Aspects of transport rationalisation in south west England

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U N I V E R S I T Y O F D U R H A M

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"ASPECTS OF TRANSPORT RATIONALISATION IN SOUTH WEST ENGLAND".

by

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PLATE ONE.

"THE GATEWAY TO CORNWALL", SALTASH PASSAGE. This view from the Plymouth bank shows the two bridges across the Tamar Gorge which carry the main road and rail routes into Cornwall. To the left is the Royal Albert Bridge, the railway bridge designed by Isambard Kingdom Brunel for the Cornwall Railway and opened in 1859. The Tamar Bridge, the road suspension bridge to the right, was opened in 1961. Its construction was the result of a massive 'Bridge the Tamar' campaign by the local authorities. Investment in the bridge is being recovered by tolls.

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F O R E W O R D.

After much consideration, this thesis was given the title "Aspects of Transport Rationalisation in South-West England". As a native Devonian, the author tenders no apologies for his definition of South-West England in these pages. The personal decision to restrict the scope of this study to Devon and Cornwall only is supported by strong geographical factors, for the peninsula forming the two counties is distinctly different to the remainder of the conventially-accepted notion of the South-West Region. Counties to the east of Devonshire, i.e. Dorset, Somerset, Wiltshire and Gloucestershire, are orientated towards London and Bristol, whereas Devonshire and Cornwall are geographically and economically introspective. The first Report of the South-West Economic Planning Council, "A Region with a Future" (H.M.S.O.), published as this foreword was being written, clearly defines the variations between the prosperous east and the declining west of the Economic Planning Region. The fact that Devon and Cornwall have economic difficulties gives emphasis to the problems of transport in the two counties.

The author has been a railway enthusiast all his life, and the decision to write this thesis was prompted by the Beeching railway proposals of 1963. During the post-war years a considerable change has taken place in the transport structure in Devon and Cornwall and the author has grown up during the same time. The advance of private car ownership in particular has affected the whole pattern of life in the peninsula. Thus, in recent years, public transport undertakings have been compelled to reduce their sphere of operations.

Rationalisation is a much-maligned term. To the layman it is synonymous with closure. In fact, rationalisation in the language of economics implies the elimination of waste by the reformation of an industry. Where transport is concerned, rationalisation does entail the contraction of routes as an essential measure to ensure that the remainder of the system operates profitably and efficiently. In principle, closures of routes are discharged only where necessary. Adverse public reaction to this aspect of rationalisation, however, has obscured the other objects of the public transport undertakings to provide a profitable network.

This thesis then does not concern closures alone. The aim is to study the immediate effects of transport rationalisation on the socio-economic structure of the South-West. In many ways research into the problem has been a most frustrating task as the rationalisation process is by no means complete. Long-term effects cannot be gauged with any degree of accuracy, but that is not within the scope of this report, which is an analysis of recent events witnessed by the author.

Meanwhile, the transport revolution continues and at the time of writing a number of Transport White Papers are anticipated, plus a new Transport Act. A change of government transport policy based on social factors is indicated as the struggle to achieve profitability falters. In view of these forthcoming changes, this would seem to be a most opportune time at which to end this thesis, for basically it is an account of the struggle of transport undertakings to achieve a profit in a changing economic environment. Under the new measures, it is likely that publicly owned transport will not be charged with the burden of profitability. A new chapter in the story of transport in the South-West is about to begin, in

which public transport may at last provide a public service.

G. A. Griffiths.

G.A. Griffiths,
Honicknowle,
Plymouth.

July, 1967.

NOTES IN THE TEXT.

i). Capital letters([A] thus) refer to footnotes.

ii). Numerals([2] thus) refer to references which are listed at the end of each chapter.

CHAPTER ONE

INTRODUCTION.

a). The Physical Background

The physical constitution of the South-West has presented great difficulties in the development of the transport system. Devon and Cornwall form a peninsula over 150 miles long, and varying in width from twenty to seventy miles, most of which is in Highland Britain, west of the Tees-Exe line. Thus the sedimentary rocks of the peninsula are mostly older than the coal-bearing strata of the Carboniferous series.[A] Basically, the structure of the two counties is that of a compound syncline, formed by the Armorican folding of Permo-Carboniferous times. The centre of this syncline is marked by the Culm Measures, the resistant and upstanding series of shales and grits in North and Mid-Devon and North East Cornwall. To the North and South of the synclinal centre are Devonian rocks, (Shales, slates, limestones, and sandstone); whilst in the extreme South are highly altered representatives of Ordovician and Silurian age, with Cambrian rocks in the Lizard and Bolt Head areas. The youngest sedimentary rocks in the peninsula are in East Devon - the famous Permian Red Sandstone and earlier rocks, Into the syncline in Permo-Carboniferous times, were injected huge masses of granite, which metamorphosed the surrounding rocks, injecting them with quartz veins - sometimes bearing ores of tin,copper and radium. These granitic uplands....Dartmoor, Bodmin Moor, Hensbarrow, Carnmenellis, Lands End, and the Scillies....are the highest parts of Devon and Cornwall.

Topography in the peninsula is very strongly marked.[B] Apart from the physical variety, there is a heavy rainfall, causing a prolific drainage system with many river valleys. The topography is complicated because there have been several changes in the level of the land in relation to that of the sea, also changes in sea level,

A For geol., see Map 7,Pp.8/9

B " top., " " 2,Pp.3/4

sea level,/
the most important of which were associated with the end of the Ice Age. This has resulted in several distinct morphological features:-

(a) Erosion Surfaces.....mainly at 400 feet, 800 feet, and 1,000 feet, with some at 200 and 300 feet in West Cornwall and the Lizard.

(b) Raised Beaches.

(c) Rias, submerged river valleys on the South Coast, which are a serious barrier to land communications, though providing excellent harbours.

(d) Deep river valleys.

The intricate river pattern and the hilly topography have caused numerous problems in the development of land transport. Most of the main rivers flow towards the South Coast, against the main direction of traffic flow. Due to the comparatively recent rejuvenation of the river system, there are few expansive stretches of lowland which can be used by main routes. In the West, both the railways and the main roads have been forced inland by the rias of the Channel Coast. The superposition of the drainage pattern across the lines of communication was one of the contributory factors to the strong maritime tradition of most large coastal settlements in the region.

With the exception of Barnstaple/Bideford, the main development of coastal settlements was along the south coast, with its sheltered bays and rias. In constrast to the submergent coast line of the south, the north displays emergent features, with formidable cliffs and short streams plunging into the sea. For this reason, the north has few ports or deep-water anchorages, and it has always been at a disadvantage to the south. The hinterlands of the south coast ports have benefited until modern times by the availability of sea transport. For instance, the accessibility of the seaboard in South Cornwall aided the development of the metalliferous mining and china clay working in the eighteenth and nineteenth centuries.

b). Climate

The South-West has warm summers, mild winters, with rain all the year round. Mean January temperatures are well over 40°F, and July means are just over 60°F. Rainfall averages increase towards the West from about 35-40 inches. Dartmoor and the other moorlands are much wetter than this, however, and are thus negative areas for the development of settlement and transport. The general mildness of the climate has aided the development of transport as it is a cause of the heavy traffic in horticultural produce, and a contributory factor to the attraction of the area to holiday-makers. In addition, the chaos caused by fog, ice and snow, is rare except on the high moors.

c). Settlement

The earliest settlements in the region were in the upland areas away from the inhospitable forests of the lowlands. There was a mass movement of Megalithic peoples into Cornwall, which was colonised extensively by settlers from Brittany up to the Bronze Age. The foundations of the present rural settlement pattern, however, were laid by the Saxons who were responsible for the agricultural colonisation of the rich lands in South Devon, South-East of a line between Tiverton and Tavistock. The settlements of this area are typically Saxon, small and compact, built around the local church. But the smallest settlements of all are those of Celtic origin in Cornwall, where they were often associated with tin-streaming in addition to farming. Here the churches are usually later additions to the community, and frequently stand apart from it. By the Dark Ages, the South-West had a fairly dense rural population in certain areas, but there were few towns, except Exeter, Totnes, Lydford and Barnstaple: the present urban pattern dates from mediaeval times.

In the Middle Ages, there was a fresh colonisation and enclosure of farming land, and much of the present rural settlement pattern was established. Market towns were built at intervals of 8 - 10 miles, so that it was easy to drive cattle to them in one day.

Many of the inland market towns became associated with mining, woollens, and other textile industries. Good examples of the prospering market towns were the Stannary towns of Devon....Ashburton, Chagford, Tavistock and Plympton....where the Government taxed the miners of Dartmoor. Totnes and Tiverton developed woollen industries and Honiton was famous for its lace. Between the market towns, there was considerable trade, and a network of inter-town roads and trackways was evolved.

The leading settlements, however, were also seaports, for these were not only centres of internal trade, but also commercial links with the outside world at home and abroad. Plymouth, Dartmouth, Bideford, and Falmouth were among the premier ports of the realm during the late mediaeval period. Along the coasts numerous fishing villages also developed. In this period was formed the great maritime tradition of the region.

In the eighteenth century, with the advent of the Industrial Revolution and the concentration of manufacturing industry on the coal-fields of the Midlands and North of England, the traditional industries of the South-West began to decline. The inland market towns lost their main sources of prosperity. Rural areas began to decline in population and importance and the holiday industry started to emerge, first of all in Devon. In Cornwall, however, there was a revolution in the field of metalliferous mining, where improvements in engineering and technique made deep-mining possible, just as the alluvial deposits were declining. Such developments led to a boom in the mining of copper (with a peak from 1830-1860) and lode tin (peak period 1865-1892). This increased mining activity had a profound effect on the distribution of settlement and population in Cornwall and in parts of West Devon. The main mining areas....Tavistock/Callington; Carnmenellis; and Land's End....experienced a mild explosion in population. Among the towns which expanded due to mining activity were St. Just, Penzance, Camborne, Redruth, Truro, Helston, and Tavistock. By Victorian times, where there was mining, there was a concentration of settlement, but in the farming areas there was a dispersion.

In this way, the population distribution in Cornwall became unbalanced, being concentrated in the west of the County (except around Gunnislake). Mining activity attracted other industries to the main areas of exploitation, adding to the density of population. Engineering was developed in the Camborne area, and in all the mining areas there was a growth of small-holdings with a ready market for their produce. In West Cornwall, there was a considerable development in the ports and an internal railway system was built. All this new prosperity, however, did not solve the problems of Cornwall's isolation.

The boom years of Cornish mining were short-lived and the end came rather suddenly, when the exploitation of the large alluvial deposits in other countries lowered the world prices of tin and copper. Mining in Cornwall had virtually ceased by 1918. When the end came, there was no alternative industry and great distress was caused. The only solution for thousands of Cornish miners was to leave home for the coalfields and the colonies. In addition to this, employment in agriculture had been declining since 1851, and all the main farming areas in the South-West experienced a decline in population and in the sizes of settlements. In that period of decline, the only expanding industry was the holiday industry.

The events outlined above had a profound effect on the development of the present transport system. Modern rail and road building was geared to the requirements of the places along the south coast, where economic expansion was concentrated, except in the Barnstaple/Bideford area. Along the Channel coast were situated the main ports; expansion of mining, and later china clay, in West Cornwall, favoured the expansion of port activity in the sheltered rias. Growth in the holiday industry favoured the towns along the Channel as they were more attractive to visitors than the exposed settlements which faced the Atlantic. Farming was more prosperous on the fertile soils of the south, especially in Devon. Gradually, settlement became concentrated in the south and it was to that area the railways first came, thereby accentuating the disadvantages of the North, where the railways came too late. In the north the rural population declined and is still doing so.

Nevertheless, the actual distribution of settlements is extremely dense, and justifies a tremendous network of roads and tracks.

d). Population

Due to the lack of large-scale industrial development in the South-West, the density of population is far below that of the British Isles. In Devon and Cornwall, there are only 0·5 persons per acre compared with 4·1/acre in the South East and 3·3/acre in the North West. In 1961, the population of the two counties was just over one million, and was comprised by the following figures:-

TABLE 1

POPULATION OF THE SOUTH WEST 1951-1961

Source: H.M. Census figures.

ADMN. AREA.	1951	1961
DEVON A.C.	514,208	539,021
CORNWALL A.C.	345,442	342,301
PLYMOUTH C.B.	208,017	204,409
EXETER C.B.	75,513	80,321
TOTALS	1,143,180	1,166,052

The above figures show but a small increase in population from 1951-1961. On the basis of such statistics, it has been forecast by the local authorities that the rate of increase will continue to be slow until 1981, unless migratory population is attracted from other areas. Devon has experienced a small net increase in every year since the war (+3·6% from 1951-61), but, as the above table shows, Cornwall's population declined between 1951 and 1961 (-0·9%). Population trends in the two counties differ greatly. By natural change from 1951-1961, Devon's inhabitants declined by -0·7%, whereas in Cornwall there was an increase of +0·6%. The reversal of these trends in the net figures above is caused by Devon's high

Devon's high/
migration gain and Cornwall's high migration loss. Since the 1961 census, however, a healthier trend has been displayed, for Cornwall's population rose steadily by 2·1% to 347,000 in 1964, and Devon's by 2·9% to 851,000 in the same year. Despite this, there would still seem to be a decline in the more remote rural areas.[A]

In Devon, the general distribution of population shows a concentration in the South.[B] Apart from this, there are three main areas of dense population....the Barnstaple/Bideford area; the coastal belt from Budleigh Salterton to Dartmouth; and the Plymouth area. In Cornwall the distribution is more general, but there is a tendency for a concentration in Mid and West Cornwall. For this reason, transport resources tend to be concentrated in these areas, where the demand is greatest.

The problem of rural decline is not the only possible obstacle to the future prosperity of the Region. The structure of the population shows a marked unbalance, with a large proportion of persons over the retiring age. Most of the inward migration into the region is accounted for by persons over the age of fifty-five, while outward migration is mainly in the 20-49 age group. Thus there is a decline in the numbers of persons of working age, and in the pool of labour essential to attract any new industry to the South-West,

TABLE 2.

WORKING AGE POPULATION 1961.

	1961.	Loss 1951-61	%
CORNWALL	202,600	- 9,000	- 4·2
Devon	479,000	- 7,000	- 1·4

upon which the future development of transport depends.

A See map 5., Pp.6/7.

B See map 4., Pp.5/6.

e). Industry and Employment.

The present structure of industry and employment is dominated by tourism and agriculture. Agriculture, though unimportant numerically, is significant in terms of area and its contribution to the life of the region. Farming has been an important activity in the South-West since before the colonisation of the Middle Ages. In the mediaeval market towns there developed a system of industry which was complementary to the agricultural system. Each market town had small industries....textiles, leather, pottery, paper-making, boat-building, and many others. These traditional, all-year round, industries declined with the advent of the Industrial Revolution, tending to unbalance the social and economic structure of the region. As we have seen, even the boom in tin-mining did not aid the region in the long run because there was little development of associated industries to outlast the mining industry when it died.

From 1851 there was a constant decline in agricultural employment. Tourism began to emerge as the major industry, and in association to this growth the railways helped to develop the coastal resort towns. The traditional industries continued to decline throughout the nineteenth century, but since the First World War there has been a rise in the marketing and processing of dairy produce and in the numbers of modern light industries. Of all industries, however, few have boomed except the holiday industry. After the Second World War, the universal increase in "holidays with pay" and in the numbers of private cars helped to make the South-West Britain's most popular holiday area.

The results of the industrial unbalance may be seen in the present employment structure. Employment in the service industries is very high compared to the national average. From/

TABLE 3.

S.W. INDUSTRIAL EMPLOYMENT STRUCTURE, 1963

Comparison by broad groups: Nos. of insured Employees.

Source: Associated Industrial Consultants

GROUP %s.	CORNWALL	DEVON	PLYMOUTH	EXETER	U. K.
EXTRACTIVE	16.9	9.8	1.8	5.3	5.5
MANUFACTURING	13.4	16.3	33.3	6.9	38.1
CONSTRUCTION	8.7	9.7	9.4	9.4	7.1
SERVICES	16.0	64.0	55.5	68.4	49.4
TOTALS	100.0	100.0	100.0	100.0	100.0

From 1951-1961, there was a decline in the primary group, but this was much less than the national tendency, and still the percentage employed in agriculture is much higher than the national figure. A percentage is employed in the "miscellaneous services" group, which includes hotels and catering (15·9% in Cornwall and 21·6% in Devon in 1961). A surprisingly high number of workers are employed in transport, especially in view of the high rate of car ownership and the paucity of demand for commuter services. The

TABLE 4.

PERCENTAGE EMPLOYED IN TRANSPORT, 1961

Source: A.I.C.; H.M. Census figures

CORNWALL	DEVON	PLYMOUTH	EXETER	U.K.
7.0	5.7	6.7	8.6	7.1

instability of the employment situation is illustrated by the low number of insured persons; in 1961 only 42% of the working age population was insured, compared to 66% in the U.K. as a whole.

TABLE 5.

NUMBERS OF INSURED PERSONS IN THE WORKING AGE POPULATION, 1961

Source: A.I.C.; H.M. Census figures

	CORNWALL	DEVON	PLYMOUTH	EXETER
INSURED	98,720	137,174	94,946	45,482
	202,600	479,000	(including Plymouth and Exeter)	

With the tourist industry so dominant, there is a great deal of casual and seasonal employment. Consequently, winter unemployment rates in the South-West tend to be double the summer average. This trend to high winter unemployment is particularly noticeable in the service group of industries, whilst there is a low rate in the manufacturing group throughout the year. Also the biggest variations in the unemployment register

TABLE 6.

SEASONAL UNEMPLOYMENT IN THE SOUTH WEST.

Source: Ministry of Labour.

CORNWALL	1953	1958	1960	1961	1962	1963	1964
January	3.92	6.31	6.59	4.77	5.69	6.72	6.41
July	1.97	3.16	2.66	2.06	2.45	2.31	1.95
DEVON							
January	4.10	4.59	3.86	3.24	3.27	4.76	3.87
July	1.48	2.08	1.56	0.75	1.48	1.74	1.66

tend to be in the areas near the coastal resorts. For example, the numbers of unemployed in Torquay in 1963 rose from 150 in summer to 900 in winter; similar variations were registered in Penzance (300-1,000), Newquay (65-450), and Ilfracombe (75-350).

The basis of the economy is still agriculture and tourism, but there has been a growth in light manufacturing industry since the Second World War, especially in the South Coast areas. In Devon, for example, one-sixth of the firms employing twenty or more people were established in the period 1951-1961, and seventy-two of the 176 firms listed in 1964 had been established since 1939. One-third of these new factories were concerned with the manufacture of electrical goods or in light engineering. In Cornwall, however, there is a more traditional image, with 24% employed in "ships and marine engineering", mostly at Falmouth. Plymouth has over 40% employed in this group, most of whom are employed in the Naval Dockyard, the region's largest single employer of labour. Industries in this group, however, have an uncertain future, and the local authorities are anxious to attract more manufacturing firms to the region to strengthen the employment structure.

Despite the establishment of new factories, there has been little benefit to the transport network. A survey conducted by Devon County Council in 1962 concluded that there was little evidence of workers travelling long distances to work. Most new firms move their raw materials and products over long distances, as labour costs are so low as to make this worth-while. Few of these commodities, however, are heavy or bulky. Fifty per cent of the firms in Devon use rail transport in varying degrees, but most are road users. Most firms use their own fleets of vehicles, because of the ease of handling. Thus transport interests have gained little from the establishment of new industry; in any case, much of the material used is unsuitable for rail handling or for the long-distance haulage firm. Sea transport also plays little part in this industrial expansion apart from the import of timber.

Nevertheless, the establishment of more new industries would seem to be necessary in the region to counteract the problem of seasonal unemployment. Proof of the benefits is demonstrated at Paignton and Exmouth, where the building of a few new factories has almost erased the seasonal rise in unemployment.

New factories may help to arrest the migration of young people who see their own region as lacking in opportunity. Although migration figures show an increase in population, there is a net loss in the 15-59 age group (of 16,000 from 1951-1961). What the transport industry hopes for is the type of heavy manufacturing industry which uses large amounts of materials in bulk.

f). The Holiday Industry

Tourism, as the major industry in the South-West, warrants special consideration in this introductory chapter. No matter how much new manufacture is attracted to the region, the South West is likely to derive most of its prosperity from the millions of visitors each year. The two counties, with their varied scenery, mild climate, and freedom from urban development, are most attractive to holiday-makers. Tourism is a long-established industry, and this has resulted in the provision of many amenities for the visitor, plus a varied amount of accommodation. With the increase in national affluence and "holidays-with-pay", the annual holiday has been established as a national habit. Since the Second World war, this has been of particular benefit to the South-West because, lacking large centres of population in its vicinity, it could not previously depend on visitors unable to afford long journeys. Increases in earnings have also led to increased car ownership, enabling people to tour the area they have chosen for their holiday; this is important in the South-West, where the scenery is the main attraction.

TABLE 7.

U.K. RESIDENTS: MAIN HOLIDAYS

Source: A.I.C.; British Travel Assocation

	1951. 000s	1963	% increase
CORNWALL	950	1,442	52
DEVON	1,720	2,675	55.5
TOTALS	2,670	4,117	53

TABLE 8.

EXPENDITURE: U.K. RESIDENTS: ALL HOLIDAYS

Source: A.I.C. Estimates; British Travel Assocation; National Income and Expenditure Tables; Family Expenditure Survey.

	1951	£millions	1963.
CORNWALL	12.8		25.4
DEVON	23.1		47.5
TOTALS	35.9		72.9

N.B. All holidays include day trips and excursions from within and without the region.
Expenditure includes fare payments.
Estimated expenditure by foreign visitors to the region not included: 1963 estimate was £5 million.

The increase in car ownership, however, has not been of benefit to public transport. Another effect of the motor age has been the significant increase of self-contained accommodation, including flatlets, chalets, caravans and tents....the so-called

TABLE 9.

HOLIDAY ACCOMMODATION 1964: CARAVANS, CHALETS, TENTS.

Source: A.I.C. & County Planning Departments.

	CARAVANS	CHALETS	TENTS	TOTAL
CORNWALL	8,600	1,800	4,400	14,800
DEVON	15,400	5,300	7,900	28,600
TOTALS	24,000	7,100	12,300	43,400

"freedom holiday", free from the necessary restrictions of hotel and boarding house life. The freedom from routine on holiday is a principal advantage afforded by the family car, and the increase in the use of accommodation of the non-traditional type can be attributed to the greater mobility of the holidaymaker. In fact, one third of the visitor s to Devon in 1964 stayed in caravans, tents, chalets, etc.

There would also seem to be a desire to make the cost of holidays as cheap as possible so as to increase the amount of available spending money.

The trends of recent years would seem to indicate that the demand for holidays, particularly of the informal type, will continue to grow. It is desirable that the expansion will be spread into the off-peak season, as many areas are becoming overcrowded in the peak months of July and August. In recent years the length of the holiday season seems to be growing but this is only a slight movement, and well over half the visitors to Devon and Cornwall come in July and August. In some ways this peak is inevitable as it

TABLE 10.

U.K. RESIDENTS: PERIOD MAIN HOLIDAYS TAKEN.

Source: A.I.C.

	MAIN HOLIDAYS.			ADDITIONAL HOLIDAYS.		
	1951	%	1961	1951	%	1961
MAY/JUNE	18		22	13		23
JULY/AUGUST/SEPTEMBER	78		72	64		50
OTHER MONTHS	4		6	23		27

coincides with the annual industrial holidays and the school holidays; also the weather is more likely to be reliable. A more balanced holiday season, however, would be desirable, as it would result in the improvement of the quality of the accommodation available and in the structure of the employment pattern in the industry. Congestion on the main roads would be relieved to some extent. But, if the expected demand for holidays is accounted for by those who use tents and caravans, then the problem of the peak will remain largely unsolved. Tents and caravans have a short season, whilst hotels and boarding houses are open throughout the year.

Another problem is that of the distribution of holidaymakers, resulting in the overcrowding of certain areas, especially during the peak two months. The South coast would seem to be more popular

more popular/
than the other holiday zones, particularly in Devon. In 1960, for instance, 58% of the visitors to Devon stayed in the coastal strip between the Exe and Dart estuaries. Twenty per cent of the visitors to Cornwall are estimated to stay in the Newquay area. Although the popularity of these areas has advantages in the concentration of holiday facilities, a tremendous strain is placed upon the road system, especially in the Exeter area. Paradoxically, the increased mobility, which might have solved this problem, only serves to worsen matters in creating new, conflicting streams of holiday traffic.

These are some of the problems to be solved if the South-West, visited by well over four million people a year, is to retain its outstanding popularity, and value to the economy. One disturbing feature is that, despite the rise in the numbers of visitors, especially those staying in chalets, caravans, tents, there have been no new hotels constructed in recent years. Yet the numbers of people staying in licenced hotels has risen, whilst the numbers staying in unlicenced hotels and boarding houses has declined. Careful attention should be given to the future provision of more and better-quality hotel accommodation, for the hotel user is a most valuable customer. Visitors who use the large hotels rarely vary their choice of accommodation and the hotel has the advantage of a longer season and offers considerabl e employment. The hotel exerts a considerable influence of luxury and stability.

Nevertheless, the increased numbers using caravans, tents, chalets, etc., must be accommodated; this presents a major amenity problem in many areas, as great care must be taken in the siting of encampments. Some existing caravan sites still have accommodation, but at the same time, there are localities where holiday development should be discouraged, either because a reasonable capacity has been reached, or because it is necessary to safeguard the character of a particular district. However, with careful planning, it would seem that there is no doubt that the increase in numbers can be accommodated.

The Annual A bstract of Statistics, 1961[A], estimated that in 1980, the population of the U.K. will be 58,000,000,000. If the present proportion of about 60% going on holiday continues, there will be about 35,000,000,000 home holiday-makers by 1981. If at least one-fifth of these go abroad, there will be about 28,000,000,000 taking holidays in this country. Assuming the proportion visiting the South-West continues at about 18-20%, then there should be an increase over 1961 of over 50,000 persons at peak times and 500,000 during a whole year. Most of this increase would probably be absorbed by caravans or chalets, the majority of which would be on new sites away from the coasts. More chalets might be built because they have more permanence than caravans, thereby helping to lengthen the season.

g). Minerals.

Despite the lack of the basic raw materials for industry, Devon and Cornwall are rich in many other mineral resources that are suitable for bulk transport. The main sources of minerals are listed below:

CHINA CLAY.

Found around St. Austell, Bodmin Moor, and S.W. Dartmoor: over 1½ million tons of this iswon each year, about twelve per cent of the total coming from Devon. Resources are likely to last for the next one hundred years and the material is likely to remain the major item in freight transport, for 72% is exported from the region. The waste is a useful source of building materials.

BALL CLAY

Ball clay is found at Bovey, in South Devon, and Meeth, in North Devon, which are together responsible for 60% of the U.K. production, the remainder coming from Dorset. Production is increasing at the rate of 5% per annum, and 40% of Devon's output is exported via Teignmouth.

A. H.M.S.O.

LIMESTONE/CHALK.

Production of limestone is confined to Devon and runs at about 1½ million tons per annum, 3½% of the national output. Annual quarrying of chalk is much less, only 60,000 tons per annum. Production has doubled in the period 1952-1961, also in the associated field of cement manufacture. Near the largest quarries and works, transport facilities have benefited by the expansion.

SAND AND GRAVEL

This industry is quite well-developed, despite the lack of glacial and recent deposits, and is concentrated in East Devon, where twelve quarries are situated. Also a great deal of sand and gravel is obtained by the dredging of estuaries, and in the English Channel. In Devon in 1960, 22% of the sand and gravel deposits were obtained through estuarine and marine sources. A great deal is obtained as a by-product from the china and ball clay pits.

BRICK CLAY

The main source of brick clay is the weathered Devonian slate in South Devon. Production averages 65,000 tons a year and the main quarries are situated at Ottery St. Mary, Exmouth, Pinhoe, Paignton, and Steer Point. Expansion of the industry is concentrated at the Pinhoe Quarry.

IGNEOUS ROCKS AND SANDSTONE

Quite extensive quarrying is foumd, for high quality road-stone and concrete aggregate. The railways own huge ballast quarries at Meldon and Menheniot. The quarrying of granite has been important, especially in West Cornwall,but now it is concentrated in small quarries, owing to the sporadic distribution of good high-quality stone. Sandstone quarrying is concentrated mainly in North Devon. Total production averages about 800,000 tons per annum of igneous rock, and 300,000 tons of sandstone.

METALLIFEROUS MINING

Only two active mines are left in Cornwall, but in recent

PLATE TWO.

DRAKEWALLS MINE, GUNNISLAKE. The landscape of the igneous areas of Cornwall is dotted with the remains of derelict mines. Drakewalls, near Gunnislake in the Tamar Valley, was one of the richest mines in East Cornwall. The principal metal mined was tin, with some arsenic and copper. Production was spasmodic, with peaks in the early 1850s and mid-1870s. Between 1875-1883, tin ore to the value of £218,000 was won from the 80 fathom lode without having to sink a shaft over six feet in depth. Closure came to the mine in 1910. The view shows the ivy-clad ruins of some of the mine buildings.

in recent/
years the International Tin Council's price for world tin has risen to over £1,000 per ton and there has been a considerable amount of new prospecting in the hope that many old mines may be re-opened. At the moment the Cornish production of tin concentrate (70% tin) is about 2,000 tons per annum, giving 1,400 tons of metallic tin. It is estimated that the output could be increased to about 3-4,000 tons by 1970, also that £2,500 millions worth of tin lies under the soil of Cornwall and West Devon. Despite the conflict of land use which may arise, a total of 25 square miles may be worked again in the not so distant future. Although the production would not generate particularly great loadings, there is bound to be some fringe benefit to the transport system.

h). Agriculture, Forestry and Fishing.

Over two million acres in the South-West are used for farming, of which about one-eighth is rough pasture. Eighty per cent of the land utilised is in pasture and the region produces nine per cent of the total agricultural output of the U.K. The amount of rough pasture and derelict land is decreasing but the number employed shows a similar trend. The main sources of revenue are from small-holdings, livestock, and dairy products, especially milk. Market gardening produce from the Scillies, West Cornwall and the Tamar Valley, is an important source of rail revenue. Also, daily milk trains are run to London.

Forestry is localised; many areas have been taken over by the Forestry Commission, with a resultant increase in conifers. The revenue from forestry in 1964 was £178,000 from 2.7 million hoppus feet of timber. The Forestry Commission's contribution to the total was £107,000 which will rise to £500,000 in the future when young trees have matured.

The decline in Fishing has been arrested but production is sufficient to generate large amounts of freight traffic. Transport is expensive and the industry has suffered by recent increases in rail transport prices. Small canning factories have been built in some ports to attempt to revive the industry.

However, it is unlikely that the region's fishing industry will ever regain its former importance. Only Newlyn and Brixham now harbour fleets of over twenty vessels.

THE DEVELOPMENT OF THE TRANSPORT SYSTEM.

Within the geographical and historical surroundings, the transport system in the South-West has developed to its present state by four distinct stages:-

i). The "Horse and Cart" Era.
ii). The Railway Age.
iii). The Inter-War Period; the entry of the Internal Combustion engine.
iv). Post-War Competition....the motor car age.

The "Horse and Cart" Era. Devon and Cornwall together have a tremendous road mileage, over 11,000 miles, of which Devon has about 7,000 miles. In Roman times there were only just over 1,000 miles, of which a mere forty-five miles were actually built by the Romans. Yet the present network and mileage had developed substantially by 1815, though only one-tenth had been turnpiked or paved. The extension of turnpiking along fresh sections of main roads in the mid-nineteenth century almost completed the present network.

The proliferation of roads and trackways in the region was a direct result of the geography of the region. Rural settlement was scattered in nature and the rugged topography of most areas necessitated circuitous routes. The long and indented coastline has caused many deviations in the routes which reach the important coastal settlements. Large numbers of agricultural holdings all require adequate road access. Indeed the very elongate shape of the peninsula fostered the development of a dense system of roads.

The great majority of roads date from the agricultural colonisation of the early Middle Ages, although many of the inter-village roads are Saxon in origin. Contemporary maps of the mediaeval period seem to indicate that there was quite a considerable network of

network of/
roads in use by that time; the number of ancient bridges[A] still in use would seem to support this. The main means of transportation throughout the Middle Ages, and until about 1800, was the pack horse. For heavy loads a wooden, sled-like vehicle called a "truckamuck" was used, drawn by horses or oxen. Oxen were quite common for heavy work or on steep hills. In the eighteenth century, however, coach and wagon services began to replace the older methods of transport. Turnpiking improved some of the main routes, and the quality of long-distance coach travel improved to reach its highest level just before the railways reached the region from outside in the 1840s. Many new main roads were built at this time.

Although the railways killed long-distance coach travel, short distance road travel remained a feature of the South-West, because of the configuration of the landscape and the thin spread of the rail system. In fact, the road system in the region did not go out of use to the same extent as in industrial areas. Carrier's carts remained a prominent feature of rural life until the late thirties, when the internal combustion engine assumed almost complete control.

In industrial areas, the canal era bridged the gap between the horse era to the railway age. However this period is missing in the history of the South West because of the low traffic potential and the difficulties imposed by the landscape on building. Only a few short canals were built in the region. The Exeter Ship Canal, an earlier, Mediaeval venture has been the only lasting canal.

Despite the proliferation of the road system, the main form of long-distance transport during the period in question was sea. Long-distance transport by land was too slow and inadequate until the turnpike era. The physical nature of the South-West.....the length of the coast, the topography, the large numbers of inlets, bays, and coves..... favoured sea transport. Numerous trading and fishing ports grew up around the coasts, dealing with coastal and world trade.

A. See Plate 3.

PLATE THREE.

PLYM BRIDGE. Before the Industrial Revolution, goods were transported by pack-horse, for the narrow lanes with their high hedges were prohibitive to wheeled transport. On the rivers of the South West, there are many survivals of bridges built for this traffic. Plym Bridge, on the Plymouth boundary, is a 17th century bridge of five granite arches across the River Plym.

The exploits of some of the seafarers from South-West ports is now legendary; the region played no small part in the creation of the British Empire. Throughout the Middle ages, there was also a steady trade with the ports of Brittany. Later, Plymouth and Falmouth developed considerable trade with the West Indies and America... the latter was famous for the mail 'Packet' services to America, developed during the eighteenth century. Quays on the many river estuaries aided the expansion of many industries including Cornish mining. Even today, coastal shipping is still important, but there has been a great decline in shipping in the region.

The Railway Age. This era really dates from 1844, when the first main line reached the region from the East. Gradually, the network expanded, and long-distance road traffic and coastal shipping declined. The principal contribution of the railways to the region was the development of the coastal resorts. In West Cornwall, the early network of mineral lines, which formed the basis of the main line later, did help the development of the mineral ports, but the arrival of the main line from Plymouth stopped that. Falmouth lost her mail packet service, and ports all over the South West declined, although there was no similar recession in road traffic as a whole, for the reasons outlined above.

The First World War and the Rise of the Internal Combustion Engine.

During the First World War, the internal combustion engine experienced a revolutionary development, and after the War, many of the omnibus and haulage companies were established in the region. Many people bought cars too. The railway companies began to lose business, particularly in the field of passenger transport, where they began to feel the effects of bus competition by the late twenties. Cars, however, were still a luxury.

The Post-1947 Competition After the Second World War, the omnibus industry expanded still further at the expense of the Railways. Not only local rail traffic suffered, but long-distance traffic declined too, because of the long-distance coach.

In the fifties, however, a new element entered the field of competition, in the form of the motor car. Due to the increase in private car ownership, all forms of public transport (except air) are threatened.

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CHAPTER TWO.

THE RAILWAY PROBLEM.

i). The development of the Railways.

The network of railways in the South-West was developed by two main companies[1]:...the Great Western Railway and The London and South Western Railway. Transport by rail came quite early to the region in the form of small mineral lines, but the first main line passenger link arrived in 1844, when the broad gauge Bristol and Exeter Railway reached Exeter. From Exeter, this line was extended by the South Devon Railway to Plymouth via Newton Abbot and Totnes, Plymouth being reached on 5th May, 1848. Eleven years later it was possible to travel throughout from London to Penzance by train. On 2nd May, 1859, the opening of Brunel's Royal Albert Bridge at Saltash linked Devonshire's railways with the Cornwall Railway main line to Truro. From Truro to Penzance the main line had already been developed[B] by the West Cornwall Railway (1852), using mineral lines as a basis for expansion.

Early railway history was as colourful as anywhere in the country at that time. Besides enthusiasm, there was also failure, suspicion, and battles with civic dignitaries and local landlords. Despite early teething troubles, the main line to Penzance became a great success in the latter part of the nineteenth century, and it brought prosperity to the region. When the railways became established, many formerly important towns which had been missed by the main line began to clamour for their own links. Consequently, the Great Western Railway, which had absorbed the early companies,[A] built a number of branches from the original main line.

[A] The G.W.R. absorbed the Bristol and Exeter, and the S. Devon Railways in 1876,; the Cornwall Railway was absorbed in 1889. All these Companies were formerly subsidiaries of the G.W.R.

[B]. Built to the Standard gauge;converted to the 7' 0¼" broad gauge 1867;first through trains Paddington-Penzance I.3.1867.

These branch lineswere of two main types:-

1). Coast lines....linking the main line to the coastal towns, thereby assisting the growth of seaside holiday resorts.

2). Country lines....joining the main line to established inland market towns which had lost some of their nodality with the arrival of the main line.

The purpose of both types of line was to serve the surrounding countryside and to feed the main line with long-distance passengers. Without doubt, the coast lines were more successful from the outset because they helped to establish the new seaside resorts. Country lines made only a marginal profit, if at all; frequently they were built in areas of decline.

Another of the pre-grouping railway companies also had ambitions in the South-West, namely the London and South Western Railway, whose main line reached the region from Waterloo via Salisbury. The opening of the line was long-delayed by legal proceedings and parliamentary discussions, but finally the link to Exeter from Yeovil was opened on 19th July, 1860. Five short branch lines were built from this main line to the coastal resorts of East Devon.[A]

Beyond Exeter, the L.S.W.R. was retarded in its development by the actions of the G.W.R. Originally, there was a Central Scheme of the former to project a route beyond Exeter over Dartmoor and Bodmin Moor to Falmouth, but this idea was defeated in Parliament. The L.S.W.R. arrived in Devon at a late stage, when the richest areas in the South of the county had been entered by the G.W.R. Lines which were developed to the West of Exeter by the L.S.W.R. consisted of a main line to Plymouth, plus secondary lines to Padstow[B], Bude, Ilfracombe, and Torrington.

A To Lyme Regis (now in Dorset), Seaton, Sidmouth, Budleigh Salterton and Exmouth.

B The L.S.W.R. had acquired (in 1847) the Bodmin and Wadebridge Railway, opened in 1834.

PLATE FOUR.

TAVISTOCK SOUTH STATION.The I2.40 Launceston to Plymouth pauses at the up platform on 29th. December,I962,the last day of operations on the 34½-mile Plymouth-Launceston branch.The Plymouth-Tavistock section of the line was opened by the South Devon and Tavistock Railway on 22nd.June,I859;the remaining I9 miles to Launceston were built by the Launceston and South Devon Railway and opened on Ist. June,I865.Both companies were absorbed by the South Devon Railway in I865,which in turn became part of the Great Western Railway.Tavistock was the most important intermediate station;its overall roof was designed by I.K.Brunel,engineer of the line.

There were few short branch lines of the G.W.R. type (above). In 1848, the L.S.W.R. had plans to develop the docks at Plymouth into an ocean terminal but the Great Western had already established a grip on the area, and built the Great Western Docks at Millbay (completed 1852), a lesser scheme than the L.S.W.R.'s. Thus the South Western's hope of big business was lost and the company's first trains into Plymouth, on 18th May, 1876, entered the town by humbly using the G.W.R. branch from Lydford. An independent company (an L.S.W.R. subsidiary), the Plymouth, Devonport and South Western Junction Railway, built the present line from Lydford via Bere Alston, which provided an independent entry for L.S.W.R. trains from 2nd June, 1890. Even so, South Western trains were forced to use the Great Western's metals in Plymouth to reach their own Friary terminus, opened on 1st July, 1891.

The Great Western was the only British railway system to retain its old identity in the important railway groupings of 1923, and it kept all its lines in the South-West. At the same time all former L.S.W.R. property was ceded to the Southern Railway. The Southern system, like its predecessor, remained the poor relation of the G.W.R., and acquired the nick-name of "the withered arm" beyond Exeter. By 1923, the whole of the railway network had taken shape, with the exception of the wandering light railway branch between Halwill Junction and Torrington, which opened in 1925 and was absorbed by the Southern Railway.

At nationalisation in 1948, all G.W.R. lines were made part of the Western Region of British Railways, whilst all Southern Railway lines were integrated into the Southern Region. Management under nationalisation became unsettled, for the Western Region acquired all the Southern lines West of Exeter, only to return them in 1958, The arrangement, however, was short-lived, for from 1st January, 1963, the Western Region has controlled all the ex-Southern lines west of Salisbury.

Thus the railway structure in the South-West has always presented a contrast between the powerful, prosperous Great Western with its many branch lines, and the flimsy network of Southern lines, forced to eke out an existence in the rural wilderness of North Devon and Cornwall. Apart from the Plymouth main line, none of the Southern's routes warranted double-track. The company's trains were notoriously pedestrian beyond Exeter and all the principal expresses lost time by dividing into sections at Exeter, Okehampton, or Halwill. By contrast, the Great Western attempted to provide an efficient and fastsexpress service to Torbay, Plymouth and Penzance, with good branch line connections where possible. Even on the difficult Cornwall main line, services were vastly superior to the Southern's.

ii). The Railway Hey-Day.

The railways undoubtedly brought a great deal of prosperity to the South-West after the completion of the main line system by 1860. Towns served by the railway advanced, while those it by-passed fell back. Many new resorts were established with the aid of railways, and the holiday trade became a major industry in many parts of the region. Every member of the population came directly or indirectly under the influence of the railways. Communications with London were quicker and more numerous than in stage-coach days. Increased travel, the universal adoption of Greenwich time, the growth in circulation of national newspapers, the greater interest in national events afforded by the telegraph (an important railway enterprise).... all this had started to blend the South-West with the rest of the country. The process of orientation and dependence upon London was initiated by the railways. The world of 1860 was totally different to that of 1830, when the stage coach had been at the peak of its development. This process may be compared with Brittany, where the influence of Paris was increased by railway development.

Gradually the railways established themselves as an economic force and built up a near-monopoly in public transport, but there were also short-comings.

In the pioneer days, there were many instances of business inefficiency, where the companies failed to exploit demand as fully as they might have done. Even the proud Great Western made many mistakes, for pride bred complacency. Until 1892, the GW.R. persisted with the 7' 0¼" broad gauge to which Brunel had constructed the main line. This difficulty created great inconvenience in linking up with other railway systems. Not until 1892 was the G.W.R. obliged to swallow its pride and converted the main line to Devon and Cornwall to the standard 4' 8½" gauge. The logic of this step was soon demonstrated, for through expresses were soon introduced from the Midlands and the North.

The L.S.W.R. main line, which reached Exeter in 1860, was in many respects too late. Unlike the broad gauge lines to Penzance, it did not bring a vast increase in prosperity to the market towns en route. Rural de-population was a serious problem in East and North Devon long before the arrival of this railway. Axminster had lost its carpet industry and Honiton was re-awakened only by the motor-car, reviving as an important cross-roads town. East Devon suffered in that it was left virtually off the transport map from the opening of the Bristol and Exeter line in 1844, to the completion of its own main line in 1860.

In latter Victorian times too, there were examples of underdevelopment and inefficiency. The Cornwall Railway was particularly notorious; it was slow, the maintenance of the track was of a shocking standard, and it had a bad accident record. Patronage was poor in the early years, both because of inefficiency and the fact that the Cornish people did not habitually travel far. But mining declined rapidly, and the rapid exodus of thousands of miners in the 1870s helped the traditional sources of railway revenue, tourism and agriculture, to increase. At the Eastern end of the Cornwall line Plymouth had only two stations to serve about 100,000 people in 1871. Only twenty trains left the area each weekday in winter, and all trains were notoriously slow.

Many passengers, as well as goods, were still going by sea, not only because of the paucity of trains, but also because of high fares. However, the arrival of the L.S.W.R. from Lydford in 1876 brought a new spirit of competition to the area and trains and traffic grew.

Gradually, competition on the two systems increased, the L.S.W.R. demonstrating a great deal of business enterprise in encouraging third class fares on their trains, which the conservative G.W.R. did not. Not until October, 1890, was every train on the G.W.R. open to all classes. Two years later, the 213 miles of exclusively broad-gauge track on the G.W.R. west of Exeter were converted to standard gauge. In 1890, the L.S.W.R. reached Plymouth on its own P.D. & S.W.J.R. route. With this, and the exciting possibilities of through trains from the North and Midlands, the stage was set for true competition.

The peak of railway efficiency was reached in Edwardian times. This may be illustrated by the tremendous increase in ocean traffic from Plymouth at that time. Great hopes had been expressed for the future of the Great Western Docks at Millbay and in late Victorian times, many homeward-bound ships dropped mails at Plymouth, to be conveyed by the Great Western to London. Later, passenger specials were started and, in 1904, the trickle became a flood, when the L.S.W.R. started to attract passengers to their new terminal at Stonehouse Pool. One of its first ocean specials covered the 230 miles from Stonehouse Junction to Waterloo in 4 hours 3 minutes. The G.W.R.'s reply is now an epic of railway history, for the locomotive "City of Truro" attained the maximum speed of 102.3 m.p.h. on Wellington Bank with a mail special on 9th May, 1904. This train reached Paddington in 3 hours 42 minutes from Millbay Docks at an average speed of 66.5 m.p.h. including a stop for engine-changing at Bristol. Although the South Western could not hope to equal this, the accent on speed continued until a bad collision at Salisbury on 1st July, 1906, when 24 of 43 passengers on a Waterloo-bound ocean special were killed. After this, competition was mainly restricted to comfort and reliability until in 1910, the two companies signed a peace treaty, and the L.S.W.R. withdrew from ocean activities in Plymouth.

There was also considerable competition between the two companies for local traffic in the Plymouth area. The L.S.W.R. in the 1890s started several locals for Dockyard workers between Devonport and St. Budeaux, but the G.W.R. did not counter this until 1904, when there was a sudden increase in local services in the area, run by the new steam railcars. Several new halts were built between Millbay and Saltash. Many people moved to the suburbs near the new halts and these areas grew rapidly, notably St. Budeaux and Lipson. In 1906, the P.D. & S.W.J.R. opened their new halts, increased the Devonport-St. Budeaux service and extended it to Friary. From 1881 to 1914, the year when Plymouth, Devonport and Stonehouse were united, the population of the area increased from 138,000 to 214,000. Saltash and Plympton grew because of their increased rail services; so too did the villages served by the Yealmpton and Turnchapel branches. Population in the centre of Plymouth thinned as more people moved out to the suburbs; the acreage devoted to housing doubled.

With competition and the increase in through traffic, the Great Western Railway became truly great. By July, 1903, the "Cornishman" express started to reach Exeter in 3½ hours, Plymouth in 4 hours 50 minutes, and Penzance in 7 hours 46 minutes. This paved the way for the introduction of the famous "Cornish Riviera Express", introduced on 1st July, 1904, which reached Penzance in only seven hours, via Bristol. In 1906, a shorter route via Castle Cary[A] was opened and the non-stop Paddington-Plymouth run was completed in 4 hours 7 minutes. The "Riviera" typified the advance of the Great Western, which substantially increased its patronage after the First World War on a wave of popular worship. West Country holiday popularity was due in no small measure to the G.W.R., which ran numerous summer extra trains to the South-West, especially to Torbay. In its peak between the wars, it was a splendid railway, the pride of the South-West, completely eclipsing the image of the Southern Railway west of Exeter.

A. From Castle Cary to Taunton, which reduced the Paddington-Plymouth mileage by 20¼ miles.

iii). Social Conditions.

The Railway Age brought a new prosperity to the South-West, and railway revenue in turn benefited from this. Up to the First World War, the success of the railways was due to a near-monopoly in public transport. After that war, the development of the internal combustion engine brought new competitors to the scene. Omnibus services sprang up all over the region and there were many companies formed after the war. Some men who had left the forces with gratuities used their money to set up in business with an omnibus. Many country carriers expanded their trade, and began to invest in the carriage of passengers. At the time the railways did not view the competition with much dismay. In fact, the Great Western began to run its own services, and was the pioneer operator of buses among the large railways in this country, with a service from Helston to the Lizard in 1911A.

The complacency of the railways was not surprising because of their monopoly which had lasted for so long. Despite the excellence of the Great Western as a whole, the monopoly created a condition where the operator could be both extravagant and tight-fisted.... and get away with it. Thus railway officials were slow to realise the full threat of the challenge until about 1925, when the railways started to lose an enormous amount of traffic, particularly over surburban routes and the shorter branches in rural areas. Yet both the Great Western and the Southern continued to run uneconomic services parallel to the competing bus routes, and little was done to make the system more profitable by the pruning of uneconomic services.

In fact, only three lines were closed by them in the period before the Second World War. These were as follows:-

1. The Fowey-St. Blazey line which closed on 8th July, 1929. This short line, only five miles long, was little used after 1895 because its connecting services with the main line competed with the Loswithiel-Fowey service. Omnibus services quickly acquired the local traffic between Fowey and the St. Austell area.

A With vehicles bought from the Lynton and Barnstaple Railway (see Chapter 6).

2. The Lynton and Barnstaple Railway, which closed on 29th September, 1935. This was the Westcountry's own (1' 11½") narrow gauge passenger railway and was completed by the local people in 1898 to link the twin resorts of Lynton and Lynmouth with the outside world. From the start it had shaky finances, and in 1922 it was sold to the Southern Railway. The rurality of the area, the fact that trains were fully-loaded only during the holiday season, and the introduction of a quicker bus service, hastened the closure of this expensive line. One reflects ruefully that today the line would possibly be a major tourist attraction, comparable to similar lines in North Wales.

3. The Plymouth-Yealmpton branch closed on 7th July, 1930, when it succumbed to a quicker bus service on the adjacent main road. However, it was re-opened on 3rd November, 1941, to accommodate Plymouth people living in the country after the Blitz. Closure came again, finally, on 7th October, 1947.

These were the only real economy measures taken, for few wayside stations on other lines were closed. In fact, between 1925 and 1930, the G.W.R. began building a number of wayside halts on its lines to compete with nearby bus services, on a scale comparable with the building of suburban halts in the Plymouth area in the 1905-10 period. Past traditions and prejudices prevailed, and little attempt was made to abandon the uneconomic lines in rural areas. Besides the feeling of competition, there was the sense of duty to the public. What this, in fact, meant was the provision of uneconomic services for the minority to the detriment of the majority of customers on main lines. The Southern was especially guilty of this, as we shall see. [A] Ordinary principles of business management did not seem to apply. Yet, unlike under nationalisation, the railways were under no obligation to provide any uneconomic services.

A See Chapter 4.

The railway companies also met the threat of omnibus competition by expanding their own road services, a move which eventually proved harmful to their interests. Rather than risk a clash of interests, the railways joined with the large road combine of Tilling and British Electric Traction by an agreement of 1929. Thus the railways became almost half-owners of the bus companies, but the strength of the latter was greatly increased by the inflow of railway capital. As the bus companies grew from this impetus, so the railways gradually backed out of bus operations;[A] they had lost the battle, although they did not realise it at the time.

At nationalisation the Great Western Railway was the only one of the 'big four' to be showing a profit. In the South-West, this profit was probably only marginal, yet a mere fifteen years later, it was stated[B] that the railways in the peninsula were losing over two million pounds per annum. The fifties stripped the railways naked from the cloak of false prosperity which they had succeeded in wearing for so long. A revolution began in transport....the spread of the private motor car. Until the fifties, the railways in the area had off-set the losses on the branch lines and local services by an expansion in long-distance traffic, particularly during the holiday season. This expansion went on even up to 1955, when 98,042 long-distance passengers alighted at Torquay, and 70,365 at Paignton, on the Saturdays during the summer service.

Personal transport added to bus competition made the losses on the branch lines rise; but in terms of long-distance travel the numbers of people coming to the South-West by car increased and the numbers coming by rail decreased rapidly. The following table, based on British Travel and Holidays Association Surveys, shows how holiday-makers travelled in 1951, 1955 and 1960:

A. The G.W.R. sold its buses in the S.W. and made an agreement with the W. & S. National Omnibus Cos. in 1932 (see Chapter 6)

B. Beeching Report. (Reference p.54)

TABLE 11

TYPE OF TRANSPORT	1951 for U.K.%	1955 for U.K.%	1960 for U.K.%	1960 for S.W.%
Rail	47	37	30	23
Car	27	34	47	63
Coach/bus	27	33	21	14
	101*	104*	98	100

* The excess over 100% is because some holiday-makers used more than one type of transport.

The impact of the change in social conditions hit the railway traffic hard and the enormous economies necessary eventually were extremely harsh. Besides the increase in private transport[A] many other changes contributed to this situation.

TABLE 12.

INCREASES IN PRIVATE CAR OWNERSHIP

Source: M.O.T. Road Statistics

AUTHORITY	ALL VEHICLES			
	1951	1963	1964	1965
Devon C.C.		165,300	171,470	
Exeter C.B.C.		19,010	20,470	
Plymouth C.B.C.		37,150	40,020	
Cornwall C.C.	52,127	106,780	108,390	110,840
TOTAL S.W.	157,408	328,240	340,350.	356,560

AUTHORITY	OF WHICH CARS				POP./CAR
	1951	1963	1964	1965	1964
Devon C.C.		103,310	111,940		5.5
Exeter C.B.C.		12,170	13,520		6.1
Plymouth C.B.C.		25,400	27,950		7.6
Cornwall C.C.	27,053	65,370	68,700	73,110	5.1
TOTAL S.W.	83,644	206,250	222,110	240,950	5.3

A See table 12

Rural de-population continued to be a problem, and as the countryside is vacated, so transport loses customers. The problem is particularly serious in North Devon and Cornwall; in the latter case the situation is aggravated by an actual outward migration from the county.[B] In remote areas, the railways inadvertently helped the decline by taking local business to larger towns nearby. Old-established market centres and large villages contracted. Okehampton, for example, lost much of its business to Exeter. The private car has merely accentuated this process of dependence on the larger centres.

Long-distance holiday traffic is no longer profitable to the railways now that they have lost the lion's share of the revenue. Rural de-population has not been accompanied by any massive expansion in urban centres or in the field of industry. The economy of the South-West has become lop-sided (see chapter one), with too many people employed in service industries (see table 13), an aging population (see table 14), and too great a dependence on the short holiday season, with its heavy traffic.

TABLE 13

PROPORTION OF WORKERS EMPLOYED IN SERVICE INDUSTRIES (1962).

Source: Ministry of Labour Statistics

Devon	73.3%
Cornwall	71.4%
S.W. Average	72.4%

TABLE 14

COMPARISON OF AGE STRUCTURE....DEVON AND ENGLAND & WALES.

a. SUMMARY OF POPULATION BY AGE AND SEX....ENGLAND & WALES

	MALES (%)		FEMALES (%)		
AGE GROUP	1951	1961	1951	1961	AGE GROUP
0-14	11.3	11.6	10.8	11.0	0-14
15-64	32.2	32.4	31.9	30.1	15-59
65 and over	4.5	4.6	9.3	10.3	60 & over
TOTAL	48.0	48.6	52.0	51.4	TOTAL

A See Chapter one

B See Table 1 in Chapter one.

TABLE 14 (Cont.)

b. SUMMARY OF POPULATION BY AGE AND SEX....DEVON

	MALES (%)		FEMALES (%)		
AGE GROUP	1951	1961	1951	1961	AGE GROUP
0-14	10.2	10.4	9.7	9.9	0-14
15-64	30.2	29.5	30.9	28.3	15-59
65 and over	6.2	7.1	12.8	14.8	60 & over
TOTAL	46.6	47.0	53.4	53.0	TOTAL

It is no longer attractive to the railway to run extra trains on summer Saturdays for journeys in one direction only. Operating procedure necessitates that coaching stock usually returns from the region empty. The holiday season is insufficiently spread; the "peak" fortnight at the beginning of August is economically ruinous. In Cornwall the problem

TABLE 15

MONTHLY TOTALS OF VISITORS TO DEVON, 1960.

Source: D.C.C. Survey of Holiday Industry, 1960.

MONTH	NO. OF VISITORS	% OF TOTAL
January	24,600	1
February	24,600	1
March	73,800	3
April	98,400	4
May	196,800	8
June	467,400	19
July	565,800	23
August	590,400	24
September	270,600	11
October	73,800	3
November	24,600	11
December	49,200	2

is accentuated because the season is shorter and, therefore, expensive. Holidays with pay have given the worker more leisure and the number of visitors has increased steadily since the 1939-45 War. But the holidaymakers do not now mainly come by train. After the Second World War, the increase in traffic on the railways was due to the increase in post-war purchasing power. Travel was one of the few outlets for pleasure. Now other luxuries, including the private car, have replaced this.

In the remote rural areas where de-population is a serious problem, it follows that there is little industry other than that connected with the holiday trade. North Devon and East Cornwall are special cases. Here rail transport arrived too late to arrest the migratory flow from the land. In some ways, rail transport accelerated the decline in the most remote areas, for they transferred much of the trade of the smaller market towns to the larger centres. It was too late to bolster the sagging economies of such towns and villages. There was little industry and the holiday season on the North coast is shorter, so unemployment is always a nagging problem. North Devon has become like a wilderness; the geographical differences between Devon North and South of Dartmoor are quite amazing. Furthermore, the transport arteries of the peninsula are lineal, and so it is particularly difficult, even in Cornwall, to travel from the North to the south by public transport. From Padstow to Fowey, twenty miles, it takes about 2½ hours; it is almost quicker to travel between Plymouth and London than between Plymouth and Barnstaple. In North Devon, only Barnstaple and Ilfracombe have really benefited from the railway. Barnstaple has established herself as the "capital" of North Devon, and Ilfracombe has become the only large resort in that part of the county. Trains to Bude, Padstow and other places along the North Coast by the Southern lines were always too slow and inconvenient.

The general isolation of the South-West usually blunts ambitions to attract industry. Cornwall was extremely prosperous

prosperous/
during the mining era, but after the slump of the First World War, the decline in the industry has caused an inland depression in the county. China Clay has replaced mining as the principal extractive industry and has a fairly dense network of railways connecting the pits. Most of the clay, however, is sent away by sea, which does not help the railways in respect of long-distance freight traffic. Fishing, another formerly important industry, has declined drastically. Horticultural traffic is large, but is largely uneconomic from the freight point of view unless it can be handled in large quantities. Traditional industries have declined, and the new factories are usually without rail connections, but rely on road transport. For example, in the City of Plymouth, twenty four new factories were built during the period 1945-1966 (17 since 1957); none of these has a direct rail link.

In the cities, Plymouth and Exeter, the changes in social conditions initiated by the railways have continued. People have gone on drifting to the outskirts of these cities to live, but the new suburbs are no longer being built near the railways, Trams and then omnibuses replaced the railways as the main form of suburban public transport. During the last war, many small halts and platforms were closed in the Plymouth area. The services based on Millbay and Friary stations were cut from the time-tables, killed by road competition.

Against this background of social conditions, it must be stated that the South-West is a very difficult area geographically (see chapter one). Dartmoor and Bodmin Moor are barriers to rail transport, and the whole peninsula is deeply incised with rejuvenated river valleys and a coastline crenellated with inlets. The railway system has to avoid these obstacles, and thus steep gradients and sharp curves are prevalent on most lines, having severe effects on speed. In so many places the railways have lost business because the local station is too far from the town centre (as at Callington), or perched on the top of a steep hill (as at Tavistock N).[A]

A See Map 14., Pp.79/80.

PLATE FIVE.

THE SEA WALL AT TEIGNMOUTH.The I5.IO from Plymouth to Cardiff skirts the New Red Sandstone cliffs on a summer Saturday in I959.Heading the train is a Class '9F' 2-IO-O,a type of locomotive normally reserved for freight haulage.Until recent years,the dense holiday traffic at week-ends in the Summer placed a tremendous strain on the main line railways.At the peak period all spare resources of motive power and coaching stock were pressed into service.This stretch of line was part of I.K.Brunel's atmospheric railway,constructed in I846.Today it constitutes a difficult section of the Exeter-Newton Abbot main line.

In addition, the North is a poor area for agriculture and has a harsh coastline, so that development has tended to be in the South. Fortune has always favoured the main line to Penzance, as it follows the grain of the peninsula. Other lines are ancillary to this (see the 1966 rail map), hence the numbers of branch lines which have become uneconomic.

iv). Economic Factors.

The economy of the South-West has long been unbalanced (see chapter one), partly because of its isolation, but in more recent times, because of the lack of industrial raw materials. We have already touched on some of the current economic problems in this chapter and in Chapter One, such as rural depopulation, lack of industry, and the dependence on the holiday season. Now it is a question of whether such problems are inevitable, or whether they have been caused by the inadequacies of the railway system. With the contraction of the system, it has been argued by many local people that the disappearance of the railways in many areas will accentuate these problems.

Rail closures would seem to have local effects but so far they have not affected the overall economic situation in any marked way. The first lines to be closed down were mostly rural lines, serving country towns and villages which could not possibly generate enough traffic for a viable railway system. Some measure of de-population and unemployment has occurred as a result of rail closures, but it should be remembered that de-population has been going on for many years in such areas. In North and Mid-Devon, for example, the population declined by 2.3% from 1951 to 1961. More serious problems, however, may be raised in the future, as some of the coastal resorts are losing their rail links. The railways argue that their share of the holiday traffic decreases annually, and that they cannot afford to operate branch lines which are underused for nine months of the year. Local authorities believe that they will lose visitors because of the lack of rail facilites and that the traffic transferred to the roads will cause considerable congestion.

Trends in the numbers of holidaymakers, however, would not seem to indicate this over the region as a whole. Choice belongs to the consumer; the tourist has opted to use the private car and thus rail traffic has declined. Small hoteliers do seem to suffer some inconvenience, however, as the motor age has increased the demand for touring and camping holidays rather than for residential periods at one place. Economic problems caused by the withdrawal of passenger trains services, however, would seem to be personal rather than universal.

The problems of industry and the railways resemble a vicious circle. Lack of large industries with possible bulk loads has caused the withdrawal of many railway freight facilities. Yet in turn, the lack of rail facilities in the region as a whole has discouraged the attraction of large new industries. Most new industries are of the light variety and use road transport. The contraction of the rail system does cause many indirect problems for industry. Almost all firms have to import their raw materials from outside the region, and the increasing lack of rail facilities has increased the costs of many firms. Difficulties are experienced in the distribution of fuel and other heavy freight. The railways are concentrating their freight depots, and are using road vehicles for the final distribution. The efficiency of this system can only be impaired as road congestion increases. Many firms have taken steps to provide their own transport, which detracts from the revenue of the railways and increases road congestion (see chapter seven for increase in 'C' licences). Local industrialists have frequently complained of the poor communications, on radio, television and in the press; private road fleets are a tangible expression of this dissatisfaction.

The overall basis of the problem is that of isolation. South-West England is too far from the major centres of population and industry, which is a good thing only for the holiday industry. In North Devon and Cornwall, the tenuous secondary lines[A] were almost part of the landscape;

A To Bude and Padstow

landscape;/
their loss will undoubtedly cause great personal hardship in many cases; the only long-distance links from these areas have been destroyed with the closure of the lines to Bude and Wadebridge from Okehampton on 3rd October, 1966. Cross-country journeys are becoming even more difficult, and it seems that the rift between North and South will widen. Despite the increase in p rivate car ownership, can the South-West survive the threat of seeming isolation by lack of public transport? On traversing the stretch of line between Launceston and Wadebridge on the last train after eighty years of service, one had the feeling of abandoning the huddled crowds on stations like Delabole and Camelford to their fate. The feeling of hopelessness was reflected in the windswept plateau, where the very trees strained to escape to the East.

As utilisation decreases, so the railways find it necessary to increase their fares. Increased prices in turn discourage traffic, and so the authorities are enforced to refuse to carry unsuitable traffic. If this process continues much further, then the very existence of traditional industries like fishing and horticulture will be threatened. The function of the railways will be confined to the long-distance passenger traffic and to the handling of freight which can be transported in bulk loads. The situation resembles a vortex, a downward spiral that cannot possibly be broken without direct Government intervention. These problems will be considered in more detail in the following chapters.

MAIN REFERENCES USED IN CHAPTER TWO.

1. D. St. John Thomas. "A REGIONAL HISTORY OF THE RAILWAYS OF GREAT BRITAIN" Vol. 1., THE WESTCOUNTRY" Phoenix, 1960.

2. D. St. John Thomas. "THE RURAL TRANSPORT PROBLEM", Routledge and Paul, 1963.

CHAPTER THREE

THE DECLINE OF THE RAILWAYS - 1947-62.

i). The Economic Problem.

From 1st January, 1948, the railways became nationalised. In the South-West, ex-G.W.R. lines were absorbed by the Western Region of British Railways, and the ex-S.R. lines became part of the Southern Region. The new management was mandated to provide 'adequate railway services' throughout the country, considering the needs of agriculture and the rural population. In 1953, the requirement of adequacy was dropped, and the railways were permitted to run whatever services they chose. But this freedom was limited by the procedure of the Transport Users' Consultative Committee, and by two statutory duties of making enough revenue to 'make provision for the meeting of charges properly chargeable to revenue, taking one year with another', and having 'due regard....to the needs of the public, agriculture, commerce and industry'.[1.] These two requirements conflicted, for if they were to consider the public need, the Commission A would have to provide services which minimised their chances of making their revenue meet their expenditure. Throughout the fifties the hands of the railways were tied by these anomalies, and necessary economies were not forthcoming until the dramatic increase in the national rail deficit after 1957. However, this does not place the blame for the losses on the Government alone.

The economic burden placed on the railways of the South-West was a heavy one. At first the cancerous growth was disguised by a resurgence of traffic in the immediate post-war years. The simple explanation for this was that, in the days of austerity and few entertainments, travel was one way of finding pleasure. Until 1955 too, excursion and long-distance traffic expanded to an unprecedented level. In 1955, the first national railway operating loss was announced, and the enigma was exposed. But then it was already too late to correct the situation in the South-West.

A Transport Act. H.M.S.O. 1947.

The biggest single contribution to the post-war profit was that the railways continued to carry, on a national scale, a considerable amount of heavy freight, particularly coal. After the recessions in the coal and steel industries, this traffic was lost, and the operating surplus soon became a deficit. For the first time, it was realised how serious the problem in the South West actually was. At this time, road competition, particularly the private car, had started to make considerable inroads into railway traffic. Also the railways had emerged from World War II in a poor physical state, which had created bad operating conditions and had detracted from their public image. Passengers were constantly annoyed by lateness, inefficiency and dirty trains, and their impressions of the railways were distinctly Victorian. The decline of the G.W.R., in the nationalised guise of the Western Region, was particularly galling to Westcountry travellers who had worshipped the Company in pre-war days.

In March, 1955, the railways announced a £1,240 million Modernisation Plan,[2] which was essentially a plan for the modernisation of equipment rather than the shedding of uneconomic liabilities. The Plan was too late to help the railways of the South-West; it missed the true reasons for the poor economic position. Great faith was placed in the Modernisation Plan by both the railway management and the public, although it was really ten years too late. A popular railway journal of the day received the Plan in typically enthusiastic manner,[3] saying "The B.T.C. has not grasped its opportunity half-heartedly", and "It is hoped that every project....it outlines will be in motion within five years".

The South-West received a great deal of national publicity at the publication of the Plan, for it was implied that all lines to the West of Newton Abbot would be turned over to complete diesel operation. Although the diesels did eventually arrive,[A] developments in the region before or after the Plan were not rapid.

A The first main-line diesel loco. appeared in April, 1958, but a real impression was not made until after 1960.

The attitude of the local management was conditioned by the days of near-monopoly, when the railways felt a social obligation to carry traffic, and rates of charge were fixed by statute without relationship to local costs. Accounting was not detailed enough, and no figures were available concerning the contributions of individual branch lines to total revenue. Thus there was too much cross-subsidisation, which was exposed by road competition. Profits from the busy main lines subsidised the poorly-used branches and helped to keep them open. Road competition, however, reduced the rates of good railway traffic to the point where they were quite incapable of subsidising the very costly provision of services which handled the poor railway traffic. The burdening of good traffics with the costs arising from poor ones led to the transfer to road of a considerable volume of traffic which the railways were best equipped to handle, because customers were unable to afford the rates which were kept at high levels by the uneconomic traffics.

Road operators had a considerable advantage over the railways, for they had low fixed costs. The high fixed costs of the railways could be overcome only if there was a high usage, even on single-tracked lines. Thus, in the passenger field, the biggest losses are incurred by branch-line and stopping-passenger services, in which the South-West abounded. On British Railways in 1960, one-third of the system carried 1% of the passenger traffic[4.], while one third of the mileage[A] also carried only 1% of the freight ton-miles. Furthermore, half of the total route mileage carried about 4% of the total passenger miles and 5% of the total freight ton-miles. Applied to the South-West, these figures would probably be somewhat different, as the greater proportion of the rail system consisted of branch lines, but bearing in mind that the above figures concern the country as a whole, the situation in the S.W. region must have been much worse. One fact was certain; the figures reveal an alarming tendency for the bulk of the system to carry a minimum of the traffic at enormous costs. Such traffic does not even match the costs of stations themselves, and makes no contribution to route costs, movement costs, nor terminal costs.

A No separate figures are available for the S. West.

PLATE SIX.

NORTH DEVON & CORNWALL JUNCTION LIGHT RAILWAY.This line,between Halwill Junction and Torrington,was the last of any length to be built in Devon and Cornwall and was opened in July,I925.Passenger services consisted of three trains each way(weekdays only),which were virtually unused.The line was closed in March,I965,but six miles at its eastern end were retained for ball clay traffic between Torrington and the North Devon Clay Company's Works at Peter's Marland,near Petrockstow.This typical view shows Class '2MT' tank engine No.4I298 and one coach forming the IO.38 Halwill-Torrington on 30th. March,I963.The train is about to cross the River Torridge near the end of its journey.

Railways in the South-West developed in the days when the horse was the only alternative form of rural transport.Even under these near monopoly conditions,it is doubtful whether many of the branches in Devon and Cornwall have ever paid their way.In recent times,these services competed with omnibuses serving the same basic purpose,and now both are fighting an impossible battle for economic survival against the motor car.In these conditions,it has beem estimated that British Railways meet less than IO% of the demand for rural transport,and to do this they provide services accounting for a large proportion of passenger route miles.Most branch and stopping passenger trains in the fifties carried less than a bus-load per journey and lost nearly twice as much as they collected in fares.[4].

This shaky economic situation w as not only confined to the passenger trains.Freight traffic was also highly inefficient and most South-Western services undoubtedly operated at a loss.The original dense network of rural freight stations was built to be served by horse and cart from the local areas,Most of the traffic was conveyed in single wagon-loads.Great numbers of primary and secondary marshalling yards were necessary to assemble trains from these small units for destinations outside the region,and to split in-coming freights into trip-workings for the respective destinations of the individual wagons.Because of this,freight trains were slow and inefficient.Few wagons were equipped with vacuum brake apparatus because of the marshalling which was a feature of operation.The development of new types of wagon was thus impaired,Turn-around times were numbered in days and an enormous fleet of wagons was required in order to maintain an "efficient" service.

Inevitably,the policy of cross-subsidisation in both passenger and freight traffic led to increased fares and carriage rates.Fares became too high for the limited demand,and there was seldom any real increase in revenue as a result of an increase in charges.Taxis became cheaper than rail transport for groups of people,and were in fact cheaper tham bus fares.

Using door-to-door transport, the rural populace began to realise the inconvenience of rail services[A] which had descended to them from the horse-and-cart era.

From these facts it must now become apparent that the railway management was largely responsible for the abominable deterioration in the state of the railways in the South-West. Officials did not realise in time, i.e. in the immediate post-war years, that the railways could not pay their way in most of the area and they continued to provide what were essentially social services. Many economies could have, and should have, been made in the early fifties. When criticism was directed at the management, it was argued that capital had not been made available for money-saving at that time, thus uneconomic lines started to lose even more money.

Many people, not only those in railway management, believed there should have been Government subsidies for uneconomic lines in the South-West. After all, roads, power, water, education, postal and telephone services all benefit from Government assistance in rural areas, so why not rail transport?[B] It has been argued[5.] that railways are not in a position of monopoly, like the Post Office, for example, and they should not be expected to support uneconomic lines by charging high fares elsewhere, thereby losing a fair proportion of profitable long-distance traffic. Against this, it was said that rail transport in rural areas was fast becoming unnecessary in view of the increase in car ownership. However, lines frequently affect far more people than those who actually use them because of the ancillary services a line provides. Hardship could be caused to many more people than those who actually use a line. Those advocates of subsidies believed that the value of a service should not be measured in terms of revenue and expenditure and the number of regular users but in terms of personal hardship. For instance, most rural car owners are male, and women and girls are made dependent on public transport.

A. See Map 14 in Chapter Five, Pp.79/80.

B See Chapter nine on "Transport Policy" (Comd. 3057)

The loss of services could cause strife in families and accentuate the drift from the country-side.

This situation clouded the responsibilities of the railway management and, as we have seen, the aims of running a service were conflicting. Many top officials in the South-West had joined the old Great Western or London and South Western Railways when they had a near-monopoly in public transport. There had been little mobility in staffing and so many of them believed in 'social' transport.

These beliefs, however, do not exclude the post-war management from blame for the economic situation. Even if they believed that all lines should have been retained, they should have attempted to make those lines as economically viable as possible. Instead, the amount of waste in the South-West was scandalous in its proportions.

It has been estimated that over £1 million could have been saved on Western Region lines alone in the South-West without closing a single line and withdrawing only twenty per cent of the traffic[2]. If this had been realised, less inconvenience and hardship would have been caused to the public later, and there would have been little harm to the railway interest. Time-tables should have been re-cast to suit demand, and diesel multiple-unit trains should have been introduced as soon as possible as they were more economic than steam trains. The accepted cost of running a multiple-unit is only 6s. a mile, while the cost of steam operation is 15s. per mile. The first diesel multiple-units on B.R. were introduced in the Birmingham and Leeds areas in 1954; the first regular services in Devon and Cornwall did not appear until 1960. In addition to this, a few wayside stations should have been closed and others reduced to un-staffed halts. Signal boxes, especially those on branch lines, should have been closed in scores.

Undoubtedly these measures would have improved the situation if they had been introduced in the early fifties, although they would not have transformed the losses of most branches into a profit.

Some closures were clearly justified, bearing in mind their cost to the community, but they should have taken place much earlier than they did. At least, economies should have been enforced long before the end of their lives. Three examples illustrate this point:-

1. The Exe Valley Branch.

By their submission to the Transport Users' Consultative Committee, the Western Region stated that by closing this line they hoped to save an annual sum of £46,900. The line, in fact, did close in October, 1963; but, if economies had been introduced five years previous to the closure, the total working loss would have been reduced to about £16,000 per annum. Thus the total loss over the five years would have been £80,000 instead of about £230,000.

2. Plymouth, Tavistock and Launceston.

The Western Region originally wished to close this line in 1957, but it was found to be impossible to provide acceptable bus replacements for several of the intermediate stations. Also, there was a disagreement with the Southern Region over the handling of milk at Lifton and freight at Tavistock South. The annual loss was said to be £61,000, but this could have been reduced to £28,000 if economies had been made. This would have resulted in a total saving of £165,000 before the eventual closure of this line in December, 1962.

3. The Helston Branch.

This was a border-line case. At first the line was closed only for passenger traffic (9/62) and the Western Region stated that this would bring a saving of £9,000 pa. If economies had been introduced, particularly in the introduction of diesel multiple-units operating a revised time-table, then the operating loss could have been reduced to between £1,000 and £2,000 a year. Whether this would have resulted in a justifiable case for closure is questionable, for the line was quite well-used, especially in summer when several hundred people used the trains each Saturday. The inconvenience after closure was considerable, especially to Cornwall County Education Committee, The Royal Navy, the Post Office, the holiday industry and the general

PLATE SEVEN.

EXE VALLEY BRANCH.The I2.30 Dulverton-Exeter St. David's enters Bampton station on 25th. September,I963,headed by Class 'I4XX' 0-4-2 tank engine No. I442.The Exe Valley branch was built in two parts.First to be completed was the Tiverton & North Devon Railway,which was opened in August,I884,between Tiverton and Morebath Junction,where it joined the Taunton-Barnstaple line of the Devon and Somerset Railway.Almost a year later,the G.W.R. opened the second section of the line,from Stoke Canon,on the Taunton-Exeter main line,to Tiverton.Closure of the Exe Valley came shortly after this photograph was taken,on 7th.October,I963.

the general/
public. Transport expenditure on their part has had to be increased by a far greater amount than British Railways would have saved in closing the line.

In the negotiations leading up to these closures, many public views were ignored. Not only standard complaints about lateness, filth and Victorianism, but also constructive criticisms by local experts, were ignored by the railway management and Government officialdom. The top railway staff had no business-type approach and public relations besides overall efficiency were poor. No economists were employed and the recruiting of the right men for the job was lacking. There were vast gulfs between local officials, staff and head-quarters. On the other hand, the regional jealousies perpetuated the wasteful antagonism between the ex-Great Western and ex-Southern Railway officials. This would have been avoided if the railways in the South-West had been allocated IN TOTO to either one region or the other.

With the confusing management structure, it is not surprising that so much waste was allowed to continue undetected. Frequently lines were re-laid or re-signalled before their closure. All lines were steam-operated through the fifties and dieselisation came too late. Time-tables were in most cases badly-compiled and confusing. The schedules of many branches could have been reduced to about four specialist trains each way daily, all making good main line connections at junctions. In the economy cuts that were made, there was too much odd pruning without investigation into the demand for individual trains. Freight occupation of single-line branches could have been reduced to two hours per day thereby allowing such lines to be worked on the "one-engine-in-steam" principle, and obviating the need for passing loops. Passing loops and signal boxes on single lines were extremely expensive. For two men working a branch signal box for a six-day week, it costs £1,300 - £1,500 a year. Level crossings are also expensive, for each requires a keeper if there is no signal box.

To economise on this, either continental automatic crossings should have been introduced, or British Railways should have sought light railway powers for many of their lines, thereby allowing level crossings to be without gates. Yet, despite all these glaring instances of waste, officials were seemingly reluctant to make economies.

It is clear that administration was at fault. Sometimes, small branch lines had several station masters who regarded each other as rivals. Each branch could have been worked as a single section of line based on its junction. Responsibility for the line could have been vested in one-man....a "line-master"....who would have been directly responsible to Head-quarters for the efficient running of his line. Standardisation would have been achieved by regarding the junction as an integral part of the branch. Connections to the main line trains could have been improved, and if the branches were allowed to stock the junction's excursion tickets, it would have saved re-booking at the junction. Frequently, the necessity to re-book at junctions detracted from the real revenue of the branch lines.

Thus, if one line had been regarded as a single unit, run on the "one-engine-in-steam" principle, and was the responsibility of one official, the the necessity for the above economies would have been realised. Rationalisation and efficiency would have cut the enormous deficit on many lines, and the appalling situation which was exposed to a shocked public by the Beeching Report[4]. would have been much milder in its impact. That economies were not made is to the shame of the officials concerned, for the capital costs of such economies would have been small. One feels, however, that in many cases the railwaymen as a whole were protecting their own interests, encouraged by the trades unions. Widespread redundancy was feared if economies were made, and undoubtedly a large part of the answer lay in the cutting down of staff and facilities.

ii). Differences Between Ex-G.W.R. and Ex-S.R. Lines, 1947-62.

From a geographical viewpoint, perhaps the most shocking of all managerial deficiencies was the division of the lines in the South-West between the Western Region and the Southern Region at Nationalisation, in the way which has been described above.[A] The former G.W.R. lines differed very much from their Southern rivals, both in mode of operation and in character, especially west of Exeter.

West of Exeter, the Great Western had owned the main line from Paddington to Penzance and some sixteen branch lines which diverged from it. Only one of these lines, the Plymouth-Launceston branch, was over twenty miles long, and eleven were under ten miles in length. All these branches were normally served, except in summer, by trains operating from the junction stations. There was one exception, that of the busy Kingswear branch, which was double-tracked from Aller Junction[B] to Goodrington Sands and had the status of a secondary main line, with regular, well-patronised services to London, the Midlands and the North of England. However, the basis of the regular train services on the G.W.R. was the main line to Plymouth and Penzance.

In East Devon, the organisation of the Southern Railway services was very similar, with branch trains serving Lyme Regis, Seaton, Sidmouth, Budleigh Salterton, and Exmouth. West of Exeter, however, the situation was different. The S.R. system west of the Devonshire capital was nick-named "the withered arm", because the main line from Waterloo petered out at Exeter Central and split into several sections. The main line was regarded as one running north of Dartmoor to Plymouth. From this diverged, at Yeoford and Okehampton a series of secondary lines serving North Devon and Cornwall, running to Ilfracombe, Torrington, Bude and Padstow. These lines were of some length and the S.R. had few short branch lines[C] in this area.

A. P.41.

B. Near Newton Abbot

C. i.e. Similar to the G.W.'s branch system.

....only the Torrington-Halwill line, the Bodmin North branch, and the Callington & Turnchapel branches. These last-named examples were operated on the normal branch line principle of a separate train connecting at junctions. But most of the S.R. services were based on through connections with Waterloo. West of England expresses were usually divided into sections at Exeter Central; on every train there was a section for Plymouth or for Ilfracombe. In addition, there might also be sections for either Bude, Padstow, or Torrington. Because of this peculiar operating method, the lines in North Devon and Cornwall were always regarded as miniature main lines rather than branch lines. This idea was initiated by the L.S.W.R., which self-consciously arrived late on the scene, and developed these services in the vain hope of attracting some of the G.W.R. clientele away from the South Coast.A

The geographical zones served by the two systems were not all alike. The Great Western's network served the densely-populated rural districts of South Devon and West Cornwall. Along the Channel coast, the holiday industry has always been more prosperous than on the rugged Atlantic Coast. The Great Western, realising the potential of the holiday industry, was swift to develop the facilities at the coastal towns it served. But the L.S.W.R. came too late, and its territory west of Exeter was less attractive to the potential holidaymaker than its rival's, as the North Coast is rugged, exposed and has few sheltered beaches. Only Ilfracombe of the North Coast resorts served by the S.R. rivalled places like Torquay and Newquay. Whereas the G.W. lines served Exeter, Torbay and Plymouth, the S.R. served no comparable centre of population in North Devon or Cornwall. In Cornwall, the G.W. system serves several large towns which are fairly close together. In the ex-S.R. zone, there has always been a problem of rural-de-population, accentuated by the lack of alternative employment in industry. Against this, the Ex-G.W. area is a comparatively stable zone, with large towns, industries and a dense rural population.

A See Chapter two.

Thus the potential traffics for the two systems differed enormously. Before the Second World War and the expansion in road traffic, the G.W.R. main line was assured of at least 10,000 passengers per week, even without the addition of feeder traffic from the branch lines. Much freight traffic was handled, and large yards were necessary at Hackney (Newton Abbot) and in the Plymouth area. Many experts have suggested that some of the G.W.R. branch lines did not pay from the time of their opening. In view of the area the Southern system served by contrast; what was the financial situation like in the wilderness north of Dartmoor? Almost all stations on these lengthy single lines had expensive passing loops and signal cabins, plus a station-master and a full staff. Except on summer Saturdays, traffic had always been light, with the possible exception of the main line to Plymouth Friary, which served Okehampton, Tavistock, and the densely-peopled Tamar Valley. The potentialities for freight traffic were small, the largest sources being china clay from Wenford-bridge, and ball clay from Peter's Marland, near Petrockstow.

After Nationalisation, both managements continued to provide the same patterns of services that had been provided in the days of monopoly. As we have stated already, the attitude of railway officers was that they had a duty to the public to provide services, however unremunerative. After the 1953 re-organisation, however, there was a little change in policy in that ex-Great Western men began to realise that most of their branch lines were losing money and served little useful purpose. Cuts were at last discussed without a guilt complex. Although after 1953 (to 1958) Southern lines west of Exeter were absorbed by the Western, there was no mass change-over of local officials. Thus, although ex-G.W. men realised the writing was on the wall for much of their dense network of branch lines, closure was seemingly an unheard-of expression, almost an obscenity, in ex-S.R. circles. The "withered arm" was still regarded as a semi-main-line system, an artery of Waterloo.

The maintenance of the service was regarded as essential, and although trains were slow and infrequent, the rural populations of North Devon and Cornwall were very close to their railways and regarded them and the local staff, and their renowned courtesy, with some affection.

In the post-war, pre-Beeching era, only one ex-S.R. branch was closed, that from Plymouth Friary to Turnchapel[A*] which, like the Yealmpton branch of the G.W.R., was a victim of the disastrous decline of the Plymouth area suburban traffic. All the other lines, including the Halwill-Torrington service of two trains each way a day, remained open. Much of the old G.W.R. system, however, had crumbled long before the publication of the Beeching Report.[4.] From 1956, the Western Region closed the Teign Valley line (1959), the Moretonhampstead branch (1958), the Ashburton branch (1958), the Plymouth-Launceston line (1962), the Princetown branch (1956), the Chacewater-Newquay line (1963), and the Helston branch (1962). Yet it is probable that all the losses on these lines would not have exceeded the loss on the S.R. lines in the North.[A]

The survival of the lines in North Cornwall and Devon for so long displayed the inefficiency and complacency of operating technique. But it also highlights the geographical dilemma. If economic and geographical limitations had been recognised and the lines closed, it would have brought about the downfall of these already debilited areas. On the ex-G.W.R. lines, it was found that the provision of adequate bus substitutes was fairly easy. The branches were short, and usually paralled[bl] by reasonable roads. Hardship was felt at closures, but only in very limited areas. On the other hand, the ex-S.R. lines were long and served a poor rural area, where there are poor roads and a sparse network of bus services. Even the bus services run at a loss. These secondary lines, therefore, were regarded as the life-blood of the rural wilderness, and it is difficult to imagine what the future will be like now they have gone.[B]

A*. From 10.9.51

A. Closed Bude and Wadebridge lines on 3rd. October, 1966.

B. See Table in Chapter four.

MAIN REFERENCES USED IN CHAPTER THREE.

1. H.M.S.O. Transport Act, 1953.

2. H.M.S.O. Modernisation and Re-Equipment of British Railways, 1955

3. Trains Illustrated. The £1,240 Million Plan; March, 1955.

4. H.M.S.O. The Re-Shaping of British Railways; March, 1963.

5. D.St. John Thomas. The Rural Transport Problem, Routledge and Paul, 1963.

CHAPTER FOUR

THE BEECHING CLOSURE PROPOSALS

i). The Report

The report by the British Railways Board entitled "The Re-Shaping of British Railways"[1]. popularly known as the 'Beeching Plan', burst like a bomb on the transport scene in March, 1963. Its proposals were far more devastating than any others which had previously been mooted, for it aimed at a complete rationalisation of the existing railway system, and a step forward from Victorianism to a modernised, efficient system. Its aim was summarised in the following quotation:-

"The thought underlying the whole Report is that the railways should be used to meet that part of the total transport requirement of the country for which they offer the best available means, and that they should cease to do the things for which they are ill-suited".

Railways have a high fixed-cost for their route-ways, but there is a low cost per unit if there is dense traffic. Thus routes with the densest traffic are the most economic. By these criteria, many of the railways in the South-West fail to justify their existence. Studies in the Report were made with the advantage of high-density routes in mind. The proposals contained in the document were then laid with a view to making the railways competitive by building up the usage of well-loaded and fast routes, and by closing down the lightly-loaded lines. In the South-west, this proposal was the word of doom for the branch-line system.

No break-down of figures was given for particular areas, but it was obvious that the economic situation in the South-West, with its tenuous system of branch lines, was much worse than the average situation throughout the whole country. It was revealed that, on British Railways as a whole[A], over 50% of the passenger services did not cover the cost of their routes alone.

A Figures for 1960.

Also, the cost of more than 50% of the stations was greater than their revenue. Stopping trains, on main and branch-lines, were the principal cause of these losses. Fast inter-city trains are the best sources of revenue, but summer extra trains are heavy loss-makers, which was a blow to the South-West. Suburban services were not economic, and most of the freight traffic was dealt with in a way which was unsuitable for rail transport. The reason for this was that most of the freight was conveyed in single wagon-loads. Even coal-class traffic just paid its way, as two-thirds of this was conveyed in wagon-loads instead of block trains. It was also noted that there was a substantial proportion of freight sundries traffic in the country which could have been moved profitably by rail, but which was on the roads. The possibility of liner trains....fast freights between selected urban centres...was introduced.

The report, it must be realised, was made as a summary of British Railways from a strictly economic point of view. Even so, its release caused an explosion of popular reaction all over Devon and Cornwall. Many of the vehement criticisms that were offered were uninformed and confused, but this must be attributed to the cold objectiveness of the Report itself. Undoubtedly, the essence of the studies was true, but in detail the Railways Board used the statistics to suit their own point of view. For instance, £2,500 was given as the cost of running a country station for a year, and this figure was used in many of the tables. No suggestion of any possible economies was offered, yet it was obvious to any school-boy that the costs of many country stations could have been minimised by their relegation to the status of unstaffed halts. Yet complete closure was the sole solution offered by the Board, in most cases.

Many hypothetical and actual examples of unremunerative services were given in the Report. In these examples, there was no detailed analysis of operating methods, particularly in respect of branch-line working on the 'one-engine-in-steam' principle.

No mention was made of charging of higher fares and whether this would help the revenue of little-used services. Rail-users were regarded as merely statistical units, groups of people who could simply be switched to a parallel bus service if a railway were closed. In actual fact, rail users are well-defined in their travel habits, and cannot simply switch to buses, as has been illustrated by the numbers of people who change jobs or buy their own transport, following the closure of certain lines. Most of the regular bus travellers were captured in the thirties and rail users are in a completely different category.

Despite these criticisms, it cannot be denied that the Report revealed the real truth about the terrible state of the railways in rural areas, and that, although stated strictly from the B.R. point of view, it was an extremely competent economic document in many ways. As Dr. Beeching[A] pointed out after the publication of the Report, it was really a set of recommendations, and the future of the railways lay firmly in the hands of the Government and the British people. This paternal advice was qualified, however, by the following words: "If this is going to be done, it is well that it should be done quickly".[B] Obviously, the railway management placed great faith in the implementation of their proposals.

ii). The Proposals.

The proposals to rationalise and modernise the railways were summarised under fifteen counts:-

1. The discontinuation of most stopping passenger services[C]
2. The conversion of the remainder of these services from steam power to diesel multiple-units.
3. The closure of a high percentage of small stations[D]
4. Improvement of inter-city passenger services and the rationalisation of routes.

A. Dr. Richard Beeching, Chairman of the B.R.B. former Chairman of I.C.I.

B. Newspaper reports on Press Conference given by Dr. Beeching (28/3/63)

C. See Table 16 for details

D. " " 17 " "

TABLE I6.

BRANCH RAILWAY CLOSURES FROM I960.

Beeching Proposals.	Closure Date.	Under Consideration at time of Report.	Closure Date.
Tiverton Jc. - Tiverton	5.I0.64	Tiverton Jc. - Hemyock	9.9.63
Liskeard - Looe	Reprieved	Exeter St. David's -	7.I0.63
Taunton- Barnstaple Jc.	3.I0.66	Dulverton	
St.Erth - St.Ives	Reprieved	Churston - Brixham	4.5.64
Okehampton - Plymouth:		Brent - Kingsbridge	I6.9.63
Bere Alston - Okehampton	For I968	Plymouth - Launceston	3I.I2.62
Bere Alston - St.Budeaux	Reprieved	Chacewater - Newquay	28.I.63
St.Budeaux(Victoria Rd.) - Devonport Jc.	6.9.64	Gwinear Rd. - Helston	5.II.62
Barnstaple Jc. - Ilfracombe	Reprieved		
Okehampton - Wadebridge	3.I0.66		
Halwill - Bude	3.I0.66		
Barnstaple Jc. - Torrington	4.I0.65		
Axminster - Lyme Regis	29.II.65		
Seaton Jc. - Seaton	5.2.66		
Sidmouth Jc. - Sidmouth	6.3.67		
Tipton St.John's - Exmouth	6.3.67		
Exeter Central - Exmouth	Reprieved		
Bere Alston - Callington:			
Gunnislake - Callington	7.II.66		
Bere Alston - Gunnislake	Reprieved		
Halwill - Torrington	I.3.65		
Bodmin Rd./Bodmin N. - Wadebridge - Padstow	30.I.67		
Loswithiel - Fowey	30.II.64		

TABLE 17.

STATION CLOSURES FROM 1960.

Station.	Closure Date.
Bow	
Brent	5.10.64
Broad Clyst	5.2.66
Bugle	
Chacewater	5.10.64
Churston	Reprieved
Copplestone	"
Cullompton	5.10.64
Dartmouth(ferry from Kingswear)	
Doublebois	5.10.64
Exeter St. Thomas	Reprieved
Exminster	31.3.65
Grampound Road	5.10.64
Gwinear Road	5.10.64
Hele and Bradninch	5.10.64
Kingskerswell	5.10.64
King's Nympton	Reprieved
Loswithiel	
Luxulyan	
Marazion	5.10.64
Menheniot	
Morchard Road	Reprieved
Newton St. Cyres	
North Tawton	
Pinhoe	5.2.66
Quintrel Downs	
Roche	
Sampford Courtenay	Reprieved
Scorrier	5.10.64
Seaton Junction	5.2.66
Sidmouth Junction	6.3.67
Silverton	5.10.64
Starcross	
Tiverton Junction	Reprieved
Whimple	"
Yeoford	
Sampford Peverell Halt	5.10.64
Burlescombe	5.10.64

N.B. Stations as listed in Beeching Report; where no date is shown, no proposals have been formulated at the time of writing(July,1967).

5. A damping-down of seasonal holiday traffic and the withdrawal of corridor stock held for them.
6. The co-ordination of suburban services with other means of transport.
7. Co-ordination of parcels services with the G.P.O.
8. Increases in the number of block freight trains. Arrangements would be made with the N.C.B. for loading at the collieries and for the establishment of a system of coal-distribution depots at key points.
9. Reduction of uneconomic freight traffic.
10. Attraction of more siding-to-siding traffic, suitable for time-tabled through traffic movement.
11. The introduction of liner trains.
12. Concentration of freight sundries traffic on about 100 main depots throughout the country.
13. Withdrawal of obsolete freight wagons.
14. Continued replacement of steam by diesel locomotives.
15. A rationalisation of the fleet of road cartage vehicles.

By these measures, it was hoped to eliminate the railways' deficit by 1970. In the South-West, it meant that the whole railway map would be changed. The ex-Great Western system would be reduced to the main line to Penzance, with branches only to Kingswear, Newquay, and Falmouth. On the ex-Southern system, only the main line to Exeter from Waterloo would remain, with extensions to Barnstaple and Okehampton[A]. It is not surprising that the proposals of such magnitude caused such consternation, eclipsing the impact of the more progressive parts of the Report's proposals.

iii). Implementation.

In 1962, the former British Transport Commission was abolished and the railways' interests were vested under the control of the British Railways' Board under the chairmanship of Dr. Richard Beeching. Whereas the Transport Act of 1947 nationalised all main-line railways, London Transport, and much of the road transport, docks, inland waterways,

A. See Map No.10.

waterways,/
and ancillary undertakings, and placed them under the control of the British Transport Commission, the Act of 1962 has abolished the controlling body and created four separate nationalised Boards to administer respectively the railways, London Transport, Docks and Canals. The Act also created a Holding Company to control all nationalised road transport, both passenger and freight (other than railway collection and delivery services, and London Transport bus and coach services), which were previously owned by the Commission, and most of the ancillary undertakings controlled by them, such as Thomas Cook & Son Ltd. The Holding Company also holds shareholdings in other undertakings previously held by the Commission. Thus, the 1962 Transport Act was the prelude to widespread re-organisation throughout the country.

The British Railways Board began to operate on 1st January, 1963, and on this date the control of all ex-Southern Region lines West of Salisbury was handed to the Western Region. At this time too, the Western Region lost considerable mileage to the London Midland Region in Central Wales and the Midlands, and was divided itself into four operating Divisions....London, Bristol, Cardiff and Plymouth. The Plymouth Division covered the whole of the South West Peninsula, with eastern boundaries at Weymouth, Salisbury, Westbury and Bridgwater. By this management rationalisation, the Board had set the scene for the implementation of the Beeching Report, which was published two months later.

Responsibility to carry out proposals was vested in the Minister of Transport. Formerly, such decisions had been made at the recommendation of the Transport Users' Consultative Committee, following a public enquiry to discuss a closure case. This procedure was changed by Section 56 of the Transport Act, 1962, which detracted from the powers of the T.U.C.C., which had originally been set up by the 1947 Transport Act.A

A Both Acts published by H.M.S.O.

PLATE EIGHT.

MORTEHOE BANK.The view from the carriage window as 'Battle of Britain' Class 4-6-2 No. 34072 '257 Squadron' attacks the gradient with the I2.I5 Ilfracombe-Exeter Central on a July day in I962. Mortehoe Bank,two miles at I in 36,is one of the steepest inclines on British Railways.The ascent begins at the platform of Ilfracombe station,high above the town.Steep banks such as this are a major obstacle to railway operation in the South West.

The 1962 legislation again mandated area committees to arrange hearings of objectors, but they only allowed to discuss possible hardship. The local committee's report on hardship would be forwarded to the Central Transport Consultative Committee in London, who would forward recommendations, based on possible hardship, to the Minister of Transport. The ultimate decision on the closure of a line lay with the Minister himself.

Considerable criticism has been directed against this system and the way in which public enquiries have been held, in addition to the general indignation against the losses of so many branch lines. The limitation of the powers of the Committees has seriously reduced the value and purpose of the public enquiries. Objectors at the enquiries feel that little notice is taken of what they say, even within the context of hardship. Neither the railways nor the Ministry of Transport appear to be concerned with the preservation of public goodwill. Certainly justice is not being seen to be done and it should be. At hearings the Chairman has constantly to remind speakers from the floor that the Committee are limited to the consideration of hardship, which confuses and antagonises the objectors.

Closure procedure itself is extremely long-winded. Six weeks before a proposed closure date, the railway must display a green public notice on the stations concerned to inform the public of their intentions. Objectors are given a statutory period of six weeks in which to forward written objections to the area T.U.C.C. [A] Assuming objections are received (Exminster Station is the only case where there were none), the Committee arrange a public hearing and the closure date is postponed. If the Minister ultimately decides to close a line, six weeks notice must be given of closure. Thus, the mechanics of closing a line may take many months; in serious cases where closure is inevitable the line may be losing a great deal of money unnecessarily during this period.

A Only 'regular' users are advised to forward objections.

On the whole, closure proposals have been made in too piecemeal a fashion, making it difficult for planning on a regional scale, particularly in the provision of adequate road replacements. In fact, the closure of a railway is the largest change in land use not requiring planning permission.

Despite the statutory requirements of the 1962 Act, no straightforward public statement is made about a closure. A "brief" of a closure proposal is sent to local councils and the T.U.C.C., yet the Press may only obtain such information by request. The public are informed by the Victorian-type "Public Notices" on local stations, or by notices in local newspapers, which is somewhat unsatisfactory. Objectors are invited to spend time and money in forwarding statements of hardship to the Bristol office of the South Western Area T.U.C.C. before a public hearing is arranged. Copies of the objections are forwarded to the railways, who prepare their own carefully-worded replies. Only 'regular' travellers are invited to forward objections, no criterion being placed on regularity of use.

Thus, the public hearings have the aura of farce. To many people, they are a platform for putting the railways' view to the public. Before each enquiry, the T.U.C.C. Secretary forwards to each objector a 'Heads of Information' leaflet, in which the railways' replies to the statements of objection are entered. At the hearing rail and bus operators are frequently called upon to proclaim the suitability of the alternative services. With the hands of the T.U.C.C. tied, except on hardship, and the ultimate decision in the hands of the Minister, then it is no wonder that the hearings appear to be so one-sided.

But what is hardship? Distinguishing hardship from inconvenience is extremely difficult. Apart from this, however, the closure of branch lines causes varying degrees of dislocation according to the numbers of people affected and the alternatives. The hardship (or inconvenience) discussed at enquiries is only that which concerns <u>regular</u> travellers;

travellers;/
the effect of closures on local areas and the region as a whole is overlooked and is not investigated in any detail. Despite the fact that closures are economic decisions by the railways, the questions of finances are not allowed to be raised in enquiries. The T.U.C.C. receives few firm details from B.R.[A], and financial information is reduced to a plain statement of total revenue, expenditure, and loss. No-one may question these figures, nor the estimates for the costs of simplified services where these have been given. The Helston branch was a case in point[B]; no-one conceded the right to point out that the estimate for a simplified diesel service was higher than that for a similar service on the Plymouth-Launceston and Teign Valley lines, both roughly three times the length of the Helston line. This decision was the consideration of the railways and the Ministry of Transport, but not of the T.U.C.C. and the public, yet it is the public which suffers when the trains cease running....just as it is the public who paid the bills when the railways were losing unnecessary moneys in the fifties.

The financial information is usually based on a census of passengers taken by the Railways Board. An estimate is made, with the local bus company, of the alternative bus services necessary and also of alternative parcels facilities. In principle this procedure is simple but it has led to a good deal of confusion. Many branch line services were irregular and ran without true relationship to local demand, or to connect with main line services. The problem of omnibus connections was thus complicated. More confusion is caused by public speculation, or by denial by the railways of an expected closure before the public notices are placed. In August, 1964, the prospective Labour candidate for Tavistock, Dr. John Ellsworthy, forecasted that the railways wished to close the lines between Okehampton and Plymouth, including the Callington branch. This was promptly denied by Mr. D. Pattinson, the Plymouth Divisional Manager, yet the closure was announced, albeit in a modified form, only two months later.

A. See "Guardian" 25.10.63.

B. See Chapter three.

At the time of writing, over 75% of the Beeching closure proposals have been acted upon. Few cases have survived the public enquiry, although the railway management has reprieved the lines to the Tamar Valley, plus the stations at Exeter St. Thomas and Starcross, and the Minister has reprieved the lines to Looe and St. Ives. Swiftly and efficiently, the railways have forwarded their proposals to the Minister, and the original strong public reaction has largely wilted in the face of economic reasoning, which they have been unable to question. The reprieves are gratifying, but one regrets the bad cases of Bideford, Tavistock and Bude being allowed to proceed. All are regional centres, and Bude was a much better railhead than Okehampton for its hinterland in North Devon and Cornwall.A

With the public being virtually powerless to intervene, the social geography of many parts of the South-West has been radically altered within two years. Even the Labour Government, with its election promises of 1964, has proceeded with closures. The future will prove the rightness, or otherwise, of such decisions. If there is blame to be laid, then it must be vested in the politicians and the railways, who were responsible for the 1962 Act, a slight on the principles of democracy.

iv). Effects of the Report on the Public.

The most general effect of the closure proposals on the public would seem to be the loss of goodwill. It has been explained in the above section how the closure procedure has confused and angered the public. In many cases, even railwaymen and responsible public bodies have stated that there has been a deliberate attempt to run-down services in order to inflate the working loss and to present a good case for closure. British Rail can withdraw, within the law, all but one train on a particular line without reference to the local T.U.C.C. Apart from this, there have been many cases of 'jumping the gun'....in the removal of excursion fares. The T.U.C.Cs. are unable to prevent this, and thus the public has had little confidence in them.

A. See list of closures in Tables 16 and 17.

Traffic removed from the railways by closures has inevitably to use the roads. In Devon and Cornwall the road network is very dense, but the quality of the roads is generally poor. Even main roads are narrow and winding; the main A30 and A38 trunk routes have both been called "country lanes". The main problem is the congestion of the main roads during the summer months by holidaymakers, especially at week-ends, when queues of over five miles are by no means uncommon. Most rail travellers are forced to use bus services, which in most cases are unsuitable alternatives. Generally they are slower, more expensive, and less convenient for through connections, than the trains. In addition, most rail travellers fall into well-defined categories of people who can not have a bus-service as their alternative, due to inadequate roads.

In addition to local travellers, holiday-makers and hoteliers are also affected by rail closures. The rail traveller is a valued guest in most resorts because he is usually based in the same spot, and has a tendency to spend more[A]. This is contrary to the "holidays-on-the-cheap" trend, where people live as cheaply as possible by touring the area in their cars. Where rail connections to resorts have been lost, hoteliers have complained about a decrease in revenue[B]. Extra co-ordination is necessary in the summer months to off-set the loss of branch lines. For instance, the closure of the Bude line leaves a thirty-mile gap between the rail-head at Okehampton and Bude. Will this affect the numbers of rail travellers visiting Bude? A thirty-mile trip by bus from Okehampton after a long train journey is not particularly inviting.

Where railways close, the alternative means of transport are often bad. On the Loswithiel-Fowey branch, the intermediate settlement of Golant is served only by a minor road leading down a 1 in 6 hill from a 'B' class road. Former rail travellers had considerable difficulty with this hill after the closure of the rail service, although a minibus service was introduced.

A. See Chapter two, part iv.

B. Perranporth is a good example of this.

Bad road and bus services affect both local people and holidaymakers. The latter have the additional problem of luggage; most buses have no facilities for the conveyance of heavy luggage, although the use of trailers is now permitted. Through the increase in private transport and the decline of the summer extra trains, only one fifth of the South-West's holiday traffic now arrives by rail. However, it should be remembered that though this is proportionally small, it represents a considerable number of people[A] the majority of whom travel on the peak Saturdays. Are these people to be treated like cattle? The danger of complete confusion is very real. Traffic congestion worsens every summer, and one feels that the decline in rail usage will halt. Whether British Rail like it or not, they still have a role to play in the movement of holiday traffic.

Yet the railway services to busy resorts like St. Ives and Looe were considered for closure. The Looe branch is admittedly a difficult line to work, but it conveys thousands of passengers in the summer. In two years (1963-5), the working loss rose mysteriously from £1,000 to £19,000. St. Ives was a difficult case because it has possibly the most notorious traffic problems of any resort in Cornwall. British Rail stated that bus services could handle the branch line traffic with ease, but this view was not upheld by the Minister of Transport, Mrs. Castle, when she reprieved the line in August, 1966. On several Saturdays during the summer, two trains arrive within an hour with over five hundred people aboard. The prospect of the congestion that would have been caused by an alternative fleet of buses is somewhat staggering.

One would imagine that the losses in these cases was not large enough to justify closure. The important matter which is not considered in such cases (e.g. Helston[B]) is the cost to the public of making alternative arrangements and of providing road improvement. For most of the year, the additional traffic could no doubt be borne by the road system.

A. See Appendix on Torquay Survey of Holidaymakers.

B. See Chapter three.

But in summer, the holiday traffic, which is already nearing saturation point, just cannot absorb any extra load without road improvements. Although this enigma exists for only three months of the year, it should be remembered that the holiday industry is the most important aspect of the South West's economy, whatever local businessmen may like to think, and this in turn is part of Britain's biggest earner of foreign currency. The comfort of the visitor and the impression he obtains of the region is all-important for the future.

In the retention of uneconomic lines for social reasons, the question of subsidy is again raised. The present Labour government clearly supports the principle of subsidising socially necessary transport facilities. As yet, the form of subsidy has not been stated. Many experts have argued that it would be wrong for subsidies to come wholly from the Central Government. Why should all British tax-payers pay for remote branch lines they personally never use? The answer to this, of course, is that the continuing life of rural areas is essential to the well-being of the national economy. In the provision of recreational facilities and as a source of primary products, the rural areas of the nation complement the activities of the densely-populated local authorities, but the responsibility is clearly that of the Central Government.

With little more organisation, it would be possible to retain a considerable amount of rail facilities for holidaymakers. Yet British Rail have discontinued advertisements for resorts in national newspapers, and have toned down the information displayed on local stations. At the enquiries held by the T.U.C.C. the census figures for line usage have frequently ignored holiday times.

The local members of the public are affected in a different way, as not only does the railway concern its regular users, but also other residents of rural areas, who depend on trains for the deliveries of mails, newspapers, and parcels.

PLATE NINE.

BUDE.Bude was typical of the neat seaside termini on the ex-Southern Railway system in the South-West.The resort received its first train on IOth. August,I898.Business was brisk for the summer season but was light during the rest of the year.Daily through coaches from London Waterloo were a feature of the timetable until I962.In this view a special three-car diesel multiple-unit stands at the platform on the last day of operations,Ist. October,I966.The station is crowded with railway enthusiasts and other sight-seers.On this day 73 miles of line in North Devon and Cornwall,from Okehampton-Bude and Wadebridge,were closed to all traffic.

If distribution is to be entrusted to road transport, deliveries become irregular and less reliable. In bad weather the railways have often been the only means of public transport available, particularly in North Devon and around Dartmoor.

For the urban areas, however, the closure of branch lines is an advantage. With less line occupation by local trains and less stations, main line expresses may be speeded up. Between Plymouth and Paddington the fastest time has dropped below four hours and will probably be reduced to 3½ hours. After the closure of several stations on the Cornish main line in October, 1964, the Plymouth-Penzance journey was severed to two hours. Against this, however, one must consider the overall possibility that closures cause damage to the holiday industry and to the rural economy.

v). Effects on Staff.

Obviously, with such a large amount of closure proposals, there would be a reduction in the numbers of staff required. This was anticipated in the Report[1.], which included a table to prove that there had been a progressive reduction in the numbers of staff[A] throughout the country since 1948. On a nation-wide basis, there is a high wastage rate among staff in the industry. Thus, it was anticipated that the threat of redundancy was not serious and that most of the staff displaced could be found alternative jobs. Those workers who had to move down a grade when moving elsewhere were promised that they would retain the higher grade of pay for up to five years. The small numbers of men who could not be accommodated or who would not move, were given adequate notice and re-settlement pay, payable as a lump sum and in weekly instalments for a year. One solution to the problem in the South-West was to offer early retirement to men of sixty and over. As Mr. D. Pattinson was quick to explain, there were 13% of the railway workers in Devon and 12% in Cornwall in 1962, who came under this age grouping.

A. Opp. Cit., P.50

This simplification clouds the issue in the South-West, for the structure of employment and earnings is different to other parts of the country. In the South-West, the average weekly wage rate is far below rates in other regions. The high wastage rate quoted for the railway industry is due to the high proportion of workers in London, the Midlands and the North who leave the railway for higher-paid situations in industry. In the South-West, railway employment is still something of a tradition. Some families in rural areas can boast generations of railway service. One has only to consider a place like Halwill Junction in North Devon, which existed for the railway, to realise the importance of railway employment. Almost all the workers in that settlement worked for the railways; Halwill was the junction for Bude, Padstow, and Torrington, yet now all these lines have disappeared.

In rural areas then, it is evident that the wastage rate is low, yet it is here that sweeping redundancies are inevitable. For instance, in the proposals for the closure of the line between Bere Alston and Okehampton, it was stated by B.R. that the redundancies would include three from Bere Alston, nine from Tavistock, one from Brentor, three from Lydford, plus thirteen train staff, and thirty-eight from the Engineering Department. Many of these men are late middle-aged and alternative employment will be hard to find.

It is hardly surprising that in the South-West there is much ill-feeling among railway staff towards the management. Many feel that the branch lines are being deliberately run down. Suggestions by the staff to the management seemingly fall upon deaf ears. The rivalry between the ex-G.W.R. and ex-S.R. staff still persists. Ex-Southern men have held that, since the regional boundary changes of January, 1963, the Western Region is murdering the old Southern lines. Meanwhile, the Western men are amazed at having taken over the Southern's expensive white elephant west of Exeter. The transfer was not enthusiastically received, and many felt that the divisional head-quarters should have been set up in Exeter and not at Plymouth.

Nevertheless, it was an administrative decision which should have been taken at Nationalisation.

The matter of staff reduction must be faced honestly. Whether lines were closed or not, railways in the South-West could not continue to operate efficiently without a severe pruning of staff. A smaller staff should lead to increased efficiency and also to better pay for those who remain. The new management have done their best to help the Unions and their members, and co-operation has improved. At Laira locomotive depot in Plymouth, thirty drivers agreed to premature retirement in 1963, sc that their comrades could retain their jobs. In return, these drivers received a lump sum and 52 weeks on two-thirds pay. The management also delayed the closure of the Plymouth-Launceston line so that new jobs could be found for the staff.

Most of the redundancies have been piecemeal, but there have been large cases where mass-unemployment has been the threat. Until its reprieve in December, 1965, Meldon Quarry, near Okehampton, was threatened with closure and many men would have lost their jobs. The biggest blunder, however, was inflicted on the salaried staffs when the Plymouth Division was disbanded in 1965, only eighteen months after its foundation. In June, 1963, the old divisional offices at Exeter (Western and Southern Regions), Newton Abbot, and Plymouth were eliminated and staff were moved to the new £500,000 block of offices at Plymouth station. At Exeter, only 28 out of two hundred people were left behind and £3-400 per person was involved in the move to Plymouth.

Yet in 1965, came the startling news that the Plymouth Division would be absorbed by the Bristol Division, and that most of the expensive office accommodation at Plymouth would be let. The mystery of this decision increases when one considers that the Divisional offices at Bristol are over-crowded and will have to be housed in new premises, which have not yet been built. Following the decision, there was a slow run-down of staff at Plymouth until only a quarter of the divisional staff are now left there, in the Devon and Cornwall Area offices.

The hardship caused has been considerable in some cases. Many men and their families had only just moved to Plymouth from Exeter and had bought new houses. Since their arrival in Plymouth, the prices of houses dropped. Several families lived in the same street in one suburb, and all faced a considerable loss of money when all their houses went up for sale at the same time. Much resentment was caused by the decision, and the management was almost overwhelmed in finding new jobs for large numbers of staff. A typical case is that of a clerk from Plymouth Goods Offices, who was found a job at the Laira Motive Power Depot Offices. After two months there, he was told that his new post did not exist!

It is small wonder that the railway staff in general have become demoralised. The measures recommended in the Beeching Report are being implemented at a fast rate and the impact on the staff has been hard. Again, one must point to the mistakes of the past. If staff had already been reduced by phased economies, then this impact would have been less hard.

vi). Effects on Industry.

Much of the hysteria which greeted the Beeching Report concerned the loss of passenger facilities. This tends to cloud the fact that a considerable amount of railway revenue, even in a non-industrial area like the South-West, is derived from freight. In addition to losing passenger services, many lines have also been closed to freight traffic, and this has been condemned at public meetings as a discouragement to industrial development.

Local government officials and businessmen seem to overlook the fact that the South-West is not primarily an industrial area. Industrial growth is concentrated around certain points and these are around the South Coast of the peninsula[A]. From the railways' point of view, the carriage of freight in the region was highly uneconomic

A. See Chapter one.

highly uneconomic/
as too much of it originated from small country stations in single wagon-loads. In future, the traffic that the management will pursue will be only that which is suitable for block train-loads.

Tradional freight in the region will continue to be handled if there is a sufficient quantity. When Marazion station was closed, the horticultural traffic was diverted to St. Erth and Penzance. From November to June, however, the station will be re-opened for the special broccoli trains. If the Tamar Valley Rationalisation is completed, through vans of horticultural produce will be despatched to Plymouth for the main line. There may be some difficulty in North Devon, but it is hoped that a new freight handling centre at Wadebridge will help. In the immediate future, china clay will probably continue to be the most important commodity handled, and it is hoped to capture more traffic from the roads. Through milk trains will continue to be an important feature of the freight train pattern.

Obviously, some farmers and industrialists will be adversely affected by the changing pattern in freight handling, but there is unlikely to be any large-scale dislocation. The chief sufferers would appear to be the fish trade and the holiday industry. The latter has been discussed in respect of passenger traffic, but in 1965, the fishing industry was delivered a crushing blow by an increase in carriage rates. In Cornwall, there was an increase of 50% and later Brixham was affected by increases of up to 350%. Fishing is a declining industry and its produce has become increasingly uneconomic for rail transport, unless in large quantities.

Since the Second World War, the industries which have been attracted to Devon and Cornwall have been of the 'light' variety. Very few of these firms use rail transport at all, and some are not near a railway line. At Ernesettle, Plymouth, there are several factories beside the ex-Southern Region main line, yet none has a rail siding.

Thus there would seem to be little reason for alarm. Morbid forecasts have been made of a "vicious circle".....that "if the railways were shut down, no industry would be attracted to the area". This argument overlooks the fact that there has been no proposal to weaken the main line network. If industries require rail transport, then they naturally choose a site near a main railway line. Whatever optimists may hope, no substantial changes are likely to be made to the existing industrial structure. Many lines which are on the closure lists have not affected development for over fifty years, and are hardly likely to now. In addition, there are unlikely to be any new discoveries of natural resources.

No doubt new industries will come to the South-West, but few of these will depend on rail transport. Only increased efficiency and a rationalised system of freight handling will encourage industrialists requiring rail transport to come to the region. The showpiece of the new system will be the liner train depot at Plymouth, and it is hoped that this will be an encouragement to new developers.

MAIN REFERENCES USED IN CHAPTER FOUR

1. H.M.S.O. The Re-Shaping of British Railways, 1963.

CHAPTER FIVE

THE POST-BEECHING PERIOD

i). The Plymouth Division; Efforts at Rail-Road Co-ordination.

The South-West was one of the worst hit areas under the Beeching programme of line and station closures. With this and the stagnant economy of the region in mind one might have expected the new officers of the Plymouth Division, appointed in January, 1963, to sit back and watch the inevitable disintegration of the Division. Instead there was a strenuous pursuit of fresh traffic and of more economic methods of working by the young management force. A new team spirit emerged at Plymouth and in the Exeter sub-office, despite the regional boundary changes.

Line and station closure plans outlined in the Report had envisaged a reduction in the number of places of railway business from around 300 to 50. There was a careful scrutiny of all cases with a view to reducing losses. New business was sought vigorously. At the instigation of British Rail a South Wales Miners' Holiday Camp was established near Looe. Each Friday in the summer a special N.U.M. train from South Wales was booked to Looe returning with those who had finished their fourteen days. At Looe the goods yard was converted into a money spinning car park. All signalling and point-work was removed from the station and the branch was worked on the "one-engine-in-steam" principle with a diesel railcar. Economies were also made on the Newquay branch but after the 1964 summer it was thought that the measures were too stringent and so the 1965 service was augmented.

On closures which were inevitable there was a drive to establish rail and road direct passenger links at the rail-heads. The Divisional Manager, Mr. David Pattinson, was also a director of three 'bus companies in the region - The Devon General, The Western National and The Southern National

Thus, his position approached the ideal of being the area transport manager. For connections the railways succeeded in getting many 'buses diverted to station yards. 'Bus services were re-timed to connect with long-distance trains. If trains were late a stipulated period of time for holding the 'bus was arranged. If the period of lateness was exceeded a duplicate service was run. Experiments were first conducted on the Taunton-Minehead branch where the last train was replaced by a connecting 'bus. Perhaps the most significant measure was that from summer 1964 many 'bus connections were shown by a symbol in the railway time-table. A number of 'bus services to rail-less resorts, including Brixham, Helston, Perranporth and Kingsbridge, were displayed in the time-tables. Through fares to these places were made available from railway stations all over the Country.

Advertisement was essential, for the railway management had to break down a great deal of consumer resistance to 'bus services. In a way, the railways were walking a tightrope as on some connecting 'bus services some loss was inevitable at first. The railways were pledged to reimburse to the 'bus companies' losses made on alternative 'bus services, a provision made in the Transport Act, 1962. Luggage was a problem. In the old G.W.R. and pre-Beeching time-tables the 'bus connections advertised were always qualified with the notice "Heavy Luggage not Conveyed". The railways sought to overcome this problem by reserving the rear group of seats in a vehicle for luggage storage. The Western National had already tried this with some success. Now it is hoped that luggage trailers will be attached to 'buses, as Parliamentary sanction has been granted.

To encourage customers car-parking facilities have been improved at many stations. At Plymouth an automatic car park with slot machines for coin and season-ticket tokens was installed and became an instant success. Many new travel inducements were introduced aimed at selling rail travel to the business man.

Some anxiety has been expressed at the future influence of the railway in the rail-less towns. The answer will most probably be a chain of rail marketing offices in such towns to sell both passenger and freight facilities on behalf of the nearest rail-head. The Plymouth Division received a commission for this from Paddington, to be used as an experiment for the whole of the Western Region. Another way in which the railway hopes to retain its influence in such areas is to have an S.T.D. enquiry service in conjunction with the G.P.O. By dialling a code customers may have their enquiries answered by a competent trained staff at one of the main enquiry offices. Such enquiries may easily be turned into lucrative railway business by the astute enquiry officer. By these measures and by better public relations and advertising it is hoped that the influence of the railways in the South-West will be as strong as ever before. Certainly, there has been established a precedent in road-rail co-operation.

ii). Faster and Better Passenger Trains.

In the passenger field there was little hope of attracting any completely new traffic to public transport. Traffic flows were already well defined. Owing to the distances involved and the predominant rural population, there was little requirement for long-distance public transport in some areas, particularly in the North. Because of the elongate shape of the peninsula most long-distance travellers travelled between west and east. Communication between north and south was difficult and slight. Thus, the publicity campaign devised by the Plymouth Division was aimed at those people who were already travelling long distances but by other means of transport. Speed and comfort were the main theme of the drive for business.

For many years Plymouth businessmen had demanded an efficient air service to London. After successful test running with 2,700 h.p. diesel hydraulic locomotives the railways countered this demand with the "Golden Hind" express train.This left Plymouth at 07.05 hours each Monday-Friday and reached Paddington at 10.55.

The 3 hours 50 minutes running time now includes stops at Newton Abbot, Exeter St. David's and Taunton. The return leaves Paddington at 17.25 and arrives in Plymouth at 21.15. By this service, for the first time ever, the Plymouth businessman has been able to reach London before eleven o'clock and return home during the evening after a good day's business. From Newton Abbot there is another train, making four stops, which leaves at 06.25 and arrives in London at 10.30. Soon it is hoped that the "Golden Hind" may become a Pullman service when the "Birmingham Pullman" diesel sets are released after the Euston-Birmingham electrification is complete. New trains like these beat traffic congestion between the London airports and the central area, especially when the evening rush hour bars roads to Heathrow. For air travellers the Western Region introduced a new facility - through bookings to the airport via. Slough in conjunction with B.E.A.A. Travellers on the main line to Waterloo may also reach the airport via. Basingstoke.

In time, it is hoped to reduce the Plymouth-London time to 3½ hours or less. On 3rd June, 1965, a special seven-coach train was run from Paddington to Plymouth, hauled by two 1,750 h.p. diesel electric locomotives, which reached Plymouth in 3 hours 16 minutes. The return journey was made via. Bristol and was completed in 3 hours 26 minutes. West of Plymouth too it is hoped to make improvements in timing on the difficult Cornwall main line. The way was paved by the closure of five intermediate stations on 5th October, 1964. Previous to this an experiment had also been made with a test train, stopping at the ten stations to remain, which completed the Plymouth-Penzance run in 2 hours 5 minutes.

Cross-country services had always been notoriously bad. The improvement has now begun, and communications with South Wales, the Midlands, and the North are better than ever before. Half an hour has been cut from the journey to Bristol, so that it is now reached in three hours.

A. Now via. Reading.

PLATE TEN.

PLYMOUTH STATION.A symbol of the new era in South Western railway development,a 'Warship' class 2,200 H.P. diesel-hydraulic leaves Plymouth with the I0.30 express to Paddington on a bleak January day in I965.

Plymouth passengers may now leave their city at 06.35 hours and be in Cardiff by 11.00 or Sheffield by 14.00. Two and a half hours have been cut from the marathon journeys to Manchester and Liverpool. At Bristol, connections are made with the accelerated services to the Midlands and the North-East. These improvements are only the beginning, however. One sees no reason why the Plymouth-Bristol journey should not be reduced to 2½ hours, and the Plymouth-Manchester run to six hours. Much more progress could be made on the ex-Midland Railway route to Birmingham, Sheffield, and York, which is badly-affected by coal-mining subsidence in West Yorkshire. One idea worth trying would be to extend one of the daily Newcastle-Bristol services to Plymouth in both directions, to speed the journey up and to lessen the need for changing trains.[A.] At present, the fastest way to get between Newcastle and Plymouth is via London, taking nine hours, compared with 10½ hours via. the Midlands. The route from South West to North East has considerable traffic potential and is worthy of development.

Traffic flows are constantly being studied with a view to time-table planning, and the railways are more flexible to demand than ever before. For instance, there was a constant demand for an evening train to Paddington from Plymouth later than the 16.30 hours. In order to exploit the possibility, B.R. experimented with an 18.30 departure on Friday evenings. This move was apparently unjustified, but it is something that may be tried again in the future. Another example of the new attitude is afforded by the staff who reported that the Sunday 16.30 Plymouth-Paddington was often overloaded beyond Newton Abbot. Sometimes 250 people were standing when the train reached Paddington. To meet this increased demand for Sunday travel, an extra train now departs from Paignton on Sundays at 17.00 hours, and Newton Abbot at 19.30 hours, and the problem of overcrowding has now been solved.

A. At the time of writing, this is done on Saturdays only. With the 10.45 Newcastle-Plymouth. There is no balancing train from Plymouth.

The biggest potential problem facing the Plymouth Divisional officers was that of the summer peak. But this problem has largely solved itself,, because the numbers of travellers coming to the South West by rail reduced itself by 10% per annum in the early sixties. Now the railways handle only 20% of the holiday traffic. When new roads become available, this proportion may yet become still smaller. At the moment, large numbers of people still use the railway services to beat traffic congestion. The railways' answer to congestion, the car-carrier train, has yet to prove itself economically, but it is hoped that its popularity will continue to increase. The poor economic situation is not really due to the operating method of these trains, but to the traditional habits of starting and finishing holidays on Saturdays. It is essential that the peak must be spread if the railways are to remain in the holiday business. Pressure has been put on hoteliers and boarding-house-keepers to accept mid-week bookings and also for employers to stagger holidays and to let more workers start mid-week. If this were done, then B.R. might start to combat road competition by going into the car-hire business, guaranteeing the holidaymaker a car to tour the area from the moment of his arrival in the South-West. This would not cut the railways' throat, as rail closures have limited the scope and value of the traditional "Holiday Runabout" tickets, whose sales are now dropping.

Local services are not being neglected where they are to be retained. Complete dieselisation of all branches has now taken place, and most services have been accelerated. Better connections are made with long-distance trains. Exeter St. David's is an excellent example of a focal point, where numbers of inter-connections may be made.

To accompany the revolutionary changes in train services, a new time-table booklet was designed for the Western Region of B.R. It is much simpler than the old ones, uses the twenty-four hour clock, and explains most facilities by the use of clear symbols. Instead of separate summer and winter time-tables, one book will suffice for a whole year.

The first issue of the new-look time-table was issued in June, 1964, but this unfortunately smudged its public image by remaining in circulation a mere six months. Closures and vast numbers of train alterations caused a reprint to be necessary. In June, 1965, a new issue was published and this lasted its advertised course, until April, 1966. The original time-table produced a storm of public criticism, but the new edition was infinitely more acceptable.

Now that the pattern of railways in the South-West becomes settled, these new time-tables will become symbols of the revolution in rail passenger transport in the region. Despite closures and former confusion, there is great hope for the future.

iii). The Drive for More Freight Traffic.

Industry in the South-West is at a low level of development, and although the government has promised expansion, there is little likelihood of there being any substantial changes in the industrial structure of the region. Almost all the possible new freight potential lay in existing business which was moved by alternative means of transport. Ironically, to improve services to move freight suitable for rail transport, it was necessary to discard most of the small goods stations, which handled freight mainly by the wagon-load. Thus, a great deal of traffic suitable for rail transport was travelling by road, whilst the railways were handling large amounts of traffic which could be better handled by road.

In recent years, the main outgoing product has been china clay. Most of the railway share of the china clay traffic takes the route from St. Blazey to the docks at Fowey. Before the formation of the Plymouth Division in 1963, it became evident that the service to the clay industry was not efficient enough for modern conditions. There was a threat of a new deep-water harbour at Par, which would be served by road. One of the first major tasks of the new organisation was to modernise the railways' docks at Fowey and to improve the rail services from the clay-pits.

China clay has certain problems of transport. It must be conveyed in clean wagons and cannot be air-blown. To solve this problem, the railways assembled 845 specially-maintained trucks for the clay traffic. After experiments with nylon and polythene, glass-fibre proved to be a satisfactory wagon lining. Such improvements have increased the export of clay from the docks by 250,000 tons per annum. Increased efficiency has also led to a rise in clay traffic at Marsh Mills, near Plymouth, to which the clay is piped from the pits at Lee Moor, on the edge of Dartmoor.

Much of the internal trade in china clay is maintained by road transport. To win back some of this traffic, B.R. have introduced a selected block train to serve three rail-heads in the Potteries, plus places in Lancashire and Scotland. In early 1967, the "Clayfreighter" block train, from St. Blazey to paper mills in Kent, was also introduced. For the first time, tank wagons are being used to carry liquid Slurry. Other such trains may follow, and more traffic will be won back from the roads.

The other important group of products leaving the region by rail is provided by farming and market gardening. Milk is the most regular traffic, as there are two daily milk trains to London from West Cornwall and one from North Devon. Rail-served milk depots are situated at St. Erth, Loswithiel, Saltash, Totnes, Torrington, Hemyock, and Seaton Jc. Recently, production has been increasing, but the railway wagon fleet is largely obsolete. The continuance of rail transport in this field depends on the acquisition of new vehicles; to give a greater capacity per train and per vehicle. Equipment to match the flexibility of the road vehicle is also desirable, either in the form of road vehicles mounted on flat wagons, or an adaptation of the road-railer idea.

Meat is another similar traffic which arouses business possibilities. At the moment, almost all the South-West's meat production is taken away by road, but a block train could be successful, considering the predominance of livestock in the region's farming structure and the great numbers of cattle auctions and abbatoirs.

PLATE ELEVEN.

HEMYOCK.Milk is one of the most important freight traffics on the railways in the South-West.In this scene,Class 'I4XX' tank engine No.I462 shunts tank wagons at the Hemyock milk depot on Sunday,I2th.February,I96I.Hemyock is the terminus of the 7½-mile Culm Valley line from Tiverton Junction on the Taunton-Exeter main line.When this view was taken,the line boasted a passenger service,but this was discontinued on 5th.October,I964.To the right can be seen the former Barry Railway coach which sufficed for the meagre patronage.

Among the prototype liner train equipment introduced in 1964 was a 25' 9" insulated meat container, which is more than a match for the high capacity refrigerated road wagons. A daily block meat train could be run from mid-Cornwall to London, reversing at Exeter St.David's and continuing via. the ex-Southern main line. Several new meat depots have been opened on the latter route between Salisbury and Exeter.

The economics of transporting fruits, flowers and vegetables depend on the seasonal fluctuations in flow of the different commodities. However, with the use of adaptable vehicles, competitive rates, and assured arrival in London and other centres, the railways can continue to provide an attractive service. The first action of the new management in 1963 was to conduct a drive for increased traffic in broccoli. Broccoli had always been a traditional traffic in G.W.R. days but much of this trade had been lost to the roads. This was the result of bad handling in London rather than mis-management in Cornwall. Now the broccoli traffic is beginning to increase again, thanks to the business efficiency of the Marketing and Sales Department of the Division. To show how seriously the railways regard this traffic, the example must be quoted of the railway representative who grows all known types of Cornish broccoli in his garden at Redruth, so that he can anticipate when to move for the business. A similar agricultural representative is responsible for Devon, and there is also a special representative for the clay industry who has actually worked in the industry himself.

Provided the rail vehicle is a flexible unit, the railways should maintain a sizeable share of the traffic in other market garden products. Knowledge of the industry is essential, so that potential business deals may be anticipated. An example of the advantages of rail transport over road in the swift transport of produce in bulk is afforded by the handling of early French potatoes at Millbay Docks, Plymouth, on Easter Sunday, 1964. The vessel bringing the potatoes docked at 08.00 hours, and by 13.55 two long-distance freights were on their way....one to Crewe and one to Newcastle.

This is but one example of what can be achieved with continuous-braked trains and diesel traction. Wherever suitable business is, the railways now seem keen to find it and to handle it efficiently at short notice.

iv). Centralisation of Freight Facilities.

The South West is primarily a freight-receiving area, and the old system of distribution was extremely uneconomical. Most of the produce came in single wagon-loads in slow, loose-coupled freights which served a multitude of small goods stations and yards all over the peninsula. Under the proposals of the Beeching Report, most of these small goods stations will be eliminated and freight handling will be concentrated in large strategically-placed depots, relying on road haulage for the final distribution to the consumer. What is more, with more efficient working, it is thought that the network of distribution can be maintained without a sizeable increase in the road haulage fleet.

One of the main reasons for the existence of the old network of small rural goods stations was the demand for agricultural products as and when the customer required them. There is still the same pattern of demand, but the marketing staff are gradually convincing the customer that the advantages of rail can be made cheaper if he collects his produce from a rail concentration depot, served with supplies by scheduled block trains. In February, 1964, a train of animal feed was introduced to run every Friday to Cornwall from British Oil and Cake Mills warehouses at Avonmouth. This fifty-wagon train of 500 tons runs non-stop to Plymouth, then calls at St. Austell, Truro, and Penzance. From Truro, a portion is tripped to a depot at Penryn. A year later, a similar train was introduced from Joseph Rank at Barry. If trains of this type can be run with the co-operation of agriculturalists, the railways can charge competitive rates and remain in the farm business. As with outgoing traffic, the flexibility of the wagon fleet is essential, and this is being achieved.

For instance, when B.R. were faced with a shortage of GRANO (Grain) wagons to service three grain mills near Exeter, they adapted CovHops (covered hopper wagons) for this purpose, an experiment which was a success.

All fuel supplies for the South-West must be imported to the region, and this affords the greatest opportunities for block train working. Coal, the traditional railway freight, comes mainly by sea, and it will be a difficult matter to compete with coastal shipping. Despite this, the railways are hitting back. With the co-operation of the N.C.B., a coal-concentration depot has beem successfully established at Taunton, and more are to follow....at Exeter, Plymouth, Newton Abbot, and several places in Cornwall. These depots will be served by block trains of special wagons, with doors in the bottom, so that the coal can be off-loaded on a staithe, equipped with automatic weighing and bagging apparatus. Oil distribution depots will be set up in a similar fashion by contracts with the Oil Companies. The pioneer unit was established at Heathfield on the Newton Abbot-Moretonhampstead branch, where there is also a Fyffes' Banana depot, served from Southampton docks.

Miscellaneous goods handling is to be revolutionised under the National Sundries Plan. Large new goods depots will be set up, served by road transport. The largest depot in the South-West will be at Friary Station, Plymouth, and it is hoped that this depot will be a terminal for liner trains....continuous-braked trains travelling at express passenger speeds. In this new plan, there is provision for the use of vehicles which can be adapted for either rail or road use. Freight handling throughout the South-West will be concentrated into just a few depots.

One problem that must be overcome is that of the steep gradients between Newton Abbot and Plymouth. The working of heavy block freights on this section of main line is complicated by the exertion of strong forces on the drawbars of wagons when such a train

such a train/
is ascending a bank. One answer may be to copy the American method of putting a 'slave' locomotive in the centre of the train, the performance of this locomotive being geared to the train engine to distribute the force exerted on the drawbar. However, a simpler, and possibly more economic, solution migh be to limit the size of freight trains taking this section of line, and to split them where necessary.

As far as possible, freight train working in the future will be concentrated on the main lines, although branches and sidings will be maintained for industry which requires a rail link and can justify it in volume of traffic, like china clay. It is hoped that a swifter, more efficient service will tend to attract industry and dispel the fears of those who prophesy that branch line closures tend to discourage it. Undoubtedly, British Rail mean business and they have plenty of scope. In Cornwall, it has been estimated that there are 13,000 separate industrialists, including farmers, and most of these use road transport. The railways handle considerable volumes of milk and horticultural produce, but they could also handle more clay and stone.[A] Although carrying 75% of the products of Cornwall's main engineering firm, the railways bring only 30% of the coal entering the county. Marketing and sales staff obviously have a tremendous task to change the traditional ways of freight handling, but it is anticipated that the good results achieved so far will convince more local industrialists of the advantages of modern rail transport.

v). Other Aspects.

Although the drive for more business is proceeding satisfactorily in the South-West itself, more promotion is necessary in London, the Midlands, and the North.... both to attract passengers and to 'sell' the region to industrialists. The tourist industry has been neglected by the new management.

A. Fact revealed by S.W. Export Assoc. 12/64.

In conjunction with local authorities, the railways used to display holiday posters all over the country, and all advertisements in national newspapers for resorts on the South-West would carry the slogan "Travel by Train". Something more should be done along these lines to promote the South-West as a holiday area, and to publicise the advantages of rail travel to the area in these days of traffic congestion.

At home, however, the Western Region undertook, in 1964, a survey seeking to link new industry with rail transport, to show the railway flag where new industries are likely to arise, and where it can co-operate with local authorities in their bids for development of this type. Where lines close, the railways are selling land to attract industry. In cases of threatened closure the area served by the line is studied as a future prospect in the hope that it can be retained. The news of the survey was enthusiastically received in the region; one local newspaper reported that it could "spark off economic development in Cornwall on a large scale". Other lines of enquiry were made as to what kinds of industries would be attracted and what their traffic prospects were likely to be.

Modernisation of equipment has proceeded apace since the new regime assumed power. Steam traction has now been abolished and dieselisation is complete. In this respect, the South West was one of the first areas in the country to achieve a complete changeover. Trains are now clean, swift and efficient. Diesels have quicker turn-around times and thus a smaller locomotive fleet is necessary. In addition the number of locomotive depots in Devon and Cornwall has been reduced, from 10 in 1960 to 3 in 1966, at Newton Abbot, Laira (Plymouth) and St. Blazey.

Signalling and telecommunications are being improved also. Many intermediate signal boxes on main lines have been closed in addition to those on branch lines. The Plymouth area is practically controlled by one signal box at Plymouth station.

In the near future it is hoped that re-signalling and simplification of the layout will be started at Taunton. At Exeter, with its key role in the South-West's rail network, a traffic control centre has been set up to assume the functions of the old Western and Southern centres. Eventually, the whole of the control of the South-West will be invested in two centres.

Despite these glowing reports of modernisation, efficiency, and progress, the initial wave of success seems to have abated, by a series of strokes of mis-management from above, bad luck, and by a measure of local inefficiency. The first blow was the transfer of the Divisional Manager, Mr. D. Pattinson, to London Division in September, 1964. This was a great disappointment, as Mr. Pattinson was the figurehead of the railways' comeback bid. Many local authorities and businessmen had become accustomed to dealing with him, and he had gained a tremendous amount of respect. Almost a year later, this news was followed by the incredible decision that the Plymouth Division was to be abolished and absorbed by the Bristol Division. However, it was pledged that "a strong management team will remain at Plymouth", and Mr.J.J.Donovan was appointed Manager, Devon and Cornwall area. The latter proviso, needless to say, did not cool the angry reaction of the local M.Ps. and the fears of the staff and the public. There has always been a resentment of Bristol's role in the affairs of the South-West, imposed by the central government.

Between these two blows, the second stage Beeching Plan, "The Development of Trunk Routes"[1]. was introduced in February, 1965. Included with this plan was a map, which showed routes for which development was proposed. On this map, the main line in the South-West was shown as ending at Plymouth, and this caused an immediate outcry in Cornwall. Many local bodies interpreted it as a plan to retain only the lines actually shown on the map, and suggestions were even made that Cornwall should assume control of her own transport system.

In fact, what the map did show was the routes which had been selected for "intensive development" only. The aim of the report's proposals was to streamline the railways' network of trunk routes, to cause an expanding market for both freight and passenger traffic. The report was not the 'prelude for closures on a grand scale', but the basis for better planning. Eventually, route costs on the trunk routes would be reduced to about half the 1965 level, by concentration on cheap bulk movement. Only by lowering costs on the main trunk routes, would it be possible to justify the large sums of money necessary for maintenance, renewal and improvement of all existing through routes to be retained in the future pattern.

Another cause of concern was that the Reading-Taunton section of the Paddington-Penzance main line was also omitted, plus the Salisbury-Exeter main line. This was interpreted by the public as a proposal to divert all Plymouth-London trains via. Bristol and to close the Reading-Taunton line. M.Ps. angrily pointed to the large sums of money which had already been spent on the improvement of the existing route via. Westbury. The logic of the map, however, can easily be interpreted. Between Paddington and Bristol the selected trunk route also carries traffic from London to South Wales; between Bristol and Plymouth it carries traffic between the South-West, the Midlands, South Wales and the North. The comparatively lightly-used Westbury route does not require much more development. The most pleasing feature of the map was the inclusion of the route from the North-East to the South-West via. Leeds, Sheffield, Derby, Birmingham and Gloucester. Despite this, the adverse publicity given to this Report was a bad blow to the public image of the railways, especially in Cornwall.

Another cause of public disapproval has been the spate of diesel locomotive failures, which at one stage reached 15-18 per week. In the early days of diesel traction, it was possible to attribute such failures to 'teething troubles', but this is no longer an adequate excuse, especially in an area where there is great nostalgia for the days of steam traction.

Most of the diesel locomotives employed in the South-West differ from those elsewhere on B.R. in that they have hydraulic transmission equipment. Diesel-hydraulic locomotives have high-speed engines and these appear to be more susceptible to failure than the normal diesel-electric engines. With steam, it was possible in most cases to get a train to where an ailing locomotive could be replaced, but the diesel in trouble too frequently stops dead miles from the nearest depot. On the first day of diesel traction on the Plymouth-Tavistock run, the locomotive on an early morning train failed twice and passengers took three hours to reach Tavistock. A similar occurrence on the first day of diesels on the Callington branch caused over one hundred workers to be late at Devonport Dockyard. Despite many fine performances and accelerations, the diesel is hated by many people. The image is not improved by the fact that many of the main line diesels run in a filthy condition, due to the lack of cleaning staff at depots.

The public has also suffered two increases in ordinary fares since the publication of the Beeching Report. However, the increase in day return fares in February, 1966, provoked a public out-cry. Even to professional economists, these increases are incredibly bad. Workers from Saltash to Devonport faced an increase of over 100% on their daily rail fares, from 11d. to 2/-; seven-day season tickets also increased from 4s. 7d. to 10/-. All over the South-West day fares increased from 50% to 75%. It is early yet, but the effect of such increases can only be to drive local customers away. By March, 1966, Plymouth Argyle A.F.C. had reported a marked decline in the numbers of Cornish Supporters attending their home matches.

By such measures imposed by the national railway management, the sparkling new image spread by the Plymouth Division has been clouded. Greater morale among the staff has been crushed by the abolition of the Plymouth Division.

The prophets of doom again maintain that the railways have no future in the South-West, and that the economy is being strangled. Successive General Managers of the Western Region have pledged that the railways are to stay in the South-West for good. After all, over £30 million was spent on modernisation in the area between 1960 and 1965. But if the railways are to stay, they must be used. This aim is contradicted by the increases in fares and freight rates. The imposition of rates charged in other regions of the country will not do for the South-West. Better results would be obtained if the local managements were allowed to state their own rates. From what has happened, it would appear that too much national interference may do a great deal of damage to the efforts of the men on the spot.

MAIN REFERENCES USED IN CHAPTER FIVE.

1. H.M.S.O. "The Development of Trunk Routes", 1964.

CHAPTER SIX.

OMNIBUS SERVICES

i). Development of the Omnibus Network

The first motor bus services in the South-West appeared before the turn of the century and the present system had developed almost completely by 1930, a rate of expansion which was comparable to that of the railways[A] almost a century before. Growth was concentrated into the years following the First World War, which had acted as a stimulus to mechanical development. Services were evolved by five main types of operators in the South-West:-

1. Territorial Companies....large companies operating throughout the whole region, of which there are two main groups:
   (a) The Western and Southern National Omnibus Company, the largest group, with its Headquarters at Exeter.
   (b) The Devon General Omnibus Company, of Torquay, which operates over much of South and East Devon.

2. Newcomers....ex-servicemen with gratuities, and business-people who saw a future in public transport.) PRIVATE COMPANIES

3. Village carriers who started to expand, sometimes in association with a garage.)

4. Railway Companies, especially the Great Western Railway. The pioneer bus operator was the Lynton and Barnstaple Railway but the Great Western Railway bought out their vehicles and developed railway bus operation with a service from Helston to the Lizard in 1910.

5. Municipal undertakings....with buses and trams. Plymouth and Exeter both have large omnibus fleets.

A. See Chapter two, Part 1.

During the rapid expansion of the twenties, the railways originally regarded the omnibus companies as allies. They also began to experiment with their own feeder bus services and many branch and light-railway schemes were abandoned,[A] for it was realised that the omnibus was the cheapest form of short-distance transport in the South West with its areas of sparse population, especially around the moorlands and in the northern part of the peninsula.[B] The Railway Management hoped that local bus services would stimulate travel and traffic for the long-distance trains but as the bus companies expanded they became a serious rival to the Railways in the region by the end of the twenties. Not only did the bus companies duplicate the rail services of the dense network of branch lines, but they also started to operate long-distance services with the Royal Blue[C] express services to the South Coast and London.

Events during the period 1928-30 decided the whole form of transport in the peninsula and are at the bases of many of the problems which exist to-day. The government of the time and the railways were jointly responsible. When the railways realised that the omnibus companies were making vast inroads into rural traffic they made two mistakes; firstly, they maintained branch-line and stopping-train services in full[D] and even constructed many new halt stations in rural areas instead of conceding that the omnibus was more economic in such places; secondly, they began to invest in the omnibus themselves, seeking some of the rewards. By 1927 the Great Western Railway was carrying more than 8,000,000 passengers a year on its omnibuses.... over two million in the South-West. The following year all the 'big four' railway companies obtained powers to more fully engage in railway operations themselves. The Great Western joined with National Omnibus Company to develop road services; at this time the National already owned a substantial mileage in the South West.

A. The last built was the Halwill-Torrington light railway (1925)

B. See Map 4.

C. Developed by National Company

D. See Chapter two, part 2.

In fact, this step was taken with the deliberate aim of protecting railway capital and must be regarded as a commercial decision. Public need was a secondary consideration.

During 1929, the two largest territorial omnibus groups in the country....Tilling and British Electric Traction....joined with the railways. By this the railways became part-owners of most provincial omnibus companies whose strength was augmented by railway capital. In the South-West this meant that the railways became half-owners in the Western and Southern National and the Devon General Omnibus Companies, for the National was acquired by Tilling in 1931 and the Devon General was part of the B.E.T. Group. With well over 1,200 vehicles these companies together dominate operations in the region. However, by their actions at this time the railways committed economic suicide, as we have seen.[A]

The most prominent event in the history of road transport was the Road Traffic Act of 1930[B]. In the twenties entry into the industry was unrestricted and no licence was required. The 1930 Act set up the Traffic Commissioners to be responsible for licencing and the entry into the industry of newcomers. Devon and Cornwall became part of the Western Traffic Area with its Headquarters at Bristol, one of eleven such areas in the country, each controlled by a panel of Commissioners. The panel consists of several part-time Commissioners under a paid Chairman, who is effectively responsible for all decisions on licencing. A senior official, the Certifying Officer, is responsible for the structural and mechanical safety of all public service vehicles. Two licences are required for their operation:

> 1. Non-Discriminatory Licences - These provide for the construction and operation of public service vehicles to be controlled strictly in the interests of public safety. Each driver has to possess an additional driver's licence besides the ordinary driving licence before he can drive a bus or coach.

A. See Chapter two, Part 2.

B. Road Traffic Act, H.M.S.O. (1930)

Conductors must also hold a special licence. Both men hold licences subject to tests of competence and certificates of medical fitness and good character. Before a bus or coach is operated for hire or reward, its owner must hold a valid p.s.v. licence for it. These licences are given in the interests of the consumer and are not transferable.

2. Discriminatory Licences - Apart from the licences listed above a vehicle to be used for a regular advertised service requires a road service licence. This authorises a service of stage or express carriages or a group of excursions or tours. A watertight definition of such services is difficult and thus the issuing of such a licence depends not on objective factors but on opinions or misconception. Out of this licence has arisen a system of protection which characterises the Road Traffic Act.

The Traffic Commissioners have discretionary powers to grant or refuse a road service licence after hearing representations from local authorities and existing operators. They must consider 'the suitability of the route and the extent to which it is already adequately served' and 'the extent to which the proposed service is necessary or desirable in the public interest' and 'the needs of the area as a whole'. The latter is to include 'the provision of adequate, suitable and efficient services, the elimination of unnecessary services and the provision of unremunerative services'. The Commissioners must also secure that 'fares are so fixed as to prevent wasteful competition with alternative forms of transport' and they must have regard to 'the co-ordination of all forms of passenger transport including transport by rail'.

These clauses represent a set of conditions deliberately weighted against the newcomer. Existing operators have priority over the new applicant and the established operator has a right to protection from new competition.

In practice, this means that public need is placed at the bottom of the list. Applications are discussed at 'traffic courts' at which the Commissioners preside. Attempts are made to prove as fact matters of opinion and the objection lodged by existing operators usually stands. Thus, holders of road service licences have obtained almost complete monopolies for their prescribed routes. Effective competition has been eliminated and the object appears to be to protect the railways and the territorial bus companies from lower-cost competitors. The interest of the consumer is not really involved.

When this monopoly had been established, the companies with the largest route mileage, i.e. the National Companies and the Devon General, encouraged the small concerns to sell up. In this way, the big companies accepted a fair quota of unremunerative services, in typical public spirited martyrdom, as the railways had done before them. The principle of 'using the fat to keep the lean' was born. How mistaken this policy was is now only too clear.

In 1948 the newly-formed British Transport Commission purchased the Tilling Group and so the capital of the Western and Southern National became railway owned. The B.E.T. Group, which had split from the Tilling Group, had railway members on its Board but the railways had a minority share. However, the advent of Nationalisation meant that the railway share in the territorial companies was perpetuated.

With the passing of the Transport Act of 1962 a Transport Holding Company was formed to hold the railways' share in the omnibus companies. The object of these measures was, in some degree, to promote co-operation between road and rail services. In actual fact this did not happen. In many places the services of the Western and Southern National and the Devon General continued to compete with the railway services. However, this cannot be described as 'free' competition, as together the railways and the territorial companies possessed a virtual monopoly of the services in particular areas, especially in South-East Cornwall and in the Southern Coastal Districts of Devon[A].

A. See Map 17., Pp.102/103.

Competition between means of transport has been described by many schools of thought as wasteful. When competition is limited to two persons this is in practice the case. Of the private stage service operators the great majority were formed before the 1930 Act and possess only small fleets of buses working on small, localised routes outside the established network of the National and Devon General Companies. Inside this network private operators have found it virtually impossible to exist. The lucrative traffic of South Devon and around most coastal resorts has remained in the hands of the territorial companies. Only in the more remote areas is the private operator common, except around Camborne/Redruth, Falmouth and Truro, where there is open competition with the large firm. The suitability of the small, private operator for services in remote areas is undoubted, but the fact remains that in the established areas of territorial influence there are many routes which could be operated more profitably by the smaller man, with a better service to the customer.

One would not argue that the territorials should not operate interurban services on main roads serving the villages en route; but many of the shorter routes terminate in villages and a local operator would be more suitable on such routes as he would be able to run, at lower costs, the services which the local population would require. Too often on such routes the morning service to the nearest large town is too late for a shopping trip. The biggest omission is in the absence of late buses from large towns to such villages making visits to cinemas and other places of entertainment impossible.

Under present conditions the private operator in Devon and Cornwall has but a minor function. The territorial companies have a virtual monopoly over large tracts of countryside and the thriving private concerns are located mainly in the geographically remote areas. The former take the cake; the latter the crumbs. The situation arises because of the peculiar incidence of public demand. In the remote areas, such as North of Dartmoor, much of the service to the rural population is provided by inter-urban routes.

Where villages are too far from these routes they are served by the private operator for the large companies find these services to be too uneconomic. This is in contrast to the situation in many other areas of the country where private operators can operate on practically the same routes as the territorial companies. County Durham is a good example of the densely-populated, industrialised region where there is sufficient demand to be absorbed by both the large companies AND private operators.[A] The former cannot possibly cope with the total demand. In the South-West the only parallel would appear to be in West Cornwall, where there are a number of private stage operators. Most of these firms were established before the 1930 Road Traffic Act and they operate in an area where there is a fairly dense population and a spread of industry to create demand, from the Camborne/Redruth complex to the St. Austell clay area. For the most part, however, the private operators are concerned with rural routes; in this they perform an important function.

Thus the monopoly of the large companies has been maintained ever since 1930. Small independent operators have frequently failed to gain licences, being crushed by the objections of the territorial groups. The interests of the consumer have apparently become a secondary consideration. A State-owned transport monopoly is seen as a desirable objective and a truly competitive framework is seen to be contrary to this.

ii). Unprofitability of Rural Services.

Throughout the thirties and after the SecondWorld War, bus services over much of the South-West wore the cloak of false prosperity, hiding the mistakes which had been made in the 1930 Road Traffic Act. The expansion in the industry up to 1939 continued after the end of the war. Petrol rationing continued also and cars were scarce. Most country people depended on public transport. After the long war travel itself was a form of amusement in the days of rationing.

A. See Map 18., Pp.103/104.

PLATE TWELVE.

PLYMOUTH BUS & COACH STATION.Built beneath a traffic viaduct,the Bretonside bus station in Plymouth is the largest in the South West. In the foreground are three Plymouth Corporation Transport vehicles on local services in and around the City.Beyond them is a Devon General omnibus awaiting departure to Torquay.This view was taken in winter;in summer the parking area is packed with motor coaches.

The holiday trade began to revive. Few British holidayed abroad and the South-West received early benefits from tourism. Bus services thus became an extremely necessary part of life in the region. Moreover, travel was cheap as bus fares remained at pre-war levels until 1950.

After the 1950 fares increases the problems which beset rural buses began to be manifest. The most telling of these was the increase in private car ownership, which doubled between 1951 and 1958. The extent of the increase is summarised in the following table:- A

TABLE 18.

INCREASE IN PRIVATE CAR OWNERSHIP IN THE SOUTH-WEST, 1951-1965.

	1951	1965
Cornwall	27,053	73,110
Devon	56,591	167,840
TOTAL	83,644	240,950

There was an especially rapid increase during the rural areas; the next table shows the differences in numbers of people per car in 1964 and shows the discrepancy between urban and rural areas B

TABLE 19.

Licencing Authority	People/Car	
Devon C.C.	5.5	S. West average is 5.3 people/car
Cornwall C.C.	5.1	England " is 6.2 " "
Plymouth C.B.C.	7.6	Gt. Britain " is 6.4 " "
Exeter C.B.C.	6.1	

A. Figures supplied by the M.O.T.

B. " " " " "

Cars also took more customers from the bus companies as motorists would give lifts to family,neighbours and friends. A country person waiting at a bus stop would often be picked up by a passing friend in a car.

In many parts of the South-West the indigenous rural population has fallen. Where population in rural districts has risen, especially along the Channel Coast, a large part of the increase can be accounted for by retired and business people who usually have their own transport. Local transport as an amusement has declined and rides to entertainments have been abandoned in favour of television. The necessity for shopping expeditions decreased as mobile delivery vans visited even the smallest hamlet, although most country wives prefer an occasional trip into the nearest large town to shop for the largest commodities. During the period 1951-1955 all companies (and in particular the large ones) were faced with increased costs and decreased loadings, which forced them to increase fares still further; this in turn caused further declines in the numbers of passengers. In addition, ordinary stage services faced increased competition from private hire and excursion vehicles which did not require road service licences. Great varieties of coach tours became available for the holiday season.

According to the Jack Report[1]; the passenger peak for omnibus services in this country was reached in 1955 and the mileage peak in the following year. However, it is suggested that the peak year for rural services (i.e. the South-West) was 1951. Most rural services in the South-West outside the network of the territorial companies are operated by small firms with fleets of 1-24 vehicles,[A] and passenger journeys by such firms over the whole country reached a peak in 1951, four years before all other operators. The next table, based on Ministry of Transport "Public Road Passenger Transport Statistics", was used in the Jack Report:-

A. See Appendix III

TABLE 20.

STAGE SERVICES - ALL OPERATORS EXCLUDING LONDON TRANSPORT AND LOCAL AUTHORITIES

Year	Passenger Journeys (Millions)			Vehicle Miles (Millions)		
	Up to 24 vehicles	Over 24	Total	Up to 24	over 24	Total
1948	-	-	5,004*	-	-	N/A
1949	-	-	5,275*	-	-	1,029*
1950	-	-	5,446*	-	-	1,047*
1951	338.56	5,164.94	5,503.5	98.65	966.55	1,065.2
1952	329.84	5,222.78	5,552.6	94.91	981.83	1,076.74
1953	322.09	5,197.61	5,519.7	91.16	983.30	1,074.46
1954	302.87	5,279.12	5,581.99	87.67	994.01	1,081.68
1955	283.65	5,348.11	5,631.76	81.36	1,008.22	1,089.58
1956	276.00	5,287.36	5,563.36	79.08	1,013.09	1,092.17
1957	268.48	4,873.93	5,142.41	75.60	951.80	1,027.40
1958	258.24	4,847.42	5,105.66	75.40	975.59	1,050.99
1959	240.05	4,818.05	5,058.10	72.04	977.46	1,049.50

*Before 1951 no figures for operators of less than five vehicles are available. Figures of operators with more than five have therefore been scaled up to give approximate totals.

After 1951 the number of passengers in the U.K. declined at a rate of 3-4% per annum, and there is no reason to suggest that conditions differed in the South-West. The gravity of the problem has only been realised in recent years due to the sudden publicity given by the Jack Report[A] and other documents to a shocked public. As with the railways, the situation had been disguised by the lucrative inter-urban traffic which subsidised the more unremunerative routes. In the mid-fifties the Western and Southern National managed to reduce costs by increasing the load per vehicle, converting fleets to diesel traction, introducing single-manned services and by improving methods of cleaning and maintenance. By such measures they attempted to obtain the maximum possible savings but it was really too late.

A Opp. cit.

Later a bigger percentage of increased costs was passed to the public in the form of fare increases to which consumer resistance was growing. Travel by bus became directly comparable to the cost of motoring and more persons were encouraged to buy their own transport. No research was conducted into the problems of the industry in rural areas. Like the railway management[A], omnibus operators held the belief that eventually the Government would help, especially in the remission of fuel tax. The industry became too self-reliant and too little fact-finding was attempted.

The big companies continued the familiar policy of cross-subsidisation using the profits from inter-urban routes to finance the strictly rural services. In 1962 it was estimated that £4-5 million was lost on rural routes throughout the country; of this probably £½ million was lost in the South-West. Exact figures are not available as the bus companies express income and expenses in pence per mile taking an average for a complete district or a group of routes. This form of accounting is much too rough and ready for a supposedly modern industry.

A bus service is unremunerative if it is not earning enough to cover its average expenditure, excluding overheads. However, if the bus is run during 'layover' time then wages become an overhead. The situation then is marginal for even if the revenue yielded may come below the average cost, the operator might induce losses on other routes if he abandoned an uneconomic feeder route. This practice, however, seems to be rare in the South-West, especially during the holiday season when almost all buses are needed and the amount of 'layover' time is small. Indeed, the point remains that many rural services cannot possibly be run profitably by the larger companies, even as feeder routes, under present conditions. It would seem that they could be handled by smaller independent operators who have lower running costs. The fact that the Western and Southern National Companies are unwilling to surrender their rural routes to independents

A. See Chapter three

to independents/
suggests that many of them are not so great a liability. In fact, the Traffic Commissioners have granted exclusive licences on many profitable routes on the understanding that the operators shall bear some of the essential uneconomic mileage. It should be realised, however, that an operator may give up a licence for an uneconomic route at any time without any permission or the giving of notice. There is no enquiry by the T.U.C.C. as is held for rail closures.

The point remains that a considerable proportion of omnibus routes in the South-West is uneconomic. To preserve their monopoly the territorial companies hold on to their uneconomic routes. There is great danger that this situation cannot exist in years to come. Without obligation the large companies could abandon tracts of rural areas without independent operators to consume the business. Irreparable damage could be caused by the time-lag between the abandonment of routes by the territorials and the appointment of independent operators.

iii). Contraction and Its Problems.

In present circumstances, contraction of the rural bus network seems inevitable, and indeed this process has already begun in North Devon and North Cornwall where the population density is extremely low and in a state of decline. In the Rural Districts all over the region it would appear that the indigenous local population is declining, although in some cases this is disguised by the spread of urban population into surrounding R.Ds., especially in Devon. For instance, in the R.Ds. in North and Mid-Devon there was a 1951-61 decline in population averaging 2.3%. Eight out of ten R.Ds. in this zone experienced a decline, whereas in the South Devon R.Ds. there was an increase of 9.0% during the same period, especially in Plympton and St. Thomas, which gained overspill population from Plymouth and Exeter respectively. In Cornwall there was a general decline in R.Ds., particularly in West Penwith, Camelford, and Truro.

The areas of declining population to some degree coincided with the areas of contracting omnibus routes.

This trend is also illustrated by the map of population densities[A]. In Devon (1951-61) almost all areas registered a decline in population density, or remained static; this was also true of Cornwall. There were three main areas of concentration which were exceptions to the general rule, i.e. Barnstaple/Bideford, the Plymouth area and a belt from Exeter-Torbay. In North Devon the density of population is 115/square mile, but in the whole of the County of Devon it is 224/square mile. The North has lost far more bus routes than the South. Hence there would appear to be a relationship between declining population and the contraction of bus routes. We are not suggesting that declining population is the only cause of contracting routes, but it is a strong contributory factor. On the other hand, the absence of bus services is a factor which causes people to leave rural areas. A vicious circle is in operation causing demand for the country bus to subside. The only answer the bus companies now have is to increase fares, but, as we have mentioned, there is growing consumer resistance to this.

Who will be left to create any demand for rural services in the more remote areas? The basic activity in the areas of marked population decline is agriculture. Most farmers possess their own private transport and do not use public transport on comparatively rare excursions from home. Also, the agricultural worker lives practically on the job and usually does not have to travel far to get to work. Besides agriculture, there is no other activity of any size, except in certain localised examples, such as the slate quarries at Delabole (Camelford R.D.). North of Dartmoor there is little hope of attracting any industry. Immigration from other areas is small.

In South Devon and along the South coast the employment structure is more diverse. Although agriculture is somewhat more prosperous than in the North it is overshadowed by tourism and other industries.

A See Map 4.

Most of the manufacturing or light industries are concentrated in the South, especially around Plymouth, where the Naval Dockyard employs nearly 20,000 persons. In Mid-Cornwall the main activity is the quarrying of kaolin. Thus, the basic need for public transport increases in the South where the population and industry is concentrated. The two most important regional centres, Plymouth and Exeter are in this area and great numbers of people from surrounding districts commute to these places for work. Some Devonport Dockyard workers come from St. Austell. These regional centres also draw people for shopping and entertainment. When Plymouth Argyle F.C. are at home, supporters come from as far as Penzance. Despite this activity the proportion of people using public transport decreases. In the more remote parts of South Devon, away from the main roads, there are many unremunerative bus routes which are in danger of closure.

Undoubtedly, closure of routes causes inconvenience and a measure of hardship to a large section of the community. In North Devon and Cornwall the problem is accentuated by that of isolation from the rest of the region. Women, young people and the aged are vitally affected by the contraction in the bus network, particularly the last for whom there is no escape. Even if every family possessed a car the need would still exist for public transport and a certain network of bus services would have to be maintained. Most services would be unremunerative, however, and increasingly unattractive to the operators.

How can a satisfactory pattern be maintained....free from financial strain? There would appear to be two answers to this problem...subsidy....or the taking over of most routes in the more remote areas by the independent operators, but, as we have seen, the large companies would seem to be opposed to the latter as it would break their monopoly. They are also opposed to subsidy systems based on independent assessments of social transport requirements and on competitive tendering between operators to fulfil necessary unremunerative services with the aid of subsidy.

They themselves prefer to assess the public need and seek an all-round abolition or reduction of ~~the~~ fuel tax, which would enable them to honour obligations in rural areas. Above all, they object to any subsidy system, as recommended in the Jack Report[A], which would favour small-scale operators at the expense of the big companies.

The Jack Committee recommends:-

"Once the County Council had decided that a particular service was needed, its next step would be to publish details of what was required, together with an invitation to operators to tender for it. The successful tenderer would then apply to the Traffic Commissioners for a road service licence which presumably would be granted unless there were overwhelming reasons against it.

The financial assistance in this case would be provided in a number of ways. One would be an undertaking to make good the operator's loss; another would involve a fixed sum paid to the tenderer.. The second method would be simpler to operate and would have the additional advantage that the amount of financial assistance would be definite, and not, as in the first case, an uncertain quantity. In fixing the contract, regard would doubtless be had to its reasonableness in relation to the services to be provided. The Traffic Commissioners might be asked to certify that the tender was in fact reasonable."

If this plan were adopted the Counties would be responsible for the planning and provision of all rural amenities, including public transport. The provision of transport in remote areas would come within the scope of the County Development Plans. Devonshire[A], in particular,has a strong rural settlement policy involving the establishment of 'key villages' into which future development will be concentrated. Where population is declining it is regarded as economic to concentrate the provision of amenities such as new housing, sewerage, water supplies, etc. into one village, rather than spread resources wastefully over a number of smaller settlements.

A. Development Plan (First Review), D.C.C. (1964)

NOTES ON THE MAP 'TRANSPORT AND SETTLEMENT IN DEVON'

This map has been drawn with regard to the County of Devon's Rural Settlement Policy outlined in the 'Analysis of Survey' of the First Review of the County Development Plan (1964). Among the aims of such a policy is to make an adequate system of public utilities services in rural areas a practical objective The services of groups of villages will be shared where possible and concentrated into Key settlements. Developments in rural areas will be concentrated in these communities. It is essential that these settlements must retain a public transport service, subsidised if necessary. If nationalisation of 'bus routes must proceed then the network should not be permitted to shrink beyond the routes shown on the map. These routes could be operated by the territorial companies, leaving other routes to private companies where possible.

Index to Towns

REGIONAL CENTRES

1. Plymouth
2. Torbay
3. Exeter
4. Barnstaple

KEY INLAND TOWNS

5. Bideford
6. South Molton
7. Holsworthy
8. Tavistock
9. Okehampton
10. Plympton
11. Kingsbridge
12. Totnes
13. Paignton
14. Torquay
15. Ottery St. Mary
16. Honiton
17. Axminster
18. Tiverton

OTHER TOWNS

19. Braunton
20. Gt. Torrington
21. Plymstock
22. Cullompton

SUBURBAN TOWNS

23. Ivybridge
24. Crediton

COASTAL TOWNS

25. Lynton/Lynmouth
26. Ilfracombe
27. Northam/ Westward Ho!
28. Salcombe
29. Dartmouth
30. Brixham
31. Teignmouth
32. Dawlish
33. Exmouth
34. Budleigh Salterton
35. Sidmouth
36. Seaton

Devon's policy takes into account, among other things, the contraction of public transport and includes in its aims 'to make an adequate system of public transport services in rural areas a practical objective', and to maintain a convenient distribution of readily accessible village centres, particularly in areas of rural de-population. The key settlement distribution would provide a basis for the future provision of public transport on the lines described above.

In accordance with this policy subsidies should not normally be offered to routes outside the key settlements. Places off these routes should be within access of a key settlement...and a bus route. Before the buses came to the more remote villages people would often walk two or three miles to the nearest railway station or main road: where there are infrequent bus services this is still the case. However, if there were sufficient demand a small operator would find it convenient and remunerative to run a feeder service from a remote village to a key route, particularly in association with a garage business. Objections to this might be lodged by the big companies, but if they were receiving subsidies on certain routes their grounds for complaint would be diminished. Besides, they would not gain anything by the operation of consistently unremunerative routes where a small operator might profitably take them over, especially if they were to be feeder services to the main routes.A

Thus, we would recommend that the future pattern of bus services in the South West should take the following form:-

(a) Municipal Services...in Plymouth, Exeter and in the future County Borough of Torbay;

(b) Inter-urban Services on main roads;

(c) Subsidised rural services to key settlements. Here we would suggest that Cornwall's rural settlement policy should be aligned with that of Devon.

A. See Map 19.

(d) Other services operated where profitable by the territorial companies or by private enterprise.

Large-scale measures like these would not be sufficient in themselves. Many small economies could also be made. One-man buses, run on the 'pay-as-you-enter' principle, have been a success with the Western and Southern National Companies, and this mode of operation could become general on all routes except inter-urban ones. In the most remote areas provision might be made for Post Office vans to convey passengers. The National buses also convey parcels and newspapers and more provision could be made for this type of traffic.

As with other forms of transport the omnibus companies are faced with the problem of the summer peak in the South-West. However, this summer traffic is increasingly handled by private operators with excursion and touring licences rather than ordinary stage services. Certain measures would help. On services connecting with railway stations heavy luggage is not conveyed. Legislation has been passed to allow buses to attach luggage trailers and it is hoped that this measure will soon be adopted. Time-table matters and public relations need streamlining as regular interval services will not be possible in future in many areas. All operators should be shown in one timetable.

As long as demand continues then measures should be taken to halt the contraction of rural bus routes. Modifications of the Road Traffic Act are needed to help small operators break the monopoly of the territorial companies where it would aid the community. Responsibility for the situation must be assumed in full by the Government, which should delegate this power to the County Councils and also to the Traffic Commissioners. Policy decisions made for transport in general do not necessarily apply to rural areas, let alone Devon and Cornwall.

In 1961 fuel tax was increased and this hit the rural operator particularly badly, leading to a disastrous increase in costs just when inflation was bad. Thus, the public has been subject to a series of staggering fare increases to which there has been considerable consumer resistance, causing a decrease in loadings. It is difficult to see where this trend will end without some form of legislative action to maintain a basic network of services offering realistic fares. Urgent action is needed from the Government or large tracts of countryside will be left without any public transport.

iv). The Need for Bus Services.

From the discussion so far, it becomes obvious that there is still a sizeable need for bus services in the more remote parts of the peninsula. Mr. D. St. John Thomas[A] summarises this need under three counts:-

1. to provide all rural amenities up to town standards;
2. to preserve a healthy balance of population between rural and urban places;
3. to enable a full life to be led by those living in the country without their own transport.

Above all, transport is essential if a reasonable standard is to be maintained. Without transport the old become isolated and the young drift away. De-population continues and the character of rural life collapses. Maintenance of country life is essential in the South-West as the attraction of the countryside is of benefit to the tourist industry in relieving the congested coastal areas. This does not mean that the population level should be maintained by immigration because when the 'adventitious' population exceeds a certain proportion the rural community loses its character, e.g. as has happened in the dormitory rural districts near Plymouth...Plympton, Plymstock, Torpoint and Saltash.

A. The Rural Transport Problem - D. St. J. Thomas (Routledge & Paul, 1963)

De-population in many parts of Devon and Cornwall has been disguised by an adventitious swell, especially on urban and coastal fringes. Most of the immigrants are business and retired people who do not use public transport and who enjoy the amenities provided by the countryside at less than economic cost. A network of public transport, however, is still required for the primary, indigenous population. The present generation in the country cannot be abandoned. It is a fallacy to suppose that every rural dweller can have his own personal means of transport.

The pattern of services suggested in the above section, with the degree of subsidy, would go some way towards the solution of rural bus problems. The old pattern of country bus services which has descended from the horse-drawn carrier's cart, cannot be perpetuated. It is in no-one's interests that this pattern should be maintained in full by subsidy. In the South-West there is a substantial network of inter-urban services connecting the small market towns and skilled management could adapt them to all sorts of local requirements involving the key settlements. Rural transport is not dead: a drastic re-appraisal of its form is needed in accordance with demand, for despite car ownership, works and school buses are still required and country buses and coaches remain popular for all forms of community activities.

Technical illegalities imposed on such services by the Road Traffic Act must be removed. With more freedom allowed to independent operators and a measure of subsidy on key routes a more casual pattern of services might play a useful part in rural life and give an acceptable living to operators. The advantage of the private car is that it is completely flexible to demand. Bus services cannot match this but they should be as flexible as possible. Off bus routes, the traditional willingness of Westcountry people to help each other out would solve most problems.

PLATE THIRTEEN.

MINI-BUS AT FOWEY. A mini-bus operated by Messrs. G. & E.A. Bartlett waits to depart from the yard of Fowey station for Loswithiel. When the Loswithiel-Fowey rail service was discontinued at the end of 1964, The Western National Omnibus Company began a substitute bus service. Even with a subsidy from British Rail, this service was unremunerative, and so, in the Spring of 1967, the Western National agreed to transfer the route to the mini-bus company.

In short, a planned rationalisation of country routes would not be the disaster that many people forecast, provided that legislation enables some form of subsidy on key routes and free competition outside the basic network.

MAIN REFERENCES USED IN CHAPTER SIX.

1. Devon County Council; Development Plan; First Review, 1964.

2. Hibbs, J. "Transport For Passengers"; Institute of Economic Affairs; Hobart Paper No.23, 1963.

3. St. John Thomas, D. "The Rural Transport Problem", Routledge & Paul, 1963.

4. "Report of the Committee on Rural Bus Services" (THE JACK REPORT) H.M.S.O., 1961.

CHAPTER SEVEN

OTHER ROAD PROBLEMS.

i.) Long-Distance Haulage.[1.]

With the rationalisation of rail and bus services, a great deal of attention has been focussed on the adequacy of the alternative means of transport by road. The very factor whichhas killed so many rural rail and bus routes, viz. the private car, continues to increase in numbers, while at the same time the road building programme proceeds at a snail's pace. Growth of car ownership is an inevitable process; many local authorities, however, allege that withdrawals of rail and bus services are one of the most important causes of this increase, and that former passengers are being 'forced' onto the roads. In isolated instances this may be true[A], but the main cause of the rise in car ownership is simply the universal desire to possess one's own personal transport. If the road system was adequate, then the problem caused by this basic demand would be minimal; however, traffic continues to worsen each year.

There are many general statements and ideas promulgated as to how to ease traffic congestion. Private motorists, sickened by the urban disorder and summer traffic jams (seasonally very important), seek out all manner of scapegoats. One of the most persecuted of these is long-distance lorry traffic, which is said to choke the main arterial roads, causing traffic congestion and accidents. What is the role of long-distance haulage in the South-West?

In Devon and Cornwall, there are few really large industrial entities, and most of the freight traffic which is generated in the region is in small units, which are more suitable for road than rail transport. As we have seen in Chapter three, there are few regular flows of bulk freight traffic. Because of this, a large proportion of the freight traffic in the South-West is conveyed by road.

A. See Chapter six.

Most of the traffic, for shops and factories, is conveyed by 'C' licenced vehicles. There are nevertheless a large number of private road haulage firms. The largest fleet of privately-owned haulage vehicles in the region is owned by English China Clays (Lovering and Pochin) Ltd. who convey most of the internal china clay traffic leaving the peninsula, in addition to other forms of haulage work. E.C.C. also have interests in several other haulage firms. Of the pure haulage concerns, British Road Services are the largest group in the region, with haulage depots at Exeter and St. Austell and parcels depots at Plymouth and Perranporth. Of private firms, the largest single unit is Drake Carriers of Plymouth, with 120 vehicles. There are a great number of small haulage firms[A], some of which are descendants of the old country carriers.

Drake Carriers (see above) was the first private firm to move towards co-operation between road and rail transport. In 1964, a modern depot and warehouse was opened on an eleven-acre site at Crabtree, on the eastern boundary of Plymouth.[B] From this depot, eighteen vehicles now provide a long-distance service to London, Birmingham and Manchester, and twenty-seven vehicles are used for daily distribution services in Devon and Cornwall. Contracts have been established with several national food and household goods firms, and the warehouses distribute several hundred tons of such articles per week, which arrive in bulk. A most significant factor is that the depot is rail-served, by a siding from the nearby marshalling yards at Tavistock Junction. The site at Crabtree will be suitable for expansion in the near future and it is probable that a small industrial estate will develop there in conjunction with the transport facilities.

Co-operation of this type is essential in the future if freight movement by road is not to be choked by traffic congestion.

A. See Appendix II. B. Plate I4.

In the 1950s a great deal of rail traffic was transferred to road haulage, partly because of railway inefficiency and partly because the rail freight charge increases became prohibitive. For instance, in 1950 91% of the market garden produce from West Cornwall travelled by rail, but in 1964 72% went by road.[A] Road haulage expanded at a tremendous rate during this period. Those private motorists who criticise road haulage argue that the expansion is being accentuated by the closure of rail branch lines to goods traffic. In fact, as we have seen[B], the policy of the railways is to discard traffic which is unsuitable for rail haulage and could be handled more efficiently by road. It is a mistake to say that ALL long-distance road traffic should be transferred to rail, because a vast proportion of it is not suitable for rail haulage.

However, on the other hand, there are considerable amounts of traffic on the roads which are suitable for rail haulage. In 1960, in preparation for the Beeching Report[C], the railways collected detailed information[D] about the volume and nature of freight traffic entering and leaving the South-West. The surveys were divided into two groups....general freight traffic and coal-class[E]....and were part of a nationwide investigation of freight. From the information, the amount of general traffic suitable to rail but not on rail was calculated. It was estimated about 40,000 tons of such traffic converged each week on the Exeter area from the East. Of this, about 25,000 tons was destined for Devon and the remainder for Cornwall[F]. Out-going traffic was much less and amounted to about 20,000 tons per week....evenly spread between the two counties.

A. B.R. Statistics

B. In Chapter four.

C. Opp. cit.

D. Unpublished Survey material collected by Rail Traffic Management

E. Coal and all heavy mineral traffic.

F. Exact figures not available.

A separate survey was made of coal and it was estimated that over 20,000 tons reached the region every week, mainly by sea.

Much of this road traffic paralleled rail routes, and was deemed to be eminently suitable for rail haulage. Suitability in this respect was determined by load, regularity of flow, distance travelled and terminal requirements. Traffic was divided further into possible consignment sizes passing under the most favourable rail conditions. Some was found to be suitable for Liner Train traffic, especially to South Devon and the Plymouth area.

A great proportion of road freight is conveyed by 'C' licence owners and co-operation from these firms is essential if rail-road liason is to be established on a large scale. Distribution and collection of the bulk of incoming foods must be organised into large rail depots served locally by road vehicles and owned by either the railways or a road haulage firm. Road haulage would retain a considerable amount of its present importance but for its proper role, that of local collection and distribution. The whole process of freight movement should be regarded strictly as a service to the consumer and efficiency should be the principal target.

Coal traffic entering the South-West comes mainly by sea from North-East England and South Wales. Quite a considerable amount comes by road from the Midlands, but this is being absorbed by the railways, transporting the coal in bulk from the collieries to concentration depots. Bulk commodities of this nature are more suited to rail transport than road on a long-distance haul. This principle is applicable, also, to much of the freight traffic generated in the South-West. Most of the china clay[A] and stone traffic could be transferred to rail.

While there is conflict between private motorists and road haulage, there cannot be an efficient service to the consumer and the situation can only worsen.

A. See Chapter five.

PLATE FOURTEEN.

RAIL-ROAD INTEGRATION.The Bass,Mitchell & Butler's Brewery Group's distribution depot at Crabtree,near Plymouth's eastern boundary. All produce is brought by rail from the Midlands,then distrubuted throughout the South-West by road.The private rail siding can be seen in the background.This siding also serves the depot of Drake Carriers Limited,one of the largest road haulage firms in the region.

An overhaul and rationalisation of the road haulage system is vital, in conjunction with the railways' freight modernisation plans in the South-West. Road haulage still has a vital part to play but it should withdraw substantially from the long-distance sphere, where it would be much more economic to transport materials in bulk by rail.

The private motorist's view of road haulage cluttering up the main roads is selfish and distorted. On the contrary, a more correct view would be that the congestion caused by private motorists is detracting from the value and efficiency of long-distance road haulage. As the traffic problem increases, so the efficiency of the road haulage network decreases in proportion. Yet, in this worsening situation, there is no apparent drift from road to rail haulage, in spite of the fact that most industrial firms have reasonable access to the latter. The principle cause of this anomaly is the difference in road and rail freight rates, which overshadows the improvements in railway efficiency in the freight field. In the near future it is hoped that the South-West will have regular Liner Train services[A] to the main industrial areas, but there is scepticism about their success, as local businessmen may continue to use the cheaper long-distance lorry. Around 80,000 tons of materials[B] per week moving in and out of the region are suitable for rail haulage but are conveyed by other means. If this continues into the seventies, then the modernised rail system will be wasted as the cost to the community of road congestion grows larger.

There would appear to be two main answers to this problem: the fixing of more competitive freight charges by the railways, or Government legislation to persuade business men to use rail transport for long hauls. Many of the loads in transit would appear to be too small as units for rail transport, but concentration of goods from each area into a rail freight depot soon creates a train load.

A. The first depot will be at Plymouth and services should start in the winter of 1967-8.

B. From B.R. figures, 1960.

At the time of writing, there is much talk of road-rail co-ordination, to be imposed by government legislation. Although the problems of freight movement would appear to be minimal compared to those in the large industrial areas, the problem is nevertheless a most pressing matter. The roots of the matter are not solely economic; the geographical configuration of the region exerts a strong influence. Here one must again emphasise that the South-West is a peninsula and the main traffic flows are along the 'spine' in an East-West orientation. Because the flows are channelled onto the two main trunk roads to and from the region, there is no spread of congestion, no alternative route. This is not only due to the restrictions caused by the elongate peninsula, walled by the sea, but also to the fact that there are only two routes suitable for long-distance lorries and both the A30 and the A38 are barely suitable for this role. The hilly nature of the land is itself most unsatisfactory for road development.[A]

In this situation, some form of planning and co-operation is vital in order to keep freight on the move, also to ensure that the road haulage industry is not strangled. The aim of the transport industry as a whole should not be merely to achieve profitability (albeit a worthy intention) but also to provide the best and most efficient service to the customers.

ii). Adequacy of the Road Network.

With more and more vehicles coming onto the roads each year, there is an increasing burden on the strained road network. Devon and Cornwall have one of the densest road networks in the country, yet the standard of these roads for modern traffic conditions is extremely poor. After the SecondWorld War, only the City of Plymouth built new roads on a large enough scale to absorb the flow of modern traffic, [2] but even now road usage in the City Centre at rush hours is as great as any main street in Central London.

A. See Chapter one.

The road system in the city has become out-dated by the phenomenal increase in traffic and an urgent re-appraisal of land-use and traffic problems has recently been necessary[3]. Over the rest of Devon and Cornwall, progress has been slow, and schemes undertaken have usually consisted of modifications to existing roads. Little money has been available for large scale works, either from county funds or from the Ministry of Transport, who administer the trunk roads[A]. As a result few lengths of dual-carriageway have been constructed.

Main traffic flows in the South-West were concentrated on the A30 London-Penzance road and the A38 Derby-Bodmin road.[a] These two routes converge on the Exeter by-pass, which is one of the most notorious traffic bottlenecks in the whole country. The A38, carrying heavy flows of traffic to South Devon, Plymouth, and East Cornwall (via. the Tamar Bridge) has truly earned the nick-name of "the longest country lane in England". Improvements to both routes are badly needed, yet schemes are tendered only for separate pieces of a few miles in length. The present programmes of improvements for the Exeter-Plymouth stretch of the A38 will still leave 21 miles of this road without dual carriageway by the late seventies.

The main traffic problem in the region is that congestion, although on a tremendous scale, is concentrated into the summer holiday season, for three months of the year, and particularly at weekends. Government ministers are, therefore, loth to spend money on a road system which might be under-used for over half the year. Policy is directed at providing motorway links between the main centres of population and industry, and tourism does not apparently count as an industry. Current plans[B] provide for an extension of the M5 Birmingham-Bristol motorway to East Brent, near Bridgwater in Somerset. The M3 (supposedly London-South West) motorway will terminate at Basingstoke. Later, it is intended to extend a dual-carriageway road from East Brent to Exeter, where it is intended to have a by-pass to the by-pass!

A. See Map 21. B. to 12/66.

a. " " "

PLATE FIFTEEN.

RIDGEWAY, PLYMPTON. The A.38 trunk road is known as 'the longest country lane in England'. Between Exeter and Plymouth, this reputation is deserved, for there are many bottlenecks. The Ridgeway is the main street of the town of Plympton, now a suburb of Plymouth. This view shows through traffic picking its way past parked vehicles on the twenty-foot carriageway. Attempts have been made to divert through traffic via the spine road of a new housing esate to the north of the town. This diversion is so considerable, however, that the town centre is now regarded as a short cut! A new by-pass has been approved by the Ministry of Transport, but will not be started until 1969.

The A.38 between Exeter and Plymouth will eventually be dual-carriageway in the seventies, but a similar road through Cornwall may not exist until the eighties, far too late. In December, 1965, the Committee of Six[A] gave an assurance that it was possible to build a 'spine' road from East Brent to Penzance by 1975. Undoubtedly, this would be an extremely expensive venture; it was estimated that £50 million[B] would be required for the East Brent-Exeter stretch alone, for which no line has yet been determined. The Committee stated that they would be opposed to the introduction of tolls, but this would seem to be a hasty decision in view of the likely costs.

The urgency of the need to improve the main routes to the South-West is undoubtedly very pressing. At the moment[C], the increase in road improvements is far outstripped by the proportionate increase in cars. Ideally, the solution would be to extend the M5 to Plymouth and the M3 to Exeter for a start. The A.38, in particular, must be replaced. Not only is it the main access to Plymouth and the popular South Devon resorts, but it is also an important link to Cornwall via. the Tamar Bridge. These basic improvements are essential for the survival of the tourist industry. Traffic congestion is bad publicity for the region, and not only the tourist industry is in danger. The government has declared its intention to attract new industry to the South West by the designation of Development Districts[D] in West Cornwall and North Devon. Without an adequate road system, there is little hope of realising such plans to the full. Meanwhile, as talks continue, the number of private cars continues to increase and also the amount of traffic congestion, which itself costs a great deal of money. It was estimated that the basic improvements outlined above would save the community £3,000 million a year by 1979[E], by the prevention of traffic congestion.

A. The Councils of Devon, Cornwall, Somerset, Dorset, Plymouth & Exeter.
B. At the above Conference
C. In 1967
D. Areas where Board of Trade assistance will be given to new industries
E. Road Research Lab. figures.

In the cities and towns, local authorities face the universal problem of traffic versus the environment. In Plymouth and Exeter at least, perimeter parking will be necessary and parking fees may have to be increased to discourage private motorists from taking their cars into the City Centres. Parking fees are a useful source of revenue for road funds; it is an unfortunate fact that the protesting motorist will have to contribute still more in the future to the cost of the facilities he uses. In Plymouth, it will probably be impossible to accommodate the demand for road space in the City Centre[3]. and £50 million will have to be spent on perimeter parking[a2]. for by the year 2010, it is estimated that[B] 193,000 vehicles will be registered in the City. For other towns, the Council for British Archaeology has listed several places in Devon and Cornwall which they would like to be traffic-free to preserve their potential as tourist attractions[C] The preservation of such places is deemed to be essential for the attraction of foreign tourists. In 1964, for instance, although the South-West handled 20% of the British holidaymakers, only 7% of foreign visitors to this country visited the region[D].

For the benefit of tourism and all other basic industries a bigger road building programme is essential. Improvements in the near future to the trunk routes would mean a long-term saving[E]. The financial burden could be borne, at least in part, by tolls, as on the "Highway to the Sun" tourist route in Italy.[F]

A. Plymouth Corporation figures.

B. Based on M.O.T. estimates of increase in car ownership.

C. Falmouth, Looe, Penzance, St. Ives

D. B.T.H.A. figures

E. See above

F. Runs from Milan - Naples through the Apennines

The success of the Tamar Bridge indicates the value of tolls and few motorists begrudge the bridge tolls for the evasion of delays and congestion. As the costs of the structure have been paid, so the tolls have been reduced. Now, in some instances, the tolls are lower than the old ferry fares.[A] Whatever method of payment is adopted, speed is essential for the future prosperity of the region. Already there have been instances of 25-mile traffic queues,[B] and of "too many cars and too few visitors". Two new toll motorways could be constructed by the late seventies. Costs would directly and indirectly be repaid quickly. For the visiting motorist, driving on a good, well-landscaped motorway would be part of the pleasure of being on holiday. Funds would then become available to modernise many of the other notorious classified routes which carry a heavy burden of tourist and regional traffic. Planned development of the roads should proceed side-by-side with that of tourism and other industry.

iii). Sample Studies.

From what has been stated in the previous section of this chapter, it is clear that the principal road problems in the South West hinge on the movement of through traffic along the major trunk roads during the holiday season. The trunk roads in the two counties, however, account for but a small percentage of the total road mileage. Many important settlements are not served by the trunk routes, and are quite unlikely to receive the benefit of any large-scale road-building programmes for some time to come. The sample studies which follow are attempts to assess the importance of road transport in the three main types of settlement in the region; a small coastal resort, an inland market town, and a country village. Each settlement is examined in terms of the current transport situation, and of the possible problems that may arise in the future.

A. Saltash ferry closed in October, 1961.

B. 1964 August traffic was queued from Torquay-Exeter by-pass

(a) LOOE: A Small Coastal Resort. The settlement of Looe * consists of two entities, East and West Looe, which straddle the estuary of the River Looe at its mouth. Of the two, East Looe is the more important, where is situated the Guildhall, the Fish Quay, and most of the shops and places of business. At the northern extremity, a fine arched bridge links the twin towns. In its entirety, Looe is typical of many small South-Western resorts, an attractive clutter of buildings vying one with the other for the limited space at the mouth of steep-sided river valley. Its population is small....about 4,000A and the annual rise in population is low. Development on the valley bottom has reached saturation point and new building proceeds mainly on the plateau to the East (Sunrising Estate). In these conditions; Looe has a perennial problem of overcrowding which attains nightmarish proportions in the height of the summer season.

Looe's main road link is the A387, a branch from the A38 trunk road at Polbathic, six miles to the east, through Looe to Polperro. This route carries most of the through traffic from Plymouth and points further East. It approaches the town from a northerly direction, along the floor of the East Looe valley. At Sandplace, two miles to the North, where the A387 enters the valley, it is joined by the B3254 from Liskeard. At Looe the road crosses the river bridge, widened in 1961, and proceeds to Polperro, an extremely popular tourist attraction four miles to the West. The only other classified road to serve Looe is the B3253, a direct cut-off route from the A387 at Widegates, three miles to the North-East. The roads in the town itself are extremely well-maintained, but suffer from narrowness.

Demand for public transport has declined markedly in recent years, and the present facilities would appear to be adequate, despite the infrequency of the buses. Five routes are operated by the Western National Omnibus Company; two to Liskeard, two to Torpoint and one to Plymouth, via. the Tamar Bridge.

* See Map 22(over).

A. 1967 estimate.

The services to the East do moderate business, but those to Liskeard are under-used and are operated on the P.A.Y.E. principle. The most important service in the area, however, is operated by a private company, Messrs. Pearce, who operate a frequent service from East Looe to Polperro; Polperro is not served by the Western National.

The Pearce bus connects at Looe station with the branch line passenger trains. Looe station, at East Looe, is the terminus of the 9½ mile branch line from Liskeard on the Plymouth-Penzance main line. Passenger services consist of nine trains in each direction on week-days, and six each way on Summer Sundays. Freight traffic ceased in 1963, when the former goods yard was converted into a car park; most freight and parcels traffic will in future be distributed from the Friary depot at Plymouth. The passenger service makes good connections with the main line trains at Liskeard and is reasonably well-utilised, being worked by one diesel unit. Despite this, British Rail proposed to close the line in 1966, but the request was quashed by the Minister of Transport because of possible road congestion between Liskeard and Looe. Thus, the future of the line seems to be assured for some years to come. It is making a loss, but this is probably considerably less than the £19,000 estimated by the railway management in their closure proposal.

The fairly healthy state in public transport is not echoed by the situation on the roads. Looe is in grave danger of being slowly strangled by the motor car. Fore Street, the main thoroughfare of East Looe, is the crux of the problem. Although it is the principal street of the town, there is no room for two vehicles to pass each other. During the daytime, a no-waiting limit is imposed and a one-way traffic system is controlled by traffic lights at either end of the thoroughfare, manually-operated by a traffic warden stationed at the southern end. Most of the main shops are situated in the street, which also provides access to the main bathing beach, and the Fishing Quay.

Thus, almost all traffic in the lower part of East Looe has to use Fore Street. Considerable congestion is the result, which the one-way system and the waiting restrictions have only partially solved. Naturally, traffic conditions are worst at peak holiday times, but the basic problem is a perennial one. Many of the retired people who live in the area come to Fore Street by car to shop, especially on Saturdays. At such peaks, traffic in the older parts of both East and West Looe reaches saturation point and the narrow, twisting streets become clogged with vehicles.

To view the situation on a Summer Saturday, it would be easy for any expert to confess defeat. However, with good management Looe could breathe again. This hope is expressed after an examination of the car parking facilities existing at the commencement of the 1967 summer season. There are four[A] main car parks, which are as follows: (No. of car spaces in brackets)

I. Mill Pool (1,000) 4. Railway Station (90)
3. Sea Front (100) 2. Town, East Looe (250)

Of these, the Mill Pool and the Railway Station parks are not used in winter. Yet, on a peak day in summer, the Mill Pool park handles over 2,000 cars per day; 8-900 cars per day park elsewhere in West Looe; and over 200 cars per day use the seafront park in East Looe. It would appear, therefore, that a solution to the off-peak problem would not be difficult to devise.

The Borough Surveyor's Department at Looe has shown considerable enterprise in attacking the car-parking problem. Since 1960, the Mill Pool car-park has been enlarged by 250 spaces per annum to a total capacity of over a thousand. This entailed the filling of part of the boating lake, a controversial decision, but one which has been justified by the success of the giant car park. Efforts are being made to increase the number of car parking spaces by 50 during 1967. Plans are also afoot to extend the Mill Pool car-park to 1,500 capacity, but filling more of the boating lake.

A. Numbered I-4 on Map 22

In fact, it would be a simple matter to achieve a future capacity of over 2,000 spaces by this method. The total gain in spaces would exceed the total capacity of all the other car-parks in Looe.

If this expansion at Mill Pool could be achieved, then the solution to congestion in East Looe would be to close the town completely to traffic south of the Town car-park. This measure may be considered to be drastic, but the situation demands such action. A similar approach to the traffic problem in Polperro is being considered by the Cornwall County Council at the time of writing. Obviously, such schemes are bound to cause argument and inconvenience at the outset, but the long-term environmental benefits must surely outweigh the rather selfish claims of individual private motorists. The narrow, twisting streets of Looe and resorts like it all over the South-West were not built for heavy streams of traffic. This basic fact should be acknowledged. Any compromise in favour of the motor car only serves to aid the destruction of the amenity value of such resorts. Quaintness, including a jumble of narrow streets, is the primary selling factor of the small resort. Motorists flock to Clovelly and admire its steep cobbled streets leading down to the harbour. Freedom from the car is part of Clovelly's attraction. Surely the banishment of the motor car from other similar towns and villages would add to their attraction for summer visitors?

One other suggestion for solving the traffic problem in East Looe is that the Quay could be opened to traffic and a one-way system could be set up. This, however, has the disadvantage of being a temporary measure. In addition, the amenity value of the Fish Quay, a magnet for visitors to see the catches of the shark-fishing boats, would be destroyed. The only ultimate solution must be faced eventually.

Local car-owners and traders in East Looe could be provided with some form of permit to enter the restriction zone for unloading or garaging purposes.

Similarly, the few hotels in the area with garages could provide their customers with a permit to enter the zone. However, if the ban on traffic was to be imposed strictly throughout the day, then simple electric trolleys could be on hand for the transportation of goods.

Although Looe has a serious traffic problem at the time of writing, the town is fortunate for, with a little determination and sacrifice, the problem can be solved. To retain the charm and beauty of the South-West's small resorts is essential for the future health of the tourist industry.

(b) TAVISTOCK: An Inland Market Town. Tavistock* is typical of the many market towns which are spread throughout the South West peninsula. It straddles the River Tavy on the western edge of Dartmoor, occupying an ancient site where the river valley widens. The settlement dates from the year 974, when a great Benedictine Abbey was founded there, which became the largest and richest Abbey in the South-West during the Middle Ages. Borough status was attained during the 12th Century when Tavistock became interested in the tin trade. In 1305, it was established as one of the Stannary towns in Devon (along with Ashburton and Chagford) where all tin won in Devon was to be weighed, stamped and put on sale. Tin declined in the 17th century along with a considerable local cloth trade, but this was replaced by speculation in the copper mining in the Tamar Valley, four miles away. The height of this trade was reached in the mid-nineteenth century; a canal was built from the town to Morwhellam Quay on the Tamar in 1817. This became disused in the 1890s, when the mines declined.

Despite this recent history of decay, Tavistock remains to-day an attractive and thriving market town with a population of just over six thousand and a large hinterland. The present character of this pleasant town owes much to the efforts of the Dukes of Bedford in the nineteenth century, when they owned most of the land in and around the town.

* See Map 23(over).

The second Duke remodelled much of the town centre during the 1840s, including the erection of the gothic-style Guildhall (1848) and the planning of the fine Plymouth Road. These spacious nineteenth century layouts have considerable significance to-day, as we shall see.

Tavistock is a market and shopping centre for a large area of West Devon. It is also a nodal point for five main roads: the A386 from Plymouth, the A390 from Callington, the A384 from Launceston, the A386 from Okehampton, and the A384 from Princetown. The principal route is the A386 Plymouth road, which carries twice as much traffic as any of the other routes. Plymouth, with its population of 247,000, is only fourteen miles distant, and although Tavistock retains its own character and trade, it nevertheless falls into Plymouth's sphere of influence. Many people living in Tavistock work in Plymouth. Devonport Dockyard is the largest single employer, but there are many business and professional people who commute daily by car. There is a not inconsiderable flow of business into the city, and many Tavistock folk look to Plymouth for entertainment and shopping excursions. Long-term planning proposals for the area include a dual-carriageway from Plymouth to Tavistock.

The latter is the only major roadwork envisaged for Tavistock. Certain minor improvements and widenings are being undertaken, but in general the main roads into the town and the streets within its boundaries are well-maintained and absorb the flow of modern traffic to a high degree. The main exception is at the East end of the town, where Juke Street and Brook Street constitute a troublesome bottleneck. Most traffic leaving the town for the Okehampton main road has to use this narrow street. Recently, a no-waiting order has been introduced for the period 8 a.m - 6 p.m. and this has effectively reduced the measure of congestion. Should the situation worsen in the future, no doubt a one-way system could be devised, using Market Street or Dolvin Road.

In a town so well-served by road, it is hardly surprising to find that the use of public transport is declining. Until 1962, Tavistock had two railway stations, Tavistock South and Tavistock North. The former was closed from 30th December, 1962, and was the principal intermediate station on the former Great Western Railway branch from Plymouth to Launceston. Passenger traffic to Launceston was light, but it was of steady proportions on the section to Plymouth until the early fifties, when car-ownership began to increase. South Station, opened in June, 1859, was the original station in Tavistock and was unchallenged until 1890, when the North Station, on the hill overlooking the town, was opened. This station was on the main London and South Western Railway (later Southern Railway) line from Plymouth to Waterloo, and provided Tavistock with through services to Exeter, London and Southern England. North station has a considerable physical disadvantage in that it is situated atop an extremely steep hill, and thus loses many potential local travellers to the omnibuses. At the time of writing, the railway is under sentence of closure, although no specific date has been announced. The train service has been reduced from 25 weekday services each way in 1964 to 7 services each way in 1967 (2 on Sundays). All through services beyond Exeter have been withdrawn, and the choice of trains is so limited as to make the service practically unusable. When the station at Tavistock closes, the nearest rail-heads will be at Plymouth, Bere Alston, or Okehampton.

In respect of omnibus services, Tavistock is well-served by the Western National Company, which has a small bus station and garage in Plymouth Road, adjacent to the town centre.

The following routes are operated by the Company:

Route Number	Destination
82	Liskeard
83/83A	Plymouth
84/84A	Whitchurch
113	Princetown and Yelverton
115	Yelverton
118	Okehampton
132	Plymouth and Bideford
152	Calstock
153	Metherell.

On the surface this would seem to be a dense network of routes linking Tavistock to the surrounding countryside. No exact figures are available, but from personal observation over the last few years and from conversations with residents in the area, it is apparent that there is a steady decline in the use of the bus services. The busiest routes are those to Plymouth and the Tamar Valley, especially the former. Other routes tend to be under-used, the most significant example being that from Tavistock to Okehampton, which will be augmented to replace the train services. This service has been observed on several occasions crossing Blackdown with no passengers at all. One of the reasons put forward by British Rail in their closure case for the adjacent railway line was the under-use of the section between Tavistock and Okehampton; figures were produced to substantiate this. The bus service runs through the same territory as the railway and fulfills a similar function, although making more stops. Despite its comparative cheapness to operate (there is no conductor), this service can surely never succeed where the railways failed. When one considers the sparsely populated countryside to the North and East of Tavistock, one speculates on the future prosperity of the bus services. However, most routes are along main roads, are socially-necessary and may be retained by subsidy, according to Government policy.

There is one private bus service, operated from Tavistock to Bere Alston, operated by Messrs. A.H. Sleep. The future prosperity of this route seems bright, for it will assume the function of the railway when that closes.

Car-ownership in the area is high and naturally continues to increase. Despite this, Tavistock can face this increase with considerably more confidence than the coastal resorts. The main reason for this has been mentioned; the planning of the Duke of Bedford, which gives the town enough space to absorb its traffic. A large proportion of the flow is through traffic. This does not re ach uncomfortable proportions in summer, as Tavistock is not an important tourist centre and is well away from the principal holiday trunk routes. Most through holiday traffic by-passes Tavistock on its way to Cornwall via. the A30. Queues over seven miles are common at Okehampton, but unknown in Tavistock. The other main holiday flow travels via. Plymouth and the Tamar Bridge, which, when it was opened in 1961, captured a considerable amount of through traffic which formerly passed through the town en. route to cross the Tamar at Gunnislake Bridge. Except on the A386 to Plymouth, for which provision will be made (see above) no serious problems are envisaged on the main roads leading into Tavistock.

In the town itself, there is but a minor car-parking problem. Most of the main streets are wide enough to permit on-street parking, especially in Plymouth Road, and the two main car-parks[A.], the Bedford and Guildhall Square Parks, are adequate. The Bedford car-park holds approximately 250 vehicles and is rarely filled to capacity. Obviously, there is bound to be increasing pressure on the present facilities, but there is plenty of room for expansion when the occasion demands. One possibility that springs to mind is the site of the railway station after the closure of the railway has been implemented.

A. Car parks shown on Map23: No. I Bedford; No. 2 Guildhall; No. 3 Cattle Market.

There is every hope that in the future Tavistock will remain the friendly, pleasant market town it is today. Traffic problems do exist, but their solution is possible. For this happy situation Tavistock has to thank the inspiration of the nineteenth century Bedfords in providing spacious streets. In terms of traffic generation too, the town is fortunate in that it is the centre for a large rural area and thus the majority of traffic is of a local nature. No flood of vehicles clogs the streets in summer-time, and traffic is, therefore, more predictable.

(c). HOLBETON: A Small Country Village. Holbeton* lies thirteen miles to the south-east of Plymouth and is set in lush rolling countryside at the head of a short, steep-sided tributary valley of the River Erme. The village is protected from the prevailing south-westerly winds by high ground which almost surrounds the settlement to the north, west and south. To the east is the estuary of the River Erme, approached by a lane through the tributary valley. The countryside along the estuary is magnificent; this factor, together with the excellence of the land for agriculture, encouraged the erection of several large country houses on the western slopes of the estuary. From north to south these are Flete, Efford House, Pamflete and Mothecombe. These houses with the many substantial farms in the area made Holbeton a prosperous and thriving village of some importance. In addition to general agricultural employment, many of the villagers worked on these estates.

Today the estates have contracted in importance. Flete, which formerly exerted a tremendous influence on the area, is now no more. One wing of the house remains and this has been converted into flats. However, the Mildmay family (the First Lord Mildmay lived in Flete) still own most of the land in and around the village. The family now resides at Mothecombe House, another Mildmay possession, and is headed by the Hon. Mrs. Helen Mildmay-White, daughter of the first Lord Mildmay.

* See Map 24.

(Lord Mildmay's son, the second Lord, was drowned in 1952). Despite contraction of their resources, the family still has considerable landowning interests in the parish.

The main activity in Holbeton is still agriculture. A reflection of the changing nature of the countryside is that almost as many persons as are employed in agriculture commute to the Plymouth area to work. Devonport Dockyard is the largest employer of male labour, and most of the female commuters work in shops. As the population of the parish is just over 700, it is not difficult to assess the importance of transport in the area.

The road system around Holbeton is well-developed from the dense network of country lanes which served the many farms in the area. Although the roads are narrow and winding, they are well-metalled and provide good access to the village. The village is two miles south of the main A379 Plymouth-Dartmouth road and is connected to it by three routes. The main route leaves the main road at Flete Western Lodge and enters the village from the west via. the Bull and Bear cross-roads. Another narrower and more hilly route travels due south from Flete Western Lodge to reach Holbeton via. the tiny farming hamlet of Ford. For persons travelling to and from Plymouth there is a shorter route from the Bull and Bear cross-roads to the main road at Yealm Bridge, $1\frac{1}{4}$ miles west of Flete Western Lodge. In addition to these connections with the main road, there is one other important route, which travels south-west from the village to Battisborough Cross, $1\frac{1}{2}$ miles away, where it diverges,one route going to Mothecombe, the other along the coast to Noss Mayo.

Despite this rather dense network of routes, Holbeton has no through traffic problems, not even in summer. This happy situation is due to a very short connecting route along the plateau to the west of the village from Luson Cross to Whitemoor Cross, which carries the brunt of the summer traffic bound for the popular Mothecombe beach.

Thus, despite its size and local importance, Holbeton remains a most charming, quiet place of great character, free from the ravages of through traffic which has spoiled other villages in the area, notably Yealmpton and Brixton, on the A379 road. The roads leading into the village may be regarded as terminal routes, for almost all traffic using them has some business in the village. The only real disadvantage is that all these routes enter the village by extremely steep hills.

Holbeton has one omnibus service, the Western National route No. 139 from Plymouth to Mothecombe. This route leaves the A379 at Flete Western Lodge and runs to Mothecombe via. Bull and Bear, Luson Cross, Holbeton and Battisborough Cross.[A] Despite the populous nature of the area it serves, this service is under-utilised and does not run at a profit. Usage has declined dramatically over the past ten years, mainly due to the increase in car ownership. Other changes in the way of life have also been contributed to the decline of the omnibus service; many basic shopping needs are supplied by travelling shops and mail order representatives; television has obviated the necessity to seek entertainment outside the village. In addition, there have been a series of crippling fare increases. For example, in 1951 the return Plymouth-Holbeton fare was 2s; in 1967 it is 5/3d — an increase of 163%. Short journeys are even more expensive by comparison. From Holbeton to Mothecombe, just 2½ miles, the return fare is 2s. 4d.

To combat the increasing unprofitability of this route, the Western National has introduced several economies. The service has been reduced to a basic three buses in each direction on weekdays only, with augmentations during the summer months. In 1951, the service consisted of six buses each way throughout the year (three on Sundays). The effect of this has reduced the cost of operation but it has also rendered the service almost unusable in the eyes of the public, and has encouraged the spread of car ownership.

A. Bus-stops shown by green spots on Map 24.

All the workers who commute to Plymouth travel by car, as the first bus to the City does not leave Holbeton until 10.30 a.m.

The other main economy has been the introduction of one-man operated vehicles, which has produced favourable results. Despite the economies, patronage continues to decline, and the service is undoubtedly running at a loss. On fine days in the summer the service is busy, but this fails to support the service for the winter months. The possibility of profit is remote.

Clearly, the service is not used by persons for going to work. It follows that most passengers are using the service occasionally for visiting, shopping or for entertainment. Most of the patrons are female, plus old age pensioners and very young children. There is a primary school in the village and pupils of the Secondary School at Ivybridge are conveyed by special coach.

In recent years, there has been considerable fear that the bus service will not be continued. On purely economic grounds, one could not condemn the Western National for taking it off. However, the fact remains that, despite the economic situation, there is still a small, but steady demand for the service in the area. The welfare of housewives and the aged cannot be overlooked. Without public transport, this section of the community in particular would become isolated and frustrated by their environment. Such discontent would slowly undermine both family life and the vitality of the village community. The bus service in Holbeton fulfills an extremely important social function.

In a thriving settlement like Holbeton, it is necessary that some brand of public transport should survive, at least for the present generation. There are two [redacted] means of making this possible. First, the Western National could continue to operate the route, but as a branch route from the main road at Flete Western Lodge, Yealmpton or Ermington.

Alternatively, the Western National could give the route up for operation by a private individual, possibly with a mini-bus.

The omnibus problem is Holbeton's only really serious road transport matter. Car ownership in the area is extremely high (a good estimate would be a car for every 3 persons). Most families own cars, and practically every member of the community has access to a car in an emergency. There is little social enmity. A strong community spirit prevails, fostered by the active Mildmay-White family, and local people seem willing to help fellow villagers to combat the inadequacies of the bus service. Those without cars find no difficulty in obtaining lifts to work in Plymouth. Many families own more than one car. Car ownership shows signs of reaching its maximum level in less than ten years time, but there is little cause for alarm in Holbeton. There is considerable space for garaging and parking accommodation.

SUMMARY

We have examined the road transport problems of three different types of settlement, all typical of the South-West. Two facts have emerged from this discussion:-

1. that the smaller the size of the settlement, the smaller is its traffic problem, provided that through traffic does not intrude.

2. that the worst affected places in the region are those towns and villages which are popular tourist attractions.

In our discussions, we have attempted to postulate some form of solution to the main problems of each place. That we have succeeded would seem to indicate some hope for the future despite portents of gloom from the Road Research Laboratory and the Buchanan school of planners.

The chief priority in the South-West is the improvement to near motorway standard of the two main trunk roads, the A30 and the A38, followed by the improvement of all major roads.

We have shown in the three studies above that internal traffic problems are soluble, if only by preventative measures, as suggested for Looe. The present generation tends to sneer at preventative measures, but in future they will be accepted as satisfactory and economic solutions to urban traffic problems in the region. Resources must be concentrated on the inter-urban roads. We have indicated that a settlement like Holbeton is unlikely to have a serious traffic problem. But what use will a car be to the villager if he finds that the A379 road to Plymouth is rendered unusable by traffic congestion of the scale now encountered by the London area? To function efficiently as a region, the South-West must have a good system of inter-urban roads which by-pass the older towns and villages en route.

MAIN REFERENCES USED IN CHAPTER SEVEN

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2. A Plan for Plymouth, Lord Abercrombie, City of Plymouth, 1943.

3. M.F. Snell and A. Norman Plymouth and District Land Use/Transportation Survey. (Articles in) Traffic Engineering and Control, July/Aug.,1966.

CHAPTER EIGHT.

SHIPPING

In a region which is almost surrounded by sea, there is a heritage of seafaring in the South-West. Many of the important events in the maritime history of this country have some connection with the area. In Elizabethan times, Plymouth, Dartmouth and Bideford were among the important ports of the realm. To the region, sea transport in the sense of coastal shipping was as important as land transport until the coming of the railways. Since the establishment of rail communications however, there has been a steady decline in the importance of shipping in the South-West. All around the coast trade has been lost to rail and road transport and now there is little participation in world sea transport. Many of the smaller ports around the coasts have gone out of existence. Only two ports handle substantial traffic, and the future of shipping in the region is now in the balance. In recent years however, there have been signs of an improvement in certain ports, and the following survey of ports will examine these prospects. The 1965 tonnages handled at the South-West ports are given in Appendix 4. (see also Map 25)

Exeter

In the days of sail, coastal traffic was handled at several points in East Devon from Seaton to the Exe Estuary. Topsham was once of considerable importance, having quite a large general trade with Holland. Exeter is connected to the estuary by the Exeter Ship Canal, the oldest Ship Canal in the country, begun in 1564 at the expense of

the Chamber of the City to provide a direct sea link to the City against the competition of Exmouth (see below) and Topsham. The Canal is still in use and also the wharves at Countess Weir, despite the gradual silting of the estuary which killed Topsham as a port. Trade at Exeter, however, is mainly coastal, with the import of fuel as the main activity. There is no prospect for expansion and it is conceivable that Exeter's future as a port is limited.

Exmouth.

Though not a large port, Exmouth handles twice the trade of Exeter, due to its position at the mouth of the Exe estuary, and lesser reliance on the tides. The history of the port goes back to the Middle Ages and until recently[A] there has always been a ferry across the estuary to Starcross. The main incoming cargoes are coal and timber, and there is quite a large export of sand and gravel, which is dredged from the English Channel.

Teignmouth.

Here is a story of local success, for Teignmouth's handling of Baltic timber, in which she specialises, is increasing. Coal is also an important import. Recently plans have been proposed for the extension of the quays and there is a possibility that ball- and china-clay will be exported from the port. These expansion plans, however, have been opposed by the local fishermen, who are worried about their moorings in the Teign Estuary if more ships should use the port. There is also some anxiety from those interested in the welfare of the holiday trade, as the estuary is considered to be a notable beauty spot.

A. B.R. discontinued the ferry service in September, 1966.

Dartmouth and Torbay

Developments in this area are small, despite the historical associations of the Port of Dartmouth, which rivalled Plymouth in Elizabethan times. The Dart Estuary is much too narrow for modern shipping and there is little commercial activity. The main import is coal, and there is also a small ship repairing industry. On Torbay, Brixham imports coal and oil, but the main maritime activity is in pleasure yachting.

Plymouth

Plymouth has always been the most important port in the South West, but it has not developed as a commercial port to the full potential of its fine natural harbour. Since the late 18th Century, the Royal Navy has been the most important maritime influence on the port, and today this is still the case, with the Navy monopolising the best deep water berths and quay spaces. Perhaps the most significant non-event in modern times occurred in 1852, when the Great Western Railway secured the defeat in the House of Commons of a proposal by the London and South Western Railway to build a line to Plymouth and to extend the harbour there. After this defeat, the L.S.W.R., chose Southampton as its principal port, and the opportunity to establish Plymouth as one of the most important passenger ports in th the country was lost.

Later, the Great Western Railway opened its own docks at Millbay and an ocean trade was started by tendering to the liners which lay at anchor in Cawsand Bay. There was a period of intense rivalry between the G.W.R. and the L.S.W.R. in Edwardian times which

has been described in Chapter Two.[A] Dock facilities at Plymouth quickly became too small for large ships and use of the port today is limited; there is a considerable under-utilisation of the port's resourses. Compared to the country as a whole, Plymouth is one of the nation's smaller ports, but, handling about 1½ million tons a year, is of substantial importance to the region. The trade is mainly in general coastal trade; foreign trade is mostly short-haul.

The organisation of the port is highly fragmented, and there are several sets of docks. Each dock has one or more set roles. In the main, these are complementary to each other, but in some cases they cut across the roles of other main port areas. The port is now administered by three authorities:-

a. The British Transport Docks and Harbours Board, which controls the Millbay Docks.

b. Cattewater Wharves, fronting the River Plym.

c. Victoria Wharves, who also control land along the Cattewater, including Sutton Harbour.

Activity is fairly evenly distributed in different parts of the port; most of the goods handled are imports.[B] Recently there have been signs of a revival in the Port's activities, and this expansion is expected to continue. The only anticipated short-term decrease is in coal traffic for the Cattedown gasworks. In any case the long term decrease in coal traffic is inevitable. The nature and the

A See Chapter 2, Section 3.

B For details see Appendix 4.

precise extent of development, however, is uncertain, for despite recent upward trends, the overall capacity of the port is grossly under-used. One reason for this is that facilities for really large modern ships are lacking. Also, Plymouth is a long way from the nation's centres of population and industry.

Trade at Millbay Docks has been increased recently and a £4000 loss in 1963 was transformed into an £11000 profit in 1964, despite the loss of the ocean passenger business in 1963. In 1965 a new £50,000 transit shed was completed and trade in cattle was started between Plymouth and the continent. Trade in timber was increased and the possibility was discussed of a car ferry between Plymouth and the continent. Yet the port facilities at Millbay were still way below their working capacity, with a surplus in quay space, craneage and labour.

On the Cattewater, there have been similarly encouraging trends but there is also room for improvement. The most important cargo is oil, which is imported to the Cattedown Wharves and distributed throughout the South West. A considerable quantity of coal is brought for the Prince Rock Power Station, which is adjacent to the Cattewater. China Clay is the principal export, handled by the Victoria Wharves. Much industrial development is taking place on the waterfront which should benefit the shipping industry. At Pomphlett, the cement works is being extended to increase its capacity. On the site of the old Breakwater Quarry, at Oreston, a new gas plant is being built, as part

TABLE 2I.

CARGO HANDLED BY BRITISH TRANSPORT DOCKS BOARD PORTS?I965.

Port.	Thousands of Tons.
Hull	9,982
Grimsby/Immingham	6,873
Swansea	6,546
Grangemouth	4,2I3
Newport	3,922
Port Talbot	3,705
Cardiff	2,645
Hartlepools	2,245
Goole	2,053
Barry	2,0I5
Southampton	I,926
PLYMOUTH(Total Port)	I,623
Garston	I,484
Ayr	973
Methil	873
Middlebrough	629
King's Lynn	607
Fleetwood	342
Barrow	300
Penarth Harbour	280
Lowestoft	220
Burntisland	2I5
Troon	93
Silloth	83
Lydney	34
TOTAL	53,88I

of a 3¼ million plan by the South Western Gas Board to extend its supergrid network. This plant will use petroleum distillate and a weekly tanker service will convey the distillate to Cattedown, which has been linked by pipeline across the Cattewater to the site of the gas plant at Oreston.

Table 21 shows the tonnage handled at the Port of Plymouth in 1965 compared to British Transport docks all over the country. The following figures (for 1964) show the tonnages handled by the three separate Harbour Authorities :-

TABLE 22

Tonnages Handled by Port of Plymouth

	CATTEDOWN WHARVES	MILLBAY	VICTORIA WHARVES
IMPORTS	567,000 tons	159,610 tons	15,000 tons
EXPORTS	5,500 tons	5,386 tons	195,000 tons

These figures help to show that Plymouth has a reasonably large capacity, and it could be much more important as a port if the port facilities were more extensively utilised. Unfortunately, the National Ports Council's Plan [A] for the development of Britain's ports excluded Plymouth, but this plan only covers a period of 5-10 years and other ports might have to be considered. Thus, Plymouth's chance might come, although one states this with some reservation, bearing in mind the present position of the port in relation to the other ports in this country.[B] If expansion on a large scale were to be

A Report of the Commission of Inquiry into the Major Ports of Great Britain Rochdale Report - H.M.S.O. 1962.

B See Table 21.

contemplated, however, some compromise would have to be achieved with the Royal Navy, who monopolise the best deep-water berths and possess miles of quay space. Should the importance of the Royal Dockyard decline in the future, there would be a considerable surplus of port facilities.

One encouraging trend is that some shipping firms are now using Plymouth to avoid the overcrowded facilities at London. Plymouth has an advantage in that it is a day's sailing West of London. However, this effect is nullified by the fact that shippers charge the same shipping rate for Plymouth as for London, and the extra cost of land transport from Plymouth becomes a disadvantage to the potential user. There is a growing movement in the South West for the development of Plymouth as the principal port for the South West. The South West Export Association encourages its members to use the port facilities at Plymouth. Development of exports is essential if the working of the port is to remain economical. At the moment, the ratio of imports to exports is too high.[A] If the plans outlined above materialise, Plymouth should become quite an important port, with a tonnage similar to that of the South Wales ports.[B] Owing to its remoteness from industrial Britain, it cannot really hope to be of national importance, but as a regional port, it could become a boon to the economy of the South West.

A See Table 22.

B N.P.C. figures show averages for Newport $1\frac{3}{4}$ million tons; Cardiff $1\frac{3}{4}$ million tons and Swansea $3\frac{1}{4}$ m. tons.

Fowey

Fowey is the most flourishing port in the South-West at the time of writing, due to the phenomenal increase in china clay exports in the last few years. The reason for this has not only been an increase in the production of china clay in Cornwall but also that British Rail, who own the port, have poured vast sums of money into its expansion and modernisation. This was necessary for the railways to stay in the business of transporting china clay. Before the railway plan to extend Fowey, English China Clays (Lovering and Pochin) Limited formulated a plan to extend their own docks at Par to take larger vessels. These new facilities were planned substantially for road transport to the docks.A

In addition to the increases in china clay production, the average size of the world merchant ship is rising. Thus, in addition to the extension and modernisation of the jetties, the harbour at Fowey has been deepened to take larger ships. Export of clay rose to over 800,000 tons in 1965, and the capacity of the docks is now considered to be over a million tons per annum. A major obstacle at the mouth of the estuary, Carne Rock, was removed by blasting in 1964. New facilities have cost over £100,000, and the five working jetties have 28 feet of water even at low tide, so that ships of up to 20,000 tons can now use Fowey. The efficiency of working the docks has been increased by several hundred per cent, and there is a bonus scheme in operation for both dockers and local railwaymen. Exports of clay proceed to most European countries, plus the United States, Canada and South America. Fowey is now the most important china clay port in the world.

A. See Chapter 5.

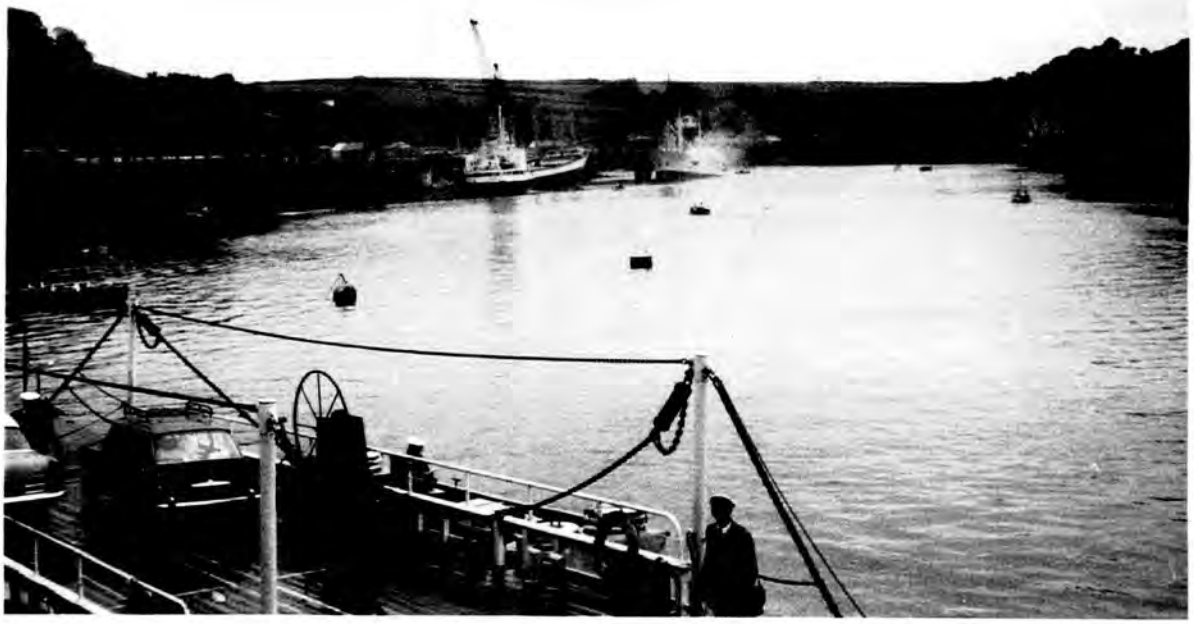

PLATE SIXTEEN.

FOWEY DOCKS.A view of the wharves in the china clay port of Fowey,which is the busiest port of its type in the World.The Docks are owned by British Rail,and were modernised in 1963. Vessels of up to 20,000 tons may be accomodated and clay exports now total over 800,000 tons per annum.The wharves are served directly by rail links to all parts of the Cornish china clay fields.In the foreground,is the small car ferry which crosses the River Fowey to Bodinnick on the East bank.

Par.

Par is another busy china clay port which is owned by E.C.C. Limited, the main china clay company. It is adequately served by both road and rail, but its capacity is limited owing to the silting up of the bay. As a clay port, it has a secondary function to that of Fowey, and will continue to absorb the increase in the clay production by the handling of smaller ships. In addition to clay, Par handles a large amount of other commodities, including coal and timber. The port was opened for the export of minerals, but china clay has replaced this traffic.

Charlestown

A shadow of its former self, when it was one of the main mineral ports in Cornwall, Charlestown is now a very small port handling about 50,000 tons per annum. Trade is mainly coastal, with china clay as the main cargo. There are no rail connections.

Falmouth

Falmouth, at the mouth of the Fal, has the finest natural harbour in Cornwall, but it is too remote to be an important port in the national structure. The economy of the port is too dependent on the large ship-repairing yards, which in recent years have felt the effects of a recession in the world shipping industry, causing high unemployment rates in the town. There is a steady coastal trade in the export of stone, and the import of coal and oil. Oil is the only important item of foreign trade, amounting to some 65,000 tons per annum out of a port total trade of 224,000 tons per annum.[A] It is a far cry from the days when Falmouth was the base for the mail 'packet' vessels to America [B]

A. See Appendix 4
B. From mid C.18 to mid C.19.

Truro.

The creeks of the Fal Estuary are still dotted with the decaying remains of quays which handled a large trade in granite and mineral exports. Truro, at the head of the estuary, still handles coastal shipping, mainly bringing coal imports.

Penzance

Penzance is the only passenger port in Cornwall, and is the terminal for the Scilly Isles. Two motor vessels handle the passengers and mails for the islands and there are daily sailings, although there is competition from the B.E.A. helicopter service. Other trade is very general, the main items being imports of coal, and horticultural produce from the islands.

Newlyn

Newlyn exists for the export of stone from the quarries at Penlee, amounting to over 350,000 tons a year.

Hayle

Hayle is the only survivor on the North coast of several small ports which handled the vast exports of minerals in the last century. The reason for its existence today is the import of coal and oil from the adjacent power station.

Padstow

Padstow was once a thriving port, but today trade is a mere trickle, (1,000 tons per annum), caused by a decline in the industries which formerly used the port ..... metalliferous mines, quarries, etc. The Camel Estuary

has gradually silted up and it is probable that Padstow will soon cease to exist as a port.

Bideford

Bideford is yet another example of a once-famous port which has been declining steadily since Elizabethan times. Activities are concentrated at the Town Quay, which is in the tidal estuary of the River Torridge. Recently there have been hopes of a small revival and the Port Authorities have proposed to spend £60,000 on expansion in the next five or six years. In 1965, a new crane, costing £9,000, was installed at the Town Quay. The Labour Government promised increased grants for expanding ports and also designated the port hinterland as a Development Area, A which induced the port authorities to go ahead with expansion plans. Trade, although small (16,000 tons per annum), was steady, with imports of sand, gravel, coal, timber and fertiliser. A new wharf is being built down-river to cope with increased traffic.

Recently the C.E.G.B. proposed to build a new hydro-electric power station on the cliffs at Bucks, near Hartland. B The plant necessary for this could be brought by sea. and it is thought that the Electricity Board could make some contribution towards port development. As Bideford and its hinterland is so remote from the rest of the South-West, there would seem to be a case for expansion. In recent years there has been a loss (£1,227 in 1965), but this could be transformed into a profit quite easily. Bideford Bay is a nucleus of activity in

A.i.e. eligible for industrial grants from the Board of Trade.

B. Using tide power on a completely new system.

North Devon. In addition to the Town Quay, other Quays are active at Northam, Instow (for a power station) and Ilfracombe, and there is a small ship-repair yard at Appledore.

Although the Tawe-Torridge estuary is difficult for shipping, there would appear to be a future for coastal shipping here, especially with the South Wales industrial area so near.

CONCLUSION

The over-all picture in the South-West is one of decline, but this should be interpreted as a natural rationalisation rather than a serious dearth of coastal shipping. There would seem to be a future for sea transport, but with trade concentrated into a few ports. Plymouth and Fowey would appear to be the growth points on the South coast and Bideford in the North. On a regional scale, it is most vital to the economy of the South-West that the development of Plymouth should not be allowed to lag. Provided that rates are competitive, Plymouth has many commendable advantages .... a good harbour, good rail connections, well-situated for the Atlantic and Mediterranean trade, and a large, skilled dock labour force. If the Naval Dockyard declines, the development of a commercial port would be a distinct advantage.

MAIN REFERENCES USED IN CHAPTER EIGHT

1. "Report on Plymouth and Devon", A.I.C., March, 1966.

The National Ports Council's Interim Plan for Port Development (1965) envisages port expansion on a large scale, but it does not specify Plymouth or any other port in the South-West west of Bristol. At Bristol, the plan included the first stage of a major new liner terminal at Portbury, near Portishead. In this £25 million project, Bristol City Council and the National Ports Council foresee an expanded port serving the whole South-West and most of the Midlands. However, the present Government evidently does not favour the development of a new major liner terminal and the Portbury project will most probably be shelved. Throughout the country there will be a substantial growth in port investment in the next few years, principally towards the modernisation of existing port facilities. The larger ports adjacent to the recognised centres of industry will therefore receive most benefit. Statistics produced by the National Ports Council suggest that the majority of the country's imports and exports are generated close to the ports through which they flow. Thus, it is unlikely that any port in the South-West peninsula will be affected by the investment programme.

In the light of current policies it would appear that the future of sea transport in the South West is somewhat precarious. Most of the shipping traffic is of the coastwise variety and imports far exceed the volume of exports. Nevertheless, there remains a strong maritime tradition, and it would seem essential for the future prosperity of the

far South-West that there should be some measure of Government investment on port facilities in the region. As Plymouth has most of the advantages we would favour the concentration of investment in that port.

A first step in the development of the port would be the amalgamation of the three existing port authorities, thus leading to a rationalisation of the present port facilities. Any expansion of the trade in the port would then be coupled to a programme of industrial expansion in the City. A great deal of new industry is needed in the Plymouth area. The most valuable type of industry to attract is that which produces primarily for the export market, using the port facilities at Plymouth.

In addition to the expansion of conventional port facilities, a revolution in container handling is forecast, with a marked integration of shipping and road and rail transport. The areas which will derive most benefit from this boom are the packet ports on the East and South coasts. At present container traffic is concentrated on routes to France and the Low Countries, but expansion in this field need not necessarily be restricted to Northern Europe. Plymouth could be equipped to handle container traffic for the Iberian Peninsular and the Mediterranean.

With a reasonable amount of local industrial expansion and capital investment, the capacity of the Port of Plymouth could be doubled to 3-3½ million tons per annum. In this a healthy prosperous port, contributing to the economic life of the region is envisaged, but not a

major liner terminal. Plymouth is too far removed from the industrial heart of the country for large-scale expansion, and it is unlikely that the capacity of the port will ever approach the 8 million tons per annum of Bristol. But, while not attaining this size, Plymouth could become an important secondary port within the national structure, with a similar capacity to places like Cardiff, Hartlepool or Grangemouth.

Most of the sizeable expansions in new port facilities in Britain in recent years have occurred in connection with oil refineries. Although oil is one of the chief imports of the South-West ports, it is brought in a refined or semi-refined state by small coastal tankers. Local press reports have hinted that a new tanker terminal could give an economic boost to the Port of Plymouth similar to that which has been experienced by Milford Haven. However, there is no possibility of a major oceanic oil terminal in Plymouth as the port is too far removed from the centres of population, and also because the berths in the commercial port will not accommodate vessels much over 20,000 tons. In any case, the discoveries of natural gas in the North Sea probably mean that the construction of new coastal oil refineries will cease. Although the demand for oil products in the U.K. is likely to continue to rise, this increase can be met by the expansion of existing refineries in other regions.

Investment needs to be concentrated at Plymouth because of its strategic geographic and economic advantages. A prosperous port of Plymouth means that many other ports will also benefit from the demand for shipping. After Plymouth, there is room for investment in the other ports which serve the specialist needs of their hinterlands. Here Fowey, Par, and Teignmouth spring to mind. Some of the small ports will no doubt cease to exist in a few years time, e.g. Charlestown and Padstow, but

PLATE SEVENTEEN.

SUTTON HARBOUR, PLYMOUTH. Sutton Harbour is the oldest part of the Port of Plymouth, and was the nucleus of the original fishing port. Today it is the smallest unit in the fragmentary organisation of the port. This view shows a typical 2,500 ton coaster discharging coal at the coal wharf. Coal is one of the South-West's principal imports by sea; most of it comes from the Northumberland and Durham coal-field. It is likely that the coal wharves at Sutton Harbour will be closed by 1970, for most of the coal discharged there is used at the nearby gas-works. A new gas plant, using oil as the raw material, started production in the Spring of 1967, and the old conventional gas-works will be phased out.

this does not mean that the maritime tradition in the South-West will disappear. Small ports handling only 1,000 tons per annum are hopelessly uneconomic nowadays. With such small quantities of traffic they can hardly be regarded as contributing to the economy of their hinterlands. Coastal shipping has declined in recent years and is now most important for the carriage of bulk products such as coal and oil, or where it fulfills a specialist role. Over the region as a whole, therefore, the future of the ports depends on two factors; the prosperity of industry and an expansion in the field of trade with other countries.

CHAPTER NINE.

CONCLUSION

The main difficulty in compiling a thesis on contemporary transport problems is that it soon becomes an historical document. Transport in Britain today is in the throes of a revolution to meet the demands of an affluent, technologically- advanced society. Many of the products of this revolution are of a spectacular nature ..... the 'Concorde', the Hovercraft, monorails, the gas-turbine train ..... and are of great national importance for the future. It is difficult to say at this stage how such projects will affect the transport situation in the South-West. That is not the function of this thesis. A technological revolution which produces such outstanding achievements is the result of a process of gradual evolution which has been taking place for many years and is still continuing. It is that process of change which is the subject of this thesis. In the previous eight chapters we have described the changing transport situation in the South West, and have attempted to examine the geographical, social and economic factors behind it.

The transport change in the South West has its roots in the development of the railway system in the nineteenth century, but the problems discussed in this thesis date from the end of the first World War, when the internal combustion engine made its presence felt. From that time great changes in the socio-economic situation in the region forced the adjustment in the transport structure.

Between the wars, road transport began to make inroads into the traditional railway traffics. Since the Second World War the increase in private motoring has caused wide-spread decline in the use of public transport; road and rail.

The history of these changes has been examined in some detail in Chapters 3 and 6 and need not be discussed here. The future of public transport in the South West will depend on the considerations of national Government policy. The current Labour Government has an extremely strong transport policy, and in the 1967/68 Parliamentary Session there will be issued a new Transport Act to supersede the Transport Act of 1962.

The policy which will be expressed in this new Act was laid down in a White Paper on transport published in July 1966. The Author spent the two years study period in Durham, but returned to Plymouth in the summer of 1966 in order to complete this thesis. During this particular period several other works have been issued which will have a bearing on the future transport situation in the South West. In this conclusion we shall attempt to discuss the recommendations of these publications.

WHITE PAPER - TRANSPORT POLICY - JULY 1966

The White Paper of 1966, which is a prelude to the forthcoming Transport Act made three basic recommendations:-

(1) the modernisation of the transport infra-structure and services;

(2) that transport must take account of social as well as economic needs;

PLATE EIGHTEEN.

LAIRA LOCOMOTIVE DEPOT, PLYMOUTH. The modern diesel locomotive at Laira, Plymouth is the principal locomotive depot in the South-West. It was opened in 1962 on a site adjacent to the old steam locomotive depot which has now been demolished. In the foreground are diesel multiple-unit trains, which are also serviced at Laira.

(3) a key role for public transport, with integration of publicly owned road and rail services.

In terms of the transport situation in the South West this White Paper is most important because it suggests for the first time that the Government is prepared to subsidise uneconomic services which are of great social value to the community. It also states that by modernisation and advanced business techniques, the transport authorities will be encouraged to make transport services as economic as possible.

On the railways there will be a definition of the basic railway network. The Government will assume responsibility for losses on any services retained on social grounds and also the cost of the lines. There will be a joint study on a national scale of the B.R.B. finances, and the Government will make available capital for the modernisation and development of the railways on an economic basis, particularly the uses for which the railways are best suited. In the South West this would mean the development of bulk freight carrying services and the continuing improvement of inter-city passenger services. To ensure the smooth passage of such measures, discussions will be held with the Trade Unions on pay and productivity.

In terms of road transport more capital is promised for road building, but there is a concentration on the problems of urban transport. It is recommended that land use and transportation planning should proceed together; there should be a traffic plan formulated for every town and city, and there will be firm Government backing for complete local transport plans.

Over the South West region as a whole, machinery will be set up for the co-ordination of regional transport. Powers are to be sought to enable local authorities and the Government to continue to subsidise the cost of bus services in the rural areas. On the freight side a National Freight Plan is envisaged with a National Freight Organisation, to be responsible for the general merchandise and sundries traffic of both the B.R.B. and the Transport Holding Company. The integration of road and rail services will give door to door delivery. Shortly, the first step will be made to co-ordinate the parcel services of British Road Services and the Freight Concentration Schemes of B.R.B. In addition a survey will be made to review the commercial vehicle licencing system, with a view to ironing out its discrepancies. The White Paper does not make any concrete recommendations on port facilities except that port investment will be expanded over the next five years and that there will be an overhaul of the charges structures in ports and a review of port administration.

THE SOUTH WEST ECONOMIC PLANNING COUNCIL -"A REGION WITH A FUTURE: A DRAFT STRATEGY FOR THE SOUTH WEST"

This report was published by the South West Economic Planning Council in July,1967, and is a strategy upon which the economic plan for the South West region will be based. In its recommendations on transport it does not make any outstanding points, but endorses the proposals which have been made in the White Paper and earlier documents.

Its main deviation from the White Paper is that it recommends a substantial increase in port investment at Bristol, and favours the fulfilment of the Portbury scheme, which the Ministry of Transport refuses to support. This would possibly mean that the smaller ports in the far South West would decline. This proposal, however, is unlikely to be entertained by the Government, and it is hoped that port expansion in the South West peninsula will be concentrated on Plymouth (see Chapter 8). The recommendations on land transport are headed by a concept of a spine road from the M.5 near Bristol via Exeter and Plymouth to Penzance. The report recommends that this road should be completed by 1975. It is difficult to imagine that funds would be forthcoming for such a major scheme, but the idea of a toll motorway could be raised in Parliament.

In March, 1967, the Ministry of Transport and the B.R.B. published a map showing British Railways' basic network for development. In the South West this follows very closely the proposals of the Beeching Map in 1963 (see map 4). The South West Report accepts the proposals of this map, but cautiously recommends the retention of certain passenger lines until road improvements are forthcoming. Its final transport recommendation is for a sub-regional airport for Devon and Cornwall to be constructed in the near future, either by the expansion of the present airport at Exeter, or by the establishment of a completely new air terminal between Exeter and Plymouth near the A.38 main road.

GENERAL CONCLUSIONS

These documents demonstrate the fact that the special problems of transport in the South West are at last recognised at both national and regional level. In addition to its peculiar geographical constitution the South West has problems of an ageing population, stagnation of industry and the inbalance of the economy, which is caused by a dependence on the tourist industry.

Economic policy for the South West seems to recognise now the importance of a good road system, especially the concept of the spine road. In addition it realises the priority of a modern railway system which is thoroughly integrated with the road network. The future pattern of public transport in the region will consist of a

rationalised network of services designed to meet the basic needs of the community at the lowest possible cost. If the economy of the South West is to be revived, good communications will be essential.

Major items of investment in the future, therefore, are likely to be concentrated on existing main routes, such as the A.38 trunk road, the main railway line to Plymouth and the Exeter Airport or its replacement in South Devon. Such investment, however, will not solve the very real problems of the remote rural areas, especially in the North of the peninsula. We have constantly made the point that the South coast is more prosperous than the North by virtue of its social and geographical conditions and that it has always expanded at the expense of the North. There is a very real danger that this will continue to be so.

This thesis is, in some ways, more than an exercise in economic geography, it is also substantially a social commentary on how changing economic and technological conditions in an industrial nation can alter the pattern of life in its predominantly rural areas. The railway age orientated the South West on London; the motor age has not only increased this dependence on London and the other industrial regions, but also it has brought increasing personal mobility within the region. The subsequent decline in public transport has had far-reaching effects on the social geography of the more remote parts of the South West.

In remote rural areas, rail and bus services are regarded as the life blood. Not only are they forms of public passenger transport, but they also perform important social functions in the conveyance of mails, parcels traffic, and newspapers. When these services are withdrawn on economic grounds, such deliveries are not necessarily discontinued, of course, but frequently, the alternative arrangements are less reliable and take longer and are a widespread cause of social unrest in the countryside.

A certain proportion of every rural community is committed to public transport, especially the very young, the elderly, and females. The family vehicle is usually required by the head of the house for his work. Loss of public transport, therefore, may have a much more serious effect, in that it can, and does, cause family unrest. In the North in particular, the lack of public transport may be regarded as a major factor in the continuing decline of population by the migration of young people to more attractive areas. This affects the economy of the region as a whole. In time, no doubt, as vehicle ownership increases, a more stable situation will be attained. In the meantime, however, a pattern of change is affecting the rural areas of the South West from which the area may never recover.

Much apprehension has been expressed at the possible effects of local rail and bus closures on the tourist industry, but it is unlikely to suffer any appreciable harm. As has already been shown, most

visitors arrive by car and the most important priority in terms of tourism is a spine road.

The crux of the problem is undoubtedly to be found in the rural areas, where the effects are most deeply felt. A basic network of public transport facilities is essential for the life-blood of these parts of the peninsula. Already, a rationalised railway plan has been formulated and has been widely accepted as a blueprint for future railway activity. Now that the principle of subsidy has been accepted, a similar analysis of the omnibus network is needed, possibly in conjunction with the local authorities, as suggested in Chapter Six. Subsidy, however, is not the answer as it can be applied only to certain routes. What is needed is a revision of the public service licencing system to terminate the monopoly of the territorial companies and to allow the smaller operators, with their lower operating costs, to take over the services for which they are best suited. After all, public money should be spent only where it is necessary. If a small company can operate a service profitably, then there is no reason why it should not do so. With more freedom of competition, the transport system will be more flexible.

With these hopes for the future, this thesis is ended. Only time will show the results of the very significant changes which are taking place at the present time. Above all, one hopes that the outcome will be that the motor car becomes a true friend and not the potential monster it seems.

PLATE NINETEEN.

GUNNISLAKE STATION. Formerly the principal intermediate station on the Bere Alston-Callington branch line, Gunnislake is to be retained as the terminus of a diesel service from Plymouth to the Tamar Valley. The physical geography of this area has been the principal factor in the decision to retain the service. Between the Tamar Valley area and Plymouth, the railway is the only direct transport link. Travel by road involves a long detour to cross the Rivers Tamar and Tavy. The Gunnislake-Callington section of the line, however, carried very little traffic and was closed on 7th. November, 1966.

MAIN REFERENCES USED IN CHAPTER NINE.

1. British Railways Board. Ministry of Transport - "British Railways Network for Development". H.M.S.O. March 1967

2. Ministry of Transport - "Transport Policy". H.M.S.O. (Cmmd 3057) July 1966.

3. South West Economic Planning Council: "A Region with a Future - A Draft Strategy for the South-West". H.M.S.O. July 1967.

APPENDIX ONE: TOURIST SURVEY AT TORQUAY.

A random sample of holidaymakers in the Torquay area was conducted on Friday, 9th September, 1966; a hot sunny day when visitors thronged the seafront and its adjacent open spaces. All the people interviewed were visitors to Devon and Cornwall; day trippers were discounted. The results of survey are set out in the tables below and they maybe compared with the general information about tourism in the whole region in Chapter 1.

MEANS OF ARRIVAL IN THE TORQUAY AREA : TABLES 1 and 2.

Tables 1 and 2 show how visitors reached the Torquay area. It is noticeable that 28½% arrived by train, a higher figure than for the region as a whole. Several reasons may be advanced for this. Firstly, Torquay's busy railway station has extremely good connections to London, the Midlands and the North throughout the year. Secondly, Torquay has more hotels and guest houses than any other South-West resort and most rail travellers seek this type of accommodation. In addition, Torquay is extremely popular with elderly persons who are unable to own their own transport. One third of the rail travellers interviewed came into this category. For these reasons, the railway appears to have a greater share of holiday traffic than the coach firms. By far the greater proportion of visitors, however, travelled to the area by car.

TABLE 1 - Means of Arrival in the Torquay Area

MEN	Bus	Train	Car	Coach	Other
Under 21	-	3	6	3	-
21-34	1	19	22	1	-
35-54	2	18	48	14	-
55 & over	3	15	25	12	-
	6	55	101	30	-

WOMEN					
Under 21	2	-	3	1	-
21-34	1	8	9	2	1
35-54	1	11	29	13	-
55 & over	1	14	9	15	-
	5	33	50	31	1

TOTALS	Bus	Train	Car	Coach	Other
Under 21	2	3	9	4	-
21-34	2	27	31	3	1
35-54	3	29	77	27	-
55 & over	4	29	34	27	-
TOTAL	11	88	151	61	1

TABLE 2 - Means of Arrival in Percentages

	Arrived by	per cent
Car	151	48½
Train	88	28½
Bus	11	3½
Coach	61	19
Other	1	½
	312	100

PLACE OF ORIGIN - Table 3.

Visitors were asked what area they came from. Not surprisingly, most came from the densely populated areas of London, the South-East, the Midlands and the North, all of which have reasonably direct communications with the holiday resort. From the three main areas shown in the Table, about one-fifth travelled by rail in each case. From the South and South-East, however, the railways did not convey so much traffic because of the difficulty of rail travel from these areas. Only one through train per day runs from the South Coast to the South-West, the 11.00 a.m. Brighton-Plymouth. To reach Torquay and the other South Devon resorts, passengers must change at Exeter. The most disturbing feature of this Table, however, is that only 0.9% of the sample were foreign visitors.

TABLE 3 - Place of Origin

	Number	Per cent
London Area	54	17.3
South-East	24	7.2
South	52	16.7
Midlands	60	19.2
North	90	28.8
East Anglia	10	3.2
Wales	11	3.4
Scotland	8	2.4
Abroad	3	0.9
TOTAL	312	100

PROBABLE EFFECT OF CLOSING TORQUAY STATION : TABLE 4.

Torquay Station is to be retained in the future rail network but as Torquay receives a considerable number of its summer visitors by rail, an assessment of the affect of closing the railway station was undertaken. All rail travellers were asked whether they had been to the South-West before, also if they would have come to Torquay if the railway station had been closed. The South-West appears to be an extremely popular holiday area ..... 229 out of 312 persons interviewed had been before, many on several occasions, including an elderly couple who had been coming since 1919! Yet nearly 50% of the rail travellers stated that they would not have come to Torquay if the station had been closed.

One wonders whether these resorts which have lost their rail links will be adversely affected in future.

TABLE 4 : PROBABLE EFFECT OF CLOSING TORQUAY STATION

Rail Travellers Interviewed

If Torquay Station had been closed:

	Would Have Come	Would Not
Have Been Before	34	30
Have Not Been Before	12	14
	46	44

MEANS USED BY VISTTORS DURING THE HOLIDAY : TABLE 5.

Questions were also asked to discover how the visitors moved around the South-West during their holiday. The buses proved to be the most popular means of transport; two-thirds of the people interviewed used them. In the local area, the Devon General Omnibus Company provides an excellent service in the town and to the adjacent holiday settlements. The most popular route is the Number 12, which runs between Babbacombe and Brixham; in the season open-top Atlantean buses are a big attraction. Another noticeable feature was, that only four people used the railway for local travel, despite the good services to Teignmouth, Dawlish and Exeter.

TABLE 5 : MEANS OF TRAVEL USED BY VISITORS DURING HOLIDAYS

Means of Transport	Car Arrivals	Non-Arrivals
Train	1	3
No. of above with Runabout	-	1
Bus	63	133
Coach	8	45
Boat	6	15
Car	93	6
Motor Cycle	-	1
Walk (as pastime)	10	15
Total of Answers	181	219

N.B. Of 312 persons interviewed, 132 were car arrivals. Discrepancy in this table is due to the fact that many people moved about by more than one means.

BUS USERS' SURVEY : FREQUENCY OF LOCAL TRAVEL DURING HOLIDAYS : TABLE 6

About 70% of the sample claimed to use the buses during their stay. Detailed questions were put on this aspect to ascertain the usage and importance of the local omnibus network. It will be immediately apparent that just over half of the bus-users travelled by this means on five or more days per week. Many used the bus to reach the sea front from their accommodation inland. Younger people displayed a tendency to walk, but the bus service was declared to be essential by most people over the age of 35.

TABLE 6 - BUS USERS' SURVEY : FREQUENCY OF LOCAL TRAVEL DURING HOLIDAYS

	AGE GROUP				
MEN	-21	21-34	35-54	55 & over	TOTAL
5 + days per week	4	11	26	19	60
1-4 days per week	-	8	16	14	38
Less often	2	-	8	7	17
Not at all	6	24	32	15	77
	12	43	82	55	192
WOMEN					
5 + days per week	1	1	19	18	39
1-4 days per week	3	8	12	10	33
Less often	-	3	8	3	14
Not at all	2	8	15	9	34
TOTALS	6	20	54	40	120

APPENDIX TWO: ROAD HAULAGE - 1965+

1. NATIONALISED FLEETS.

British Rail
British Road Services
South Western Electricity Board 1,060 (to Bristol area)
South Western Gas Board.

2. HAULIERS IN DEVON.

Name	Place	No. of Vehicles
Aggetts Ltd.	Okehampton	
Blatchfords	Exeter	16
C.Bowden	Okehampton	10
Bradford's Sand and Haulage Ltd.	Plympton	
Budleigh Transport Ltd	Exeter	20
A.Burgoyne and Sons(Transport) Ltd.	Kingsbridge	
Carder and Company	Barnstaple	
P. Cobbledick and Co.	Torrington	
W.J. Estmond Ltd	Exeter	25
G. Eggbeer and Sons Ltd	Newton Abbot	33
R.A. Gibbs of Chudleigh Ltd	Chudleigh	
A.J. Gregory and Son	North Tawton	
H.J.T. Transport Ltd	Kingsteignton	
W.E. Harvey and Sons Ltd	Plymouth	
F. J. Heale Ltd	Exeter	10
W.G. Hine (Plymptnn) Ltd	Plympton	
Holman's Haulage Ltd	Exeter	11
H. Hopkin and Sons Ltd	Bideford	11
Kivell and Sons	Exeter	10
W.J. Lamey and Son	Appledore	26
L.H. Lockyer	Sidmouth	
Mannings Ltd	Dawlish	

+From Road Transport Year Book
Road Haulage Association - 1966

W.Matthews and Son	Ivybridge	
W.F. Miners and Sons	Widecombe-in-the Moor	
Mitchells Ltd	Bideford	
S.J. Norman	Plymouth	9
A.Nott and Sons	Tiverton	
Pioneer Haulage Ltd	Beer	17
Drake Carriers Ltd (Formerly P.T.C.)	Plymouth	120
F.J. Reeves and Co, Ltd.	Totnes	
W.J. Rich and Sons	Crediton	
J. W. Scott and Sons	Bampton	
Sellicks Transport Services Ltd	Torquay	9
W.G. Stoneman Ltd	Plymouth	
W.J. Tancock Ltd	Exeter	14
F.Tucker	Exeter	
G.S. Tully	Bridford	
W.L. Vallance Ltd	Newton Abbot	75
J.Watts and Sons	Braunton	
C. Weston Ltd	Exeter	11
White and Goodman Ltd	Tavistock	
Whittons Transport Ltd	Cullompton	35
Willmotts (Contractors) Ltd	Devonport	

3. HAULIERS IN CORNWALL

Allen and Lock	Liskeard	
Cornish Meat Transport Ltd	Truro	14
A.J.Deeble Ltd	Liskeard	
G.B. Edwards Ltd	Helston	
Falmouth Transport Co, Ltd	Falmouth	
Glover and Uglow Ltd	Callington	E.C.C.
Greenaway and Greenaway Ltd	Bude	
W.G. Griffin	Liskeard	
A.R. Haddy and Sons Ltd	Tideford, near Saltash	
Heavy Transport Co, Ltd	St. Austell	E.C.C.
E. Hooper and Sons (Fraddon)	St. Columb	
H.Rawling and Son	Mawgan, near Newquay	
Richards and Osborne Ltd	Fraddon, near St. Columb	

Thomas Rowe (Carriers) Ltd (B.R.S. Fed.)	Penzance	5	
Taylor and Low Bros. Ltd	St. Austell		
E.H. Tipson	Wadebridge		
Western Express Haulage	St. Austell	47	E.C.C.
4. TRADERS IN DEVON.			
Devon Trading Co, Ltd	Exeter		
Exeter Co-operative and Industrial Soc.Ltd	Exeter		
Exmouth Ind. and Co-op. Soc. Ltd.	Exmouth		
Farleys Infant Food Ltd	Plymouth		
Heavitree Brewery Ltd	Exeter		
Newton Abbot Co-operative Society Ltd	Newton Abbot	75	
North Devon Farmers Ltd	Bideford		
Paignton Co-operative Society Ltd	Paignton	56	
Plymouth Breweries Ltd	Plymouth		
Plymouth Co-operative Soc. Ltd	Plymouth		
Robinson-Willey Ltd	Exeter	14	
Rowe Bros. & Co, Ltd	Exeter	122	(inc. sub)
Tavistock and District Co-operative Socl. Ltd.	Tavistock	14	
Tecalemit Limited	Plymouth		
Torquay Co-operative Soc. Ltd	Torquay		
Trumps Ltd	Barnstaple		
Whiteways Cider Co, Ltd.	Whimple	60	
5.TRADERS IN CORNWALL			
Co-op Retail Services Ltd	Saltash		
Cornish Mines Supplies Ltd	St. Austell		
English China Clays Ltd	St. Austell	700	
Penzance & District Ind. Co-op. Soc. Ltd	Penzance		
Primrose Dairy (Cornwall) Ltd	St. Erth		
Suttons (Cornwall) Ltd	Penzance		
West Cornwall Co-op. Soc. Ltd	Camborne	41	

+ + Subsidiary companies : Heavy Transport Co. Ltd.
Western Express Haulage Co. Ltd.
Glover and Uglow Ltd.

BUS AND COACH OPERATORS IN DEVON AND CORNWALL, 1964 +

ppendix Three

NAME	FLEET NOS.	LICENCE	PLACE
TRANSPORT HOLDING COMPANY			
uthern National	387(121dd,148sd)118co.	S.Exp.E&T.	Exeter
stern National	601(282dd,180sd)139co.	S.Exp.E&T.	Exeter
MUNICIPAL UNDERTAKINGS			
eter	67(61dd,6sd)	S.Exp.	Exeter
ymouth	264	S.	Plymouth
B.E.T.			
von General	291(174dd,69sd)48co.	S.Exp.E&T	Torquay
eensladés	81co.	E&T	Torquay
PRIVATE OPERATORS IN CORNWALL			
M. Balston	2 mini		Bude
Bennetto	2 co.	S.Exp.E&T	St. Columb
ewetts Ltd	8 co.	Exp. E&T	St. Ives
E. & E.T. Carter	4 co.	S.E&T	Mt.Hawke,Truro
J. & B. Chapman	4 co.	S	St. Wenn,Bodmin
A.R.Clarke	2sd.3co.	Exp.E&T	St. Austell
P. Cocks	7 co.	E&T	St. Austell
G. Cornish	1 co.	S	Peranporth
rnish Riviera Coach Tours Ltd	3 co.	E&T.Exp	Penzance
J. Deeble & Son	5 co.	-	Liskeard
J. Ede	4 co.	Exp. E&T	Par
Fry	6 co.	S.Exp.E&T	Tintagel
H. George(Pelene Motors)	2sd.4co.	S	Penryn
G.Gilbert	1sd.2 co.	S.E&T	Grampound Rd÷
T. Gist	1 co.	S	Bude
E.B. Gregory	6 co.	S	Launceston
hn L. Gregory	3 mini	-	St. Austell
enville Motors Ltd	2dd.6sd.6co.	S.Exp.E&T	Camborne
J.Hambley	2 co.1 mini	S	Looe
W.J.Hammett	3 co.	E&T	St. Columb
Harding	1 co.	Exp.E&T	St. Agnes
rper & Kellow Ltd	1 bus.4 co.	S. E&T	St. Agnes
A. Hawkey & Sons Ltd	4sd.10co.	S.Exp.E&T	Wadebridge
wkeys Tours Ltd	10 co.	Exp. E&T&	Newquay
Hayne	2 co.	Exp. E&T	Camelford
W.&H.D.Hitchens	1 bus	S	Newlyn
Hooper	1 co.	-	Launceston.
.Hubber	4 co.	Exp. E&T	Newquay
Jago & Sons	2 co.	Exp.E&T	Liskeard
ıkins (Duchy Tours) Ltd	4 co.	Exp. E&T	Penzance
J.O. Jennings Ltd	7 co.	S. Exp. E&T	Bude
J.H. Jones	3 co.	Exp. E&T	Crantock,N/Quay
?. Kinsman & Son Ltd	6 co.	E&T	Bodmin
I. Kinsman	i co.	S	Ponsanooth

From "Passenger Transport Yearbook", Ian Allan, 1965.

[- sd - single-decked s. stage licence dd - double-decked
Exp- Express licence co.coach E&T - Excursion & Touring Licence.

NAME	FLEET NOS.	LICENCE	PLACE
Lewis Motors Ltd	3b.5co.	S.Exp.E&T	Falmouth
L.F.J. Ley	3 co.	-	St. Buryan
Lidgey's Coaches Ltd	6 co.	S.E&T	Tregony,Truro
L.W. Lock	3 co.	S	Menheniot
M.H.Matthews & W.J.Osborne (Penvor Motors)	3 co.	E&T	Pendeen, Penzance.
M.J. Metcalfe	1 co.	-	Cornish Holiday Camp, Trevellas (see Cornish)
M.R. Mitchell & Sons	5 co.	S.Exp.E&T	Perranporth
M.A. Morse(Roseland Motors)	5 co.	S.Exp. E&T	Veryan, Truro
M.W. Mundy & Son	4 sd. 3 co.	S	Camborne
M.G. Murgatroyd(E. Cornwall S.M.)	1 minicoach	-	Looe
The Newquay Motors Co. Ltd (Red and White Coaches)	9 co.	E&T	Newquay
N.W.J. Nicholls	1 co	-	Carbis Bay
N. Olde	1 co.	Exp. E&T	Boscastle
O.J.B. Oxenham	1 co.	-	Penzance
Pearce's Motors Ltd	6 sd. 5 co.	S.Exp.E&T	Polperro
P.L. Pine	2 co.	Exp. E&T	Falmouth
P.J. Pollard.	1 b. 5 co.	S	Fraddon, Hayle
P.J. Pratt	3 co.	S	Rezare,Launctn.
P.E. Prout	1 co.	S	Launceston
R.J. Richardson (Flora Motors)	3 co.	Exp	Helston
R.N. Rickard(Penryn & Falmouth) Motor Company	2 sd. 6co.	S. Exp. E&T	Penryn
Riviera Services Ltd	2 co.	S. Exp. E&T	Mylor Br. Fal:
R.G. Rowe	7 co.	S. Exp.E&T	Dobwalls, Liskeard.
S.T. Saule	1 co.	-	Portscatho
S.H. Stephens	1 dd. 6 co.	S. Exp. E&T	Redruth
Stevens Tours(Blue Coaches ltd)	8 co.	E&T	St. Ives
T. Stoneman & Son	1dd. 1sd. 4 co.	Exp. E&T	Nanpean
T.A. Swan	1 co.	-	Boscastle
Taylor's Garage	4 co.	S. E&T	Falmouth
T.T. Tilley	1 co.	Exp. E&T	Crackington Haven.
T.J. Tregunna	-	S.	Portholland, Truro
T.A. Tremain	5 co.	S. E&T	Zelah, Truro
T.T. Watson & F.T. Ford	9 co.	S. Exp. E&T	St. Anne's Chapel
Webber Bros.	2 co.	S.Exp. E&T	Blisland, Bodmin
W.C. Wellington	1 co.	S.	St. Austell
W.T. Weston	3 co.	Exp. E&T	Looe
Wills Garage Ltd	10 co.	S.Exp. E&T	Bodmin
W.G. Wills (Primrose Coaches)	3 co.	E&T	Leedstown, Nr. Hayle

RIVATE OPERATORS IN DEVON

NAME	FLEET NOS.	LICENCE	PLACE
ngel Hotel & Garage	6 co.	E&T	Honiton
nglo-Continental Tours Ltd	1 co.	E&T	Torquay
.A. Arscott & Son	9 co.	S. Exp.E&T	Chagford
shcroft Motors Ltd	3 co.	Exp. E&T&	Chudleigh
.J. Ball	2 co.	-	Merton, Okehampton.
.M. & D. Beard	3 co.	S. Exp.	Widecombe-in-the-Moor
.A. Beardon	2 co.	-	Burlescombe
.W. & E. Bloomfield	3 co.	S. Exp. E&T	S.Milton, Nr. Kingsbridge
lue Coaches Ltd.	17 co.	Exp. E&T	Ilfracombe
.C. Born	12 co.	S. Exp. E&T	Northley, Okehampton
.H. Braunton	3 co.	S. Exp.	Torrington
rowne Bfos.	1 co.	Exp. E&T	Holbeton
. Clatworthy	4 co.	S. Exp. E&T	Tiverton
ouch & Stoneman Ltd	1 co.	Exp. E&T	Dartmouth
ourt Garages (Torquay) Ltd	6 co.	E&T	Torquay
ream Cars Ltd (included with Wallace Arnold Tours (Devon) Ltd).			Torquay
.T.S. Crook	2 co.	S. Exp. E&T	Goodleigh, Barnstaple
. Davis	1 co.	E&T	Rockbeare, Exeter
awlish Coaches Ltd	5 co.	E&T	Dawlish
.P. Down	4 co.	S. Exp.	Mary Tavey
.J. Down	7 co.	E&T	Ottery St. Mary
mbankment Motor Company	30 co.	E&T	Plymouth
xcelsior Coaches Ltd. (included with Wallace Arnold, Torquay)			
.S.J. Farley	2 co.	-	Chulmleigh
.F. Flatters	1 co.	-	Christow
.G.F. & P. Galpin	5 co.	-	Newton Ferrers
.M. Geddes & Son	1dd.3sd.6co.	S.Exp.E&T	Brixham
.W. Good	5 co.	Exp. E&T	Beer
oodmans Tours Ltd	3 co.	S. Exp. E&T	Tavistock
.P. Gourd	2 co.	-	Bishopsteignton
reen & Cream Coaches Ltd	1 co.	-	Cullompton
.H. Hale	1 co.	-	Filleigh, Nr. Barnstaple
. & L.R. Hard	1 co.	-	S. Brent
.C. Hatton (Blue Venture)	8 co.	S. Exp. E&T	Culmstock
eard's Garages Ltd	7 co.	Exp. E&T	Torrington
.L. Heard	8 co. 1 mini	E&T	Hartland
. K. Hill	11 co.	S. Exp. E&T	Stabbs Cross, Langtree
. Hoare & Sons (The Ivy)	4 co.	Exp. E&T	Ivybridge
.H. Hobbs	2 co.	-	Uffculme
.J. Hookway	1 sd. 4 co.	Exp.	Meeth
.L. Jones (Teign Valley Coaches)	3 co.	Exp. E&T	Hennock, Newton Abbott

NAME	FLEET NOS.	LICENCE	PLACE
Kingdom's Tours Ltd	14 co.	S. E&T	Tiverton
Coverings (Combe Martin) Ltd	8 co.	Exp. E&T	Combe Martin
The Millbrook Steamboat & Trading Company Ltd	8 sd. 3 co.	S. E&T	Millbrook
W.J. & K. Millman	3 co.	Exp. E&T	Buckfastleigh
P.A.Newton	6 co.	S.	Chulmleigh
W.E. Nightingale	5 co.	S. E&T	Budleigh Salterton
W.A. Nock (Gayton's Coaches)	6 co.	E&T	Ashburton
O'Donnell & Sons	2 co.	Exp. E&T	Hartland
Okeridge Motor Services Ltd	5 co.	S. E&T	Okehampton
W.J. Orchard	1 co.	Exp. E&T	Bratton Fleming
W. Osborne	1 co.	-	W.Worlington, Crediton
W.G. Parnell	2 co.	-	Paignton
W. Parsons & Sons	10 co.	E&T	Holsworthy
W. & M. Perris	4 co.	S. Exp.E&T	Halwill
W.T.Phillips	2 co.	S. E&T	N. Tawton
W.J. Pincombe	1 co.	-	Tiverton
W.L.W. Potter	1 co.	-	Callacombe, Barnstaple
W. Potter & Sons Ltd	2sd. 4 co.	S.	Haytor
Pridham Bros.	7 co.	S. Exp. E&T	Lamerton, Tavistock
W.Pugsley (Imperial Coaches)	1 co.	-	Yeo Vale, Barnstaple
W. Pursley (Superway Service)	1 co.	-	Paignton
Read's Garage Ltd	1 co.	-	Honiton
W.J. & B.J. Redwood	5 co.	Hemyock	
Simpson's Garage Ltd	5 co.	S. E&T	Woolacombe & Mortehoe.
W. Saunders	5 co.	S	Winkleigh
W.J. Skinner & Sons	3 co.	Exp. E&T	Millbrook
W.H. Sleep	4 co.	S. Exp. E&T	Bere Alston
Stevens Garage	10 co.	E&T	Modbury
Sunbeam Garages Ltd (with Wallace Arnold Ltd., Torquay)			
Tally Ho! Coaches Ltd	11 co.	E&T	E. Allington, nr. Kingsbridge
Terraneaux Garage	10 co. 1 Mini	S. E&T	S. Molton
W.C. Trathen & Sons	7 co.	S. [illegible]	Dousland
W. Turner & Co.	4 co.	S. Exp. E&T	Chulmleigh
W.G.Venner	6 co.	Exp. E&T	Witheridge, Tiverton
W. Vernon	1 co.	S. Exp. E&T	Northleigh, Colyton
Wallace Arnold Tours (Devon) Ltd	22 co.	E&T	Paignton
Wall's Garage Ltd	4 co.	Exp. E&T	Dartmouth
W.P.B. Watson	1 co.	-	Torquay
Waverley Motor Coach Tours Ltd (with Wallace Arnold Ltd Torquay)			
Way & Son	7 co.	E&T	Crediton
W. Wellington & Son (Kingsbridge)	3 co.	E&T	Kingsbridge
W.T. Wills	7 co.1 mini	S. Exp.E&T	Atherington
W.D. Wooley	2 co.	S.	Haccombe. N.A.
W.E. Wright (Bow Belle)	9 co.	S. E&T	Bow.

CARGO TONNAGE HANDLED BY SOUTH WEST PORTS.

a).Foreign Traffic,1965.

Thousand Tons.

	Imports		Exports		Total	
	Dry cargo	Petroleum	Dry Cargo	Pet.	Dry Cargo	Pet.
Exmouth	I8	-	II	-	29	-
Exeter	9	-	I	-	IO	-
Teignmouth	7	-	267	-	274	-
Dartmouth	2I	-	-	-	2I	-
Plymouth	226	I7	228	-	454	I7
Fowey	-	-	605	-	605	-
Par	II	I	670	-	68I	I
Charlestown	I	-	I	-	2	-
Truro	I2	-	3	-	I6	-
Falmouth	-	64	-	I	-	65
Penzance	3	-	2	-	5	-
Newlyn	-	-	-	-	I	-
Hayle	6	-	-	-	6	-
Padstow	-	-	-	-	-	-
Bideford	5	-	II	-	I6	-

Source: Returns to the National Ports Council.

b).Coastwise Traffic,I965.

Thousand Tons.

	Inwards		Outwards		Total	
	Dry cargo	Pet.	Dry cargo	Pet.	Dry cargo	Pet.
Exmouth	I9	-	I	-	20	-
Exeter	-	22	-	-	-	22
Teigmmouth	60	-	-	-	60	-
Dartmouth	5	2	-	-	5	2
Plymouth	3I9	706	I26	-	445	706
Fowey	I	-	25	-	26	-
Par	I9	39	I86	-	205	39
Charlestown	I8	-	32	-	50	-
Truro	I2	22	-	-	I2	22
Falmouth	3	I76	-	48	3	224
Penzance	49	-	-	-	49	-
Newlyn	-	-	380	-	380	-
Hayle	I28	22	2	-	I3I	22
Padstow	I	p	-	-	I	-
Bideford	-	-	-	-	-	-

c).Totals (thousands of tons).

Exmouth	49	Fowey	63I	Penzance	54
Exeter	32	Par	926	Newlyn	382
Teignmouth	334	Charlestown	52	Hayle	I59
Dartmouth	28	Truro	50	Padstow	I
Plymouth	I,622	Falmouth	292	Bideford	I6

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The above listed constitute the main references consulted during the preparation of this thesis. A large proportion of the material is derived from a formidable personal hoard of press cuttings, photographs, magazines, timetables, leaflets and reminiscences which have been amassed in recent years. It is not proposed to list all these sources as they are, for the most part, an extension of the author's personal experiences. Mention should be made, however, of the informative value of the monthly magazines "Modern Railways", "Modern Transport" and the "Railway Magazine". The principal newspaper sources were the daily "Western Morning News" and the "Sunday Independent" which circulate throughout the region.

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In addition the author is grateful to literally hundreds of anonymous persons who gave up some of their time to be interviewed.

PLATE TWENTY.

DRIVER'S EYE VIEW, 1967. This picture has been added as footnote. A line of frustrated Sunday drivers attempt to pass a cattle truck at Elburton Cross on the A.379 Plymouth-Dartmouth road. The place is unimportant; the situation is all too familiar. Transport problems in the South-West cannot be solved without new roads. A serious crisis cannot be averted in the mid-seventies unless expenditure on roads is increased drastically.

Devonian slates.
Open moorland (china clay). Plateau in north, rolling topography in south. Fine cliffs in north, rias in south.
Well-wooded in south valleys.
Mixed farming. Dense settlement.
Local building material - granite and slate.

11. Cammenellis

Granite and "country" rock.
Metalliferous intrusions.
Open plateau and moorlands, rias in south.
Well wooded in south valleys.
Mixed farming.
Industrial waste.
Dense settlements, centred on Cambourne/ Redruth.
Local building materials - slate and granites.

12. Lizard

Cambrian metamorphic rocks.
Open plateau, fine cliffs.
Little woodland.
Mixed farming.
Nucleated settlement.
Local building materials - slates and granites.

13. Lands End

Granite.
Open moorland and a few sheltered valleys. Fine cliffs.
Few woods.
Sheep farming and some market gardening.
Settlements coastal.
Local building material granite.

Key to Geographical Areas Map

1. East Devon

Greensand capped hills.
Keuper Marls.
Flat-topped hills, steep-sided valleys and fine cliffs.
Woodlands not confined to valleys, hill summits - scrub.
Some coniferous afforestation.
Fertile valleys - dairying.
Valley settlements mainly in villages.
Local building material - some flint, cob and thatch.

1A. Woodbury and Assoc. Commons

Budleigh pebble beds.
Open downs.
Some coniferous afforestation, otherwise scrub.
Infertile. Little settlement.

2. Exe Basin

Permian sandstones.
Rolling topography.
Little woodland.
Very fertile - arable and dairy farming, settlement less scattered than elsewhere.
Local building material - cob and thatch.

3. Torbay

Permian sandstones.
Rolling topography.
Woodlands limited except Dart Valley - deciduous.
Very fertile (except Bovey Basin).
Mixed farming.
Large coastal settlements.
Nucleated villages.
Local building material - cob and thatch.

3A. Haldon

Gravels. Open hills.
Coniferous afforestation and scrub.
Infertile. Little settlement.

4. South Hams

Devonian sandstone, slates and limestone.
Rolling, open topography.
Fine cliffs in South.
Limited woodland in valleys - deciduous
Fertile land - dairying.
Nucleated settlements.
Local building material - slate.

5. Dartmoor

Granite and metamorphic aureole.
Open moorland.
Woodland confined to valleys except recent coniferous afforestation.
Infertile moorland, moderately fertile periphery, mixed farming.
Little settlement, usually confined to valleys, tends to be scattered.
Local building materials granite.

5A. Tamar Valley

Devonian slates, Igneous Culm Measures.
Steep sided valleys of Tamar, Tavy, etc.
Well-wooded valleys, mixed deciduous and coniferous.
Mainly small village settlements.
Local building materials - slate.

6. Mid-Devon

Culm shales and shales.
Undulating countryside.
Well-wooded river valleys, extensive coniferous woodlands. Moderately fertile.
Interspersed with wet moorland. Mixed farming.
Scattered settlements.
Local building materials - cob and thatch.

6A. North West Coast

Culm shales and clays.
Open plateau and fine cliffs near Hartland.
Little woodland.
Settlement in hamlets except Hartland, Clovelly and Bude.
Local building material - cob and thatch.

7. North Devon Coast and Exmoor

Partly National Park.
Devonian slates and sandstones.
Open moorlands and hills.
Rounded topography, fine cliffs.
Valley woodlands, beech hedges.
Stock rearing.
Small settlements confined to valleys.
Local building materials - slate.

8. North Cornwall - Bodmin Moor.

Partly National Park.
Granite boss and culm measures.
Open moorlands and high plateaux.
800' and 1000' erosion surfaces.
Huge cliffs.
Woodlands only where sheltered.
Stock rearing.
Scattered settlement.
Local building materials - granite and slate.

9. East Cornwall

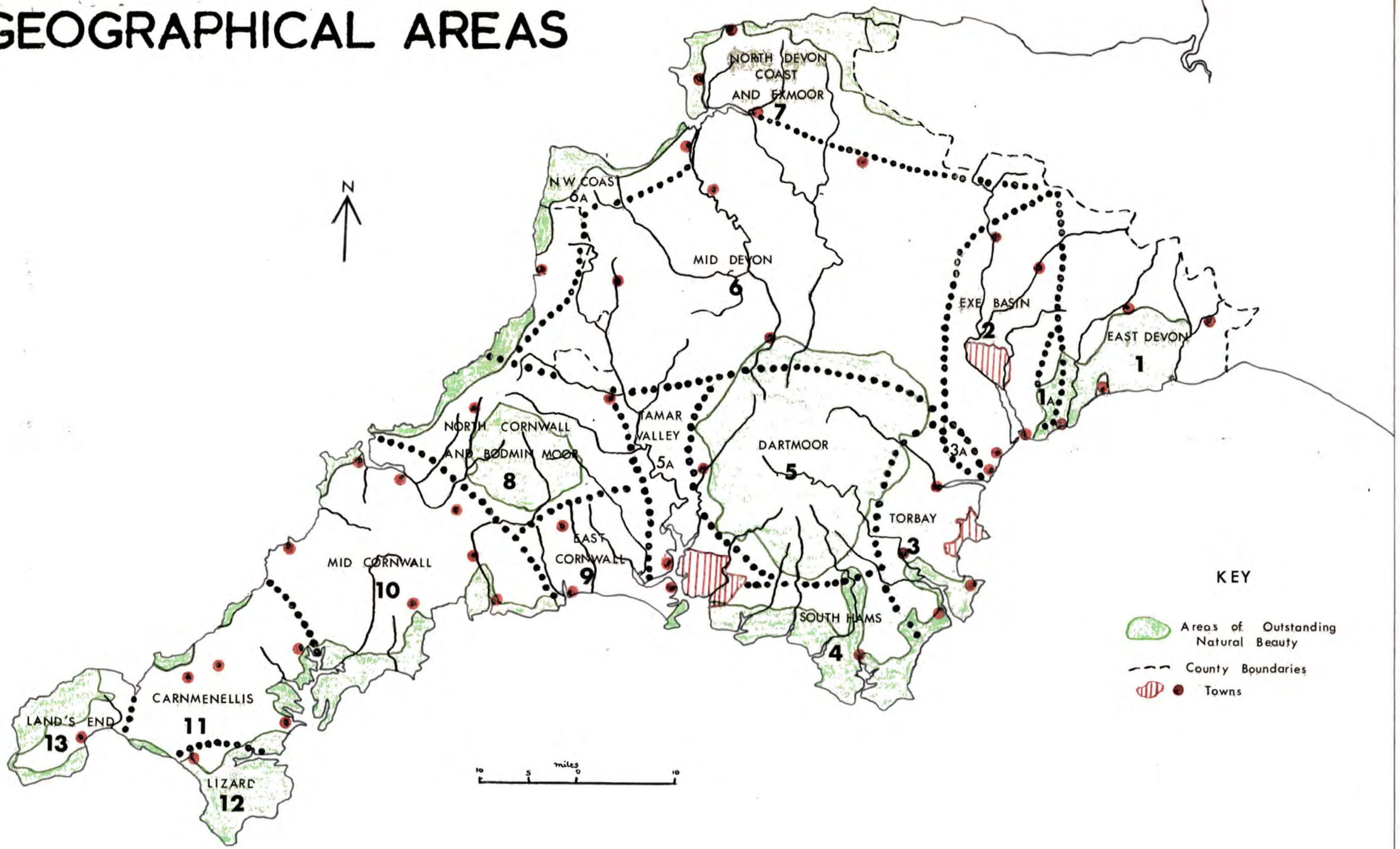
Devonian and slates, shales, grits.
Rolling topography.
Valley woodlands.
Mixed farming. Nucleated settlement.
Local building material - slate.

10. Mid-Cornwall

Hensbarrow granite and

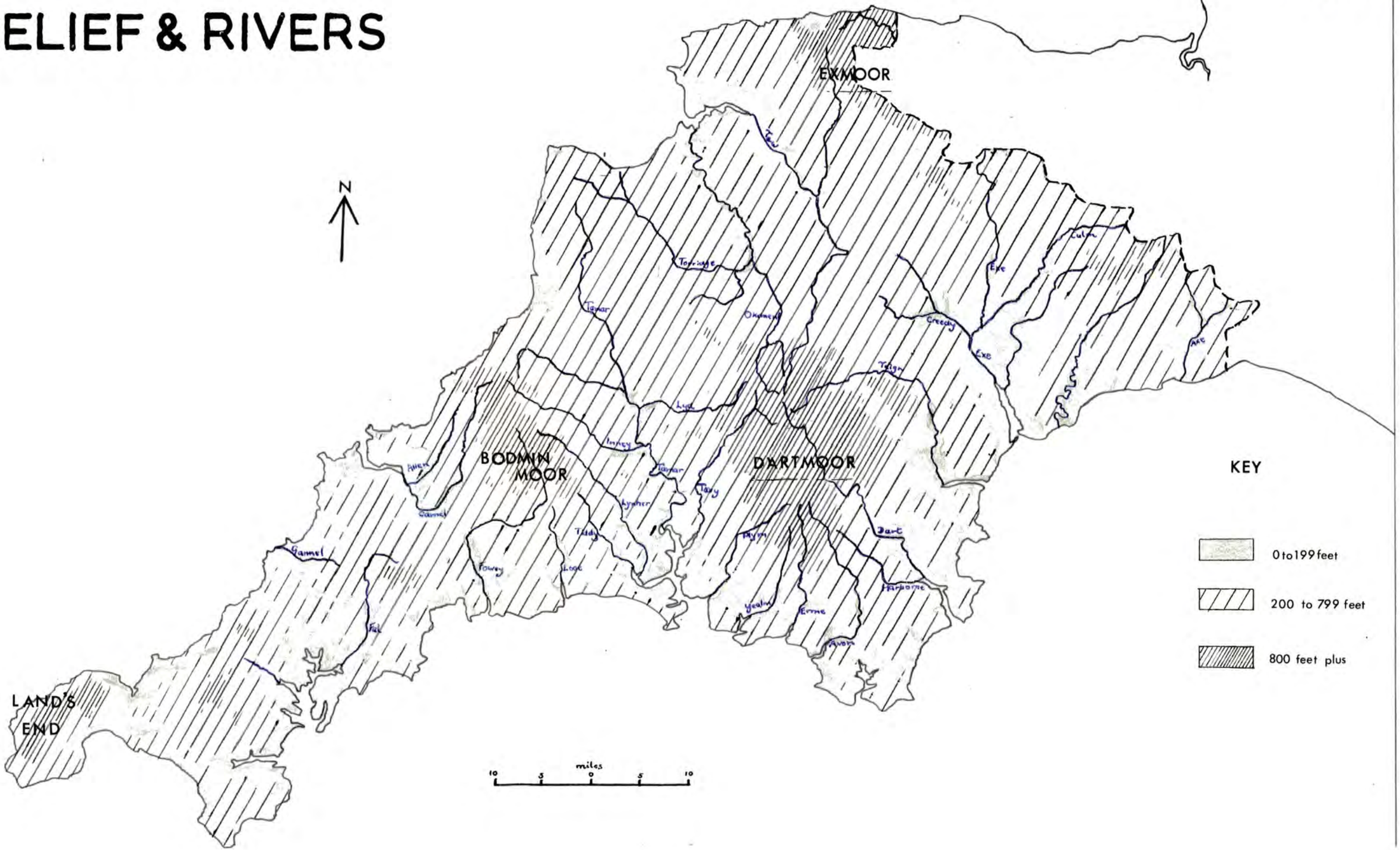
MAP 1

GEOGRAPHICAL AREAS



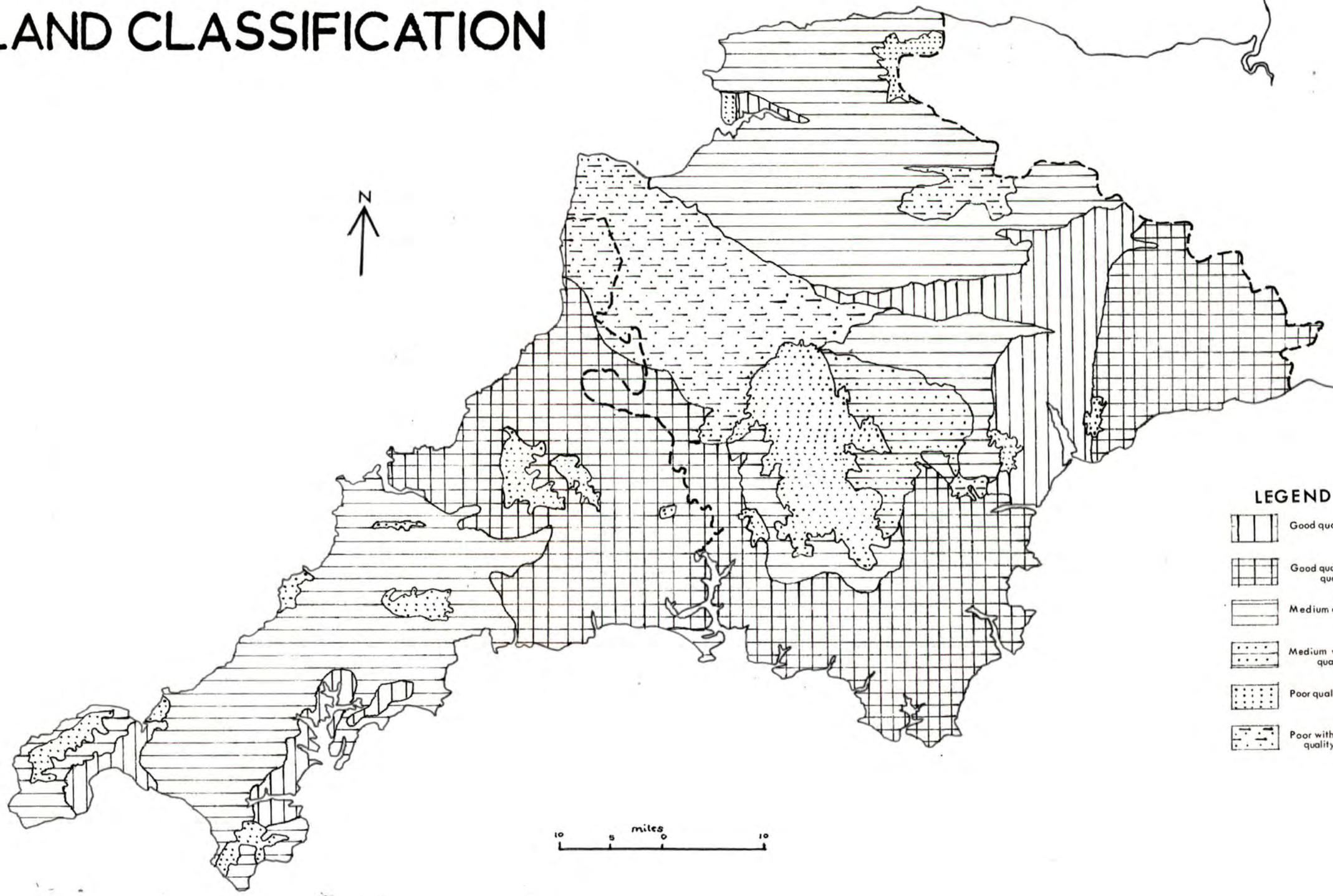
MAP 2

RELIEF & RIVERS



MAP 3

LAND CLASSIFICATION



MAP 4

POPULATION DENSITY 1961

N

10 5 miles 10

LEGEND

URBAN POPULATIONS.

5,000 ↑ 25,000 | 100,000
10000 | 50,000 | 250,000

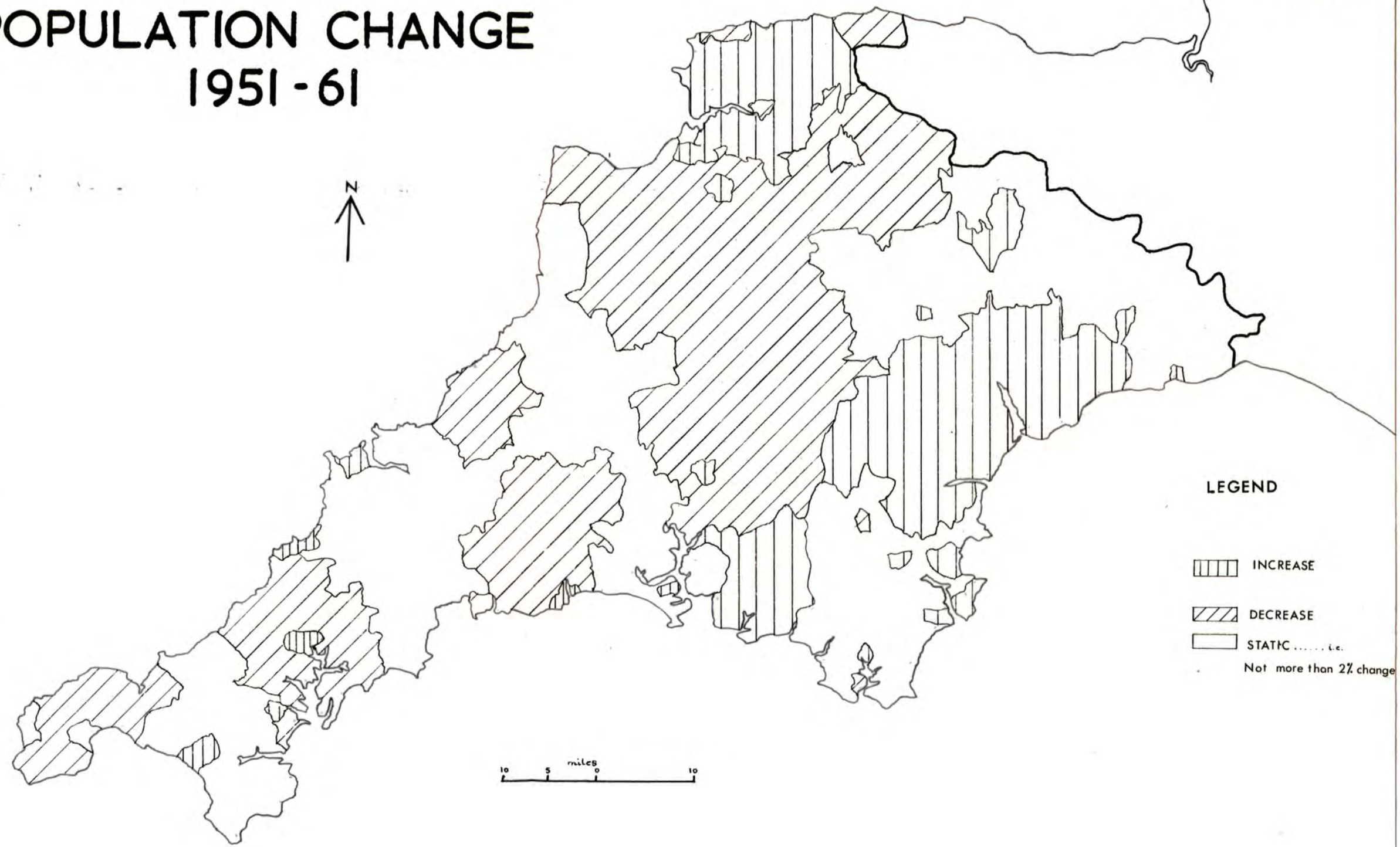
C. Bs. M. Bs. U. Ds.

RURAL POPULATIONS.

One dot represents 100 persons.

MAP 5

POPULATION CHANGE 1951-61



LEGEND

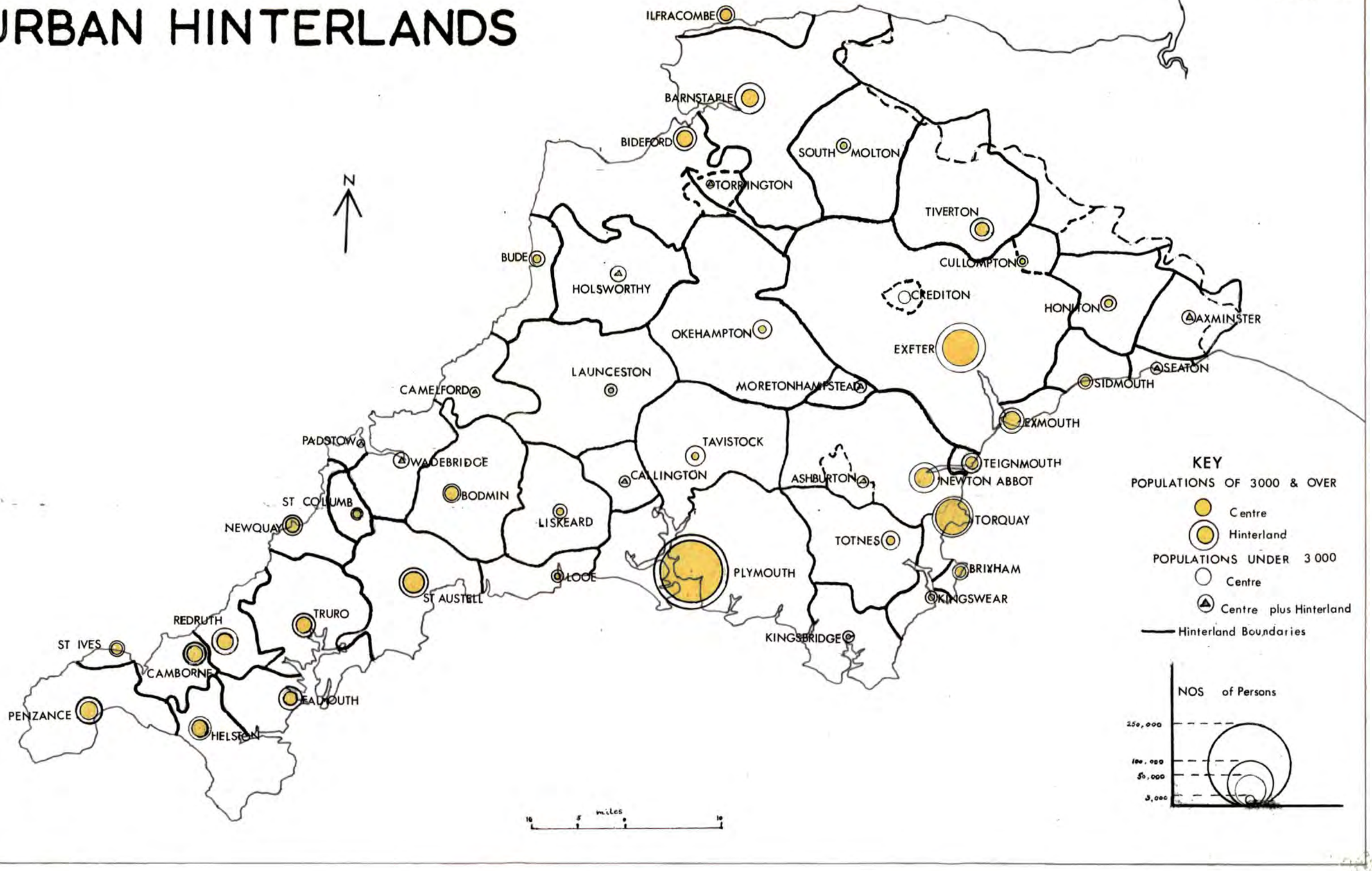
INCREASE

DECREASE

STATIC ..... i.e.
Not more than 2% change

MAP 6

URBAN HINTERLANDS



KEY

POPULATIONS OF 3000 & OVER

- Centre
- Hinterland

POPULATIONS UNDER 3 000

- Centre
- Centre plus Hinterland

Hinterland Boundaries

MAP 7

GEOLOGY

N

10 5 0 10 miles

LEGEND

- OLIGOCENE
- EOCENE
- CRETACEOUS
- JURASSIC
- TRIAS & PERMIAN
- CARBONIFEROUS
- DEVONIAN
- GRANITE
- METAMORPHIC
- OTHER IGNEOUS ROCKS

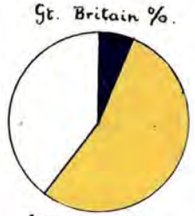
MAP 8

EMPLOYMENT STRUCTURE

1962

N

Gt. Britain %.



(Not to scale).

Ilfracombe

Barnstaple

Bideford

Bude/Stratton

Launceston

Okehampton

Tiverton

EXETER

Honiton

Axminster

Seaton

Exmouth

Teignmouth

Torquay

Paignton

Brixham

Dartmouth

Kingsbridge

Totnes

Newton Abbot

Ashburton

Tavistock

Plympton

PLYMOUTH

Liskeard

Lase

St. Austell

Wadebridge

Newquay

Truro

Camelford

Camborne/Redruth

St. Ives

Penzance

Helston

Falmouth

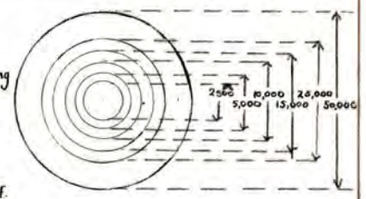
- N.B. China clay

miles

10 5 0 5 10

LEGEND

Number of Insured Population



MANUFACTURES:-

- C. Clothing.
- E/E Elettrical or Engineering
- Fd. Food.
- Tx. Textiles.
- T. Timber.
- V. Vehicles.
- P. Paper.
- Cly. Pottery or Clay Manuf.
- S/B Ship building & Repairs.
- Rem. Remainder.

EMPLOYMENT EXCHANGE AREA BOUNDARIES.

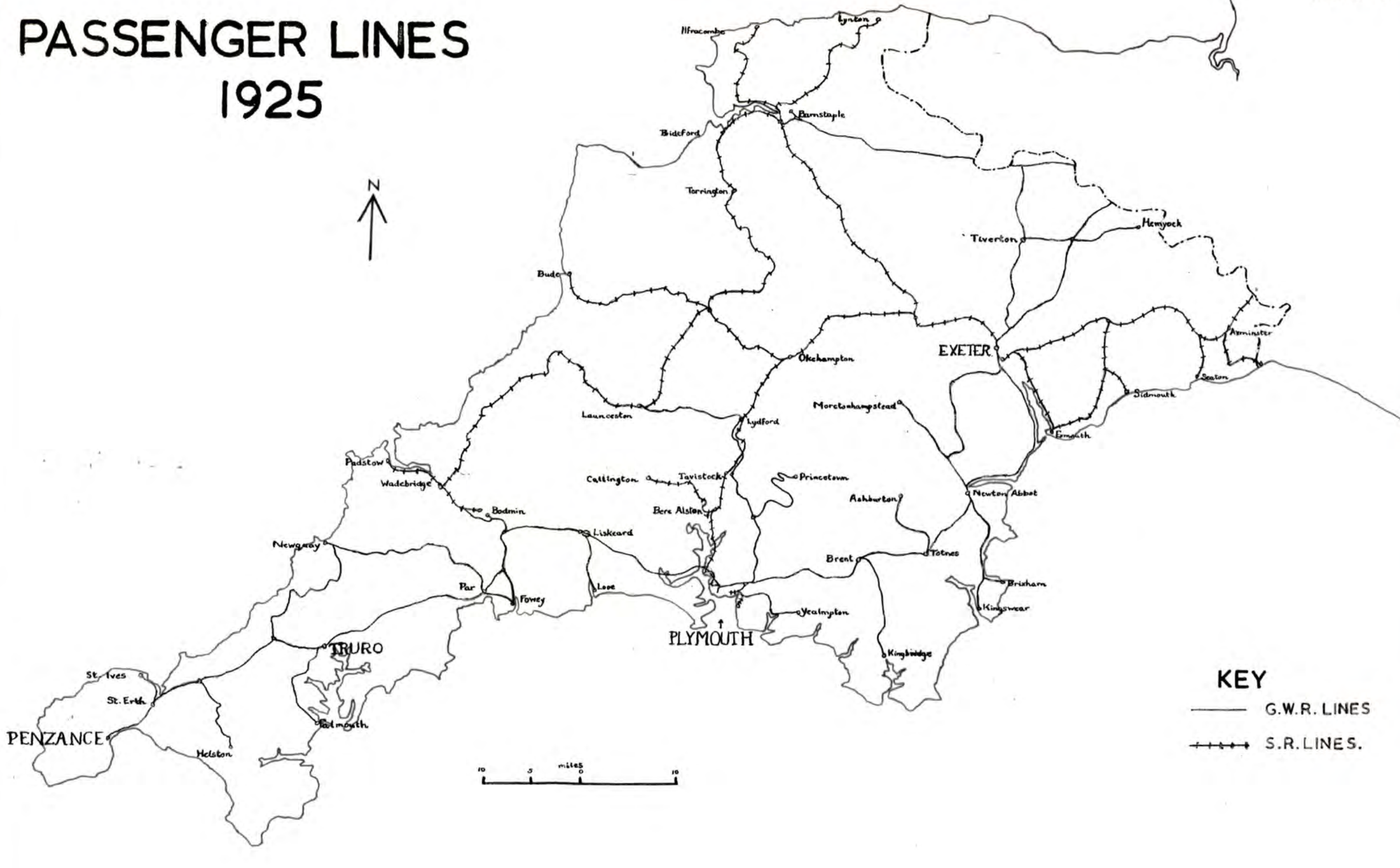
MANUFACTURING - EXTRACTIVE

SERVICES -

Source: Ministry of Labour 1962 figs.

MAP 9

PASSENGER LINES 1925



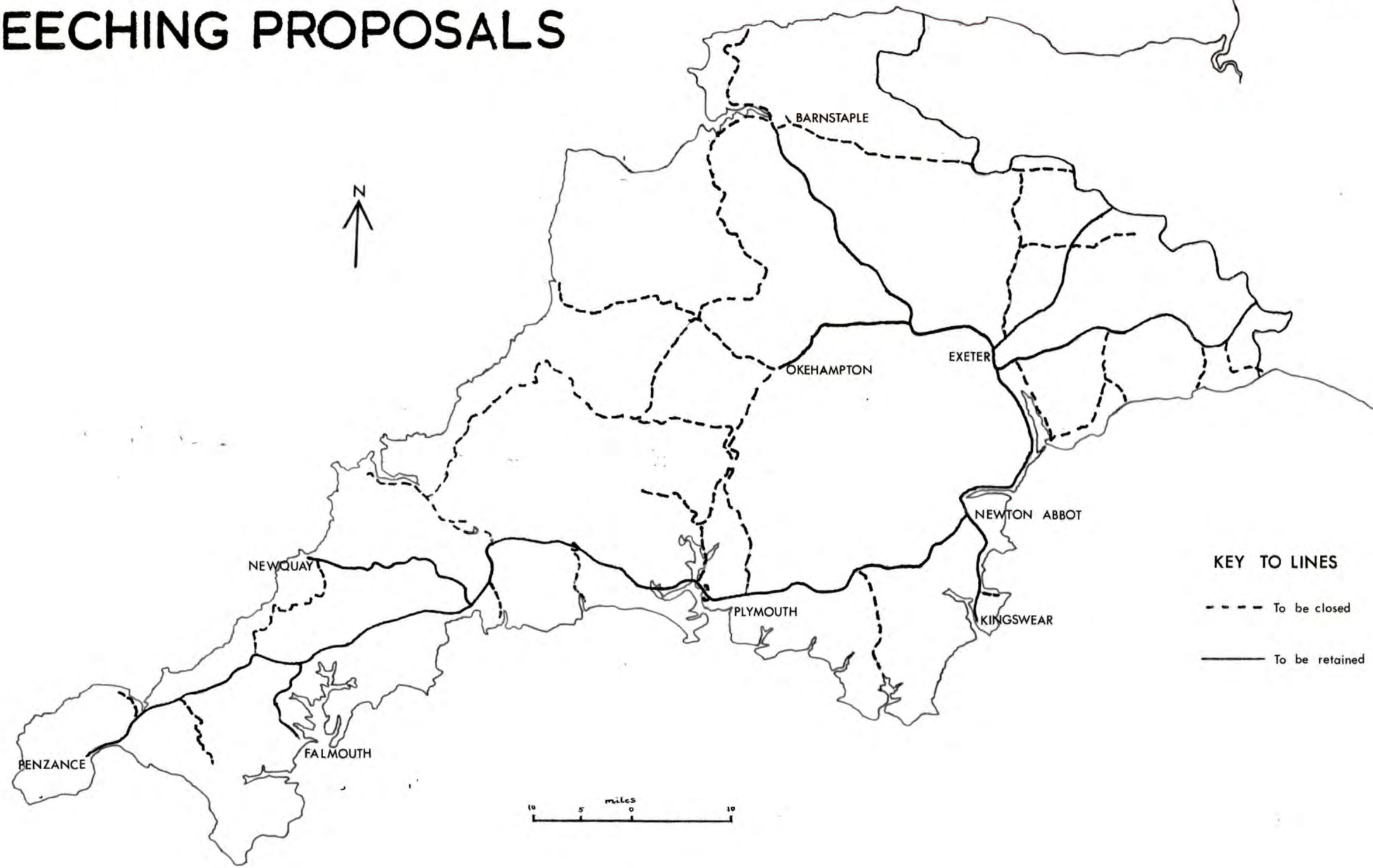
KEY

——— G.W.R. LINES

+++++ S.R. LINES.

MAP 10

BEECHING PROPOSALS



KEY TO LINES

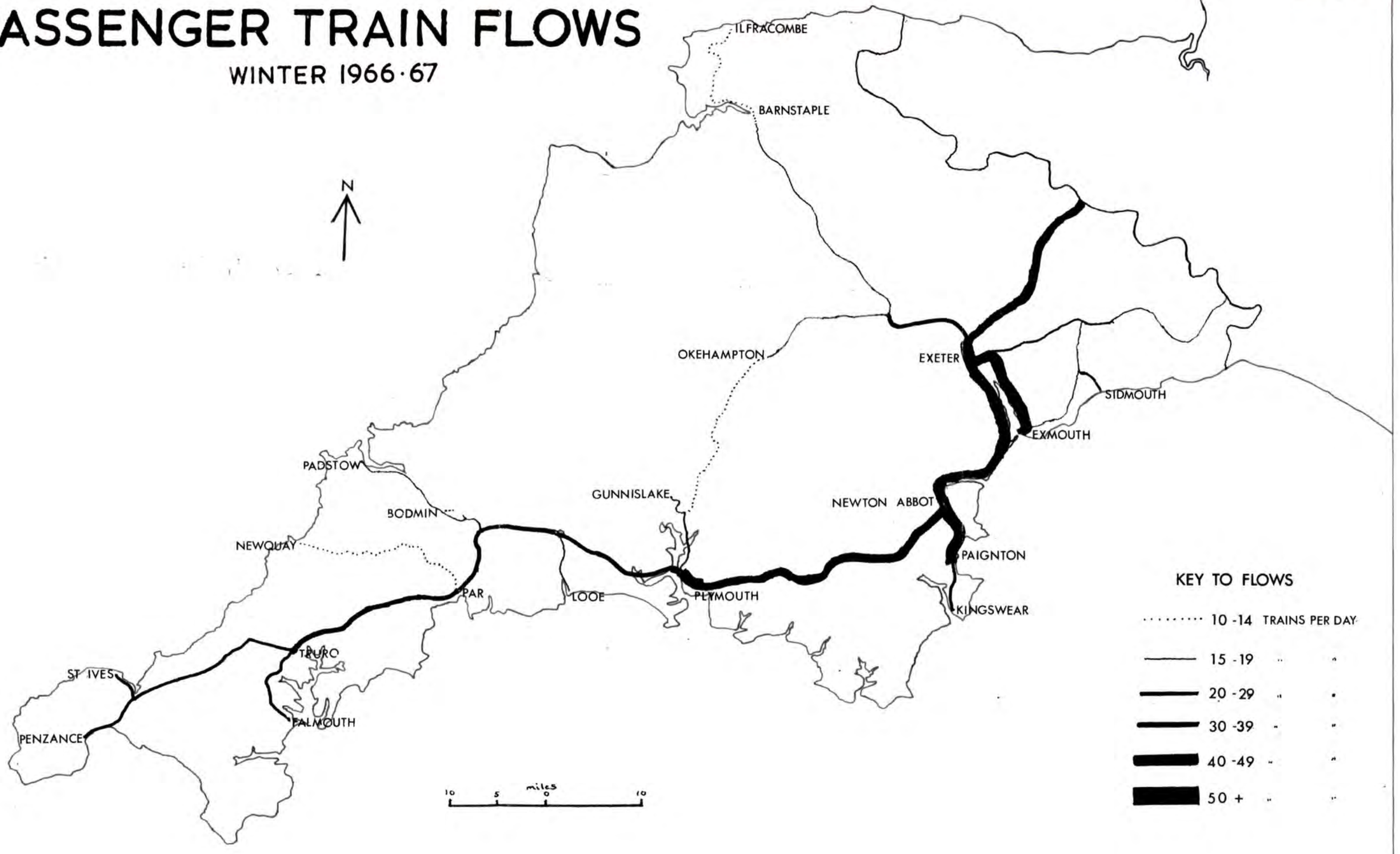
- - - - To be closed

——— To be retained

MAP II

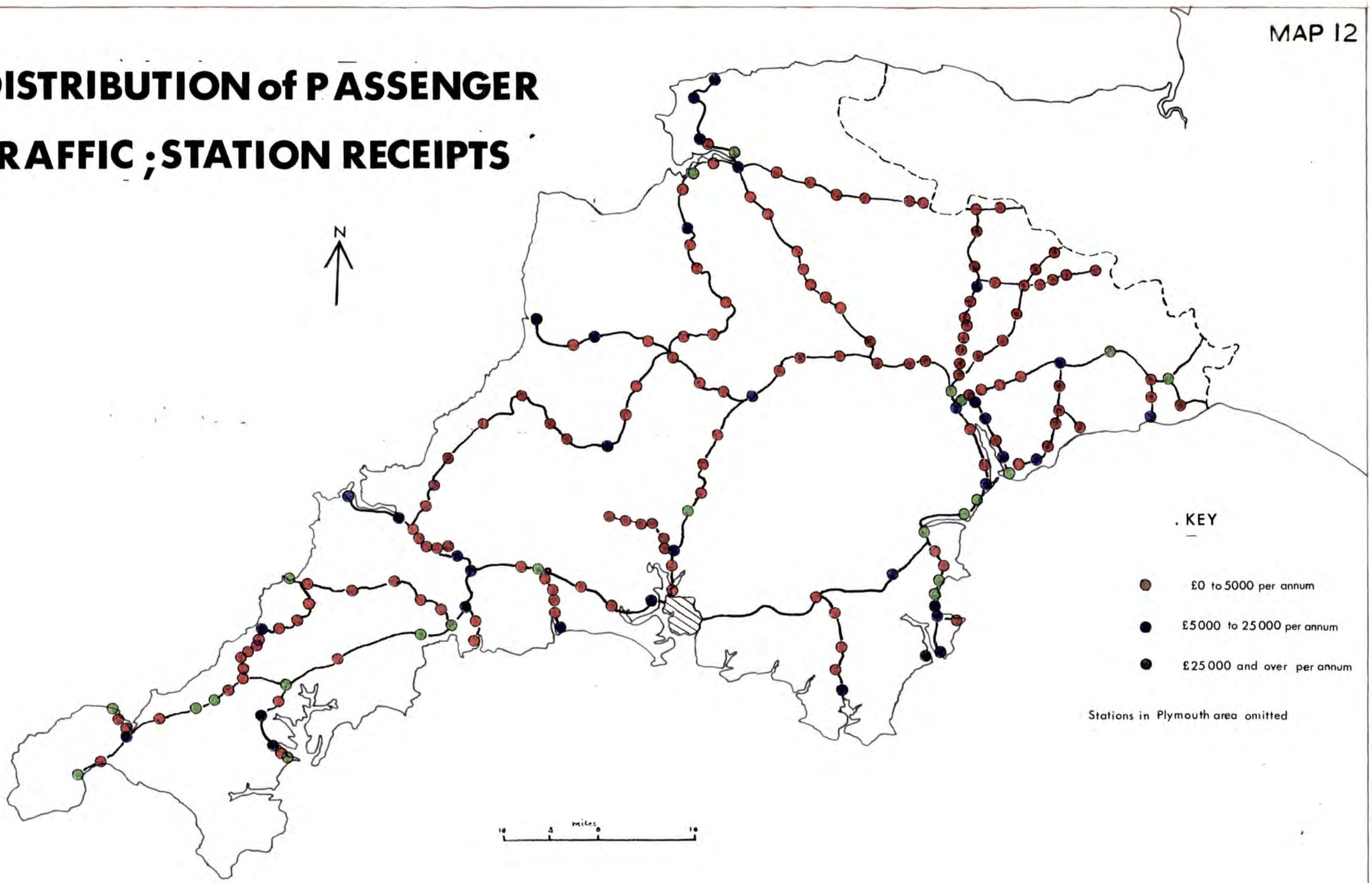
PASSENGER TRAIN FLOWS

WINTER 1966·67



MAP 12

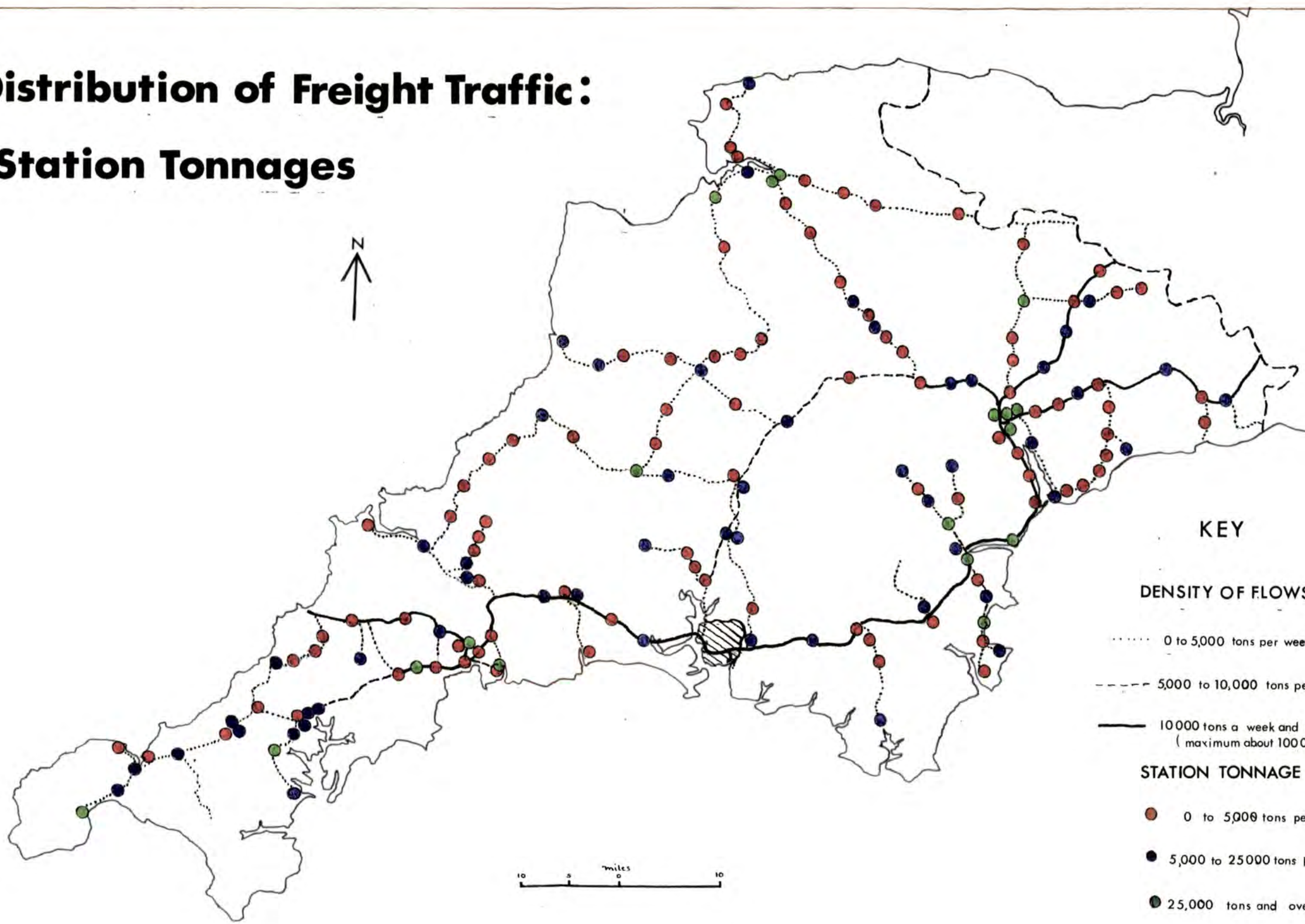
DISTRIBUTION of PASSENGER TRAFFIC ; STATION RECEIPTS



MAP 13

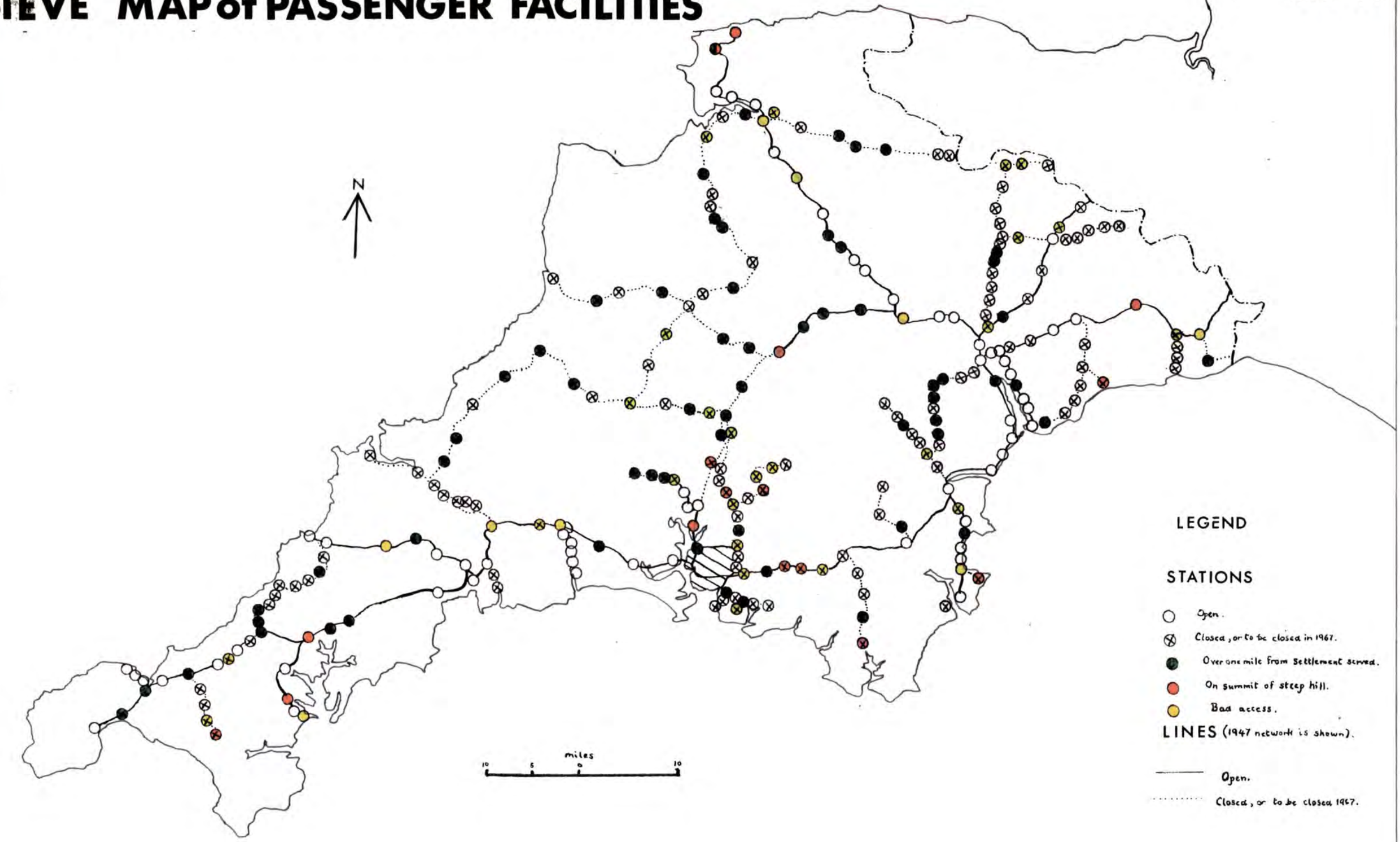
Distribution of Freight Traffic:

Station Tonnages



SIEVE MAP of PASSENGER FACILITIES

MAP 14



LEGEND

STATIONS

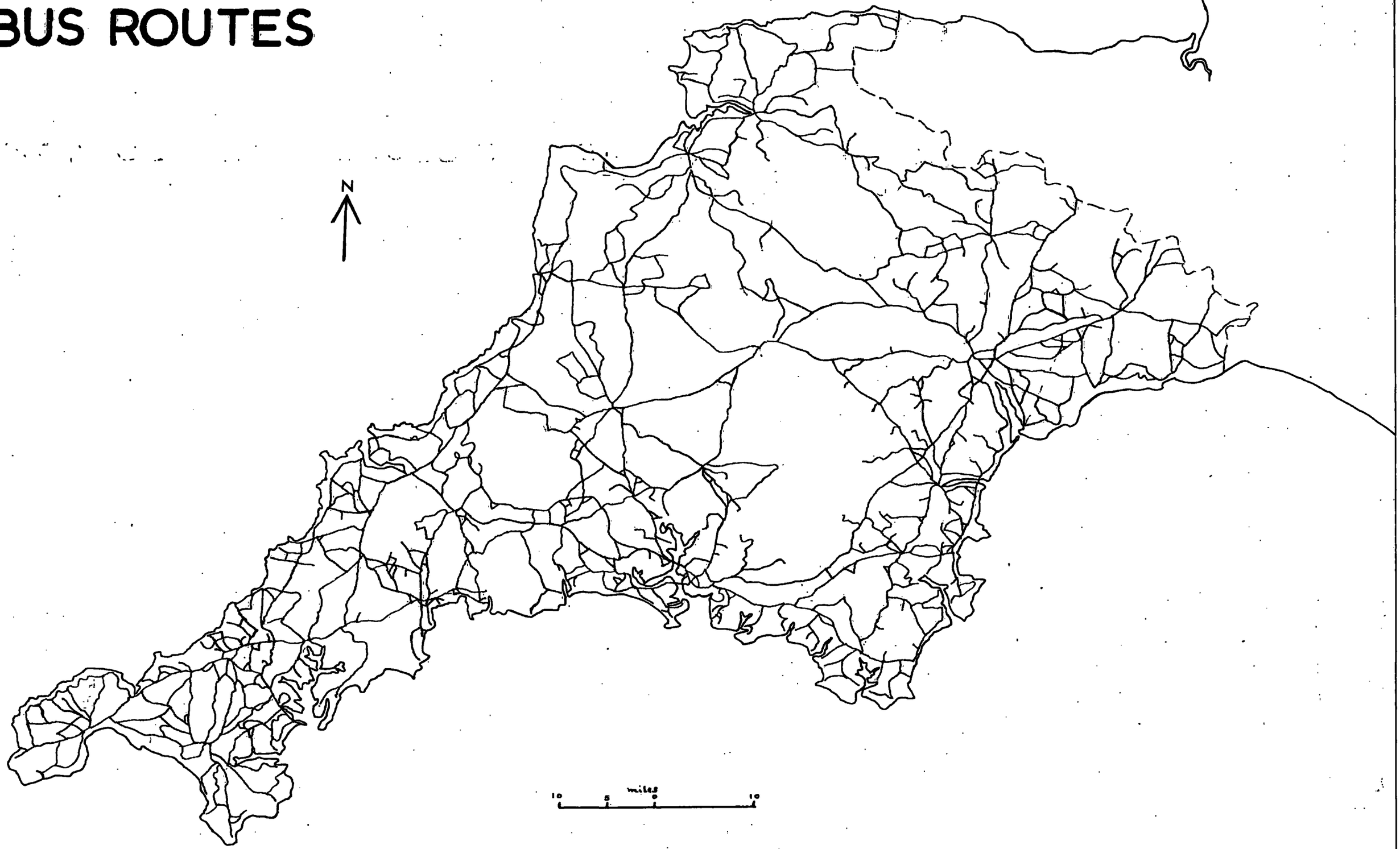
- Open.
- Closed, or to be closed in 1967.
- Over one mile from settlement served.
- On summit of steep hill.
- Bad access.

LINES (1947 network is shown).

- Open.
- Closed, or to be closed 1967.

MAP 15

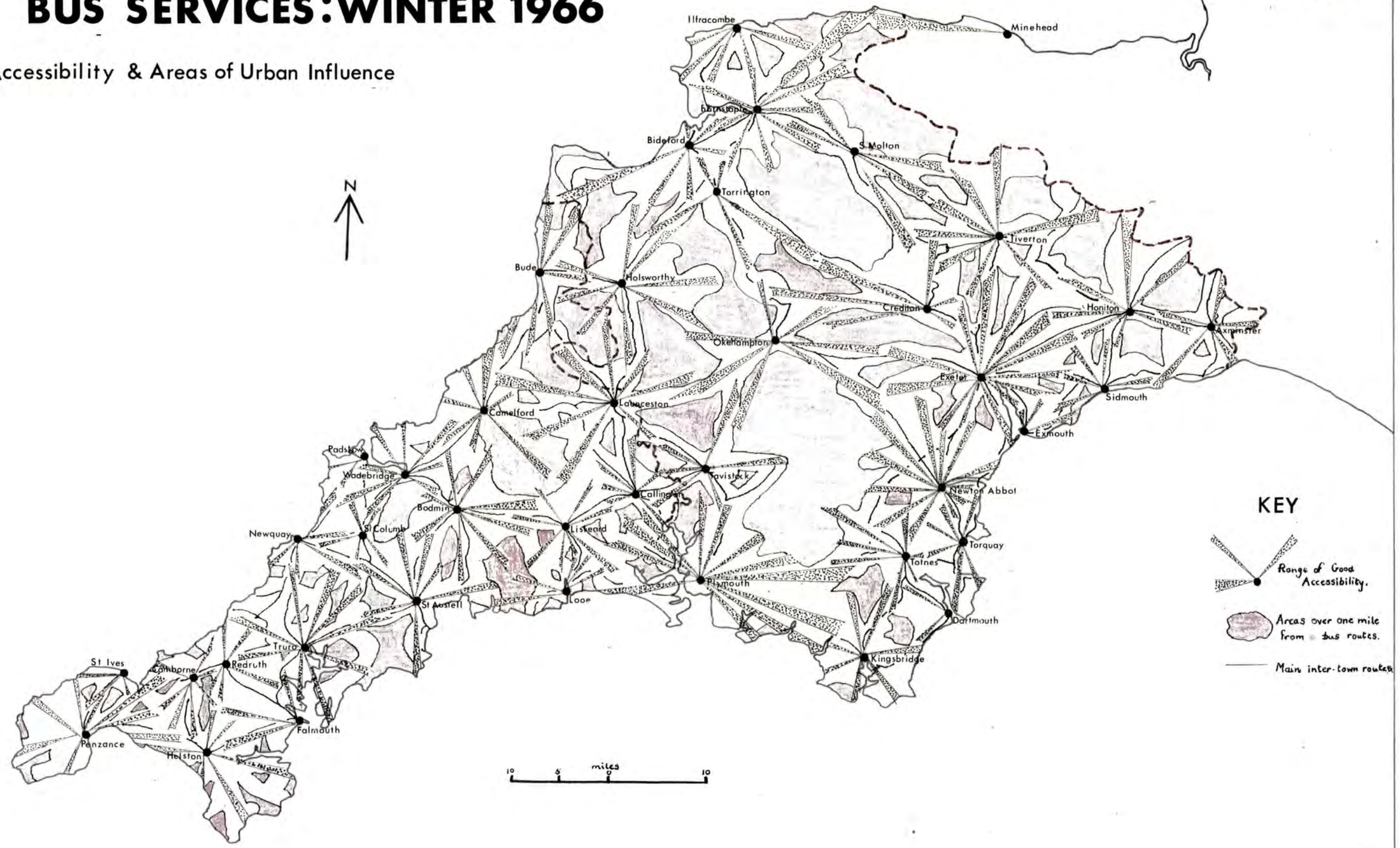
BUS ROUTES



MAP 16

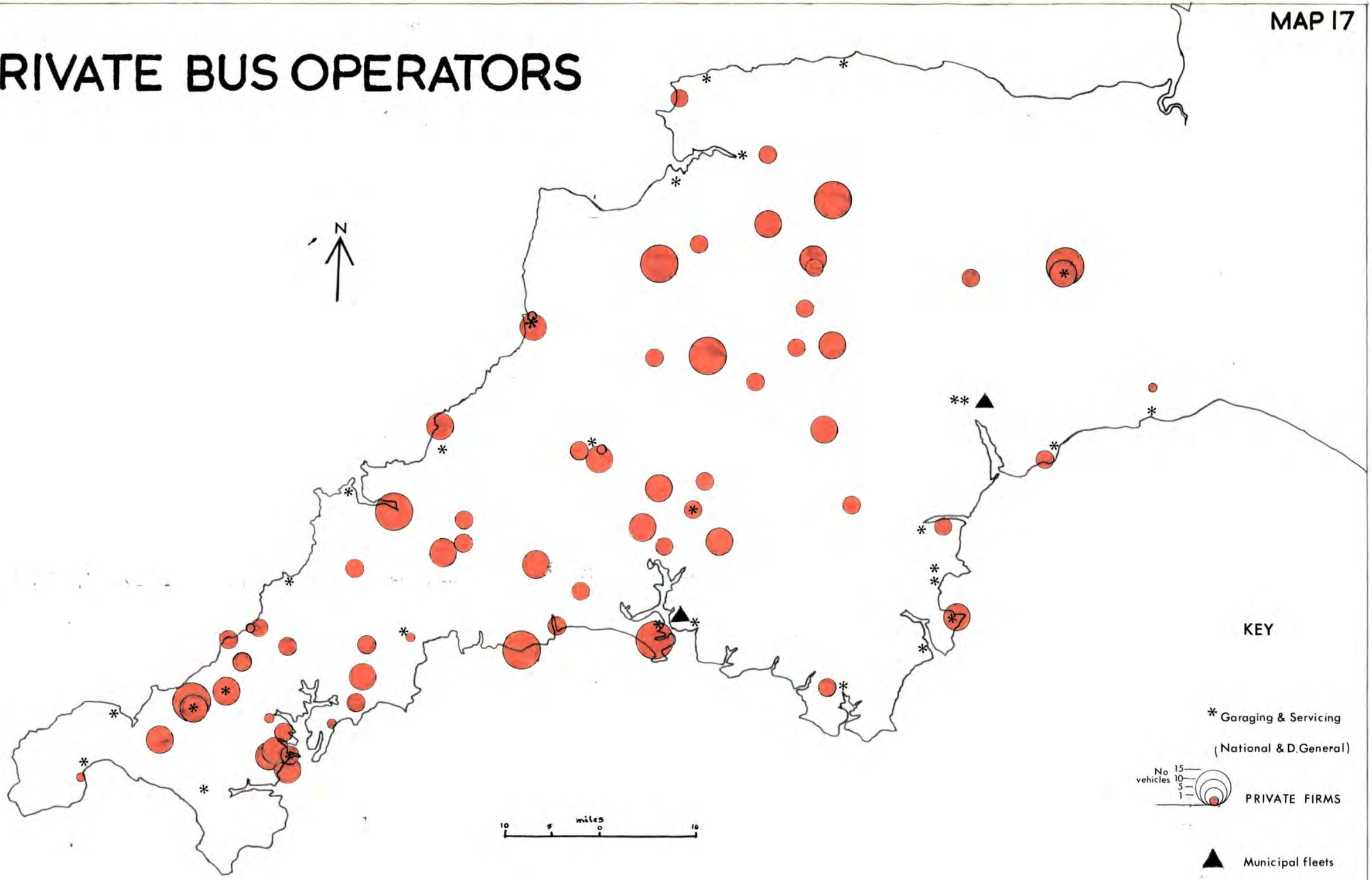
BUS SERVICES: WINTER 1966

Accessibility & Areas of Urban Influence

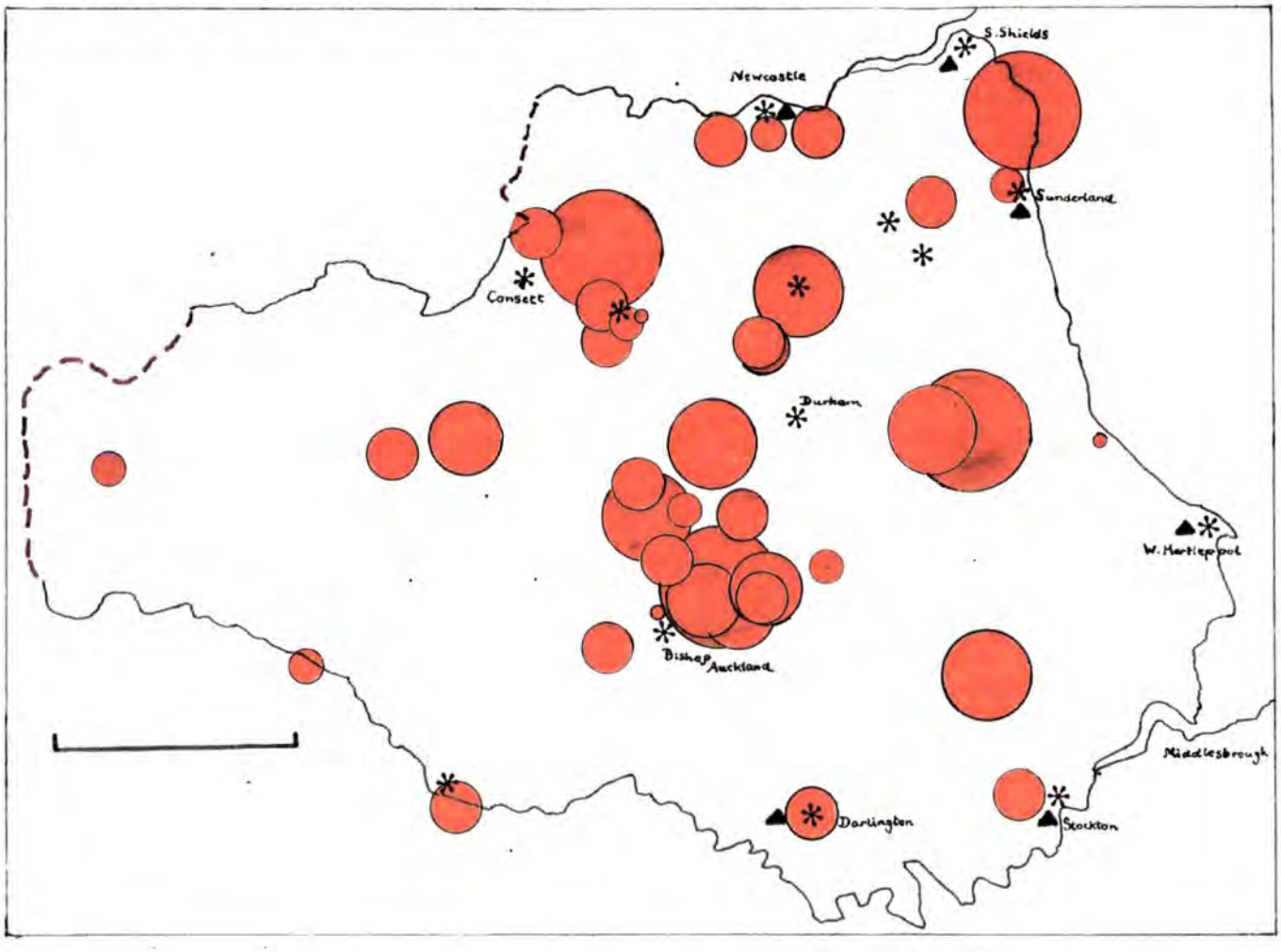


MAP 17

PRIVATE BUS OPERATORS



PRIVATE STAGE OPERATORS —— COUNTY DURHAM



LEGEND

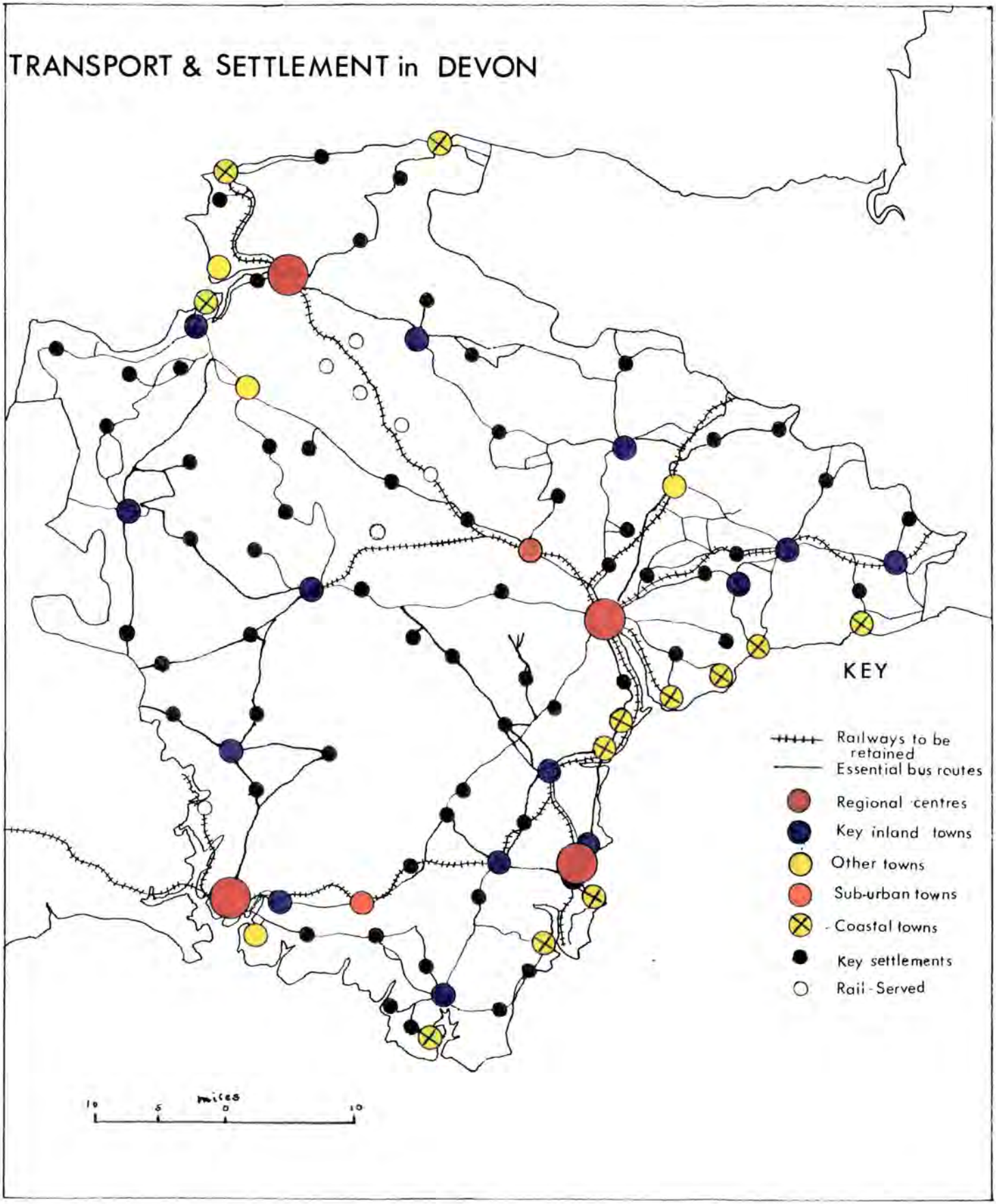
GARAGING AND SERVICING.
* State or semi-state-owned companies (Northern, United, SDO,).
▲ Municipal garages.

SIZES of PRIVATE FLEETS.
Over 20
16-20
11-15
6-10
2-5
1
No. of vehicles.

Notes: The above map was drawn as a comparison to Map I7. In the densely-populated industrial County Durham, private bus companies operate in direct competition with the Northern and United groups of territorial companies. There is enough traffic potential for both entities to exist. In addition, private companies did fall prey to take-over bids by the territorials in the thirties. Contrast this map to Map I7, which shows that most of the private companies in Devon and Cornwall are small concerns in remote rural areas.

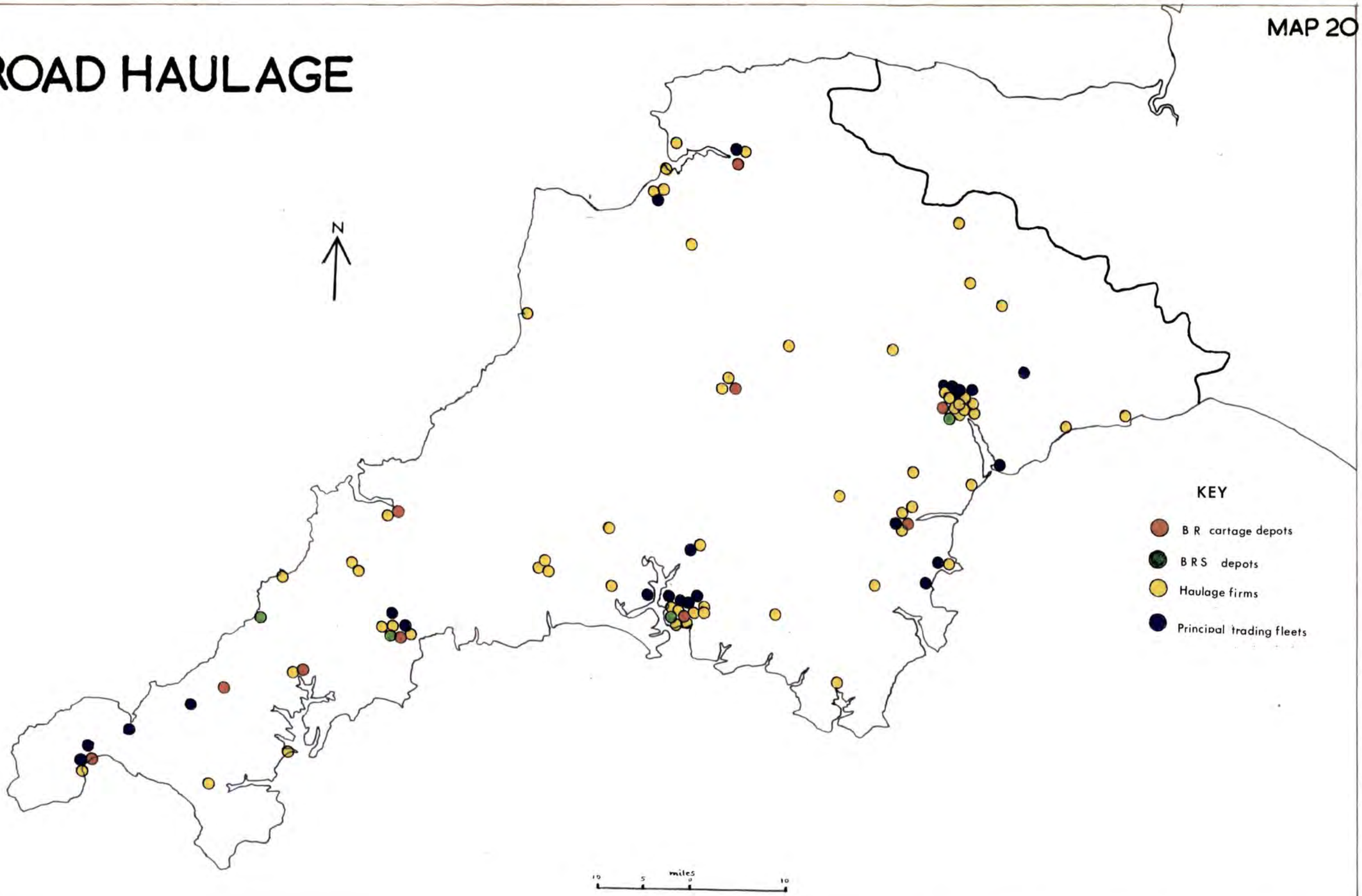
MAP 19

TRANSPORT & SETTLEMENT in DEVON

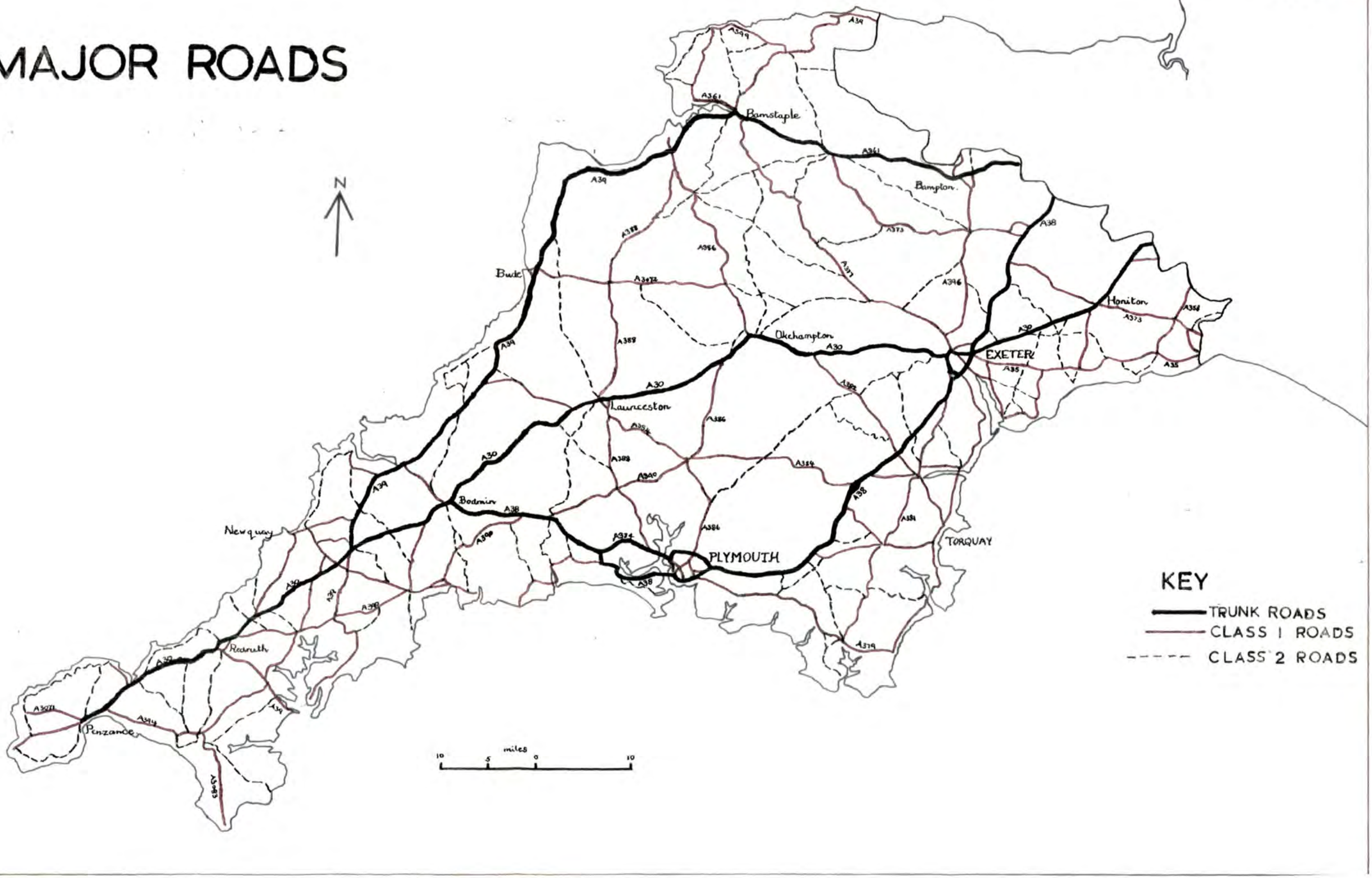


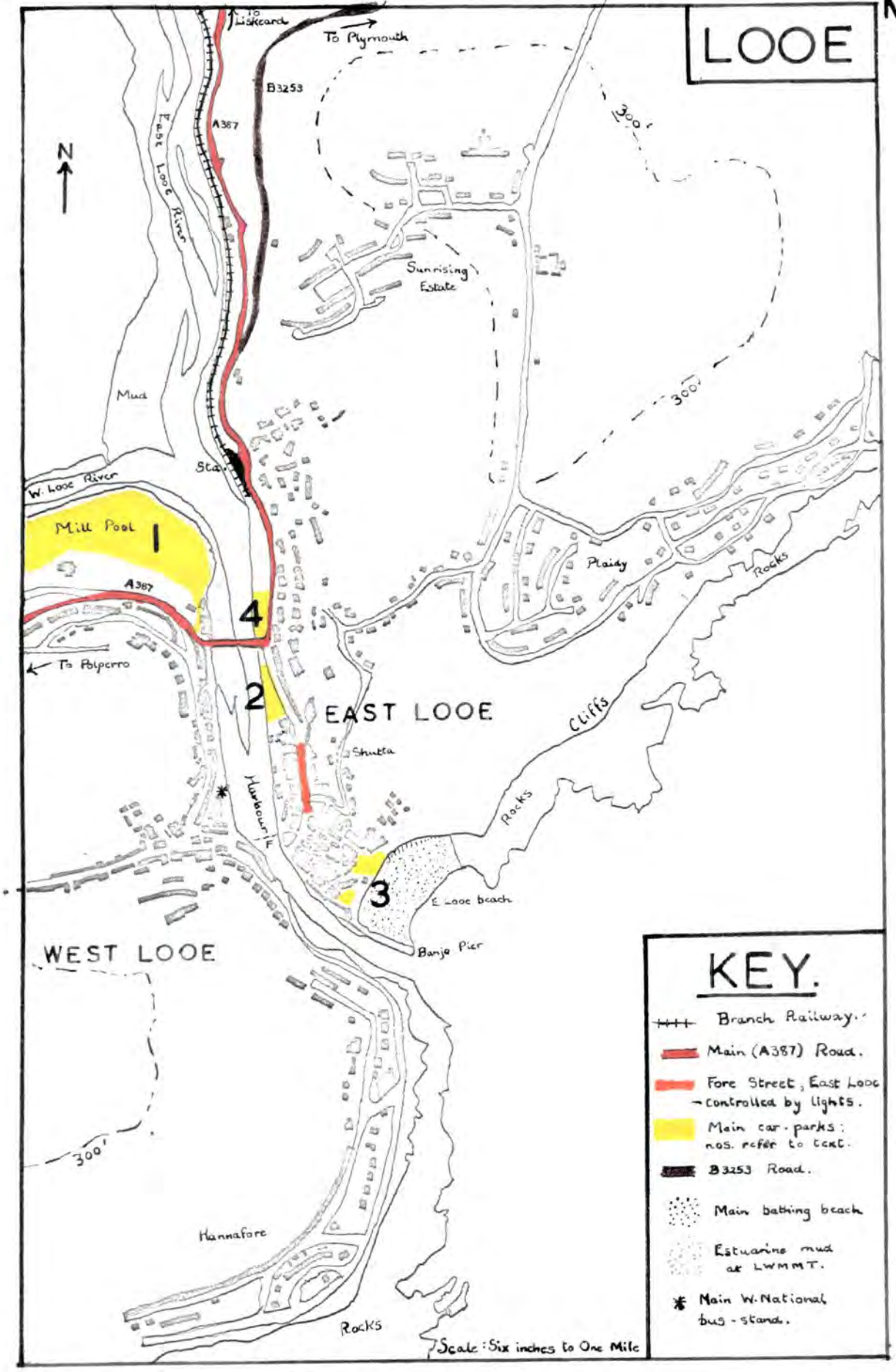
MAP 20

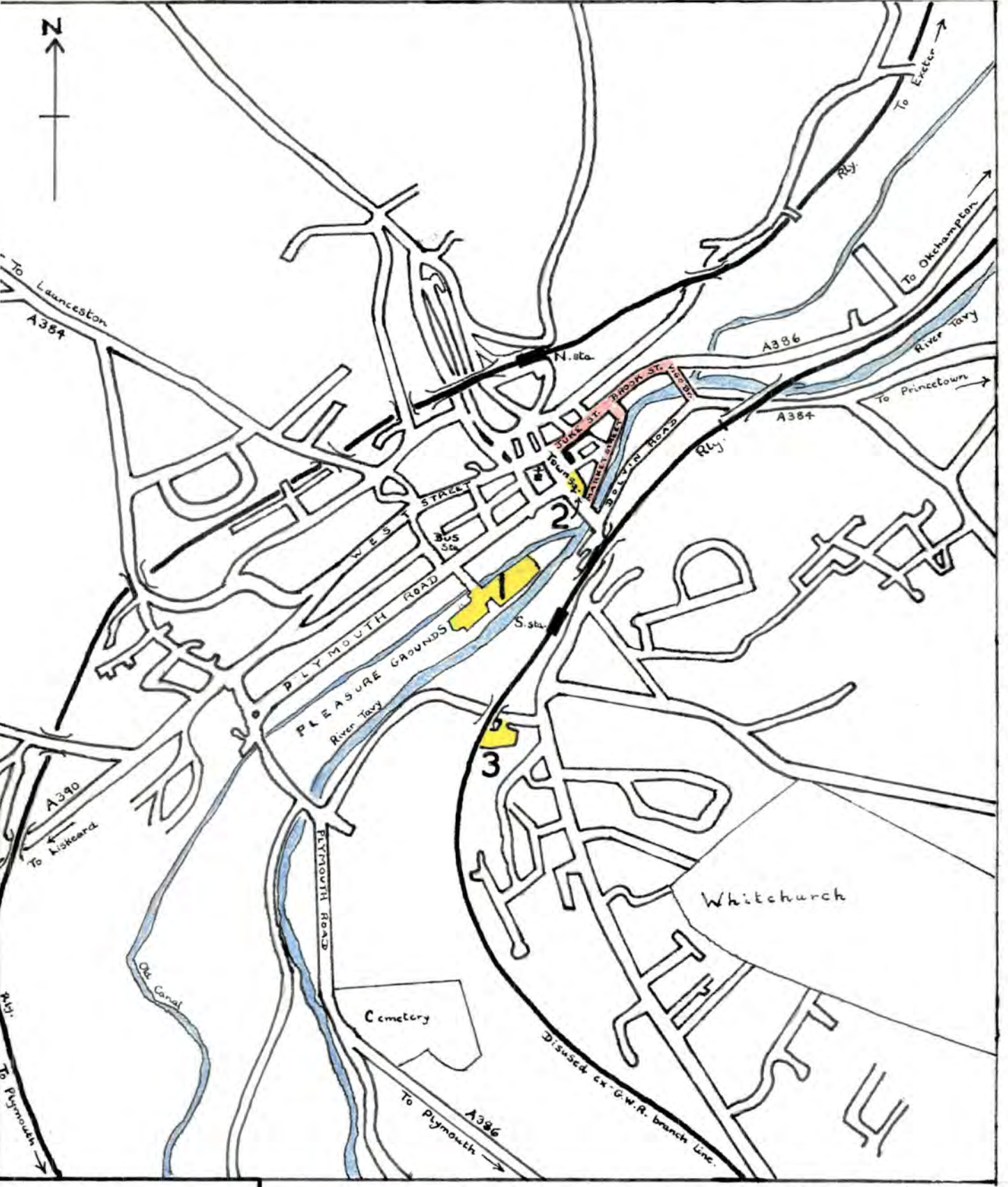
ROAD HAULAGE



MAJOR ROADS


N
Barnstaple
Bampton
Bude
Okehampton
Launceston
Bodmin
Newquay
Redruth
Penzance
Honiton
EXETER
PLYMOUTH
TORQUAY
A39
A361
A30
A38
A377
A386
A388
A3072
A396
A373
A3124
A3079
A379
A3071
A394
A35
A384
A381
10 5 0 10
miles
KEY
TRUNK ROADS
CLASS 1 ROADS
CLASS 2 ROADS


LOOE
MAP 22
N
To Liskeard
To Plymouth
B3253
A387
East Looe River
Sunnising Estate
300'
Mud
Sta.
W. Looe River
Mill Pool
1
A387
4
Plaidy
Rocks
To Polperro
2
EAST LOOE
Shuttle
Cliffs
Harbour
Rocks
3
E. Looe beach
Banjo Pier
WEST LOOE
300'
Hannafore
Rocks
Scale: Six inches to One Mile
KEY.
Branch Railway.
Main (A387) Road.
Fore Street, East Looe - controlled by lights.
Main car-parks: nos. refer to text.
B3253 Road.
Main bathing beach
Estuarine mud at LWMMT.
Main W. National bus-stands.



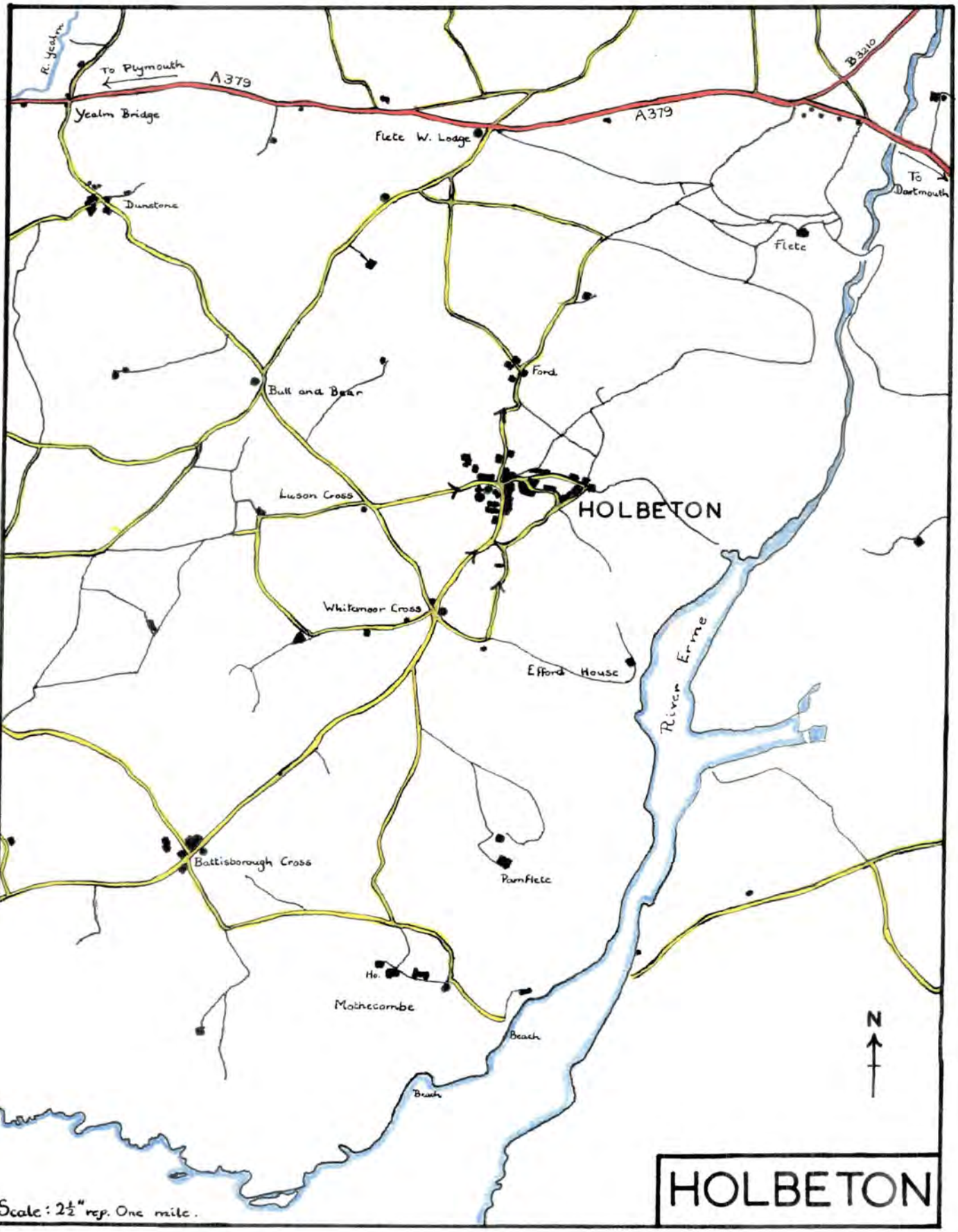
TAVISTOCK

KEY

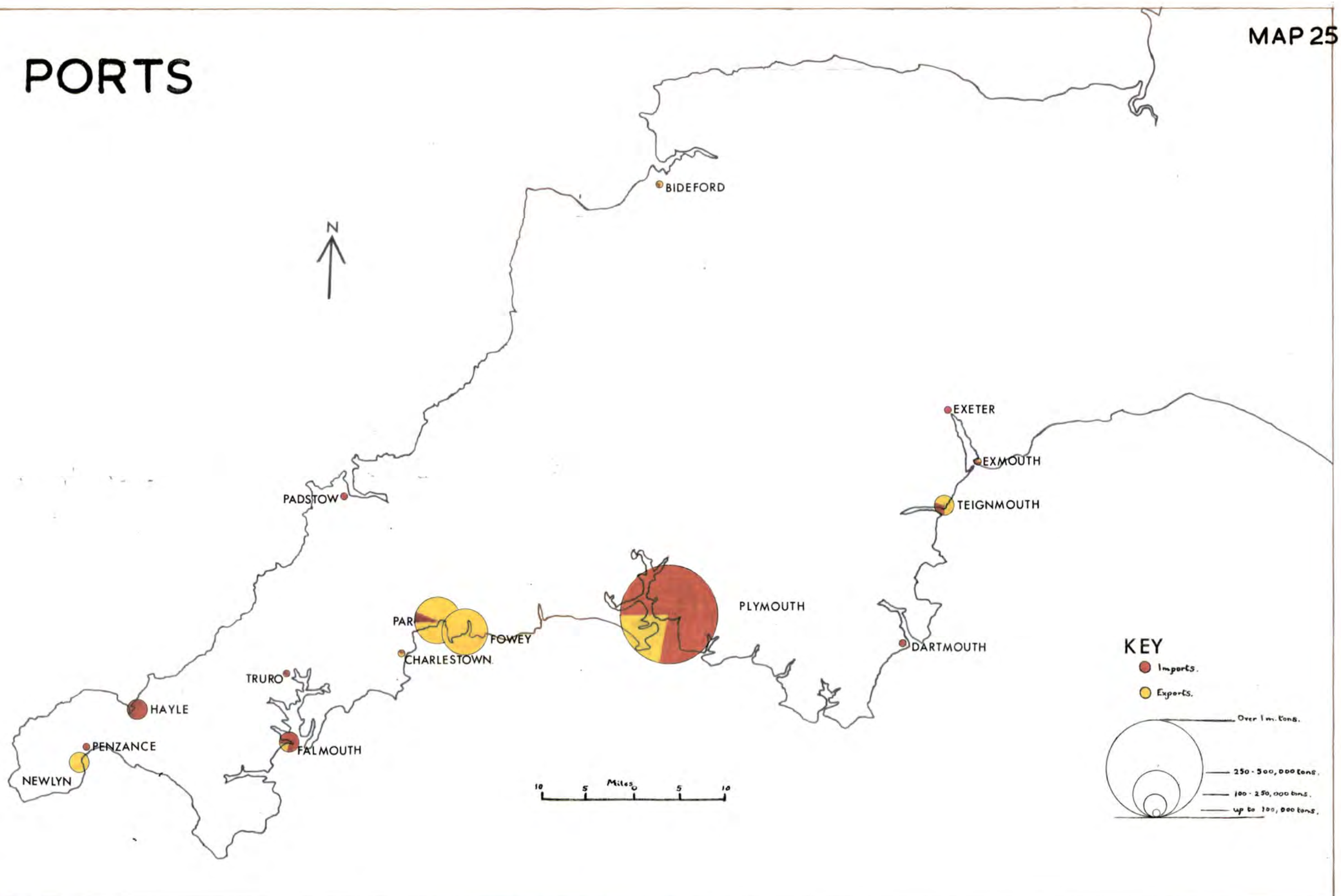
- Traffic bottlenecks.
- Existing Carparks (for nos., see text).
- Streams.

Scale 0 — ¼ mile

MAP 23


R. Yealm
To Plymouth
A379
B3210
Yealm Bridge
A379
Flete W. Lodge
To Dartmouth
Dunstone
Flete
Ford
Bull and Bear
Luson Cross
HOLBETON
Whitemoor Cross
Efford House
River Erme
Battisborough Cross
Pamflete
Ho.
Mothecombe
Beach
Beach
N
Scale: 2½" rep. One mile.
HOLBETON

PORTS


BIDEFORD
N
EXETER
EXMOUTH
TEIGNMOUTH
PADSTOW
PLYMOUTH
PAR
FOWEY
CHARLESTOWN
DARTMOUTH
TRURO
HAYLE
PENZANCE
NEWLYN
FALMOUTH
10 5 Miles 0 5 10
KEY
Imports.
Exports.
Over 1 m. tons.
250 - 500,000 tons.
100 - 250,000 tons.
up to 100,000 tons.