected routes on the Highland mainland



than 40% of the August level. The exceptions were, as would be expected, in areas where other industry is of relatively great importance in relation to tourism - i.e. in Caithness, Easter Ross and between Fort William and Corpach. On the other trunk roads February traffic was mostly between 20% and 40% of the August level, though on the more remote stretches (Lochailort to Mallaig (A830) and Glenmoriston to Auchtertyre (A87)) the proportion fell to below 20%. It seems reasonable to deduce from this that on most non-trunk roads also, February traffic would have been under 20% of the August levels, and probably between 10% and 20%.

It is therefore possible to derive (if required) from the tourist traffic figures an indication of the total traffic volumes, simply by adding to the tourist traffic figure an appropriate percentage to allow for non-tourist traffic. Such an exercise was carried out on the Highland data using the following criteria for non-tourist traffic:

on trunk roads, non-tourist traffic =
40% of all traffic
= $\frac{2}{3}$ x tourist traffic
on other roads, non-tourist traffic =
20% of all traffic
= $\frac{1}{3}$ x tourist traffic

On the basis of total traffic thus calculated, four more sections of road would appear to have been overloaded in 1968 (see Map 4.8):

1. the A832/A835 from Muir of Ord to Braemore; on the A835 overloading occurs only on the remaining sections of narrow road,
2. the A82 between Glencoe village and Invergarry,
3. the A85 between Tyndrum and Dalmally,
4. the 10' and 12' sections of the A830 (Fort William - Mallaig road).

On /

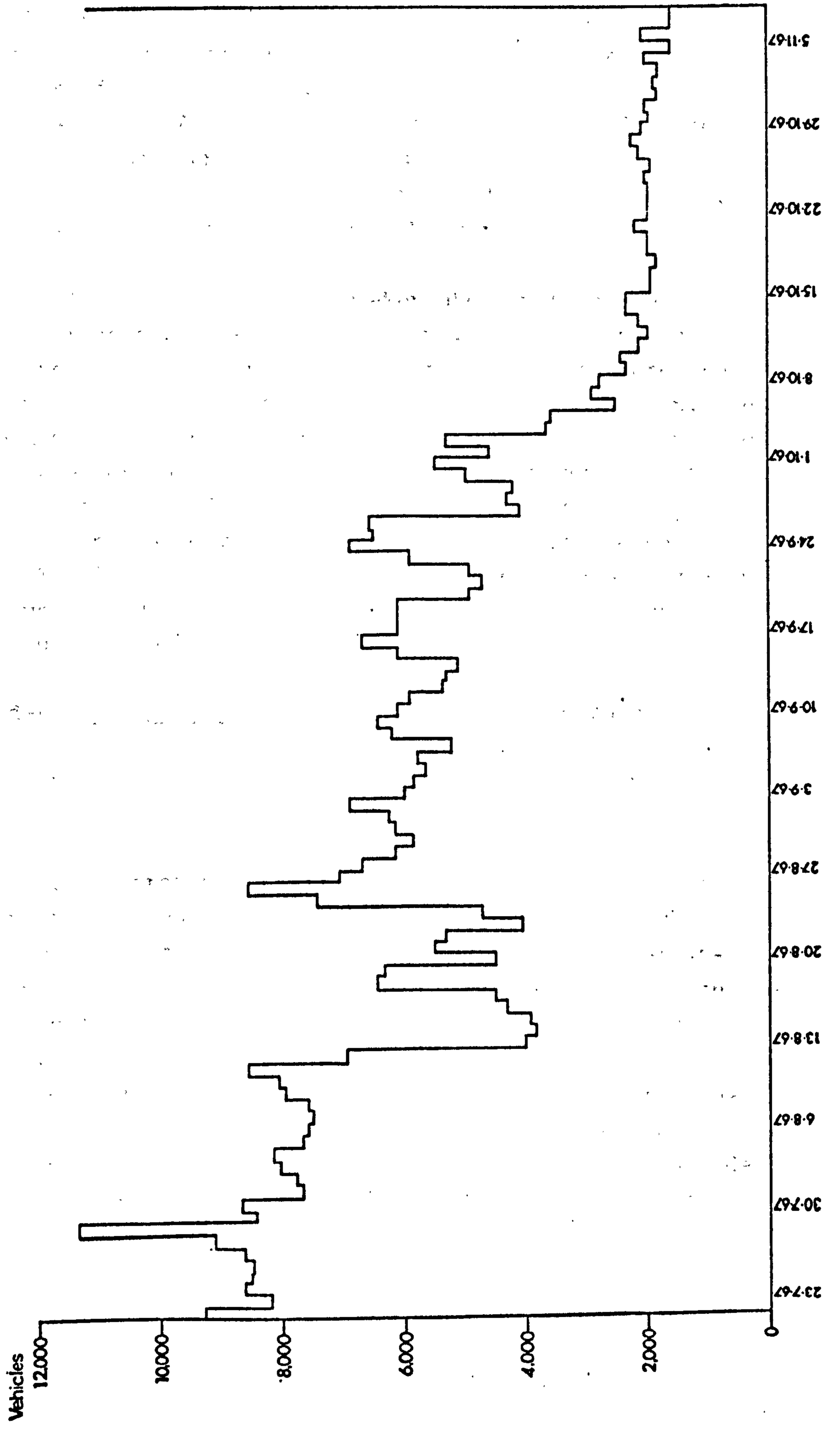


Figure 4.1
DAILY TRAFFIC FLOW AT AVIEMORE ON A9 From 22 July to 8 November 1967
(Figure 20 from "Upper Speyside" (University of Edinburgh, Department of Geography, 1970))

On certain other roads the total traffic in 1968 would appear to have been approaching the capacity levels and will probably reach capacity in the not too distant future - namely:

- the A9 up to the junction with the A95, and between Beauly and Muir of Ord,
- the A82 between Tyndrum and Glencoe village,
- the coastal roads of Wester Ross.

All the analyses undertaken above were on the basis of average peak season daily flows. No account is taken of the fact, illustrated in Figure 4.1, that there are very considerable variations within the peak season. On peak days within the peak period the traffic flow may be 50% greater than the average; if the average flow is equal to the road capacity, this implies overloading of 50% on peak days. Nevertheless it seems reasonable to plan (initially at least) for the average peak season situation, rather than a 'high peak' demand occurring on just a few days.

4.8 Understanding the present as a guide to the future

The role of Sections 4.9-13 is to illustrate how data on the existing regional market may be used to provide an understanding of the present, as a guide to the future.

The approach is to build as detailed as possible a picture of holidaymaking in the Highlands and Islands by private vehicle users, particularly the inter-relationships between all the variables operating. The choice of variables is discussed in Section 4.9 and the basic analyses are then considered in two groups:

- analyses of variables relating to the respondent and his party (discussed in Section 4.11),
- analyses of variables relating to their holiday behaviour, in particular, routes, stops and activities (Section 4.12).

Section 4.13 then develops the picture of interrelationships.

4.9 The choice of variables

The variables included in this survey which related to the respondent and his party were as follows:

Origin
Income
Number of previous visits
Number and ages of those in the party.

Other factors could, and perhaps should, have been examined, but two constraining factors were operating:

(a) limitations on questionnaire space; it was felt that the questionnaire had to be confined to one sheet of double foolscap size, folded to form four sides of foolscap, and, after questions to obtain the demand information already described, there was very little space to obtain extra profile details, particularly if a clear layout was to be maintained (see questionnaire, Appendix 2).

(b) information which can be obtained by direct questioning is less easily obtained by a self-administered questionnaire. Thus obtaining social groupings by a set of questions about employment would have been difficult (as well as space consuming) in an s.a.q. It was felt that income was a simpler alternative for an s.a.q. and realistic also, since anonymity was assured. It is recognised that income is not an entirely satisfactory surrogate for social groupings (Davidson, 1970b) but, given the constraints, it was felt to be the only suitable variable.

A longer questionnaire, administered partly or wholly by direct interview, could have overcome both these constraints and obtained further potentially useful information. Social groupings, education, sex and marital status would have been the most useful additional variables.

The /

The variables included in the survey which related to holiday behaviour were:

- Routes
- Whether the route was planned in advance of holiday
- Influences on the choice of route
- Number of stops
- Length of stay in the Highlands
- Number of nights at each stop
- Accommodation used (at any time during stay in Highlands)
- Type of vehicle - including use of caravan
- Regions visited (but not necessarily stayed in) - derived from route maps
- Regions stayed in - analysed in terms of distribution of bed-nights
- Activities undertaken
- Attractions of Highlands and Islands - rated in order of importance
- Satisfaction with provision for tourists.

Again, these were felt to be the most useful and appropriate factors for an s.a.q., but, without the constraints imposed on this survey, other potentially valuable variables might have been included - e.g. advance booking of holidays, total length of holiday, other places visited outside the Highlands on the holiday, whether it was the main or second holiday, other holiday destinations during the year.

4.10 Analysis

It was in the analysis of the relationships between all these variables that the constraints imposed by the limitations of the computer programs available were most serious. The analysis undertaken was simply very extensive cross-tabulation of the variables, and there is no doubt that use of more /

that use of more sophisticated analytical procedures, such as multiple regression, principle components analysis and factor analysis, would have reduced the amount of cross-tabulation necessary, greatly assisted interpretation of results, and possibly revealed relationships not apparent from the cross -tabulations.

However, through exhaustive examination of the tabulations, it was possible to build up a clear and reasonable picture of the patterns of interrelationships which were operating, providing an understanding of the key influences of holiday patterns in the Highlands.

The account which follows of the results of the analysis attempts to show how the picture was built up, and, of equal importance, how information obtained may be interpreted to reveal implications for tourism planning. Understanding and interpretation are essential if market research data of this type is to be of any real value. Rarely, however, is this fully undertaken; most market studies (e.g. Butler, 1966; Hunt, 1966; Duffield and Owen, 1972b) have been content with mere description.

The following account of the analysis is divided into two parts - firstly an examination of the information on individual factors, and its implications; secondly, an account of the interrelationships between factors, building up into a composite picture, again with an indication of the possible implications.

The Individual Variables

4.11 Variables relating to the respondent and his party

4.11.1 Home region

Table 4.9 shows the distribution of the home region of holidaymakers, both before and after adjustment /

TABLE 4.9

HOME REGION OF PARTIES RESPONDING TO CORDON SURVEY

	Weighted sample - analysis unadjusted for postal bias	Weighted sample - analysis adjusted to correct postal bias
	%	%
SCOTLAND		
Moray (excluding Forres) and Banff	1	1
Aberdeenshire, Angus and Kincardine (excluding Aberdeen and Dundee)	3	4
Aberdeen	1	2
Dundee	1	1
Perth, Kinross, Fife and Clackmannan	5	5
Dunbartonshire and Stirlingshire	3	3
Ayr, Renfrew and Lanark (excluding Glasgow)	7	7
Glasgow	3	3
Lothians (excluding Edinburgh)	2	2
Edinburgh	4	4
Borders	1	1
South West (Dumfries and Galloway)	1	1
Total Scotland	31	34
ENGLAND		
Northern Planning Region	7	7
Yorkshire and Humberside	10	9
North West	9	9
East Midlands	4	4
West Midlands	6	6
South West	3	3
South East and East Anglia	21	19
WALES	2	2
Total England and Wales	62	59
EUROPE		
France	1	1
Benelux	1	1
Rest of Europe	1	2
Total Europe	3	4
REST OF WORLD		
United States	2	2
Commonwealth	1	1
Others	-	-
Total Rest of World	4	3
	100%	100%

English regions used are Economic Planning Regions

TABLE 4.10

RATE OF GENERATION OF HOLIDAYS TO THE HIGHLANDS FROM EACH HOME REGION, RELATED TO ITS DISTANCE FROM THE HIGHLANDS

Region	Adjusted number of arrivals to region per week	As a % of all arrivals	Population of region mid 1968(2)	Number of private vehicle licenses(3)	Holiday generation rates(4)		Distance(5)
					(a)	(b)	
North East Scotland	9,200	8	711,450	184,870	12.9	49.8	75
Ayr, Renfrew, Bute, Lanark Dunbarton and Stirling	16,300	14	2,700,600	451,250	6.0	36.1	75
Perth, Kinross, Fife and Clackmannan	6,280	5	497,250	52,915	12.6	52.9	100
South and South East Scotland	8,920	8	989,700	231,420	9.0	38.5	125
North England	8,500	7	3,340,900	700,820	2.5	12.1	225
North West England and Yorkshire/Humberside	21,400	19	11,558,400	2,633,000	1.9	8.1	300
Midlands	11,130	10	8,407,000	2,414,690	1.3	4.6	400
South West England & Wales	4,840	4	6,419,900	1,917,690	0.8	2.5	450
South East England/East Anglia	21,710	19	18,866,800	5,634,770	1.2	3.9	500
BRITAIN	108,280	94	53,492,000	14,221,425	2.4	7.6	-

NOTES:

(1) The table only includes holidaymakers over the age of three.

(2) Population figures are the estimates for June 1968 of the Registrar General.

(3) Ministry of Transport official statistics.

(4) The 'holiday generation rates' are the number of arrivals per week from each home region:

(a) per 10,000 population

(b) per 1,000 private vehicle licenses

(5) Distance = the shortest road distance between an assumed population 'centre of gravity' of a region, and the nearest large settlement within the survey area.

(6) English regions used are Economic Planning Regions.

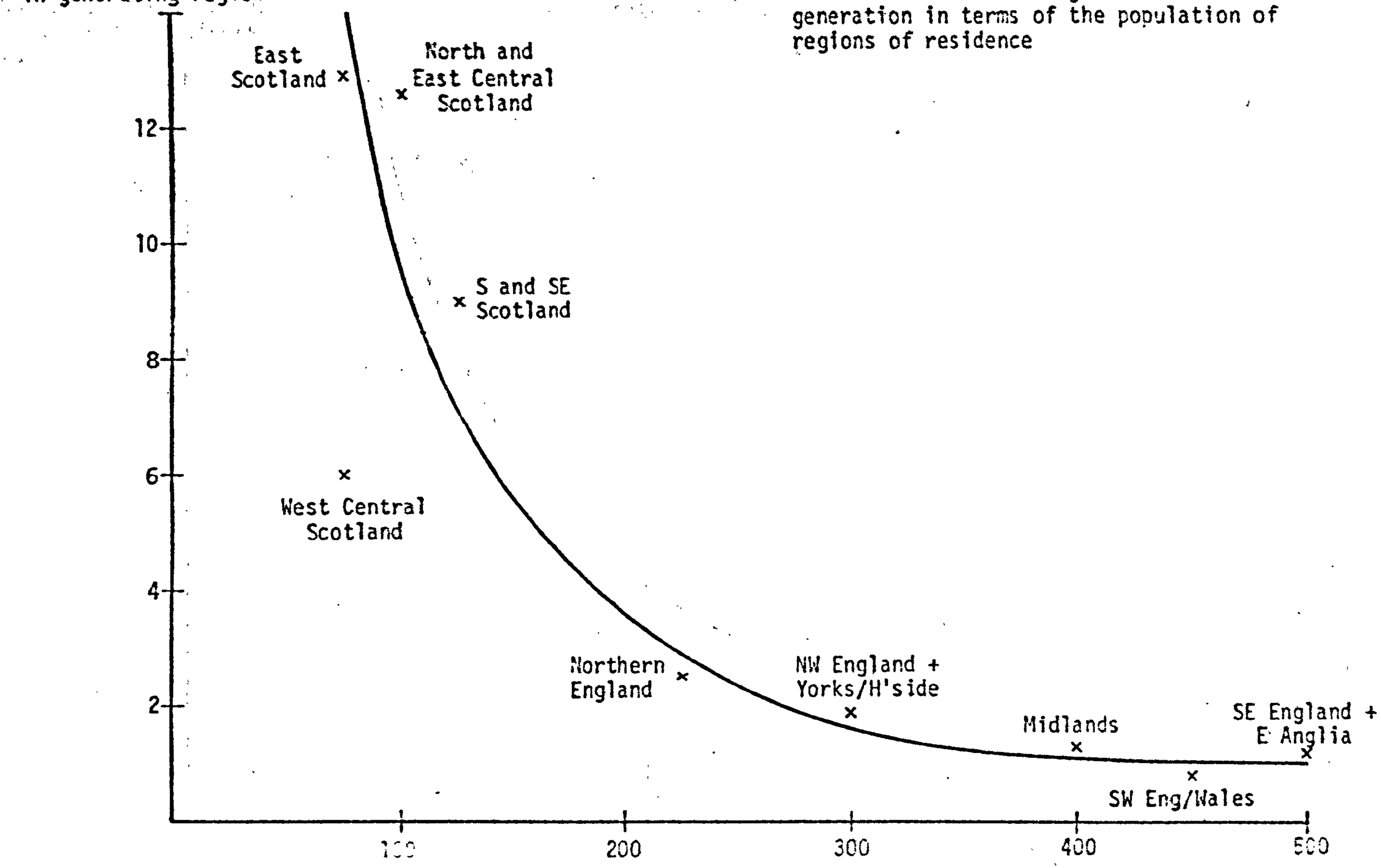


Figure 4.2(a) The generation of car-borne holidays to the Highlands, July/August 1968, related to distance from the Highlands: generation in terms of the population of regions of residence

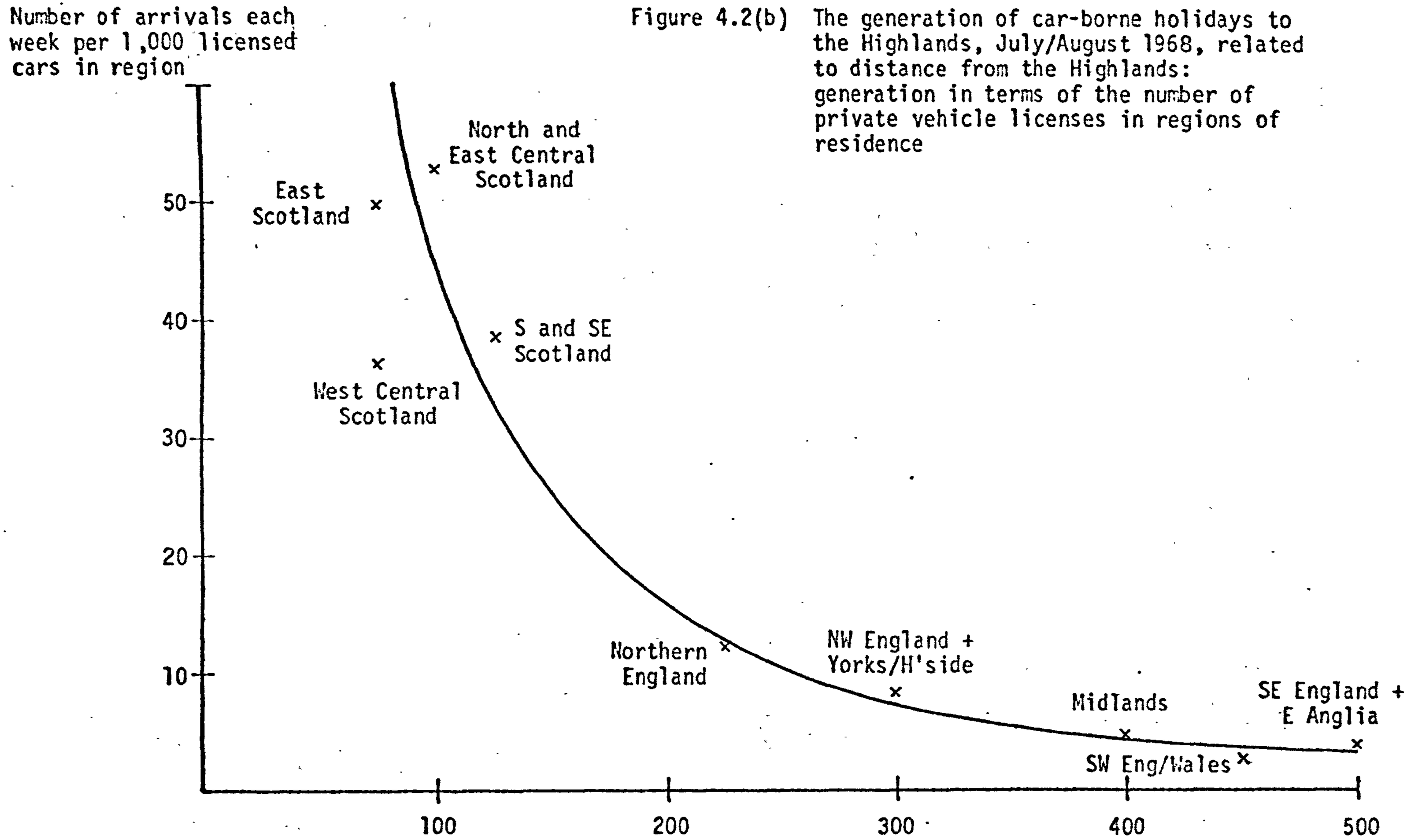


Figure 4.2(b) The generation of car-borne holidays to the Highlands, July/August 1968, related to distance from the Highlands: generation in terms of the number of private vehicle licenses in regions of residence

ment (in proportion to the percentage bias) to correct the bias in the postal return. The errors resulting from the postal bias are relatively small (up to ± 2% on the individual region values) and the general picture holds true, that about 60% of the holiday-makers came from England and Wales, one third from Scotland, and about 7% from overseas. The last figure was, perhaps, lower than might have been expected, but of course, overseas visitors were less likely to be travelling by private vehicle.

Table 4.10 converts the adjusted percentages to the average number of arrivals from, or departures to, each British home region per week at peak season. These figures of the absolute size of the various regional markets are obviously of some importance in marketing terms, but for planning it is of greater importance to relate these figures to the size of the total population in the region. This has been done in Table 4.10 by calculating two measures of holiday generation for each home region - the weekly number of arrivals to the Highlands from each region per 10,000 population, and per 1,000 cars licensed in the region. It may now be hypothesised that one of the main factors leading to the variation in the generation rate is distance of the home region from the Highlands. This has been tested by graphing the values against distance, as shown in Figures 4.2(a) and 4.2(b).

The graphs are standard 'Clawson' type(1) distance decay /

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(1) For examples of studies of distance decay curves, see Clawson (1959), Trice and Wood (1958), Clawson and Knetch (1967), Smith (1971) and Kavanagh and Gibson (1972).

decay curves - i.e. generation rates decrease with increasing distance, but the rate of decrease declines with distance. Beyond 200 miles from the Highlands (i.e. roughly south of the Scotland/England border) the rate becomes relatively low and the curve has almost levelled off beyond 400 miles. This shows clearly that although Southern England is a very important market in terms of the absolute number of visitors, its rate of generation is, relative to the Scottish home regions, very low. When holiday generation is expressed in relation to population (Figure 4.2(a)), the distance between some points and the interpolated curve is found to be relatively great. This is evidently because of differences in car ownership, since the points come much nearer to the interpolated curve in Figure 4.2(b), where generation is expressed in terms of car ownership. Because of this improved fit (which is obviously related to the fact that the phenomenon being measured is the number of car based trips to the Highlands and Islands), generation in relation to car ownership must be taken as the better index.

However, even then the point on the graph for West Central Scotland is a considerable way below the curve, indicating a low 'propensity to travel to the Highlands', which may be because of a relatively low socio-economic status of car owners in that region. Conversely, higher socio-economic status seems to result in a greater 'propensity to travel to the Highlands', since the points for regions which might be considered to be relatively prosperous (South East England, the Midlands and South East Scotland) are all above the curve.

The main implications of this analysis are:

(a) /

(a) the importance of distance in determining the generation rate; as the friction of distance decreases through the development of motorways (and also perhaps through increasing use of Motorail) the curve might be expected, all things being equal(1), to move to the right. This would not increase the rate for the more distant regions greatly, but it might increase significantly the rate for North West England and Yorkshire/Humberside which together have more than 11½ M population. Insofar as marketing may attempt to reduce the perceived distance, it would be sensible to concentrate efforts in these same regions.

(b) if a higher socio-economic status leads to an increased propensity to travel to the Highlands then increasing affluence could give the Highlands a greater share of the British market.

4.11.2 Income

The incomes of the survey respondents (Table 4.11(a)) were on average, in terms of 1968 incomes, extremely high. It is accepted that there was probably a bias towards higher incomes in the postal response. Additionally it should be noted that income here relates to the head of the holiday party; if other adults (e.g. young wage earners travelling with parents) had been taken into account the income structure could well have shown greater proportions in the lower income groups.

Nevertheless it is still undoubtedly true that the Highlands are relatively popular with the higher income groups, as is confirmed by Table 4.12 which shows the income structure of a sample of British adults holidaying in the Highlands compared with a sample /

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(1) all things might not be equal, since new motorways will also improve access to other competing holiday destinations.

TABLE 4.11

MAIN PERSONAL AND HOLIDAY CHARACTERISTICS OF PARTIES RESPONDING TO THE CORDON SURVEY
(Postal bias not corrected)

a) Income:

	%
under £750	7
£750 - £1250	29
£1250 - £2500	42
over £2500	22

b) Age structure:

	% of persons
0 - 3	3
4 - 14	18
15 - 20	10
21 - 30	15
31 - 45	25
46 - 60	24
over 60	6

c) Number of children in parties:

	%
Under 15	
none	65
1 - 2	28
over 2	7
Under 4	
none	93
one or more	7

d) Number of persons in party:

	% of parties	% of persons
1	2	1
2	40	26
3	18	17
4	22	28
5	9	13
6 - 9	7	13
over 9	1	3

e) Number of previous summer visits:

	%
0	32
1 - 2	27
3 - 5	17
over 5	24

f) Number of nights in the survey area:

	%
1	7
2	8
3	9
4	9
5 - 6	16
7	11
8 - 10	16
11- 14	18
15- 21	5
over 21	1

g) Number of stops in survey area:

	%
1	36
2	21
3	17
4 - 6	21
over 6	5

h) Accommodation used:

	%
hotel	23
guest house	9
B & B	35
cottage, static caravan	12
touring caravan	15
tent	17
with relations or friends	6
hostel	2

i) Vehicles towing:

	%
caravans	13
trailers	1
not towing	85

j) Route:

	%
flexible	58
fixed	42

k) Parties wanting improvements in:

	%
motoring conditions	52
general tourist facilities	49
sports facilities	19
information	36

TABLE 4.12

INCOME STRUCTURES(1) OF BRITISH ADULTS (16+), 1968

Income Group	Main Holiday in the Highlands	Main Holiday in Britain	All Adults over 16
	%	%	%
Under £950	18	22	27
£950 - £1,199	7	12	11
£1,200 - £1,449	14	11	10
£1,450 - £1,699	11	8	6
Over £1,699	22	16	15
No reply	29	31	31

(1) The income figure given is the total family income before tax.

Source: British National Travel Survey 1968
Social Surveys (Gallup Poll) Ltd. (1969)

sample of all British adults holidaying in Britain. Two-thirds of those visiting the Highlands who disclosed their income earned more than £1,200 compared with only one-half of all those taking a holiday in Britain as a whole.

This confirms the suggestion above of a higher propensity to travel to the Highlands amongst those of a higher socio-economic status, and ties in with research findings in other areas which indicate that it is usual for areas like the Highlands to attract those of higher socio-economic status. As Lavery (1968) pointed out in his study of holidaymaking of the North region of England:

> "The overall pattern is that the type of outdoor recreation available and the environment of the holiday area tend to attract certain types of holiday visitor. When the emphasis in gaining access to, and travelling in a holiday area is on motor car travel, and where scenic and historical features give emphasis to visual recreation.....the greater part of the visitors appear to consist of people of managerial and professional or non-manual status."

The lesson from this is that the nature of the product does positively influence the overall shape of the holiday market. The Highlands and Islands are fortunate in having a natural resource product with a strong appeal to a good market - a market which, overall, <u>suits</u> the product socially and environmentally more than many other markets, and which, potentially at least, offers relatively high economic rewards. It is therefore of the utmost importance that any new developments are, by and large, harmonious with the existing product, and not likely to alienate the existing market. Marketing efforts must also take account of these same constraints.

4.11.3 /

TABLE 4.13

AGE STRUCTURE OF BRITISH PEOPLE IN HIGHLANDS SAMPLE COMPARED WITH THAT OF BRITISH PEOPLE OVERALL

Age Group	(a) British people in Highlands sample	(b) British people overall
	%	%
0 - 3	3	7
4 - 14	19	17
15 - 20	10	9
21 - 30	13	14
31 - 45	25	18
46 - 60	25	19
Over 60	7	17

Source of (b): Registrar General, Estimates for mid-1968

4.11.3 Age, children in party and overall size of party

All members of parties were included in the analysis of the age structure of the sample. The breakdown for the total sample is shown in Table 4.11(b), while Table 4.13 shows the structure of the British element of the sample compared with the structure for the total GB population. The latter table shows that there is a heavy weighting in the Highland sample towards the 31-60 age group at the expense of the under-fours and over-sixties. The lack of young children is somewhat to be expected and is discussed further below. Apart from the obvious possibility that older people may prefer other areas, the relative lack of older people in the sample may have been because they tended to take holidays less or because they preferred to use other modes of travel. (A Scottish Tourist Board (1967) survey showed that a very high proportion of those on coach tours were elderly). Additionally it is possible that the lower percentage of people over 60 resulted from a bias in the postal response, since older people may have been less inclined or less able to complete a questionnaire.

When overseas visitors are included in the age structure, as in Table 4.11(b),the only difference is a slightly higher proportion in the 21-30 age group, at the expense of the over 45s.

It was felt that the presence of children in parties might be an important factor in determining holiday patterns. Analysis was therefore undertaken of whether parties included children or not (Table 4.11(c)). Thirty-five per cent were found to include children under 15, 7% having more than two; only a small proportion, 7%, had children under the age of four. /

four. The picture then is one of a large proportion of parties without children, and very few parties with very young children.

The large proportion of parties without children is reflected in the analysis of total party size (Table 4.11(d)), with 40% of the parties, accounting for 26% of the people, being couples. However, 39% of the parties, accounting for 57% of the people, were parties of four or more, consisting in part of parties with children and in part of larger groups of adults. The average number of persons over the age of three per party was 3.2.

Thus the Highlands and Islands appear to appeal particularly to middle aged parties without children, while families with young children are very much under-represented. If the activities available, the accommodation and the other facilities in the Highlands are not thought to be particularly suitable for children, then this pattern of preferences may be seen as perfectly satisfactory. If on the other hand the region is seen as having spare capacity which would be particularly suitable for family holidays, then there is a major marketing hurdle to be overcome.

4.11.4 Number of previous visits to the Highlands

Table 4.11(e) shows that about a third of the visitors were on their first summer visit, while a quarter had made more than five previous summer visits. For a developing tourist industry this can be seen as an extremely satisfactory position, with a good balance between first time visitors attracted by promotion, and returning visitors whose continued presence bears witness to the satisfactory nature of the product.

It /

It is of course possible that at some stage in the future a decision could be taken, most probably for environmental or social reasons, that the growth of tourism should be restricted or stopped. A first step would be to reduce the level of tourist promotion. The analysis of the number of previous visits gives an indication of what the likely effect of such a step might be. On the assumption that promotion is less likely to have influenced those who had made a previous visit, the effect of reducing promotion would be particularly to reduce the number of 'first timers'. However it is unlikely more than half of first timers are persuaded by promotion, so that, in the first year of no promotion, up to one sixth of those who might have come otherwise would not do so. It should be pointed out that there would be a cumulative effect, since those who did not come would not be potential return visitors in the future. On the other hand, the loss through lack of promotion is likely to be balanced by 'normal' gain.

4.12 Variables relating to the holiday in the Highlands and Islands

4.12.1 Length of stay in the Highlands and the number of different overnight stopping places

Most parties (94%) stayed for 14 nights or less, with a very even spread of different lengths of stay up to that figure (Table 4.11(f)). One third of parties stayed four nights or less and one half stayed for less than seven nights. The average of nearly eight nights is not therefore a very meaningful figure with such an even distribution.

Table 4.11(g) shows that only a quarter of the parties made overnight stops at more than three different places, while about a third stopped at only one place. Whilst holidays involving more than three stops /

stops might reasonably be labelled 'touring' holidays, not all the third involving one stop can necessarily be called 'centred' holidays, since they include some very short stays. In fact one third of those stopping at only one place were staying in the Highlands for less than four nights, so that approximately one quarter of all holidays might properly be termed 'centred'. Additionally, however, some of the 9% of parties who spent seven or more nights in the Highlands distributed between just two different places, would certainly have made lengthy stays at one or both of their stops.

Thus there is a balance between those making an extensive tour of the Highlands and those tending to centre on one place, with many others falling into neither category or making very short visits to the Highlands.

In resource planning terms, one implication of this analysis relates to the potential problem of reducing pressure on Highland roads. If such a measure were thought to be necessary, a key market segment to look at would be the 26% on 'touring' holidays as defined above, with the hope of converting them (by force or persuasion) to 'centred' holidays. This would of course need to be accompanied by a change in activities away from the 'car based'.

4.12.2 Type of accommodation used in the Highlands and Islands

The analysis of accommodation used (Table 4.11(h)) cannot unfortunately be compared directly with other figures. However, a broad comparison with the 1968 British National Travel Survey (Social Surveys (Gallup Poll) Ltd., 1969) indicates that the proportion using Bed and Breakfast (B and B) and camping in the Highlands is /

is relatively very high, whilst the numbers staying with friends and relatives is low. The proportion using touring caravans (13% of parties towing one, 15% staying in one) was also high. In strategic planning terms this is perhaps the least satisfactory aspect of the accommodation profile, because of the likely impact of touring caravans on road congestion and on the landscape. Otherwise the high proportion using attended accommodation of some type is probably satisfactory in terms of income and employment generation.

4.12.3 Nature of route chosen and influences on choice

For 58% of parties the route they took on their holiday in the Highlands was decided before the holiday began. In analysing the influences on the choice of route (whether decided in advance or not), five factors were each found to have influenced the choice of route of more than 30% of all the parties. These can be arranged in three groups according to their order of importance (in terms of percentage of parties which mentioned them):

Previous personal knowledge	63%
Selection of a route passing specific attractions	each 48-50%
Access to a specific destination	
Map information	each 32-35%
Advice from friends and relations	

Other factors, including the weather and information from motoring and tourist organisations, were each mentioned by fewer than 30% of the parties.

Where parties said they had decided their route in advance of their holiday, it is not possible to say with exactly what precision they had done so. Nevertheless the high proportion saying they had decided in advance, taken /

taken together with the low proportion following advice from an information centre, clearly indicates that the scope for influencing people's destination within the Highlands after they have started their holidays, is limited.

Attempts to persuade people not to visit environmentally sensitive areas should perhaps therefore be undertaken before the holiday is started, and preferably at the time when the destination is decided in broad terms. Unfortunately this may not prove easy since the proportion using written material of any sort to guide them is very low. However, it is fair to point out that this survey was undertaken before the statutory Scottish Tourist Board was established, and the influence of tourist literature may have increased since then. Almost certainly the market penetration of such literature can be increased given sufficient expenditure.

4.12.4 The attraction of the Highlands

Table 4.14 shows the percentage of parties which rated each of fourteen factors as the first, the second and the third most important attraction. The major attraction for the majority (54%) was the 'scenery', but for 20% it was 'peace and quiet'; no other factor rated highly as a major attraction - even 'visits to friends or relations' and active recreation were mentioned by relatively few (6% and 4% respectively).

However, other factors, particularly 'interesting places to visit' and also 'curiosity', 'hope of good food or accommodation' and 'hope of good weather' were more important as second and third attractions. Taking together all three factors mentioned by each party, 'scenery' was mentioned by 98% of all parties, 'peace and quiet' by 60% and 'interesting places to visit' by 40%. /

TABLE 4.14

THE HOLIDAY ATTRACTIONS OF THE HIGHLANDS AND ISLANDS

(Respondents were asked to rate, in order of importance, three factors from 14)

Factor	Order of Importance			Total	Combinations(1)	
	1st	2nd	3rd		combined with weighting 6: 5: 4	combined with weighting 1: 1: 1
festivals, special events	1	1	2	4	1	1
beaches	2	4	5	11	3	4
sports spectating	-	-	-	-	-	-
active recreation	4	5	5	14	5	5
motoring conditions	2	4	6	12	4	4
peace and quiet	20	23	17	60	20	20
scenery	54	27	8	89	33	30
scientific interest	-	-	1	1	1	1
evening entertainment	-	1	1	2	-	1
hope of good weather	2	7	8	17	5	6
interesting places to visit	3	18	19	40	13	14
hope of good food and accommodation	1	4	9	14	4	5
visits to friends or relations	6	2	6	14	5	5
curiosity	3	5	12	20	6	6
TOTAL	100	100	100	300	100	100

(1) Two different methods of combining the three distributions are shown: in the first case, the first factor is weighted by six, the second by five, the third by four, the result being scaled down to 100; in the second the factors were weighted equally - i.e. an average was taken = Total ÷ 3.

40%. No more than 20% mentioned any one other factor.

Since the three factors mentioned by each party were placed in order of importance, it is possible to combine the three frequency distributions into a single distribution using differential rating factors. An example is shown in Table 4.14, where the three distributions have been weighted by six (most important factor), five and four, then aggregated and scaled down to total to one hundred; these weighting factors were arbitarily chosen, but, by comparison with the uniform rating (i.e. the average of the three unweighted distributions) it illustrates that, in this case, a varying scale of weighting has the effect only of pronouncing the dominance of the two major factors ('scenery' and 'peace and quiet'), while the relative order of importance stays much the same, as follows:

1st	scenery
2nd	peace and quiet
3rd	interesting places to visit
4th approx. equal	curiosity
	hope of good weather
	visits to friends and relations
	active recreation
	hope of good food or accommodation
	beaches

Festivals and special events, watching sports events, field activities and evening entertainments were all of minor importance as holiday attractions.

Thus it is the essentially passive recreation resources which are dominant among the attractions of the Highlands - resources which are vulnerable to increasing pressures from tourism and economic activities in general. Whilst it may be possible, through careful planning, to maintain the high quality in the landscape /

scape at the same time as tourism increases, 'peace and quiet' is perhaps an even more sensitive resource. Almost by definition this resource must diminish as tourism pressures increase and only the most careful and sophisticated planning is likely to be able to resolve this conflict.

The Highlands and Islands tourist industry is obviously dependent in large part on sightseeing resources which are currently exploited mainly through use of the car. If there should in the future be a substantial curtailment of the use of petrol, the problem will arise as to whether the resources can be satisfactorily exploited through other means.

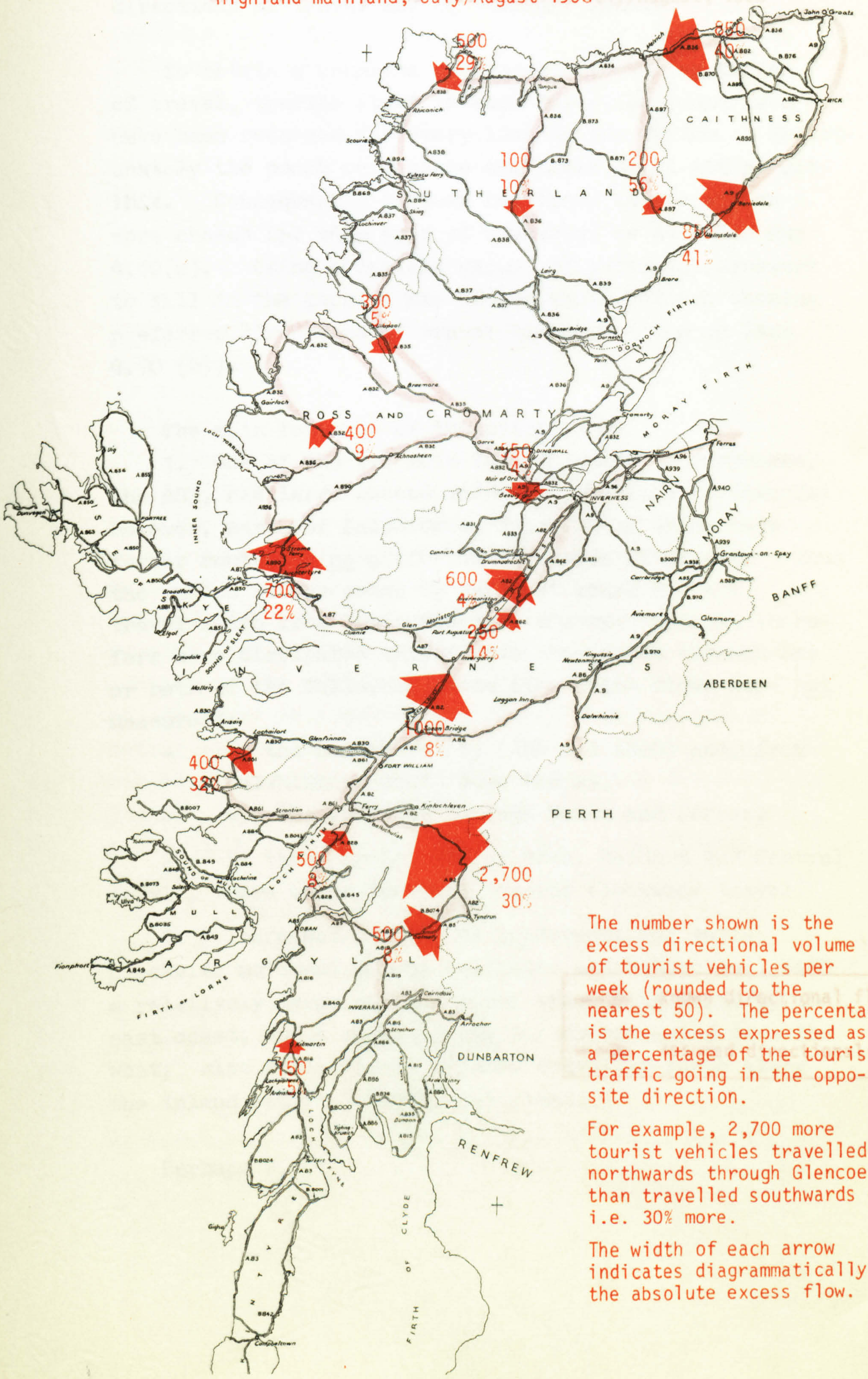
4.12.5 Visitor satisfaction

Visitors were asked if they would like to see 'significant improvements' in motoring conditions, 'general tourist facilities', sports facilities and information services. The percentages saying they would like such improvements are shown in Table 4.11 (k). The results are not surprising, nor are they particularly meaningful, since the terms used in the questions were necessarily vague. The main purpose of the question was to provide some measure of the relative desire for improvements among the different tourist groups. This is discussed in Section 4.13.

4.12.6 Tourist movements

The overall pattern of tourist traffic flows has already been described in the first part of this chapter. It was shown to be a relatively straightforward pattern with respect to the nature of the road network and the origin of the flows. However, to gain a fuller understanding of the factors underlying tourist movements, two further types of analysis were undertaken - of directions /

Map 4.10(a) Measured directional traffic flows of tourist cars on the Highland mainland, July/August 1968



The number shown is the excess directional volume of tourist vehicles per week (rounded to the nearest 50). The percentage is the excess expressed as a percentage of the tourist traffic going in the opposite direction.

For example, 2,700 more tourist vehicles travelled northwards through Glencoe than travelled southwards - i.e. 30% more.

The width of each arrow indicates diagrammatically the absolute excess flow.

Map 4.10(b) The generalised pattern of directional flows of tourist cars on the Highland road network, July/August, 1968

directions of travel and of 'common' routes.

To obtain a complete understanding of directions of travel, traffic flows in each direction would need to have been recorded for every link in the system. Unfortunately the punch card space available would not permit this. Consequently certain key links in the system were chosen for this type of analysis, as shown in Map 4.10(a). Using a certain amount of informed guesswork to fill in the gaps, a map of the whole network showing preferred directions of travel has been drawn up (Map 4.10 (b)).

The main features of the pattern are:

1. One of the two main feeder routes to Inverness, the A82, had large excess volumes travelling northwards; however, north of Dalwhinnie, the A9, the other main feeder route had no preferred direction of travel. Thus the excess volume going up the west coast did not travel south from Inverness down the A9; it must therefore have dissipated itself from the system through one or both of the following exits (for which flows were not measured):

- up the Laggan Valley (A86 and A889) and, from Dalwhinnie, south down the A9,
- via the A96 east through Nairn and Forres.

2. In three areas, Wester Ross, Moidart and Central Argyll, there was a tendency towards clockwise travel.

3. There was a definite preference for anti-clockwise movement around Caithness and Sutherland, with a relatively large excess volume travelling north up the east coast, and a slightly smaller excess going down the west; also small excess volumes travelled south along the inland routes through Sutherland.

Perhaps /

Perhaps the most reasonable explanation of these patterns is that holidaymakers take a direct route to their main objective, which, for a majority, seems to have been the west coast (see below). Thus they would make straight for that area and travel up the west coast; in order to return home via a different route they would then turn eastwards, thus making the clockwise pattern. For those going to the far north of the mainland, however, the likely main attraction, John O'Groats, was on the east coast, which would seem to be responsible for the opposite preferred direction of movement (i.e. anti-clockwise).

Apart from helping to provide some understanding of movement patterns, this analysis does throw up some implications for planning, particularly with regard to the provision of information services. The time at which people will want and can use tourist information is when they are arriving in the region. If information centres are therefore being provided to service tourists with information about the destination and perhaps to try to influence people in where they go, then the data on which to base decisions regarding siting should obviously be the figures of flows <u>into</u> the region along each route, rather than total flows. For example, the A9 between Newtonmore and Dalwhinnie was found to have almost exactly the same total tourist traffic flow as the A82 through Glencoe (20,700 tourist vehicle journeys per week). However, while the A9 flows were almost the same in each direction, on the A82 there was a larger north-bound component. Thus the inward flow on the A82 was 11,700 tourist vehicle journeys per week compared with 10,300 on the A9.

The analysis of 'common' routes was undertaken to ascertain the scale of mass movements within the Highlands. On the basis of a visual analysis of a sample of /

of the questionnaires, each route which was thought likely to be popular was allocated a code number, and this was recorded when the route was taken. However, very few parties were found to follow any one of these routes exactly. The three most popular routes, which were each followed by only 1% of the parties (both directions combined) were:

A82 Glencoe - Spean Bridge / A86-A889 Spean Bridge - Dalwhinnie / A9 Dalwhinnie - Drumochter

A82 Glencoe - Inverness / A9 Inverness - Drumochter

A82 Glencoe - Inverness / A96 Inverness - Forres

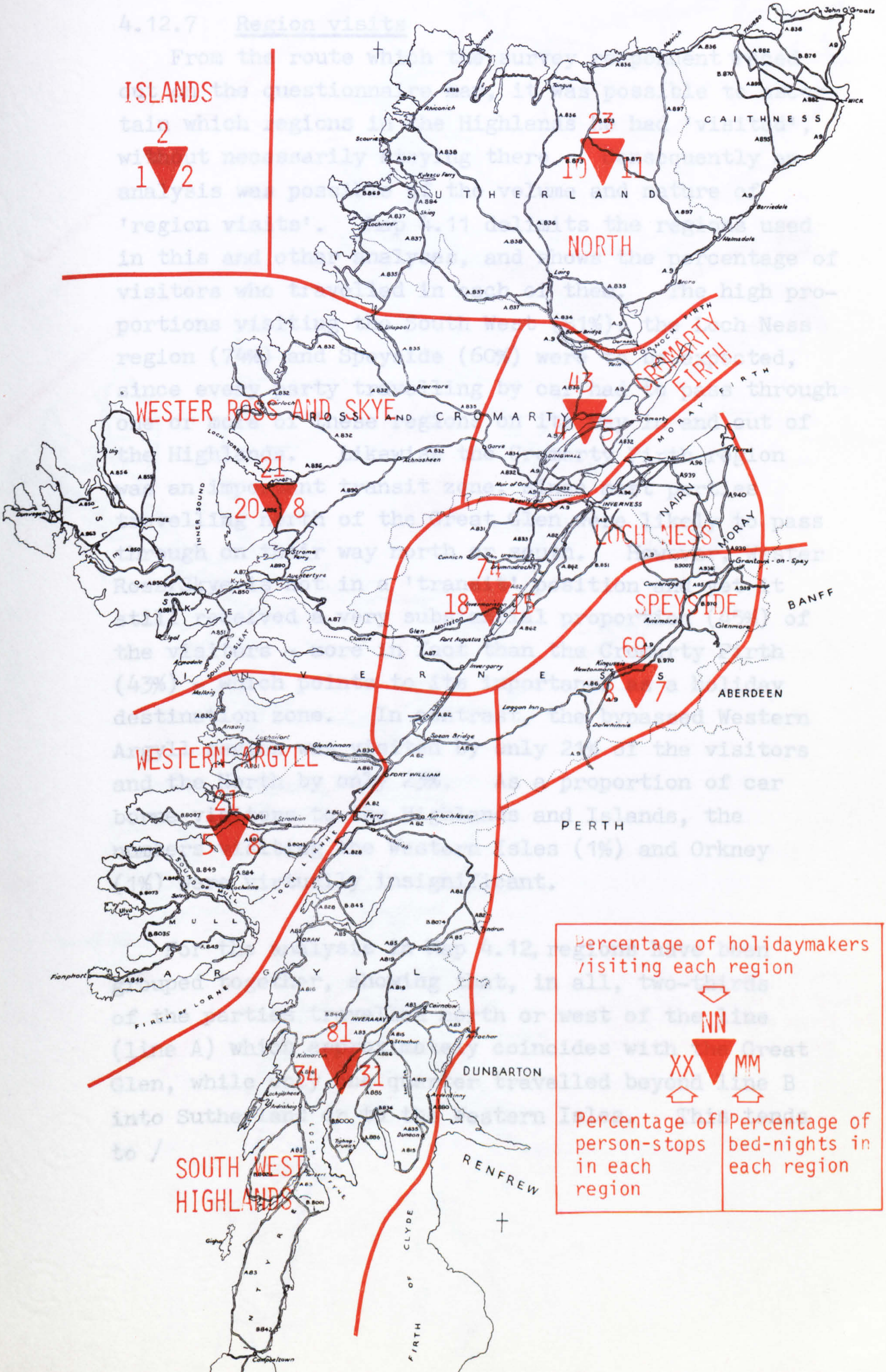
Even if allowance had been made for minor variations from the routes, it is unlikely that there would have been a great difference. This is indicated by an analysis of movements between or within regions on journeys between consecutive overnights stops. Although such an analysis allows for wide variations of routes used between any two regions, nevertheless relatively few parties made similar movements. The largest inter-regional movement was between the South West and Wester Ross/Skye, with 11% of all parties making the movement in a northwards direction and 9% southwards; the next in importance was between the South West and Loch Ness, where 8% of all parties travelled north and 7% travelled south. Other significant movements were:

Loch Ness - Wester Ross /Skye	north 7%	south 7%
Wester Ross/Skye - North	north 4%	south 5%
Loch Ness - North	north 4%	south 3%
South West - Western Argyll	west 4%	east 3%

As might be anticipated, the largest movements were between different stops in the same region, in the South West (23%) and in Wester Ross/Skye (19%).

One conclusion from this analysis of movements is that it would be wrong to make plans for tourism in this part of Scotland, which assume that tourists move as one homogeneous whole. Planners must understand /

Map 4.11 The proportion of visitors, person-stops and bed-nights going to each region, July/August, 1968 (cordon survey)



understand that they are dealing with a complex system.

4.12.7 Region visits

From the route which the survey respondent traced out on the questionnaire map, it was possible to ascertain which regions in the Highlands he had 'visited', without necessarily staying there. Consequently an analysis was possible of the volume and nature of 'region visits'. Map 4.11 delimits the regions used in this and other analyses, and shows the percentage of visitors who travelled in each of them. The high proportions visiting the South West (81%), the Loch Ness region (74%) and Speyside (60%) were to be expected, since every party travelling by car had to pass through one or more of these regions on its way in and out of the Highlands. Likewise the Cromarty Firth region was an important transit zone, since most parties travelling north of the Great Glen were likely to pass through on their way north or south. However, Wester Ross/Skye is not in a 'transit' position and yet it still received a very substantial proportion (45%) of the visitors - more in fact than the Cromarty Firth (43%) - which points to its importance as a holiday destination zone. In contrast, the bypassed Western Argyll region was visited by only 21% of the visitors and the North by only 23%. As a proportion of car borne visitors to the Highlands and Islands, the numbers visiting the Western Isles (1%) and Orkney (1%) were virtually insignificant.

For the analysis in Map 4.12, regions have been grouped together, showing that, in all, two-thirds of the parties travelled north or west of the line (line A) which approximately coincides with the Great Glen, while only one quarter travelled beyond line B into Sutherland or to the Western Isles. This tends to /

Map 4.12 The extent of car-borne visitor penetration into the Highlands and Islands, July/August, 1968

The figures shown are the percentage of tourist parties passing north of the line in question

to indicate the importance of the intermediate zone as a destination area, particularly (as had been shown above) Wester Ross.

When the percentages visiting each region are summed, the total is 358% - i.e. each person visited on average approximately 3.6 regions, indicating fairly high mobility. Relatively few parties visited only one region - 13% visited only the South West, 2% only Speyside and 3% only the Loch Ness region. The relatively high average mobility does not contradict the fact that one quarter to one third of the parties were taking centred-type holidays, since:

- parties can travel out from their centre into other regions,
- parties may pass through one or more regions to reach their destination.

4.12.8 Regional distribution of overnight stops and bed-nights

It is apparent that the 'region visit' is not, on its own, a satisfactory measure of demand, since it does not discriminate between those staying in the region and those passing through, possibly for a very short time. Analyses were therefore undertaken of the regional distributions of person-stops and of bed-nights, as complementary measures of the regional patterns of tourism. Because the latter measure was derived by aggregating the bed-nights for individual settlements, as described earlier in this chapter, it was also possible to produce a bed-night distribution in terms of broad spatial divisions not necessarily coincident with regional boundaries.

The orders of importance of the regions in terms of person-stops and bed-nights were markedly different from that in terms of region visits (Table 4.15 /

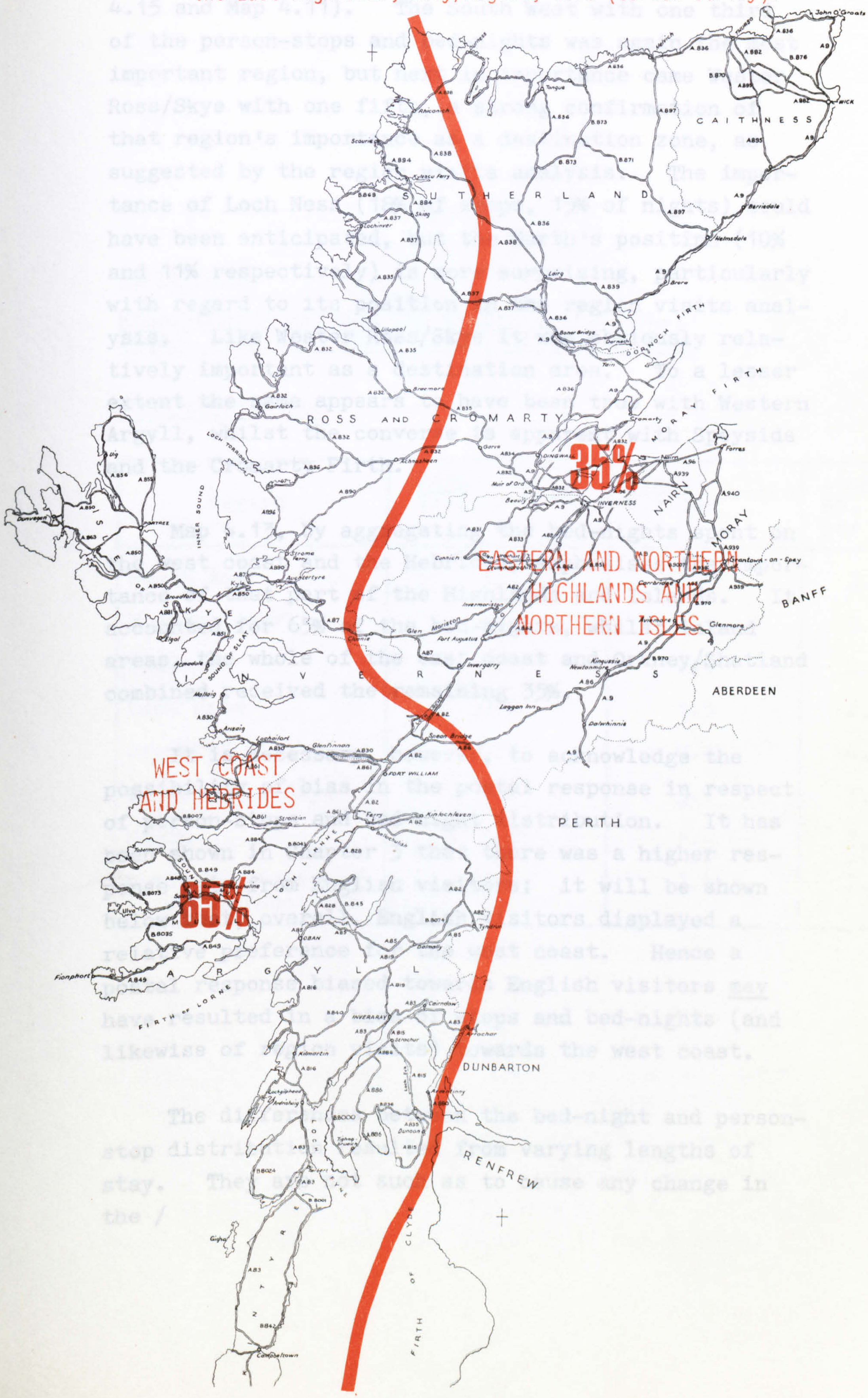
TABLE 4.15

THE PROPORTION OF VISITORS WHO TRAVELLED IN (OR THROUGH) EACH REGION AND THE REGIONAL DISTRIBUTION OF PERSON-STOPS AND BEDNIGHTS

JULY/AUGUST 1968

Region	Visitors	Stops	Bednights
	%	%	%
South West	81	34	31
Western Argyll	21	5	8
Speyside	69	8	7
Loch Ness	74	18	15
Cromarty Firth	43	4	5
Wester Ross/Skye	45	20	21
North	23	10	11
Outer Hebrides and Orkney/Shetland	2	1	2

Map 4.13 The division of bed-nights between the West Highlands and the East Highlands, July/August, 1968 (cordon survey).



4.15 and Map 4.11). The South West with one third of the person-stops and bed-nights was again the most important region, but next in importance came Wester Ross/Skye with one fifth, a strong confirmation of that region's importance as a destination zone, as suggested by the region visits analysis. The importance of Loch Ness (18% of stops, 15% of nights) could have been anticipated, but the North's positinn (10% and 11% respectively) is more surprising, particularly with regard to its position in the region visits analysis, Like Wester Ross/Skye it was obviously relatively important as a destination area. To a lesser extent the same appears to have been true with Western Argyll, whilst the converse is apparent with Speyside and the Cromarty Firth.

Map 4.13, by aggregating the bed-nights spent on the west coast and the Hebrides, emphasises the importance of that part of the Highlands and Islands. It accounted for 65% of the bed-nights, whilst inland areas, the whole of the east coast and Orkney/Shetland combined received the remaining 35%.

It is necessary, however, to acknowledge the possibility of bias in the postal response in respect of person-stops and bed-night distribution. It has been shown in Chapter 3 that there was a higher response rate from English visitors; it will be shown below that, overall, English visitors displayed a relative preference for the west coast. Hence a postal response biased towards English visitors may have resulted in a bias of stops and bed-nights (and likewise of region visits) towards the west coast.

The differences between the bed-night and person-stop distribution resulted from varying lengths of stay. They are not such as to cause any change in the /

TABLE 4.16

RELATIONSHIP BETWEEN THE NUMBER OF PERSON-STOPS, BEDNIGHTS AND VISITORS IN EACH REGION

JULY/AUGUST 1968

Region	Stop / Visitor ratio	Night / Visitor ratio	Average No. Nights per stop
South West	1.1	3.0	2.8
Western Argyll	0.6	3.2	5.0
Speyside	0.3	0.9	2.8
Loch Ness	0.6	1.5	2.6
Cromarty Firth	0.2	0.9	4.5
Wester Ross/Skye	1.2	3.9	3.2
North	1.2	3.8	3.2
Outer Hebrides and Orkney/Shetland	1.0	7.4	7.1

the relative order of the regions, but it may be noted that all regions north and west of the Great Glen received a greater proportion of bed-nights than of stops. The reverse was the case in the South West, Loch Ness and Speyside regions.

4.12.9 Direct relationships between 'visits', 'person-stops' and 'bed-nights'

The regional distributions of visits, stops and bed-nights have now been examined and compared. It is possible, however, to go one stage further and calculate for each region direct relationships between the factors in terms of ratios, as in Table 4.16.

The 'stops/visitors' ratio may be taken as the propensity of visitors to stop in the region. It can be seen that the propensity was lowest by far in the Speyside and Cromarty Firth regions, and highest in Wester Ross/Skye, the North, the South West and the Outer and Northern Isles, with Loch Ness and Western Argyll falling in between.

The 'bed-nights/stops' ratios (i.e. the average length of stay per stop) confirm the pattern noted under 4.12.8 - short stops (under 3 nights on average) in the three regions on the Southern periphery and longer stops in all other regions, particularly Western Argyll (5.0 nights), the Cromarty Firth (4.5 nights) and the Islands (7.1 nights).

The 'bed-nights/visitors' ratio (i.e. the propensity of visitors to spend nights in a region) is a function of the two ratios described above. Speyside (low value for both) and the Cromarty Firth (low value for 'stops/visitors' ratio offsetting longer stays) had the lowest figures. All the other mainland regions had values of between 3 and 4, apart from Loch Ness which, with its short stays and medium

'stop /

'stop/visitor' ratio, had a value of 1.5. The Outer Hebrides and Orkney/Shetland had by far the highest value, at 7.4, since most visitors stayed - many for a substantial length of time.

These islands apart, it is apparent that Wester Ross/Skye and the North had the most satisfactory balance between good propensities to stay and reasonable lengths of stay, with the South West not far behind. These regions and, to a lesser extent, Western Argyll (with its long stays), might reasonably be termed the real 'destination regions' of the Highlands. At the other extreme were Speyside (with relatively high volume of traffic passing through and short length of stay) and the Cromarty Firth (with its high proportion of traffic passing through), which might be termed the 'transit regions', although it must be recognised that those who stopped in the Cromarty Firth region did stay on average for substantial amounts of time. The Loch Ness region's traffic was primarily of a transit nature, but the proportion stopping was higher than in Speyside and the Cromarty Firth, indicating a 'destination' element.

Within the constraints of the computer programs available, it was possible to take analysis of one of these ratios, the average length of stay per stop, to area and settlement level, and this enabled a finer perspective to be gained on the matter of destination and transit areas. The area breakdown (Table 4.17 and Map 4.14) shows that the areas with the shortest length of stay (average of under 2.3 nights per stop) were three on the A82 (Loch Leven, Fort William and the Great Glen), Loch Duich and Northern Sutherland. Other areas with means significantly below that for the Highlands as a whole (i.e. areas with /

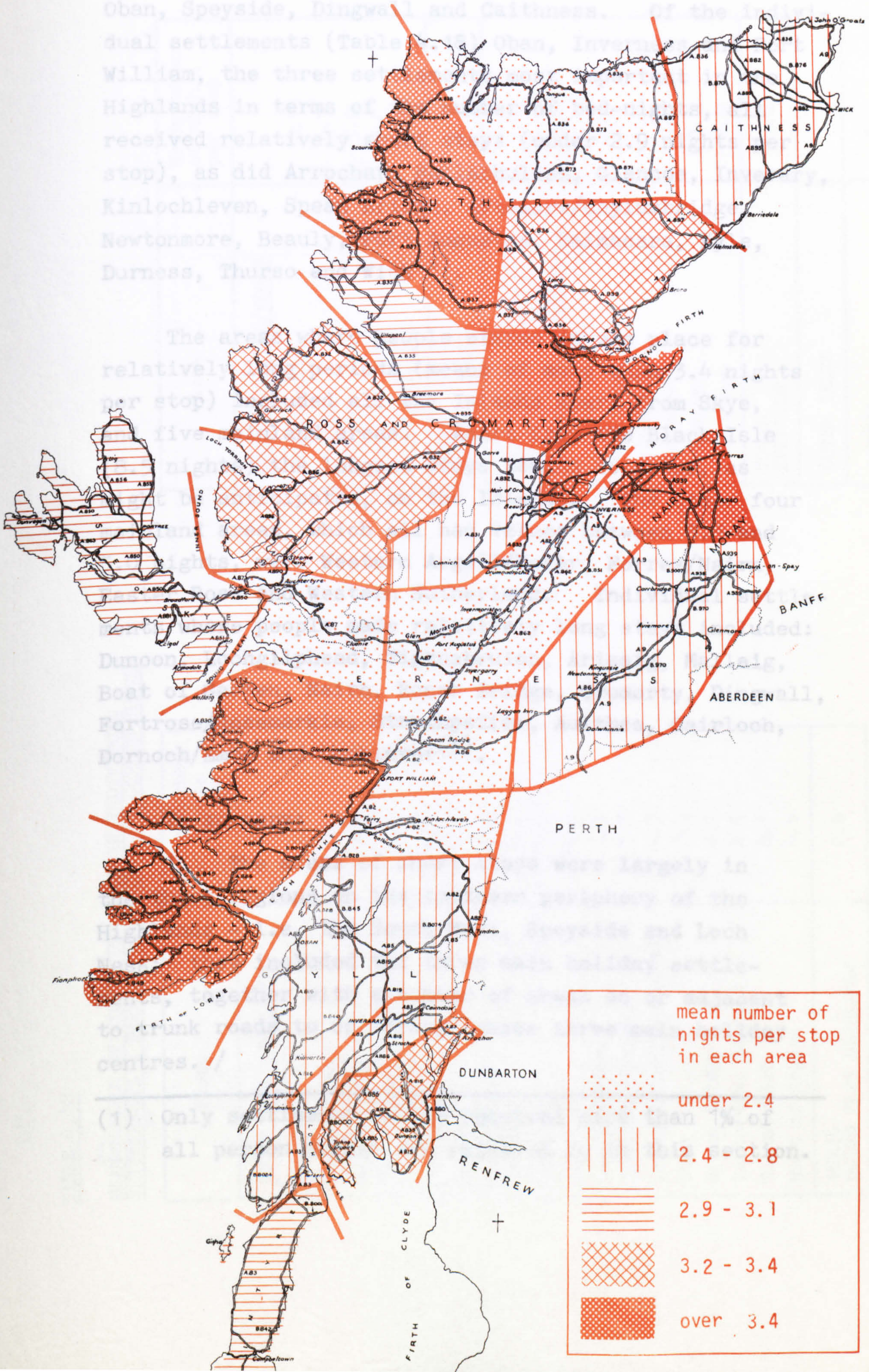
TABLE 4.17

MEAN NUMBER OF NIGHTS PER STOP IN EACH AREA OF PARTIES RESPONDING TO CORDON SURVEY

JULY/AUGUST 1968

Area	Number of Persons Staying Each Night	Mean Number of Nights Per Stop
Firth of Clyde/ Loch Long	6,900	3.4
Loch Fyne	3,600	2.8
Kintyre	1,600	3.1
Oban	13,300	2.7
Loch Leven	4,000	2.1
Fort William	9,600	1.9
Islay/Jura	900	13.0
West Argyll/Morar	8,200	4.8
Mull	2,500	8.2
Speyside	9,600	2.8
Forres/Nairn	5,700	4.3
Great Glen	12,100	2.1
Dingwall	4,400	2.7
Black Isle	1,900	8.5
Easter Ross	2,100	3.6
Loch Duich	2,600	1.8
Lochs Carron and Torridon	3,400	3.4
Gairloch	8,700	3.4
Ullapool	5,600	2.9
Skye	6,200	3.0
Sutherland - West	3,600	4.3
- North	2,100	2.2
- South	5,700	3.4
Caithness	2,900	2.6
Outer Hebrides	2,000	7.4
Orkney	600	5.5
TOTAL	130,000	3.1

Map 4.14 Car-borne holidaymakers: mean number of nights per stop in each area of the Highlands, July/August, 1968



with means of 2.6-2.8 nights per stop) were Loch Fyne, Oban, Speyside, Dingwall and Caithness. Of the individual settlements (Table 4.18) Oban, Inverness and Fort William, the three settlements most important in the Highlands in terms of the number of bed-nights, all received relatively short stays (under 2.9 nights per stop), as did Arrochar, Ballachulish, Glencoe, Inverary, Kinlochleven, Spean Bridge, Aviemore/Coylumbridge, Newtonmore, Beauly, Fort Augustus, Balmacara, Kyle, Durness, Thurso and Wick(1).

The areas where people stayed in one place for relatively long periods (means of more than 3.4 nights per stop) included all the Islands apart from Skye, and five mainland areas. Apart from the Black Isle (8.5 nights) the longest stays tended to occur, as might be anticipated, on the Islands. The other four mainland areas, which all had values between 3.5 and 5.0 nights, were Western Argyll/Morar, Forres/Nairn, Easter Ross and Western Sutherland. Individual settlements where people made relatively long stays included: Dunoon, Lochgilphead, Tighnabruich, Arisaig, Mallaig, Boat of Garten, Nairn, Bonar Bridge, Cromarty, Dingwall, Fortrose/Rosemarkie, Strathpeffer, Aultbea, Gairloch, Dornoch/Embo and Lochinver(1).

In summary:

1. The areas of short stays were largely in the three regions on the southern periphery of the Highlands - i.e. the South West, Speyside and Loch Ness; they included the three main holiday settlements, together with a number of areas on or adjacent to trunk roads to or through these three main holiday centres. /

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(1) Only settlements which received more than 1% of all person nights are referred to in this section.

TABLE 4.18

MEAN NUMBER OF NIGHTS PER STOP IN INDIVIDUAL SETTLEMENTS - PARTIES RESPONDING TO CORDON SURVEY

Place	Mean Number of nights per stop
SOUTH WEST HIGHLANDS	
Arrochar	2.5
Ballachulish	2.7
Campbeltown	5.2
Connel/Loch Creran/ Port Appin	3.7
Corpach	3.9
Dunoon	4.3
Fort William	1.8
Glencoe	1.7
Inverary	1.6
Islay	14.8
Kinlochleven	1.8
Loch Awe/Dalmally	2.7
Lochgilphead/Ardrishaig	4.3
Oban	2.5
Spean Bridge	2.1
Tarbert/W. Tarbert	2.1
Tignabruich	8.1
Rest of Region	4.5
TOTAL SOUTH WEST HIGHLANDS	2.8

Place	Mean Number of nights per stop
WESTERN ARGYLL/MORAR	
Ardnamurchan	5.7
Arisaig	4.7
Mallaig	5.0
Mull	9.0
Rest of Region	5.5
TOTAL WESTERN ARGYLL	5.3
SPEYSIDE	
Aviemore/Coylumbridge	2.8
Boat of Garten	5.2
Carrbridge	2.1
Dalwhinnie	1.6
Glenmore	2.6
Grantown	3.5
Newtonmore	2.5
TOTAL SPEYSIDE	2.8
OUTER ISLES	7.4
ORKNEY	5.5

TABLE 4.18 (contd.)

Place	Mean Number of nights per stop
LOCH NESS REGION	
Beauly	2.2
Drumnadrochit/Glen Urquhart	3.1
Forres	3.3
Fort Augustus	1.8
Invergarry	1.6
Invermoriston	2.6
Inverness	2.2
Loch Ness	1.9
Nairn	4.7
Rest of Region	3.5
TOTAL LOCH NESS REGION	2.6
CROMARTY FIRTH	
Bonar Bridge	3.9
Cromarty	11.4
Dingwall	3.4
Fortrose/Rosemarkie	9.6
Strathpeffer	3.7
Tain	4.4
Rest of Region	6.6
TOTAL CROMARTY FIRTH	4.5

Place	Mean Number of nights per stop
WESTER ROSS/SKYE	
Aultbea	4.6
Balmacara/Loch Duich	1.8
Gairloch	3.7
Kyle of Lochalsh	1.8
Loch Carron	3.5
Poolewe	3.2
Skye - Broadford	3.2
Portree	3.2
Rest	3.1
Torridon/Sheildaig	2.3
Ullapool	2.9
Rest of Region	4.4
TOTAL WESTER ROSS/SKYE	3.2
NORTH	
Brora	2.8
Dornoch/Embo	4.0
Durness	2.0
Helmsdale/Strath Kildonan	2.3
Lairg/Loch Shin	3.5
Lochinver	5.5
Rhiconich/Kinlochbervie	5.1
Thurso	2.6
Tongue	2.0
Wick	1.0
Rest of Region	3.2
TOTAL NORTH	3.1

centres. Otherwise short stays occurred on the Kyle road to Skye and in the far north. It seems likely that, in general, the shortest lengths of stay resulted from a combination of:

(a) transit stops made en route to a destination,

(b) people on short touring holidays confining themselves to the main routes,

apart from those spent in the far north, which possibly resulted from the area not being sufficiently attractive for long stays.

The transit areas proper appear to be areas on the main feeder routes which attracted short stays and which also had a large volume of traffic passing through.

2. In contrast to and complementing the areas of short stay, the long stay 'destination' areas tended to be north and west of the Great Glen and away from the main traffic routes. It will be shown below that many of the longest stay areas were also areas which attracted relatively high proportions of Scottish visitors and, from other analyses described below, we may deduce that these areas were also relatively popular with returning (as opposed to first time) visitors. Thus first time visitors (which included a large proportion of English people), with their relatively short stops, were more likely to confine themselves to the main routes and main centres, while returning visitors (including most Scots) were more likely to make their stops off the main routes and spend the longer periods there.

There are thus important planning implications in terms of the location of holiday pressures, which must be taken into account if the characteristics of the market with respect to number of previous visits are likely to change, as a result either of general trends /

TABLE 4.19

ACTIVITY PARTICIPATION RATES OF CAR-BORNE HOLIDAYMAKERS IN THE HIGHLANDS AND ISLANDS, JULY/AUGUST 1968

Showing the percentage of holidaymakers participating in each activity within the region

a) sightseeing activities:

	%
touring around	86
visiting places of interest	76
sea cruising	5
scientific field studies	4
day coach tours	3
TOTAL %	182

b) evening activities:

	%
dance or ceilidh	9
theatre or concert	8
cinema	7
bingo	1
TOTAL %	24

c) sports:

	%
walking	59
swimming/beach	42
climbing	14
boating	14
sea angling	11
golf	6
game fishing	6
coarse fishing	4
tennis	2
skating	2
canoeing	2
outdoor bowls	2
field sports	2
pony trekking	2
riding	1
TOTAL %	168

trends or of increased or reduced promotion.

4.12.10 Activities

Reference has been made in Section 4.4 to the nature and limitations of the information on participation in activities - in particular the fact that misinterpretation of terms occurred. Caution should therefore be adopted in interpreting the participation rates (Table 4.19). Thus whilst it is reasonable that very high proportions of the sample took part in the two main sightseeing activities, 'touring around' and 'visiting places of interest', it seems less likely that 59% of holidaymakers went 'walking' in any active sense of the word. Apart from these activities, only one other, 'swimming/beach activities' (42%), was mentioned by more than 15%. Five sports (climbing, boating, sea angling, golf and game fishing), three evening entertainments (dance/ceilidh, theatre/concert/ and cinema), and one sightseeing activity (sea cruising) had rates of between 5% and 15%.

The overall impression is of a heavy predominance of passive sightseeing activities, but with a substantial volume and variety of recreational activity complementing it. The volume of recreational activity does not satisfactorily reflect the existing and potential resources for such activity in the Highlands and Islands and this suggests a major area of market potential. Participation in evening activities is surprisingly low, and probably reflects a supply constraint as well as, or more than, a lack of interest.

4.13 Interrelationships between Variables

Thorough analysis of measures such as those described above can provide a clear picture of the tourism system operating. To obtain a full understanding /

standing of the system, it is necessary to move on to the next level of analysis - i.e. exploring the relationship between variables. As explained in Section 4.10, this was achieved through extensive cross-tabulation, the main tabular results of which form Appendix 4, Appendix 5 providing background notes on these tables. Relating traffic flows to background variables posed particular problems with respect to presentation of data. Rather than use tabular form, these data have been presented in map form as Maps 4.15 to 4.17.

Examination of the tables indicates that two interrelated factors, origin and the number of previous visits, seem to be most fundamental in explaining the nature of the holidays. It appears that for Scots(1), because of their proximity to the Highlands and cultural or family associations, a visit to the Highlands was a relatively frequent event (Table A4.6). For English and, in particular, overseas visitors, it was a rarer and more special event; and because they were not so well acquainted with the region, they wanted to see as much as possible in the time available. They also spent more time travelling to the region, so that the time they had there was shorter than that of the Scots (Table A4.7); nevertheless they travelled further in that shorter time (Table A4.5(a), and subsequent text).

Hence the English or overseas visitors holiday to the Highlands was much more a touring one than the Scot's - i.e. he stayed at more places (Table A4.8) with a shorter time at each (Table A4.18).

Because /

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(1) The term 'Scot' is, for the sake of convenience, used here to describe people resident in Scotland; the terms 'English' and 'overseas' are used in an equivalent sense.

Because he did not know the area so well, he was less likely to decide the route before the holiday began (Table A4.11), and was more likely to rely on written material and maps or on advice from friends/relatives or motoring/tourist organisations in deciding his route (Table A4.12). Scots, knowing the area better, naturally relied more on personal knowledge and were influenced more by climatic factors in choosing their route. Whereas the Scots were more likely to be making for one specific destination, parties from England were more likely to choose a route to pass a series of attractions about which they had read or been told.

The proportion of parties with young children decreased with increasing distance of the home region from the Highlands (Table A4.4) indicating that distance is a greater deterrent to travel where there are children in a party. The fact that a relatively high proportion of Scottish parties had young children is a further, perhaps equally important, reason why Scots more often took 'centred' holidays. This greater tendency for Scots to take 'centred' holidays, to have children in the party, and to travel in large groups generally (Table A4.5), helps to explain the pattern of accommodation usage (Table A4.9) - Scots used static caravans/cottages, with their larger capacity and longer 'lets', more than others, and B & B and touring caravans less; and because of family ties, they were more likely than others to stay with friends and relations. Hotel and B & B accommodation was used by a large proportion of overseas visitors; cottages and static caravans were used by them very little.

The Scot was more critical of the motoring conditions and tourist facilities of the Highland region (Table A4.14). This must have been partly because he knew /

knew the region better and features such as the single track roads were less of a novelty to him; and also, because the Scot tended to stay in one spot for longer and might well have been there before, he had time to become aware of the shortcomings of the facilities.

The differences in holiday patterns between Scottish, English and overseas visitors is reflected in the relative differences in the attractions which brought them to the Highlands for their holidays (Table A4.13). The Scots were attracted more than others by factors which might be associated with or required for a 'centred' holiday for the returning visitor - peace and quiet, active recreation, good weather; also, as might be expected, they were more likely to visit friends and relatives. Parties from England on the other hand were attracted more by features for a touring holiday - scenery, interesting places to visit, motoring conditions and curiosity. Overseas visitors were even more oriented to factors associated with touring holidays, particularly interesting places to visit and 'curiosity'. They were also attracted more by festivals and special events, and these, together with historic and cultural sights, obviously formed attractions which are of particular importance to that market.

The analysis of the spatial distributions of tourist activities adds another dimension to these interrelationships. The analysis of traffic flows, as well as showing that English visitors travelled more than Scots(1), reveals clearly the relative popularity /

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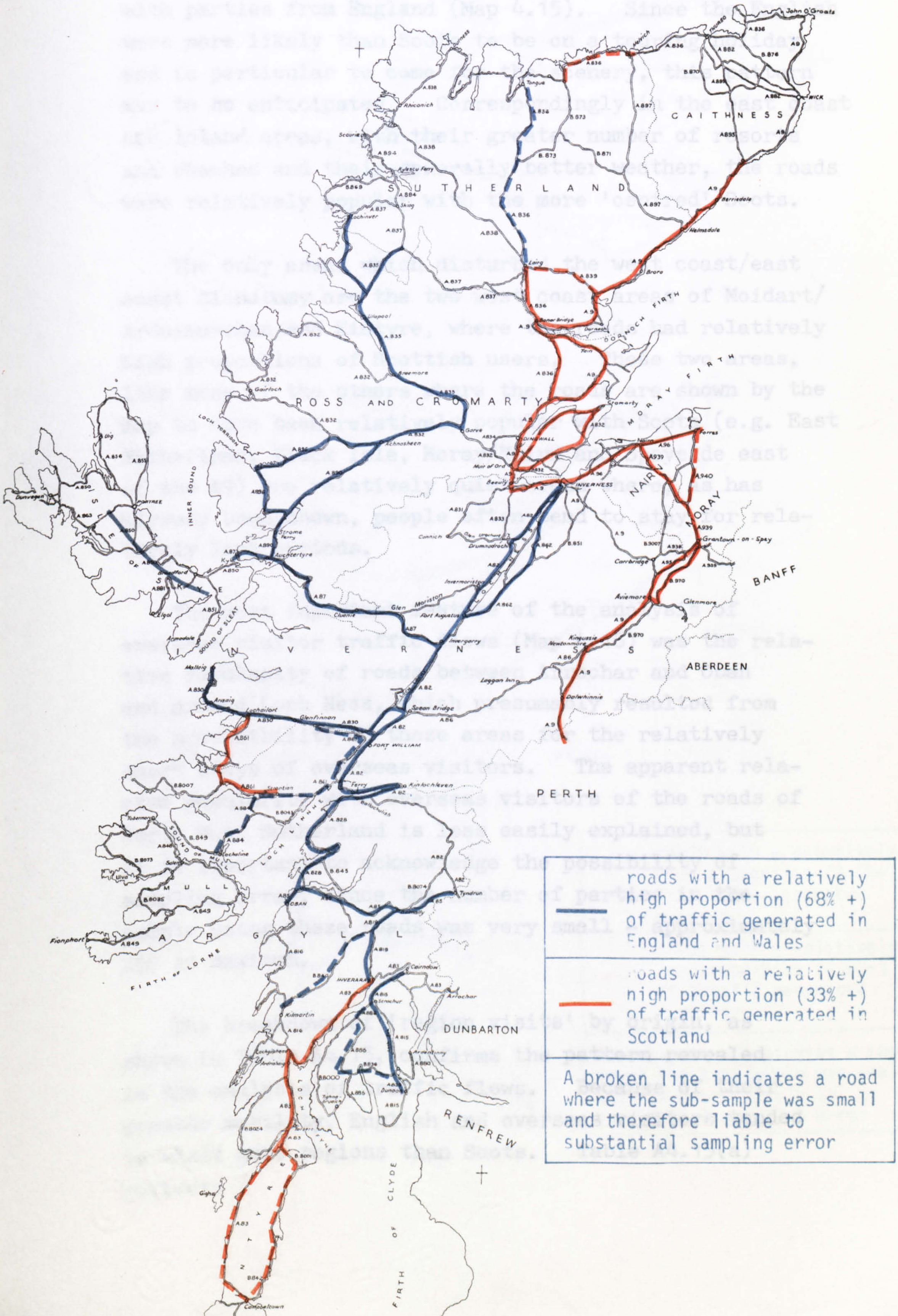
(1) 64% of tourist link journeys were made by the 62% of parties from England; put another way, English parties made an average 23.5 link journeys per party compared with the 22.2 made by Scots - the figure for overseas visitors was 23.8.

Map 4.15 Roads with relatively high proportions of car-borne traffic generated in England and Wales or in Scotland



———	roads with a relatively high proportion (68% +) of traffic generated in England and Wales
———	roads with a relatively high proportion (33% +) of traffic generated in Scotland
	A broken line indicates a road where the sub-sample was small and therefore liable to substantial sampling error

popularity of the west coast roads from Oban to Lochinver with parties from England (Map 4.15). Since the English were more likely than Scots to be on a touring holiday and in particular to come for the scenery, this pattern was to be anticipated. Correspondingly in the east coast and inland areas, with their greater number of resorts and beaches and their generally better weather, the roads were relatively popular with the more 'centred' Scots.

The only areas which disturbed the west coast/east coast dichotomy are the two west coast areas of Moidart/Ardnamurchan and Kintyre, where the roads had relatively high proportions of Scottish users. These two areas, like many of the others where the roads are shown by the map to have been relatively popular with Scots (e.g. East Sutherland, Black Isle, Moray/Nairn and Speyside east of the A9) are relatively quiet areas where, as has already been shown, people often tend to stay for relatively long periods.

The most important feature of the analysis of overseas visitor traffic flows (Map 4.16) was the relative popularity of roads between Arrochar and Oban and around Loch Ness, which presumably resulted from the accessibility of those areas for the relatively short stays of overseas visitors. The apparent relative popularity with overseas visitors of the roads of North West Sutherland is less easily explained, but it is important to acknowledge the possibility of sampling error, since the number of parties in the sample using these roads was very small - approximately 250 at maximum.

The breakdown of 'region visits' by origin, as shown in Table A4.15, confirms the pattern revealed in the analysis of traffic flows. Because of their greater mobility, English and overseas visitors tended to visit more regions than Scots. Table A4.15(a) reflects /

Map 4.16 Roads with relatively high or low proportions of car-borne tourist traffic generated overseas

reflects this in the column totals for the different origins, ranging from 313% for West Central Scotland (indicating that on average each party from that area visited 3.13 regions) to 384% for South East England and East Anglia (average of 3.84 regions per party). Because of this the percentage of English and overseas tourists visiting each region was, except in the case of the Island regions, greater than or equal to the percentage of Scots. A direct comparison between the origin groups as regards the percentages visiting each region is therefore rather misleading, since reference needs to be made to the size of the column total.

To overcome this problem the figures have been reworked to show (in Table A4.15(b)), for each origin, the percentage of party 'region visits', rather than parties, going to each region. This shows that, on this equal basis, the only regions which stand out in relative terms as having been more popular with English visitors are the South West and Wester Ross/ Skye regions, while the Cromarty Firth and Islands regions were relatively popular with Scots. Western Argyll, Speyside, Loch Ness and the North were, in this respect, roughly equal in popularity with both groups. The South West and Loch Ness regions were more popular in terms of 'visits' with overseas tourists than with British visitors.

The correlation between origin and number of previous visits is again evident from this analysis. Just as the South West Highlands region was relatively popular with English and overseas visitors, so it was with first time visitors, and the Cromarty Firth and the Islands, relatively popular with Scots, were also relatively popular with the returning visitor. Wester Ross/Skye was about as popular with the returning visitor as with the first timer, reflecting the fact

that /

that, although it was relatively popular with English visitors (many of whom were first timers), the reverse was the case with overseas visitors (an even larger proportion of whom were on their first visit). Likewise Western Argyll roughly equal in popularity between English and Scots, was relatively unpopular with overseas visitors. Consequently the region is shown as being slightly less popular with first timers than with returning visitors. Speyside and the North, equal in popularity with respect to the origin analysis, were also equally popular in the analysis by number of previous visits.

Mention has already been made of the fact that the 'region visit' is not the best measure of popularity of regions and that more emphasis should be placed on analysis in terms of 'bed-nights'. In fact the patterns revealed by the bed-night analysis (Table A4.16) are basically similar to those of region visits. Again an English preference for the West coast apart from Western Argyll was apparent. The regions which appeared from the region visits analysis to be relatively popular with Scots (i.e. the Cromarty Firth and Islands regions) were confirmed as being so by this analysis. There were however differences with respect to Speyside and the North. These regions, although roughly as popular with English as with Scots in terms of visits, were considerably more popular with Scots in terms of bed-nights. This indicates a relatively higher 'propensity to spend nights' in the regions by Scots compared with English visitors - i.e. the Scot may have been more likely to stay in the regions and/or stay for longer periods.

The preference of overseas visitors for the South West and Loch Ness regions was confirmed by the bed-nights analysis.

Thus /

Thus in terms of this more reliable indicator of popularity, the West coast apart from Western Argyll transpires to have been more popular with English than with Scots, while the reverse was true with the inland, east coast, north coast and the island regions. The pattern of bed-nights of overseas visitors was markedly different from that of the British visitors, with a heavy concentration on two of the most accessible regions - the South West and Loch Ness.

The same type of relationship between origin and number of previous visits which was evident in the region visits analysis is also apparent in the bed-night distributions. The South West was relatively popular with first time visitors just as it was with English and overseas visitors; the Cromarty Firth, North and Islands were relatively popular with returning visitors just as they were with Scots. The Loch Ness region, roughly as popular with Scots as with the English, was very much more popular with overseas visitors; hence its greater relative popularity with first time visitors. On the other hand, Western Argyll (equally popular with Scots and English) and Wester Ross/Skye (more popular with English than with Scots) were less popular with overseas visitors. Consequently the popularity of Western Argyll increased with increasing numbers of previous visits and that of Wester Ross/Skye stayed about the same.

The only variation which cannot be explained by reference to visitor origin is that relating to Speyside. The popularity of that region remained roughly constant in terms of bed-nights with increasing number of visits, despite the fact that it was substantially more popular with Scots than with English and overseas visitors. Possibly this was because Scots staying in Speyside were more likely to be first time visitors /

visitors than Scots staying elsewhere in the Highlands. This is plausible since the Aviemore Centre may have been generating new Scottish traffic which had never visited the Highlands before.

The overall pattern of change in the bed-nights distribution with increasing number of previous visits is exactly the same as the pattern of changes in the region visits distribution - i.e. the South West and Loch Ness regions decreasing in popularity; Western Argyll, the Cromarty Firth, the North and the Island regions increasing in popularity; and Speyside and Wester Ross/Skye staying constant.

The differences which have been observed between the patterns (with respect to visitor origin) of region visits and the distribution of bed-nights can of course be expressed in terms of the region bed-nights/visits ratio, as in Table A4.17(1). Because of their greater mobility (i.e. more region visits in a shorter time), the English visitors tended to have ratios lower than the Scots (i.e. a lower propensity to spend nights) in most regions - all except Wester Ross/Skye in fact. It is therefore the areas where the differences between Scots and English were greatest or least which were of significance. The greatest differences were in Western Argyll, Speyside and Cromarty Firth, in all of which the Scot's propensity to spend nights was more than twice that of the English. Apart from Wester Ross/Skye, where the English ratio was about the same as the Scottish, the differences were least in the South West Highlands and Loch Ness regions.

Table /

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(1) Where asterisked, the sample sizes of the cells of this table are very small and the results are consequently liable to substantial error.

Table A4.18 illustrates the variation between origins of one of the components which make up this ratio, the number of nights per stop in each region(1). Of the three regions where the nights/visits ratio was very much greater amongst the Scots than the English, only in Speyside was the difference in large part attributable to the variation in length of stay per stop. In Western Argyll and the Cromarty Firth it must have been due to a greater propensity to stop by the Scots, since the differences in length of stay were not nearly so large. In fact, they were more marked in the South West and in the North, where the differences in the nights/visitors ratio was not so great.

The differences between Scottish, English and overseas visitors, corresponding to variations according to number of previous visits, are continued in respect of activities undertaken (Table A4.19). Apart from sea cruising and field studies, sight-seeing activities tended to be more popular with English and overseas visitors and those with relatively few previous visits. On the other hand, with many sports and, in particular, swimming/beach activities and golf, Scots and habitual visitors were the most active; however, the English did as much or slightly more walking, climbing, boating, coarse fishing, canoeing and riding than the Scots. Despite their popularity with the English, participation in these latter activities did not decrease with number of previous visits, as might have been anticipated - indeed, in one or two cases, particularly walking, there was a tendency for participation to increase with increasing previous visits. This was probably because in the few previous /

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(1) Where asterisked, the sample sizes of the cells of this table are very small and the results are consequently liable to substantial error.

previous visits group, the low participation rates of overseas visitors in all activities except boating and golf, tended to balance the relatively high participation rates of the English.

Overall Scots and those with many previous visits also participated most in evening activities. However when the evening activities are broken down by type, this participation pattern only really applied to dances/ceilidhs, with theatre/concerts and cinema attendance and bingo participation fairly constant between origins.

Up to this point, only the straightforward distinctions between Scottish, English and overseas visitors have been considered. However, it is also necessary to take into account the differences between tourists from different regions within countries. In fact there was a broad similarity of profile and activity characteristics between the groups from the different English origins, but the differences between Scottish groups were much more marked. In particular, visitors from North Central and East Scotland had different characteristics from other Scottish groups. They had a lower average income (Table A4.2) and fewer previous visits (Table A4.6), and were less likely to have children in the party (Table A4.4). Their average length of stay in the Highlands (Table A4.7) was nearer to that of the English visitor and they were more mobile (Table A4.15). They stayed in hotels and cottages/static caravans less than other Scots, and camped or caravanned (touring) more (Table A4.9). Thus, in most respects, this group of Scots showed a <u>slight</u> tendency to characteristics associated with the English and those with few previous visits, and this is confirmed by the fact that they were attracted more than other Scots by 'scenery' and less by 'peace and quiet' and 'active recreation'.

There /

There were also considerable differences between parties from the different Scottish regions in the spatial patterns of their holidays, as expressed by region visits (Table A4.15). In part this is due to the greater mobility of those from North Central and East Scotland, but to a greater extent because of the spatial relationships of the region of origin to the Highlands. Thus those from West Central Scotland showed a preference (relative to other origin groups) for the South West Highlands. Those from the North Central and East region visited Loch Ness and the Cromarty Firth more than other Scots; like those from South/South East Scotland they went to Speyside more than those from West Central Scotland; and they also went to Wester Ross/Skye more than others, a fact which may result more from their tendency towards English type holiday characteristics rather than any spatial relationship.

The only unique relative preference of those from South/South East Scotland was for Western Argyll. This preference, which was not very marked, can again not be explained in terms of spatial relationships; it was probably due to the particular appeal of that area to the type of visitor from South/South East Scotland.

This pattern of preferences is confirmed almost exactly by the regional analysis of bed-night distributions (Table A4.16), except that, on this basis, the Loch Ness region was equally popular with all Scots.

Because they had a greater mobility than other Scots those from North Central and East Scotland had the lowest propensity to spend nights (i.e. nights/visits ratio) in every region (Table A4.17). Those from West Central Scotland had a relatively high propensity to spend nights in the Loch Ness and North regions /

regions, whilst those from South/South East Scotland were more likely to spend nights in the west coast areas of Western Argyll and Wester Ross/Skye. Table A4.18 shows that these patterns were in large part due to differential lengths of stay, but in addition it reveals the tendency for those from West Central Scotland to stay in the Cromarty Firth area for relatively long periods.

The effects of income on holiday patterns do not fit simply into the overall pattern since they were found not to be correlated with changes in the number of previous visits and there was no simple relationship with origin (Table A4.2). English visitors as a whole had a somewhat higher average income than Scots, but, of the English origin groups, it was only that from the South East which had a high income structure, while among the Scots, those from the South/South East had much the highest incomes, higher than those of English visitors from outside the South East. Overseas visitors had the highest incomes of all.

Despite the lack of straightforward relationships with origin and number of previous visits, it seems to have been the case that, with increasing incomes, there was a tendency to a number of characteristics associated with both Scottish and habitual visitors. Thus with increasing income: parties tended to be larger and were more likely to include children (Tables A4.4 and A4.5); length of stay in the Highlands increased (Table A4.7) and the number of stops there decreased (Table A4.8), implying more 'centred' type holidays; the route was more likely to be decided before the start of the holiday and involve making for a specific destination (Tables A4.11 and A4.12); and 'peace and quiet' was increasingly the main attraction of the region for the holiday (Table A4.13). Conversely, in some respects increasing income resulted in a tendency towards English/low number of previous /

previous visits characteristics - particularly in regard to satisfaction with Highland holiday facilities (Table A4.14) and the use of written material in choosing the route (Table A4.12).

With regard to the type of accommodation used, the pattern associated with changing income cuts across the patterns previously described. Indeed, in this respect, if in no other, income seems to have been a major determining factor, with the use of hotels dramatically increasing with increasing income and camping sharply decreasing (Table A4.9). Also, B & B was most popular with the middle income groups, and the towing of caravans increased as income increased over the lower part of the scale. These relationships between accommodation usage and income are reflected in one respect in the relationships between accommodation usage and origin - visitors from South/South East Scotland, South East England and overseas, who had relatively high average incomes, used hotels most and camped least.

The analysis by income of the spatial patterns of activities (Table A4.16) also revealed no major correlation with the origin/previous visits analysis. The lowest income group showed a marked relative preference for the South-West, in common with the English and first time visitors; the highest group showed a slight preference for Speyside, like the Scots. But there the similarities end. The other clear trends were for the popularity of Western Argyll to increase with increasing income and for the Loch Ness area to be particularly popular with the middle income groups.

One market segment which deserves special mention because of the environmental problems which it causes is the touring caravan. Overall some 13% of all holiday-maker vehicles were touring caravans. The proportion

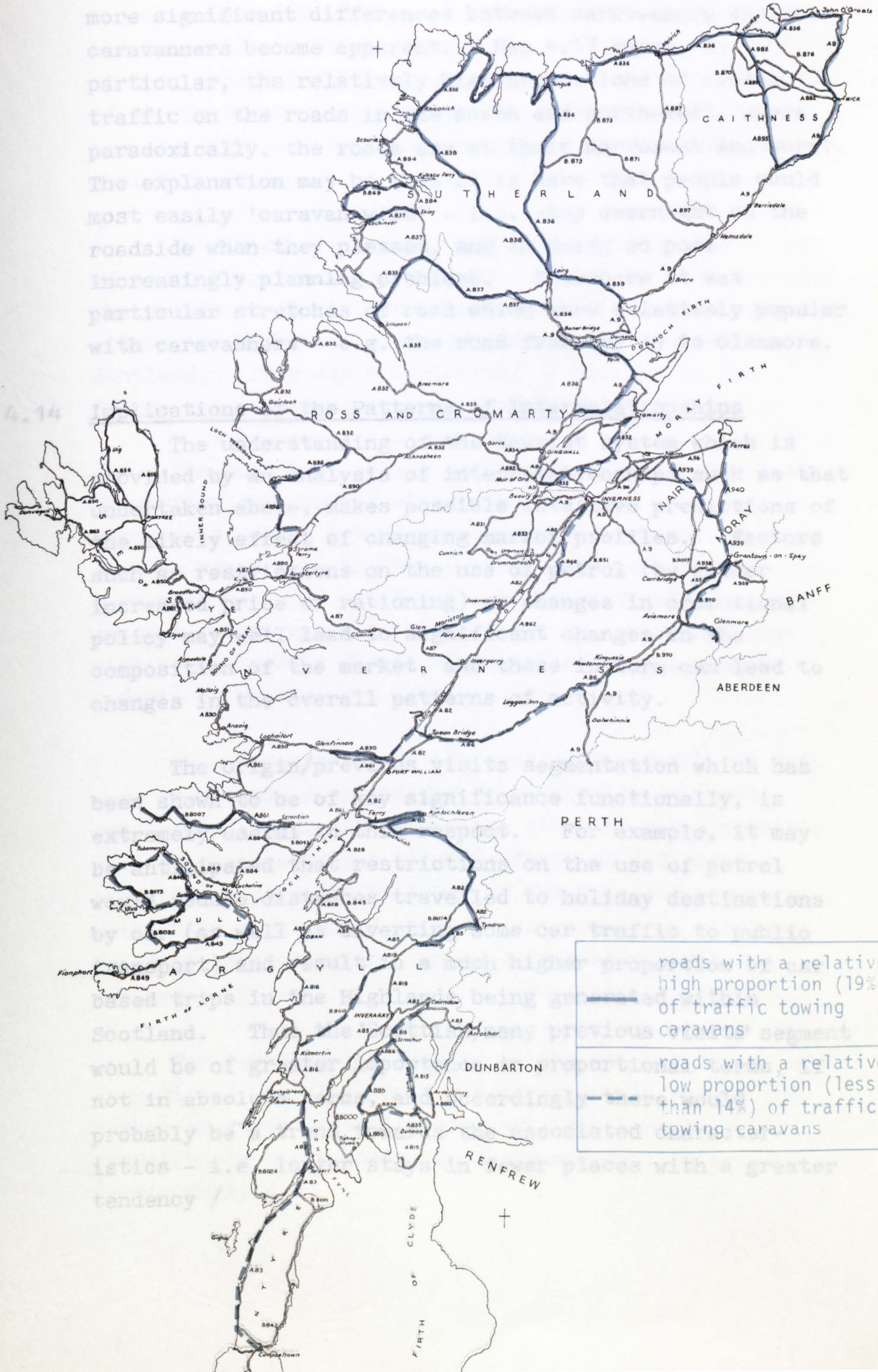
was /

was slightly higher for English visitors than for Scots, and was least with overseas visitors (Tables A4.9 and A4.10). The popularity of touring caravans with English parties was particularly marked among Midlanders, of whom 22% towed them. However, the preference for touring caravans cannot be neatly tied in with the English/few previous visits market segment, since first time visitors were in fact least likely to be towing caravans. The most significant relationships were the high touring caravan usage by the highest income group and by parties with children, particularly older children.

Just as the touring caravanner's profile characteristics did not fit with a major market segment, so their patterns of activity were distinctive. Their average length of stay in the Highlands was relatively high (Table A4.7) (i.e. a tendency towards Scottish characteristics), while their number of stops was also relatively high (Table A4.8) (i.e. an English type characteristic). Paradoxically, although caravanners made relatively large numbers of stope, they were, in terms of region visits, less 'mobile' - their average number of regions visited was 3.45 against 3.63 with the non-caravanner (Table A4.15). One explanation might be that the caravanner tended to travel around between overnight stops within limited areas; another possibility is that caravanners travelled out from their overnight centres on day trips less than non-caravanners, thus reducing the likelihood of visiting other regions on day trips.

In general there were no major differences between the regional patterns of activity of caravanners as compared with non-caravanners (Tables A4.15 and A4.16). However, in terms of bednights the South West and the North were slightly more popular with caravanners, and Loch Ness, Cromarty Firth and Wester Ross /Skye were slightly less popular.

Map 4.17 Roads with relatively high or low proportions of car-borne tourist traffic towing caravans



It is only in respect of road traffic flows that more significant differences between caravanners and non-caravanners become apparent. Map 4.17 shows, in particular, the relatively high proportions of caravan traffic on the roads in the north and north-west, where, paradoxically, the roads are at their narrowest and worst. The explanation may be that it is here that people could most easily 'caravan wild' - i.e. stop overnight on the roadside when they pleased, and in doing so pose increasingly planning problems. Elsewhere it was particular stretches of road which were relatively popular with caravanners - e.g. the road from the A9 to Glenmore.

4.14 Implications of the Patterns of Interrelationships

The understanding of the tourist system which is provided by an analysis of interrelationships such as that undertaken above, makes possible intuitive predictions of the likely effect of changing market profiles. Factors such as restrictions on the use of petrol (by either increased price or rationing) or changes in promotional policy may well lead to significant changes in the composition of the market, and these in turn can lead to changes in the overall patterns of activity.

The origin/previous visits segmentation which has been shown to be of key significance functionally, is extremely useful in this respect. For example, it may be anticipated that restrictions on the use of petrol would reduce distances travelled to holiday destinations by car (as well as diverting some car traffic to public transport) and result in a much higher proportion of car based trips in the Highlands being generated within Scotland. Thus the 'Scottish/many previous visits' segment would be of greater importance in proportional terms, if not in absolute terms, and accordingly there would probably be a trend towards the associated characteristics - i.e. longer stays in fewer places with a greater tendency /

tendency to use rented accommodation, to stay in and travel around the east coast and inland areas, and participate in daytime and evening activities. Trends of this type have obvious planning implications, in terms of a potential transfer of pressures between areas, between different types of accommodation and between activity resources.

It may also be noted that reductions in the length of journey to the holiday destination might also increase the extent of spatial association of destination regions within the Highlands with regions of origin elsewhere in Scotland. This again would lead to changes in the volume and nature of tourist traffic in each area.

The impact of petrol restrictions would of course be particularly marked with respect to the touring caravanner, whose petrol consumption is relatively heavy and who comes from England in larger proportion than non-caravanners. The north and north west Highlands, which receive relatively high proportions of caravanner bed-nights and traffic flows, would certainly see a major reduction in pressures.

An understanding of the system also enables a much more meaningful relationship to be developed between resource planning and promotion, since it makes possible some prediction of the likely effects of different promotional policies in terms of the relative pressures which they might cause on different areas, on different types of accommodation, and on different activity resources.

For example, a reduction in the overall levels of promotional activity would almost certainly reduce the number of first time visitors, and thus lead to a reduction in the pressure on areas and facilities particularly /

particularly associated with that market segment, as outlined in Section 4.13. Conversely, if it is felt that east coast resorts have spare capacity to be filled, including rented accommodation, then selective promotion to the Scottish market would seem to be the correct approach.

A further application is that it should be possible to estimate the markets most likely to be attracted by selected promotions of particular areas, types of accommodation or activities. The nature of the market attracted may have some bearing on the economic and social impacts resulting from the promotion.

This account of the analysis and implications of the results of the Highlands and Islands survey work was not intended to produce definitive conclusions and recommendations, because again this is only one aspect of the tourism research required for regional planning. Rather, it was intended to illustrate for a case-study region:

- how a detailed picture and understanding of tourism in a region can be built up from survey data limited in scope by questionnaire length and in analysis by the constraints of standard computer programs,

- how policy implications may be developed from analysis of individual variables,

- how an understanding of the current tourism system may be used in predicting the likely outcome of particular actions, an important facility in the forecasting of demand.

4.15 /

4.15 Conclusions on Research Methodology

Certain weaknesses in questionnaire design and analysis did not derive from the survey constraints which have been mentioned above, and attempts should be made in future research to avoid these. The main ones were as follows:

1. 'Income' variable

(a) the income groupings used in this analysis were chosen arbitrarily and bear no relationship to standard groupings, so that comparison with the results of other surveys is not possible.

(b) the use of gross income is less satisfactory than net income to which discretionary expenditure is more likely to be related. Gross income was in fact chosen deliberately because of the difficulties in defining net income in a s.a.q. However, even if this was the correct decision, gross figures should nevertheless have been converted to net.

2. The 'number of previous visits' classification should have made allowance for those who had lived in the Highlands and Islands.

3. In ascertaining the number in the party, difficulties arose from a limited number of cases where two groups were travelling together. For these cases the party probably should have been defined as an 'expenditure group'.

4. As with income groups, the classification of age groups should have been related to standard classifications.

5. The question "Was your route decided before you came on holiday?" offered only a Yes/No answer; however, many parties might have fixed their route in part and they probably /

probably deserved a category of their own. Alternatively the question could have been more specific as to whether it was referring to the complete route or only part of it. As it was those partly decided might have ticked either box.

6. It would have been desirable to carry out regional analysis on the basis of those who stayed for one or more nights in each region, in a way similar to that undertaken for 'visitors' (who included day visitors to the region as well as staying visitors). If the data had been coded for this purpose, it would have enabled calculation of the percentage of tourists who stayed in each region and regional distribution tables on the basis of 'staying visitors', in addition to those based on 'bednights', 'person stops' and !region visits'.

In terms of lessons learned as a whole, these weaknesses must be taken together with the other shortcomings already discussed which resulted from the constraints imposed by the survey technique and the analytical facilities available - for example, the insufficient data on activities and the lack of any quantitative market segmentation. If the survey techniques are adapted in future research, as suggested in Chapters 3 and 5, and better analytical procedures are available, it should be possible to avoid some or all of these shortcomings.

In so far as the work undertaken here was successful, implications may be that the creative use and interpretation of straightforward data of this type is as important as the availability of more extensive data or more sophisticated analytical tools.

Part 3

Chapter 5

Conclusions and proposals for future regional tourism research programmes

5.1 Introduction

The aims of this chapter are to consider in turn each aspect of a comprehensive programme of research for regional tourism planning and suggest an approach for future work, based on methodological conclusions from:

- the Highlands and Islands survey research discussed in Chapters 3 and 4,
- the other research described in Chapter 2.

As examples of particular suggestions, reference is made at several points to items in the current Scottish Tourist Board research programme.

The only proposal for a research programme comparable to that set out here is that devised by Knetch (1967) for the Canadian Government, and described in Chapter 2. It will be seen that, although developed independently, the approach suggested here for the Scottish regions is similar in principle to that which Knetch proposed for Canada as a whole, with many types of survey in common.

5.2 Analysis of the existing regional tourism market and patterns of demand within the region

The key conclusions for this area of research arise from Chapters 3 and 4 of this thesis and are as follows:

(1)/

(1) Wherever practical, surveys of holiday visitors to regions should be carried out by cordon survey, because of the facility which this offers for obtaining at reasonable cost a representative sample and, equally important, a means of grossing-up the sample to the volume of the population which it represents. If holidaymaking in the region by residents of the region is at all significant, then a home interview survey of residents will be required to complement the cordon survey.

(2) The cordon survey must cover all days of the week. Both the Lake District survey (Countryside Commission/British Tourist Authority, 1970) and the "Touring Caravan in Scotland" study (Duffield and Owen 1971b) neglected to do this, and their results must accordingly be regarded as suspect. In so far as resources allow, the survey periods at road check-points should cover as many hours between 06.00 and 22.00 as possible, if necessary by staggering of hours between subsequent days; this is a feature which could and should have been incorporated in the Highlands and Islands survey to some extent. If resources permit, the cordon survey should cover the full tourist season - April to October, at least; in the Highlands and Islands survey, the resources unfortunately did not permit.

(3) The method of obtaining information from those stopped in a cordon survey will be dependent on the nature and amount of information required. For a questionnaire of the length of that used in the Highlands and Islands survey, a self-administered method may be the best, provided that incentives and reminders are used to obtain a relatively high response rate (over 70%). The primary advantage is that it is more/

more cost effective in terms of number of replies. If the questionnaire is longer and/or more complicated than in this survey, as it would almost certainly need to be if it is to obtain the full range of information necessary for tourism planning, then a combination of direct interview and self-administered questionnaire is likely to yield the best net result. Again, an incentive and up to three reminders are essential if an s.a.q. is to be administered in this way.

(4) The key information to be sought is:

(a) the distribution of bednights broken down by type of accommodation
(b) traffic flows by mode of transport
(c) the distribution of activity participation, in terms of some unit meaningful in supply-demand analysis.

If day visitors are to be included in the study a separate questionnaire should be used for them - in contrast to the procedure used in the Lake District survey.

(5) Analysis of survey data should draw a distinction between information required for supply-demand comparison and that required to understand the system, as a basis for forecasting. For supply-demand analysis in particular, as detailed a spatial breakdown of demand data should be obtained as is possible within the constraints imposed by the survey sample size. (The degree of spatial analysis required should in fact be one of the principal factors in determining the overall sample size). Thought should also be given in advance of analysis to the format in which/

which demand data will be required for any spatial modelling which is envisaged.

(6) In analysing the data to understand the system, imaginative use of market analysis skills is required, with a continuous focussing of attention on policy implications; such analysis would undoubtedly be assisted by the use of sophisticated analytical procedures to enable market segmentation and modelling.

Considerable effort has been made to incorporate these principles in the design of the current Scottish Tourism and Recreation Study (STARS), being undertaken by the University of Edinburgh for the Scottish Tourist Board, the Countryside Commission for Scotland, the Highlands and Islands Development Board, the Scottish Arts Council and the Forestry Commission. The study covers the whole field of tourism, countryside recreation and theatre-going activities in Scotland. Appendix 6 describes the survey methodology and shows how, with reasonable (though not unlimited) resources available, a satisfactory approach may be developed.

5.3 Analysis of the current supply of resources and facilities, and of supply-demand relationships

In Chapter 2 previous research concerned with the 'supply' side of tourism was discussed, and the key concept of 'carrying capacity' introduced as a basis for supply-demand comparison. It was stated that most work had been concerned with 'site' capacities, and very little with the capacities of areas or regions. It was shown that the studies in this latter category mostly emanate from America (see Tivy, 1972), the only one in the British Isles being the An Foras Forbartha (1966) study in Donegal.

The/

The Donegal approach of dividing resources/ infrastructure into discrete groups for the assessment of capacities and supply-demand comparisons appears to be appropriate for future regional planning research and with most groups the problems do not appear to be too great:

accommodation capacity is relatively straightforward (though undoubtedly time consuming) to assess, except in the cases of 'Bed and Breakfast' establishments and accommodation with friends and relatives, where it may be necessary to calculate capacities by working back from peak season demand data. Given demand data of the type obtained in the Highlands and Islands surveys, but with breaks by type of accommodation (such as is to be obtained from the STARS), existing supply-demand assessments can be undertaken fairly easily at whatever scale is required, to reveal immediate management problems;

road supply and demand can be measured and compared as in Chapter 4, but capacity measurements need to be refined, since a road used largely by holidaymakers driving for pleasure may well have a user-perceived capacity different to that of a similar road used largely by holidaymakers and others purely travelling to a set destination. In the example, the road capacity for driving for pleasure was assumed to be the same as that for access, only because no better information existed;

with scheduled public transport services (bus, train, ship/ferry or aeroplane) capacity is easily measured and compared with passenger flow figures comparable with those obtained for holiday road traffic in the Highlands and Islands. However, such comparisons/

comparisons are only of short-term significance since rapid changes in capacity are possible;

with public infrastructure and services such as water, sewerage and electricity, supply capacity can reasonably be related to the numbers of bed-nights in different types of accommodation. Health services capacity, on the other hand, might best be related to the number of bed-nights spent by different activity groups, since, for example, active sportsmen (particularly skiers) may make a greater demand on health services than others.

These resource/infrastructure types are thus all relatively straightforward to deal with. It is with the activity resource sector that the major problems arise. Without exception the capacity standards adopted for recreation resources in the studies in Donegal and in States of the USA were arbitrary and the various approaches are mostly open to criticism in other respects. In the case of the Donegal study, the grouping of all 'day recreation' resources together for the purposes of supply-demand assessment was criticised in Chapter 2, as was the use of the 'static' capacity concept. Chapter 4 attempted to illustrate with respect to the Highlands and Islands an approach to day resource supply-demand comparison which overcomes these weakensses, but

(a) the demand data was inadequate
(b) arbitrary capacity standards were assumed.

Studies such as the STARS should provide the data required regarding existing demand but capacity assessment will require very much more research before regional capacities can be determined with any real precision/

precision. Indeed, as the following discussion indicates, such an ideal may never realistically be attainable.

The concept of 'carrying capacity' is not a simple one, and many different types of capacity have been identified, particularly by American researchers. These have been discussed in depth by Chubb and Ashton (1969) and summarised by Tivy (1972). The Countryside Recreation Research Advisory Group (1970) publication, 'Countryside Recreation Glossary', defined four basic types of capacity as follows:

> "(a) Physical capacity: the maximum level of recreation use, in terms of number (of people, cars, boats, etc.) and activities that can be accommodated for the purpose(s) for which a particular facility was designed or issued. For example, the physical capacity of a car park can be said to be reached when all available parking spaces are in use. The term is normally applied to man-made facilities such as lavatories and restaurants, but it is also applied, for example, to lakes used for sailing or water ski-ing;
>
> (b) Ecological capacity: the maximum level of recreation use, in terms of numbers and activities that can be accommodated before a decline in ecological value, assessed from the ecological viewpoint;
>
> (c) Economic capacity: the maximum level of recreation use, in terms of numbers and activities that can be accommodated in an area which is also/

also used for some non-recreation activity, before damage to that activity becomes economically unacceptable from the management viewpoint. The term can, for example, be applied to reservoirs used for boating and also for water supply, and to woodlands used for timber production and also for recreation;

(d) Perceptual capacity: the maximum level of recreation use, in terms of numbers and activities, above which there is a decline in the recreation experience from the point of view of the recreation participant. Different users could have a different view of the perceptual capacity of the same area according to their activity."

One or more of these types of capacity will be appropriate to each possible resource/use combination, dependant on the nature of the resource and the use. Where more than one type is relevant, it will be the one which sets the lowest figure which will be critical. Most natural resources and some man-made ones (e.g. golf courses) have ecological capacities; most man-made resources and some natural ones have physical capacities. But the type of capacity which is applicable can be dependent on the use - for example, a loch used for sailing may have only a physical capacity; a loch used for motor boating or cruising is likely to have an ecological capacity (because of, for example, erosion of the shores or pollution) as well as a physical capacity. Economic capacity of a resource with respect to a given use will only be applicable where another use, not necessarily non-recreational (as suggested by the above/

above definition), is expected to provide an economic return.

Perceptual capacity is perhaps the most commonly applicable type, being relevant to virtually all resource-use combinations, except where the number of participants on the recreation site at any one time is predetermined - i.e. team and court games.

Thus economic capacity is the form of capacity which is least often relevant and is probably least susceptible to the development of standards for general application. Physical capacity, although often a valid concept, will not normally be used in planning where other types of capacity are also relevant, since these other types will usually set a lower level of use. Ecological and perceptual capacities are therefore most likely to be the key measures. Unfortunately there are very real problems in applying these two concepts.

Chapter 2 has shown that there has been a great deal of research related to the measurement of ecological capacities of particular sites or types of ecosystem. In many cases relationships were developed such that site deterioration resulting from given levels of use could be predicted by reference to the site's various physical and ecological characteristics - e.g. geology, soils, climate and topography. However, this alone does not necessarily enable the ecological capacity of sites to be determined. Speight (1973) points out that there are three aspects of ecological change to be considered:

- the/

- the areal extent of an ecosystem type,
- the diversity of its species,
- its unique content;

and that it is necessary to determine by the establishment of management objectives to what extent change of each type is permissable. Speight recognises the following types of objective as the principle alternatives:

Option 1: preservation of the natural ecosystems is to be regarded as paramount; recreation use is to be regarded as subservient to this objective and is only to be allowed to such an extent as is compatible with it.

Option 2; recreation is to be regarded as the predominant use, but, for the recreationist's own benefit, the aim is to retain some naturalness by minimising ecological change; the type and amount of change which is 'acceptable' has then to be defined - Brotherton (1973) suggests that this might be done by reference to the recreationist's perceptions, being "that which does not significantly detract from the visitor's enjoyment".

Option 3: recreation is to be regarded as the predominant use, with no attempt to retain natural ecosystems; where the natural ecosystem breaks up it will be replaced by more resilient species.

In order to take into account the importance of setting management objectives, Speight suggests a revised definition of ecological capacity, as follows:

"The maximum amount of use by specified forms of recreational activity, measured in terms of numbers of/

of people/season/year, a given area will support without undergoing an unacceptable degree of ecological change away from the ecosystem condition considered desirable."

Even with management objectives set, the ecological capacity can still vary considerably. As Brotherton points out, it is also related to the patterns of recreation which occur or might occur on the site, at different levels of management. For example, in an area where people would naturally tend to disperse evenly and hence disturb fragile ecologies, management objective Option 1. above could be achieved either by reducing access to a very low level or by introducing visitor management measures which control and channel people such that damage to the natural ecosystem is avoided or kept to a very low level. On another site with rugged relief, people might naturally be channelled away from fragile ecosystems by the relief, so that large numbers can be absorbed without management. It is therefore necessary to decide what level of management is to be imposed and the likely effect of this in terms of visitor patterns. Thus the ecological capacity becomes dependent on factors which can be unique to each site, and less susceptible to calculation by means of a universal formula, although the work of Orr (see Section 2.5 and also Tivy (1972)) in devising a Potential Pedestrian Impact, may offer some pointers.

Similar problems arise in measuring perceptual capacity. A key consideration is that of the differing perceptions of the different user groups. The studies reviewed in Section 2.5 revealed that these differences occurred both between participants in any one activity (Burton, 1973) and between participants in different activities (Lucas, 1964). With each resource a decision must therefore be made as to whom it is to be planned for. The most simple approach, the one advocated by Lucas, is to plan for the user group for whom the capacity is lowest, on the basis that then all users will be 'satisfied'. However, this may greatly restrict the number of users, and, if the low capacity user group is relatively small, a decision might/

might be made to plan for a larger group for whom the capacity is higher. On the other hand, a policy of zonation might be instituted, so that those who are less sensitive to crowding can then be catered for in large numbers in relatively small areas.

Over and above this problem, there are very real practical difficulties associated with defining the satisfaction/dissatisfaction thresholds for the different user groups. Davidson (1968) suggests that much might be achieved by observation of crowding, on the basis that people disperse or converge to achieve the level of crowding they desire. This however is unlikely to be fully satisfactory because limits on the available recreation resources may constrain people to accept a greater level of crowding than they would like; or alternatively the numbers of people may not be as great as some people would desire. Also, local topography may have a substantial influence on activity patterns.

Social survey research such as Burton and Lucas used would seem to be a more appropriate tool for establishing thresholds. Here the main problem is in defining the aggregate threshold for a user group which contains within it some diversity of opinion. Lucas was able to set a 'wilderness' threshold as the level of use at which any significant number of canoeists at all started to feel that the wilderness was lost; and a 'half-wilderness' threshold as the level at which the majority of canoeists felt it was no longer wilderness. However, the situation was relatively clear cut in that particular case, with canoeists defining fairly precise thresholds in terms of very small numbers of other users encountered per day. Whilst such situations do arise in Scotland, the majority of resource-use combinations have thresholds which are likely to be less easily defined, in terms of both the numerical value of the threshold and the individual user's perception of his own threshold.

Brotherton suggests that the aggregate threshold for a user group/

group might be taken as the level of recreational use which maximises aggregate benefit - a definition which accepts that some individuals (with a high sensitivity to over-crowding) will be dissatisfied. This is an interesting concept, but, as Brotherton realises, virtually impossible to use in practice. He suggests that it may be necessary instead to take an optimum proportion of dissatisfied participants, though this too would be difficult to measure.

A further complicating factor is the necessity, pointed out by the Dartington Amenity Research Trust (1973a, 1973b, 1973c) in their water area case studies, to take into account the capacity not just of the basic recreation resource itself, but also of the facilities and services ancillary to the resource. For example, many tourists going to participate in an activity may approach the site by car along an access road and park in a car park, and then use refreshment and toilet facilities during the course of their stay at the recreation site. The capacity of the access road, the car park, the restaurant or the toilet facilities could be below that of the recreational resource, in which case that element which has the lowest capacity sets the 'effective capacity'.

Thus, there are many complex problems associated with capacity assessment, and a precise measurement of regional capacities seems virtually impossible to obtain. However, this is not of particular importance. Supply-demand research for strategic planning must be essentially concerned to reveal relative orders of magnitude of surplus and deficit, so that fine measurement, though conceptually desirable, is not necessary for this purpose. Only when it comes to pin-pointing key management pressures is it necessary to be more accurate. This may or may not be seen as part of the function of regional planning.

Accordingly, the following approach is suggested for assessing currently available capacity in regional planning research:/

research:

(1) define and delimit spatially the currently available recreation resources of the region;

(2) for each resource, define the potential user groups, decide for whom the resource is to be primarily planned in the future and, using available evidence, estimate its capacity as perceived by that primary user group, using an approach which is consistent throughout the region;

(3) assess with available evidence whether any other type of capacity is lower than the perceptual capacity for the resource-user combination in question, and, if so, estimate it;

(4) estimate the capacity of any ancilliary facilities or services which are likely to keep the use of the recreation resource to below its capacity, as calculated in (2) or (3);

(5) the result of steps (2), (3) and (4) will be to establish the effective capacity of the recreation site;

(6) sum the effective capacities for each area by type of resource; this then provides the basic resource information for comparison with existing and projected demands, to reveal orders of magnitude of resource deficit or surplus in different parts of the region, as a basis for strategic planning.

Subsequent steps would be required if the studies were to define where local management problems exist. These would be as follows:

(7) assess subjectively or with the aid of suitable demand figures (such as might be available from the STARS), those resources where the demand appears to be more than (say) 75% of the effective capacity;

(8) in these cases, undertake empirical studies involving interviews and/or observation, as relevant. If certain types of resource are under pressure throughout the region, then it might be worthwhile to attempt to develop a standard method of calculating the capacity of those particular resources - ecological capacity being determined in terms of a site's management regime, its physical and ecological attributes, and the spatial pattern of activities; perceptual capacity in terms of the nature of the terrain and the degree of quality or/

or seclusion required by the user group for whom the resource is to be planned. However, such standard methods are only likely to be profitable where one form of use of the resource is predominant; where there is multiple recreational use of the resource and where consequently the capacity of the resource for one activity is limited by the presence of another activity, then site-specific research will almost certainly be required.

Discussion of supply-demand comparisons has thus far focussed on the current situation. As explained in Chapter 1, this helps to reveal the immediate tourism management problems. However, the main supply-demand input to the design of strategies should be the range of possible supply-demand balances at some date in the future. The capacity data derived as above and amended in respect of any known or likely future changes in supply, will be used in that assessment, though some grouping of resources will be required (see Section 5.6). An additional input to the future situation will be the potential for developing new tourism supply as part of the tourism strategy. This is considered in Section 5.5.

In most regions of Scotland, inventorying all the current tourism resources and facilities would be a major task, most particularly as regards accommodation. In such a situation, a computer system would undoubtedly be of assistance in handling the data. Such a system, known as the Tourism and Recreation Information Package is currently being developed for Scotland as a whole by the University of Edinburgh under the auspices of the STB, CCS, Forestry Commission and Scottish Arts Council. The first phase in the development was completed in October 1973, and reported by the University of Edinburgh, Tourism and Recreation Research Unit (1973). A brief description of the system and its contents is given in Appendix 7.

5.4 Data

As the Appendix shows, the system incorporates a wide variety of tourism and recreation data, as well as more general planning information. The system offers the facility to map and tabulate this information easily and effectively at alternative/

alternative scales. The system is being developed to incorporate demand information, suitably grid referenced, from the Scottish Tourism and Recreation Study, so that it will be able to rapidly calculate and map or tabulate balances between demand and supply for particular activities or accommodation in 1973. This is likely to be most effective when prepared on a grid square basis, similar to the approach used in the 'Touring Caravan in Scotland' study (Duffield and Owen, 1972a).

As well as this important data handling role, a system such as the TRIP can play an important role in modelling demand (see Section 5.4), in identifying potential resources (see Section 5.5), and in strategy generation, by identifying, for example, where spare accommodation capacity could be packaged with surplus recreational capacity for promotional purposes.

It is necessary to sound a final cautionary note with regard to comparisons of tourism supply and demand as suggested above. This arises from the fact that in many areas holiday-makers form only one, albeit the largest, of the user groups of the tourism resources noted above. Transportation and accommodation (particularly attended accommodation) are used by non-holiday travellers, while recreation resources are used by residents undertaking recreation from home. These other users must in some way be taken into account if a full supply-demand picture is to be obtained. The STARS does in fact offer a marked step forward in this respect, in that it covers in equal depth the whole field of holiday-making and countryside recreation. Unfortunately that study of necessity excluded coverage of non-holiday travel away from home; however, in most parts of Scotland this is of relatively small importance.

5.4 Development of a procedure for forecasting.

A knowledge of the way demand may change in the future is a key component of any strategic planning study. However, forecasting of tourism demand raises many problems, primarily because of the dependance of demand on a wide range of factors. It/

It is firstly dependent on many factors beyond the control of organisations involved in tourism planning (as noted in Chapter 1), particularly the social and economic development of holiday-taking populations in Britain and throughout the world, and technological changes affecting mass transport. Various levels of change in these factors are possible.

Secondly, demand can be influenced by factors which are within the control of the tourism related organisations, notably promotional activities and the development of supply. The degree to which these factors can influence demand indicates the extent to which the organisations can manipulate demand to achieve maximum nett benefits.

Any procedure which is developed to forecast demands must therefore be concerned with alternative possible futures.

The proposition was put forward in Section 2.6 that the key to forecasting is to understand the past and the present, and that such an understanding can be at either a quantitative or qualitative level. At either level the information required may be divided into two broad groups:

1. Analysis of the existing regional tourism market and patterns of demand within the region, to provide an understanding of the existing system; this is the type of analysis undertaken in Chapter 4 for the Highlands and Islands, conclusions from which were summarised in Section 5.2.

2. Analysis of the characteristics and trends of the total tourism market from which holiday visitors to the region are, or may be, drawn. Such research may be divided into two types:

(a) studies of the level and nature of holiday-making and the broad patterns of destination, in relation to socio-economic 'background' factors - such data preferably available on a time series basis. As regards the British market, the British National Travel Survey (British Tourist Authority, annual - see Section 2.4) provides reasonably good data over many years for such analysis. However, as suggested in Section/

Section 2.4, the data specification and analysis of the BNTS and similar surveys leave room for improvement, and the small exercise by Handley and Heape (1972) indicates how better value can be obtained from such surveys. Surveys like the BNTS are carried out in most of the main overseas markets.

Since the forecasting procedure, as defined above, is concerned with establishing the extent to which demand may be influenced by the actions of tourist boards and others, the studies of the total market should include, where possible, analysis of the effectiveness of different types of promotion.

(b) studies of attitudes and motivations. This essentially involves research which moves back from a study of holiday behaviour to examine the holiday decision making process. The purpose of such work is to assess the <u>potential</u> of a region for change in its holiday market. Specifically, it should provide knowledge of:

- the size and nature of the market interested or likely to be interested in holidaying in the region in future, together with the constraints on the realisation of that market
- the size and nature of the present market for the region which may choose to go elsewhere given the removal of constraints.
- the size and nature of the market which is interested in a product similar to that which the region has to offer, but not apparently interested in the region itself because of misconceptions about the nature of its product.

To achieve such research objectives, it is necessary to mount a carefully thought-out survey to analyse aspects such/

such as:

- the factors which people regard as being important in a holiday destination
- the perception of the region in question in respect of these factors
- the extent of interest in and perception of the region vis a vis other holiday destinations
- the influences on the holiday decision.

Section 2.6 discussed studies which show how the use of Kelly's Repertory Grid (KRG) can be successful in ascertaining people's perceptions of destinations in terms of factors relevant to the individual survey respondent. These were found to be useful within the limited sphere of setting a framework of perceptions of holiday destinations as a whole. The weakness in these studies were examined and improvements suggested. Future studies of this type should try to adopt these improvements - particularly the suggested increases in the size of sample compared with that used in the studies of Levens (1972) and Riley (1973), to enable perceptions to be broken down by market group. It may be that, rather than carry out the type of interview used in those two surveys with a much larger sample, the type of approach adopted by Masius Wynne Williams (1967) would be more appropriate - i.e. the use of K.R.G. with one small sample to generate the destination characteristics, followed by a survey with a much larger sample in which destinations are related to those characteristics. However, this approach has the disadvantage that interviewees in the larger sample would be describing destinations in terms of characteristics which they had not generated themselves, and which might therefore not be meaningful to them.

K.R.G. is not the only way of generating perceived destination characteristics. Some researchers prefer to use the more normal methods of group discussion and depth (semi-structured) interview to achieve similar ends, because:

(a) a K.R.G. interview takes a great deal of time to administer/

administer, and allows no time for consideration of other topics; group discussions and depth interviews in contrast are more flexible and allow more ground to be covered

(b) a K.R.G. can tend to force people to generate artificial charcteristics.

The choice between these alternatives will be dependant on the particular circumstances. In a programme of research for regional tourism planning, motivational studies will need to cover a much broader field than that of the K.R.G. studies (see, for example, the subject matter of the CGTB/Air Canada Study described by Stark (1972) and discussed in Section 2.6) and group discussions and/or depth interviews will be needed anyway. Depending on the financial resources available, these could be carried out either in addition to or in place of K.R.G. interviews.

It is highly desirable in motivational research, for both planning and marketing purposes, to use analytical techniques to identify functional market segments - natural groupings of the total market in terms of either general holiday behaviour and attitudes, or, more specifically, behaviour and attitudes in respect of the holiday destination under consideration.

The former type of segmentation is likely to require an analytical technique such as factor analysis or principal components analysis which does not involve a dependent variable. The Westminster Research Bureau (1968) follow-up to the Masius Wynne Williams study is one of the best examples of this type of segmentation.

Segmentation in relation to a specific holiday destination may use techniques which involve a dependent variable - for example, degree of interest in taking a holiday in the destination. This type of segmentation is particularly relevant to regional tourism planning, and an example in such a context forms part of a current study of holiday motivations/

motivations by Morton Williams (1973), being carried out for the Scottish and Wales Tourist Boards and involving home interviews with 1,100 British adults. Separate segmentations were carried out for Scotland and Wales using a technique known as the Automatic Interactor Detector (AID), with the dependent variables being whether people had expressed an interest in holidaying in Scotland (in one analysis) and in Wales (in the other).

That such an analysis can provide meaningful policy implications may be illustrated by reference to the segmentation for Scotland. The group which was shown to express greatest interest was people who intended to take a second holiday in 1973, not necessarily in Scotland. However, because of the distance factor, which is particularly important for shorter second holidays, Morton Williams concludes that these second holiday-takers are in fact more likely to take their main holiday in Scotland. Nevertheless, if the aim is to attract people off-season, this group still remains promising since, as well as taking second holidays, it shows a relative preference to take its main holiday off-season. This implies that the promotional message, particularly for the majority of second holiday-takers who live in South East England, might be "Take your main holiday in Scotland in the Spring or Autumn", rather than "Take a second holiday in Scotland". However, there does appear to be a good second holiday market for Scotland in North West England, which is relatively near and where people revealed a relatively high degree of interest in Scotland and are more likely to take second holidays.

A further conclusion, which Morton Williams does not draw clearly, is that if travel times by road and rail can be reduced by infrastructural development (or alternatively if people can be persuaded to use air travel more) and second holidays increase in length (nb. possible forthcoming EEC regulations), the considerable potential for second holidays in Scotland from the South of England can perhaps be realised.

The/

The main problem with motivational research lies in the fact that, in theory at least, the market to be studied is the whole world. Whereas many countries have an equivalent of BNTS, few have motivational research of the required type available. If purpose designed surveys are thus necessary and resources are limited, there is then obviously a need for a pragmatic approach with studies being undertaken in each of the main existing markets and in any new markets where large growths in absolute terms may be expected.

As well as the problem of resources to carry out such extensive survey research, there is also likely to be a problem overseas in questioning attitudes towards regions of Scotland of a lack of any awareness of those regions. Indeed, a large number of people may have no meaningful attitude towards Scotland as a whole, let alone regions within it. The conclusion is that either detailed attitude questions of this type cannot be attempted or very large samples will be required to obtain sufficient numbers who do have attitudes.

In practice, overseas motivational research is likely to have to be carried out by the British Tourist Authority on an all-Britain basis, with relatively limited sample sizes. Destination attitude questions are therefore at best likely to relate to Scotland as a whole, and regional planning will have to work as far as possible with information on this basis.

The type of information described above in this Section may simply be used <u>qualitatively</u>, to provide a thorough understanding of existing and potential tourism, and hence the effects which are likely to result from particular actions. A <u>quantitative</u> approach to assessing future demands requires this same type of research to be designed and analysed to enable structured calculations - particularly through the development of mathematical models which can calculate the level and distribution of tourism demand in a region.

In/

In general, the problems associated with modelling fall into three groups:

(1) Obtaining the required data

There are two overall considerations:

(a) information is required such that those responsible for building a model have a detailed understanding of the system it is to represent

(b) the data collection exercises must be designed to meet the very precise information requirements of the model.

In these two considerations lies a "chicken and egg" situation which has already been referred to in the discussion of the Ontario Tourism and Outdoor Recreation Plan Study (OTORPS) model in Section 2.6 - namely, that the data requirements cannot be specified properly until an outline or prototype model has been developed, while such a model cannot be developed without reasonably detailed data to provide the necessary understanding. The ideal answer is, of course, to collect two sets of data - one to provide the conceptual basis for developing the model, the other to meet the precise information requirements of the model developed. The alternative approaches are those of Scotland and Ontario. In Scotland, comprehensive data has been collected, notably in the STARS, in advance of model development, but with the hope that it will meet the model's requirements. In contrast, the OTORPS developed its prototype model without any broad data base, the hope there being that testing with real data will not reveal a need for major amendments to the model, which might in turn require that additional data be collected. The Scottish approach may be more likely to be shown as wishful thinking, but it does have the advantage of providing data which can be used immediately for planning purposes while model development is in progress.

It is also necessary to acknowledge situations where data required by a model may simply not be available. This was one of the problems associated with the BTA model described/

described in Chapter 2, for predicting overseas visitors to Britain; the required range of social and economic data about the generating countries was not available and the model therefore had to operate on more limited data than was desirable. This may well account in large part for its relative lack of success.

(2) <u>The technical problems of simulating a tourism system accurately</u>

As discussed in Chapter 2, models have been developed, notably in North America which simulate tourism and recreation systems with a reasonable degree of accuracy, in the short term at least. However, accuracy can never be guaranteed in advance of development. Various different model types are available, but one problem is that it is not always possible to say in advance which model type will be most appropriate to a given situation. The ideal is to test alternatives, as was done in the Michigan Outdoor Recreation Demand Study, but this is both expensive and time consuming. Consequently the decision on the model type tends to be taken at an early stage of a forecasting study, and it is only after a great deal of model development and testing that the correctness (or otherwise) of that decision will emerge.

A model may be developed which simulates part or all of the tourism system. However, such a model will normally embody relationships which relate to one point in time, or at best a limited number of points. This then leads to the third problem:

(3) <u>The extent to which relationships embodied in a model will remain valid in the future</u>.

The use of mathematical models is based on the assumption that the relationships which they simulate will remain valid over the period of forecast. In the case of a tourism model constructed at the present time, such an assumption might not be justified in view of possible major changes in travel patterns which may result from factors such as increased/

increased price or reduced availability of petrol. The more accurate a model structure is in simulating the complete decision making process regarding holiday destinations, types, activities, etc., the more likely it is to be able to take into account changes such as this. A simplified model might well become worthless. However sophistication and complexity in a model make it difficult, time consuming and expensive to construct, and no matter how complex the model, there may be factors (such as those relating to oil supply) which at one moment appear to be of small importance, and are therefore omitted from the model, but subsequently can assume considerable significance.

Developing a simulation model for the regions of Scotland.

The task of developing the thought-process behind a model is undoubtedly a very good discipline, since it necessitates absolute clarity of thought regarding the relationships which are operational in a system. It is therefore recommended that such a thought-process should be established irrespective of whether the system is to be modelled.

Unfortunately the success record of quantitative models designed to predict levels of demand is not particularly good - the model of overseas visitors to Britain developed for the BTA never improved on intuitive estimates, while the Roskill and Channel Tunnel estimates have quickly become out-of-date because the models did not (and perhaps could not) take into account certain technological changes, oil shortages and changes in oil prices. On the other hand, Young (1973) refers to models of visitors from certain countries to Britain which have been exceptionally successful, while the American examples of systems models discussed in Chapter 2 indicate that satisfactory modelling of the spatial patterns of recreational traffic is possible.

There is no doubt that for any region of Scotland a successful tourism demand model would be an extremely useful planning tool, in showing, for example, how additional tourists of one type or another might distribute themselves around a region/

region, how new tourist or transport developments might affect the size and pattern of flows and how differential promotion for particular parts of the region might also affect patterns, by increasing the perceived attractiveness of those parts. The arguments for such models are well developed in the various relevant sources quoted, particularly Ellis (1966a).

Thus, if the considerable financial and manpower resources necessary can be made available for developmental research, it would be highly desirable to attempt development of a sophisticated model.

Ideally, such a model should aim to incorporate both demand generation and distribution, since this allows for an interaction between supply and demand. This has been the aim of the OTORPS model. However, that model was dealing with a situation where the majority of demand was generated from within its own boundaries, so that no real problem arose by treating external demand simply as an input to the model, to be obtained through a much less rigourous procedure.

In Scotland and its component regions, however, a large proportion of demand is externally generated. Consequently there would need to be a procedure for estimating external demand which could match the quality of the estimates of the internal demand produced by the model itself. Indeed, it would be highly desirable to incorporate the generation of external demand within the model, in order that there could be some interaction between demand and supply. Such a task, which implies modelling of demand from throughout the world, is a daunting one for a study concerned with just one region of Scotland. This aspect of the model would at best be crude compared with the internal demand aspect.

It is more likely that external demand would, as in Ontario, have to be calculated outside the model, with some type/

type of forecasting procedure providing inputs to the model. This might involve a separate, relatively simple model of tourism in Britain as a whole, or, alternatively, more subjective estimates based on an intuitive understanding of this wider system (as outlined earlier in this section) and still involving a model type thought process. The forecasting procedure must be able to provide for the regional model rapid and reliable estimates of external demand, related to different assumptions about social, economic and technological changes and the policies of relevant organisations in terms of promotion and development.

Overall, the type of approach which might be most realistic for estimating external demand is broadly along the lines of the Cooper Brothers (1972) report 'Hotel Prospects to 1980', but with a better structured and justified thought process and more flexibility in providing alternative or revised forecasts. It might reasonably be expected that the development of a continuing forecasting procedure of this type relating to the British tourism market as a whole would be of interest to tourism planning organisations throughout Britain, so that costs might be shared with them.

This forecasting procedure would be required to produce specific inputs for a regional model - e.g. forecasts of external demand broken down by origin, by holiday type and by socio-economic factors (according to the different assumptions adopted). The function of the model must then be to take these inputs together with internal demands as calculated by the model itself and show how the total demands would be distributed around the region, in terms of the key factors - the distribution of bednights, traffic flows and activity demand. Any such model will be based on the relationship between the patterns of demand and influencing factors such as:

- the facilities and general attractiveness of holiday destinations, as perceived by the holidaymaker
- the attractiveness of route links, in terms of their scenic/

scenic value, places of interest, etc.

- the 'resistance' of route links, in terms of distance, quality of the road, etc.

- constraints on journey length.

There are a number of model types which might be used to simulate such relationships. Examples of the use of the principal two, the gravity and systems (linear graph theory) models, have been reviewed in Chapter 2. A further critical appraisal of these two model types in a recreational context is provided by Duffield (1972 and 1973). These sources indicate that the systems approach developed and adapted from that used in Michigan is likely to be the most suitable for simulating the tourism patterns which exist in most parts of Scotland - in particular, because it is designed to deal with networks of flows. However, bearing in mind the choice of a gravity type model for the sophisticated OTORPS, it may be wrong to predetermine a model type; the merits of each type must be examined critically with respect to its possible applicability to the situation to be modelled.

Whatever the type, the model would ideally incorporate a suite of sub-models relating to functional market segments. There will obviously be marked differences between activity types (e.g. sightseers as against golfers) in the attractions which govern their holiday patterns, which the model must try to take into account. In addition, there are likely to be, within any sightseeing group, differences between sub-groups (such as those observed in the Highlands and Islands between sub-groups based on origin and number of previous visits) with regard to the nature of the attraction and hence holiday patterns. These also might require separate sub-models.

The costs of the developmental research necessary to devise these models would undoubtedly be heavy, running into tens of thousands of pounds at 1974 prices; additionally, there is always the possibility that the work would be unsuccessful. Thus, despite the many potential benefits of such/

such models for the planning process, this is the area, of all the proposed fields of tourism research outlined in this chapter, which must be most open to doubt in terms of cost effectiveness. It may therefore be necessary to fall back for forecasting on a less quantified but nevertheless rigorous and structured understanding of the tourism system.

However, if sufficient resources are available, then a spatial model of the tourism system operating within the regions, incorporating or linked with a structured method of assessing externally generated demand, should be attempted. To meet strategic planning requirements, such a model must be sufficiently robust to be able to take into account significant social, economic or technological changes.

A computer system such as the Tourism and Recreation Information Package, mentioned in Section 5.3, could play an important role in the development of a demand model. Most immediately it could provide the means for evaluation of the 'attraction indices' of destinations, which are necessary for any such model, a subject well discussed by Duffield (1973). With incorporation of demand information into a system and extensive development of its capabilities, the system could possibly act as the tool for carrying out modelling.

At this stage it would be possible to formulate some strategy options by undertaking an analysis of the alternative possible balances between projected supply (i.e. the existing supply adjusted in respect of known or likely future changes in supply) and future demand, according to different assumptions regarding social, economic and technological change and tourism marketing activities. However, before the full range of strategy options can be assessed, an analysis of the potential for adding to tourism supply is required.

5.5 The assessment of potential resources

For planning purposes tourism supply potential may be divided into two:

(a)/

(a) man-made facilities which could be constructed or provided at accessible locations where land is available and which are suitable in planning terms; visitor centres, indoor sports centres, most types of accommodation, cinemas and theatres are examples of such facilities which are likely to be relatively easy to establish given sufficient finance and providing that there is no excess pressure on land and building resources.

(b) capacity for activities (e.g. climbing, fishing, visiting places of interest, caravanning) which require resources with particular attributes which may occur infrequently or not at all within a region. It is with the identification of potential resources of this type that this section is primarily concerned.

The potential capacity which should be examined first, because it is likely to be most economic to develop, is that which may arise from increasing the effective capacity of existing recreation resources. This may be through increasing the capacity of the basic resource itself, or alternatively through increasing the capacity of ancillary facilities (roads, car parks, catering, etc.), where this is less than the capacity of the basic resource and is therefore acting as a limiting factor.

The main type of potential capacity will be in utilizing areas which were previously unavailable for recreation and in changing the planned use of currently available supply. In assessing an area for potential of this type there are basically three steps to be followed. The first is to identify the full range of tourist activities for which resources in the region might conceivably be developed; the list will normally include most of the activities already taking place within the region, together with other activities for which there appears to be both resource and market potential. Activities must be broken down to a considerable extent, such that the resources necessary for them can be specified with some precision. For example, there would be little/

little point in listing 'sightseeing' - this must be broken down into its component parts, such as visiting historic buildings, industrial archaeology, ornithology, etc.

The second step is to 'search' the region for appropriate resources which are not available at present for the activity in question. The way in which the search is carried out will be dependant on the nature of the resource. In some cases (e.g. archaeology, canoeing) the basic resource already exists and the potential has merely to be made available; here the resource has to be identified and inventoried. In other cases, locations must be identified where the natural resources are suitable for a particular type of recreational development - e.g. a golf course, a country park, a scenic route. It is possible that a computer system of the type outlined in Section 5.3, with a good 'search procedure', could be of considerable value in site identification of this type, particularly if information on factors such as scenery, relief, land use, and soil conditions is available at a large scale. Apart from speed of analysis and mapping, it offers the considerable advantage of flexibility; this is particularly important where some factors are more important than others, since it enables a number of analyses to be undertaken, testing the effect of giving different weight to different factors or even excluding some factors altogether.

The result of the second step will be a list of locations which are physically suitable for one or more of the tourist activities, ideally with some broad indication of capacity. In concept, this is a product similar to that of the Outdoor Recreation Land Capability Classification of the Canada Land Inventory (discussed in Section 2.7), but it would be more extensive in range and more rigorously derived. Where there is more than one possible use for an area, these may be compatible, so that different recreations could be grouped together as in, for example, a country park. On the other hand the uses may be genuine alternatives.

The/

The third step is to move beyond the physical constraints to human constraints on resource development and use. The prime considerations here are:

- accessibility by each form of transport
- planning restrictions
- attitudes of landowners

The last two of these factors will incorporate constraints relating to alternative uses of the resource.

Information regarding the first of the three factors is suitable for use in a computer system. However, planning restrictions and attitudes of landowners, which are much less precise factors and potentially subject to rapid change, are not suitable for such an approach, nor indeed for incorporation within the resource potential analysis at this stage. It is more realistic to take account of them by means of local, detailed appraisal, when the desirability of resource development has been established.

Thus resource potential analysis would initially be based on accessibility and physical suitability, and could be undertaken by means of a computer based system. Perhaps the most relevant example of such an analysis is the work of Duffield and Owen in Greater Edinburgh and Lanarkshire, discussed in Section 2.7. The procedure adopted there was not identical to that suggested here, since the objective was simply to identify general 'recreation environments' (i.e. areas suitable for a range of land and water based activities, active and passive) rather than sites for individual activities. Nevertheless, the principle of the analysis was the same. The inverted seiving process was initially undertaken manually, and the data was later transferred to a computer system; the benefits resulting in terms of flexibility are well illustrated by Owen (1972).

When resource potential has been identified in this way, changes to tourism supply can be introduced as an option into the future supply-demand assessment. Where such changes imply/

a loss of current capacity (through change of use), then that potential loss must be taken into account in the assessment.

5.6 Analysis of future supply-demand relationships

The research described in Section 5.4 must provide a thorough understanding of the existing and potential tourism markets for the region - an understanding which, be it in the form of a model or not, must enable prediction of the effect on the volume, nature and distribution of demand[1] of factors (notably tourist promotion and changes in tourism supply) which are controllable by those organisations involved in tourism planning, and of other factors (social, economic and technological changes) which are less controllable by them.

The first use of the forecasting procedure should be based on projected supply. If, in the first instance, promotion is assumed to be zero, the effect of various levels of social, economic and technological change can be tested. The forecasting procedure should then provide estimates of the minimum and maximum pressures on existing resources which would occur without active promotion or demotion, and the corresponding spare capacity.

Taking in turn the minimum, maximum and most likely levels of change shown in this way, the effects of alternative levels and types of promotion may be tested to reveal the extent to which pressures on resources may be reduced and spare capacity filled.

Where/

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(1) In assessing future supply-demand situations it would be unrealistic and unnecessary in strategic planning to provide the detail of break-down which might be used in analysing the existing situation; analysis might reasonably be in terms of accommodation and activity groups (i.e. groups of accommodation and activities within which large amounts of substitution may take place) and undertaken for broad sub-regions.

Where marketing policies are likely to achieve one or both of these ends, this suggests a realistic planning option based on projected supply.

The next stage is to consider the further options which may be possible through the introduction of potential changes to supply. Planned reduction of supply is one possibility which may have to be considered if excess spare capacity is likely to occur in the future and be uneconomic. In a situation of growing demand, however, the main concern would be to see how the development of new facilities and resources might help to relieve predicted pressures and realise new market opportunities.

Testing should therefore be carried out on the relevant alternative supply development possibilities (for which some assessment of capacity will be required) to ascertain the extent to which each may achieve these ends. The testing should be undertaken for different levels of social, economic and technological change (again, minimum, maximum,-and most likely levels would seem appropriate) and would initially assume zero controllable promotion - i.e. it would assess the likely effect of additional supply alone on the volume and patterns of demand, and hence on the supply-demand balance. This may directly indicate further feasible strategy options. However, with each supply development possibility, consideration might also be given to the possible additional effects of appropriate marketing, where this might increase the utilisation of supply, and further strategy options may thus emerge.

In all cases, the variation in demand which might arise from changes in the less controllable factors will indicate the extent of flexibility which must be catered for in tourism strategies.

The above process will suggest options for consideration in the strategy generation stage which are based solely on satisfactory/

supply-demand relationships. No account is yet taken of their desirability in social, economic and environmental terms. Such consideration must be incorporated into the planning process through impact analysis.

5.7 Assessing the potential impact in relation to planning objectives of different types of tourism development

Research to provide a basis for estimating likely future impacts of tourism development in relation to planning objectives will be required at two stages in the planning process. At the strategy generation stage it is necessary for the planner to have a broad understanding of the extent to which different policies are likely to achieve the tourism planning objectives, in order to avoid the generation of unrealistic strategies. At the strategy evaluation stage the research must enable a relatively rigorous assessment of the likely impact of the alternative strategies in terms of the objectives.

In essence, it is necessary to carry out research on past impacts in such a way that they provide a basis for assessing future impacts. In assessing past impacts, it is helpful to divide them into the economic and non-economic elements. This is not to imply that the economic elements are any more or less important than the non-economic elements, but simply that a different approach is required.

In analysing impacts in respect of economic objectives, there appear to be two alternative approaches:

(a) To develop further an approach involving use of multipliers, developed either through an ad hoc approach or from an input-output analysis.

In adopting this approach it would be necessary to recognise the limitations of previous studies involving multipliers (as pointed out by Bryden, 1973 - see Section 2.8) and attempt to overcome them. In particular it would be necessary to provide a means of weighing against the benefits, as shown by multipliers, the costs - both the actual costs of increasing demand (through promotion, development, incentives,etc.) and/

and, if possible, the opportunity costs. The former is relatively easy to obtain; the latter may prove much more difficult.

In addition, multiplier analysis must be designed to meet the full needs of the tourism planner, by providing differential multipliers for different types of tourism; Archer (1973) has provided such a breakdown for Anglesey, but confined it to four accommodation user groups. It would be desirable not only to increase the number of such groups, but also to produce differential multipliers for other market segmentations, the most obvious being in terms of activities undertaken. It is also likely that multipliers will vary between different types of area, and research should attempt to measure such differences. If differential multipliers of this type can be produced, the information may attain a wider applicability than would otherwise have been the case. Thus a hotel user income multiplier for the Highlands and Islands region might not be applicable to the Grampian region, but an income multiplier calculated for the rural areas in the Highlands and Islands may have considerably more relevance to the rural areas in Grampian.

A study currently being carried out in the Tayside region by the University of Edinburgh for the Scottish Tourist Board is attempting to achieve the multiplier refinements outlined above. The region has been broken down into areas which have been allocated to one of five different "settlement types", with one area or town within the region being taken as representative of each settlement type for fieldwork purposes. The settlement types are:

type	case study
nodal town	Perth
naturally evolved tourist centre	Pitlochry
seaside resort	Arbroath
town with special tourism characteristics	St. Andrews
rural area	Loch Tayside, incorporating Killin and Kenmore

For/

For each of these settlement types, differential multipliers are being calculated, using an ad hoc multiplier based on that developed by Archer in Anglesey, for nine accommodation user groups and four activity groups. It is specifically the Scottish Tourist Board's hope that, with this degree of refinement, the multipliers will be usable, possibly with some modification, in tourism planning studies throughout Scotland. The extent to which this ideal will be possible has yet to be ascertained.

The ad hoc approach being used in Tayside to calculate the multipliers is substantially less costly than a full input-output analysis, but, even so, requires collection of a substantial amount of tourism data which are unlikely to be available as a matter of course at a regional level. On the assumption that information on the volume and patterns of tourism is available from other research studies (as suggested in Section 5.2), the main information to be collected relates to business operations and tourist expenditure. A survey of businesses must cover a representative sample of types of business connected with tourism and procure detailed data on operations, such as monthly turnover, staffing and costs, which is best obtained by access to accounts.

Tourist expenditure surveys are by no means simple operations, there being two basic problems:

- contacting a valid sample
- obtaining accurate information.

By the same reasoning as was applied in Chapter 3 to surveys of existing demand, the cordon approach is again to be recommended if it is at all possible. This was the method used in the Tayside impact study. Obtaining data on expenditure poses severe problems of recall, and the method adopted in Tayside of using a diary type approach (i.e. taking people step by step through their expenditure) over a limited period, in that case two days, would seem to be the most fruitful.

Input/

Input-output analysis, which is concerned with the total economy, requires very much more data than this - hence its very much greater cost. However, not only does it give slightly more accurate multipliers and information useful in threshold analysis (Archer, 1973, see Section 2.8), but in providing multipliers for other economic activities, it gives a basis for a broad assessment of opportunity costs associated with tourism strategies.

(b) To develop a new cost-benefit procedure

The 'social cost-benefit' procedure which Bryden developed for the Caribbean (see Section 2.8) appears to have considerable merit, avoiding weaknesses inherent in the multiplier approach by incorporating opportunity costs (through a shadow wage rate) and other costs as an integral part of the accounting procedure, enabling calculation of a rate of 'social return'. However, the procedure could not be applied directly at a regional level because of data deficiencies, nor is it necessarily appropriate to a 'developed' country such as Scotland. It must suffice to say here that it would seem worthwhile for future research to attempt to devise a methodology for a comparable procedure which is suitable for application in the regions of Scotland.

Thus, while the state-of-the-art is still far from perfect, there is at least some basis for future work on evaluating economic (monetary and employment) impacts of different types of tourism in terms of net benefits. Much less of a basis exists for evaluating the impact of tourism in respect of social and environmental objectives. The difficulties in evaluating strategies against such objectives will vary according to the nature of the objectives. If social objectives are concerned purely with provision for local needs - e.g. improved entertainment, transport or health facilities - then measurement (but not necessarily evaluation) is relatively straightforward. If however they are less tangible -e.g. to improve the quality of life, to maintain or enhance the indigenous culture and community structure, or to reduce perceived disbenefits to local people - the problems/

problems of measurement are very great. This is an area of social research which is virtually uncharted, and for which it would be presumptious to suggest a methodology. The situation regarding the assessment of environmental impacts is very similar - some relatively easy to measure (e.g. the removal of dereliction), others much more difficult (e.g. noise, road congestion).

With both social and environmental impacts it must suffice here to say that research could be carried out at one or both of two levels:

1. assessing impacts <u>as perceived</u> by the local people; this is subject matter for advanced social survey work including group discussions and depth interviews;

2. measuring the actual impacts; this would be a very different matter from 1., and probably much more difficult. It is an area where sociologists and earth scientists could make an important contribution to tourism research.

If a regional plan has objectives concerned with benefits to <u>consumers</u>, further major problems of measurement arise, since this is another area where there has been little satisfactory research. As far as the writer is aware, no researchers have attempted to measure actual benefits received by consumers. The 'normal' procedure, as adopted by economists such as Clawson (1959) and Smith (1971), has been to measure the <u>cost</u> to the consumer of undertaking a recreational experience as a surrogate for the benefits to him. For the purpose of assessing impacts within regional studies, this is not conceptually the most satisfactory approach, but the problem is such that it may be the only realistic one.

However, additional research into the possibility of devising more direct measurements would seem to be justified. Again, methods cannot be detailed here, but it is evidently another area for sophisticated social survey work - one for which the cordon survey approach to obtaining a sample seems neither/

appropriate nor necessary. The key issue is whether any unit of consumer enjoyment (or dissatisfaction) can be devised and measured with respect to alternative proposals for the development of tourism.

It can be seen that quantitative evaluation of strategies against many of the possible non-economic objectives would be difficult at the present state of knowledge; by and large the necessary methods of measurement do not exist, let alone criteria which might easily be applied within regional planning studies. There would appear to be a need for a large programme of methodological research, which, taken as a whole, would almost certainly be beyond the scope of any regional research programme. But until such research has been undertaken, the attainment of non-economic objectives may have to be judged largely on a subjective basis.

It is in dealing with factors like these that a goals achievement approach to evaluation(1) has particular advantages, firstly because it provides a framework for undertaking a comprehensive evaluation which can encompass diverse factors such as discussed above; secondly, because subjective judgements can be incorporated without difficulty, since all impact assessments have to be reduced to a simple score.

Conclusion/

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(1) This is a method whereby objectives are weighted in accordance with the importance attached to each, and impacts are then scored in terms of the extent to which the objective is achieved. For each alternative strategy being considered, the score against each objective is multiplied by the objective weighting, and the products for all objectives are summed. The aggregate scores for each of the alternative strategies can then be compared as a basis for evaluation.

Conclusion

It is recognised that the programme of research suggested in this thesis is large in scope and complexity, and would require very considerable financial resources - probably well over £100,000 at 1974 prices. However, the return from this investment, in terms of greater net benefits resulting from the implementation of strategies based on the research, should be very considerable.

Even if a full programme of work cannot be mounted as a single exercise, the aim should be to relate work on particular aspects of tourism to a framework of total research requirements, so that the objectives and outputs of the work can be designed to maximise the contribution to long term planning. If this research has helped to provide such a framework, it will have fulfilled one of its objectives.

Together with a recognition of the full extent of research requirements of the regional tourism planning process, there must also be an awareness of the dynamic nature of tourism, springing from the rapid changes which are possible in the nature of visitor populations. Hence tourism plans and their research data base must be subject to regular review.

It must be stressed that this thesis has been concerned with just one area of the tourism planning and development process, as outlined in Figure 1.2. It has not been concerned with the actual processes of strategy generation, evaluation and selection, nor has it attempted to cover the factors discussed in Section 1.2 which, like basic research, form essential inputs to strategy generation.

It is particularly important to recognise that tourism planning at the regional level cannot be carried out in isolation. It must firstly have regard to and interrelate with national tourism policies. A national policy framework is essential if policies developed in different regions are to complement rather than oppose each other. There must/

must, however, be flexibility in the national policies; as detailed policies are worked out at a regional level, the need for amendments to the national framework will become apparent. Flows of ideas and policy suggestions must be able to travel in both directions.

Secondly, the interrelationship between tourism and the social and economic life of the regional community should be understood. Tourism must be harnessed to meet the economic and social aspirations of the residents of the region as well as of the nation. But, in addition, it must be recognised that tourism is constrained and influenced by developments in other spheres of activity (e.g. the development of North Sea oil), and this argues for regional tourism planning being seen within the framework not only of national tourism planning but of national and regional plans for economic and social development as a whole.

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Yapp /

Author (Year)	Title of Document
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APPENDICES

Appendix 1

Method of Estimating the Distribution of Bednights of Holidaymakers in the Highlands and Islands using Modes of Transport other than private vehicles.

A1.1 Coach Tours

The only data provided by the coach tour operators were the number of passengers on each departure of each tour. Information relating to stops, routes travelled etc. was obtained from the company brochures. The 64 operators ran 291 tours with a total of 4,164 departures. With such a large number of operations, analysis of the data to produce planning information such as the distribution of bednights and traffic flows, was a substantial task and was therefore subjected to computer analysis. The form of the analysis adopted was basically very similar to that applied to the cordon survey data. There was one record for each coach tour which included data on the number of departures and the number of passengers per departure during each part of the season, together with details of the routes and overnight stops in the same format as that used for the cordon survey data. The same computer programs were used to manipulate the data and tabulate it to show the distribution of bednights and traffic flows.

A1.2 Rail

The information relating to rail passengers was extremely limited, consisting of British Rail records for each station in the Highlands of numbers joining and alighting from trains, broken down by direction of service, during one week in summer (August 10th to 16th) and one week in winter (October 19th to 25th), 1969.

The/

The first step was to calculate the volume of seasonal traffic in each direction at each station, by subtracting the winter figures from the summer figures. The figures of the numbers holidaying in the vicinity of each station was then based (in general) on the average of the number of seasonal passengers alighting from trains heading into the Highlands (i.e. inbound trains) and the number of seasonal passengers joining trains heading out of the Highlands (i.e. outbound trains). However, allowances were made for local traffic (i.e. local trips made by residents and by holidaymakers) based on the numbers joining inbound trains and alighting from outbound trains within the Highlands. Additionally, 10% of the traffic was taken as being seasonally generated non-holiday traffic coming from outside the Highlands.

The calculations undertaken were complex and involved many arbitary assumptions. This was particularly the case with certain anomalous situations, notably:

a) on the Aberdeen to Inverness line, where holidaymakers coming from outside the Highlands to stations within the study area could approach from either direction.

b) at the coastal termini (Mallaig, Kyle, Oban and Thurso), it was necessary to assume proportions travelling on to the islands by boat;

   - at Kyle and Mallaig it was assumed that 60% of arriving holidaymakers travelled on to Skye and 20% to the Outer Isles.

- at/

- at Oban it was assumed that 10% continued to Mull and 5% to Barra or South Uist.
- at Thurso it was assumed that 25% continued to Orkney.

c) at Aviemore where it was assumed that 25% of holidaymakers continued to Grantown-on-Spey and 25% to Glenmore.

Otherwise it was not possible to make any allowance for people travelling to areas beyond the vicinity of the stations.

A1.3 Sea

The data of passengers using the shipping services from Aberdeen to Orkney and Shetland consisted of the monthly figures of passengers travelling each way during 1969. The main figures used were those of arrivals in Orkney and Shetland and the first step was to calculate the seasonally generated element. This was done by subtracting from the summer month totals a base all-year-round element. The figure taken as the base element was the total for November or March, which ever was the higher; this was on the basis that of the five winter months (November - March) December and January might show distorted figures because of holidays at Christmas and New Year, while February is abnormally low. The seasonally generated arrivals thus calculated for the months April - October were then reduced by 10% to allow for seasonally generated non-holiday traffic. The estimated numbers of holiday arrivals were then multiplied by an assumed length of stay of 12 nights (i.e. about 4 nights longer on average than the stays of private vehicle holidaymakers to the Highlands and Islands as a whole) to give the number of bednights spent by holidaymakers arriving by sea during each month. Allowance was then made for people staying

over/

over from one month to the next, using the assumptions:

a) that arrivals during each month were spread evenly over the days of that month,

b) that everybody stayed the same length of time

The total number of bednights thus estimated for July and August 1969 were divided by 62 to give the average number of persons on the islands each night who had come by sea from Leith and Aberdeen; this is the figure used in Table 4.1.

A1.4 Air

The data on air passengers was the number of passengers movements (boarding and leaving aircraft combined) at each Highlands and Islands Airport during each month of 1969. The holiday element of these figures was calculated by exactly the same procedure as was used for sea travellers. As the split by direction was not available, it was necessary to use for each month the average of the arrivals and departures as the base figure. The relationship between this figure and the number of bednights spent by air arrivals during the month was obtained by using ratios derived for the sea traffic data, in order to allow for;

a) more arrivals than departures during the early months and vice versa in the later months,

b) holidaymakers staying from one month to the next.

Obviously use of ratios relating to the sea traffic was not entirely satisfactory, but it was better than making no allowance at all.

An estimate was thus obtained of the number of bednights spent in the Highlands and Islands during each summer month by holidaymakers arriving at each airport. A problem arose regarding the allocation of

these/

these bednights to particular areas. In the absence of any statistical data, the assumption had to be made that they were spent in the settlements nearest to the airports. This seems a reasonable assumption, except perhaps in the case of Inverness where the traffic may have dispersed more widely.

Appendix 2 Cordon survey questionnaire

University
of Strathclyde

Highlands and Islands Tourism Survey

under the auspices of
The Highlands and Islands Development Board

Project Director : Roger Carter B.Sc.
Ross Hall, Crookston Road, Glasgow S W 2 Tel: Halfway 1717-8

We are asking you to help us with a survey concerning the movements and activities of tourists in the Highlands and Islands. We would like to know what you did on holiday in the Highlands and what you thought about the holiday facilities which were available to you. This information will help us to know the best ways to improve touring conditions and holiday facilities for the benefit of future holiday-makers in the Highlands and Islands.

This is an earnest effort on our behalf to find out what improvements (if any) tourists want, to help us in planning for the future. YOUR help is very important to us in this. We ask you simply to fill in this questionnaire as soon as you have left the Highlands; then return it to us in the reply-paid envelope (NO POSTAGE STAMPS ARE NECESSARY IF IT IS POSTED IN BRITAIN) as soon as possible. We do not ask for your name and address on the questionnaire, so that all information will be given in complete confidence.

We need your help to make the survey effective and reliable, and we will be grateful for your support. But we also hope that you will find the questionnaire interesting to fill in - perhaps as you are travelling home.

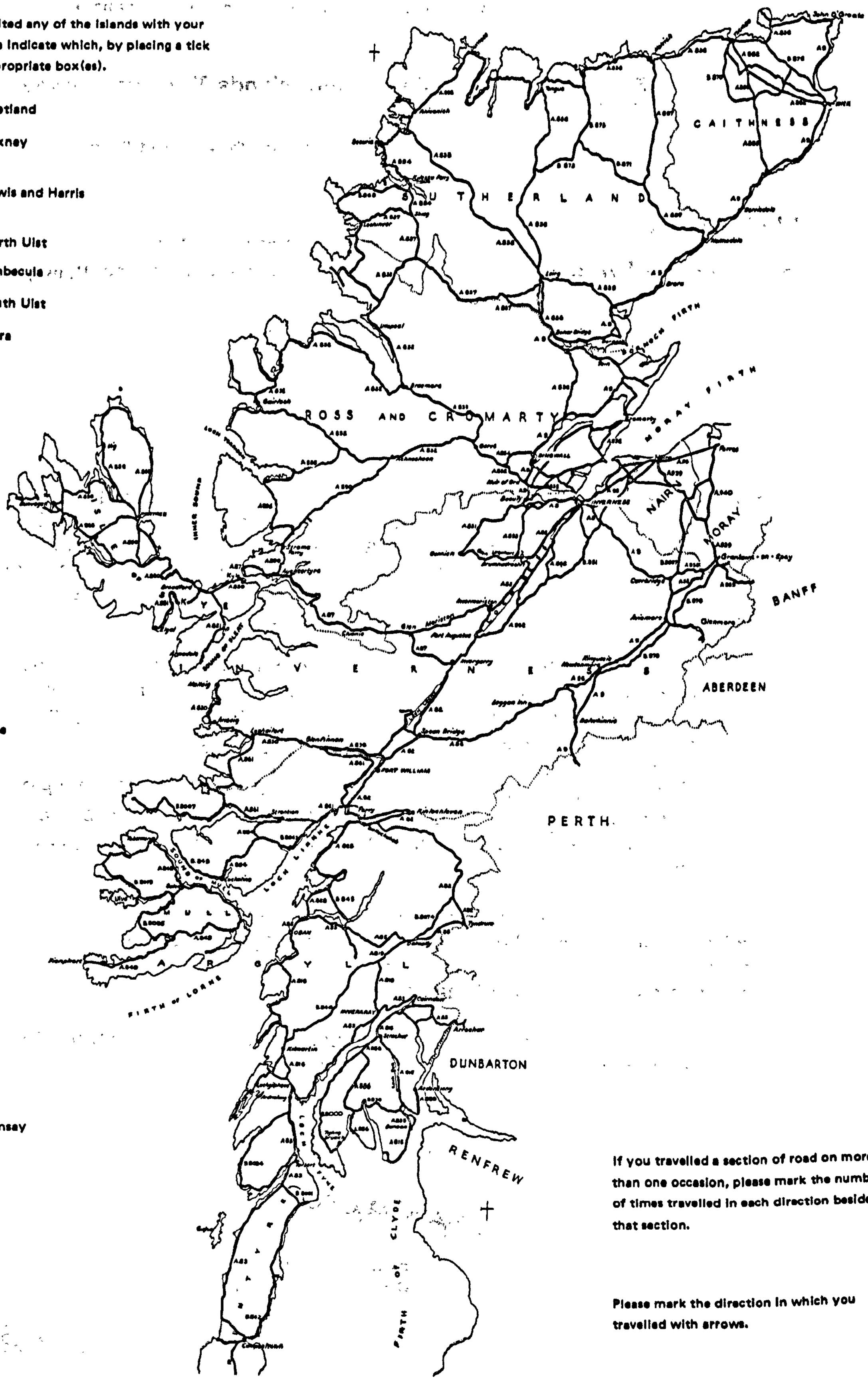
Should you have any queries, please do not hesitate to 'phone or write to me at the above address.

Many thanks

Roger Carter
Project Director.

If you visited any of the islands with your car, please indicate which, by placing a tick in the appropriate box(es).

- ☐ Shetland
- ☐ Orkney
- ☐ Lewis and Harris
- ☐ North Uist
- ☐ Benbecula
- ☐ South Uist
- ☐ Barra
- ☐ Coll
- ☐ Tiree
- ☐ Colonsay
- ☐ Islay
- ☐ Jura



If you travelled a section of road on more than one occasion, please mark the number of times travelled in each direction beside that section.

Please mark the direction in which you travelled with arrows.

1. On the road map opposite, please mark the route (excluding short local journeys) which you followed during your holiday in the Highlands and Islands, showing the direction travelled by an arrow. If possible, please use a colour pen or pencil for this.

2a. Was your route decided before you came on holiday? ☐ yes ☐ no

b. What were the three most important influences on your choice of route? (Tick in up to THREE boxes only)

- ☐ selection of route passing specific attractions
- ☐ access to a specific destination
- ☐ AA or RAC information
- ☐ guidebook information
- ☐ information shown on a map
- ☐ information from the Scottish Tourist Board or the H.I.D.B.
- ☐ advice from friends or relations
- ☐ previous personal knowledge
- ☐ advice from information centre(s)
- ☐ newspaper or journal article
- ☐ weather
- ☐ chance choice of route

3. What attracted you and your party to the Highlands and Islands for this summer holiday? (Please mark THREE only of the following factors, with 1st., 2nd. and 3rd., according to their order of importance)

- ☐ festivals and special events
- ☐ beaches
- ☐ sports events (spectating)
- ☐ active recreation
- ☐ motoring conditions
- ☐ peace and quiet
- ☐ scenery
- ☐ scientific interest
- ☐ evening entertainments
- ☐ hope of good weather
- ☐ interesting places to visit
- ☐ hope of good accommodation and food
- ☐ visits to friends or relations
- ☐ curiosity

4. Where do you live at present?

Town _____

County _____

Country (if outside Britain) _____

5. How many times have you been to the Highlands before for a holiday -

i. in summer _____ ii. in winter _____

6a. How many nights did you spend in the area shown on the map? _____ nights.

b. Please list in order the places IN THAT AREA in which you stayed (or the nearest recognised place to the point where you stayed), and state the number of nights you spent at each place.

order of stop	place	number of nights
1st.		
2nd.		
3rd.		
4th.		
5th.		
6th.		
7th.		

order of stop	place	number of nights
8th.		
9th.		
10th.		
11th.		
12th.		
13th.		
14th.		

7a. For holidays in the Highlands and Islands, would you like to see significant improvements in:

i. motoring conditions ☐ yes ☐ no

ii. general tourist facilities - accommodation, cafes, shops, etc. ☐ yes ☐ no

iii. sports facilities ☐ yes ☐ no

iv. information - information centres, maps, guidebooks, brochures, etc. ☐ yes ☐ no

7b. Please record any opinions or comments you have concerning any improvements which you would like to see:

PLEASE TURN OVER

8. What holiday activities were pursued WITHIN THE AREA ON THE MAP by the people in the different age groups within your party? For each activity please record THE NUMBER IN EACH AGE GROUP taking part in that activity.

	under 15	15 - 20	21 - 30	31 - 45	46 - 60	over 60
touring around						
visiting places of interest						
day coach tours						
boating						
sailing						
canoeing						
swimming or beach activities						
sea fishing						
coarse fishing						
game fishing						
pony trekking						
riding						
golf						
tennis						
outdoor bowls						
walking						
climbing						
field sports						
skating						
scientific (field) activities						
theatre or concerts						
dance or ceilidh						
cinema						
bingo						

others _____

9a. Were there any of the above activities which any members of your party would have liked to pursue, but which they could not because of lack of facilities or information about facilities? ☐ yes ☐ no

b. What were they? _____

THE NEXT SECTION SHOULD BE FILLED IN BY THE LEADER OF THE PARTY

This information is required for statistical purposes only

What type of accommodation did you use for the majority of your holiday?

- ☐ hotel
- ☐ guest house
- ☐ bed and breakfast
- ☐ farmhouse
- ☐ rented accommodation
- ☐ site caravan - rented
- ☐ site caravan - own
- ☐ touring caravan
- ☐ tent
- ☐ hostel
- ☐ with relations or friends
- ☐ personally owned
- ☐ accommodation

What type of vehicle did you use on holiday?

- ☐ own car
- ☐ hired or borrowed car
- ☐ minibus
- ☐ dormobile
- ☐ van
- ☐ motor cycle
- ☐ cycle

Please indicate if you were towing:

- ☐ caravan
- ☐ trailer

How many were there in your party? _____

Please place them in the following age groups:

age	number
0 - 1	
2 - 3	
4 - 14	
15 - 20	
21 - 30	
31 - 45	
46 - 60	
over 60	

If you are willing, please state (anonymously) your gross income group.

- ☐ under £750
- ☐ £750 - £1,250
- ☐ £1,250 - £2,500
- ☐ over £2,500.

Appendix 3

Calculation of ratios for deriving peak hour road traffic flows from daily flows

The best source of information on hourly flows of traffic on roads throughout the Highlands during the peak season are the SDD traffic censuses. These are carried out during August, with approximately one third of the census points being covered each year. It is a manual, classified count normally carried out over a 16 hour day (06.00 - 22.00) on one Sunday and one Monday during the month. The procedure is then to calculate a seven day average from this two day count by multiplying the Monday figures by 5.5 and the Sunday figures by 1.5, summing them and dividing by 7.

Two-day count data were obtained for a sample of the census points covered by the 1969 census as shown on Map A3.1, and from this 'seven day averages' were calculated for each hour of the day for each point. This was done firstly for private vehicles and the hourly distributions thus obtained were graphed, each hour's traffic being related to traffic in the peak hour (= 100). The census points were then grouped according to the characteristics of the graphs and their relative location. Fig. A3.1 shows the graphs of the individual checkpoint flows, divided into five groups:

	points on Map A3.1
checkpoints on the A9	1-4
checkpoints on the A82/A85	5-8
checkpoints on roads to the west coast	9-11
checkpoints on the west coast	12-15
checkpoints on the Islands	16-19

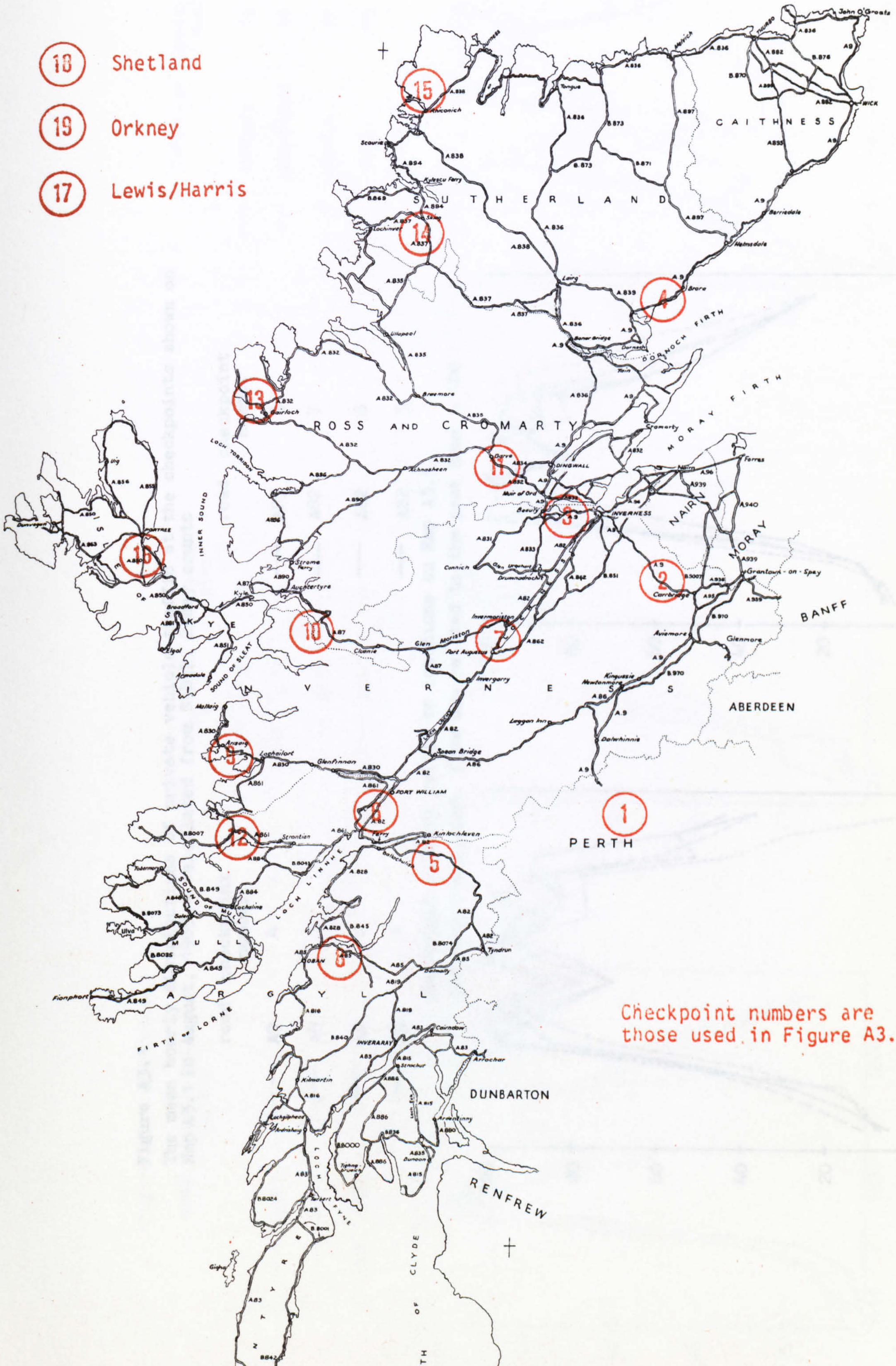
The/

Map A3.1 Location of the sample of checkpoints for which hourly private vehicle traffic distributions are given in Figure A3.1

(18) Shetland

(19) Orkney

(17) Lewis/Harris



Checkpoint numbers are those used in Figure A3.1

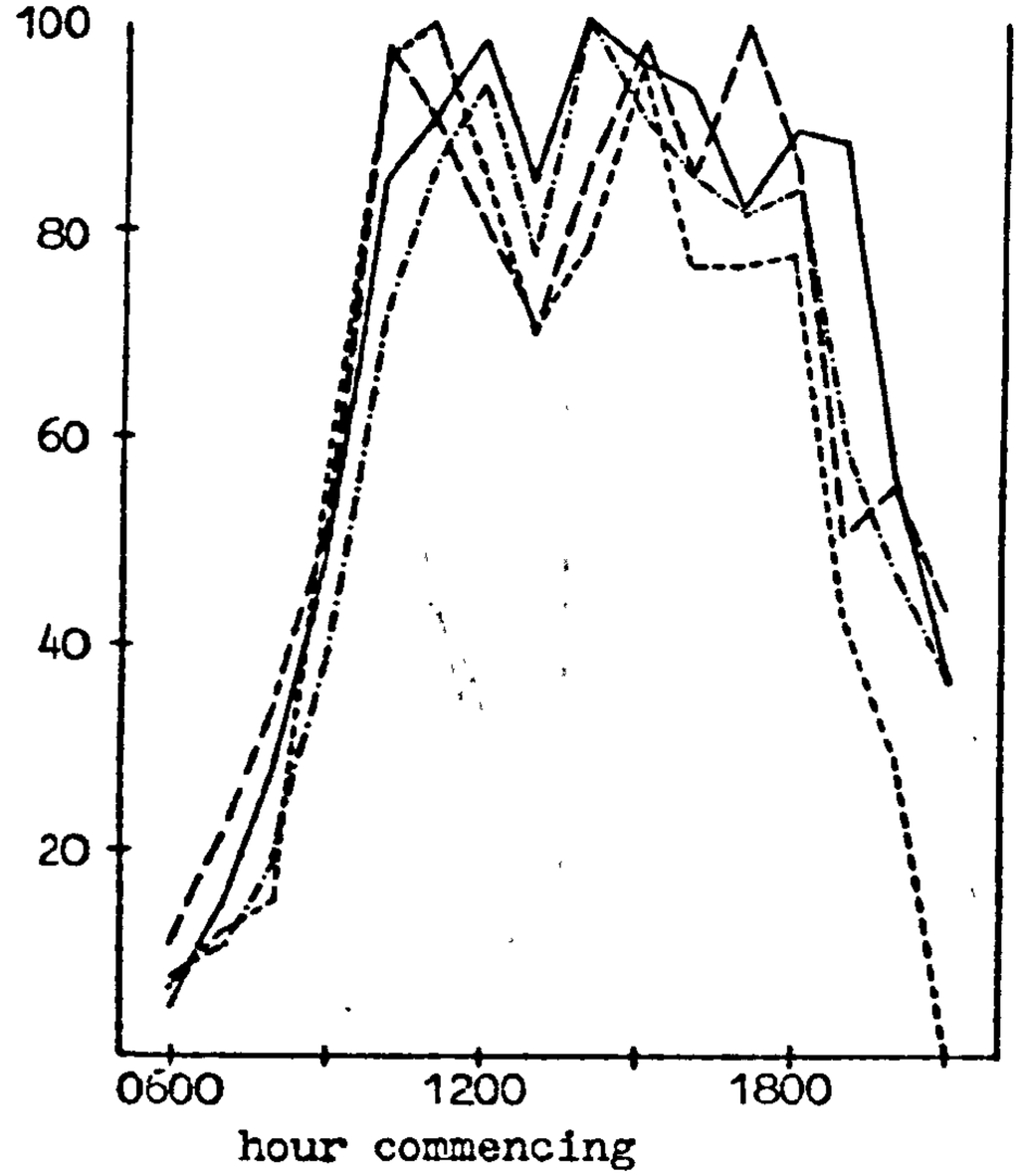
Figure A3.1

The mean hourly distributions of private vehicle traffic at the checkpoints shown on Map A3.1 in August, 1969 - calculated from S.D.D. 2-day counts

	road	checkpoint number		road	checkpoint number
-·-·-	A9	4	----	A85	8
— —	A9	3	— —	A82	7
— ·— ·—	A9	2	— ·— ·—	A82	6
——	A9	1	——	A82	5

checkpoint numbers relate to locations on Map A3.1

for each checkpoint, flow are related to the peak hour = 100



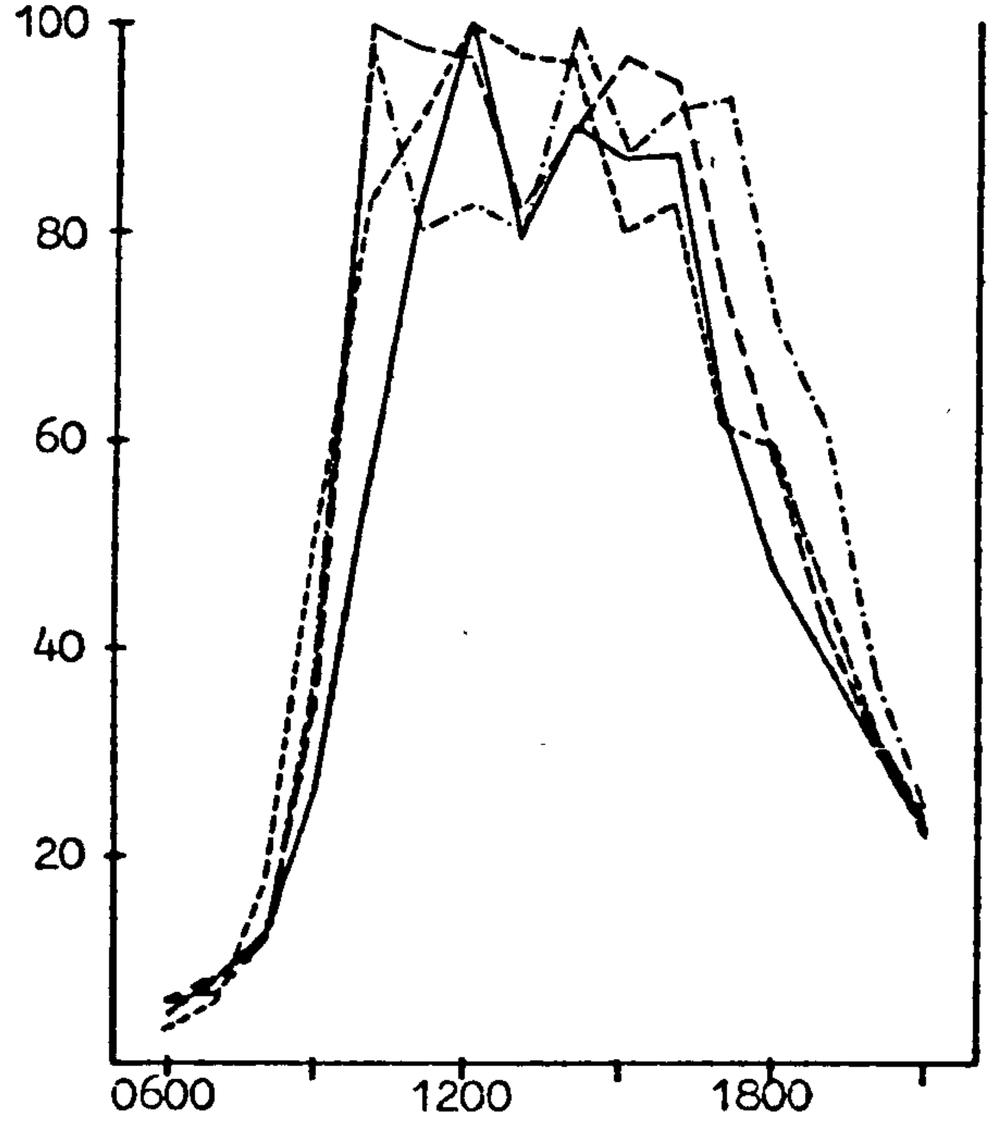
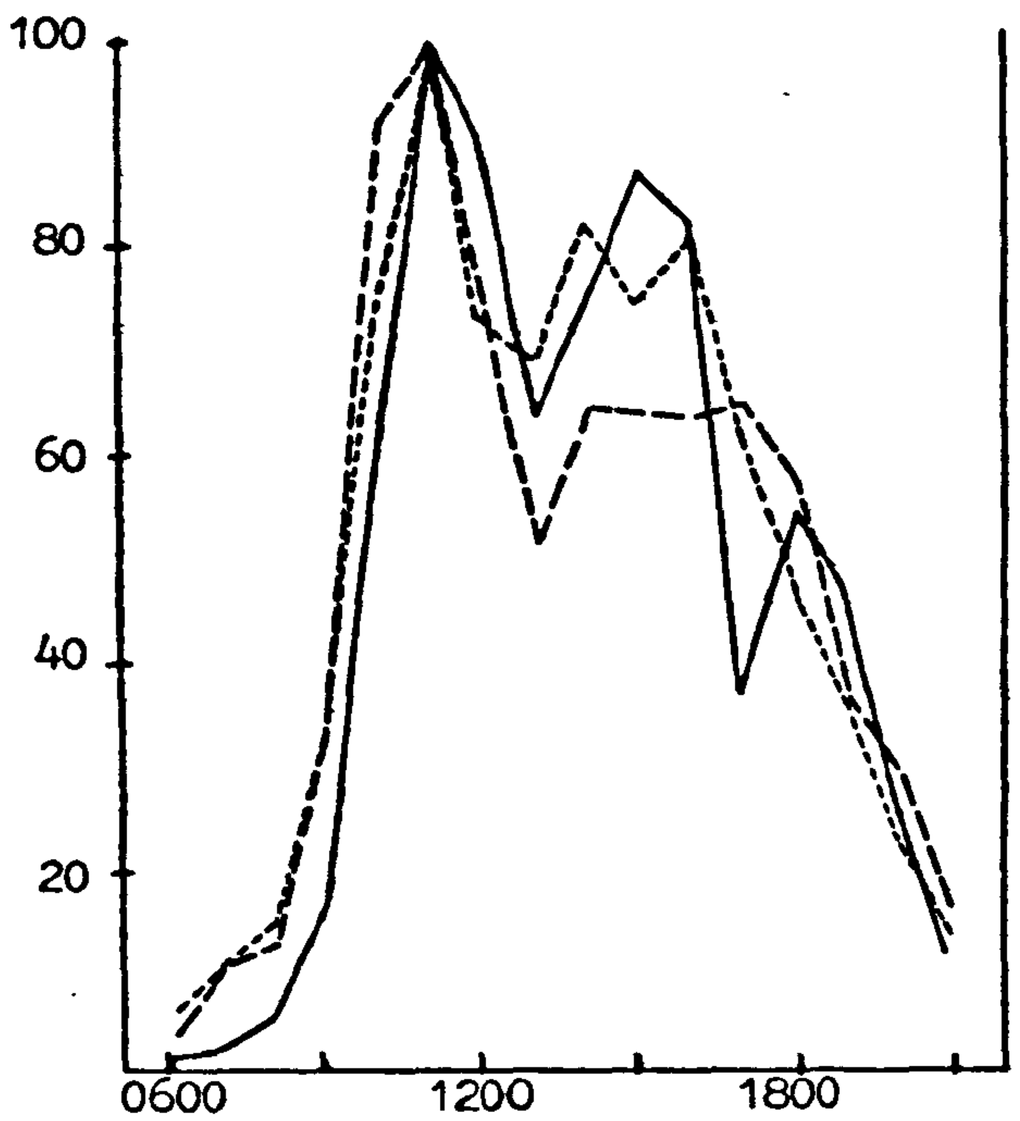
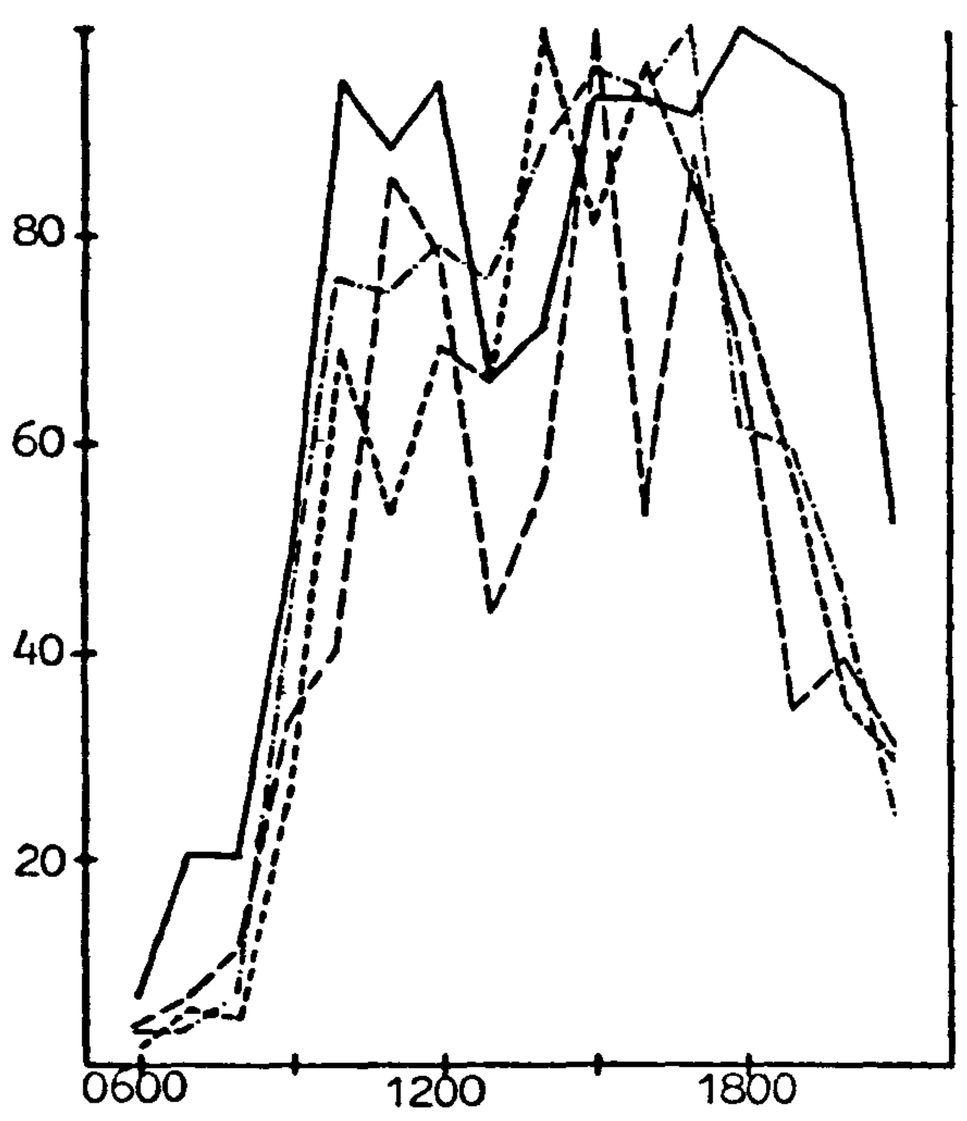


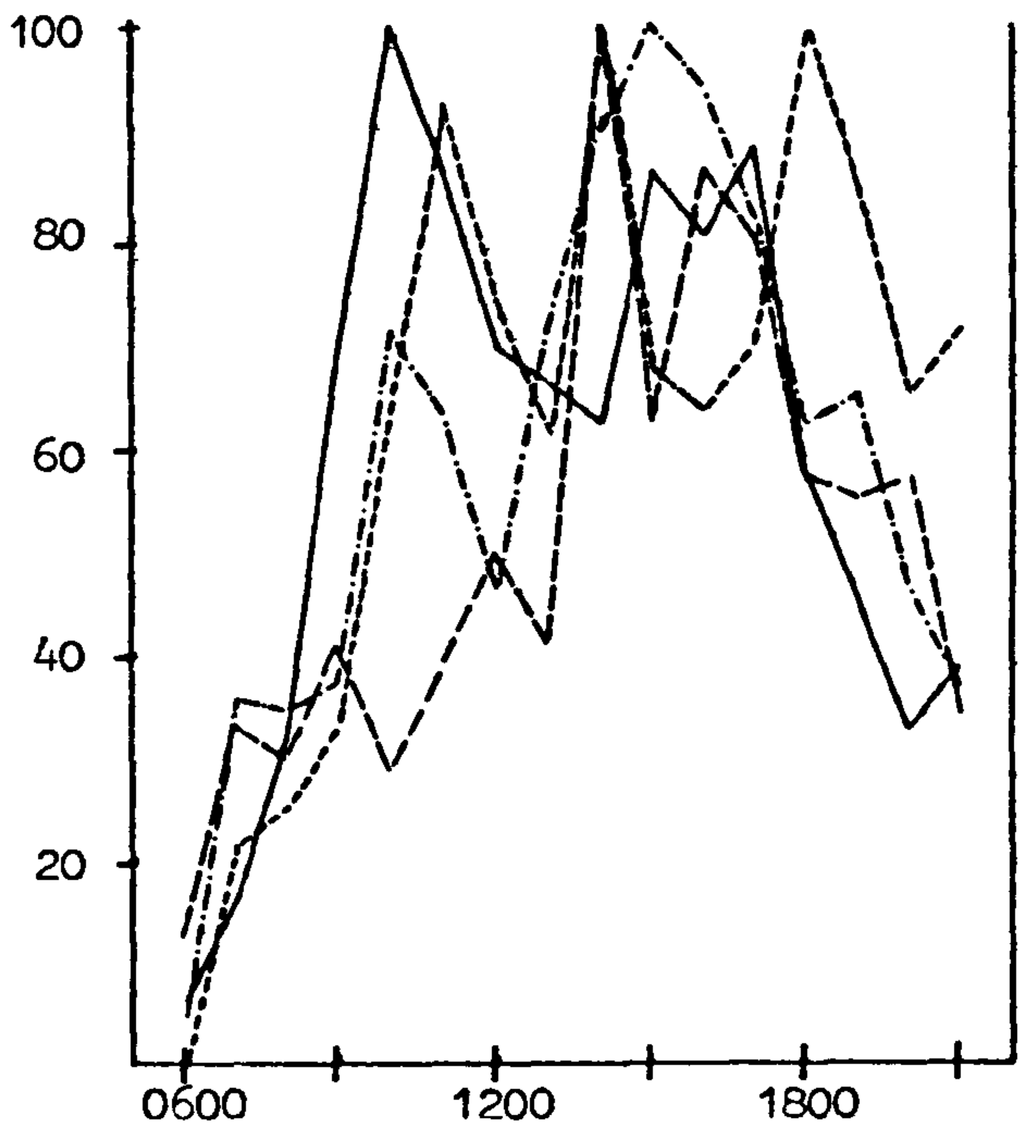
Figure A3.1 (continued)

road	checkpoint number
A832	11
A87	10
A830	9
A838	15
A837	14
A832	13
A861	12

location	checkpoint number
Orkney	19
Shetland	18
Lewis	17
Skye	16







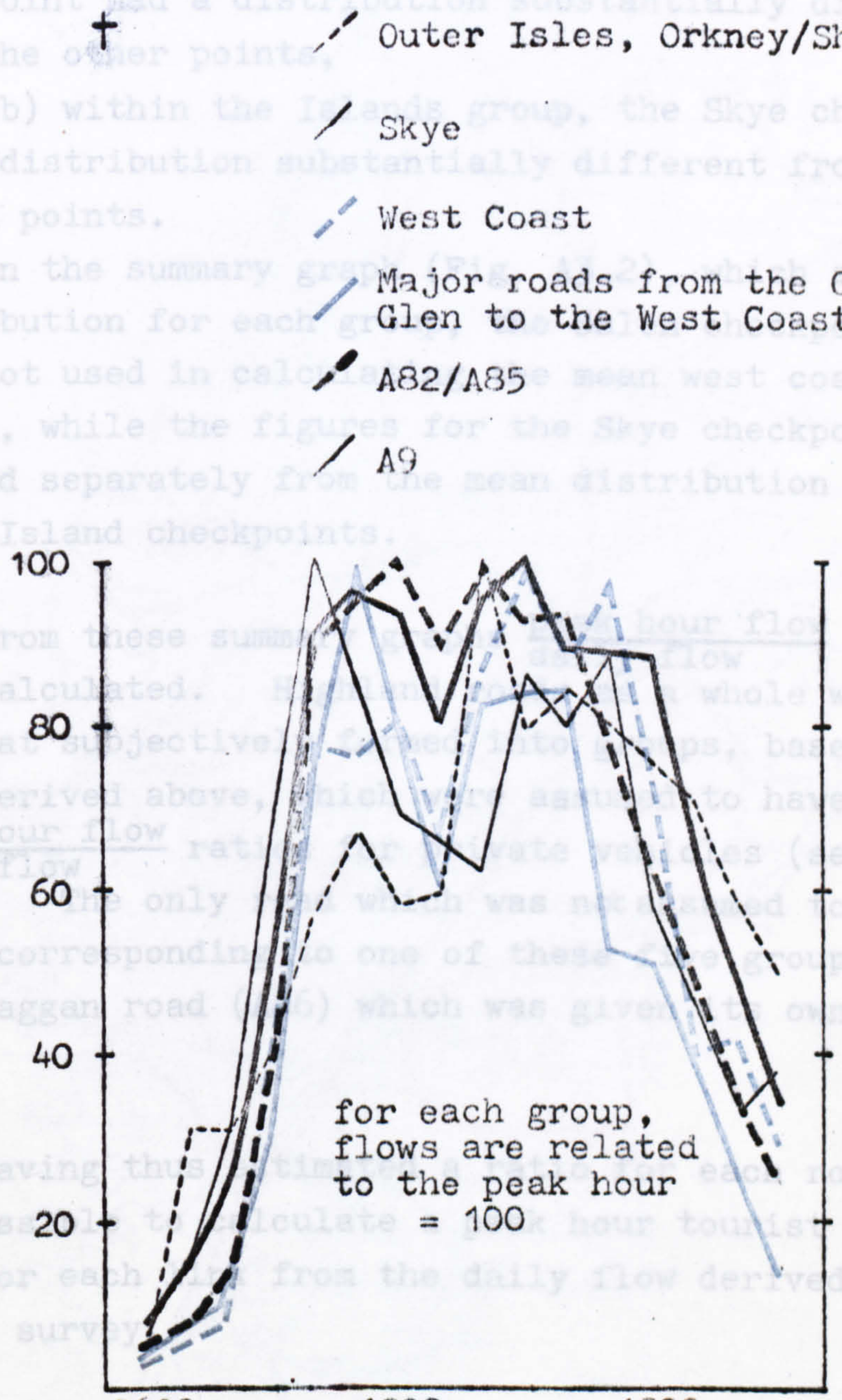


Figure A3.2

The hourly distributions of private vehicle traffic averaged for distinct groups of checkpoints, based on the counts illustrated in Figure A3.1

†

The checkpoints within each of these groups demonstrated similar distribution characteristics, except:

(a) within the west coast group the Salen checkpoint had a distribution substantially different from the other points,

(b) within the Islands group, the Skye checkpoint had a distribution substantially different from the other Island points.

Thus in the summary graph (Fig. A3.2), which shows the mean distribution for each group, the Salen checkpoint figures were not used in calculating the mean west coast distribution, while the figures for the Skye checkpoints are graphed separately from the mean distribution of the other three Island checkpoints.

From these summary graphs $\frac{\text{peak hour flow}}{\text{daily flow}}$ ratios were calculated. Highland roads as a whole were then somewhat subjectively formed into groups, based on the five derived above, which were assumed to have similar $\frac{\text{peak hour flow}}{\text{daily flow}}$ ratios for private vehicles (see Map A3.2). The only road which was not assumed to have a ratio corresponding to one of these five groups was the Loch Laggan road (A86) which was given its own unique value.

Having thus estimated a ratio for each route, it was possible to calculate a peak hour tourist traffic flow for each link from the daily flow derived from the cordon survey.

Although the ratios for coach tours were not the same as those for private vehicles, it was not a straightforward matter to calculate separate ratios for them, since, on the majority of Highland roads the /

Map A3.2 Assumed mean value for the ratio:
$\frac{\text{peak hour private vehicle flow} \times 100}{\text{daily private vehicle flow}}$
on roads in purpose defined areas

the absolute volumes of coaches are small. Consequently it is often impossible to discern a regular or meaningful hourly pattern from 2-day counts. Figure A3.3 thus presents the hourly bus and coach counts (relative to the peak hour = 100) only for the census points where the volumes were relatively large - points 1-4 on the A9, 5-7 on the A82, and 8 on the A85. Figure A3.3(a) shows the distributions for points 5-8, forming a very rough pattern. Whereas with private vehicles the peak hour accounted for about one tenth of the daily flow, with coaches the proportion at these points was about a fifth, except on Onich (which had just one main peak) where the proportion went up to one third and the peak hour there accounted for three times as much bus/coach traffic as any other hour.

At the A9 points (Figure A3.3(b)), not even a rough pattern is discernable. The bus/coach traffic at the three southernmost of these points (Nos. 1-3) tended to be less concentrated into one hour than on the A82 and A85 - peak hour traffic there forms one seventh to one tenth of the daily total. But at Golspie the situation is similar to that at Onich on the A82, with peak hour traffic being one third of the day's total.

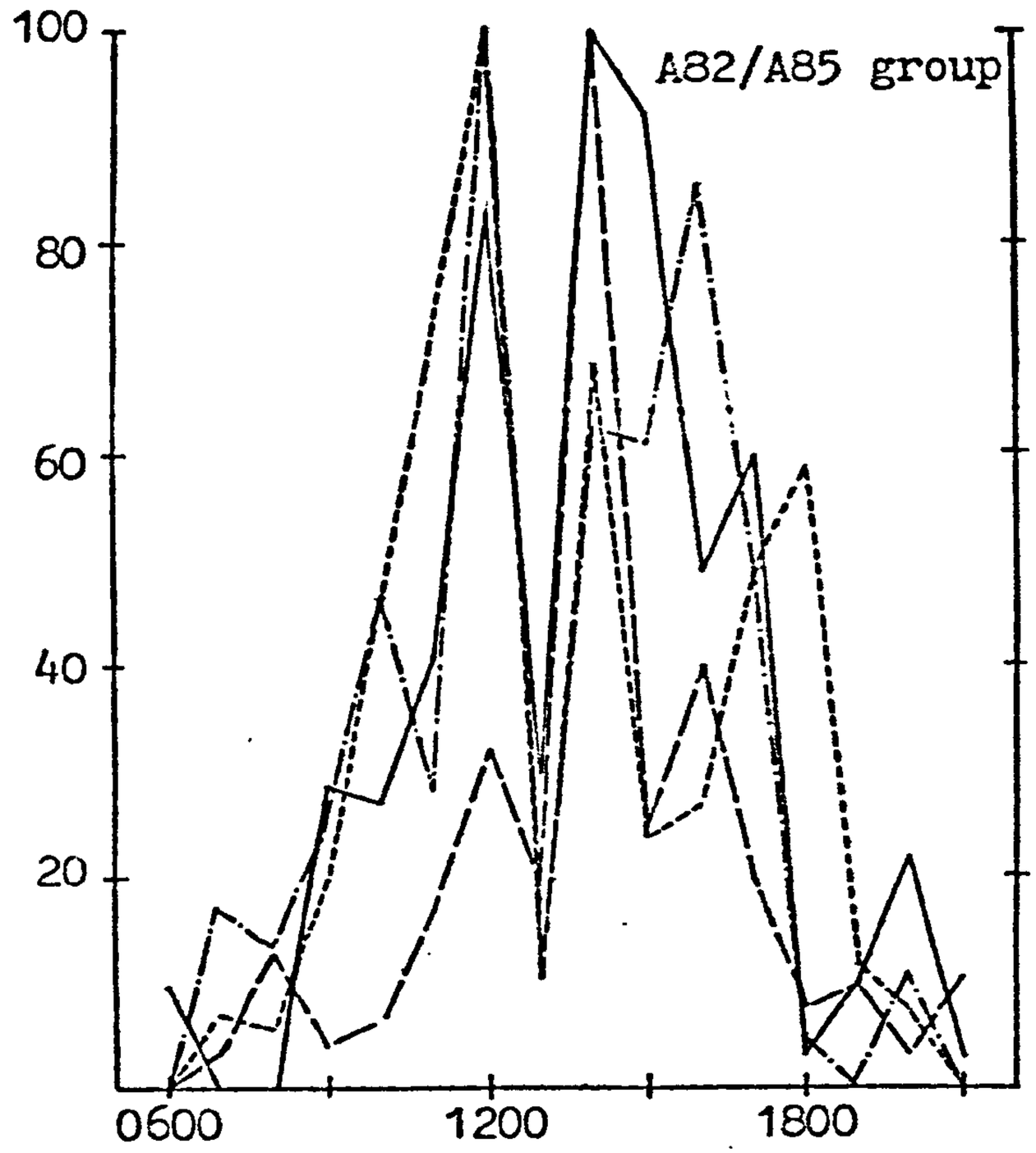
Figure A3.4 shows the 'average' pattern for the A85/A82 and A9 groups, from which $\frac{\text{peak hour flow}}{\text{daily flow}}$ ratios were derived for the two groups. The appropriate ratio was then applied to the daily flows on all A85/A82 and A9 road links to obtain a peak hour flow.

On the other roads where the volumes of coaches were too small to form a regular pattern, tourist coaches were taken as having the same ratio as private vehicles;/

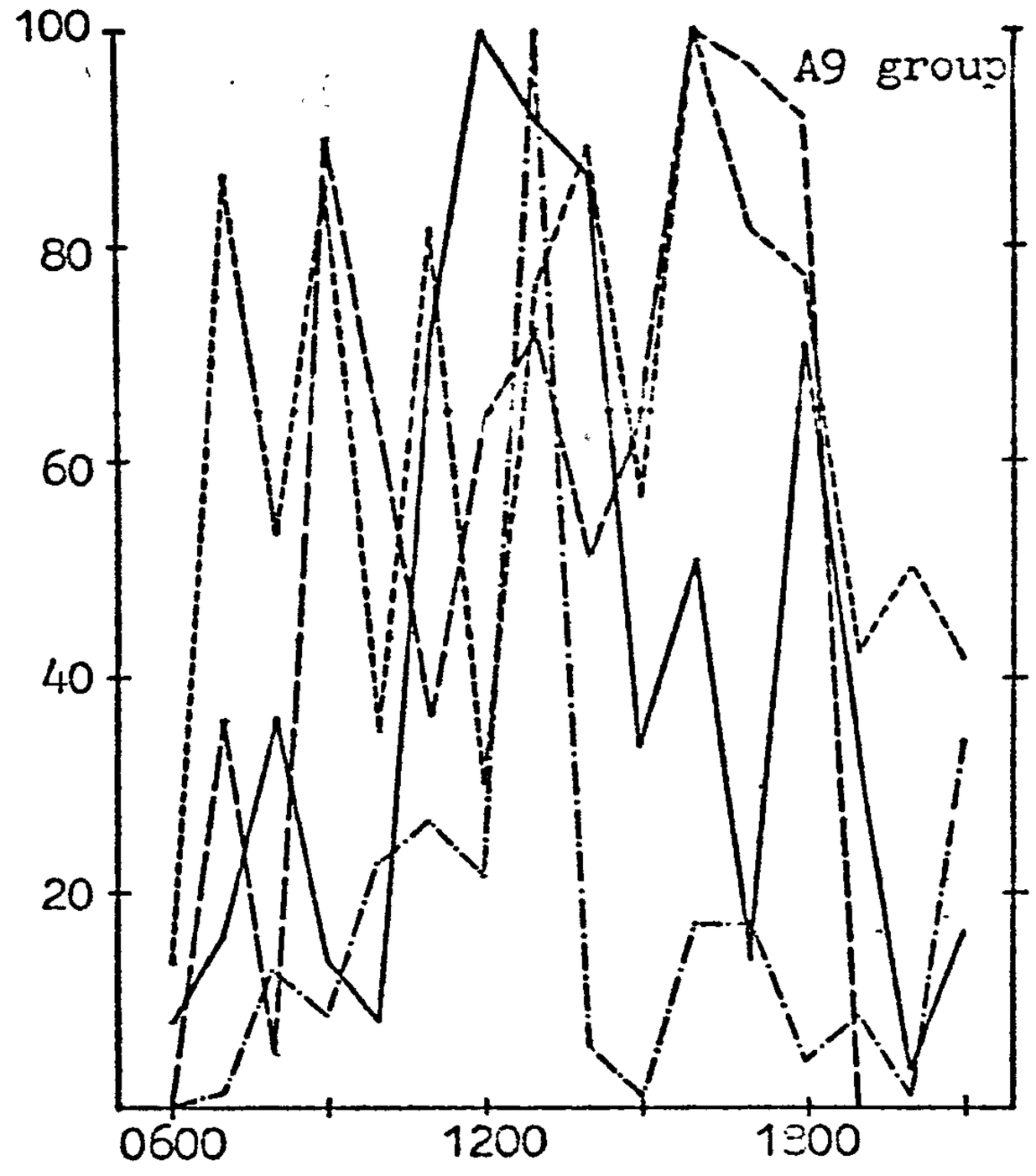
Figure A3.3

The mean hourly distribution of bus/coach traffic at checkpoints on the major roads into the Highlands in August 1969 - calculated on the basis of S.D.D. 2-day counts

flows at each checkpoint are related to the peak hour flow = 100



road	checkpoint no.
A82	5
A82	6
A82	7
A85	8

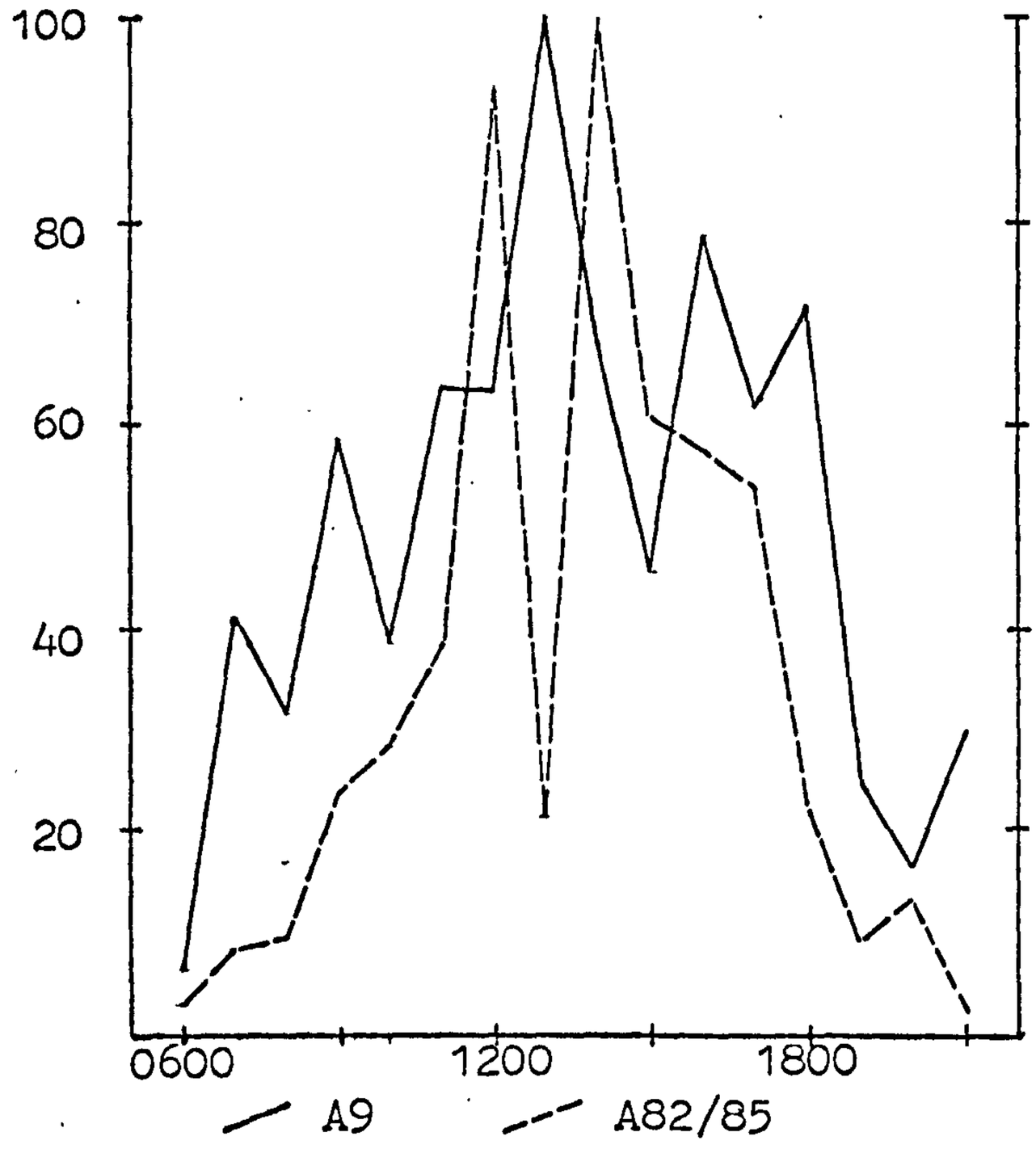


road	checkpoint no.
A9	1
A9	2
A9	3
A9	4

checkpoint numbers relate to locations shown on Map A3.1

Figure A3.4

Average hourly distribution of bus/coach traffic for the groups of checkpoints used in Figure A3.3 related to the peak hour = 100



vehicles; while not strictly correct the absolute errors involved in doing this were negligible.

TABLE A4.1

REGION OF PRESENT HOME ADDRESS

HOME REGION	PARTIES	PERSONS	BED-NIGHTS	PREVIOUS SUMMER VISITS			INCOME			
				none	one or more	six or more	under £750	£750–£1,250	£1,250–£2,500	over £2,500
Scotland										
Eastern	6	6	6	3	7	10	10	8	5	3
N. & E. Central	7	8	8	4	9	15	6	10	7	5
W. Central	10	11	14	3	14	20	15	11	9	9
South & S. East	8	8	10	3	11	18	7	8	6	10
Total Scotland	31	33	39	13	41	63	38	37	27	27
England & Wales										
North	7	7	6	6	7	5	5	9	6	5
Yorks & H'side	10	10	9	8	10	7	12	10	11	6
North West	9	9	8	9	9	5	7	10	10	7
Midlands	11	11	10	14	9	9	10	12	13	6
S.W. & Wales	5	4	4	6	4	3	2	4	6	4
S.E. & E. Anglia	21	21	20	29	17	9	15	16	22	28
Total E. & W.	62	61	57	72	56	36	51	61	68	56
Overseas										
Europe	3	3	2	8	1	-	8	1	3	5
N. America	2	2	1	5	1	-	3	-	1	8
Rest	1	1	1	3	1	-	1	-	1	2
Total Overseas	7	7	4	16	3	1	12	2	5	15
TOTAL	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100

TABLE A4.2

GROSS INCOME OF PARTY LEADER

INCOME GROUP	PARTIES	PERSONS	BED-NIGHTS	ORIGIN							NUMBER OF PREVIOUS SUMMER VISITS		
				North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East and East Anglia	Overseas	none	one or more	over five
under £750	7	7	6	9	11	6	7	5	5	13	8	7	6
£750-£1,250	29	28	25	40	31	30	33	30	21	7	26	30	27
£1,250-£2,500	42	42	42	36	39	34	45	50	44	30	43	41	42
over £2,500	22	24	27	15	19	29	16	15	30	50	23	22	25
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.3

AGE DISTRIBUTION (respondents and their parties)

AGE GROUP	PERSONS	ORIGIN							INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	under £750	£750-£1,250	£1,250-£2,500	over £2,500
0-1	1	2	2	1	1	-	-	-	1	1	1	1
2-3	2	2	3	3	2	1	1	-	7	3	1	-
4-14	18	20	19	22	18	17	18	14	5	14	22	22
15-20	10	9	9	7	9	9	13	7	30	8	7	9
21-30	15	12	13	11	14	14	14	32	26	18	13	8
31-45	25	24	24	27	24	25	26	22	9	25	27	27
46-60	24	24	20	22	27	26	23	16	12	24	24	26
over 60	6	8	11	6	5	7	5	7	9	7	4	7
TOTAL	100	100	100	100	100	100	100	100	100	100	100.	100

TABLE A4.4

THE PRESENCE OF CHILDREN IN PARTIES

NUMBER OF CHILDREN	PARTIES	ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England and Wales	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250 £2,500	over £2,500
Under 15															
none	65	60	58	57	66	66	67	80	66	65	64	90	71	59	57
one or two	28	31	32	32	27	30	26	13	26	28	29	9	24	32	32
more than two	7	9	10	11	6	4	7	7	8	7	6	1	5	9	10
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Under 4															
none	93	89	85	88	94	96	96	95	93	92	90	97	93	91	93
one or more	7	11	15	12	6	4	4	5	7	8	10	3	8	9	7
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.5

SIZE OF PARTY

NUMBER OF PERSONS OVER THREE IN PARTY	PARTIES	PERSONS	ORIGIN							INCOME			
			North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	under £750	£750-£1,250	£1,250-£2,500	over £2,500
1	2	1	3	3	5	1	1	3	2	10	1	2	1
2	40	26	35	32	38	40	42	41	54	49	46	43	33
3	18	17	20	21	13	17	17	19	19	14	19	17	22
4	22	28	23	19	24	27	27	21	9	14	21	23	25
5	9	13	11	12	11	9	6	9	11	6	7	9	12
6-9	7	13	7	14	8	6	6	6	5	6	5	6	6
over 9	1	3	1	-	-	1	1	1	-	2	-	1	1
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.6

NUMBER OF PREVIOUS SUMMER VISITS BY PARTY LEADER

NUMBER OF PREVIOUS SUMMER VISITS	PARTIES	ORIGIN							INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	Under £750	£750 £1,250	£1,250- £2,500	over £2,500
0	32	18	10	11	29	43	45	71	36	29	34	34
1-2	27	17	18	17	32	30	31	26	28	31	26	23
3-5	17	20	25	19	23	12	13	1	17	18	17	18
over 5	24	45	47	53	16	15	10	2	19	23	23	26
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.7

NUMBER OF NIGHTS IN CORDON SURVEY REGION

NUMBER OF NIGHTS	PARTIES	PEOPLE	ORIGIN							PREVIOUS SUMMER VISITS.			INCOME			
			North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500
1	7	6	7	5	6	7	6	5	20	10	5	4	12	8	5	8
2	8	8	8	8	6	8	8	6	13	10	7	6	9	8	7	8
3	9	8	10	6	5	8	10	8	14	10	8	6	9	9	8	8
4	9	8	7	7	6	10	12	9	12	12	8	5	11	8	9	7
5-7	27	25	29	23	24	29	26	30	22	31	25	22	29	30	30	20
8-10	16	16	14	13	14	18	18	19	8	14	18	17	12	17	18	16
11-14	18	21	20	24	29	16	16	16	9	10	22	28	14	16	17	22
15-21	5	5	4	9	8	3	5	6.	1	2	6	9	4	3	5	7
over 21	1	2	1	5	3	1	1	1	2	-	2	4	1	1	1	3
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean No. of Nights per person		7.9	7.8	10.0	10.0	7.3	7.5	7.9	3.6	6.6	8.6	10.6	7.0	7.4	8.0	9.3

NUMBER OF NIGHTS	ACCOMMODATION								NUMBER IN PARTY						ROUTE		CARAVAN	
	hotel	guest house	B & B	cottage site caravan	touring caravan	tent	friends or relatives	hostel	1	2	3	4	5	over 5	fixed	flexible	No	Yes
1	8	6	9	2	3	4	10	5	21	8	6	6	4	1	54	68	62	44
2	7	8	13	3	4	6	9	2	2	7	10	7	8	9				
3	8	10	11	3	8	8	5	12	11	8	10	8	7	9				
4	9	10	12	6	7	9	10	-	7	12	10	6	5	6				
5-7	29	31	30	21	25	28	20	24	31	29	30	24	29	5				
8-10	17	12	13	10	25	22	12	21	11	18	14	19	14	6	38	28	32	48
11-14	16	20	10	37	20	18	20	31	8	13	15	23	25	14				
15-21	4	3	1	10	6	5	11	3	8	4	4	6	6	10				
over 21	1	-	-	7	2	-	2	3	1	1	1	1	3	20	8	3	5	9
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean No. of nights per person	7.6	7.4	5.9	12.0	8.4	7.7	8.5	9.3	6.5	6.8	7.2	8.3	8.7	9.5	8.8	6.7	7.8	8.8

TABLE A4.8

NUMBER OF DIFFERENT OVERNIGHT STOPPING PLACES IN CORDON SURVEY REGION

		ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
NUMBER OF STOPS	PARTIES	North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales & Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500
1	36	45	48	51	31	29	33	31	34	35	44	34	34	33	46
2	21	17	17	23	23	24	19	22	22	22	18	21	20	22	22
3	17	16	12	8	16	19	20	20	18	16	14	14	18	17	13
4-6	21	18	18	13	24	24	22	19	22	21	19	25	23	22	15
over 6	5	4	5	5	5	4	6	8	4	6	5	6	5	6	5
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean Number of stops per party	2.7	2.4	2.4	2.3	2.8	2.7	2.8	2.9	2.6	2.7	2.5	2.9	2.8	2.7	2.3

	CHILDREN IN PARTY					NUMBER OF NIGHTS						CARAVAN		ROUTE	
	Under 4		Under 15												
NUMBER OF STOPS	none	one or more	none	one or more	over two	1-3	4-6	7-10	11-14	15-21	over 21	No	Yes	fixed	flexible
1	39	55	36	44	51	53	25	33	38	26	53	38	27	42	28
2	23	19	23	24	21	30	21	17	17	19	17	21	19	22	20
3	19	13	20	14	17	16	22	14	13	14	7	16	19	16	17
4-6	12	9	13	11	8	-	32	28	21	25	6	20	24	16	27
over 6	7	4	8	7	2	-	-	8	11	16	17	5	10	4	7
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean Number of stops per party	2.7	2.0	2.8	2.4	2.2	1.6	2.8	3.0	3.0	3.5	3.0	2.6	3.1	2.4	3.0

TABLE A4.9

TYPE OF ACCOMMODATION USED

TYPE OF ACCOMMODATION	PARTIES	PEOPLE	PERSON NIGHTS	ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
				North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales & Midlands	South East England and East Anglia	Overseas	none	one or more	over five	under £750	£750-£1,250	£1,250-£2,500	over £2,500
hotel	23	20	16	14	24	30	20	20	26	35	22	23	25	8	15	22	42
guest house	9	9	7	8	8	8	8	9	12	8	10	9	7	8	7	11	8
B & B, farm-house	35	31	18	26	25	16	43	37	36	44	44	30	20	27	40	38	23
cottage, or static caravan	12	14	19	20	21	25	7	8	8	3	7	14	19	12	14	9	13
touring caravan	15	17	17	15	11	11	16	21	16	9	13	16	16	8	12	17	16
tent	17	19	15	20	12	10	18	18	16	16	18	16	15	30	23	15	7
with relations or friends	6	7	6	9	10	13	2	6	6	1	2	8	14	10	6	5	6
hostel	2	3	2	3	1	1	1	2	2	3	2	2	1	11	6	1	1
TOTAL	117	118	100	113	113	113	116	121	121	119	119	117	116	115	118	119	116

TABLE A4.9 (contd.)

TYPE OF ACCOMMODATION	AGE				CHILDREN					NUMBER IN PARTY						NUMBER OF NIGHTS						NUMBER OF STOPS					ROUTE	
					Under 4		Under 15																				
	4-14	15-30	31-45	over 45	none	one or more	none	one or two	over two	1	2	3	4	5	over 5	1-3	4-6	7-10	11-14	15-21	over 21	1	2	3	4-6	over 6	fixed	flexible
hotel	9	17	17	30	24	9	28	14	5	29	30	24	15	12	10	23	22	26	21	22	17	26	23	22	20	19	25	20
guest house	6	8	8	13	9	8	10	7	7	2	10	7	12	6	7	10	8	11	10	5	2	10	9	10	8	6	10	8
B & B farm-house	17	31	27	43	37	10	43	22	11	25	43	34	30	22	17	50	46	28	18	9	10	22	43	37	46	38	28	43
cottage or static caravan	20	10	17	10	10	26	7	20	23	6	7	9	16	25	23	4	8	9	24	25	54	21	9	7	4	5	16	6
touring caravan	25	12	21	14	15	22	10	25	24	4	9	16	23	20	19	10	14	19	17	18	23	10	12	18	19	33	15	16
tent	27	26	19	7	16	23	14	18	31	17	14	15	16	21	27	13	19	18	17	16	1	10	17	22	24	18	14	21
with relations or friends	7	9	6	5	5	13	5	6	11	22	4	7	4	8	10	6	5	5	7	14	9	9	6	4	2	3	7	4
hostel	3	7	1	1	2	-	2	1	4	7	2	1	-	2	6	1	1	2	3	1	3	1	2	1	2	7	2	2
TOTAL	115	119	115	123	118	110	119	113	116	112	119	116	116	119	120	117	121	117	116	111	119	108	122	122	123	127	115	120

TABLE A4.10

VEHICLES TOWING CARAVANS OR TRAILERS

TOWING CHARACTERISTIC	PARTIES	ORIGIN							PREVIOUS SUMMER VISITS			INCOME				CHILDREN					ROUTE	
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales & Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	Under 4		Under 15			fixed	flexible
																none	one or more	none	one or two	over two		
not towing	85	86	87	89	85	79	85	95	89	83	82	94	88	83	84	86	79	91	74	75	85	85
caravan	13	13	12	10	15	19	14	5	10	15	16	4	11	15	15	13	19	9	23	22	13	14
trailer	1	1	1	1	1	2	2	0	1	2	2	2	1	2	1	1	2	1	.3	3	1	2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.11

TYPE OF ROUTE

ROUTE TYPE	PARTIES	ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750 £1,250	£1,250 £2,500	over £2,500
fixed	58	69	71	70	53	53	54	51	49	63	73	48	56	59	62
flexible	42	31	29	30	47	47	46	49	51	37	27	52	44	41	38
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

ROUTE TYPE	NUMBER OF NIGHTS						NUMBER OF STOPS					NUMBER IN PARTY						CARAVAN	
	1-3	4-6	7-10	11-14	15-21	over 21	1	2	3	4-6	over 6	1	2	3	4	5	over 5	No	Yes
fixed	50	49	59	75	77	76	68	60	57	45	46	53	53	63	61	61	69	59	58
flexible	50	51	41	25	23	24	32	40	43	55	54	47	47	37	39	39	31	41	42
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.12

THE THREE MOST IMPORTANT INFLUENCES ON THE CHOICE OF ROUTE

INFLUENCES ON CHOICE OF ROUTE	PARTIES	ORIGIN						PREVIOUS SUMMER VISITS			INCOME				ROUTE	
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	Southern England, Wales and Midlands	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	fixed	flexible
selection of route passing specific attractions	48	38	43	35	49	54	60	56	45	41	47	50	51	43	49	48
access to a specific destination	50	56	64	62	49	44	35	39	55	66	50	44	50	58	60	35
AA or RAC information	13	9	5	6	12	18	8	19	9	7	12	12	14	12	15	8
guide book	10	2	6	5	10	12	28	15	7	4	7	6	10	14	11	9
map information	35	25	25	25	34	43	39	41	32	21	33	30	37	39	32	38
STB or HIDB	4	2	1	5	5	5	9	6	3	2	3	4	5	4	5	2
advice from friends or relations	32	29	18	26	32	36	41	54	22	14	44	34	29	31	29	37
personal knowledge	63	77	97	87	63	50	33	15	87	100	52	65	61	67	73	51
advice from information centre(s)	1	2	1	-	1	1	3	3	1	1	1	2	1	1	1	2
newspaper or journal article	4	6	3	3	5	3	9	5	4	4	6	4	4	6	4	4
weather	21	37	19	28	21	17	8	21	20	25	22	25	21	11	12	32
chance choice of route	19	18	19	17	20	18	27	26	16	15	24	25	17	14	8	35
TOTAL	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300

TABLE A4.13

(a) THE MAIN ATTRACTION OF THE HIGHLANDS AND ISLANDS FOR HOLIDAYS

MOST IMPORTANT ATTRACTION	PARTIES	ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500
festivals and special events	1	-	-	-	1	1	1	2	1	-	-	1	-	-	1
beaches	2	4	5	3	1	1	-	1	2	2	3	1	2	2	2
sports events (spectating)	-	-	1	-	-	-	1	-	-	-	1	2	-	-	1
active recreation	4	7	6	9	4	4	3	-	2	5	7	8	3	3	8
motoring conditions	2	1	3	3	4	1	1	1	1	2	2	2	3	2	1
peace and quiet	20	19	28	27	19	19	21	6	12	24	29	12	19	21	25
scenery	54	46	36	37	58	63	59	64	62	50	38	48	56	54	49
scientific interest	-	-	-	-	1	-	-	1	1	-	-	1	-	1	-
evening entertainment	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
hope of good weather	2	3	2	3	3	-	2	1	2	2	1	1	3	2	1
interesting places to visit	3	3	3	2	3	1	3	13	6	2	2	4	2	4	4
hope of good food and accommodation	1	1	2	2	1	1	-	1	1	1	2	4	1	1	1
visits to friends and relations	6	13	11	13	2	6	5	5	3	8	14	9	7	7	5
curiosity	3	2	2	2	3	3	4	6	7	1	1	7	3	3	2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A.4.13

(b) SECOND AND THIRD ATTRACTIONS (COMBINED)

SECOND AND THIRD MOST IMPORTANT ATTRACTION (COMBINED)	PARTIES	ORIGIN							PREVIOUS SUMMER VISITS			INCOME			
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500
festivals and special events	3	1	4	1	1	3	2	9	3	3	2	3	3	2	4
beaches	9	17	13	21	8	4	4	1	4	11	16	9	10	7	11
sports events (spectating)	1	1	-	-	-	-	1	1	-	1	2	-	1	1	1
active recreation	10	8	15	10	9	8	11	6	5	12	16	9	5	10	17
motoring conditions	10	8	6	2	14	13	11	6	10	10	8	5	12	12	6
peace and quiet	40	38	37	41	42	42	40	29	34	42	44	34	41	43	34
scenery	36	38	41	45	33	35	35	29	33	37	42	39	33	37	40
scientific interest	2	1	1	2	2	-	3	2	1	2	2	-	2	2	1
evening entertainment	2	4	4	1	1	-	1	-	-	2	3	5	2	1	1
hope of good weather	15	26	19	14	14	10	11	7	12	16	14	21	17	14	9
interesting places to visit	38	29	28	28	39	44	41	53	47	34	24	34	41	35	36
hope of good food and accommodation	13	10	12	12	16	14	13	10	12	14	11	7	12	13	16
visits to friends and relations	8	10	7	11	5	6	10	9	5	9	13	11	7	8	8
curiosity	16	9	11	11	14	21	18	37	33	8	4	23	16	15	16
TOTAL	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200

TABLE A4.14

IMPROVEMENTS DESIRED

PERCENTAGE OF PARTIES WANTING IMPROVEMENTS IN:	PARTIES	ORIGIN											PREVIOUS SUMMER VISITS		INCOME			
		East Scotland	North Central Scotland	West Central Scotland	South and South East Scotland	North Planning Region of England	Yorkshire and Humberside	North West England	Midlands	South West England and Wales	South East England and East Anglia	Overseas	none	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500
motoring conditions	52	74	76	67	60	53	51	41	40	43	40	47	55	56	50	55	48	52
general tourist facilities	49	56	62	63	54	53	50	40	40	36	42	55	67	44	53	54	47	43
sports facilities	19	26	37	35	29	14	17	10	13	17	14	19	14	29	23	20	18	18
information	36	44	45	43	40	29	30	37	35	29	29	36	32	37	35	42	36	27
TOTAL %	156	199	220	209	183	149	147	128	128	125	124	155	168	166	160	170	149	140
SATISFACTION INDEX(1)	2.6	2.0	1.8	1.9	2.2	2.7	2.7	3.1	3.1	3.2	3.2	2.6	2.4	2.4	2.5	2.4	2.7	2.9

(1) Satisfaction index = $\frac{400}{\text{Total \%}}$; higher values = greater satisfaction

TABLE A4.15

(a) THE PERCENTAGE OF PARTIES WHICH TRAVELLED IN OR THROUGH EACH REGION (1)

REGION VISITED	PARTIES	PEOPLE	ORIGIN							PREVIOUS SUMMER VISITS			ROUTE		CARAVAN		NUMBER OF NIGHTS		
			North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	fixed	flexible	No	Yes	1-3	4-6	over 6
South West Highlands	82	81	55	79	62	88	88	88	95	89	77	71	77	88	82	80	86	86	78
West Argyll	22	21	15	17	20	27	23	23	15	19	23	21	20	24	21	23	11	22	27
Speyside	68	69	68	53	70	69	69	71	74	71	67	62	67	69	69	61	67	65	71
Loch Ness	75	74	72	62	66	72	77	82	86	81	72	65	73	77	75	70	67	77	78
Cromarty Firth	43	43	48	40	40	43	45	44	38	40	45	43	42	45	44	42	19	46	54
Wester Ross/Skye	46	45	44	35	36	49	50	51	46	45	47	42	43	50	46	46	18	51	59
North	24	23	26	23	24	23	22	27	25	21	25	24	23	26	24	22	7	24	32
Outer Hebrides	1	1	3	2	1	1	1	–	1	1	1	2	1	1	1	1	–	–	2
Orkney and Shetland(2)	1	1	–	2	1	1	–	–	1	1	1	1	1	–	1	–	–	1	1
TOTAL	362	358	331	313	318	373	375	384	381	368	358	331	347	380	363	345	275	371	402

(1) These visits did not necessarily involve over-night stops.

(2) Figures for Orkney and Shetland do not include people travelling by sea from Aberdeen.

TABLE A4.15

(b) THE PERCENTAGE OF 'REGION VISITS' GOING TO EACH REGION (1)

REGION VISITED	PARTIES	PEOPLE	ORIGIN							PREVIOUS SUMMER VISITS			ROUTE		CARAVAN		NUMBER OF NIGHTS		
			North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	none	one or more	six or more	fixed	flexible	No	Yes	1-3	4-6	over 6
South West Highlands	23	23	17	25	20	24	23	23	25	24	22	21	22	23	23	23	31	23	19
West Argyll	6	6	5	5	6	7	6	6	4	5	6	6	6	6	6	7	4	6	7
Speyside	19	19	21	17	22	19	18	19	19	19	19	19	19	18	19	18	24	18	18
Loch Ness	21	21	22	20	21	19	21	21	23	22	20	19	21	20	21	20	24	21	19
Cromarty Firth	12	12	15	13	13	12	11	11	10	11	13	13	12	12	12	12	7	12	13
Wester Ross/Skye	13	13	13	11	11	13	13	13	12	12	13	13	12	13	13	13	7	14	15
North	7	6	8	7	8	6	7	7	7	6	7	7	7	7	7	6	3	7	8
Outer Hebrides	-	-	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Orkney and Shetland(2)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

(1) These visits did not necessarily involve over-night stops.

(2) Figures for Orkney and Shetland do not include people travelling by sea from Aberdeen.

TABLE A4.16

REGIONAL DISTRIBUTION OF BED-NIGHTS

REGION	TOTAL	ORIGIN								PREVIOUS SUMMER VISITS			INCOME				CHILDREN UNDER 4		NUMBER OF NIGHTS			CARAVAN		TOTAL
		East Scotland	N. & E. Central Scotland	West Central Scotland	South and South East Scotland	Northern England	Midlands	Southern England and Wales	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	No	Yes	1-3	4-6	seven or more	No	Yes	
South West Highlands	31	15	27	30	21	33	34	33	41	37	28	26	38	30	30	28	30	30	46	40	27	30	33	31
West Argyll	8	6	4	10	11	13	5	8	1	6	10	11	4	4	8	13	8	15	3	4	10	9	9	8
Speyside	7	15	8	7	11	5	7	6	8	7	8	8	7	5	7	9	7	10	12	7	7	7	8	7
Loch Ness	15	13	16	15	12	13	13	16	25	17	14	13	14	18	20	9	14	16	25	20	13	15	12	15
Cromarty Firth	5	11	8	8	9	3	4	4	1	3	6	8	4	7	4	6	5	6	4	3	6	6	2	5
Wester Ross/ Skye	21	25	15	15	21	21	29	23	13	21	21	20	21	22	22	19	22	7	6	19	22	21	18	21
North	11	13	15	14	11	11	8	9	11	8	12	11	8	12	9	14	11	13	2	7	12	10	13	11
Outer Hebrides & Orkney/Shetland	2	3	7	2	4	1	2	1	1	-	2	4	2	2	2	2	2	3	-	-	2	2	5	2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE A4.17

THE PROPENSITY OF VISITORS TO SPEND NIGHTS IN EACH REGION

= the ratio: $\frac{\text{Number of person-nights spent in a region}}{\text{Number of holidaymakers who visited the region (staying or not)}}$

REGION	ALL PARTIES	ORIGIN							ALL PARTIES
		North Central and East Scotland	West Central Scotland	South and South East Scotland	Northern England	South West England, Wales and Midlands	South East England and East Anglia	Overseas	
South West Highlands	3.0	3.0	3.9	3.5	2.8	2.8	3.0	2.2	3.0
Western Argyll	3.2	4.1	5.7	7.0*	3.4	1.7	2.8	3.0*	3.2
Speyside	0.9	1.2	1.3	1.6	0.6	0.7	0.7	0.5	0.9
Loch Ness	1.5	1.5	2.5	1.8	1.3	1.4	1.6	1.5	1.5
Cromarty Firth	0.9	1.7	2.4	2.6	0.4	0.5	0.7	1.7	0.9
Wester Ross/Skye	3.9	3.2	3.9	5.2	3.6	4.6	4.2	2.0	3.9
North	3.8	4.3	6.5	4.9	3.8	2.3	3.1	2.6	3.8
Outer Hebrides and Orkney/Shetland	7.4	*	*	*	*	*	*	*	7.4

(1) The figures are absolute numbers, not percentages.

(2) The higher the number, the greater the propensity to spend nights.

(3) Where a sub-sample is too small to be of great accuracy, there is an asterisk against, or (in the case of Orkney/Shetland and Outer Hebrides) instead of the figure.

TABLE A4.18

THE MEAN NUMBER OF NIGHTS PER STOP IN EACH REGION, BY HOME REGION

REGION	ALL PARTIES	ORIGIN											ALL PARTIES
		North East Scotland	North and East Central Scotland	West Central Scotland	South and South East Scotland	North England	Yorkshire and Humberside	North West England	Midlands	South West England and Wales	South East England and East Anglia	Overseas	
South West Highlands	2.7	2.2	3.7	4.6	4.2	2.5	2.2	2.2	2.5	2.1	2.8	2.1	2.7
Western Argyll	5.3	3.7*	4.1*	6.4	7.8*	2.6*	8.6	3.6	3.6*	3.4*	5.5	1.7*	5.3
Speyside	2.8	4.0	2.7	3.4	4.9	2.5	2.1	1.6*	2.9	1.4*	2.6	1.8	2.8
Loch Ness	2.5	2.4	3.1	4.1	3.0	2.3	1.8	2.4	2.4	2.3	2.5	1.8	2.5
Cromarty Firth	4.6	4.3*	4.7*	7.5*	7.0*	1.2*	5.0*	4.2*	2.4*	1.7*	5.1*	1.1	4.6
Wester Ross and Skye	3.2	3.3	3.0	3.2	6.0	2.8	3.5	10.9	3.6	3.7	3.2	1.3	3.2
North	3.3	2.7	4.2	6.0	3.8	3.3	3.8	3.2	2.1	3.2*	2.7	1.6	3.3
Outer Hebrides and Orkney/Shetland	6.8	12.2*	6.6*	7.1*	8.1*	1.0*	1.0*	2.6*	5.5*	13.0*	7.9*	3.0*	6.8
HIGHLANDS	3.1	3.1	3.6	4.5	4.8	2.6	3.0	2.4	2.8	2.5	3.0	1.8	3.1

(1) Figures shown are absolute numbers, not percentages.

(2) Figures in this table should be regarded with a certain amount of caution because, in many cases (particularly those which are marked with an asterisk), the sub-sample for which the average number of nights is taken, is too small for great accuracy.

(3) The table shows the mean number of nights per stop in each region; since a party may make more than one stop in any region, this is not the same as the average number of nights in each region.

TABLE A4.19

ACTIVITY PARTICIPATION RATES

(a) Sightseeing

PERCENTAGE OF PERSONS PARTICIPATING IN EACH SIGHTSEEING ACTIVITY	OVERALL	ORIGIN				PREVIOUS SUMMER VISITS			INCOME				AGE			
		Scotland	Northern England	Southern England Midlands and Wales	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	4-14	15-30	31-45	over 45
touring around	86	80	87	91	94	91	85	81	80	100	96	89	82	82	88	91
visiting places of interest	76	67	83	79	82	78	74	66	67	76	78	74	76	74	77	76
sea cruising	5	7	7	3	3	3	7	8	2	5	6	6	4	6	6	7
scientific field studies	4	2	5	5	1	3	4	4	1	2	4	6	4	5	5	3
day coach tours	3	1	4	3	7	3	3	2	3	3	3	3	3	3	3	4
TOTAL %	182	166	186	181	187	178	173	161	153	185	188	178	169	171	173	173
SIGHTSEEING PARTICIPATION INDEX (1)	36	33	37	36	37	36	35	32	31	37	38	36	34	34	35	35

(1) Sightseeing participation index = $\frac{\text{total \%}}{5}$ = average percentage per activity

TABLE A4.19

ACTIVITY PARTICIPATION RATES

(b) Active Recreation

PERCENTAGE OF PERSONS PARTICIPATING IN EACH SPORTING ACTIVITY	OVERALL	ORIGIN				PREVIOUS SUMMER VISITS			INCOME				AGE			
		Scotland	Northern England	Southern England, Midlands & Wales	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	4-14	15-30	31-45	over 45
walking	59	60	61	61	53	60	59	64	49	56	62	60	61	63	63	51
swimming/beach	42	51	40	41	22	40	44	45	37	40	47	42	72	45	45	20
climbing	14	13	14	16	14	15	14	16	20	14	14	14	17	27	15	8
boating	14	13	15	15	18	15	14	16	7	13	16	16	20	14	16	10
sea angling	11	13	12	10	5	9	12	14	8	11	11	13	18	11	11	7
golf	6	11	4	4	5	4	7	10	4	5	6	10	4	7	6	7
game fishing	6	8	5	6	-	4	7	11	3	5	6	9	7	5	6	6
coarse fishing	4	4	4	4	2	4	4	4	2	5	4	1	6	4	5	2
tennis	2	4	1	2	-	2	2	3	2	1	2	4	3	4	.2	1
skating	2	3	1	2	1	2	2	2	2	2	2	3	3	4	2	-
canoeing	2	1	2	2	-	1	2	2	2	-	1	5	4	3	1	1
outdoor bowls	2	3	-	2	1	2	2	2	-	3	1	1	1	2	2	2
field sports	2	2	1	2	-	1	2	2	1	2	1	1	3	3	1	-
pony trekking	2	2	1	2	1	2	1	1	1	1	1	2	2	3	1	1
riding	1	-	1	1	1	1	1	1	1	-	1	1	2	1	-	-
TOTAL %	168	187	166	168	124	162	173	193	136	158	174	181	224	194	176	117
ACTIVE RECREATION PARTICIPATION INDEX (2)	11	12	11	11	8	11	12	13	9	11	12	12	15	13	12	8

(2) Active recreation participation index = Total% / Number of activities = $\frac{\text{Total}}{15}$ %

TABLE A4.19

ACTIVITY PARTICIPATION RATES

(c) Evening Activities

PERCENTAGE OF PERSONS PARTICIPATING IN EACH EVENING ACTIVITY	OVERALL	ORIGIN				PREVIOUS SUMMER VISITS			INCOME				AGE			
		Scotland	Northern England	Southern England, Midlands & Wales	Overseas	none	one or more	six or more	under £750	£750-£1,250	£1,250-£2,500	over £2,500	4-14	15-30	31-45	over 45
Dance or ceilidh	9	12	5	8	4	6	10	13	15	11	8	7	4	18	9	9
Theatre or concert	8	7	7	8	6	8	8	7	5	9	8	8	5	8	10	9
Cinema	7	7	8	7	7	9	7	5	9	8	7	6	7	13	8	4
Bingo	1	1	1	-	1	1	-	1	1	1	-	-	-	1	1	1
TOTAL %	24	28	21	23	18	24	25	26	29	28	22	21	16	39	28	22
EVENING ACTIVITY PARTICIPATION INDEX (3)	6	7	5	6	4	6	6	7	7	7	6	5	4	10	7	6

(3) Evening activity participation index = $\frac{\text{Total \%}}{4}$ = Average percentage per activity.

Appendix 5

Notes on Tables in Appendix 4

A5.1 General Notes

All two dimensional analyses, except those involving age distributions or age groups, are based on parties (i.e. the party is the unit). However, certain variables are analysed in one dimension in terms of persons over the age of three, and of person-nights (of persons over the age of three), as well as in terms of parties.

In two dimensional tabulations, the size of the sub-samples used have, wherever possible, been brought to a statistically acceptable level, by combining small sub-samples. For practical reasons, the sizes of the unweighted sub-samples have not been included in the tables, but they are all shown in Table A5.1. All tables total vertically.

In all frequency analyses of information from the questionnaires, figures have been rounded to the nearest whole figure, as the size of the sample and sub-samples did not justify giving decimal places. Because of the rounding of figures independently there may, in some tables, be a slight discrepancy between the total and the sum of the constituent items shown. The following symbol is used throughout:-

\- = less than 0.5%

A5.2 Notes on Individual Variables

Home Regions (see Map A5.1): The English Regions used are the Economic Planning Regions, or amalgamations of them; the amalgamations are clear from their titles, except/

TABLE A5.1

SIZE OF UNWEIGHTED SUB-SAMPLES USED IN TWO DIMENSIONAL TABLES
(showing unweighted number of parties, except under 'Age' where the number of people is shown)

ORIGIN

Scotland			England			
N. Central and East	West Central	South and South East	North	S. West Wales and Midlands	South East	Overseas
297	245	178	573	332	469	172

East	North and East Central	Midlands	S. West and Wales
134	163	233	99

INCOME

under £750	£750-£1,250	£1,250-£2,500	Over £2,500
146	582	873	482

AGE (People)

4 - 14	15 - 30	31 - 45	over 45
1289	1786	1778	2332

CHILDREN

Under Four		Under Fifteen		
none	one or more	none	one or two	over two
2141	164	1547	606	150

NUMBER IN PARTY

1	2	3	4	5	over 5
53	934	406	499	196	161

PREVIOUS SUMMER VISITS /

TABLE A5.1 (contd.)

PREVIOUS SUMMER VISITS

none	one or more	six or more
714	1557	550

NUMBER OF NIGHTS

1 - 3	4 - 6	7 - 10	11 - 14	15 - 21	over 21
516	605	607	380	113	39

NUMBER OF STOPS

1	2	3	4 - 6	over 6
846	442	374	486	116

ROUTE

fixed	flexible
1340	946

CARAVAN

Yes	No
287	1986

ACCOMMODATION

hotel	guest house	B & B	cottage or static caravan	touring caravan	tent or hostel	with friends or relations
549	219	809	269	327	384	143

REGION VISITORS

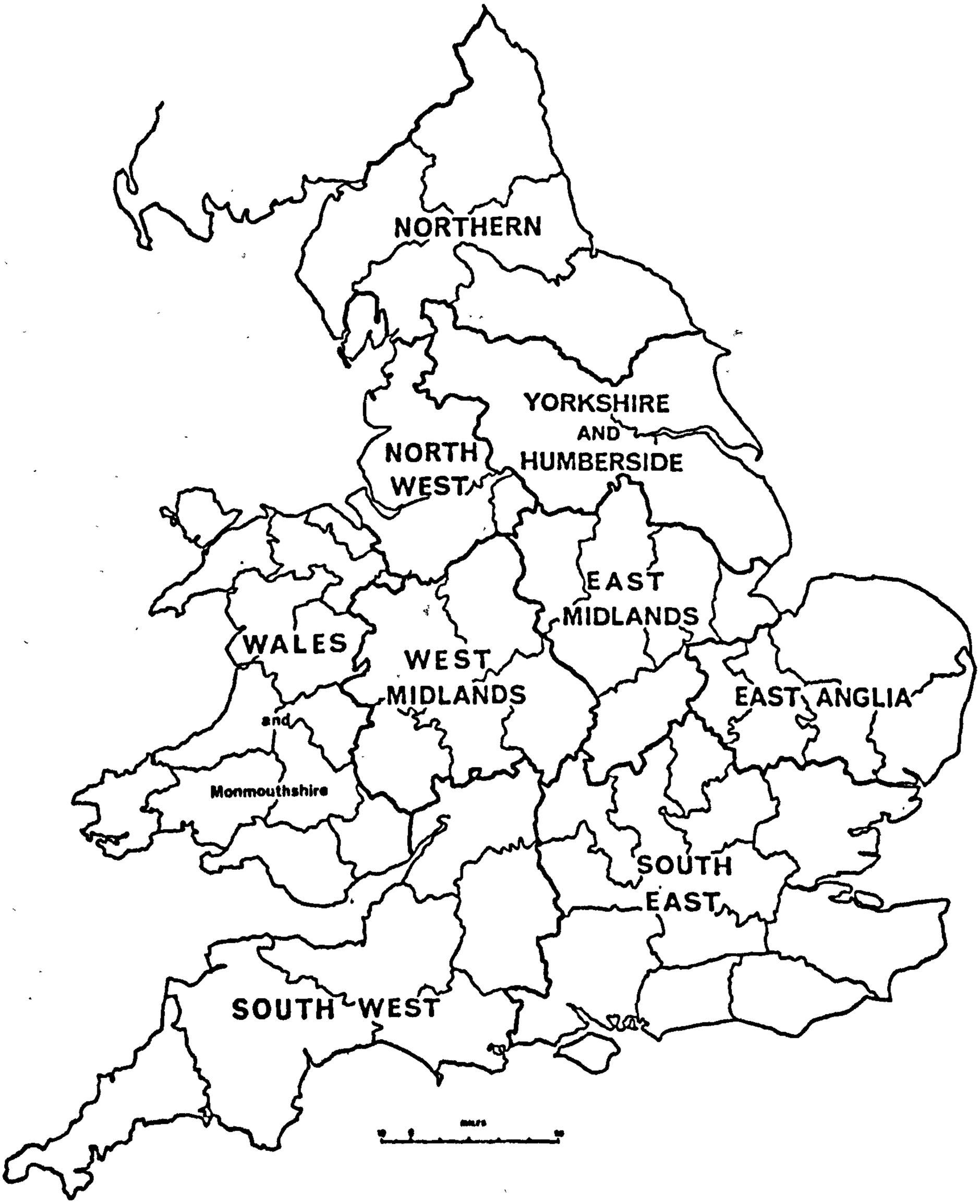
South West	Western Argyll	Speyside	Loch Ness
1833	456	1539	1628

Cromarty Firth	Wester Ross/Skye	North	Outer Hebrides
988	946	539	23

Orkney and Shetland

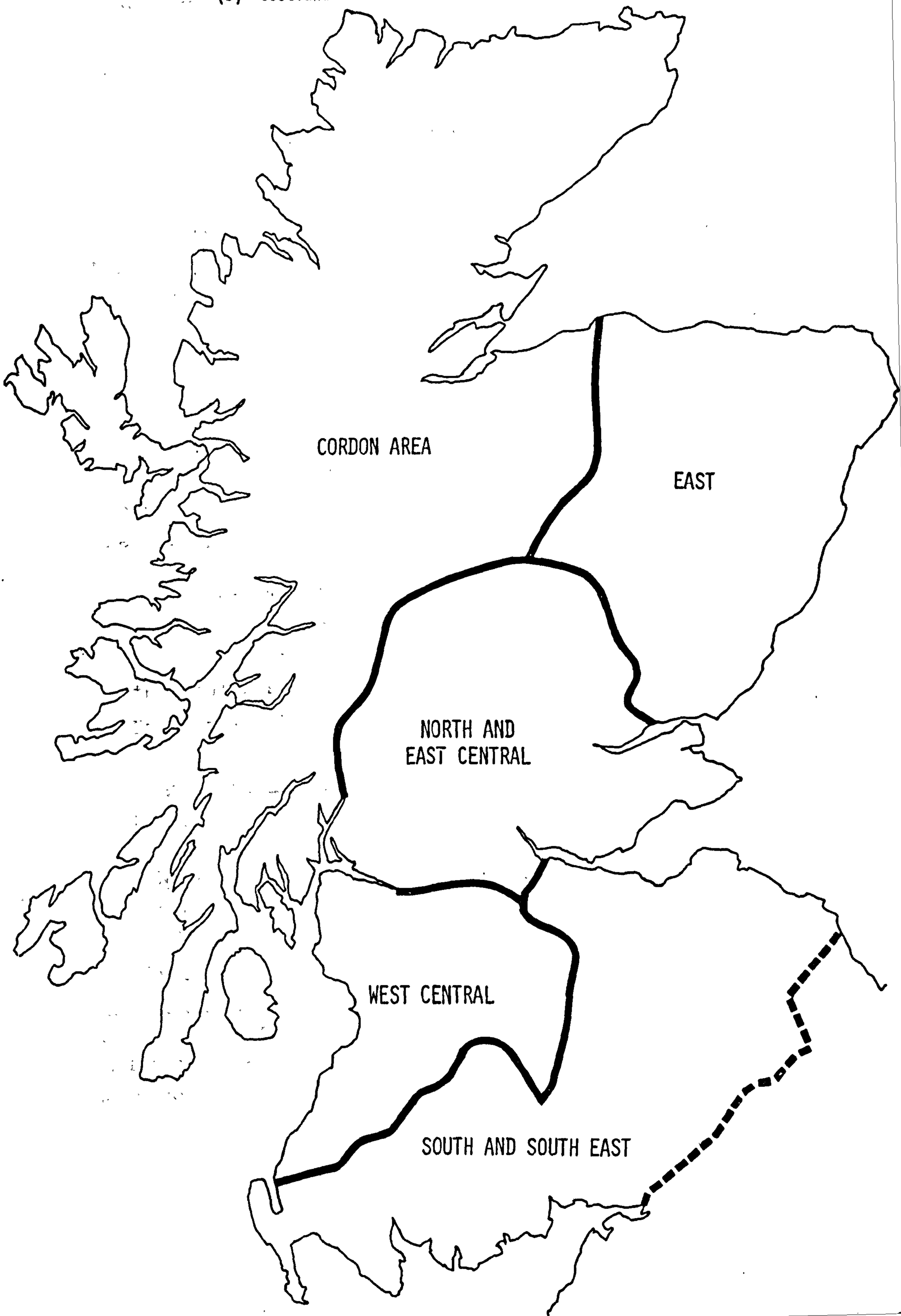
Map A5.1 Regions of Residence used in analyses

(a) England and Wales



Map A5.1 Regions of Residence used in analyses

(b) Scotland



except 'Northern' (used where other variables are analysed by home region(1)), which combines the North West, Yorkshire and Humberside, and the North. The Scottish Regions used in most tables are:

South and South East:	Wigtown, Kirkcudbright, Dumfries, the Borders and the Lothians.
West Central:	Ayr, Lanark and Renfrew.
North and East Central:	Dumbarton, Stirling, Perth, Kinross, Fife and Clackmannan.
East:	Angus, Kincardine, Aberdeen, Banff and Moray (excluding Forres).

In most tables, the last two regions are combined under the heading 'North Central and East Scotland'. Except where otherwise shown, Ireland (Republic and the North) is included as part of Europe.

Income: The income figure used here for parties is the gross income of the party leader, and this figure is ascribed to all other members of a party in the analysis of income in terms of persons and of person-nights.

Age Distribution: These analyses are in terms of persons.

Number of previous summer visits: The number of previous summer visits as recorded on questionnaires is assumed, possibly wrongly in some cases, to be that of the party leader. Where other variables /

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(1) i.e. where analysis of the 'other' variable is undertaken separately for each home region sub-group, with home region as the top heading on the table.

variables are analysed by this one, the sub-samples used are as follows: none, one or more, six or more (previous summer visits). The last two sub-samples are not mutually exclusive, since the "six or more" sub-sample is a part of the larger "one or more" sub-sample. All parties fall into either the "none" or the "one or more" categories, except where no response was given to this question.

Number in party: This is the number of people in the party over the age of three.

Number of stops: This refers to the number of different overnight stopping places within the survey area.

Accommodation: As some parties used more than one type of accommodation, the total percentages of parties and people are over 100%; for the same reason, where other variables are analysed by groups using each type of accommodation, these groups are not mutually exclusive. However, the total of the "person-night" column in Table A4.9 is 100% because each person-night can only be spent in one type of accommodation (for which analysis, the person-nights of parties using more than one type of accommodation were divided evenly between the different types).

"B & B" is an abbreviation for Bed and Breakfast.

"Touring" caravans include dormobiles (in the Accommodation section only).

Type of route: a 'fixed' route is one which was decided before the holiday began; a 'flexible' route is one which was not.

Caravan:/

Caravan: "yes" indicates a party whose vehicle was towing a caravan - dormobiles are not included in this category.

Appendix 6

Scottish Tourism and Recreation Study

Survey Methodology and Cordon Questionnaire

It was agreed from the early stages of planning that the cordon approach should be adopted to deal with visitors to Scotland, with a complementary home interview survey of people resident in Scotland to cover the large volume of holidays which they take within Scotland, as well as their day recreation and theatre-going. The cordon survey involved interviews with departing holiday-makers at road check-points along the Border (approximately 6,300 interviews); at airports (1,300); on trains (2,400); on buses/coaches (800); and at seaports (750). The survey covered the period mid-May to mid-October 1973. With trains, buses (scheduled) and ships, a carefully structured sample of services was selected for coverage. At the road and air check-points interviewing was carried out over a set period of eight hours per day, this being staggered on different survey days, between 08.00 and 20.00 hours at each road check-point, and between 09.00 - 18.00 hours at each airport. Interviewing was carried out on each day of the week at least four times on each road and two times at airport check-points.

Information was obtained partly by direct interview and partly by self completion questionnaires (s.a.q's) given out at the end of the direct interview for return by post. At airports the direct interview had to be kept relatively short (approximately 8 minutes), with a correspondingly longer s.a.q.; elsewhere/

elsewhere the direct interview took approximately 13 minutes.

With the use of both incentives and reminders, the response rates for the s.a.q. were as follows:

road	69%
train	62%
sea	72%
bus/coach	69%
air	42%

The lower response from air travellers can reasonably be attributed to the substantially longer s.a.q..

The home interview survey of Scottish residents was undertaken mainly during August and September 1973. Approximately 6,800 interviews were carried out with a fully random sample, obtaining information on holidays in Scotland directly comparable with that obtained in the cordon survey.

The questionnaires covered the key factors outlined in Section 5.2 and also many important ancillary topics. The format for obtaining information on the three key factors was as follows:

1. <u>distribution of bed-nights</u>

respondents were asked the following questions about each individual stop in Scotland:

- number of nights
- type of accommodation used
- whether accommodation was booked in advance
- type of transport used to get there
- reasons for choice of route to the place
- places visited whilst at the place.

The/

The information was recorded in tabular form, allowing for up to ten stops.

2. <u>traffic flows</u>

respondents were asked to complete a route map, marking the places where they stayed overnight.

3. <u>activity participation</u>

for each 'active outdoor recreational pursuit or sport' undertaken, the respondent was asked:

- all the locations where it was undertaken
- the number of times it was undertaken at each place
- the number of adults and number of children taking part during the last occasion of participation.

In the analysis, holiday data from the two surveys will be integrated. The samples will be related to the size of the populations which they represent, in order to enable weighting of the sub-samples and to provide grossed-up results. With the home interview survey this will be a relatively straightforward procedure, but with the cordon survey it will be more complicated. At the road check-points it was necessary to mount continuous automatic road traffic counts throughout the survey period. For the other cordon check-points counts of total outward traffic were obtained from transport operators.

Analysis is being designed to meet the requirements of supply-demand comparison and understanding the system, as recommended in this thesis.

Appendix 7

The Tourism and Recreation Information Package

A.7.1 Data Content

In October 1973 the system incorporated information on the following factors:

General Planning Information
population, communications, accessibility, land use, relief/relative relief, areas of special planning designation, nature conservation areas
(N.B. the facility was also available to create a 'scenic value of the landscape' category, by combinations of relief and land use characteristics, along the lines discussed by Owen (1972, 1973)).

Accommodation
hotels, caravan/camping sites, youth hostels.

Informal Recreation Resources
historical, archaeological and industrial archaeological features, gardens, museums, crafts/industries, beaches, country parks.

Active Recreation
golf, pony trekking, salmon/sea trout fishing, coarse fishing, sailing, adventure centres.

A range of additional information is to be incorporated during subsequent phases, notably: guest houses/bed and breakfast, rented accommodation, restaurants, roadside viewpoints and car parks, picnic areas, brown trout fishing, sea angling, shooting, /

shooting, deer stalking. All information in the system can be regularly amended and updatd.

At present the information in the system is largely inventorial. Except in the case of accommodation, no attempt has been made to incorporate capacity estimates, on either an ad hoc or a capacity standard basis. The information on provision for recreation (informal and active) therefore falls well short of what is required for proper supply-demand assessments. However, the system can, of course, incorporate capacity information as it becomes available.

A.7.2 System facilities and development

The scope of the system as developed during the first phase is relatively limited. It can provide maps and tables relating to individual factors and their 'attributes' on the basis of:

- 5 km grid squares;
- STB tourism regions and sub-regions;
- existing counties;
- the new local government regions and districts.

It can also:

(a) map relationships between different factors and their attributes, in terms of their presence within 5 km grid squares - e.g. maps showing squares with both camping sites and beaches.

(b) cross tabulate data relating to different factors and their attributes - this can include geographical breakdowns.

(c) list resources/facilities with given characteristics.

Three /

Three main developments to the system are now in progress:

(1) improvement of the analytical procedures incorporated in the system - most notably the development of a full 'search' procedure, which will be able to identify squares which have any specified resources within any specified distance - e.g. squares with camping sites and beaches within 10 km (or any other distance); this procedure will be able to take into account barriers to movement such as rivers.

(2) adaption of the system to provide maps at a 1 km square scale for the purposes of analysing data for a series of proposed regional studies in Scotland.

(3) incorporation into the system of demand data from the STARS so that supply-demand relationships can be analysed and mapped directly by computer. The location of all recreation demand identified in the STARS has been grid referenced for this purpose.

Given these developments, the TRIP system will become a powerful tool for regional tourism studies in Scotland. However, the incorporation of capacity data, however crude, will be necessary before the system can meet the full requirements of such studies.