



1401184276

43/431

Cranfield Institute of Technology

College of Aeronautics

Air Transport Group

Ph.D. Thesis

George Williams

Establishing An Effective Economic Regulatory Policy
for the European Airline Industry

Supervisor: A.N. Hofton

June 1990

ProQuest Number: 10832359

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10832359

Published by ProQuest LLC (2019). Copyright of the Dissertation is held by Cranfield University.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

Abstract

Unfettered competition in the US and Canada has resulted in a much more efficient airline industry, but the considerable economies derived from the resulting structural change has led to greater levels of concentration than previously existed. Arguments postulated in the early 1980's concerning the contestability of airline markets have been clearly shown to be erroneous. Megacarriers now have substantial power which they use to organise and manipulate their markets in order to extract economic rent and restrain potential rivals. Wresting organisational control from an increasingly powerful group of carriers in order to obtain a more equitable distribution of the benefits that deregulation has brought will be both expensive and highly controversial.

In Europe similar opportunities exist for efficiency gains, but here it should be possible to achieve these without having to hand over market control to powerful airlines. In order to do this however a considerable reorientation and modification of existing regulatory policy is required. The priority of protecting producers' interests by limiting the competitive pressures they face is no longer warranted. Sustaining competition should now form the primary concern of regulators. The adoption of a system of route franchising with carriers being forced periodically to compete for licences provides a means by which this could be achieved.

For Joan Lehain without whom
this thesis would be but a memory.

Acknowledgements

I should like to express my sincere gratitude to Andy Hofton, my supervisor, for all the help, guidance and encouragement he has given me over the past three and a half years. In addition, I should like to thank my other friends at the College of Aeronautics, Rod Fewings, Tricia Forest-Holden, Sergio Gomes, Mike Hirst, Pedro Pinto, and Ian Stockman, for their help and support.

To Dr. Michael Connock my thanks both for initially pointing the way and subsequently for his support and involvement.

My special thanks I offer to Lehain and family for all their encouragement, forbearance and wisdom in my endeavours with respect to this research.

Contents

List of Tables	i
List of Figures	ii
Introduction	1
Chapter 1 A General Critique of Economic Regulation.	9
Chapter 2 Regulation of the US Airline Industry - Theory and Practice.	23
Chapter 3 Deregulation of the US Scheduled Airline Industry.	35
Chapter 4 Explaining the Response of Airlines to Deregulation.	83
Chapter 5 Liberalisation - the European Approach.	113
Chapter 6 Devising an Effective Regulatory Strategy for Europe's Airline Industry.	155
Chapter 7 The Experience of Other Heavily Regulated Industries to An Easing of Economic Controls.	165
Chapter 8 How Best to Achieve a Competitive Environment for Europe's Airline Industry - Franchising v's Anti-Trust.	180
Chapter 9 The Implementation of a Franchising System.	192
Chapter 10 The Quest for Efficient Regulation	201
Concluding Remarks	206
Bibliography	209
Appendices	214

List of Tables

3.1	Example of a Carrier Operating to Hub A.	42
3.2	Proliferation of US Domestic Hubs.	46
3.3	Hub Location & % of Flights Operated by Carrier.	47
3.4	Enplanements by Dominant Carriers at Major Hubs (%).	47
3.5	Number of Travel Agents and % Equipped with CRS.	60
3.6	US Travel Agencies in 1985.	61
3.7	CRS Shares of Agency Locations.	63
3.8	CRS Market Share in 1985.	63
3.9	Impact of One Diverted Passenger per Domestic Departure on Six Carriers in 1985.	69
3.10	The Survivors of Deregulation.	72
3.11	Code-Sharing Alliances.	73
3.12	Characteristics of Hub and Spoke Networks.	78
4.1	Strategic Responses to Competition.	87
4.2	Development of Commercial Strategy.	89
4.3	Sources of Competitive Advantage by Carrier Type.	91
5.1	The 20 Busiest Scheduled Intra-European Routes.	118
5.2	Growth of Intra-European Non-Scheduled Traffic.	122
5.3	Chronology of Major Events in Europe.	123
5.4	Measures Agreed by the Council of Ministers in 1987.	133
5.5	The European Commission's 1990 Proposals.	135
5.6	Tactics Employed by Major European Carriers.	144
6.1	Mergers and Acquisitions of US Carriers 1984-87	159
8.1	Controlling Anti-Competitive Behaviour	183
8.2	A Comparison of Anti-Trust and Franchising	187
9.1	Standard Route Types for Franchising Purposes	193

List of Figures

2.1	Load Factors, by Trip Distance and Number of Rivals.	27
2.2	Unit Costs and Average Yields by Route Length.	29
3.1	Frontier's 1981 Route System.	44
3.2	Braniff's Route System in 1976, 1981 and 1988.	48
3.3	United's Route System in 1976 and 1983.	51
3.4	Western's Route System in 1980 and 1983.	53
3.5	Main US Domestic Traffic Flows.	55
3.6	USAir's Route System in 1983.	80
4.1	Facing a Low Cost Rival.	98
4.2	Developing Competitive Advantage.	99
4.3	US Airline Industry 1978 Price-cost Profile.	103
4.4	US Airline Industry 1984 Price-cost Profile.	105
4.5	US Airline Industry 1988 Price-cost Profile.	106
5.1	Map of European Charter Traffic Flows.	121

Introduction

It is apparent from the evidence evinced by the US domestic airline industry over the past decade that the removal of economic regulations governing scheduled passenger services will not automatically result in the type of competitive environment that is a fundamental requirement of the Treaty of Rome. The belief of many economists in the early 1980's that airline markets were likely to prove highly contestable has been shown clearly to be erroneous. In reality the industry's propensity for developing and exploiting what amount to some of the most effective entry barriers to be witnessed in any sector has been enormous. In order to be able to decide how best to introduce a greater element of competition into Western Europe's scheduled airline industry, assuming this to be the generally desired objective, it would seem wise firstly to clarify the motives of Governments in advocating the removal of economic controls; secondly, to examine in some detail the impact of deregulation on the US domestic airline market; and finally, in the light of this, to examine the progress to date in Europe with 'liberalisation'.

As to why the industry had been regulated in the first instance it is clear that unfettered competition in the 1920's and 1930's had produced a very unstable environment, in which fledgling airlines had found it impossible to gain sufficient profits to enable them to develop their route networks. The

resulting financial instability and poor standards of safety were generally regarded as not being conducive to an industry at so early a stage in its development. To eradicate the effects of what was perceived as the presence of too much competition Governments introduced a system of route licences in order to limit market access. Regulatory bodies, like the Civil Aeronautics Board (CAB) in the US and the Air Transport Licensing Authority in the UK, were established to carry out this task and to determine the fares that should be charged. One of CAB's first policies was to grant 'grandfather' rights to the 23 airlines then in existence. For the next four decades the Board set about protecting these carriers from competition from charter airlines and other would-be scheduled operators. In a similar manner UK authorities afforded considerable protection to the state-owned flag carriers, Imperial Airways (pre-war) and BEA and BOAC (post-war).

By the 1960's however, the industry had reached sufficient a state of maturity that carriers by then had developed substantial route networks and were in the main financially secure. The absence of competition had manifested itself in high fares, with considerable inefficiency being apparent when comparisons were drawn between the protected scheduled carriers and airlines operating in non-regulated sectors such as the charter market. In the US comparisons made between regulated interstate and non-regulated intrastate routes exhibiting similar characteristics revealed large variations in fare levels. Not surprisingly, arguments favouring deregulation grew

in strength as it increasingly became apparent that the industry patently no longer warranted the degree of protection provided by the regulatory authorities.

The response of US airlines to the removal of economic controls governing their operating environment provides a rare and fascinating insight into the ways in which firms react to competition. Prior to the enactment of the Deregulation Bill in 1978 tight controls on market entry and fares imposed by the CAB had limited competition to frequency of service rivalry for those lucky enough to have been awarded route licences. As in Europe this policy had produced a highly stable and secure environment in which airlines to a large extent could safely ignore any serious threat of competition. The sudden removal of this highly effective protective layering, whilst providing incumbent airlines and would-be new-comers with opportunities that previously had not existed, for the first time in forty years handed over to established carriers the onerous task of protecting themselves.

By the mid 1980's it was clear what strategies were necessary firstly to survive, and secondly to prosper, in this new world of economic freedom. Replacing the protective barriers that regulation previously had provided has been of paramount importance. The transformation of a series of linear route systems, in which carriers depended heavily on each other for traffic, to a set up in which each airline had to develop its own autonomous network of services has had a profound impact on market structure.

A number of factors have had an important part to play in building what in reality has turned out to be a highly effective replacement of the entry barriers that previously had been provided by the regulatory authority. A vital element in this endeavour has been the development and exploitation of Computer Reservation Systems (CRS). Initially developed as a means of processing a rapidly increasing volume of passenger reservations, these have been transformed and developed over the past decade into highly effective marketing tools. This amazing adaptation of computer technology has played a crucial role in enabling a small number of carriers to achieve positions of market dominance.

The prediction that the deregulated US airline market would display near perfect contestability was a pipe dream. As a result of their changed economic environment airlines had no option but to rapidly attain the much larger scale of operation required in order to survive. Between 1984 and 1988 the US Dept. of Transportation approved all of the merger proposals placed before it, as carriers sought to attain nation-wide route networks. Despite the fact that traffic has more than doubled over the past decade, the industry is now more concentrated than it has ever been.

As a consequence duopoly is once again the order of the day on many internal US routes, with competition really only playing a part on longer distance journeys, where passengers have the choice of travelling via a number of traffic hubs, and in a few locations where surviving 'new entrants' and former

regional airlines are vying with each other for market share. The lesson that the US airline industry has clearly shown is that a highly competitive environment is not a guaranteed outcome of economic deregulation, even when all of the firms are privately owned. That carriers are considerably more efficient as a result of the lifting of controls on market entry, capacity and pricing policy is irrefutable. There is now however a growing realisation that the industry is in charge of its own destiny and that the interests of consumers may not figure too highly on any list of priorities, as evidenced by the recent hike in fares. This is not to say that airlines will be anything other than highly astute at judging just how far they can go without incurring the displeasure of Governments and so risk further regulation.

Within Western Europe, irrespective of the Commission's aims, the desire to protect one's own interests has been, and remains, of paramount importance to Member States. As a consequence of this a wide range of views are apparent among the Governments of the twelve, varying from the extremely conservative as exemplified by France and Italy to the strongly non-interventionist stance of the UK. Despite this diversity of view, it is clear that the delaying tactics which have proved so successful to date are likely to prove much more difficult a strategy to follow in the future. Given this reality, it is hardly surprising that Western Europe's major airlines have been devising means by which to protect themselves. Many of the tactics that have been adopted stem directly from the lessons

gleaned from the US experience with deregulation. There are, of course, significant differences between the two situations, but nonetheless the most efficient and effective ways of establishing durable barriers to market entry are now of common knowledge.

Greater market concentration than currently exists would appear to be the most likely outcome in Western Europe, despite the best efforts of a highly committed, but increasingly stretched, European Commission. Limitations on available infrastructure both in terms of airports and airspace are more severe here in Europe. This will expedite the move to greater concentration unless some means can be found to enable new entrants to gain the all important peak time take-off and landing slots required to produce a viable operation. Without access to slot constrained airports would-be new entrants, despite having the right to operate routes from these locations, will remain frustrated. Trying to prise such scarce resources from existing users will be far from easy, especially when these carriers are supported by strongly partisan Governments.

In the 1930's Governments had adjudged there to be a surfeit of competition in scheduled airline markets and had regulated accordingly. If, as the clear evidence from the US shows, airlines when left to their own devices are able to control and in certain instances eliminate competition, it would appear that government intervention is still necessary but now needs to be reorientated to ensuring the continued

presence of competitive forces. Preventing dominant airlines from building up substantial entry barriers should form a vital part of this revised regulatory strategy. In effect it is the new entrants that need to be encouraged and protected as it is competition from these firms which provides the spur to improving efficiency and so leading to the lower fares that we, as consumers, demand. Removing economic controls will only result in a similar outcome to that experienced in the US and, as is the case there, will then prove exceedingly difficult to redress.

Many of the policies pursued by the UK's Civil Aviation Authority in recent years have enhanced competition. For example, following the acquisition of British Caledonian Airlines by British Airways, the licensing of Air Europe on a number of European routes from Gatwick has resulted in a reduction of some business class fares. The inflight service improvements that the arrival of British Midland on domestic trunk routes from Heathrow heralded has also had a strong impact. When introduced in this way competition cannot easily be quashed by powerful carriers. Adjusting and amending existing regulatory policy in this carefully controlled way and adopting other relatively more innovative ways of achieving the same objective is much more likely to result in long term consumer gains and, given the diverse interest groups that make up Europe's airline industry, may prove to be more acceptable to Governments.

Whilst the rhetoric of airline chiefs may extol a virtuous

acclamation of welcome to a climate of greater competition, few in practice display such selfless philanthropy. Eliminating competitors, or at the very least constraining their influence, is an entirely logical and reasonable response. There is a danger of falling into the trap of thinking that all regulation by its very nature is undesirable and that effective competition can only be achieved by allowing market forces to operate in an unfettered way. Regulatory policy can perform the task of either enhancing the degree of competition that producers face in a particular market, or, as has been mostly the case in the airline industry, restricting it. Given the US experience, it would seem not unreasonable to argue that regulation has more than ever an important role to play, but that instead of constraining competition it should now be aimed at enhancing it in the most efficient and imaginative ways that can be devised.

Chapter 1 A General Critique of Economic Regulation

It has been the failure of specific markets to produce and allocate goods efficiently, together with wider social and strategic objectives identified as being in the public interest, that have provided the rationale for the economic regulation of industry. Traditionally economists, such as Bator¹, have distinguished two main sources of market failure, namely: the abuse of market power by firms operating under conditions of monopoly and oligopoly, and the presence of externalities, both resulting in a distortion of market forces. In addition to these, asymmetry in the availability of information to do with prices and product quality has been increasingly regarded as forming a major source of market failure.² Other motives for adopting economic regulation have been concerned with such issues as unemployment, the strategic importance of industries, and income redistribution. In the case of many of the transport industries aspects of safety and financial instability promulgated governments to introduce economic controls. As regards distributional objectives, concern has centred on achieving a more equitable balance of income and wealth, but, as Kay and Vickers³ have argued, these are matters that undoubtedly are best left to more efficient instruments of public policy.

The earliest preoccupation of Governments in the matter of market failure concerned attempts at preventing monopolistic

firms from exploiting their market power. Given that many such industries, particularly the utilities, exhibited the presence of substantial economies of scale, attempts aimed at fragmenting such natural monopolies could only result in less efficient production. The only sensible option, given the fundamental desire to protect consumers interests, lay in directly controlling the behaviour of such firms. Regulatory authorities were established as a consequence, with each given a remit to make a particular industry operate in such a manner as to satisfy the public interest.⁴ In order to extend consumer protection to encompass all markets that exhibited a tendency toward greater structural concentration the US introduced antitrust legislation.⁵

This attitude of safeguarding the public was later widened to include situations where it had been adjudged that competition had become overly excessive. As a consequence, regulatory authorities were established with remits to limit entry to such markets. For example, in the case of the UK bus (local stage carriage) industry the 1930 Road Traffic Act⁶ established a system of route licensing, which was aimed at eradicating the poor standards of safety and financial instability experienced in the 1920's. Similar motives were behind the establishment of equivalent regulatory agencies to control the airline industries in both the UK and US.⁷

Economic regulation therefore has been used by Governments to attempt to control the amount of competition that firms face in particular markets.⁸ In situations which manifested the

presence of insufficient competitive pressure intervention would be aimed at introducing greater rivalry. In the main this was accomplished by the altering of market structure, but if this proved unfeasible attention was focussed on constraining the behavioural conduct of firms in such a way as to replicate the effects of the desired level of competition. In a similar manner adjustments could be made if it was adjudged that excessive competition was preventing the public interest being served in a particular market. Constraining behavioural conduct has usually involved the establishment of limitations on prices, product quality, distribution, and information disclosure. For example, prior to nationalisation railway companies in the UK were forced to publish their rates for the carriage of freight, enabling road hauliers to undercut them.⁹

The ever-widening net of government controls, partly the result of what Peltzman¹⁰ refers to as creeping regulation, namely regulatory authorities extending their areas of control, and partly arising from an extension of legislation to incorporate markets not previously controlled, such as health and the environment, made economists start to question the wisdom of having such an extensive system of constraints. Prior to 1960 a normative, non-quantitative approach prevailed, with regulation perceived as being an essential guard against inefficiency and exploitation. The view that economic regulation could be counter-productive and did not always work in the interests of consumers originated from a study of the electricity generating industry in the US by Stigler and

Friedland.¹¹ That regulation of natural monopoly public utilities in the US had not produced any significant impact on their operating behaviour was expressed by Jordan¹². The formalised theory, postulated by Stigler¹³, that regulatory authorities had been captured by the firms that they had been formally charged with regulating and had adopted policy accordingly, was extended by Peltzman¹⁴ into a general theory in which regulation is portrayed as being a commodity which can be bought and sold like any other. In this theory regulators are assumed to provide a cartel management service which can be purchased by interested parties, predominantly producers. This view has particular pertinence to US markets, where antitrust legislation precludes the possibility of collusive activities between firms.

The prevalent view amongst economists by the early 1970's was one of overkill in terms of the extent of market regulation. The consensus verdict was that a considerable improvement in efficiency would result if markets were substantially deregulated. That regulatory measures had failed to achieve their goals, or had actually wound up producing a worse situation for consumers was a view expressed by many economists. Jordan¹⁵, for example, made the strong assertion that... "Regardless of the diverse aims and hopes of the consumers, industry leaders, and legislators who brought about the extension of regulation over various industries, the actual effect of such regulation has been to protect producers. It follows that wherever substantial monopoly power exists in a

non-regulated market structure, regulation should have relatively little impact; and, where there is little or no monopoly power in the prior market structure, regulation should have an important impact by helping formerly independent producers form a cartel for their benefit and protection."

Prior to the emergence of the 'capture' theories an important, yet highly erroneous, assumption was that regulation had been imposed at relatively little cost. Posner¹⁶ explored this viewpoint and contended that in reality 'the costs of regulation probably exceed the costs of private monopoly'. If this outcome has generally been true, then it would constitute a fairly damning indictment of economic regulation. That it could be so inefficient and counter-productive can have stemmed only partly from an inability to adapt and develop policy to fit changing circumstances. Niskanen¹⁷, for example, argued that regulators were essentially bureaucrats who sought to maximise their budgets, and so have objectives that conflict with the original intentions of those who established the regulatory framework.

That any type of government intervention carried with it the risk that the outcome might be regarded as being worse than that which it was intended to replace had been clearly established by the early 1970's. Changing circumstances could make a set of once relevant regulatory policies outmoded and anachronistic. The more rigidly these controls were enforced the greater the likelihood of this occurring. Once a set of rules and guide-lines had become established, resistance to

further change became apparent. Even those firms who adapted their operations in a positive spirit of compliance had sought means to exploit their regulators. In the US, regulation had provided firms with a cartel management service that under normal circumstances would not have been possible given the antitrust laws.

In the US by the mid 1970's the pendulum had swung full measure and come to rest firmly in the direction of complete economic deregulation. One of the main advocates of this policy, Alfred Kahn, had the opportunity to oversee the dismantling of a complete regulatory authority together with all of its rules.¹⁸ That this relatively extreme viewpoint had become conventional wisdom is symptomatic of the relatively abrupt and dramatic reversals of public policy that are widely observed. A belief in the inherent competitiveness of markets was an essential requirement for exponents of such a policy. Although as Kahn¹⁹ has recently argued, one could always fall back on antitrust legislation if such faith turned out to be misguided. For those however whose faith had a tendency to waiver and were in need of further convincing the arrival of contestability theory in the early 1980's provided additional persuasion in this matter.

The theory of contestable markets, developed by Baumol, Panzar and Willig²⁰, provided an essential catalyst in this reforming process, switching attention from the actual competitive environment within a market to a wider preoccupation with the ease with which other firms could enter.

The more contestable a market the greater the influence of potential entrants on the decision making of firms operating within that market. In such markets established firms would set price at such a level so as to discourage entry. The greater the contestability the nearer this price level would be to that which could be expected if the market were operating under conditions of perfect competition. Repulsing competitors by maintaining a low price however is only one, relatively expensive, means of deterring potential rivals.

The theory of contestable markets is in essence an extension of Bain's²¹ limit pricing model. It implicitly assumes that firms have exhausted all other relatively more efficient means to exclude or discourage rivals. Firms that operate in unregulated markets invariably will be engaged in devising and perfecting means by which to limit access to prospective competitors, utilising all their collective ingenuities in the process. By contrast, firms operating within the protected environment of the highly regulated industries will have had no need to expend time and money on such pursuits. Deregulation besides freeing firms to operate in markets of their own choosing involves them, possibly for the first time, in the onerous task of protecting themselves from rivals. Their first priority in these circumstances assuming that they act rationally, would be to explore as quickly as possible the scope that exists for establishing such impedimenta. The really vital question therefore as to whether it makes sense to completely deregulate a particular industry

depends critically on the extent to which previously regulated firms are able to establish effective entry barriers. Basing one's expectation of this on the prior performance of these firms would be to say the least unrealistic. Industries exhibiting similar characteristics at home or abroad already operating under competitive conditions would be likely to provide a much more realistic indication of this.

That the type and extent of regulation generally employed had been regarded as being surplus to requirements can be attributed to three main causes, namely: changed circumstances; the capture of regulatory authorities by producers; and the bureaucratic self-interest of regulators. No one theory of regulation provides a sufficiently comprehensive explanation as to why this situation had emerged. What is clear is that when industries were first regulated the primary concern had been with eradicating specific market failure swiftly and radically. This invariably had meant that attention had been too narrowly focussed, with little or no consideration being given to long term implications. Policy in the main had been too inflexibly applied, with the result that regulators had been intransigent, not adjusting policy in response to the often substantial changes that had occurred in the competitive conditions prevailing in industries within their jurisdiction. This seemingly heavy handed and unsophisticated approach arose primarily because of the way in which change in public policy is realised. The sudden and relatively abrupt changes of Government policy in matters of market intervention reveal that

all too often little, if any, serious thought has been given to long term direct and indirect consequences.

The problem of sustaining an optimum level of competition within dynamic and often rapidly changing markets in such a way as to satisfy all participants is no more likely to be forthcoming by the removal of all economic controls than it is by adopting any other blanket type of approach. In general, the more concentrated an industry the greater the likelihood that it will be necessary to impose restrictions on firms wishing to merge and on those engaging in collusive practices in order to limit consumer exploitation. Market concentration is determined predominantly by the extent of economies of scale²² and the ease with which incumbent firms are able to erect other forms of entry barrier. If collusion is likely to be a significant feature of an industry then invariably it will be necessary to impose standards on the conduct of firms, or, as in the US, ban the activity altogether. Comparisons with similar industries in the home country or, if this proves impossible, using relevant examples from abroad, would provide a valuable insight into what is most likely to occur, as Peltzman²³ has argued. Fixing maximum concentration standards that are to be universally applied may be unnecessarily cumbersome and inefficient. For example, the imposition of a 25% maximum market share for each firm may be entirely apposite in certain industries, but not in others. Flexibility is a fundamental requirement in any type of market intervention. The need to recognise that large differences exist between industries is essential. Rigidity of

thought whether the outcome of political dogmaticism or arising from a desire to maintain a neat and uniform approach should be avoided at all cost. That a government will never get it quite right is not in question!

In essence it is essential that the dynamic nature of markets is recognised by those charged with regulating them. It is clear that any process that allows entrenched attitudes to develop should be prevented. Ideally the regulator needs to employ the absolute minimum tactics to achieve the cited objective. The analogy of a shadow following precisely the operating environment of a particular industry as it changes is apt. Ideally the regulatory authority should be in a position to accurately predict the strategic tactics and responses of firms and, as a consequence, be ready to counter any attempts to further constrain or expand competition beyond that which had been deemed to be in the public interest. The lightest possible touch would invariably be best, as this would minimise any risk of the regulators being unduly influenced or captured by powerful producers or consumer groups. As it is impossible to foresee precisely what changes are likely to occur in the prevailing competitive environment in each and every industry a continual monitoring process is essential. Rapid technical change may make it advisable to substantially alter the level of intervention required to achieve the desired result. The need to modify policy in a gradual and systematic way is clear, given that this offers the possibility of avoiding the abrupt volte-face associated with previous attempts at regulating

industry.

Hopefully a more balanced and realistic attitude to market intervention will one day emerge; one that fundamentally recognises the manner by which firms seek to achieve their objectives. That firms strive to control their markets is clear and, if conditions so exist, will seek to exploit any advantage often to the detriment of consumers. Previous attempts by governments to control such behaviour have been heavy-handed and inflexible. The Airline Industry provides a fascinating case study in the quest for an optimum framework of economic control, one that provides an effective balance between the twin goals of efficient production and consumer protection.

The first objective of this thesis is to provide a clear analysis of the US experience with economic deregulation in respect of its domestic airline markets. Using this analysis an explanation is postulated as to why the industry has evolved in such a radically different manner than that anticipated.

The second major focus of the work involves a detailed examination of the progress to date with the liberalisation of scheduled air services in Western Europe. Using evidence gleaned from the US and on the assumption of further liberalising measures, it is possible to predict a broadly similar outcome.

The final aim of the research is to contrast alternative strategies in terms of their effectiveness at preventing a replication of the US experience.

References and Footnotes:

1. Bator, F., 'The Anatomy of Market Failure', Quarterly Journal of Economics, 1958.
2. For example, Salop & Stiglitz examined situations in which consumers were badly informed about prices; whilst Akerlof examined the market for second hand cars in the US to explore the question of information in connection with product quality. (Salop, S. & Stiglitz, J., 'Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion', Review of Economic Studies, 1977. Akerlof, G., 'The Market for Lemons: Qualitative Uncertainty and the Market Mechanism', Quarterly Journal of Economics, 1970.)
3. Kay, J.A. and Vickers, J.S., 'Regulatory Reform in Britain', Economic Policy, October 1988.
4. The first federal regulatory commission in the US, the Interstate Commerce Commission, was established in 1887.
5. The Sherman Antitrust Act was passed by Congress in 1889, with the principle objective of preventing constraints being applied to competition.
6. The effects of the 1930 Road Traffic Act are discussed by Gwilliam, K.M. and Mackie, P.J. in Economics and Transport Policy, George Allen & Unwin, 1975, pp.302-6.
7. The Civil Aeronautics Authority was set up in 1938 by the US Government to regulate pricing and entry on interstate routes, determine mail rates, and control all aspects of safety. It adopted the title Civil Aeronautics Board in 1940. The Air

Transport Licensing Authority was established by the UK Government in 1938 to adjudicate over a system of formal hearings for the allocation of subsidy and route licences.

8. Button argues that regulatory policy concerned with market failure has been aimed mainly at making firms perform as if they were operating under conditions of perfect competition.

Button, K.J., 'New Approaches to the Regulation of Industry', The Royal Bank of Scotland Review, 1986, p.19.

9. Gwilliam, K.M. & Mackie, P.J., supra note 6, pp.22-7.

10. Peltzman, S., 'The Gains and Losses from Industrial Concentration', Journal of Law and Economics, Vol.20, pp.229-63, 1977.

11. Stigler, G. and Friedland, C., 'What Can Regulators Regulate: The Case of Electricity', Journal of Law and Economics, 1962.

12. Jordan, W.A., 'Producer Protection, Prior Market Structure and the Effects of Government Regulation', Journal of Law and Economics, Vol.15, April 1972.

13. Stigler, G., 'The Theory of Economic Regulation', Bell Journal of Economics and Management Science, Vol.2, pp. 3-21, 1971.

14. Peltzman, S., 'Toward a More General Theory of Regulation', Journal of Law and Economics, Vol.14, pp.109-148, 1976.

15. Jordan, W.A., supra note 12, p.176.

16. Posner, R.A., 'Theories of Economic Regulation', Bell Journal of Economics and Management Science, 1974.

17. Niskanen, W., Bureaucracy and Representative Government, Aldine-Atherton, Chicago, 1971.

18. Alfred Kahn was Chairman of the Civil Aeronautics Board from 1977 to 1982.

19. Kahn, A.E., 'Surprises of Airline Deregulation', American Economics Association Papers and Proceedings, May 1988, pp.316-22.

20. Baumol, W.J., Panzar, J.C., and Willig, R.D., Contestable Markets and the Theory of Industry Structure, Harcourt-Brace-Jovanovich, San Diego, 1982.

21. Bain, J.S., Barriers to New Competition: Their Character and Consequences in Manufacturing Industry, Harvard University Press, Cambridge, Mass., 1956.

22. Economies of scope and density have played an important part in determining concentration levels in the scheduled airline industry.

23. Peltzman, S., supra note 10.

Chapter 2 Regulation of the US Airline Industry -
Theory and Practice

The Contract Air Mail Act of 1925 enabled scheduled air transport services to become a permanent feature of the US scene for the first time. The Act introduced a system of contracts for the carriage of mail by air so providing the necessary stable financial environment for the development of such services. An amendment of the Act in 1930 gave considerable power to the Postmaster General who was able to use this to restructure the industry into a small number of trunk carriers operating transcontinental routes. The method used by the holder of this office to allocate air mail contracts however was the subject of considerable controversy and resulted in a national scandal and the revocation of all existing contracts.²⁴ The Air Mail Act of 1934 was the outcome of this debacle and introduced a highly bureaucratic system of control involving no fewer than three separate regulatory bodies.²⁵ As Levine²⁶ comments, given this dispersion of responsibilities, carriers were able to abuse the system by submitting very low bids in the certain knowledge of having them later made profitable by the Interstate Commerce Commission. A number of fatal crashes in the three years following this Act led to strong pressure for the establishment of an organisation that was to be devoted exclusively to matters of air transport.

The Civil Aeronautics Authority (CAA) was set up in 1938 as a direct consequence of this and was given power to regulate pricing and entry on interstate routes, determine mail rates, and control all aspects of safety.²⁷ One of its first activities was to grant 'grandfather' rights²⁸ to the 23 carriers then in existence, who later became referred to as trunk carriers.²⁹ After the war these carriers faced competition from newly formed charter operators, who had been able to acquire aircraft and trained air crew at low cost. Charter services had been exempted from regulation by the CAA in 1938 and as a consequence operators were able to charge substantially lower fares than their scheduled counterparts. The trunk carriers reacted by introducing 'coach' fares, which as Davies³⁰ shows had such a significant impact that by the end of the 1940's this class of traffic formed a large component of total demand. The Civil Aeronautics Board's reaction to this was to protect the scheduled carriers by attempting to restrict the operations of charter airlines, imposing limits on the number of flights they could undertake. A number of carriers however managed to circumvent these restrictions by operating under a variety of different names, resulting in a higher provision of charter services than the regulatory authority had intended. Scheduled carriers could have responded to this competition by reducing prices, but the CAB was not enthusiastic about authorising low fares for such operations, a policy for which it was criticised by the US Senate in 1951.³¹ In responding to this criticism the Board adopted a strategy of

encouraging the trunk airlines to apply for coach fares, whilst simultaneously prohibiting charter operators from running anything remotely resembling a regular service. The dichotomy between scheduled and non-scheduled operations in U.S. airline markets was thus established.

In a similar manner CAB sought to protect the original 23 airlines by expanding its regulatory net to include the activities of cargo charter carriers who by then had started to make inroads to their markets. Indeed, apart from the approval of some Local Service airlines, themselves strictly prevented from competing with trunk carriers, the authority maintained a complete ban on new entrants until the mid 1970's. It did however seek to increase the amount of non-price competition between scheduled carriers by licensing two or three trunk airlines on most city pair markets. By 1970 of the top 135 city pair markets, based on a combination of the top 100 ranked in terms of passenger numbers and the top 100 in terms of passenger-miles, 90 had two competitors and 38 had three.³² CAB's stated objective in so doing was..."..to assure the sound development of an air transportation system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defence."

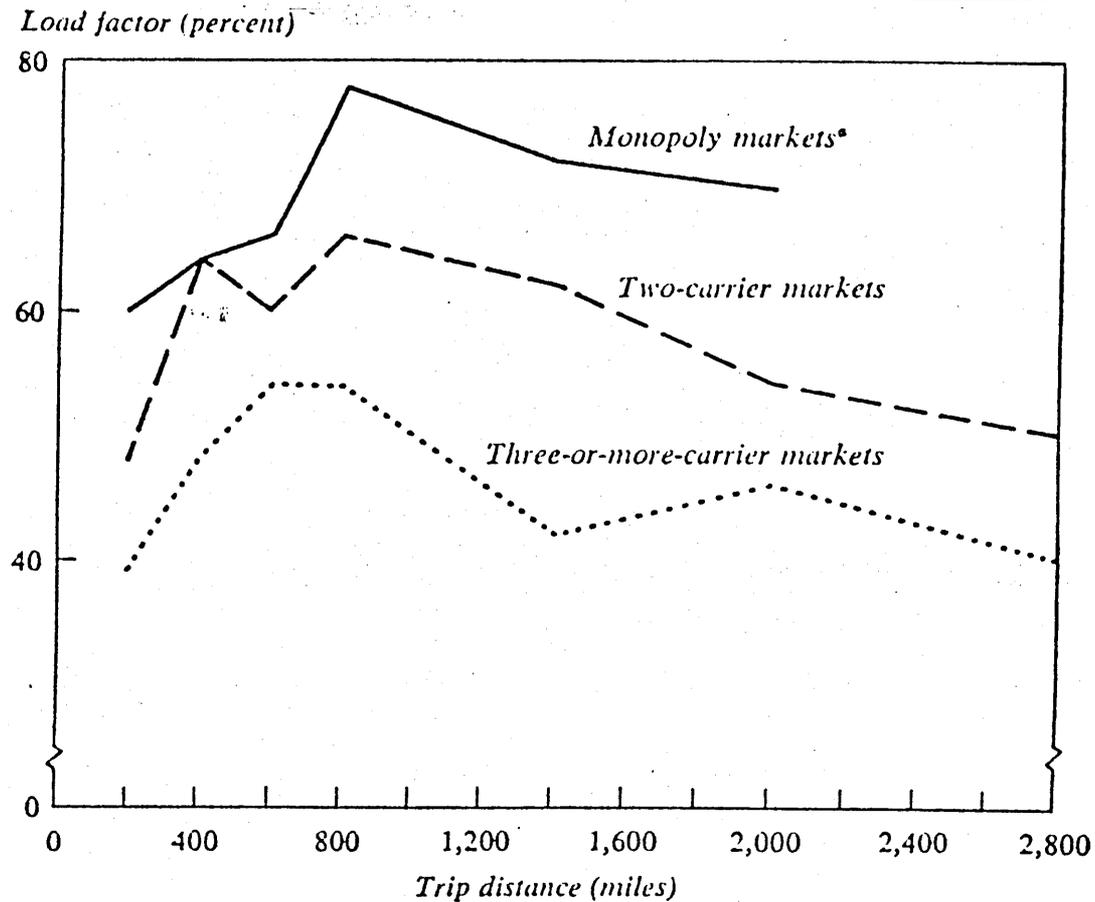
Although by today's standards it seems ironic but the Board came under fierce criticism for this pro-competition policy. Bluestone³⁴, for example, argued that the main result of attempting to introduce competition in this way had been to increase operating costs. On city pairs with two or more

licensed carriers, given an inability to vary prices, competition had manifested itself in the form of increases in service frequency, resulting in lower load factors and higher unit costs. Profitability suffered as a consequence, leading to demands from the trunk carriers for higher fares. Fruhan³⁵, using data from the mid-1960's, showed that load factor declined as the number of rivals on a route increased. Figure 2.1 summarises his findings. Douglas³⁶ using 1969 data for individual airlines in selected city pairs confirmed this and showed a more pronounced downward trend in average load factors than those indicated by Fruhan. By using a range of time valuations for travellers (\$5-\$10 per hour) Douglas had attempted to calculate optimum load factors on routes of differing length. Eads³⁷ analysed these results and concluded that..."..during the late 1960's load factors were below optimal on all but relatively shorthaul monopoly routes." This situation worsened considerably in the 1970's with carriers incurring substantial losses as a result of this and other forms of intense service rivalry.

One explanation for this was revealed by Taneja³⁹ who modelled the relationship between a carrier's output and its market share in individual city pair markets. The resulting S shaped relationship is now widely accepted and shows clearly that a unilateral decision by one carrier to reduce capacity on a route will result in a proportionally greater reduction in market share. Faced with this situation airlines according to Fruhan⁴⁰ were placed in the familiar position of the

"prisoner's dilemma"⁴¹, producing an outcome that none of them desired. Collusive action between carriers on a route could have resulted in an increase in average load factor, but this would have been only likely to have occurred under very stable market conditions. Eads⁴² attributes blame for this inefficiency on the CAB who through their willingness .."..to grant fare increases when industry profits were low, regardless of evidence that the problem resulted from scheduling rivalry, has put the Board in a position of actually encouraging such rivalry."

Figure 2.1 Load Factors, by Trip Distance and Number of Rivals



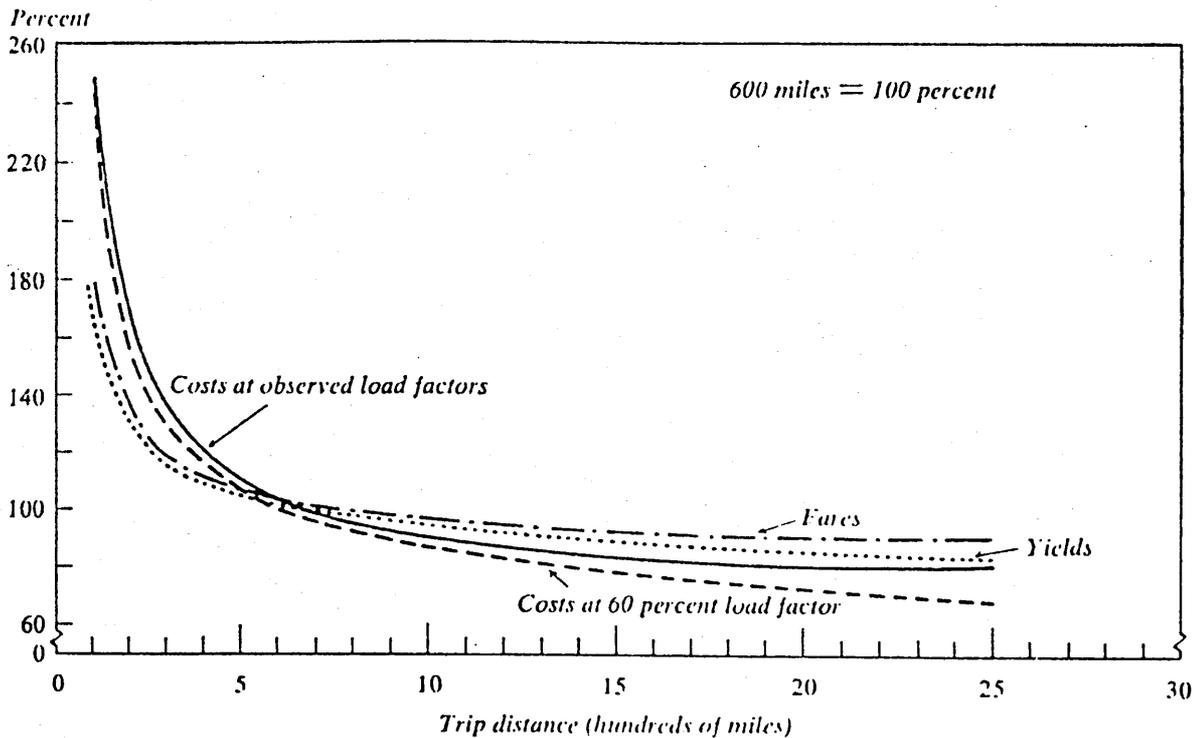
Source: Fruhan, W.E., The Fight for Competitive Advantage: A Study of the United States Domestic Trunk Air Carriers, Harvard University, Graduate School of Business Administration, 1972, p.54.

A policy of cross-subsidising short haul routes with long haul operations had also been pursued by the CAB. Eads⁴³ shows this clearly in a graphical representation of unit costs and average yields by route length using 1965/6 data. This is reproduced below in figure 2.2. That fares were allowed to exceed costs by an increasing margin as route length increased above about 600 miles, enabled long haul services to operate at lower load factors, as is indicated in figure 2.1. Competition from ground transportation provides some explanation for this as Gronau's⁴⁴ research into modal choice revealed. At distances up to approximately 600 miles, road and, in certain instances, rail transport provide a viable alternative to air travel.⁴⁵ That this mileage coincides with the CAB's cross-subsidy boundary is entirely logical and confirms the regulator's primary preoccupation of ensuring adequate provision of services to small communities.

By the early 1970's the approach favoured by a majority of economists involved the dismantling of as many economic controls as possible, allowing market forces free rein. Kahn⁴⁶ summarised the consensus viewpoint by pointing out "...that these cost-inflating service improvements have not been subjected to the test of having to compete with lower cost, lower service alternatives". Attempting to eliminate the inefficiencies resulting from excessive service rivalry in any other way was fraught with difficulty. The Federal Aviation Act specifically prevented the CAB from constraining service frequency, whilst the other option of reducing the number of

competitors on a route could realistically be achieved only through merger or the sale of a licence. To expect carriers of their own volition to agree to either of these courses of action required there to be a substantial commonality of interest. In the main, as Eads⁴⁷ comments, this was unlikely to have been a realistic expectation.

Figure 2.2 Unit Costs and Average Yields by Route Length



Source: Eads, G.C., 'Competition in the Domestic Trunk Airline Industry: Too Much Or Too Little?'; chapter 2 of Promoting Competition in Regulated Markets, edited by Almarin Phillips, The Brookings Institution, Washington, D.C., 1975, p.36.

Considerable weight was added to the deregulation cause from the experience gained in California of intrastate airline operations. On such routes the CAB had no jurisdiction, the controlling authority being the state's Public Utilities Commission whose only concern was in regulating price increases. As a consequence, airlines serving this market had been able to engage in price competition. The net impact of this was that over routes of comparable distance fares were considerably lower than on interstate city pair markets.

Jordan⁴⁸ estimated that in the absence of regulation interstate trunk fares in 1965 would have been 32% to 47% lower than they actually were.⁴⁹ He had compared fares on Californian intrastate routes operated by Pacific Southwest Airlines (PSA) with CAB regulated trunk fares in the Northeast Corridor of the country. Problems of strict comparability arose however because of the congested nature of airline operations in the latter area. Jordan attributed the success of PSA, the then leading Californian intrastate carrier, to its low fare policy and greater efficiency, which he asserted were the outcome of less regulation.

It is worth exploring the PSA case as it provided protagonists with considerable evidence in support of their case for deregulation. That the airline's lower unit costs were derived from a number of sources is clear. A key factor had been their ability to employ non-unionised pilots on a mileage flown basis, whereas trunk carriers were severely constrained in this matter by section 401 of the Civil Aeronautics Act.

Considerable economies could be achieved by concentrating on high density routes with common features. For example, PSA were able to use just one aircraft type configured for single class operation. In addition, by having the flexibility to vary fares, they were able to avoid matching the expensive service improvements of their trunk rivals. Given that all this had occurred as a result of having fewer economic constraints, it seemed reasonable to presume that this would be repeated in other markets if regulation was generally made less restrictive. That a large number of Californian intrastate airlines had failed was not regarded as being of any great consequence. Trunk carriers had by comparison not been allowed to go under.⁵⁰

The overwhelming weight of evidence that was compiled by researchers during the 1960's convinced most observers that the CAB's primary preoccupation with protecting the airlines it had been given the jurisdiction of back in 1938 could no longer be regarded as being in the public interest. However, rather than pressing for a gradual change in the regulatory system, the main body of opinion was for complete economic deregulation. The consequences of this decision forms the basis of the following chapter.

References and Footnotes:

24. A detailed account of this period is provided by:
Solberg,C., Conquest of the Skies: A History of Commercial Aviation in America, Little Brown & Co., Boston, 1979; and
Davies,R.E.G., Airlines of the United States Since 1914, Smithsonian, Washington, D.C., 1972.
25. The Post Office allocated contracts to the lowest bidders, but these rates could be adjusted later by the Interstate Commerce Commission to ensure profitability.
26. Levine,M.E., 'Regulating Airmail Transportation', Journal of Law and Economics, Vol.18, No.2, pp.317-47, 1975.
27. The Civil Aeronautics Authority changed its name to the Civil Aeronautics Board in 1940.
28. The term 'grandfather' rights in this context refers to the allocation of route licences.
29. By 1978 as a result of consolidation and merger this number had reduced to 11.
30. Davies,R.E.G., supra note 24.
31. Bailey,E.E., Graham,D.R., & Kaplan,D.R., Deregulating the Airlines, MIT Press, Cambridge, Mass., 1985, pp.18-20.
32. US Dept. of Transportation, "Top City Pairs, 1970", 1971.
33. CAB 72 Stat.740, 49 U.S.C. 1302(d).
34. Bluestone,D.W., 'The Problem of Competition Among Domestic Trunk Airlines - Part 1', Journal of Air Law and Commerce, Vol.20, Autumn 1953.
35. Fruhan,W.E., The Fight for Competitive Advantage: A Study

of the United States Domestic Trunk Air Carriers, Harvard Graduate School of Business Administration, Division of Research, Boston, Mass., 1972. In this he defines monopoly to mean 80% or more market share.

36. Douglas, G.W., 'Excess Capacity, Service Quality and the Structure of Airline Fares', Transportation Research Forum, October 1971.

37. Eads, G.C., 'Competition in the Domestic Trunk Airline Industry: Too Much or Too Little?'; chapter 2 of Promoting Competition in Regulated Markets, edited by Almarin Phillips, The Brookings Institution, Washington, D.C., 1975.

38. The introduction of wide-body aircraft was a key factor here.

39. Taneja, N.K., 'Airline Competition Analysis', Flight Transportation Laboratory Report R-68-2, Massachusetts Institute of Technology, September 1968.

40. Fruhan, supra note 35.

41. The Prisoners' Dilemma game highlights the possibility of firms making gains from cooperation.

42. Eads, supra note 37.

43. Eads, supra note 37.

44. Gronau, R., 'The Effect of Travelling Time on the Demand for Transportation', Journal of Political Economy, Vol.78, pp.377-94, March/April 1970.

45. This applied to individual travellers; with groups a greater distance was revealed.

46. Kahn, A.E., The Economics of Regulation: Principles and

Institutions Volume 2, John Wiley, 1971.

47. Eads, supra note 37.

48. Jordan, W.A., Airline Regulation in America: Effects and Imperfections, The John Hopkins Press, Baltimore, 1970.

49. Load factors as a result were substantially higher for the intrastate airlines.

50. 14 out of 16 intrastate carriers had failed, whilst all 22 of the original trunks had survived, either intact or in a merged form.

Chapter 3 Deregulation of the US Scheduled Airline Industry

Back in 1978 few, if any, airline executives had any realistic conception of how economic freedom would affect their industry. This was hardly surprising given that the decision-making skills they had acquired over the previous forty years would bear little resemblance to those that would be necessary to ensure survival in the competitive free for all they were about to experience for the very first time. The regulatory policies pursued by the CAB had provided carriers with a high degree of protection from the more usual forms of competition experienced in other industries. As was made clear in the preceding chapter, service frequency and inflight facilities had provided the only scope for managers to compete with a co-licensee on a route.⁵¹ All importantly the need to provide one's own protective barriers against competitive threats from existing and potential rivals in a dynamic and often unpredictable business environment, something that managers operating in less privileged industries would regard in the same vein as breathing, was a totally new phenomena.

When the airline industry was first deregulated approximately one in four passengers interlined⁵², most carriers being signatories to a multilateral agreement which required the honouring of tickets issued by participants.⁵³ The CAB's strategy of segmenting the industry into trunk, local service and commuter operations with each carrier servicing its

own respective markets, coupled with a highly restrictive route entry policy, had resulted in a system of linear route networks⁵⁴ being operated by the trunk carriers. At the same time these policies had provided airlines with a highly stable operating environment, so enabling the high degree of interdependence. With their protected status removed trunk carriers with their high operating costs and decentralised route networks were particularly vulnerable to attack by low cost new entrants.

An important early stage in the restructuring process that deregulation produced involved the reorientation of airline route networks into hub and spoke systems. Other developments of a more innovative kind have followed to further exploit the various economies that such networks are capable of producing. These have included the metamorphosis of Computer Reservation Systems (CRS), formerly employed as cost saving devices to process large amounts of flight reservations data, into the most successful airline marketing tool ever devised. The CRS has enabled their owners to capture travel agents, effectively tying these allegedly autonomous companies into supplying their customers with the output of the owning carrier. In addition, the information collated by these systems has enabled their owners to be most adept at targeting any response to a competitive challenge. The combination of a CRS and a carefully devised route network based on the hub and spoke principle has provided those so endowed with a degree of competitive advantage that has proved impossible to match for other than

those similarly equipped. A detailed examination of this feature of the deregulated airline market forms a significant part of this chapter.

A number of other factors have played key roles in replacing the protective aspect of the operating environment that economic freedom removed. The use of frequent flier programs to ensure consumer loyalty and so safeguard market share has advantaged the larger network operators, especially those owning a CRS. The rights of incumbent airlines to take-off and landing slots has made it extremely difficult for new entrants to establish flight schedules at attractive times of the day.⁵⁵ Their relative scarcity has made them very valuable assets, taking them beyond the financial reach of many smaller airlines. Code-sharing alliances have enabled carriers to extend their networks in cost-effective ways, simultaneously neutralising a number of possible future competitors. More recently major airlines have been acquiring a number of their associated commuter carriers, with American being the first to create a nation-wide in-house network of feeder services.⁵⁶ The aim has been to tailor the supply of airline services to that demanded in as efficient a manner as possible, this being easier to accomplish when all the available resources are under direct control. In addition, the financial economies derived from large scale purchase of aircraft has been significant.

When taken together the net impact of these various developments has been such as to provide positions of market dominance to a small number of large carriers. The only other

survivors of this period of rapid change are those that either have been satisfying a specific niche market, such as Southwest, or have developed a hub that has, as yet, not been directly challenged by the major carriers, such as America West at Phoenix. One or two others, like Pan Am, although still in existence are in reality simply awaiting the inevitable.

(Appendix 1 provides details of how the various new entrants to the interstate markets have fared over the past decade and lists market shares of each large carrier.) The distribution of industry profits between carriers would tend to suggest that the balance that currently exists is unlikely to prevail for long. For example, in 1988 American, Delta, United, and USAir accounted for some 86% of total industry operating profits, whilst producing only 51% of total ASK's.

Each of the above mentioned factors will now be examined in the chronological order in which they have appeared. Particular attention will be paid to the relative importance of each both in terms of the process of building immunity to competitive attack and in the subsequent exploitation of the market power resulting from this achievement.

3.1 The Impact of Hub and Spoke Networks

The highly vulnerable nature of the linear route systems operated by the trunk airlines to competition was clearly demonstrated in the immediate period following the passing of the Deregulation Act in 1978. The more profitable high density city pair markets were quickly targeted by both new entrants⁵⁷ and trunk operators. United, for example, embarked on a policy of vacating their more lightly trafficked routes in order to concentrate on such endeavours, selling off some of their smaller aircraft in the process. These more profitable routes were rapidly transformed into loss makers for the higher cost trunk carriers as fares tumbled, highlighting the folly of such an ill-conceived strategy.⁵⁸ It rapidly became apparent that in order to compete against lower cost and more efficiently organised new entrants necessitated a very different plan of campaign by the large carriers. Developing a competitive advantage that would prove difficult to counter in this radically new environment became of paramount importance.

The first stage in this process involved these carriers redesigning their route systems into the now familiar hub and spoke configurations. By concentrating resources in this way airlines were able through the better utilisation of their aircraft and flight crews to derive considerable economies of density⁵⁹. At the same time economies of scope were obtained through the carriage of passengers with different origins or destinations on the same aircraft, resulting in 5-10% higher

load factors on routes radiating from a hub.⁶⁰ The combined effect was such as to provide a level of service that rivals not operating from a hub found hard to match. Several of the former local service airlines already had developed networks based on this concept and so were well placed to enter the longer haul markets that deregulation made accessible. In addition, the smaller aircraft operated by these airlines enabled them to serve less dense city pair markets more effectively by allowing a greater frequency of service than their larger rivals.

That this type of route system provided the most efficient way of overcoming the production indivisibilities inherent in the use of large aircraft is demonstrated in an engineering study by Kanafani⁶¹ into the relationship between aircraft technology and network structure. He examined the operation of a hypothetical commuter airline providing short haul services within a 500 km radius of Atlanta. When the results of this operation were compared with another more realistic airline system Kanafani found that..."... connectivity decreases with aircraft size and with a 140 seat aircraft the network reaches nearly a hub and spoke system." This carrying capacity was the largest he considered, and it clearly shows that technically the best means of overcoming these indivisibilities is to develop route systems based on the hub and spoke principle. An idea as to how large these production indivisibilities are is provided by Levine⁶² in an extensive paper dealing with US airline deregulation.

Such a regime allowed an airline equipped with aircraft of a given size to offer significantly more connections between cities than would have been possible by concentrating only on direct services.⁶³ The most effective way for the major carriers to turn this to their advantage therefore was by operating as comprehensive a route network as possible. In this way it became easier for operators with larger aircraft to compete in less dense markets, as raising the number of destinations served from a traffic hub enabled them to increase the size of aircraft and/or service frequency that could be operated to any one point in a network. The example given below provides a simple insight into this feature of the hub and spoke system.

Table 3.1 cites the case of an airline carrying traffic from town A to a hub at city B. If the number of locations that can be effectively served from A via B is set at three, then on the basis of the demand levels indicated it would be feasible to offer only three flights per day using a 30 seat commuter aircraft, such as the Saab 340. As the number of spokes from B is increased it is clear that aircraft size and/or service frequency can be raised, assuming that these locations are not better served via another traffic hub. Once it becomes possible for the carrier based at B to operate jet aircraft to A, then even a long established local airline flying the route will become progressively less able to compete as the number of destinations served from B increases. In these circumstances a non-hub airline is likely to attract less traffic,

necessitating the use of smaller, less appealing equipment.

Table 3.1 Example of a Carrier Operating to Hub A

Daily Flow	<u>A-B</u>	<u>A-C</u>	<u>A-D</u>	<u>A-E</u>	<u>Total(A-B)</u>
(both directions)	20	40	10	30	100

(Assuming a 50% target load factor and three return services a day between A and B, the aircraft seating capacity required would be 33. If however a further six spokes were added to the network from B resulting in total traffic being attracted to travel between A and B reaching 250, then an aircraft seating around 85, such as a DC-9-10, would be warranted.)

As mentioned above, a number of the former local service airlines were at the outset of deregulation already operating hub and spoke networks. In addition, many of these regional carriers had developed their own feeder services, effectively reducing their reliance on the trunk airlines.⁶⁴ Given that many of them enjoyed significantly lower operating costs than their larger rivals, they were able to take advantage of their superior efficiency and, as a consequence, rapidly expand their operations.⁶⁵ The relative profitability of these national airlines in the years following deregulation has been critically dependent however on their ability to maintain a monopolistic position on the majority of their routes.⁶⁶

The benefits of operating an exclusive route network is demonstrated clearly when comparisons are made between the experiences of Frontier and those of USAir (known as Allegheny until 1979). Despite having established well before the advent of deregulation an extensive hub and spoke network based on

Denver, Frontier rapidly became unprofitable when Continental and United began to expand their operations there. Given their extensive national networks, passengers travelling via Denver were quickly attracted to the services of these two companies. That Frontier enjoyed a good reputation with consumers for service quality and had developed a strong market presence in the area was of little consequence in comparison to the network attractions of the two major airlines. The monopoly index devised by Toh and Higgins⁶⁷ showed that by 1982 the former local service carrier was facing a considerable degree of competition in its markets, whilst by comparison USAir continued to have a virtual monopoly on many of the routes it operated from its Pittsburgh hub. The latter company's continuing concentration on short range operations, serving small and medium-sized locations, had been a crucial factor in it not being closely challenged by other carriers.⁶⁸ That other airlines either were not interested in developing operations at Pittsburgh or had been prevented from obtaining the necessary slots at constrained airports enabled USAir to remain profitable.⁶⁹

It is apparent therefore that developing a coherent route network based on a central hub was only one of a number of conditions necessary for survival in the new era. Denver proved to be an attractive location for hub development to both Continental and United and it was undoubtedly this that led to Frontier's poor financial position and its ultimate acquisition in 1986. That its route network had lacked a central

Some idea of the importance of traffic hubs is indicated by the extent and speed with which these have developed. Prior to deregulation only Atlanta (Delta & Eastern), Chicago (United & American), Dallas (Braniff), Denver (United & Frontier), and New York (JFK) functioned as major traffic hubs. By 1987 however there were no less than 30 airports performing this role. Table 3.2 provides details of the proliferation of hubs between 1979 and 1988. An indication of the impact of this route restructuring on traffic flow is provided by Phillips⁷⁰ who showed that between 1977 and 1984 whilst total domestic enplanements increased by 24% those at the major hubs had nearly doubled. (By convention a large hub is defined as one which attracts at least 1% of total domestic enplanements.) Table 3.3 lists the hubs developed by each major carrier in the decade following deregulation and shows the % of flights operated by each company from these locations. An impression of the substantial amount of route restructuring that occurred is given in figures 3.2, 3.3 and 3.4, which contrast the networks operated by Braniff, United, and Western before and after this phase of hub development. Table 3.4 shows the % of domestic enplanements carried by the dominant airline at each major hub, whilst figure 3.5 provides a map showing the main traffic flows of the industry as a whole. A good deal of hub expansion in the mid and late 1980's has been achieved by merger and acquisition, which often has appeared a more attractive option than slogging it out with competitors. The background to the governmental approval of this move toward greater market

concentration and the implications of this for competition are discussed in detail in the following chapter.

Table 3.2 Proliferation of US Domestic Hubs

<u>Airport</u>	<u>Airlines Hubbing in 1979</u>	<u>Airlines Hubbing in 1988[#]</u>
Atlanta	Delta/Eastern	Delta(58%)/Eastern(36%)
Baltimore	-	Piedmont
Chalotte	-	Piedmont(92%)
Chicago(Midway)	-	Midway
Chicago(O'Hare)	American/United	United(51%)/American(29%)
Cincinnati	-	Delta
Dallas/FtWorth	American/Braniff	American(64%)/Delta(26%)
Dallas(Love)	Southwest	Southwest
Dayton	-	Piedmont
Denver	Frontier/United	United(44%)/Contin'l(43%)
Detroit	-	Northwest(59%)
Houston	-	Continental(77%)
LaGuardia	-	Eastern(23%)
Memphis	-	Northwest(84%)
Miami	-	Eastern(45%)
Minneapolis	Northwest	Northwest(78%)
Nashville	-	American
New York(JFK)	-	Pan Am(29%)/TWA(27%)
Newark	-	Continental(43%)
Philadelphia	-	USAir(37%)
Phoenix	-	America West(44%)
Pittsburgh	USAir	USAir(85%)
Raleigh-Durham	-	American
Salt Lake City	-	Delta(79%)
San Francisco	United	United(40%)
Seattle	United	United(31%)/Alaska(21%)
St Louis	TWA/Ozark	TWA(83%)
Washington(Dulles)	-	United

[# - First six months. %'s refer to enplanements.]

Sources: Treital, D. and Godly, M., 'Growing into New Hubs',
 Airline Business, September 1988, p.44; & Aviation Daily,
 Washington, DC, 14 April 1989, pp.104-6.

Table 3.3 Hub Location & % of Flights Operated by Carrier

<u>Airline</u>	<u>1978</u>		<u>1986</u>		<u>1988[#]</u>	
American	Chicago	26	Dallas	42	Dallas	64
	Dallas	19	Chicago	28	Chicago	29
Continental	Denver	30	Houston	44	Houston	77
	Los Angeles	14	Denver	36	Denver	43
					Newark	43
Delta	Atlanta	35	Atlanta	42	Atlanta	58
	Chicago	9	Dallas	16	Salt Lake	79
					Dallas	26
Eastern	Atlanta	34	Atlanta	41	Miami	45
	Miami	11	Miami	10	Atlanta	36
Northwest	Minneapolis	30	Minneapolis	36	Minn'lis	78
	Chicago	23	Detroit	13	Detroit	59
					Memphis	84
TWA	Chicago	25	St Louis	60	St Louis	83
	St Louis	19	JFK	17	JFK	28
United	Chicago	27	Chicago	35	Chicago	51
	San Fran'co	13	Denver	16	Denver	44
					San F'co	40
USAir	Pittsburgh	26	Pittsburgh	46	Pittsburgh	85
	Philadelphia	18	Philadelphia	17	Phil'phia	37
Western	Los Angeles	33	Salt Lake	49	-	
	Las Vegas	16	Los Angeles	23	-	

(# - First six months. 1988 data refers to enplanements.)

Table 3.4 Enplanements by Dominant Carriers at Major Hubs (%)

<u>Hub</u>	<u>1977</u>		<u>1984</u>		<u>1988[#]</u>	
Chicago(O'Hare)	United	30	United	46	United	51
Atlanta	Delta	50	Delta	52	Delta	58
Dallas-Ft Worth	Braniff	34	American	61	American	64
Los Angeles	United	28	United	22	United	19
Denver	United	32	United	40	United	44
Newark	Eastern	30	People Ex	50	Continental	43
San Francisco	United	42	United	37	United	40
La Guardia	Eastern	31	Eastern	32	Eastern	23
Boston	Eastern	24	Eastern	22	Eastern	19
St Louis	TWA	40	TWA	58	TWA	83
JFK	American	18	TWA	21	Pan Am	29
Washington(Nat)	Eastern	28	Eastern	24	Eastern	23
Pittsburgh	USAir	46	USAir	77	USAir	85
Minneapolis	Northwest	46	Northwest	47	Northwest	78
Phoenix	American	27	Republic	19	America West	47
Miami	Eastern	38	Eastern	47	Eastern	45
Houston(Int)	Contin'al	37	Contin'al	45	Continental	77
Detroit	Delta	21	Republic	29	Northwest	59
Seattle	United	32	United	28	United	31
Las Vegas	Western	27	United	16	America West	37
Philadelphia	USAir	22	USAir	24	USAir	37

Charlotte	-	-	Piedmont	74	Piedmont	92
Orlando	-	-	Eastern	27	Delta	26
Tampa	Eastern	31	Delta	23	Eastern	21
San Diego	-	-	PSA	26	American	16
Salt Lake City	-	-	Western	71	Delta	79

(# - First six months.)

(Data sources for table 3.3 are Aviation Daily, Washington, DC, 14 April 1989, pp.104-6; & Jenks,C., 'US Airlines Hubs and Spokes', Travel & Tourism Analyst, August 1986, p.30. Table 3.4 data sources are Phillips,L.T., 'Structural Change in the Airline Industry: Carrier Concentration at Large Hub Airports and Its Implications for Competitive Behaviour', Transportation Journal, Winter 1985, p.24; & Aviation Daily, Washington, DC, 14 April 1989, pp.104-6.)

Figure 3.2 Braniff's Route System in 1976, 1981, and 1988

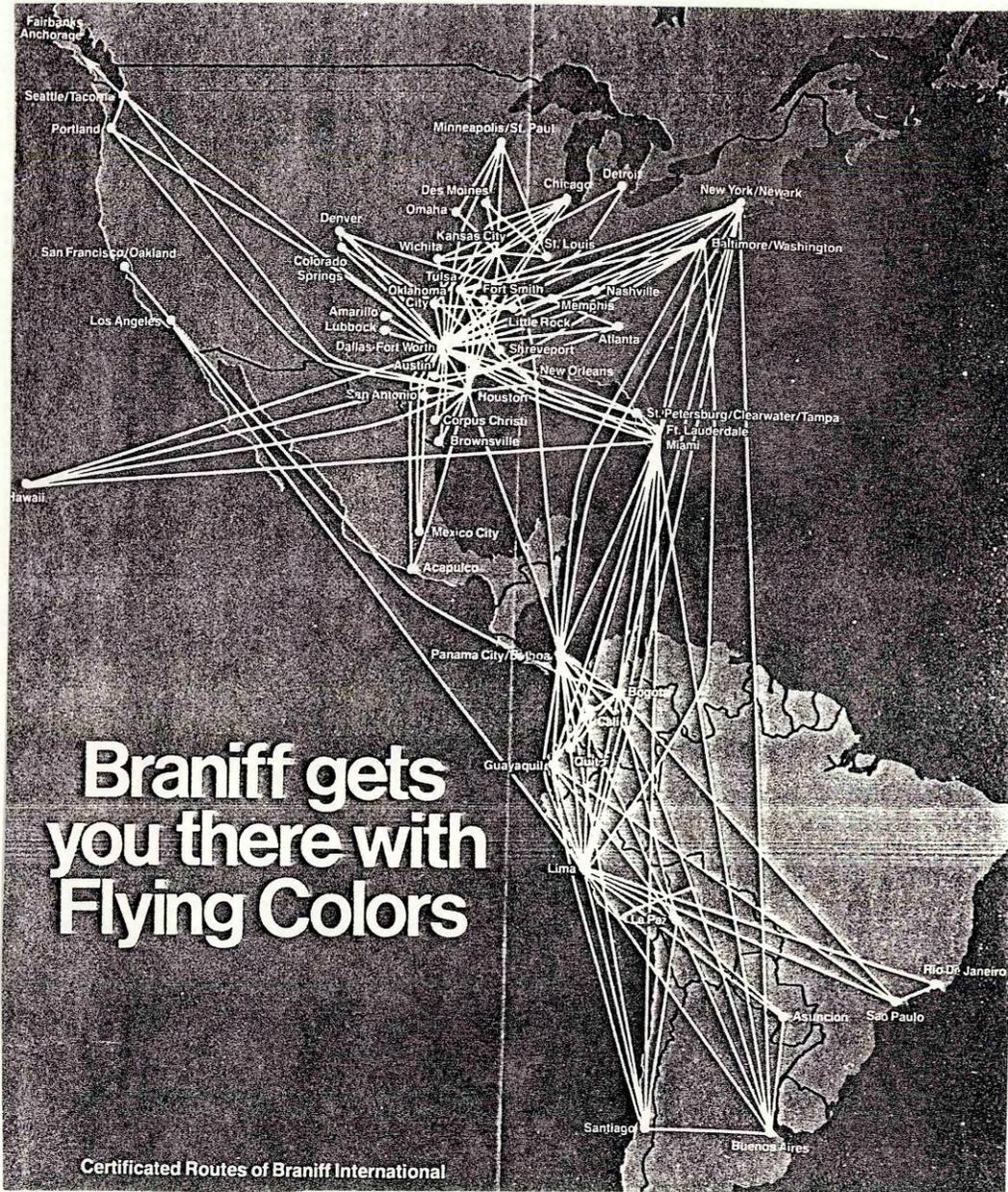


Figure 3.2 continued

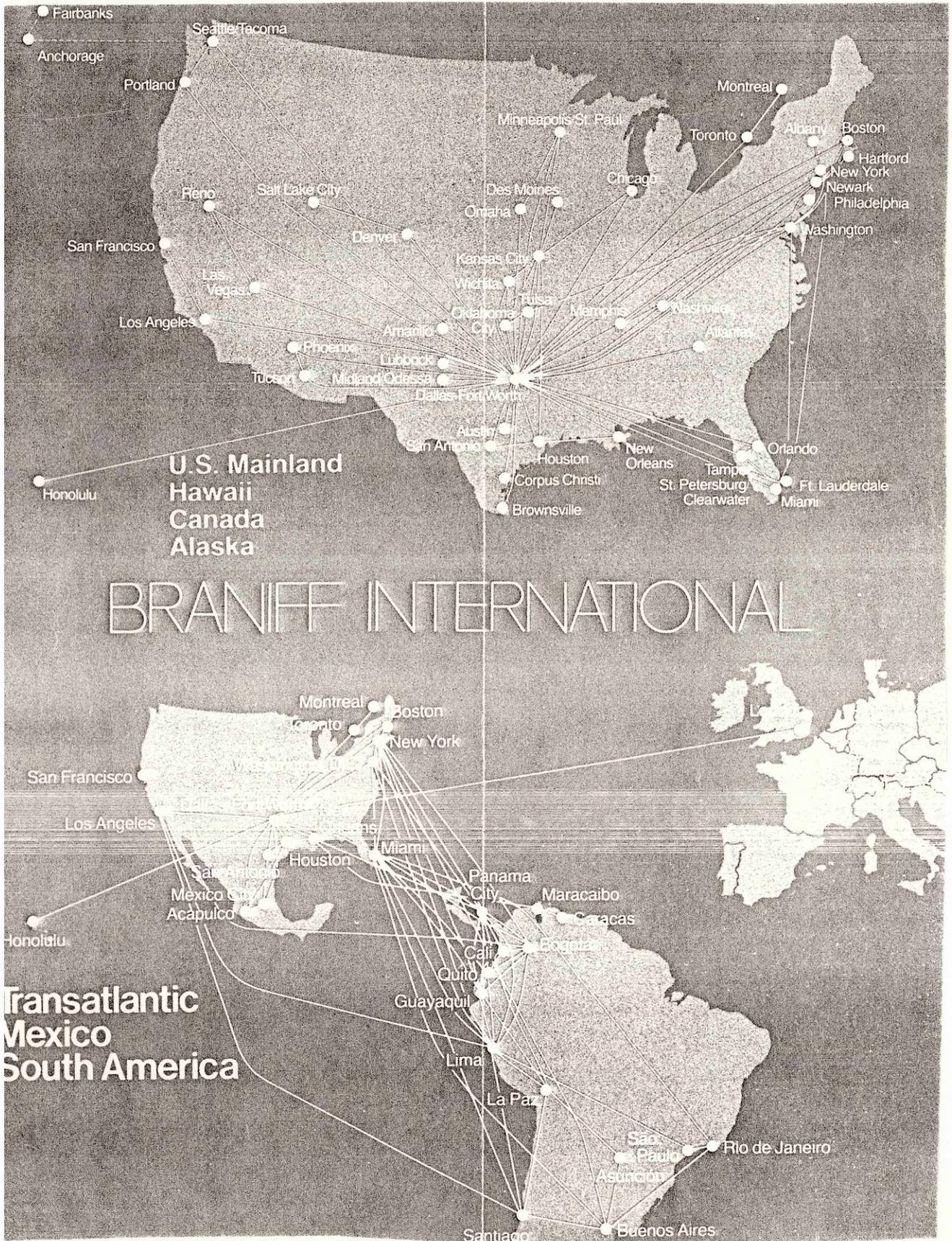


Figure 3.2 continued

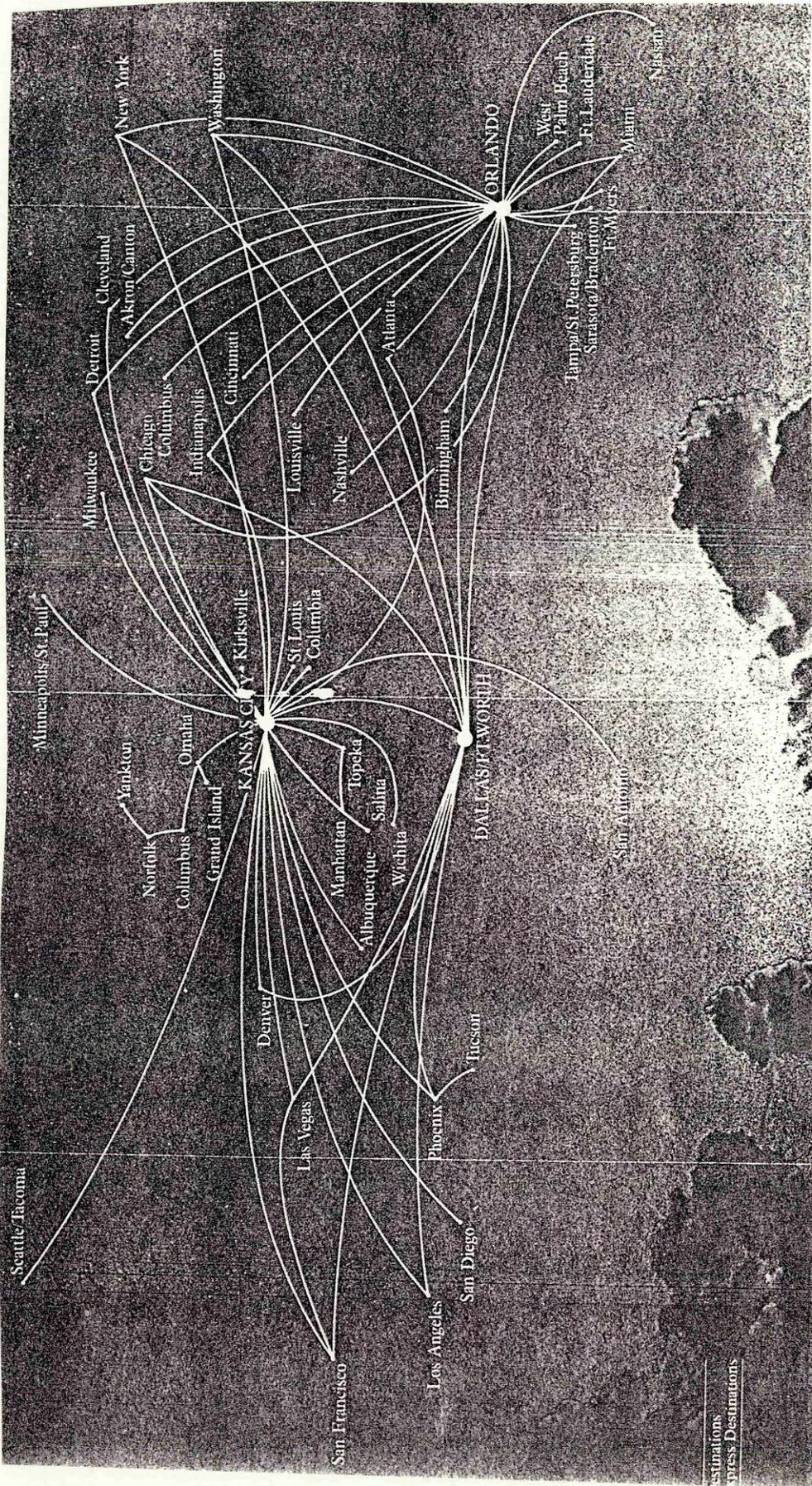


Figure 3.3 United's Route System in 1976 and 1983

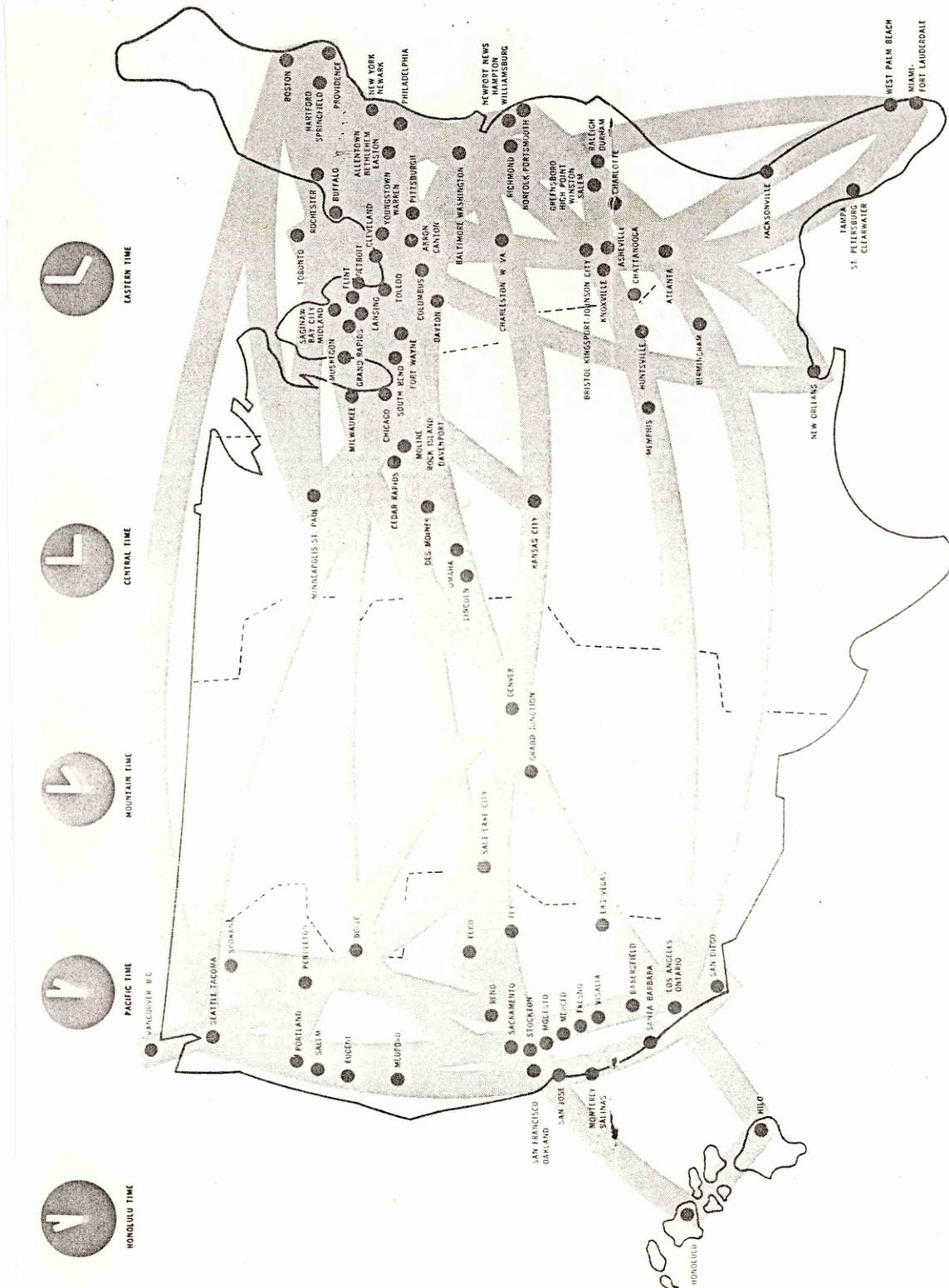


Figure 3.4 Western's Route System in 1980 and 1983

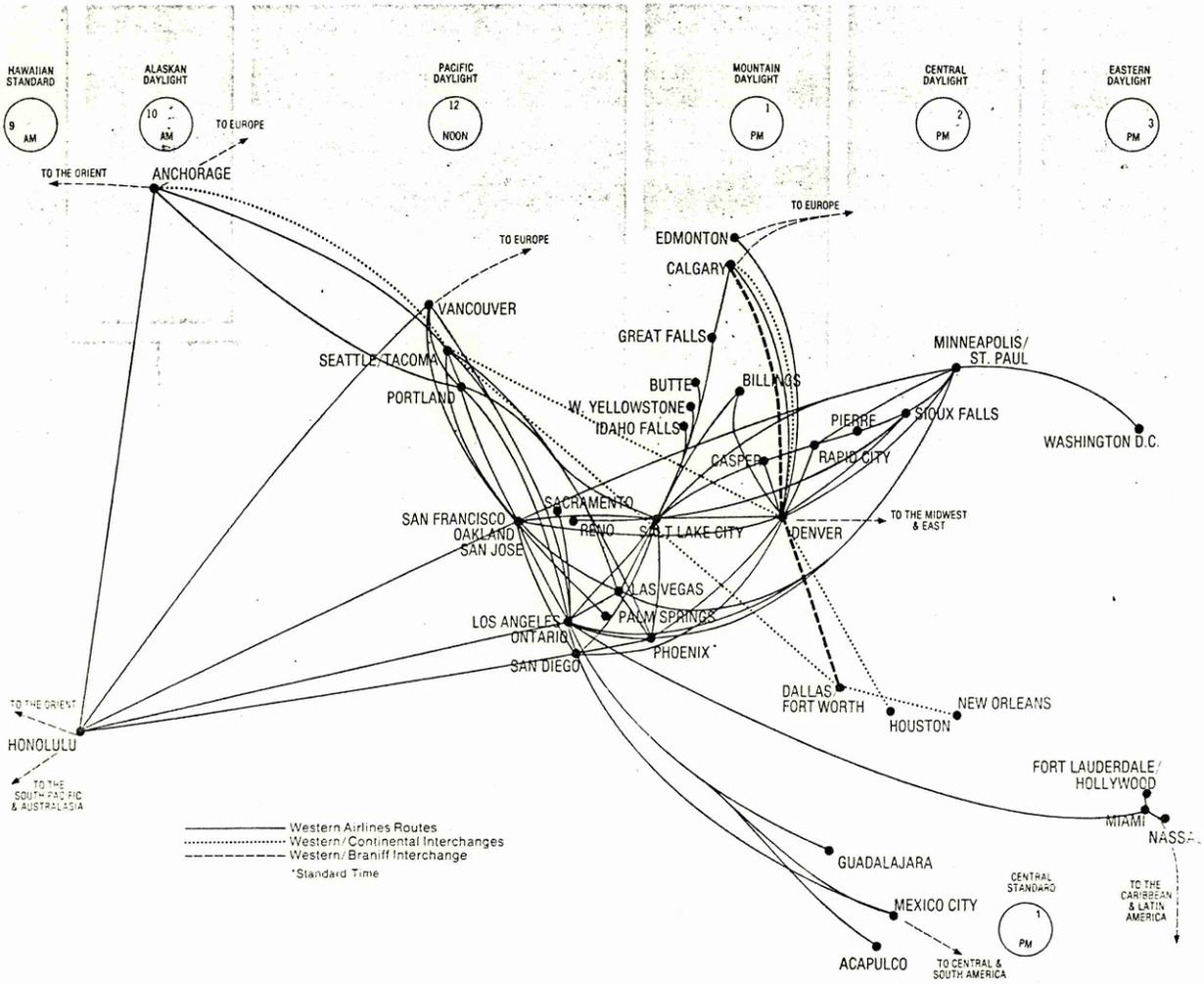


Figure 3.4 continued

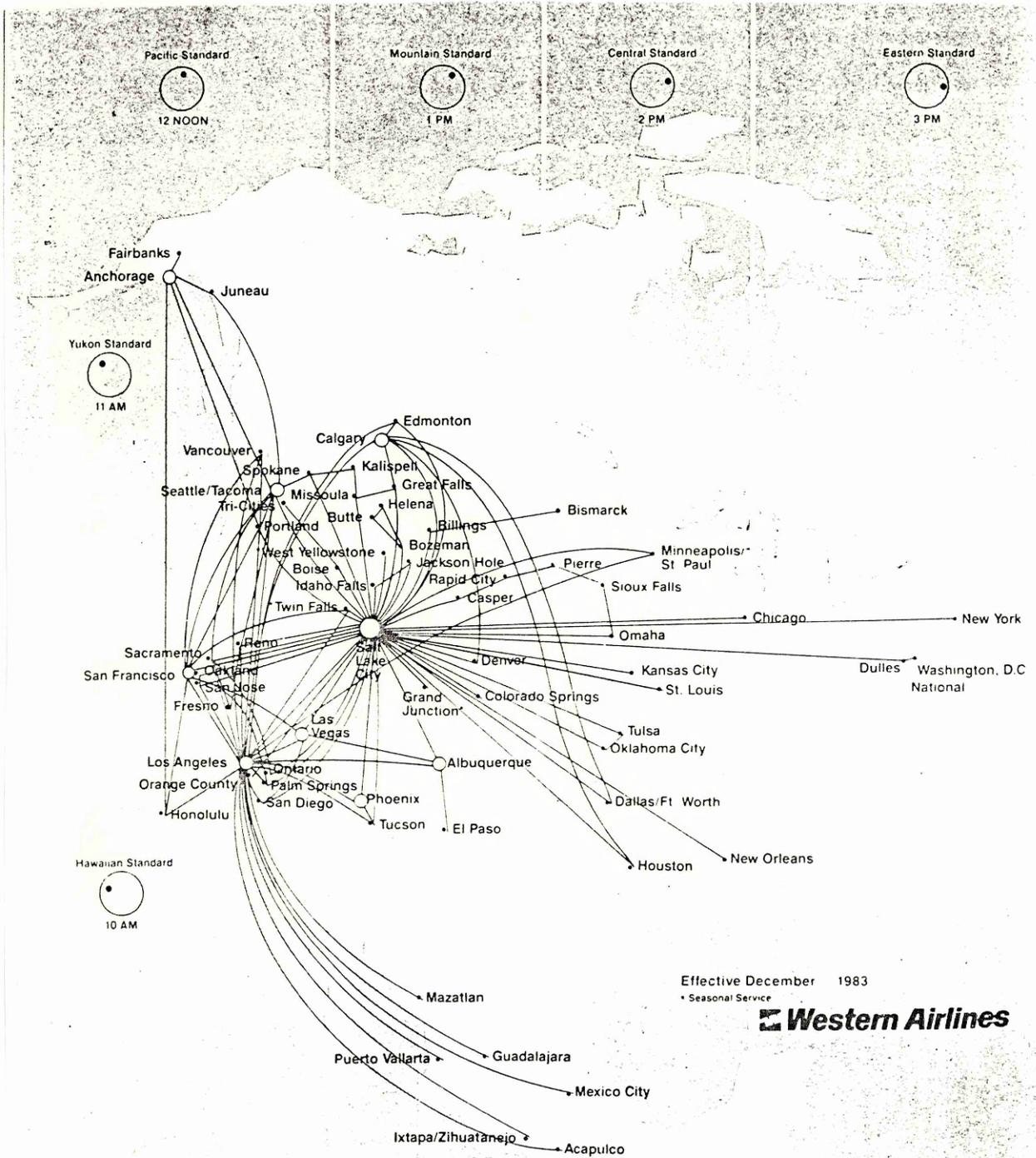
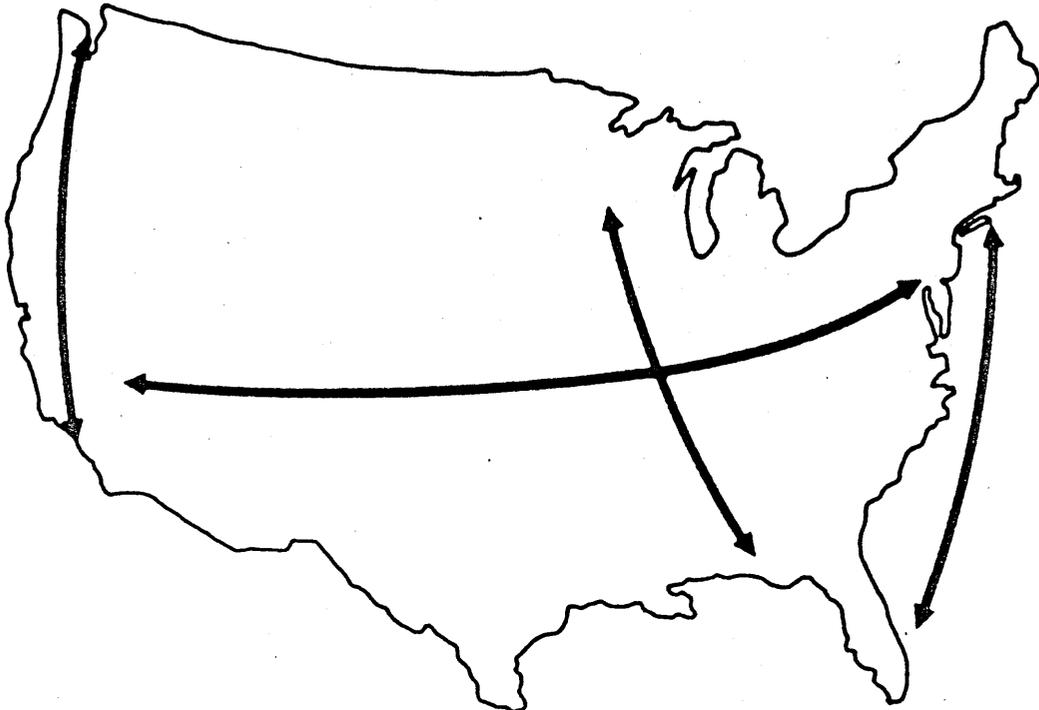


Figure 3.5 Main US Domestic Traffic Flows



The major patterns of US traffic flow

It is apparent therefore that the hub and spoke system of operating a network of services became the first means by which established carriers were able to protect their markets. The commonality of interest that the era of tight regulation had produced in which carriers had been forced to be mutually reliant in supplying each other with feeder traffic was quickly replaced by a situation in which it was imperative for each carrier to be as self-reliant as possible. A hub and spoke system reduced the scale of this dependency, simultaneously providing a degree of protection from would-be interlopers.

Carriers offering only a point to point service would, all things being equal, achieve lower load factors than an airline operating the same route from a hub. Unless the former had significantly lower operating costs, or had some means of differentiating its product, it would operate at a relative disadvantage to the latter.⁷¹ This first and necessary step in the path to developing a sustainable competitive advantage is an important distinguishing characteristic of those that have survived economic freedom.

3.2 The Impact of Computer Reservation Systems

To argue that the CRS has had a significant impact in determining the structure of the deregulated airline industry is to understate its importance. This amazing adaptation of computer technology has played a crucial role in enabling a small number of carriers to achieve positions of market dominance. An in-house CRS has provided airline managers with a degree of clarity about the demand for their various offerings that one ordinarily would associate only with the hypothetical examples contained in elementary microeconomics textbooks. Indeed given the existence of independently owned CRS's it is highly probable that the restructured airline industry would exhibit far less market concentration than it does today. There can be few industries that are characterised by the ability of a number, but not all, of their largest firms to control the sale of their products through retail outlets that they do not own, whilst simultaneously getting their rivals to be so dependent that they have little choice but to supply them with what normally would be regarded as highly confidential information. Indeed I doubt it to be a very heroic gesture on my part but I would venture to assert that it is unique!

The objectives of those first involved in developing the CRS were of themselves fairly innocuous. American initiated this activity in the late 1950's when it set out to establish a real-time data processing system which would enable it to access the flight details of any of its passengers at all of

the company's locations. In all it took IBM and American six years to perfect Sabre (Semi-Automated Business Research Environment), with the system coming on stream in 1964. TWA and United were quick to follow in developing their own systems, which at this stage were regarded by all involved as purely labour and time saving devices for handling large and growing amounts of reservations data. A number of attempts were made in the late 1960's and during the 1970's to develop a single industry-wide system with the aim of minimising unnecessary duplication, but all proved unsuccessful. One such system, Marsplus, remained active for several years servicing some 300 agencies. Some of the background to these 'neutral' proposals are provided by Feldman⁷², who remarks with some irony that one of the reasons for their failure was .."..fear of the government's suspicions that a joint system would be anti-competitive". A public commitment however by both American and United that they would make their systems available to travel agents made the huge investment necessary to establish an additional independent CRS even less attractive.

As will be made clear below, whereas airlines subsequently have been able to derive substantial incremental revenues by biassing information display and adopting incentive commission packages that reward travel agents for abandoning their impartiality, a non-airline owned system would had to have relied exclusively on fees received from agents and airlines. Tight regulation and the concomitant high degree of airline interdependence precluded anyone from thinking that of itself

the ability to access such large amounts of data could render a position of considerable power.

United became the first carrier to install a CRS in a travel agency in 1975. It was quickly overtaken however by American who within a year had signed up 90 of the top 100 companies.⁷³ At this stage agents paid directly for this automated service, with each receiving an identical amount of sale's commission irrespective of which carrier's flights were booked.⁷⁴ This ostensibly benign approach to the use of the new technology however rapidly became transformed into one displaying considerable self-interest once the previously secure markets of the larger carriers began to be eroded. Following deregulation the number of options facing travellers in terms of their choice of carrier, routing, and fare increased beyond all recognition. Passengers could no longer rely on individual airlines to provide them with a comprehensive listing of the alternatives available to them. Their only reliable and seemingly independent way of accessing this information involved them using the services of travel agents. How crucial a piece of equipment the CRS has been to the travel agency industry is shown by the information contained in table 3.5. Within a decade a considerable transformation had occurred such that by the mid 1980's all but a small minority of agencies were equipped with a CRS.

Table 3.5 Number of Travel Agents and % Equipped with CRS

<u>Year</u>	<u>No. of Agents</u>	<u>% with CRS</u>
1977	13454	5
1979	16112	24
1981	19203	59
1983	23059	85
1985	27193	90
1987	29370	95

Source: Feldman, J., 'CRS in the USA', Travel & Tourism Analyst, September 1987, p.5.

The removal of constraints on route entry and fares resulted in a considerable change in the way passengers both accessed information about flights and subsequently booked them. Prior to deregulation around two thirds of bookings were made direct with airlines, but by the mid 1980's some 80% were being made via travel agencies.⁷⁵ Although the total number of agencies has increased substantially as a result of this, to a large extent this gives a misleading impression of how this particular market has changed. As remains the case in many industries, a relatively small number of companies still account for a large % of total sales. Wardell⁷⁶, for example, estimated that in 1985 over 37% of sales were accounted for by fewer than 4% of agencies. (Table 3.6 reproduces his analysis of sales volumes for the U.S. travel agency business in 1985.) That CRS vendors have had a great deal to gain by extracting exclusive contractual agreements from the larger agencies follows directly from this.

Table 3.6 U.S. Travel Agencies in 1985

<u>Volume of Sales</u>	<u>No. of Agencies</u>	<u>% of Total</u>	<u>% of Sales</u>
<\$5m	20427	96.5	62.3
\$5-15m	587	2.8	15.3
\$15-40m	111	0.5	8.1
>\$40m	42	0.2	14.3

Source: Wardell, D., 'Airline Reservation Systems in the USA', Travel & Tourism Analyst, January 1987, p.52.

In the first few years following the introduction of the CRS to travel agencies airlines naturally concentrated on locating their equipment in the geographic regions in which they operated their most services. In order to obtain a wider coverage some CRS owners entered into reciprocal agreements with other airlines to make use of their machines in areas where they had only a minor market presence. With restrictions on route entry lifted however airlines quickly expanded their networks and this arrangement was superseded by one in which each of the major CRS owners found it incumbent to install their own equipment with as many agencies as possible. At first some agents adopted more than one system, but this practice was swiftly curtailed by airline vendors who by supplying CRS equipment to agents at little or no cost were able to persuade retailers to sign exclusive contracts with them. As Levine⁷⁷ has remarked, this made good commercial sense to both parties as ... "The agency enjoyed the benefits of automation at prices deliberately kept low by the system provider, in return for which the agency passed the costs of more restricted choice on to its consumers". Customers would continue to believe that

they were receiving an impartial service from their travel agent, and even if they did not it would be exceedingly difficult for them to establish what other options had been available to them at the time their flights were booked. Given the geographical concentration of CRS's, turning to the services of another agent in the locality would be unlikely to prove of any benefit in this regard. For example, Apollo is the dominant CRS in Denver accounting for some two-thirds of travel agency revenues.⁷⁸

The impact of the CRS on the airline industry's structure would not have been so great had more carriers developed their own systems. In reality though the market has been dominated throughout by just two companies, American and United, as table 3.7 shows. Despite a declining share of agency locations these two carriers have continued to account for over 70% of the revenues generated by agency CRS's, by virtue of the fact that they had targeted the larger firms long before the other players in the field had woken up to the fact that the game now being played was a very different one. For example, in 1985 American and United were able to generate 31% and 17% more revenue respectively than their share of agency locations.⁷⁹ Table 3.8 shows the share of agency generated revenue for all CRS's in 1985. Only a part of this additional revenue however can be attributed to the above; significant portions also have resulted from the explicit biasing of information displayed on VDU screens and from the use of incentive based commissions, as is made clear below.

Table 3.7 CRS Shares of Agency Locations

<u>System</u>	<u>1983</u>		<u>1985</u>		<u>1986</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Sabre	5692	41	8906	35	12200	36
Apollo	3865	28	6263	24	8500	25
Pars	2159	16	3419	13	4250	12
SystemOne	1074	8	4303	17	5300	16
Datas	688	5	2685	10	3800	11
Others	344	2	237	1	-	-
Total	13822		25813		34050	

Sources: Wardell, D., 'Airline Reservation Systems in the USA', Travel & Tourism Analyst, January 1987, p.51; Feldman, J., 'CRS in the USA', Travel & Tourism Analyst, September 1987, p.7; & 'Note on Airline Reservation Systems', Harvard Business School, 1984, pp.8-14.

Table 3.8 CRS Market Share in 1985

<u>System</u>	<u>Vendor(s)</u>	<u>% of Locations</u>	<u>% of Agency</u>
			<u>Generated Revenue</u>
Sabre	American	35	46
Apollo	United	24	28
Pars	TWA/Northwest	13	10
SystemOne	Texas Air	17	10
Datas II	Delta	10	5

Source: Airline Business, January 1988, p.27.

By 1986 the five CRS's were accounting for 88% of all airline ticket sales in the US.⁸⁰ Locating an airline's CRS equipment in agencies that have had the potential to generate the most bookings has invariably meant concentrating these in the geographical areas surrounding each of the carrier's hubs.⁸¹ As the number of hubs operated by each of the major carriers has increased so there have been attempts to persuade agents to switch allegiances. In some cases considerable inducements have been provided, for example Feldman⁸² reports a

case cited by Northwest at a 1985 congressional hearing in which United is purported to have offered an agent \$500,000 in cash, 10% additional commission on each ticket sale and five years free use of Apollo including all telephone charges, if it would replace Sabre with its own system. This, which is by no means an isolated case, provides an indication as to just how much additional revenue United anticipated generating from this newly captured agent. A recent estimate by Hirst⁸³ suggests that some 75% of U.S. agencies measured in terms of the total amount of revenue they generate are tied in this way.

Having tied in a significant % of 'local' agencies, there has been little, other than what usually is referred to as political expediency, to prevent CRS vendors fully exploiting this situation. Although the more blatant display bias practised by CRS owners in the early 1980's was outlawed by the CAB in 1984, a number of relatively more sophisticated attempts at the same have followed.⁸⁴ CRS owning airlines have been able to present their flight schedules in a beneficial way by adopting algorithms that have given precedence to their flights. Careful manipulation of departure times and flight duration, and the use of weighting techniques to distinguish different types of connections, all aimed at disadvantaging the offerings of rivals, have enabled carriers to continue this post-deregulation tradition. In addition to restricting information about the services offered by competitors, CRS generated market intelligence has enabled marketing managers to achieve a high degree of precision in the targeting of their

price discrimination activities, resulting in significantly less revenue dilution than ordinarily could be anticipated.

The ability to control ticket sales using, initially at least, relatively simple techniques to bias information relating to flight availability stems partly from the fact that agents have been in the habit of booking 50% of their sales from information displayed on the first line of the first screen showing.⁸⁵ From the CRS vendors point of view it would have made little sense to have provided travel agents with a system that would attract travellers away from directly booking with them unless they had some means at their disposal to control the activities of such intermediaries. In addition to the impact of inequities in the display of information on CRS's, the various forms of incentive provided by carriers to induce travel agents to give preference to their services has fundamentally altered the relationship that had previously existed between these two parties. Levine⁸⁶ explored this principal/agent involvement and concluded that the incentive packages devised by airlines had been fashioned on the use of non-linear reward structures in order to automatically favour the use of a single carrier's services. All large airlines, irrespective of their CRS owning status, have benefited naturally from this practice as their greater networks have more to attract passengers. As Levine remarked however ... "The system rewarded airlines that were particularly adept at paying high incentive commissions for business that was truly incremental...". CRS ownership has considerably enhanced an

airline's ability to control such expenditure. Careful monitoring of individual markets using information produced by a CRS not only reduces unnecessary commission expenses, but also enables an airline to target its marketing efforts in a similarly efficient manner.

As the more overt forms of bias in information display have been made unlawful, so the two leading protagonists have developed other more sophisticated ways of maintaining a tight control over their markets. Indeed these have been so successful that Wardell⁸⁷ asserts that..."With the opportunity to affect agency carrier selection in so many powerful ways, and with computer services overall profitable ventures in their own right, improper display tactics make little sense for a sophisticated vendor". That such vendors have been able to exercise considerable control over not only the actions of travel agents and customers, but also of non-CRS owning airlines, stems from the vast amount of market intelligence readily available to them. The latter mentioned have had little choice but to assign their seat reservation functions to one of the five CRS vendors. Besides the financial return that this has provided, the accruing of sensitive information concerning the demand for rivals' products has conveyed with it a considerable degree of market power. For example, the risks that a non-CRS owning airline embarking on a new pricing strategy would incur would be substantial in comparison with those of a CRS vendor undertaking a similar exercise. Whilst the former would face not only the usual uncertainties

associated with changing prices, the ability of a CRS owner to negate and indeed turn to its advantage any such amendments would metaphorically cast such an airline in the role of 'whistling in the dark'. By contrast American or United undertaking this type of exercise would have had a clear picture of likely retaliatory action and have adopted tactics aimed at minimising any possible adverse impact, long before initiating the change. Even in the unlikely event of something unforeseen occurring, the ability to respond quickly and with considerable accuracy virtually ensures a safe passage.

Levine⁸⁸ in an extensive article dealing with airline deregulation highlights some of the more important benefits that a CRS vendor gains from having formed exclusive relationships with travel agents. He comments that..."Through the CRS an airline can track the effect of price changes, see roughly how much of a rival's seat inventory is assigned to a given discount fare classification, measure how much full-fare business it attracts compared to rivals, and track changes in shares of city-pair traffic flows and of market demand sub-segments". By using this information it can..."..distort market signals to its rivals, leading them to make incorrect decisions". The phenomenal power that this has conveyed is such as to have ensured the non-contestability of many city-pair markets.

Various estimates have been produced as to how significant an advantage this has proved. For example, Feldman⁸⁹ reports American's chairman as having stated that his airline gained an

additional 8-12% in revenue from Sabre equipped agents over that which could ordinarily be expected from equivalent agencies equipped with another company's CRS. A more recent valuation referred to by Hirst⁹⁰ shows that in 1988 Apollo equipped agents produced \$44mn each month for United over and above that which could have been expected to be generated by neutral agents in the same markets. He expressed the view that... "Assuming similar numbers for American, these sums annualised approximate the \$981 million which the entire industry earned in profit in 1988". The Dept of Transportation revealed in a regression analysis conducted in 1988 that relative to the number of seat-kilometres produced the five CRS's generated incremental bookings for their owners ranging from 40% in the case of American to 12% for Texas Air.⁹¹

The impact on the profitability of individual non-CRS owning airlines resulting from this generation of incremental revenue by CRS vendors has been considerable. Table 3.9 reproduces Feldman's⁹² estimate of the impact on the pre-tax profitability of six non-CRS owning carriers caused by a 1% reduction in their average load factors. The information used by this writer was presented by these airlines during a lawsuit taken against American and United. Traffic diversions had had the effect of raising the profitability of the Sabre and Apollo systems by 66% in 1984. The corollary of this was that other carriers had been forced to operate at reduced load factors, resulting in a substantial decrease in their profit margins. Feldman⁹³ estimates this reduction in profitability to have

been of the order of 38% in 1985 for the airlines cited in the table. The exaggerated impact on profits has given CRS vendors considerable leeway in terms of the financial inducements that they are able to offer travel agents. Once hooked the tactics adopted by the vendor take on a more subtle approach, but are none the less efficacious. The manipulation and exploitation of these agents and the commercial relationships they have with their clients has been perfected to a virtual art form using the phenomenally clear picture of city-pair markets provided by the increasingly sophisticated CRS's.

Table 3.9 Impact of a 1% Reduction in Load Factor per Domestic Departure on Six Carriers in 1985

	<u>Actual</u>	<u>Adjusted</u>	<u>% Decrease</u>
Average passengers enplaned per domestic aircraft departure (%)	58.0	57.0	1.7
Total enplanements ('000)	70,608	69,373	1.7
Revenue passenger miles (mn)	45,934	45,127	1.7
Average seat miles (mn)	79,470	79,470	-
Load factor (%)	57.8	56.8	1.7
Total revenue (\$mn)	6,928	6,818	1.6
Operating expense plus interest	6,702	6,680	0.3
Pre-tax profit (\$mn)	226	138	38.9
Profit margin (%)	3.3	2.0	38.0

Source: Feldman, J., 'CRS and Fair Airline Competition', Travel & Tourism Analyst, 1988, p.20.

3.3 The Impact of Frequent Flyer Programs

A major attempt to influence customer choice has involved the use of frequent flyer programs. The first of these was introduced by American in 1982 and provided travellers with a reward for continuing to make use of the company's services. This attempt to increase consumer loyalty is based on the idea that the more flights a passenger takes with the airline the greater their reward. Although there has been nothing preventing passengers from participating in more than one program, the award levels are constructed so as to encourage exclusivity of use. For example, United's current frequent flyer scheme provides one domestic upgrade for 10,000 miles flown with the company, whilst for 40,000 miles a return trip to Europe is offered.⁹⁴

Network size has been a particularly important factor for travellers in their choice as to which scheme to patronise. Not surprisingly, the larger carriers have been the main beneficiaries, as the choice of leisure destinations they are able to offer is invariably much greater than those offered by the smaller operators. Code-sharing alliances have extended this choice and so strengthened brand loyalty. An important additional influencing factor here has been the added precision of the CRS which has enabled their owners to perfect their incentive packages in such a way as to minimise the incentives paid to committed travellers, so reducing wastage.

3.4 The Impact of Code-Sharing Alliances

Prior to 1984 there had been very few code-sharing alliances formed between the large carriers and commuter airlines.⁹⁵ Over the next two years however a considerable transformation occurred, such that by the middle of 1986 all of the twelve major carriers and four of the national airlines had entered into code-sharing alliances with operators of commuter services. (In 1981 the CAB began classifying airlines on the basis of annual revenues, categorising 'major' carriers as those generating in excess of \$1 billion and 'national' carriers as earning between \$100 million and \$1 billion. Table 3.10 provides a 1978 listing of these airlines, together with an update for 1989 showing survivors.) Within a period of two years nearly all of the largest fifty commuter carriers had formed code-sharing alliances with a major airline.⁹⁶ By then the companies participating in these agreements accounted for over 75% of the passengers carried by the whole of the commuter airline industry. Table 3.11 lists the agreements in force between the major airlines and the largest 30 commuter carriers in 1986.

This phenomenon had come about as a direct result of the continuing development of the hub and spoke systems adopted by the major airlines. The economies of scope that are possible to achieve with this type of route configuration are exploited fully only when all possible locations are being served. As a consequence, the rapid development of nation-wide route systems

had become a key priority by the mid 1980's. In order to operate profitably in low density markets it was essential to make use of small turbo-prop aircraft, typically seating fewer than 30 passengers. Large carriers had little experience of these markets and did not possess this type of equipment. Following the development of traffic hubs by the major airlines, commuter carriers had become increasingly dependent on these companies for their traffic. This growing interdependence invariably worked against the interests of the smaller companies. For example, Oster and Pickrell put forward the view that commuter airlines..."..might be pitted against one another in the major carrier's battle for control of a hub and encouraged by the major carrier partner to provide economically high levels of service in a fight for market share".⁹⁷

Table 3.10 The Survivors of Deregulation

<u>1978</u>	<u>1989</u>
<u>Trunk Airlines</u>	<u>Major Airlines</u>
American	American
Braniff	Continental(Texas Air)
Continental	Delta
Delta	Eastern(Texas Air)
Eastern	Northwest
National	Pan Am
Northwest	TWA
Pan American	United
TWA	USAir
United	
Western	
<u>Local Service Carriers</u>	<u>National Carriers</u>
Allegheny	Air Wisconsin
Frontier	Alaska
Hughes Airwest	America West
North Central	Braniff

Ozark
 Piedmont
 Southern
 Texas International

Horizon
 Midway
 Southwest

Table 3.11 Code-Sharing Alliances

<u>Regional Carrier</u>	<u>Enplaned Passengers('000)</u>	<u>Major Partner(s)</u>
Air Wisconsin	2026.0	United
Metro	1494.0	American/Eastern
Mid-Pacific	1286.9	Continental
Atlantic Southeast	1156.0	Delta
Henson	1152.0	Piedmont
Horizon Air	1147.8	Alaska
Simmons	1092.5	American/N'west
Britt	985.0	Contin'al/East'n
Air Midwest	923.0	American/East/TWA
PBA	856.9	Continental
Skywest	763.0	Delta
Express A/1 I	754.0	Northwest
Aspen	640.0	United
Comair	634.8	Delta
Pan Am Express	555.1	Pan Am
West Air	544.9	United
Pennsylvania A/1	534.3	USAir
Business Express	525.0	Delta
Bar Harbor	453.0	Eastern
Brockway	429.2	Piedmont
Wings West	408.5	American
Suburban	406.3	USAir
Royale	385.4	Continental
CCAir	380.2	Piedmont
Rocky Mountain	362.2	Continental
Chautauqua	358.1	USAir
Gull Air	354.0	Continental
Command	322.2	American
Metro Express II	295.0	American
Crown A/w	288.3	USAir

Source: Feldman, J., 'Regional Airlines in the USA', Travel & Tourism Analyst, May 1987, p.22.

The benefits of code-sharing to a large CRS owning carrier were considerable. The ability to attract additional clients through the manipulation of travel agents, in part aided by the use of frequent flyer programs, was considerably enhanced as route networks became more extensive.⁹⁸ Although the code-sharing services operated by commuter carriers in conjunction with, and on behalf of, their partners were still nominally considered to be independent flights, to all intents and purposes they formed an integral part of the larger carriers' route networks. In effect the commuter companies had had little option but to form such alliances in order to survive. In the process though they had lost their autonomy and had become increasingly dependent on the major airlines.⁹⁹ The tying of virtually all of the smaller independent carriers in this way had proved to be highly effective in removing an important source of potential rivals.

3.5 Summary

These various factors have conspired to act in a synergistic way providing the large airlines with an even greater competitive advantage over their smaller and less well endowed rivals. It is apparent from the above that the major way by which the relatively high cost trunk airlines managed to survive was by restructuring their networks. The imaginative and mostly unconstrained exploitation of the CRS has enabled their owners to gain the full advantage from their new route systems. The cumulative effects of the various features of the deregulated airline industry discussed above are analysed in the following chapter.

References and Footnotes:

51. Richard Caves argued that as a result of CAB policy rivalry could be expected to occur through variations in service quality. 'Air Transport and Its Regulators: An Industry Study', Harvard University Press, 1962.
52. In 1977 interlining domestic traffic constituted 24.6% of total city-pair RPM's. By 1984 this figure had fallen to 10%. (Phillips, L.T., Air Carrier Activity at Major Hub Airports and Changing Interline Practices in the United States' Airline Industry, Transportation Research A, Vol. 21A, No. 3, p.218, 1987.)
53. In 1942 the CAB approved an agreement which committed participants to honouring each others tickets for the carriage of passengers and their luggage. "Interline Traffic Agreement - Passengers", Air Traffic Resolution 5.65.
54. For example, as depicted in figure 3.4, Western's route map prior to deregulation clearly shows the lack of a central hub. By 1983 the airline had reconfigured its network routing much of its traffic via Salt Lake City.
55. So called 'grandfather' rights relate to the use of take-off and landing slots by incumbent airlines at congested airports. The allocation of these scarce resources is usually determined by individual airport committees, which mostly consist of airline employees. Historical precedence forms the main criterion in this apportioning process.
56. In 1987/8 American acquired two bankrupt commuter carriers

which had been providing feeder services on its behalf. AMR Eagle Inc. was formed in mid 1987 to operate services previously provided by Air Midwest, American's code-sharing partner based at Nashville. In January 1988 AVAir, the American Eagle operator at Raleigh/Durham, filed a Chapter 11 bankruptcy petition and the acquisition process was repeated. A further three feeder service partners were acquired in 1988, but not as a result of commercial failure. These carriers were Wings West (Los Angeles/San Francisco), Command Airways (New York) and Simmons Airlines (Chicago). Details of these acquisitions are contained in Commuter World, 'The Integration of American's Eagles', November 1988, pp.24-28; and 'Under the Eagle's Wing', January 1989, pp.28-32.

57. "Carriers who had previously been considered Supplementals, such as World, began making the New York-Los Angeles route the most price competitive in the world." Gialloreto, L., Strategic Airline Management: The Global War Begins, Pitman, 1988, p.28.

58. "...by 1982 none of the airlines flying the transcontinental routes was making as much as a 1% return on sales." Gialloreto, L., supra note 6, p.28.

59. Caves, D.W., Christensen, L.R., & Tretheway, M.W., 'Economies of Density versus economies of scale: why trunk and local service airlines costs differ', Rand Journal of Economics, Vol. 15, No.4, Winter 1984, pp.471-89.

60. Gloria Hurdle, speaking for the U.S. Dept. of Justice, developed this point in connection with Northwest Orient's proposed acquisition of Republic. Comments in the NWA-Republic

Acquisition Case (Docket 43754), Dept. of Justice, Washington, D.C., 1986.

61. Kanafani, A., 'Aircraft Technology and Network Structure in Short-Haul Air Transportation', Transportation Research, Vol. 15A, 1981, pp.305-314.

62. Levine, M.E., 'Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy', Yale Journal on Regulation, Vol. 4, 1987, pp.434-36.

63. The relationship between the maximum possible number of connections and the number of spokes radiating from a traffic hub is given by the formula:

$$C = \frac{n(n-1)}{2}$$

where C refers to the number of connections and n to the number of spokes. Table 3.12 explores the effect on C as n is increased.

Table 3.12 Characteristics of Hub and Spoke Networks

<u>No. of Spokes</u>	<u>Maximum No. of Connections</u>	<u>Connectivity Ratio</u>
5	15	3:1
10	55	5.5:1
20	210	10.5:1
30	465	15.5:1
40	820	20.5:1
50	1275	25.5:1
100	5050	50.5:1
200	20100	100.5:1

[Conectivity Ratio = $\frac{n}{2} + 0.5$]

2

Source: Doganis,R. and Dennis,N., 'Lessons in Hubbing', Airline Business, March 1989, p.42.

64. USAir, known as Allegheny Airlines until October 1979, continues to operate its own commuter feeder services under the name Allegheny Commuter.

65. Cost per ATK for local service carriers was higher than that of trunk airlines, but in the main was more than accounted for by the considerably shorter average sector length of the former.

66. "The key to success is the exclusivity of the routes rather than the structure of the network." Toh,R.S. & Higgins,R.G., 'The Impact of Hub and Spoke Network Centralization and Route Monopoly on Domestic Airline Profitability', Transportation Journal, Summer 1985, p.27.

67. Toh,R.S. & Higgins,R.G., supra note 66, pp.16-27.

68. USAir's route system, depicted below in figure 3.6, reveals the carrier's concentration on small and medium sized locations.

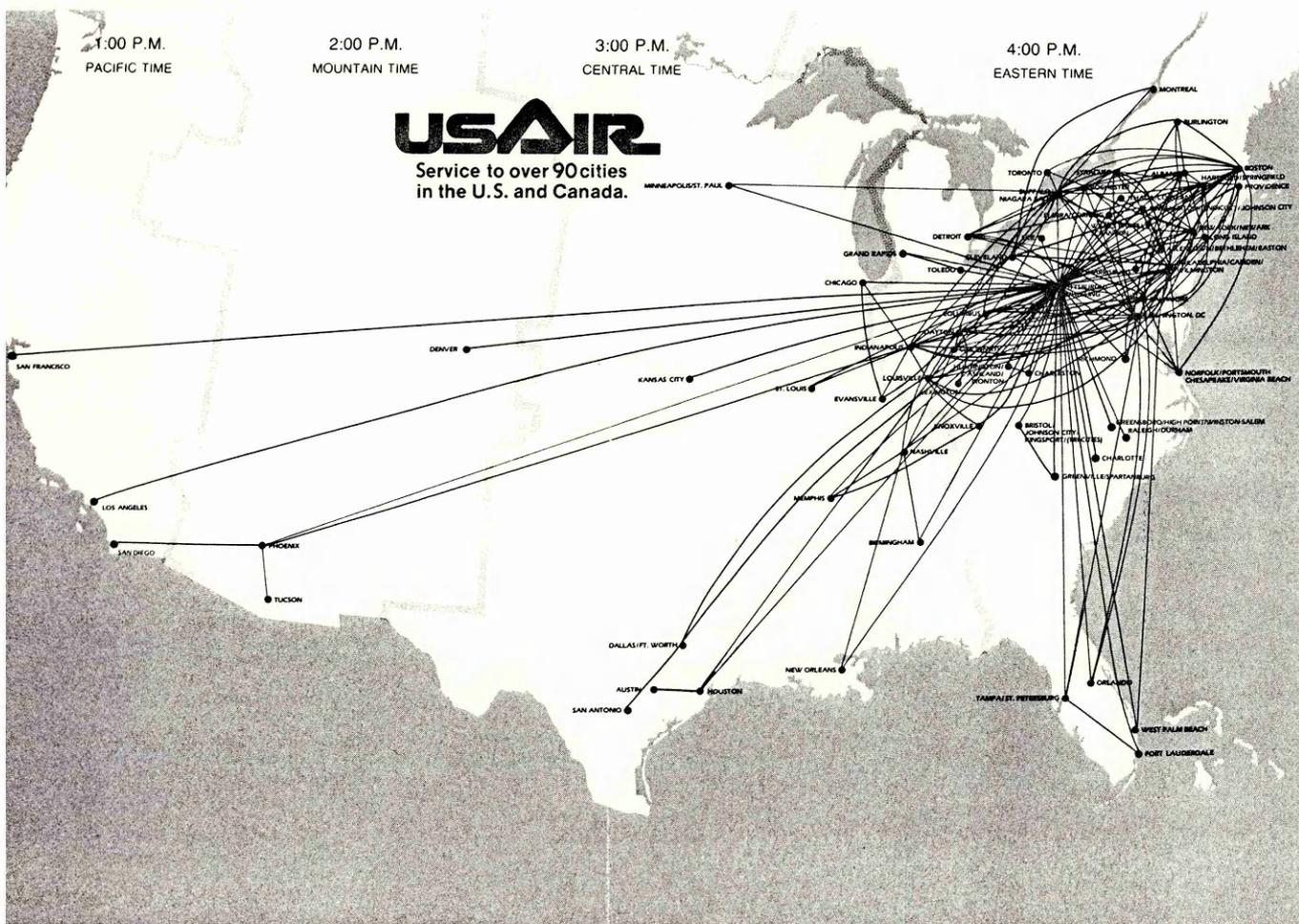
69. USAir - Piedmont Acquisition Case, Docket 44719, US Dept of Transportation, Office of Hearings, Washington, D.C., September 1987, pp.32-50 and appendices C,D and E.

70. Phillips,L.T., supra note 52.

71. Southwest, for example, has served a number of specialist niche markets particularly in connection with its operations from the downtown airports at Dallas and Houston.

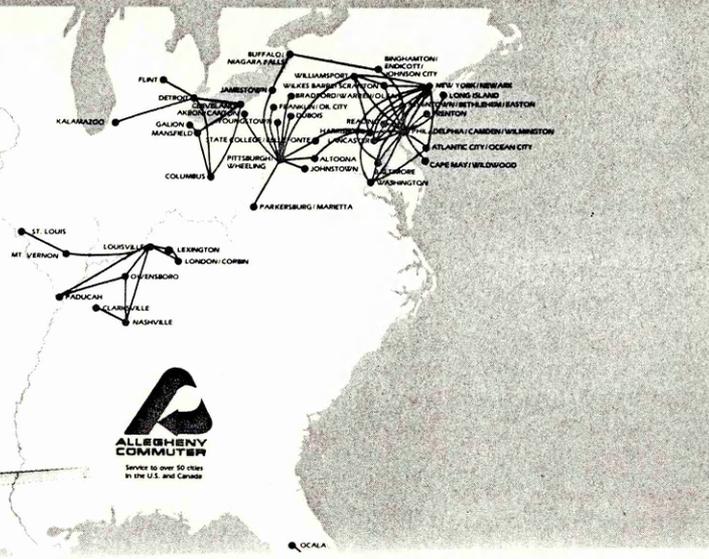
Figure 3.6

USAir's Route System in 1983



USAir & Allegheny Commuter - A great team to go with.

Service to over 120 cities in the U.S. and Canada.



72. Feldman, J., 'CRS in the USA', *Travel & Tourism Analyst*, September 1987, pp.3-4.
73. Note on Airline Reservation Systems, Harvard Business School, 1984, p.3..
74. Wardell, D., 'Airline Reservation Systems in the USA', *Travel & Tourism Analyst*, January 1987, p.47.
75. The large increase in the number of agencies equipped with a CRS is partly explained by the advent of inexpensive micro computers.
76. Wardell, D., supra note 74, p.52.
77. Levine, M.E., supra note 62, p.460.
78. Feldman, J., supra note 72, p.10.
79. Feldman, J., 'CRS and Fair Airline Competition', *Travel & Tourism Analyst*, 1988, p.7; and *Airline Business*, January 1988, p.27.
80. Feldman, J., supra note 72, p.3.
81. Levine, M.E., supra note 62, p.464.
82. Feldman, J., supra note 72, p.6.
83. Hirst, R.B., 'The CRS Mess, 1984-89: From Display Bias to Travel Agency Franchises', American Bar Association, Forum on Air and Space Law, Seattle, May 1989, p.5.
84. Hirst, R.B., supra note 83, pp.1-3.
85. Wardell, D., supra note 74 (p.48), estimates that between 70% and 90% of bookings have been made on the basis of information displayed on the first screen showing.
86. Levine, M.E., supra note 62, pp.432-4.
87. Wardell, D., supra note 74, p.55.

88. Levine, M.E., supra note 62, pp.461-2.
89. Feldman, J., supra note 72, p.8.
90. Hirst, R.B., supra note 83, p.3.
91. Hirst, R.B., supra note 83, p.3.
92. Feldman, J., supra note 79, p.20.
93. Feldman, J., supra note 79, p.20.
94. Executive Flight Planner, ABC International, February 1989.
95. Feldman, J., 'Regional Airlines in the USA', Travel & Tourism Analyst, May 1987, p.19.
96. Oster, C.V. & Pickrell, D.H., 'Marketing Alliances and Competitive Strategy in the Airline Industry', Logistics and Transportation Review, Vol.22, No.4, p.372.
97. Oster, C.V., supra note 95, p.383.
98. Feldman, J., supra note 94, p.23.
99. Some examples of this are contained in 'Code-sharing: the brass ring can sometimes turn to lead', Air Transport World, June 1988, pp.190-3; and 'Turmoil and trauma for the code-sharers', Avmark Aviation Economist, March/April 1988, pp.12-15.

Chapter 4 Explaining the Response of Airlines to Deregulation

"I do not hope to see microeconomics rescued from the recreational technicality into which, for many, it has fallen. Paralleling what Dr. Johnson said of making money, it is the least harmful of professional pursuits."

J.K.Galbraith¹⁰⁰

Much of the theory taught to students of microeconomics provides little insight into the way contemporary business organisations function. The preoccupation of the subject with short term optimisation has made it anachronistic. Its seemingly relentless pursuit to produce tidy mathematical formulae purporting to provide an insight into how markets function, but which are in reality attempts at preserving a particular philosophical status quo concerning the competitive process, has rendered it to all practical purposes redundant.¹⁰¹ That one needs to turn to the literature dealing with business strategy to gain a clear understanding of the policies of modern business organisations is symptomatic of this condition. For this reason the analytical approach adopted in this study, although utilising many of the theoretical concepts of microeconomics, relies heavily on the ideas developed in the field of business strategy.

Prior to the passing of the Airline Deregulation Act it was widely anticipated that the overall effect on the industry would bear a close resemblance to that which had been experienced in the intrastate airline markets of California and Texas. The competitive pressures of these deregulated markets had resulted in intrastate carriers such as Pacific Southwest and Southwest operating these services at substantially lower costs than their regulated counterparts. This and the concomitant lower fares and wider range of services were expected to be replicated in the interstate markets.¹⁰² That the trunk airlines had had little scope or motive to change their operating environments, given the CAB's tight grip on the industry, plus the fact that the likes of Pacific Southwest had posed no serious threat to them, would perhaps provide some explanation as to why these intrastate markets had remained so competitive. That this experience has not been reproduced on a national scale necessitates a careful analysis of the ways in which airlines, particularly the former trunk carriers, have responded to deregulation and the extent to which the US Government's continued non-interventionist stance toward this sector has had a bearing on this.

The industry's rapid transition in the years 1979-82 to substantial loss-making exacerbated the need of the larger airlines to find ways by which to reduce their inherent competitive disadvantage.¹⁰³ The lower operating costs and greater flexibility of their new rivals made them particularly vulnerable. Only one possible course of action was open and

this involved the former trunk carriers instigating policies that would have the effect of improving their relative position vis a vis their rivals. In the long term this seemingly defensive approach would result in the survival of only the more efficient.¹⁰⁴ Any competitive advantage derived in this way could be considered 'natural', to the extent that it would have resulted either from the achievement of operating economies of one kind or another, or from the ingenuity of airline managers in successfully differentiating their product. This approach however can also encompass actions of a very different nature, many of which ordinarily would be labelled as being anti-competitive and therefore as not being conducive to the best interests of society. In the present context this would involve airlines setting out to change the competitive environments confronting them through the instigation of policies deliberately aimed at deterring market entry by both price and non-price means.¹⁰⁵

This offensive approach to the elimination of competitive disadvantage, if successfully implemented, carries with it the advantage of providing a much more durable safeguard against existing and possible future rivals. Ordinarily this type of anti-competitive behaviour would have been constrained by US anti-trust and other anti-monopoly legislation, but after the 'sunset' of the CAB the US domestic airline industry had passed into the jurisdiction of the Dept. of Transportation. The fact that this body and the CAB, post-deregulation, had adopted a 'hands off' approach enabled airlines to pursue this latter

philosophy virtually unchallenged. The general recognition that it would have been politically unacceptable for the Government to clamp down so soon after having so rapturously introduced airline deregulation undoubtedly had a profound influence on the strategies devised by the former trunk carriers.

The Government's expectation that deregulation would produce a sustainable competitive environment had been reinforced by academic arguments concerning the contestability of markets. The theory of contestable markets¹⁰⁶ was developed in the early 1980's and had the effect of focussing attention away from the actual degree of competition existing within a market to a preoccupation with the potential level from firms 'waiting in the wings'. The nub of the theory was that if firms could enter an established market in a costless way then incumbents would be forced to price competitively irrespective of the degree of market concentration.¹⁰⁷ Rather amazingly, or so it would now appear, the airline industry was postulated by Bailey and Baumol¹⁰⁸, amongst others, as presenting..."..a particularly close approximation to contestability". Evidence from the heavily regulated days of the industry had revealed a general lack of scale economies leading to..."..the almost unanimous conclusion of economists that most airline markets, as well as the airline industry, were not natural monopolies".¹⁰⁹

As a result of this research, the clear and unequivocal expectation of most observers of the industry was that..."..the barriers to entry in airline markets...(would)..appear to be

quite low, and the number of potential entrants quite high. Thus, there may well be little room for monopoly abuse, even in small airline markets which can support only one carrier at efficient scale."¹¹⁰ Ten years of deregulation however has resulted in a very different outcome. One that rather unfortunately bears little resemblance to the confidently expressed beliefs of many economists. A number of surprises came with economic freedom as Kahn has acknowledged.¹¹¹ In my view though the real surprises of deregulation have been the pace at which a few airlines have managed to squeeze out their new rivals and perhaps importantly the resolute refusal of the Dept. of Transportation to acknowledge this reality.¹¹² Any attempt now to dismantle the powerful entry barriers erected by these carriers in order to free up market forces is likely to prove exceedingly difficult, if not totally impossible.

Table 4.1 summarises the options facing incumbent carriers in their response to competition; whilst table 4.2 identifies three distinct stages in the development of carrier strategy following deregulation.

Table 4.1 Strategic Responses to Competition

A. Defensive Tactics - Operating within the new commercial environment

i) Reducing Operating Costs:

- a. Labour - implementation of two tier wage structure;
 - greater productivity
 - less demarcation

- management reorganisation
- deunionisation
- bankruptcy as a means to force labour changes

b. Aircraft - operation of hub and spoke networks

- purchase/lease of fuel and labour (2 flight deck crew) efficient equipment
- downsizing of equipment

ii) Increasing Revenue:

a. Diverting Traffic - frequent flyer programs

- varying agency commission levels
- greater service frequency
- code-sharing alliances
- better inflight service
- matching rivals' fares
- advertising

b. Discriminatory Pricing - CRS development

- varying agency commissions
- direct sell to major firms

B. Offensive Tactics - Transforming the new competitive environment

Major ways of achieving monopoly power:

a. Controlling information supplied to agents

- limiting CRS availability (contractual arrangements)
- biasing CRS display

b. Control of gates & slots

c. Control of Commuter airlines

Table 4.2

Development of Commercial Strategy

<u>Airline Type</u>	<u>Strategy Adopted</u>	<u>Main Impact</u>
<u>Stage I</u>		
<u>Euphoria</u>		
Trunk	High density routes targeted	Intense price competition
	Low density routes abandoned	Decline in feeder traffic
Local Service	Longer haul routes targeted	Reduction of revenue loss to other carriers
New Entrant	Entry to high density routes with emphasis on low fares	Intense price competition
<u>Stage II</u>		
<u>Protectionism</u>		
Trunk	Hub & Spoke development	Economies of density & scope
	Labour cost reductions	
	Enhancing productivity	Lower unit cost
	Biassing of CRS's	Greater revenue
Local Service	Alliances/Mergers with Trunk carriers	Ensure feed and aid marketing
<u>Stage III</u>		
<u>Stage Management</u>		
Trunk	Exploitation of CRS's	Greater revenue generation
	Acquisition of Commuter Feeders	Greater cost & revenue control

Acquisition of National
Carriers/Mergers

Exploiting full
economies of
scope
Elimination of
rivals

The early route expansion strategies developed by a number of the former trunk carriers were quickly shown to be unsuccessful as the high density markets that had been the focus of this expansion were also the target of former charter operators. Whilst the latter could operate these markets profitably at the resulting low fares, the high operating costs of the former implied huge losses. In addition, the fleets of wide-bodied aircraft operated by the larger airlines became a considerable disadvantage as hub and spoke route networks began to be developed.¹¹³ The smaller aircraft operated by the former local service carriers and their more centralised regional networks provided them with both flexibility and an efficient supply of feeder traffic. That they were better placed during this route expansion phase is clear. An added factor here being that many of their markets generated traffic levels that did not prove sufficiently attractive to potential competitors, enabling carriers like USAir to continue to maintain a monopolistic position on many of their routes.

The early attempts at erecting entry barriers employed during the second phase of strategy development indicated in table 4.2 displayed a comparative crudeness, partly the outcome

of the desperation felt by many long established carriers who, with great urgency, had had to find a means by which to survive. Later techniques adopted display a much greater insight on the part of managers into the most effective and efficient means by which to exert control over their competitors. The various sources of competitive advantage are summarised by carrier type in table 4.3.

Table 4.3 Sources of Competitive Advantage by Carrier Type

<u>Feature</u>	<u>New</u> <u>Entrant</u>	<u>Local</u> <u>Service</u>	<u>Charter</u>	<u>Domestic</u> <u>Trunk</u>	<u>International</u> <u>Trunk</u>
Unit Cost	#		#		
Network Size				#	
CRS				#	#
Slots/Gates		#		#	#
Route Monopoly		#		#	
Traffic Hub		#		(#)	
Fleet	#	#			
Quality		#		#	#

As regards cost reduction exercises, the major burden of these has fallen on company employees. The most spectacular instance of this being the approach adopted by Continental, which invoked bankruptcy proceedings in order to replace its relatively expensive unionised workforce. This had the effect of reducing at a stroke its unit labour costs by 36%.¹¹⁴ A less drastic means of reducing labour costs adopted by some carriers

involved the introduction of a two tier wage structure. This had the effect of maintaining the status quo for existing employees, but allowed the companies to recruit new staff at significantly lower levels of remuneration. That airlines felt compelled to reduce wage costs is clearly shown when comparisons are made between incumbents and new entrants. For example, in 1984 the cost per employee incurred by People Express was of the order of one third of that borne by USAir.¹¹⁵ One reason for the lower operating costs of the new entrants stemmed from their ability to obtain significantly more output from their employees. Flight crews for example worked much longer hours per month than their former trunk counterparts. Demarcation of tasks was also reduced to a minimum by new entrants, further enhancing their higher labour productivity.

A second means by which trunk carriers attempted to reduce their operating costs involved them reorienting their route networks into hub and spoke systems. As is made clear in the preceding chapter this enabled the larger airlines to exploit the substantial economies of scope and density inherent in such systems. At the same time concentrating services at particular locations made it difficult for other carriers to gain access to runway slots and terminal gates at these cities during peak traffic times¹¹⁶, so enabling the former trunk carriers to capture more of the full-fare business market. This had the effect of raising their average yields whilst simultaneously increasing the cost per full fare equivalent passenger carried

for their rivals.¹¹⁷ Additionally, by operating a higher frequency of services from traffic hubs than their competitors, airlines were able to gain higher proportions of the total traffic as a result of the familiar S curve relationship.¹¹⁸

Despite these various attempts to improve efficiency, the former trunk airlines continued to operate at a substantial cost disadvantage relative to new entrants to the interstate markets. Given that it was effectively impossible for them to match the cost levels of the new-comers, other than by declaring themselves bankrupt and effectively starting again, their only alternative lay in preventing their rivals acquiring high yielding traffic. To a certain degree this had been achieved by the adoption of hub and spoke route systems, which had had the effect of restricting access to new entrants of the traffic originating and terminating at these hubs. The most important breakthrough with regard to this however has been brought about through the use of CRS's in controlling the flow of information to the new points of sale in the industry, namely retail travel agencies.

Deregulation has brought about a fundamental change in the point of sale of airline seats, with passengers turning to independent travel agencies for what they consider to be impartial advice. The enormous increase in the number of options available to airline users, both in terms of the number of services operated and the range of fares on offer, has made it essential for travellers to rely on the services of such agents. By devising a means by which to directly influence the

advice these companies were giving to their clients about the options that existed for their intended journeys, the way was open for carriers to divert more traffic to their operations. Whilst direct ownership of such agencies would have provoked an immediate public outcry of unfair competition, CRS vendors have had no need to resort such action. Because of the latter's need for direct instantaneous access to information about seat and fare availability, by being in the unique position of being able to supply this, a small number of fortuitous airlines have been able to exert a high degree of control over the reservations made by travel agents on behalf of their clients. Of course, it has been open to all carriers to vary their inducements to travel agents in order to directly influence booking activities, but by not being able to provide direct electronic access to reservations data non-CRS owning carriers have been at a considerable disadvantage in this regard.¹¹⁹

Control over the activities of travel agents has been achieved in two ways: firstly by varying the amount of sales commission paid and secondly through the biasing of information displayed on CRS's supplied to such agents. The former has been devised in such a way so as to reward most those agents who have booked large numbers of passengers on the CRS vendor's flights. These higher percentage commissions ordinarily are paid only to companies that have achieved designated target levels.¹²⁰ A financial incentive is therefore used as a means to influence the agent's choice as to which information to pass on to the customer. To further constrain

the agent's decision making CRS vendors have conspired to bias the information they make available.¹²¹ The net effect of these two attempts to influence the activities of travel agents has been to transform what on the surface would appear to be a competitive marketplace for flight information into one which in reality consists of a few very carefully orchestrated, geographically delineated, monopolies.¹²²

Another important means by which airlines have sought to enhance their revenue has been through the use of price discrimination. This has been an unexpected outcome of deregulation, as policy makers had anticipated that the ensuing competitive environment would be such as to make the practice unviable.¹²³ The demand peaking characteristics of airline markets though are such as to allow considerable variations in price, due to the inability of carriers even in competitive markets to vary supply to the same extent.¹²⁴ The key to achieving the full benefits of such a policy rests in an ability to minimise revenue dilution, which itself necessitates the existence of monopoly or highly collusive oligopoly. Only in these types of market are firms able to exercise the necessary control over their customers. The vast amount of information gathered by CRS's has enabled their owners to fine tune their price discrimination activities, allowing them to extract even more economic rent; their non-CRS owning rivals earning less as a consequence. Without the ownership of such equipment, airlines, unless operating in highly specialised niche markets, have had little option but to relinquish their

seat reservation activities to one of the five CRS vendors. The resulting dependency has provided the CRS owner with what normally would be regarded as highly confidential data. To then add what seems insult to injury, CRS vendors are able extract a substantial amount of revenue in the form of fees from these carriers.

The business of extracting economic rent through the careful manipulation of the fare at which each seat is offered has become of supreme importance. The commercial advantage derived in this way has more than offset the higher operating costs of the larger carriers, enabling them to place less emphasis on cost reduction measures. Figures 4.1 and 4.2 provide by way of a quasi-theoretical example an attempt to illustrate this point. The initial operating cost advantage of the new entrant B is clearly shown in figure 4.1. Whilst this differential has been reduced by the established carrier A implementing a cost cutting programme, in relative terms it continues to be disadvantaged. If our hypothetical incumbent airline operates its own CRS, its considerably enhanced ability to extract economic rent can result in this disadvantage being overturned, as is demonstrated in figure 4.2. The continued refinement of the large firm's marketing effort, predominantly a product of continuing investment in its CRS, eventually has the effect of reversing the initial positions of our two airlines.

This is demonstrated in the two figures by first

converting the total revenue generated by each carrier for the route in question into an equivalent number of full fare passengers. For this it is necessary to select a normal (full) single fare. The total numbers of passengers carried by each airline are represented in the diagrams by way of an overall % load factor. It is assumed that the new-comer has to offer more of its seats at greater rates of discount than its rival, and as a consequence this reduces its full fare equivalent load factor. Initially it derives a competitive advantage from its greater efficiency, but as the incumbent airline begins to implement the various measures discussed above this is slowly whittled away. Eventually the operating cost per ASK of the established airline will be significantly less than that of its 'low cost' rival at their respective revenue adjusted load factors.

Four effects have conspired to bring this about and these are represented in figure 4.1 by the arrows marked 1 to 4 respectively. The first is the result of the various attempts by the established carrier A to reduce its operating costs. The second stems from the tactics adopted by A to raise the operating costs of B. The third from A's ability to generate more economic rent, whilst the final effect represents the effect of B being forced to offer greater amounts of discount to its passengers in order to maintain load factor. Each of these is now explored in more detail.

Figure 4.1

Facing A Low Cost Rival

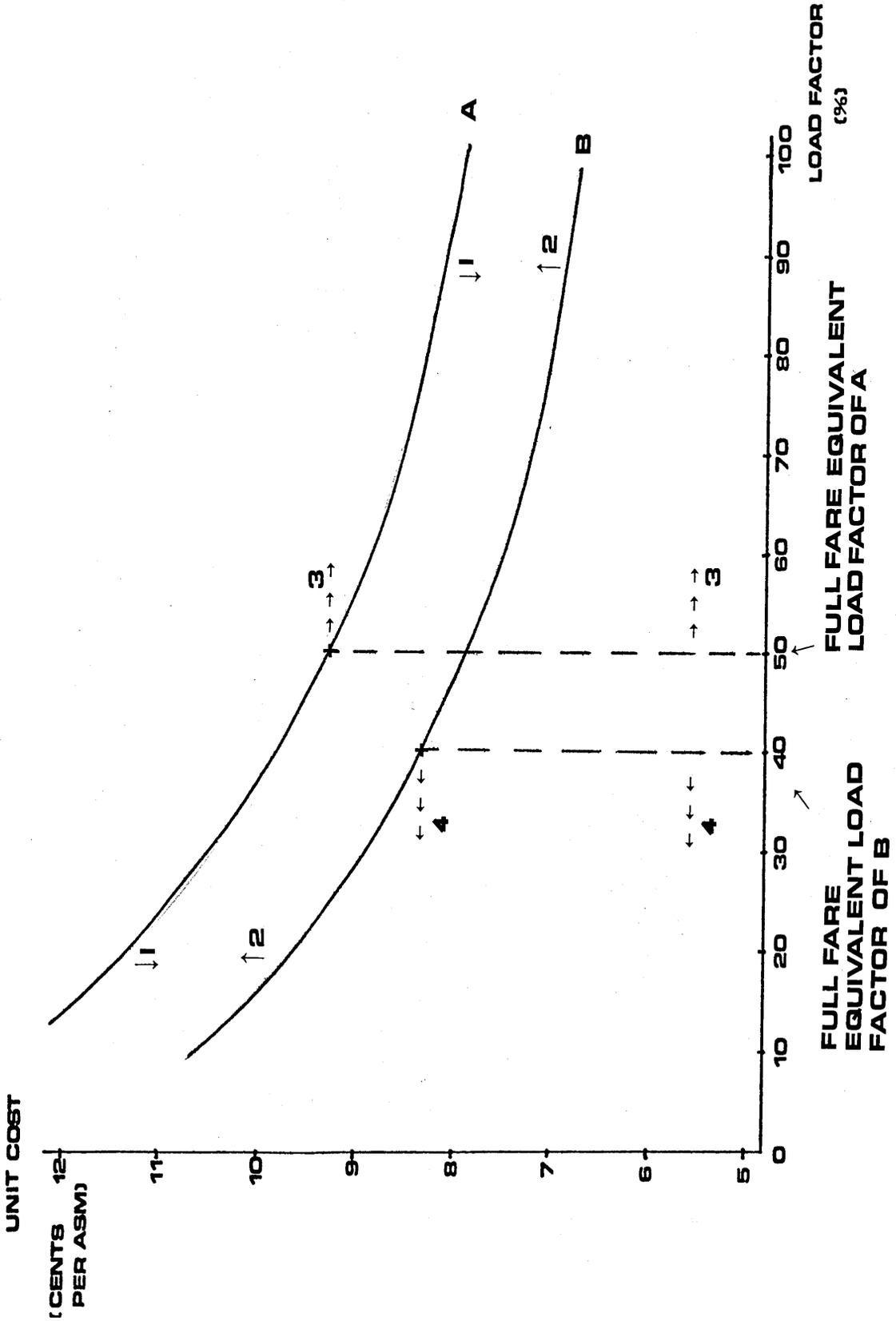
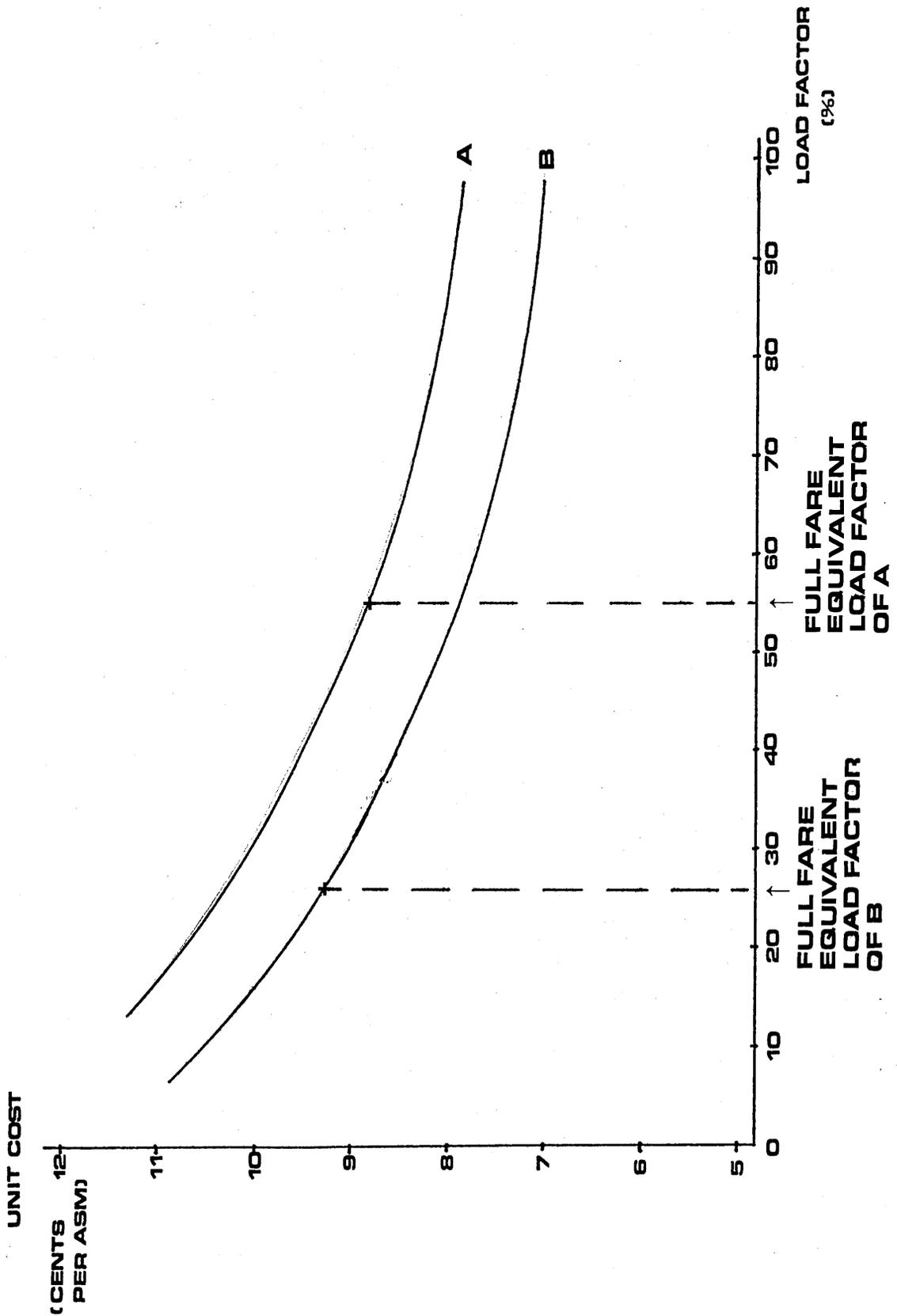


Figure 4.2

Developing Competitive Advantage



The improvement in operating cost experienced by A has resulted from both a reduction in the basic cost of its input factors and the more efficient use of these resources. The former primarily has entailed the lowering of labour costs and the use of more efficient aircraft. The latter has involved attempts at improving the productivity of both the labour force and aircraft. The adoption of hub and spoke route configurations has enabled airlines to exploit the various economies that are a feature of such systems. Economies of scope have been of particular importance and have enabled the larger carriers to enhance the productive output of both their aircraft and staff. The summation of these various effects is indicated in figure 4.2 by the new unit cost curve shown for A, the scale effects being particularly apparent at the higher load factors.

The raising of a rival's costs offers the possibility of reducing an inherent cost advantage and ultimately may result in its demise. For example, forcing a competitor to undertake an expensive advertising campaign is one classic means by which established firms are able to force up costs.¹²⁵ Of particular significance in the airline industry has been the erection of strategic entry barriers by large carriers at both airports and retail outlets, both of which have raised the operating costs of smaller airlines. These effects are accounted for in the new cost curve for B depicted in figure 4.2.

The third factor relates to the economic rent generating activities of the larger airlines. Obtaining additional rent

from customers has been refined to a virtual art form by CRS vendors. The near monopoly conditions created by the clever exploitation of this technology has enabled their owners to increase their price discrimination activities. In addition, the vast amount of market information collected and collated has provided this small number of large carriers with the ability to fine tune, thereby further enhancing their revenue generation. Non-CRS owning airlines by comparison are forced to rely on age old 'guesstimating' techniques. The full fare equivalent load factor for A is increased as a consequence of this additional revenue generation as is indicated in figure 4.2. The final factor relates to the difficulties of B in its revenue generating activities, and is represented in this diagram by a decline in the carrier's full fare load factor.

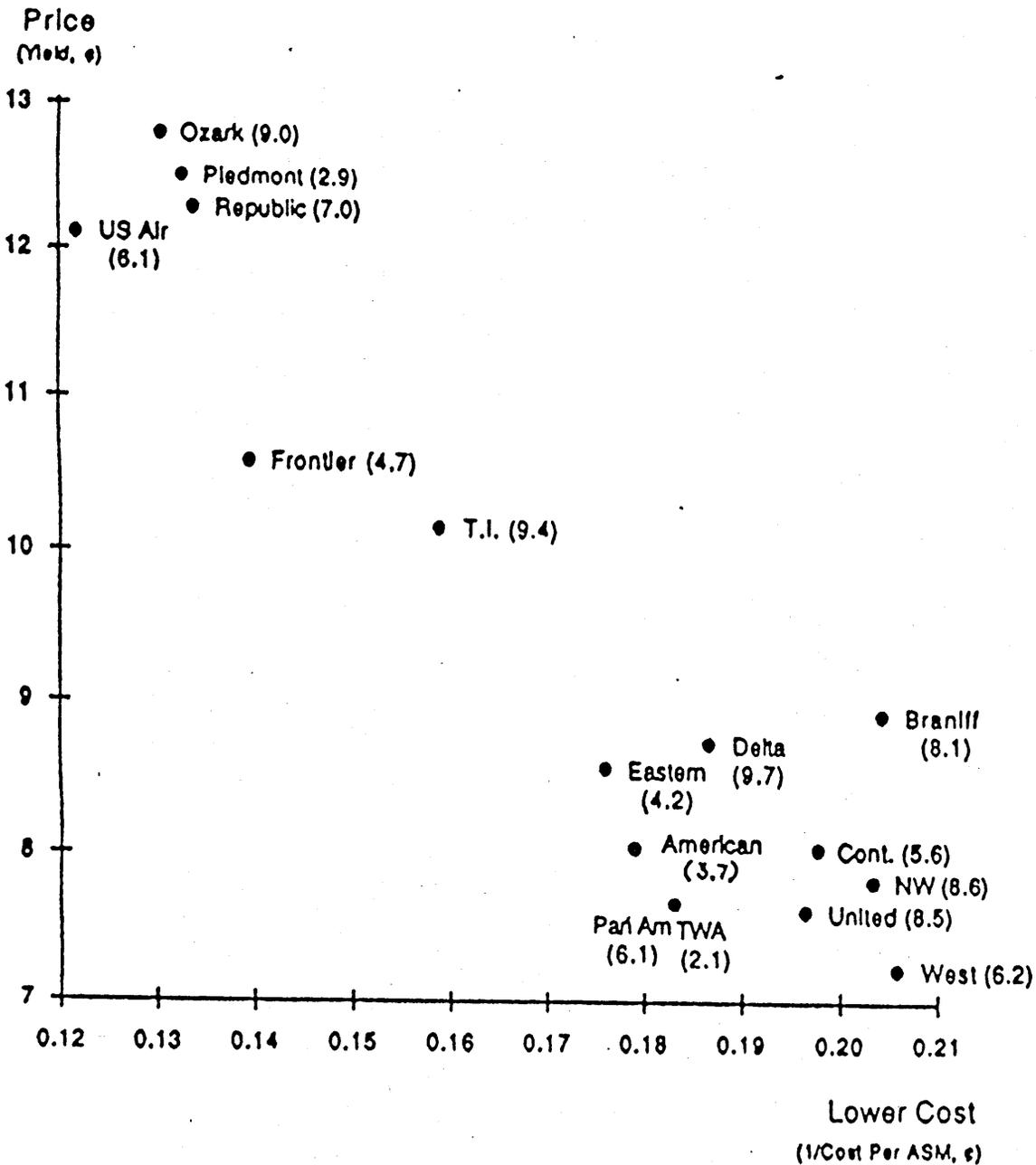
Attempting to reach an overall impression of the effects of deregulation has been a difficult and controversial exercise. On the one hand protagonists of the policy have been able to cite examples of city-pair markets in which competition has been, and continues to be, effective in holding down fares and presenting consumers with a considerable element of choice. Whilst on the other opponents have responded with considerable evidence to the contrary.¹²⁶ One approach however which does provide an overview of the direction in which the industry is moving involves analysing the price-cost profiles of individual carriers over time.¹²⁷ This approach reveals clearly which of the competitive strategies adopted by the various airlines have

proved to be most successful. More importantly perhaps it provides an insight into the ways the industry is likely to develop over the next few years.¹²⁸

An examination of the price-cost characteristics of each carrier reveals a high degree of commonality between airlines, enabling each to be identified as belonging to a particular 'strategic cluster'.¹²⁹ Bailey and Williams¹³⁰, using this type of analysis, show the existence of two distinct cluster groups prior to deregulation, the clear outcome of regulatory policy with one incorporating trunk airlines and the other local service carriers. Figure 4.3 reproduces their profile diagram of the industry in 1978. In this they have graphed average yield against the reciprocal of average operating cost. If symmetrical axes had been used the iso-profit contours revealed by this type of analysis would have been hyperbolic in shape. However as yield has been measured in terms of revenue per RPM and unit cost on the basis of cost per ASM, the shape of these curves has been influenced by the average load factor of each carrier. The divergence of Frontier and Texas International from the local service cluster is explained by Bailey and Williams as resulting from the greater competition faced by these carriers.¹³¹

Figure 4.3 US Airline Industry 1978 Price-cost Profile

(Figures in brackets refer to % operating margins)



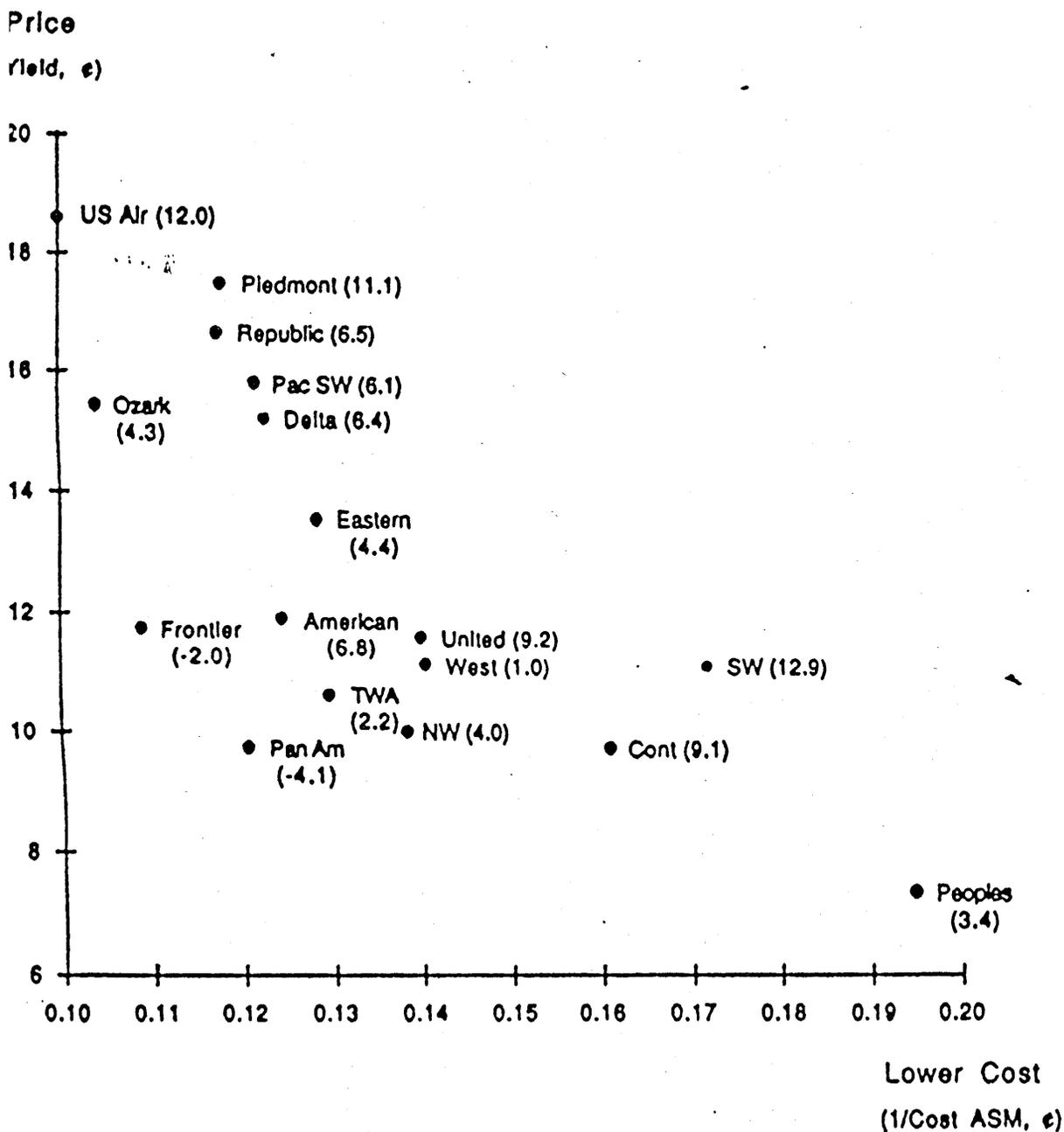
Source: Bailey, E.E. and Williams, J.R., 'Sources of Economic Rent in the Deregulated Airline Industry', Journal of Law and Economics, Vol. XXXI, April 1988, p.190.

A similar exercise carried out by the same authors using 1984 data reveals a much greater diversity between carriers. (Figure 4.4 reproduces the results of their analysis.) This may be construed as revealing a number of different contributory factors, some the result of initial endowments, but in large measure the outcome of carriers having pursued differing competitive strategies. Although there has been a clear necessity for each carrier to find apposite means by which to protect their markets from encroachment by rivals, it is apparent that some carriers been more successful at achieving this objective than others. Repeating the price-cost profile exercise of Bailey and Williams using 1988 data clearly shows this to have been the case, as figure 4.5 confirms. The more successful strategies being revealed not only by the relative profitability of those that remain, but also by those that are no longer in business.

With the exceptions of Alaska, America West, Braniff, Piedmont, Southwest and USAir, the development of a single cluster is apparent. Aside from satisfying niche, usually monopolistic, markets, carriers have had little option but to emulate the strategies adopted by the successful. As a consequence, I would strongly anticipate an even greater concentration as this trend continues. Repeating the same exercise using 1989 data, once it is available, should reveal this to be the case.

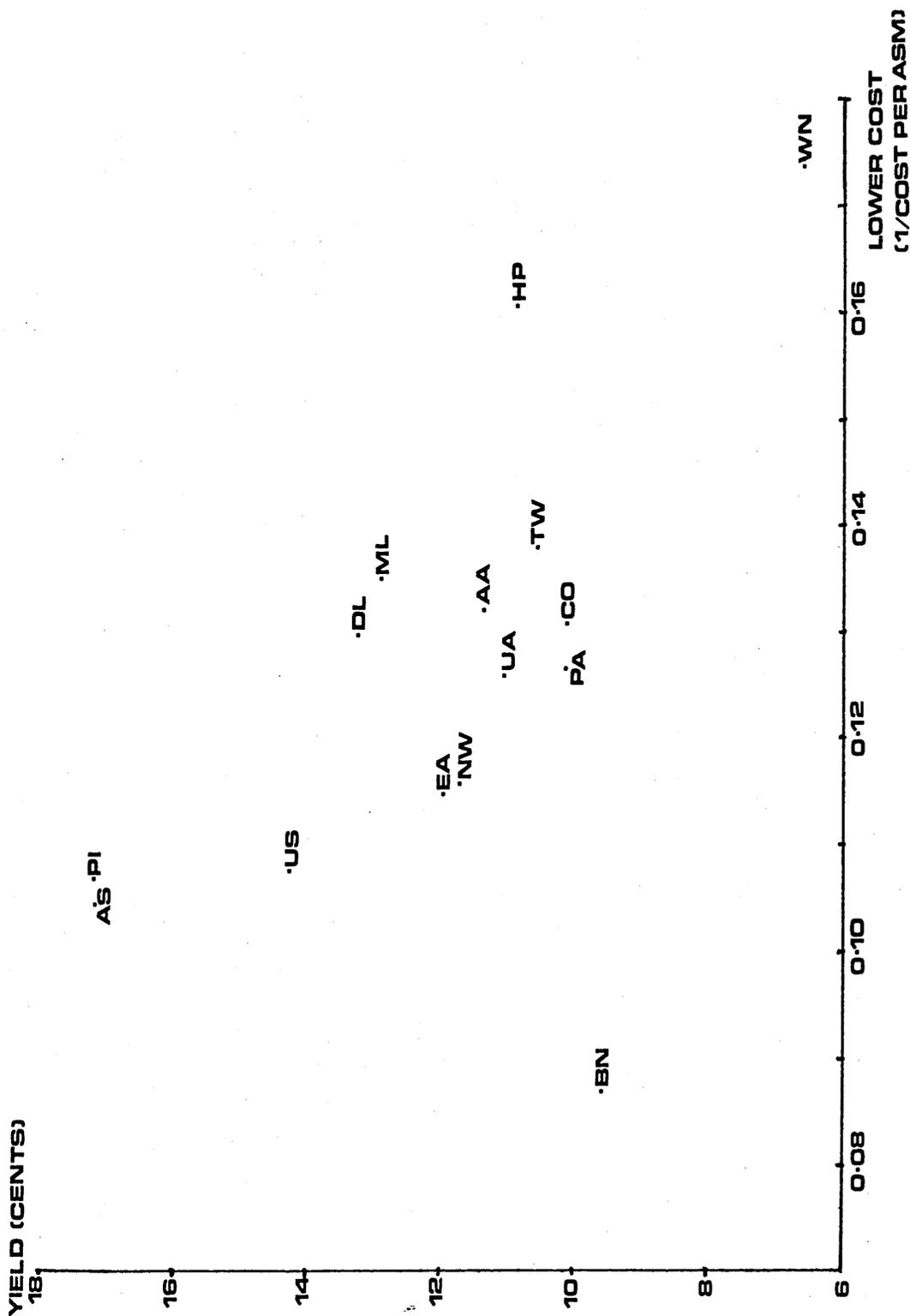
Figure 4.4 US Airline Industry 1984 Price-cost Profile

Figures in brackets refer to % operating margins)



Source: Bailey, E.E. and Williams, J.R., 'Sources of Economic Rent in the Deregulated Airline Industry', Journal of Law and Economics, Vol. XXXI, April 1988, p.192.

Figure 4.5 US Airline Industry 1988 Price-cost Profile



As regards those carriers that did not form part of the 1988 cluster, both Braniff and Piedmont have disappeared. The former the result of it being declared bankrupt for a second time, the latter a consequence of its merger with USAir. Both Alaska and Southwest serve niche markets, the latter as a result of its monopoly rights into the downtown airports of Dallas and Houston. USAir's position stems largely from the monopolistic position it has held in many of the markets it serves. However, now that it is approaching megacARRIER size it can be expected to have moved closer to the position of the clustered group. America West, the only genuine new entrant still in existence, is likely to face much greater competition over the next few years both as a result of its expansion into new markets and the outcome of megacarriers continuing to obtain greater synergy from the combined exploitation of their hub and spoke networks and CRS's. A small number of similarly sized and equally endowed megacarriers would seem to be the most likely outcome for the US airline industry. The restructuring exercise it would appear has still a little way to go!

References and Footnotes:

100. Galbraith, J.K., 'Time and the New Industrial State', American Economics Association Papers and Proceedings, May 1988, p.376.
101. "The modern corporate enterprise cannot...be brought within the framework of conventional and mathematical market theory. The present solution, which is to adjust the reality to what can be accommodated to the equations, is not something we should applaud or approve." Galbraith, J.K., supra note 100, p.375.
102. Keeler forecast that deregulation would result in fare decreases of sufficient magnitude to require increased flight frequencies. Keeler, T.E., 'Airline Regulation and Market Performance', Bell Journal of Economics and Management Science, Vol.3(2), Autumn 1972, pp.399-424.
103. The net aggregate profit of the major and national carriers on domestic operations amounted to some \$804 billion in 1978, but by 1982 as a result of deregulation, economic recession and a number of labour disputes this was transformed into a net loss of \$1,317 billion. IATA Deregulation Watch - Third Report, 1986, Appendix 2.
104. In essence this approach represents a only different emphasis from the offensive stance that is discussed below. As such it is often difficult to isolate them in any rigorous and convincing way.
105. Porter's work on competitive strategy is particularly

pertinent in this regard. Porter, M.E., *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, The Free Press, New York, 1980.

106. Baumol, W.J., Panzar, J.C., and Willig, R.D., *supra* note 20.

107. For a market to display perfect contestability requires costless entry and exit and an absence of sunk costs, in effect the complete non-existence of entry barriers.

108. Bailey, E.E. and Baumol, W.J., 'Deregulation and the Theory of Contestable Markets', *Yale Journal on Regulation*, Vol.1:111, 1984, p.128.

109. Kyle, R. and Phillips, L.T., 'Airline Deregulation: Did Economists Promise Too Much or Too Little', *Logistics and Transportation Review*, Vol.21(1), March 1985, p.13.

110. White, L.J., 'Economies of Scale and the Question of "Natural Monopoly" in the Airline Industry', *Journal of Air Law and Commerce*, 1979, Vol.44, p.548.

111. Kahn, A.E., *supra* note 19.

112. As witnessed by the approval granted to a number of highly questionable acquisitions and mergers during the period 1985-8. Fisher and Jordan have each examined in some detail this particular aspect of deregulation. (Fisher, F.M., 'Horizontal Mergers: Triage and Treatment', *Economic Perspectives*, Fall 1987, Vol.1, No.2, PP.23-40. Jordan, W.A., 'Problems Stemming from Airline Mergers and Acquisitions', *Transportation Journal*, Summer 1988, PP.9-30.

113. Kyle, R. and Phillips, L.T., *supra* note 109, p.18.

114. Calculated from statistical data published in Air

Transport World and Aviation Daily.

115. Calculated from statistical data published in Air Transport World and Aviation Daily.

116. A recent survey of gate availability carried out in January 1989 by the Airport Operators Council International is referred to in Airline Business, October 1989, p.17.

117. This measure is referred to in more detail on page 82.

118. Taneja, N.K., supra note 39.

119. A relatively recent survey of the commission levels paid to travel agents during the deregulated era is contained in Airline Business, November 1988, pp.33-6.

120. Levine, M.E., supra note 62, pp.454-8.

121. Some early examples of the biasing of information display is contained in 'Note on Airline Reservation Systems', supra note 73, pp.29-37. More recent evidence of this is contained in Avmark Aviation Economist, May 1987, pp.19-20; and in Appendix 7 of the European Civil Aviation Conference submission in connection with the US Dept. of Transportation's investigation into the CRS industry, published in 1988. (Int.S/16-WP/4.)

122. For example, even though in reality there may be six carriers offering a service from A to B at about the time a client wishes to travel, if the agent only indicates one such option as being available, then to all intents and purposes as far as this traveller is concerned this particular market is monopolistic. By controlling the agencies in their main traffic generating locations in this way CRS vendors have been able to confer near monopoly status on a significant number of the

city-pair markets in which they operate.

123. Levine, M.E., *supra* note 62, pp.413-4.

124. The daily peak observed in most land-based urban public transport systems is such that of the order of two thirds of rolling stock is required purely for peak operations.

Profitable operation under these conditions is hardly ever accomplished.

125. Salop, S.C. and Scheffman, D.T., 'Raising Rivals' Costs', *American Economic Association Papers and Proceedings*, May 1983, pp.267-71.

126. For example: Shepherd, W.G., 'Competition, Contestability, and Transport Mergers', *International Journal of Transport Economics*, Vol.XV, No.2, June 1988, pp.113-28; and Humphreys, B., 'The Myth of 'Contestability'', *Avmark Aviation Economist*, January 1987, pp.7-8.

127. This is the approach adopted by Bailey, E.E. and Williams, J.R. in 'Sources of Economic Rent in the Deregulated Airline Industry', *Journal of Law and Economics*, Vol.XXXI, April 1988, pp.173-202.

128. The transition of the industry is clearly revealed by contrasting figures 4.4 and 4.5. Undertaking a similar exercise using data for 1989 (not yet available) will undoubtedly confirm the trend toward greater market concentration.

129. Williams, J.R., 'Understanding Where You Belong: Sources and Stability of Competitive Advantage', Working Paper No. 20-86-87, Carnegie Mellon University, Graduate School of Industrial Administration, March 1987.

130. Bailey,E.E. and Williams,J.R., supra note 127.

131. Bailey,E.E. and Williams,J.R., supra note 127, p.191.

Chapter 5 Liberalisation - the European Approach

"One attitude common to all European States is preservation of their sovereign rights in relation to air transport and reluctance to cede power to the European Commission."

S.Wheatcroft & G.Lipman¹³²

The regulation of intra-European scheduled airline services continues for the moment to be based on the concept of bilateralism. The exchanging of reciprocal traffic rights between individual States, as enshrined in the Bermuda Agreement of 1946 between the US and UK, remains the fundamental means by which European Governments regulate their international services. Although most West European Governments no longer would regard their flag carriers as performing the important role they once played in bringing their country's attention to the world, many still view their major airline as a form of national virility symbol. The desire to protect one's own interests therefore has been, and remains, of paramount importance. Progress towards liberalising the regulatory regime in Europe as a consequence has been extremely slow. With the benefit of hindsight however this may well have proved to be a blessing in disguise, judging by the experience of rapid and full scale deregulation gained on the other side of the North Atlantic.

A key differentiating characteristic of the airline industry in Europe has been the high proportion of charter traffic, with over one half of total passenger demand carried on non-scheduled services.¹³³ Economic regulations governing such operations in Europe have traditionally been much less restrictive than those constraining scheduled services. As a result, the charter sector has exhibited a strong element of competition in stark contrast to the experience of the scheduled industry. Operating costs, measured in passenger-kms, traditionally have been much less for non-scheduled services, with Doganis estimating that on a sector of some 1500 miles these would be some 20-30% lower for a charter carrier than for a scheduled airline.¹³⁴ The vast majority of this non-scheduled traffic however is formed of inclusive tour holidaymakers travelling from Northern Europe to Mediterranean resorts, mostly on the services of independently owned airlines.¹³⁵ By comparison the business orientated routes connecting other points have remained almost exclusively in the hands of nationally owned flag carriers.¹³⁶ It has been the experience of this latter area that has provoked travellers to demand a fundamental change in regulatory policy.

Whilst from an administrative perspective it was comparatively easy for the US Government to fundamentally alter the economic rules governing its domestic airline industry, achieving a similar outcome for its international routes has proved a very different ball game. In many respects its progress towards liberalising the latter provides a much closer

parallel to what has occurred in Europe. There are of course fundamental differences between the two situations, most notably the fact that an increasing number of European States have been participating in the formation of a 'Common Market'. Although at first sight this would tend to suggest an easy passage towards the reaching of a consensus regarding an overall regulatory strategy for Europe, this in practice has not proved to be the case. The true motives of States for joining such an endeavour are seldom revealed, but it would appear to have been concerned much more with the safeguarding of their individual interests (ie. airlines, airports, aircraft manufacturers and other associated companies) rather than with any preoccupation with the collective good of their fellow members.

To provide an understanding of the likely future evolution of regulatory reform in Europe it is essential first of all to analyse historically the way in which policy has evolved and secondly to examine what effect this has had on the development of airline services. This approach enables the more powerful influencing forces in this at times confused picture to be identified and their strategies revealed.

5.1 The Development of Regulatory Policy in Europe

In 1944 a Conference involving some 52 Western Allied nations had been called in Chicago to discuss the possibility of achieving a multilateral agreement concerning the development of international airline services. The protectionist stance adopted by most European governments at this Conference contrasted strongly with the attitude of the US Government, which had been keen to see such operations develop in a unfettered way.¹³⁷ Although participants were able to agree to the mutual exchange of overflying and landing rights, generally referred to as the first two freedoms of the air, they were not able to reach agreement on the mutual exchange of commercial traffic rights. A further attempt at Geneva in 1947 also failed to reconcile these two extreme points of view. Since this time agreements concerning international airline services have been based on the exchanging of reciprocal traffic rights between individual States. The various attempts to instigate a multilateral approach had proved unfeasible because of the huge imbalances of power that then existed. In many respects inequality continues to be one of the major obstacles to the achieving of a consensus regarding the reform of regulatory policy for the airline industry in Europe.

The precise terms of a bilateral agreement depend therefore very much on the attitudes of the two parties concerned. Some, like those involving Eastern bloc countries, have been of a highly restrictive nature, whilst others,

particularly those based on the USA-UK Bermuda Agreement of 1946, have been by comparison liberal. Where a bilateral involves countries with flag carriers of comparable power and ability the terms agreed are invariably less restrictive than those contracted between a country possessing a small and relatively weak airline and one possessing a well developed and financially strong national carrier. An additional factor that has had an influence here concerns the granting of fifth freedom rights, which would require the agreement of the third countries involved, if it was intended that these rights were to be used. The precise details agreed to however are not always made public as some of the more blatant anti-competitive features contained in many bilaterals would promote considerable disquiet.¹³⁸ These often have to do with pooling arrangements, to which, as Doganis notes, this type of duopolistic structure lends itself.¹³⁹

In Western Europe the need to protect the flag carrier invariably has resulted in each country designating its national, often publicly owned, airline to operate their international scheduled services. Only in a very few instances have airlines other than the flag carrier been assigned to perform such operations.¹⁴⁰ Table 5.1 lists the twenty busiest intra-European routes and their operating carriers. The result has been to produce a scheduled airline industry which, until relatively recently, has remained to a large degree immune to competitive pressures. For example, regulatory authorities in many European countries have sought to protect the interests of

their flag carrier by refusing to license competitors on domestic routes. Even in the UK, where various attempts have been made since 1960 to introduce some degree of head to head¹⁴¹ competition on to domestic routes, it has been only comparatively recently that the avoidance of any harmful effects to the national airline has not been the predominant factor in such decision making.

Table 5.1 The 20 Busiest Scheduled Intra-European Routes

<u>Route</u>	<u>Pax Traffic</u>	<u>Carriers</u>	<u>5th Freedom Airlines</u>
London-Paris	2,400,000	AF, AE, BA, & BC, DA, UK.	GF, IR, KU, MK, MH, & PA, PK, SV.
London-Amsterdam	1,300,000	BA, BD, HV, & II, KL, UK.	AI, KU, MH, PK.
London-Dublin	1,200,000	BA, BD, BZ, & DA, EI, FR.	
London-Frankfurt	1,000,000	BA, LH.	CX, ET, GF, NW, MH, & PA, PR, RG, TG.
London-Brussels	800,000	AE, BA, II, & SN, UK.	SV.
London-Zurich	750,000	BA, DA, SR.	AC, UL.
Copenhagen-Oslo	725,000	SK.	FI, NW, PA, SR.
London-Geneva	670,000	AE, BA, SR.	AI, KU.
Copenh'n-Stockholm	640,000	SK.	JU, NW, OK, SN.
Milan-Paris	550,000	AF, AZ.	TW.
London-Milan	540,000	AZ, BA.	
Geneva-Paris	510,000	AF, SR.	AA, AC, RK, TW.
Frankfurt-Paris	480,000	AF, LH, YP.	AI, AR, AV, CX, PA, & PK, TG.
Berlin-Dusseldorf	480,000	AF, BA.	PA.
Amsterdam-Paris	470,000	AF, KL.	GA, JL, KU, PR, RG.
London-Madrid	460,000	BA, DA, IB.	
London-Rome	460,000	AE, AZ, BA.	AI, ET, IR, KQ, PR.
Helsinki-Stockholm	450,000	AY, SK.	MS, PA, SR.
London-Dusseldorf	450,000	AE, BA, LH.	AC.
Paris-Rome	450,000	AF, AZ.	CX, KU, RK, SV.

Source: ICAO Origin & Destination Survey for 1987; ABC World Airline Directory for December 1989.

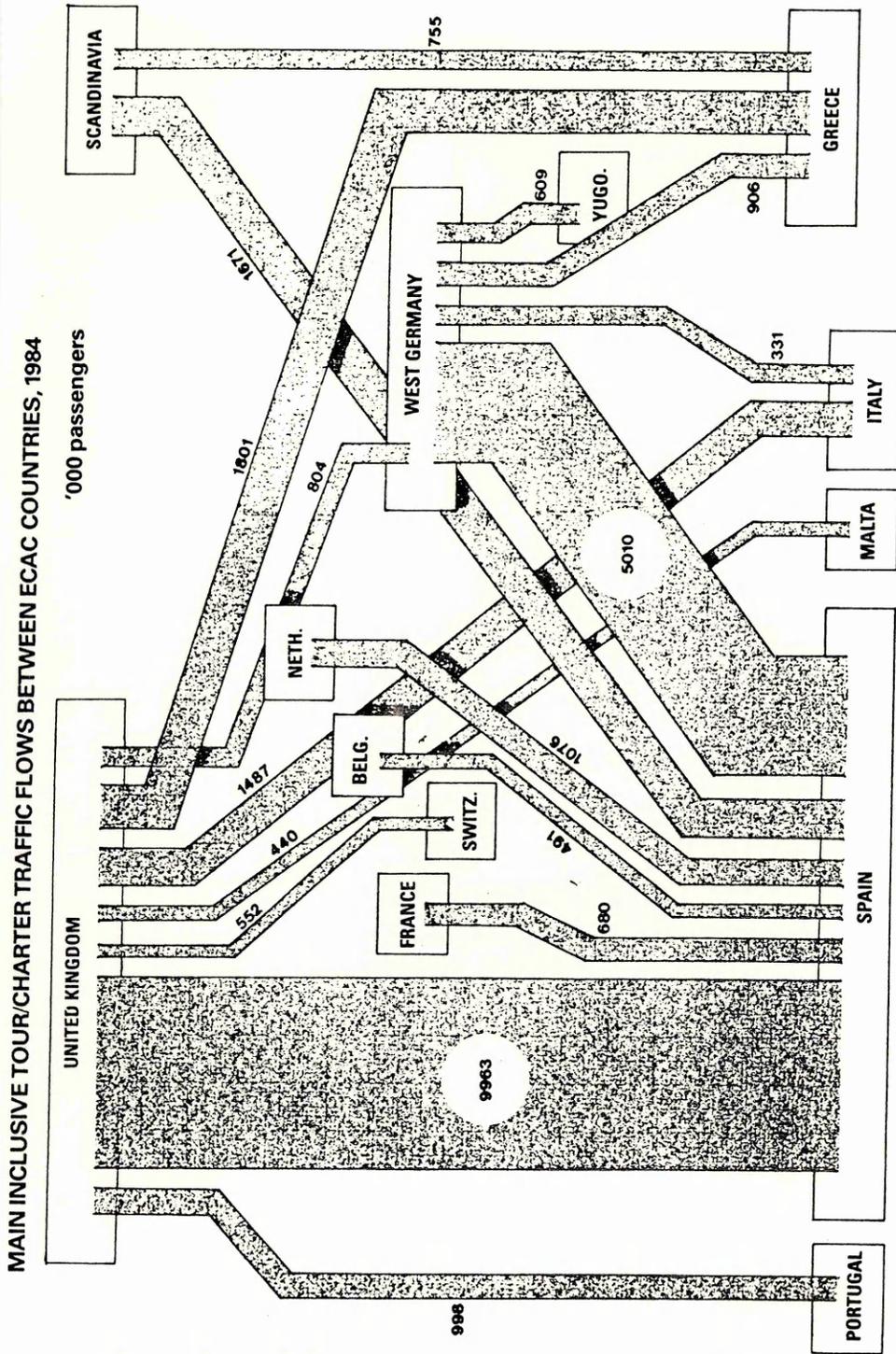
That such a regime resulted in inefficiency, necessitating high fares, was thrown into sharp focus in the late 1960's and early 1970's by both the experience of US intrastate airline markets and, more especially, by the relatively unregulated charter markets existing within Europe and across the North Atlantic. Since the deregulation of the internal US market the contrast has become even more stark, leading to a general conviction that the adoption of such a policy in Europe would force airlines to improve their efficiency and hence result in lower fares.

Whilst international scheduled passenger services have been the subject of tight economic regulation, the attitude of most governments toward charter operations has been essentially liberal. The Chicago Convention left the authorisation of non-scheduled services to the discretion of individual States. This resulted in each country needing to give prior authorisation to inbound charter flights. Not surprisingly a wide range of attitudes have been apparent with some countries flatly refusing to authorise services not operated by their own flag carriers, whilst others, of whom some have been keen to develop their tourist industries, have adopted an open door policy. Within Europe the 22 member States of ECAC agreed in 1956 to mutually waive this requirement of prior authorisation.¹⁴² The adoption of this policy facilitated the development of inclusive tour operations, which currently account for some 90% of intra-European non-scheduled traffic. At first however the desire to protect the markets of scheduled carriers meant that

regulatory authorities adopted practices aimed at restricting the fares that could be charged by charter companies and the capacity they could offer. For example, the UK's Air Transport Licensing Board stipulated that the minimum price for inclusive tours could not be less than the full scheduled airline fare to the same destination.¹⁴³ Gradually these restrictions were lifted, mostly as a result of growing public demands for cheaper holiday travel.

The coexistence of these two seemingly incompatible attitudes to Europe's airline industry continued throughout the 1960's and 1970's. Governments were able to maintain this apparently contradictory approach because of the very different requirements of passengers using the two types of service. As figure 5.1 shows, on the one hand most charter services catered to the needs of Northern Europe's holidaymakers whose main concern was to get to the resorts of the Mediterranean as cheaply as possible, whilst scheduled services were perceived primarily as providing essential links for business travellers.¹⁴⁴ In most instances charter operators were satisfying a genuinely new demand for air travel and so could not be regarded as poaching traffic from the national airlines. Table 5.2 details how this intra-European charter traffic grew between 1975 and 1985.

Figure 5.1 Map of European Charter Traffic Flows



Source: Wheatcroft, S. and Lipman, G., Air Transport in a Competitive European Market - Problems, Prospects and Strategies, Economics Intelligence Unit Special Report, September 1986, p.24.

Table 5.2 Growth of Intra-European Non-Scheduled Traffic

<u>Year</u>	<u>Non-Scheduled Pax.</u>	<u>% of Total Intra-European Pax.</u>	<u>% of Total RPK</u>
1975	25,500,000	40.2	52.5
1976	25,800,000	38.7	50.4
1977	28,100,000	39.0	49.4
1978	30,100,000	39.0	49.0
1979	33,300,000	40.1	50.1
1980	31,800,000	39.6	50.4
1981	32,300,000	39.3	50.3
1982	34,800,000	41.4	52.3
1983	37,500,000	43.3	55.0
1984	41,000,000	43.8	55.4
1985	42,000,000	42.9	54.6

Sources: ICAO Circular 200-AT/78, 1986; & ECAC Digests of Statistics.

Whilst the type of aircraft used for these operations in the early and mid 1960's were predominantly castoffs from the scheduled airlines, by the early 1970's charter companies were operating similar equipment to that used by the flag carriers. The second class image of non-scheduled services was eroded during the 1970's as inclusive tours grew in popularity, matched in many instances by a quality of in-flight service virtually indistinguishable from that offered to economy class travellers on scheduled flights. Operators of the latter had been forced to differentiate the quality of their inflight service in order to appease their full fare customers, who had grown increasingly dissatisfied at being given what they perceived as exactly the same product as customers who had paid considerably less. The need to fill larger aircraft at a time when fifth freedom rights were being increasingly exercised had forced scheduled carriers to offer discounted fares not only through their normal distribution channels, but also in the

shady, yet increasingly important, bucket shop market. By 1980, whilst the national carriers still continued to monopolise the non-holiday intra-European city-pair markets, they were, metaphorically speaking, swimming against an increasingly strong tide. In recent years it allegedly has been the increasing power and influence of the European Commission that has provided the greatest stimulus to this tidal flow. To help analyse the effects of the various factors that appear to have had an influence on the regulatory policies adopted by the European States table 5.3 provides a chronology of major relevant events.

Table 5.3 Chronology of Significant Events

- 1956 - ECAC multilateral agreement on non-scheduled operations.
- 1957 - European Community consisting of six member States established by the Treaty of Rome.
- 1961 - EC Council of Ministers exempted sea and air transport from competition rules of the Rome Treaty until a policy could be developed.
- 1967 - ECAC multilateral agreement on scheduled service tariffs.
- 1973 - U.K., Denmark & Ireland join EC.
- 1979 - EC Civil Aviation Memorandum No.1 published, which set out general objectives regarding air transport policy.
- 1980 - EC introduce proposal to Council regarding inter-regional services.

1981 - EC report on scheduled air fares within the Community published.

1982 - U.S./ECAC Memorandum of Understanding introducing a multilateral agreement on non-intervention zones for North Atlantic tariffs.

- ECAC COMPAS Report on Competition in European Air Services published.

1983 - EC Inter-Regional Air Services Directive issued by Council.

1984 - EC Civil Aviation Memorandum No.2 published, which advocated the harmonisation and liberalisation of intra-European bilaterals, and the introduction of competition rules with certain exemptions.

- UK/Netherlands liberal bilateral agreement signed.

1986 - Nouvelles Frontières case at European Court of Justice established that rules governing competition in the Rome Treaty applied to air transport.

- EC introduce proposal to amend 1983 directive on inter-regional services.

- ECAC Memorandum of Understanding, involving representatives of several States, on capacity share and tariffs but not market entry.

1987 - EC Single European Act implemented, which makes unanimous approval of Council decisions no longer necessary, only a qualified majority.

- Stage 1 of liberalisation approved by Council.

1988 - Sorensen Plan discussed, which envisages the Commission

gradually taking over responsibility for the Air Service Agreements of the 12 member States.

1989 - Court of Justice decision in Ahmed Saheed case, declaring null and void ipso jure agreements on tariffs applicable to scheduled routes.

- Stage 2 of liberalisation proposals put forward by Commission.

5.2 The Impact of the European Community

The Treaty of Rome, signed in 1957 by the governments of Belgium, France, Italy, Luxembourg, Netherlands, and W.Germany, established the European Community. The aim was to remove any barriers to trade existing between the Member States in order to create a 'Common Market'. The six were joined by Denmark, Ireland and the U.K. in 1973, by Portugal and Spain in 1987, and by Greece in 1989. The Community, as established, is a supranational body with its own legislative, judicial and administrative powers. The first of these powers is exercised by the Council of Ministers, comprising ministers from each Member State, the presidency of which rotates on an alphabetic basis every six months. Judicial powers rest with the Court of Justice, made up of eleven judges assisted by a number of advocates general. The administrative function is performed by the Commission, consisting of 14 Commissioners nominated by Member States, but remaining independent of them. To perform its role the Commission has a secretariat of 19 directorates general, two of which, number IV dealing with competition and number VII concerned with transport, have the most concern with airline services.

For a long period of time the Commission did not concern itself with air transport, as the Council of Ministers in 1961 had exempted this and sea transport from the competition rules of the Rome Treaty until such time as a policy could be developed. By the mid 1970's, prompted by the rapid development

of the aviation sector, a growing public dissatisfaction with scheduled service provision, and a decision of the European Court that the general rules of the Treaty were applicable to maritime transport, the Council was forced into action, albeit of a very limited nature. In 1978 it issued a list of priorities for air transport, but, as could only realistically be expected given the vested interests of the Member States, it was only going through the motions, as no reference was made to either market entry, capacity, or fares.¹⁴⁵ A year later the Council set up a consultation procedure for dealing with third party States and established a directive concerning noise emission. However it was, and continues to be, the Commission, which the same year issued its first Memorandum dealing with air transport, that has been the main driving force within the Community.¹⁴⁶ This 1979 Memorandum set out a list of broad objectives for the mode and had the effect of increasing the debate on this controversial topic.

In 1980 the Commission was asked by the Council and the European Parliament to prepare a report dealing with scheduled airline fares within the Community. This was published a year later and concluded that in relation to costs fares were not excessive, but suggested that procedures for tariff development could be improved. Later that year to further this suggestion the Commission proposed to the Council that they issue a Directive dealing with tariffs. At the same time the Council were asked to consider making a parallel regulation which would have the effect of making air transport subject to the

competition rules of the Rome Treaty. A great deal of debate ensued regarding these proposals but the Council were unable to reach agreement. Too much was at stake! An exasperated European Parliament successfully brought the matter before the Court of Justice in a case which cited the failure of the Council to meet its obligations under the Treaty.

The Commission's next move concerned inter-regional air services, which it can be conjectured provided a possible chink in the establishment's armour plating.¹⁴⁷ The fact that it took the Council three years to reach agreement on this matter, the terms of which were much more restrictive than originally envisaged by the Commission, gives a clear indication of how reluctant most Member States were to altering the status quo. The results of this directive were not surprisingly very limited, with the Commission reporting in 1986 that only 15 new routes had been approved under these provisions. Katz¹⁴⁸ identifies the directive's shortcomings as firstly limiting...
"..approval.. to services between the smaller airports",
secondly being only applicable.."..to aircraft having less than 70 seats", thirdly the requirement stipulating a minimum distance of 400 kms, fourthly that "..it did not apply if one of the two States concerned could demonstrate that the proposed new service is 'already satisfactorily catered for' by existing direct services between the two airports..or if an indirect scheduled air service already exists between the airport concerned and another airport situated within 50 kms", and finally that.."..it did not provide for fifth freedom rights to

carry traffic to third countries". These extremely tight conditions, particularly the exclusion of category 1 airports, provide a crystal clear insight as to where the Council of Ministers priorities lay. However, on a positive note, the 1983 directive did represent the first multilateral agreement on air transport under the Rome Treaty.

Following this mostly abortive attempt to move the Council in the direction of applying the Treaty's competition rules to air transport, the Commission introduced its second Memorandum in 1984.¹⁴⁹ The main thrust of its recommendations were the harmonisation of existing bilateral agreements, with greater emphasis being placed on the use of market forces in the areas of capacity and fares, and the introduction of the Treaty's competition rules to this sector. The sensitive area of market entry was dealt with "...cautiously".¹⁵⁰ As regards tariffs the Memorandum introduced the concept of zones of non-intervention or approval, as a means to circumvent governments failing to reach agreement on the introduction of innovative fares. In terms of the sharing of capacity it proposed rejecting a strict division in favour of a minimum 25% safeguard level for each of the two participants. As to the competition rules the aim was to apply Articles 85 to 90 for an initial seven year period to intra-Community routes only, with the possibility of exemptions being granted by the Commission.

Reactions to the proposals again not surprisingly followed along vested interest lines. The Council established its own working party to consider how the recommendations could be

implemented. The outcome of these deliberations were a report and a list of guide-lines, which were endorsed by the Council in December 1984.¹⁵¹ Whilst the guide-lines appeared to reduce the extent to which the Commission's full recommendations could be implemented, they did in the words of Wheatcroft and Lipman .. "...suggest a growing political realisation of the need for the Community to take action in respect of tariff, capacity and competition before possible Court decisions severely constrain the scope of action available".¹⁵² Minds were not sufficiently concentrated on this possibility however, and, as a consequence, the core issue concerning the application of the Treaty's competition rules was left to the judiciary to determine. This they did in what is generally referred to as the *Nouvelles Frontieres* case.¹⁵³

The matter had been taken to the European Court by the French Tribunal de Police, which was considering taking criminal action against airlines and travel agents who were selling tickets below government approved levels. A key question posed by the French authorities concerned whether or not the system by which its government approved tariffs ran counter to the competition rules of the Rome Treaty. The response was that such a regime at the time of the Court's deliberations did not contradict the rules, but that this situation could change if the Commission or Member States deemed otherwise. Of critical importance however was the Court's clear decision that the competition rules did apply to the air transport sector. Whereas before the Commission had had

little scope to push Member States in the direction of agreeing a multilateral policy aimed at removing barriers to competition, now they were in a position to be able to force the Council to do this, because until such time as the body of Ministers approved a regulation dealing with competition they were empowered to determine which collusive practices were legal and which were not. It began to exercise this power after the Council's failure to reach formal agreement on both capacity and tariff liberalisation and the drafting of a regulation dealing with competition at the end of June 1986.

The Commission wrote to a number of the Community's scheduled airlines giving them two months to terminate certain activities which it reasoned to be in contravention of Article 85 of the Rome Treaty. The most publicised example of this concerned the matter of Aer Lingus providing a financial inducement to KLM to dissuade the latter from operating a service to Dublin.¹⁵⁴ Additional pressure was exerted by the Commission which threatened to withdraw its proposals on group exemptions from the competition rules unless the Council arrived at a sensible conclusion by June 1987. It would seem reasonable to conclude that it was these various actions that persuaded the Council's Ministers to 'get their act together', because by agreeing regulations which implemented the competition rules they could minimise any damage to their respective national airlines. The alternative lay in the Commission using the European Court to outlaw anti-competitive practices, which would effectively have removed the influence

Ministers could exercise in this regard. Indeed within the twelve months stipulated by the Commission the Council were ready to unanimously agree a package initiating such regulations. Final agreement however was delayed a further six months after Spain's last minute veto over the matter of access to Gibraltar.

The liberalisation measures agreed in December 1987 consisted of two regulations implementing the competition rules and two other measures aimed at relaxing the restrictions on fares, capacity and entry. As regards the former, Article 85, which prohibits anti-competitive agreements, decisions and concerted practices, and Article 86, which prohibits abuse of a dominant position to affect trade between Member States, became effective. The precise activities which were considered as contravening these principles were not defined however. Frere Cholmeley¹⁵⁵ identified the following as being possible candidates for inclusion.."..fare fixing, capacity fixing, revenue pooling, route limitation, mergers and take-overs, unreasonable attempts to destroy new entrants and discrimination in slot allocation, computer reservations or arrangements for handling or other ancillary services." However a number of block exemptions were included in the Council's package, providing immunity for a three year period.

The measures concerning tariffs, market access and capacity are summarised in table 5.4. These at first glance convey the impression of substantial change, but as one commentator concluded in mid 1988 .."..they have been confined

to the smaller airlines and markets, mostly involving U.K. and Irish airlines and destinations. The heartland of Europe's air transport industry - the major flag carriers and the prime inter-hub services - remains largely untouched."¹⁵⁶ The real aim of the Council's Ministers it would appear was to put off what in their eyes would be the evil day when access to hub airports becomes a reality. Despite this overall impression of intransigence a wide range of attitudes is apparent. Ireland, Luxembourg, Netherlands, and U.K. have liberalised the bilateral arrangements existing between themselves well in advance of policy recommendations issued by the Commission. Other Member States though have been adopted a predominantly protectionist stance as they have had more to lose as will be made clear below.

Table 5.4 Measures Agreed by the Council of Ministers in 1987
Capacity

Controlled on a country-pair basis. From January 1988 to September 1989 capacity may be adjusted within the range + to - 5% of an equal share. From October 1989 this is increased to + and - 10%. Services operated under the terms of the 1983 inter-regional agreement are excluded from this calculation.

Market Access

Multiple designation is compulsory on a country-pair basis and, under the following conditions, on a city-pair basis:

- i) During 1988 on routes which in 1987 had at least $\frac{1}{4}$ million passengers;

ii) in 1989 the preceding year's minimum traffic level is reduced to 200,000, with the addition of an alternative constraint stipulating the minimum number of flights on a route during 1989 at 1200;

iii) in 1990 this is further reduced to 180,000 in terms of passengers and 1000 with regards to flights.

Fares

Still required to be filed with each country with not more than 60 days advance notice. Automatically approved if not disapproved by one State within 30 days. They must be approved if reasonably related to long term fully allocated costs.¹⁵⁷

Automatic approval for the following:

- i) discount fares of 60-90% of the normal economy fare;
- ii) deep discount fares of between 45 and 65% of the normal economy fare
- iii) super discount fares down to 10% below the lowest approved fare under conditions relating to length of stay and advance purchase.

Source: 'The EEC's New Air Transport Package', Frere Cholmeley, 1988.

The Commission for its part regarded the 1987 package as an important first step on the road to securing an internal market for air transport. They foresaw the real breakthrough as having to be achieved in 1990 when the second package of liberalisation proposals is scheduled to be agreed by the Council. "The Commission naturally would liked to have achieved

even greater liberalisation in this first phase, but was willing to settle for the agreed package on the basis of a commitment by the Council to adopt, by 30 June 1990, further measures of liberalisation with a view to the completion of the internal market by 1992." (Nicholas Argyris, Division Head in the Directorate General for Competition, February 1988.¹⁵⁸) The delay in implementation, which no doubt will be extended, has provided carriers with a good opportunity to prepare for their new less protected status. How well each has responded to the challenge will be reflected in their Governments' responses to the Commission's 1990 proposals. Those national carriers perceived as being able to benefit from further liberalisation will be revealed by the Member States anxious to push ahead with reform, whilst those identified as losers will be evident from the protectionist stance of their Governments.¹⁵⁹

At this time of writing the Commission has just publicised its recommendations regarding the 1990 package. It is clear from this that they are keen to push ahead as much as possible with liberalising the current bilateral arrangements between Member States. Table 5.5 summarises their proposals to the Council.

Table 5.5 The European Commission's 1990 Proposals

Fares

i) In place of the existing regime a double disapproval requirement is proposed. Fares would be automatically approved if not disapproved by the relevant authorities at each end of a route. Fare changes of greater than 20% would require detailed

examination by Member States.

ii) Fifth freedom carriers to be allowed to act as price leaders.

iii) Proposals to apply to domestic services and those to third countries.

Capacity

i) The present 60:40 sharing arrangement between States is recommended to increase to 67.5:32.5 from October 1990 and to 75:25 from April 1992. It is also proposed to allow a further 5% increase in capacity share if airlines from one Member State have reached the upper limit of the range.

ii) It is proposed that the Commission could suspend the above extension to the capacity sharing proposals if a Member State's airlines were suffering serious financial difficulty.

iii) All inter-regional services to be excluded from capacity calculations.

iv) The seating limit for services between hub and regional airports should be raised to 100.

Market Access

i) Multiple designation limits to fall to 180,000 passengers, or 1000 return flights, per year from January 1990. Further reductions are proposed for introduction in January 1991 (140,000 passengers or 800 return flights per annum) and January 1992 (100,000 passengers or 600 return flights).

ii) Existing airport derogations, excluding those involving the Greek Islands, to be phased out, resulting in the establishment of third and fourth freedom rights between all

other airports open for intra-Community international services.

iii) Member States would no longer have complete discretion to refuse one of their own carriers from operating any intra-Community or domestic route. A State could only refuse a licence if the route applied for did not meet its published criteria of economic viability, which must exclude any detrimental impact on existing operators.

iv) A Member State would be obliged to accept a third or fourth freedom service licensed by another Member State and operated by one of its carriers, except under circumstances in which an aircraft seating more than 100 passengers is proposed for operation on an inter-regional route on which a new service utilising equipment with less than 100 seats had been established during the previous three years. Exemption could also be obtained by applying to the Commission if it could be deemed that an airport had insufficient facilities, navigational aids or slots.

v) Member States could continue to regulate in a non-discriminatory way the distribution of traffic between airports forming part of a system in a particular locality.

vi) As regards fifth freedom traffic rights it is proposed that Community airlines be allowed to exercise such rights within the Community as an extension of a service from, or as a preliminary of one to, their State of registration, with no exclusion for hub airports. This would be subject to a limit of 50% of a route's annual seat capacity, but would not apply to aircraft equipped with fewer than 100 seats. A change of gauge

would be permitted on such services. Such operations would be only subject to the approval of the third country concerned.

vii) Sixth freedom services would be allowed as it is proposed that carriers be allowed to combine third and fourth freedom flights through their home airport using the same aircraft and flight code.

viii) It is advocated that cabotage be permitted with the following provisos: firstly, that the service should be an extension of, or preliminary to, a third or fourth freedom service; secondly, that at least one of the airports served is a regional airport; and thirdly, that not more than 30% of the annual seat capacity may be utilised for the carriage of domestic passengers.

Source: 'Summary of the Commission's Proposals for 1990', UK Dept. of Transport, September 1989.

The Court of Justice has continued to play a vital role in pushing forward the liberalisation game, this being reflected in the Commission's proposals for 1990. The Ahmed Saeed case¹⁶⁰, which resulted from a Frankfurt travel agency being served a writ at the behest of Lufthansa on account of having sold discounted tickets obtained outside of West Germany, established that the imposition of a single price policy forced upon carriers by an airline holding a dominant position would contravene Article 86 of the Rome Treaty. This applied to not only intra-Community services, but also to domestic services and those involving third party countries. The Court also

declared that Member States approving tariff agreements between airlines either abusing a position of dominance or operating a cartel would be in contravention of Article 86. In addition, recourse to Article 90, which would allow some respite from this ruling on the grounds of public service, would require...
"..clear details as to the nature of the mission and its effects on the structure of the prices schedule."¹⁶¹

5.3 Maintaining the Status Quo

The fundamental essence of the European Common Market is that the economic barriers existing between Member countries by virtue of their different nationalities should be eliminated. In effect by the beginning of 1993 the defences provided by each State to safeguard its interests should be dismantled and replaced by a collective system designed to promote the affairs of all Members. Any attempt though to create a single market comprising a group of nations with such a wide and diverse range of economic and political philosophies can only realistically be expected to proceed at snail's pace.¹⁶² This certainly has been the experience of the now twelve Member States, with the European Commission acting as a sort of conscience reminding Governments of their obligations with respect to the implementation of the Treaty of Rome. Each of the Member States has sought to use the Community to pursue their own ideosyncratic objectives, and, rather than conveying a picture of increasing harmony, it is much more a case of nations continuing to vie with one another.

Forcing States to accept the responsibilities implicit in their membership has not been an easy task. Numerous delaying tactics have been employed when an individual State has perceived that its best interests are not likely to be served. To have expected otherwise can only be construed as exhibiting naievity. Whilst some individuals have seen the light and wholeheartedly accepted the doctrine of a common market, the

same cannot be said of their Governments.¹⁶³ It would be unrealistic to think that 'Europe's interests' are likely to have been foremost in the minds of those responsible for devising the strategy of their country with regards to this issue. The day that the average Frenchman, Italian, or Spaniard regards himself firstly as a European and only secondly as a native of his country of birth has yet to dawn. Finding a balance between on the one hand attempting to push ahead with the implementation of ideas enshrined in the Treaty of Rome concerning competition and on the other hand acknowledging the reality that the main players are primarily concerned with pursuing what they each regard as being in their individual best interest and which often will imply a contrary objective, is the exceedingly difficult task of the European Commission.

Given the enormous differences in the size and power of Europe's scheduled carriers full scale deregulation almost invariably would result in the demise of the weaker companies. In the event of such a policy being implemented several flag carriers would be likely to fold and it is for this reason that the US experiment has never been a realistic option for Europe.¹⁶⁴

5.4 Summary

The move towards instigating policies designed to produce a more competitive environment in these markets was at first very slow to develop. More recently this process has speeded up, with some progress being made toward agreeing a more liberal regulatory policy. Much of this has been assumed to have been associated exclusively with the commitment of Member States to achieving a common market by the end of 1992. A good deal though of recent developments in the industry however have been motivated by what has occurred in the US.¹⁶⁵ Partly this has stemmed from a growing realisation that in order to provide an effective defence against a now highly efficient and aggressive group of aspiring US airlines has necessitated the adoption of a number of the tactics used by these carriers. However, it also has resulted from the experience of US carriers in terms of what the successful have been able to achieve in terms of their ability to control and exploit markets.

The best long term defensive strategies have involved the elimination or neutralising of powerful competitors. Survival as a European scheduled operator with so many uncertainties has required a very careful analysis of defensive tactics involving the full range of feasible options. For a carrier like British Airways it has been essential to protect its home territory, not just at a congested Heathrow, but also where there has been some room for expansion, namely at Gatwick and Birmingham. It

has achieved this through the acquisition of British Caledonian and Brymon. By operating in partnership with Maersk¹⁶⁶ it has the potential to counterattack SAS on its most important home territory. Its shareholding in Sabena, in conjunction with KLM, ensures the cooperative development of services from the main traffic generating western edge of Europe. (Table 5.6 summarises the tactics adopted to date by each major European carrier and presents an idea as to their future options.)

It is the main power groups within the industry itself which are dictating the speed at which and the extent to which regulatory policy is being eased in Europe. For any Government to have deployed its troops until it was known that they were fully prepared for battle would have made little sense. The days of the genuine risk taking entrepreneur are gone. Playing to win a game that you have carefully devised is much closer to reality.

Table 5.6

Western Europe's Airline Industry - A Summary

<u>Country</u>	<u>Scheduled Carrier(s)</u>	<u>Charter Carrier(s)</u>	<u>State Involvement</u>	<u>Alliances</u>
Austria	Austrian A/1 - fleet: two A310, 13 MD-81, two MD-87, three DC-9-30. Austrian Air Services (100% owned by Austrian) fleet: four Fokker 50. Tyrolean A/w - fleet: three Dash 7, three Dash 8.	Lauda Air - fleet: two 737-300, two 767-300ER.	75% holding in Austrian.	Swissair and Luft- hansa each have a 10% shareholding.
Belgium	Sabena - fleet: two 747-300, two 747-100, five DC-10, three A310, six 737-300, ten 737-200. Delta AT - (49% owned by Sabena; 33% by KLM) fleet: three F28, five FH 227, five Brasillia.	Sobelair - (100% owned by Sabena) three 737-200, one 707, one 737-300. Trans European - one A300, six 737-300. (owns TEA[UK].)	54% holding in Sabena	British A/ways and KLM each own 20% of Sabena World Airways.
Denmark	SAS - jointly owned with Norway and Sweden. (details under Sweden.) Maersk - ten 737-300, four 737- 200, eight Fokker 50, two Dash 7.	Cimber Air - three ATR 42, three Nord 262. Conair - three A300B4.	50% holding in SAS by the three Gov'ts.	Maersk and British A/ways each own 40% of TPL, owners of Brymon and Birmingham European.

France

Air France -
fleet: seven Concorde,
20 747-200, 15 747-100,
25 727-200, 16 737-200,
16 A300, seven A310, 12
A320, 15 Fokker F.27.
Air Inter -
fleet: one 747-100, 18
A300, ten A320, 11
Mercure, 12 Caravelle.
(owned by Air France -
36.5% and UTA - 35.7%).
Air Littoral -
four ATR 42, 4 Brasilia,
four Nord 262, 6 Bandeir-
rante.
(operates on behalf of
Air France).
Brit Air -
two F.27, four ATR 42,
three Saab 340, four
Bandeirante.
TAT -
16 F.28, 14 FH227, two
ATR 42.
(operates on behalf of
Air France).
UTA -
one 747-400, four 747-
300, one 747F, five DC-
10.
(Under acquisition by
Air France.)

Air France 100%.

Aeromaritime -
one 747-300, one
747-100, one DC10,
six 737-300.
(owned by UTA).
Air Charter -
one A300, five 727-200,
ten 737-200, five
Caravelle 10.
(owned by Air France).
Air Liberte -
six MD83.
Europe Aero Service -
11 Caravelle 10, two
727-200, three 737-200,
one Saab 340.
Minerve -
one 747-200, one DC10,
five DC8, six MD83.

Air France: joint
ownership with
Lufthansa of
EuroBerlin.
Major alliance
with Lufthansa.

West Germany	<p>Lufthansa - fleet: 25 747-200, 12 DC10, eight A300, 12 A310, 24 727-200, 20 737-300, 40 737-200. DLT - 10 Fokker 50, 12 Brasilia. (40% owned by Lufthansa.) EuroBerlin - four 737-300. (jointly owned by Air France and Lufthansa.) German Wings - four MD83. NFD - one 737-300, one BAE 146QT, ten ATR 42. (Part of the Air Europe Group.)</p>	<p>Aero Lloyd - five MD83, four MD87, three DC9. Condor - two DC10, six A310, five 757, six 727- 200, five 737-300. (owned by Lufthansa) Germania - six 737-300. Hapag Lloyd - six A310, three 737- 400, two 727-200, two 737-200. LTU - nine Tristar. LTU Sud - six 757.</p>	Lufthansa 65% owned.	Lufthansa has a major alliance with Air France, and owns 49% of EuroBerlin.
Greece	<p>Olympic - fleet: four 747-200, eight A300, five 707, six 727-200, 11 737- 200.</p>	100% state owned.		
Ireland	<p>Aer Lingus - fleet: three 747-100, two 737-400, two 737- 300, 14 737-200, four BAe 1-11, four Fokker 50, five Shorts 360.</p>	100% state owned.		

Italy
ATI -
fleet: 12 MD82, 17 DC9,
nine ATR 42.
(owned by Alitalia.)
Alisarda -
five MD82, three DC9.
Alitalia -
11 747-200, 11 A300, 26
MD82, 26 DC9.

Alitalia is 77%
state owned.

Luxembourg
Luxair -
fleet: one 747SP, three
737-200, three Fokker 50.

Luxair is 21%
state owned.

Netherlands
KLM -
fleet: 13 747-300, six
747-200, five DC10, ten
A310, 13 737-300, six DC9,
six Fokker 100.
NLM -
four F.28, nine F.27,
six Saab 340.
(owned by KLM.)

Air Holland -
five 757.
Martinair -
two 747-200, three
DC10, two 767-300,
two A310, two MD82.
(KLM own 40%.)
Transavia -
eight 737-300, nine
737-200.
(KLM own 40%.)

KLM owns 20% of
Sabena World,
15% of Air UK,
and can acquire
up to 20% of
Northwest.

Norway
SAS - jointly owned with
Denmark and Sweden.
(details under Sweden.)
Wideroe -
seven Dash 7, 13 Twin
Otter.
(owned by SAS(22%),
Fred Olsen(40%), and
Braathens(18%).)

Braathens -
two 737-400, 19 737-
200.
Busy Bee -
one 737-200, five
Fokker 50, 11 F.27.
(owned by Braathens.)

Portugal	Air Portugal - fleet: seven Tristar, three A310, four 727- 200, nine 737-200, five 737-300. LAR - three ATP, three BAe 748. (owned by Air Portugal).	Air Atlantis - three 727-200, three 737-200, one 737-300. (owned by Air Portugal)	Air Portugal is 100% state owned.
Spain	Aviaco - two MD83, 22 DC9, eight F.27. (owned by Iberia.) Iberia - six 747-200, eight DC10, six A300, 35 727-200, 28 DC9.	Air Europa - four 757, seven 737-300. (part of the Air Europe group.) Lineas Aereas Canarias - five MD83. (part owned by Finnair.) LTE - three 757. (part owned by ITU.) Nortjet - three 737-400. (part owned by Air Charter.) Oasis - three MD83. Spanair - seven MD83. (part owned by SAS.) Universair - five 737-300. VIVA Air - five 737-300. (part owned by Lufthansa and Iberia.)	Iberia is 100% state owned.

Sweden

SAS - fleet: 11 DC10, six 767-300, ten MD81, 13 MD82, two MD83, three MD87, 60 DC9, 12 Fokker 50, three F.27.
Linjeflyg - 20 F.28, eight Saab 340. (50% owned by SAS.)

Scanair - six DC10. (owned by SAS.)
Transwede - four MD83, two MD87.

SAS owns 25% of the Airlines of Britain Group, 10% of Finnair, 10% of Texas Air, 10% of Swissair, and 50% of Lan Chile. Major alliances exist with Thai, ANA, Varig, and Canadian International.

SAS is 50% owned by the Danish, Norwegian and Swedish Govts.

Switzerland

Swissair - fleet: five 747-300, ten DC10, nine A310, 23 MD81, ten Fokker 100.
Crossair - 24 Saab 340. (38% owned by Swissair.)

Balair - one DC10, one A310, three MD82. (57% is owned by Swissair.)
CTA - four MD87. (partly owned by Swissair.)

United Kingdom

British Airways - fleet: seven Concorde, 24 747-200, 16 747-100, 17 Tristar, eight DC10, ten A320, 38 757, 46 737-200, 34 BAE 1-11, eight ATP, eight BAE 748.
Air Europe - eight 757, nine 737-300, five 737-400, one 747-100, four Fokker 100.

Air 2000 - six 757, one 737-300.
Air UK Leisure - three 737-400. (30% owned by Air UK.)
Britannia - eight 767-200, seven 737-300, 27 737-200.
British Air Ferries - 14 Viscount, two Herald, three Short 330.

BA has a major alliance with United. It owns 20% of Sabena World A/w, and 40% of TPL, owners of Brymon and Birmingham European.

UK continued

British Midland -
two 737-400, six 737-300, 12 DC9, three ATP. (part of the Airlines of Britain Group, which is 25% owned by SAS.)
Brymon -
five Dash 7, two Twin Otter.
(owned by TPL, which is owned by BA and Maersk, 40% each.)
Capital -
two BAe 146, six Shorts 360.
Jersey European -
four F.27, four Shorts 360, three Twin Otter.
Loganair -
one BAe 146, two ATP, five Shorts 360, four Twin Otter, nine BN Islander.
(part of the Airlines of Britain Group.)
London City -
three Dash 7.
(part of the Airlines of Britain Group.)
Manx -
one BAe146, three ATP, three Shorts 360.
(part of the Airlines of Britain Group.)
Virgin -
six 747-200.

Caledonian -
one 747-200, four Tristar, three 757. (100% owned by BA.)
Dan-Air -
eight 727-200, two 727-100, two 737-400, two 737-300, four 737-200, 17 BAe 1-11, four BAe 146, nine BAe 748.
Inter European -
three 737-300.
Monarch -
two A300-600R, nine 757, eight 737-300.
Novair -
three DC10, two 737-400.
Trans European(UK) -
three 737-200.
(owned by TEA of Belgium.)

Air Europe owns
25% of Air Europa,
35% of Norway A/I,
and has a holding
in NFD.

References and Footnotes:

132. Wheatcroft, S. and Lipman, G., Air Transport in a Competitive European Market - Problems, Prospects and Strategies, Economics Intelligence Unit Special Report, September 1986.
133. Nuutinen, H., 'Charter Airlines in Europe', Travel & Tourism Analyst, November 1986, pp.19-20.
134. Doganis, R., Flying Off Course: The Economics of International Airlines, George Allen & Unwin, 1985, p.143.
135. These charter carriers mostly form part of vertically integrated organisations, with inclusive tour operation being their primary activity.
136. The five largest airlines based in the European Community, British Airways, Air France, Lufthansa, KLM, and Iberia, control some 68% of total traffic. Source: Association of European Airlines (AEA), Aviation Week, 9 March 1987.
137. Many other countries, such as the former British Colonies and Dominions, also advocated a protectionist stance. Australia, for example, argued for the development of a world airline - the first mega-carrier!
138. Bilaterals usually contain confidential 'Memoranda of Understanding' or 'Exchange of Notes', which specify in more detail particular aspects of the agreement.
139. Pooling is used as a means by which a State with a weak carrier can gain some assurance that it will obtain an equitable share of the traffic carried and revenue earned on an

- international route. Doganis,R., supra note 134, p.29.
140. In 1982 the European Civil Aviation Conference (ECAC) found that two thirds of European bilaterals had no limit on the number of the number of airlines that could be designated. In practice though only 8% of city-pairs had more than one airline per State. Source: Katz,R., 'Liberalisation of Air Transport in Europe', Travel & Tourism Analyst, March 1987, pp.7-8.
141. The term 'head to head' refers to operations between the same two airports. An early example of this form of competition on UK domestic routes was provided in the early and mid-1960's by British Eagle, which was licensed to operate in competition with British European Airways on the Glasgow route from Heathrow.
142. European Civil Aviation Conference, 'Multilateral Agreement on Commercial Rights of Non-scheduled Air Services in Europe', Paris, 1956.
143. Wheatcroft,S. and Lipman,G., supra note 132, p.26.
144. The AEA estimated in 1985 that 57% of intra-European passengers travelled at discounted fares averaging some 38% of normal levels.
145. Council of Ministers, 'Priorities in the Field of Air Transport', European Community, 1979.
146. European Community, 'Civil Aviation Memorandum No.1 - The Contribution of the European Communities to the Development of Air Transport Services', 1979.
147. 'Inter-Regional Air Services', Council Directive, European

Commission, July 1983.

148. Katz,R., supra note 140.

149. European Community, 'Civil Aviation Memorandum No.2 - Progress Towards the Development of a Community Air Transport Policy', 1984.

150. Wheatcroft,S. and Lipman,G., supra note 132, p.51.

151. European Community, 'Report of High Level Group to the Council of Ministers', 1984.

152. Wheatcroft,S. and Lipman,G., supra note 132, p.54.

153. European Court, April 1986.

154. Katz,R., supra note 145, p.11.

155. Frere Cholmeley, 'The EEC's New Air Transport Package', 1988.

156. French,T., 'So Far, So What?', Airline Business, August 1988, pp.16-9.

157. In earlier discussions within the Commission the idea that fares should be reasonably related to the costs of an efficient operator had been put forward. However, the idea of efficiency was anathema to many States and the concept consequently was dropped.

158. Argyris,N., 'Competition in European Air Transport - The Role of the European Commission', Symposium of Air Law Group of the Royal Aeronautical Society on 'Airline Competition and the Treaty of Rome', London, 25 February 1988.

159. The question of double disapproval is not something that countries normally identified as being liberal have found to their taste. For example, the UK Civil Aviation Authority is

concerned that double disapproval would simply allow British Airways to raise its fares on routes to countries with high cost national airlines.

160. The Ahmed Saeed case was brought before the European Court in May 1987 and related to a Lebanese travel agent who had bought discount tickets in Lisbon for flights to Tokyo on Lufthansa services routed through Frankfurt. The fact that he was selling the tickets in West Germany had produced this test case.

161. Aeropa, 'The Court of Justice of the European Communities "breaks" the System of Air Tariff Agreements', Brussels, April 1989.

162. Recent developments in Eastern Europe, particularly the rapid unification of Germany, are likely to add further delay to this process of harmonisation.

163. 'Eurocrats' working for the Commission tend to develop a different perspective than their fellow countrymen.

164. Wheatcroft and Lipman identify some of the other features which have precluded such a course of action. Wheatcroft, S. and Lipman, G., supra note 132, p.131.

165. "...it will be the rigours of global competition as opposed to European liberalisation that will galvanise the Eurotrunk carriers into a more efficient and commercially-orientated carrier structure." Gialloreto, L., Avmark Aviation Economist, May 1988.

166. British Airways and Maersk each own 40% of The Plimsoll Line, owners of Brymon and Birmingham European.

Chapter 6 Devising an Effective Regulatory Strategy for
Europe's Airline Industry

The most important lesson to be gained from US airline deregulation is that the type of competitive environment envisaged in the Rome Treaty can only be achieved in scheduled markets by regulatory authorities intervening in order to ensure that carriers are not able to adopt policies which eliminate or restrict competition. A key expectation of the US authorities had been that their domestic markets would exhibit high degrees of contestability. Rather unfortunately for them the propensity and ability of airlines to erect durable and highly effective entry barriers has been prodigious. As a consequence a decade of deregulation has produced an airline industry which manifests a high degree of concentration¹⁶⁷, with many city-pair markets that are duopolistic.

Despite the slow pace at which regulatory policy has been evolving in Europe the ultimate goal has remained much the same as that of the US, namely the creation of a competitive scheduled airline market as free of state imposed economic controls as is compatible with this objective. The strategy of gradually liberalising the economic controls governing Western Europe's airline markets stems predominantly from a recognition that the many nation States that comprise the continent have diverse and often conflicting objectives. As is discussed in chapter five, twelve countries are participating in the

formation of a European Common Market, a key feature of which involves the removal of barriers restricting trade between the Member States. Pushing the twelve in this direction has involved the European Commission in a laborious exercise requiring considerable degrees of skill and ingenuity to gain even a small amount of momentum.¹⁶⁹ Not surprisingly, less contentious matters have been tackled first, with issues of real substance, in the case of the airline industry the crucial question of market entry, being left for later deliberation. As the target date of 1993 looms closer however national airlines have been taking the matter more seriously, with many of them beginning to prepare new lines of defence in recognition of the fact that the protection previously afforded by their Governments can no longer be relied upon. The collusive arrangement revealed in October 1989 by Air France and Lufthansa provides a good example of this.

In Europe limitations of available infrastructure at major centres of population provides both Governments and national carriers with a relatively simple, yet highly effective, means by which to exclude potential competitors. Attempts to alleviate this problem by expanding facilities are likely to prove extremely difficult, given the growing general public concern with environmental issues. Pricing solutions advocated by economists to solve this excess demand situation will only succeed in providing the more powerful carriers with a legitimate and easy means by which to exclude competitors. The Commission itself is currently engaged in studying this problem

and is hopeful of devising a generally acceptable means by which it can be resolved. However, it is clear that the present system, based on 'grandfather' rights and organised by national carriers at their home bases, cannot be considered as other than providing a highly effective means by which to exclude prospective competitors.

6.1 Reliance on Anti-Trust Legislation

It is conceivable that firms could be prevented from abusing their market power through the use of anti-trust controls, as the Commission now appears to favour, but this will necessitate a continual monitoring of airline behaviour to ensure that competition is not being artificially constrained. This strategy also suffers from the major disadvantage of being essentially reactive, with the result that by the time anti-trust legislation could be enforced it may well prove too late to prevent a weaker carrier being squeezed out of business. In addition, it is also the case that large established organisations are able to devote more resources to presenting their views and are more experienced and adept at lobbying and influencing decision makers than smaller firms. Given these realities and despite the best efforts of a hard pressed and increasingly stretched Commission it appears likely that a few large airlines will, even more than now, be able to control the vast majority of Europe's scheduled services. Indeed, many commentators now anticipate a similar outcome in Europe to that which has occurred in the US - namely a highly concentrated industry with a small number of carriers controlling the markets in which they operate.

Unfettered market forces it would appear do not provide sufficient of a constraining influence to prevent such an outcome. In the United States, anti-trust legislation, which ordinarily could have been anticipated as providing some means

by which to limit anti-competitive activity, was held in abeyance by the Dept. of Transportation (D.O.T.). Such immunity besides freeing airlines to engage in various forms of predatory behaviour, enabled a number of mergers and acquisitions to take place, which had the effect of raising market concentration levels.¹⁶⁸ It is clear however that not all of these transactions could have been prevented by the D.O.T. on the grounds of their being anti-competitive. For example, several of the acquisitions were the direct result of financial failure, whilst in other instances it is evident that the merged companies had been serving very different markets prior to their combination. Table 6.1 provides a list of the more important mergers and indicates which of these could have been expected to have failed under conventional anti-trust law.

Table 6.1 Mergers and Acquisitions of US Carriers 1984-87

<u>Year</u>	<u>Airlines Involved</u>	<u>Primary Reason</u>	<u>Anti-Trust</u>
1985	People Express/Frontier	Financial Weakness	Approval
1986	United/Pan Am(Pacific)	Financial Weakness	Prevented
	Northwest/Republic	Enlarged Network	Prevented
	TWA/Ozark	Hub Monopoly	Prevented
	Texas Air/Eastern	Financial Weakness	Approval
	Delta/Western	Enlarged Network	Approval
	Alaska/Jet America	Financial Weakness	Approval
1987	USAir/Pacific S'west	Enlarged Network	Approval
	American/Air Cal	Enlarged Network	Approval
	USAir/Piedmont	Monopoly of Routes	Prevented

The benefit of having the experience of economic deregulation in the world's largest airline market has made the European Commission acknowledge the essential role of anti-trust legislation. To prevent a similar outcome in Europe the Commission is seeking to limit anti-competitive behaviour through the adoption of such laws. In the future, prospective mergers are to be evaluated in terms of their likely impact on competition, with those that are adjudged as being anti-competitive being barred. Such decisions invariably will provoke controversy and considerable debate given the undoubtedly clear conflict of interest between what the Commission would regard as being best for consumers, namely a strongly competitive environment, and that which would serve most the objectives of flag carriers. Given the strong concerns of Governments regarding the latter it is likely that much watering down of the Commission rulings can be anticipated, as has been the case in the past. Operating an effective anti-trust policy will be a far from easy task, especially given the strongly partisan interests of the Member States.

6.2 Devising an Alternative Approach

For this reason an alternative strategy is advocated in this thesis, one it is argued that will prove much more robust in countering the anti-competitive tactics of a powerful airline industry. Amending existing regulatory policy in such a way as to tackle directly the all important issue of market entry would appear to offer many advantages over the approach described above. Given its specific characteristics the industry is naturally oligopolistic. Under free market conditions producers are able to acquire considerable market power and exploit it in both subtle and unsubtle ways to protect and enhance their markets. Acquiring the ability to control competition enables firms to be the arbiters in determining how much and in which particular markets to engage in such activities. The uncertainty of a competitive environment is virtually eliminated as a consequence. The US experience has shown how adept and imaginative airline managers can be in exploiting the specific features of their industry to achieve this. Few other industries have lent themselves to this degree of stage management.

The licensing of additional carriers between specific airports with an accompanying allocation of slots and access to terminal facilities has the effect of introducing direct competition to existing city pair markets. However, under present arrangements whenever such a policy has been adopted there has been a tacit understanding that the new services are

to be additional to those already provided by existing operators. The protectionism inherent in the bilateral system has enabled incumbents to maintain their frequencies and dominant positions. Only in comparatively rare instances has direct head to head competition at comparable capacity levels been sanctioned. In most situations new-comers have had little choice but to fit in with the existing collusive arrangement, or have been licensed only to fly from secondary airports. The level of entry sanctioned therefore usually has not been of a sufficient extent to enable a more radical approach by the new carrier to be at all viable. Once 'on board', the new-comer's best interests has been served by maintaining the status quo and discouraging any further entry. As a result, the competitive environment has not undergone any significant change, but merely a minor redistribution of market share.

To achieve any substantial degree of entry to routes, particularly those involving congested airports and air space, invariably requires that a certain amount of exiting also occurs. As the early stages of US deregulation clearly showed, new entrants with relatively small market shares can have a significant impact on overall behaviour. With economic freedom however, given sufficient resources and effective managerial effort, such an irritation can be eliminated, as has been aptly demonstrated. Obtaining the desired efficiency gains and resulting lower fares without allowing powerful carriers a free hand to neutralise competitive pressures are perfectly feasible goals, providing some modification to existing policy is

undertaken.

To prevent entry barriers being established, carriers should not be able to own or control airport facilities nor be the arbiters in allocating runway slots. Given the latter's tremendous scarcity, ultimate control for these should rest with the regulatory authority. Preventing airlines establishing powerful and long lasting impediments to competition of this kind is a vital requirement and would therefore need to form a central function of a revised and updated set of regulatory policies. Retaining the power to force carriers to exit routes on which they been able to manipulate market forces in furtherance of their own interests would appear to be crucial. For this, in reality, would appear to be the only way in which a regulatory authority can achieve the swift and decisive control essential to sustaining a strongly competitive market place. The adoption of a system of route franchising with carriers being forced periodically to compete for licences provides such a facility. In chapter eight this approach is explored in some detail, and contrasted with the anti-trust stance of the Commission in terms of their ability to prevent competition being constrained.

Prior to assessing these alternatives, the experience of other relevant industries with respect to economic regulation is explored, providing some insight as to how these two strategies could be expected to perform.

References and Footnotes:

167. Appendix 2 examines some of the controversies concerning the measurement of market concentration in the US airline industry.

168. Jordan provides a list of airline acquisitions and mergers over the period 1979-87. Jordan, W.A., supra note 112, p.29.

169. Agreement to change has been paced by the attitude of the most conservative State.

Chapter 7 The Experience of Other Heavily Regulated Industries
to an Easing of Economic Controls

In many respects the regulation of public enterprise in the UK provides the closest parallel to the scheduled airline sector, given the monopolistic manner in which such services have been operated. Regarding the former it would appear that it has not proved possible to establish a coherent framework of economic control. Kay and Vickers, for example, regard the regulation of state owned industries as .."always (having) been vague, ill-defined, and subject to political influence".¹⁷⁰ In order to overcome this failure the Treasury had sought to limit the financial requirements of such industries. In addition, in-depth monitoring exercises were undertaken from time to time, which had the effect of creating atmospheres of mistrust on both sides.¹⁷¹ The managers of public enterprises considered themselves to be shackled and unable to act in a commercial way.¹⁷² The change of Government in 1979 heralded the introduction of a major evaluation of regulatory policy, with a strong emphasis being placed on creating competitive markets wherever it was feasible to do so.

Attempts to introduce the rigours of the market place into industries previously granted immunity from such discomfiture have taken many different forms. One key area of interest to the UK Government over the past decade in this regard has been the nationalised industries, many of which have occupied

positions of monopoly. Aside from reasons dictated by political dogma, a primary objective has been to make these industries operate more efficiently. Privatisation, it has been argued, is an essential prerequisite to the engendering of a competitive environment within such industries. The monopolistic nature of many of the firms that have been privatised though have necessitated Government finding additional, more direct, means by which to introduce an element of rivalry. Privately owned monopolistic firms have more to gain from the exploitation of market power than their publicly owned counterparts, as their shareholders and managers can benefit through greater dividends and more attractive emoluments respectively. Any ensuing efficiency gains therefore would be unlikely to be passed on to consumers, as without the threat of a competitor such action could in no way benefit the firm. Outrageous behaviour, of course, would provoke an adverse response from Government, but it would be unlikely that such a firm would be so foolish as to act in such a manner. The lobbying of Ministers and other well tried techniques aimed at massaging public opinion could be expected to play a key role in the safeguarding of the monopolist's image.

Injecting competition into industries formerly controlled by state owned monopolies has proved to be both controversial and technically difficult. The successful privatisation of such firms has rested in large measure on their being able to retain their positions of market dominance. The granting by Government of special concessions to new entrants in order to allow time

for them to establish themselves has been greeted by the Directors of privatised companies with disdain and, on occasion, outrage. The comments made in 1989 by the Chairman of British Telecommunications (BT) in his annual report to shareholders aptly demonstrates this viewpoint. "Provided the authorities can establish a regulatory framework that balances fairly the needs of domestic competition policy with the broader international perspective, I know that we can achieve our stated goal of becoming the leading telecommunications company worldwide."¹⁷³ Whilst this particular company could be expected to face competition in any overseas markets it wished to enter, the provision of a restraining influence in its home territory has necessitated the Government artificially creating one. This has been attempted in two ways: firstly by abolishing BT's exclusive privileges in the telecommunications sector and secondly by creating OFTEL to regulate the industry.

The structural approach adopted by earlier Governments as a means by which to regulate naturally monopolistic industries has been replaced by various forms of behavioural control.¹⁷⁴ The measures employed have varied between industries, with each allegedly tailor made to suit the characteristics of of the particular market place. The public utilities have proved especially difficult in this regard, as the social objectives pursued by many of these concerns often have been incompatible with more narrowly defined commercial goals. For example, the provision of telephone services at a standard charge irrespective of geographical location has involved a

considerable element of cross-subsidisation. Attempting to preserve this type of public welfare consideration, whilst simultaneously encouraging the industry to operate on a purely commercial basis, has necessitated the delicate balancing of two totally conflicting objectives. Not surprisingly, the Chairmen of such enterprises find these requirements difficult to reconcile. In these circumstances many observers would argue that the social objective in practice would be awarded a lower priority and in the longer term be quietly forgotten about.

In order to illustrate some of the difficulties that have been encountered in the removal of economic controls governing former state owned monopolistic industries, the recent experiences of the UK telecommunications, gas, local stage carriage, and television sectors are outlined below. By appraising the particular characteristics and experiences of these and other deregulated industries it should be possible to predict which of the two options identified in the preceding chapter is more likely to prove suitable for application to the airline industry.

As regards telecommunications, BT was privatised in 1984. The move towards privatising the industry had commenced in 1981 when the Post Office was divested of its telecommunication interests. An Act of Parliament the same year introduced some liberalisation measures to the industry in terms of the supply of telecommunications apparatus.¹⁷⁵ The public announcement about the sale of BT came in 1982 and triggered a debate about

the possible abuse of its monopoly power. The Littlechild Report into this matter was published a year later and recommended the introduction of a pricing control mechanism generally known as RPI - X.¹⁷⁶ The method required that a weighted average of the prices of BT's regulated services should fall by a minimum of X% annually in real terms over a five year period. X was set at 3 when privatisation occurred in 1984 and covered around 50% of its revenues. The regulatory approach adopted in this industry formed the model for later privatisations and is described below.

Regulatory control of telecommunications is shared by three parties: OFTEL, which monitors compliance with licence conditions and protects the interests of consumers; the Monopolies and Mergers Commission (MMC), which determines future price controls governing the industry after the initial five year period and arbitrates in disputes about changes in the conditions imposed in licences; and the relevant Government Minister, who is responsible for the granting of licences. In addition, the Office of Fair Trading (OFT) has powers in matters of competition policy. Within this framework considerable scope exists for the regulatory authority to exercise its own discretion as to precisely how, and in what areas, to concentrate its activities. OFTEL, for example, has concentrated particularly on promoting competition and protecting consumers' interests.¹⁷⁷ "For consumers and others concerned with competition, it is a matter of good fortune, rather than legislative design, that Professor Carsberg and his

team have chosen to give a high priority to the promotion of competition, and have skilfully pursued that end."¹⁷⁸

OFGAS, the regulatory authority set up to monitor and control the activities of the privatised British Gas (BG), has faced considerably more difficulty in its attempts to check the company's compliance with price controls. Despite its diverse interests BG is required only to provide accounting information for its gas supply business in aggregate. The fact that the OFT became involved in conducting an investigation into BG's industrial users' pricing policies following complaints by consumers would tend to point to an inherent weakness in the way OFGAS has been able to carry out its functions. A significant factor here concerns the fact that the enterprise was privatised intact as a horizontally and vertically integrated monopoly. In the case of BT, Mercury provided a yardstick by which to compare both efficiency and prices, but in the case of the gas industry no such strictly comparable option exists.

The approach adopted in the bus industry has been very different from that used for the telecommunication and gas industries. Local stage carriage services have been for many years loss making activities and as a consequence have been subject to both direct subsidy and cross-subsidisation. The 1968 Transport Act introduced the system of direct subsidy provision for unremunerative bus and rail services, following an almost continuing decline in public transport patronage. The

bus industry had been tightly regulated in 1930, when a licensing system had been introduced for stage carriage services in order to limit market entry and improve safety standards. A newly formed body of traffic commissioners were to organise and regulate the awarding of route licences. Under this regime the practice of using profits earned on more highly trafficked routes to cover the losses incurred on lightly loaded journeys developed and eventually lead to the emergence of an industry characterised by area monopoly. By the 1960's, with dwindling profits the practice was becoming less and less viable, hence the introduction of direct subvention.

The low traffic levels in many areas rendered the provision of stage carriage services by more than one company an unnecessary extravagance. Since 1974 local authorities have been responsible for the provision of direct subsidies to bus companies in order to maintain socially necessary services. To introduce an element of competition into this loss making environment two approaches have been advocated. One involves the use of competitive tendering and requires the local authority to stipulate particular service requirements for the routes it intends providing a subsidy. The practice then involves bus operators competing for the licences to operate the subsidised routes. Selection is usually made on the basis of which company requires the least subsidy to provide the specified service.

The alternative to competitive tendering involves the full scale deregulation of the bus industry. This has been the

approach advocated by Beesley and Glaister¹⁷⁹ and contrasts strongly with the views of Gwilliam et al¹⁸⁰, who favour the use of competitive tendering with the present route licensing system. The former however have argued that such a policy can only be effective if an industry is already deregulated. At the centre of this debate is the question of how to take proper account of the needs of the transport disadvantaged. The provision of an adequate level of public transport is regarded generally as a fundamental social requirement. Obtaining a planned, properly coordinated, integrated, and reliable operation is at the core of the case put by Gwilliam et al. Deregulation is regarded as too drastic a step with the operators becoming the main arbiters in determining how the public interest is to be served. The need to provide a stable supply of public transport services could not be guaranteed under full scale deregulation.

Local stage carriage services in England and Wales, other than in London, were deregulated in 1985. As in the airline industry, a considerable amount of restructuring has followed, with many observers estimating that this process will continue well into the 1990's.¹⁸¹ In the first two years following the lifting of economic constraints bus mileage increased by 14%, whilst the number of passenger trips fell by 5.5%. Greater efficiency had the effect of reducing operating costs by some 6% over the same period, but as Robinson¹⁸² remarks.."..reduced loadings went a long way to wipe out the benefit of savings in operating costs..". The decline in patronage is attributed to a

number of factors, but of special concern given the nature of the business is the degree of confusion generated by deregulation in terms of the many changes to services that resulted. On the positive side marketing is far less stultified than it was and in many instances passengers have a wider choice of products than previously. In certain geographical locations the quality of service has also improved.

Growing concentration is also a feature of the deregulated bus industry. For example, of the original 72 subsidiaries of the National Bus Company, one third are now controlled by four corporations. This trend is expected by observers of the industry to continue, with between five to ten operators predicted to remain by the mid-1990's.¹⁸³ Despite the cited efficiency objective it would appear that the primary motive for bus deregulation has been to reduce the level of operating subsidy. In this regard at least some success is apparent, as by 1987/8 some 83% of all mileage was being operated commercially.¹⁸⁴

The approach favoured for commercial television and radio has involved the use of franchising. Limiting the number of television and radio channels has been necessitated firstly by the need to protect the British Broadcasting Corporation and secondly by Government desires to control the use of wavebands. Given these constraints the number of franchises available has been strictly limited, more especially in the case of television. Introducing an element of competition into this

heavily controlled market has posed a considerable problem. Demsetz¹⁸⁵, in an attempt to overcome this question in natural monopolies, advocated the use of franchising the right to be sole supplier in such a market, with interested parties being allowed to compete for an operating licence. By limiting the time that a licence was operative competitive pressure could be exerted and maintained. Rather than simply granting a franchise to the highest bidder, which, given public interest considerations could be inappropriate, it would be perfectly feasible for the franchising authority to determine an alternative goal, such as the lowest price to be charged to consumers.¹⁸⁶

The viability of this approach depends critically on there being a number of interested bidders. Assuming, however, the existence of a sufficient number of potential rivals, in the absence of collusion and given a ready availability of input factors, price could be expected to be determined at a competitive level in the bidding market. Thus, as Demsetz has argued the requirement that regulatory authorities determine price could be dispensed with.¹⁸⁷ This outcome, however, presupposes that franchises can be transferred in a 'frictionless' way, as Williamson has argued.¹⁸⁸ Long lived assets are particularly problematical in this regard, as are matters relating to the acquisition of skill and knowledge by the workforce. Williamson's view¹⁸⁹ was that the mechanics of the transference process had been assumed away by Demsetz and Posner¹⁹⁰, in their strong advocacy of franchising in

preference to regulation. It may well be the case that once a firm has established itself as the holder of a franchise, rival firms will be at a relative disadvantage when the bidding recommences. If the.."..original winners of the bidding competition realise non-trivial advantages in informational and informal organisational respects during contract execution, bidding parity at the contract renewal interval can no longer be presumed."¹⁹¹ To minimise the likelihood of this occurring would necessitate careful monitoring and possible additional market intervention by the franchising authority. In this regard a franchising system could bear an uncanny resemblance to anti-trust regulation.

A further problem with franchised monopoly is that the firm once selected has little or no incentive to reduce cost.¹⁹² Under such a regime the franchising authority ideally requires the use of a benchmark in order to be able to make reasonable judgements about the appropriate level of cost that a firm might be expected to incur in producing a particular service. Finding an acceptable candidate for comparison purposes would be likely to prove highly problematical for many industries, but this is unlikely to be the case with the airline sector.

In connection with this, Schmalensee¹⁹³ makes the point that it is inadvisable to contrast state-owned utilities with those in private ownership because of possible differences in attitude towards efficiency. To help overcome this problem, Schleifer¹⁹⁴, in order to provide guidance to franchising

authorities about attainable cost levels, proposes comparison between regulated firms possessing a high degree of similarity. He quotes the example of Medicare in the US and its system of reimbursing hospitals, which is based on a comparison of incurred unit costs from treating patients within the same diagnostically related group. As far as the airline industry is concerned however, the continuing trend towards the privatisation of state-owned carriers has reduced this particular problem.

In the case of franchising: it would appear that in many instances the minutiae associated with individual markets conspire to confound the hope that it could provide an easy to administer and less costly alternative to conventional forms of regulation. Williamson¹⁹⁵ for one, however, considered that local service airlines in the US would prove suitable candidates for a franchising system. Such an approach may offer some useful possibilities for Europe's regulatory authorities. To provide a realistic assessment of this, the following chapter is devoted to providing a direct comparison with the regime currently being pursued by the Commission, namely further liberalisation backed up by anti-trust controls. Given a generally desired objective to produce a sustainable competitive environment in Europe's scheduled airline markets, each method is assessed in terms of the likelihood of this attainment being achieved.

In practice it is impossible to find a sufficiently close parallel to the airline industry. The specific characteristics of the sector, namely its total dependence on a limited infrastructure, the strong links that exist between flag carriers and their governments, its mixture of public and private ownership, the ability of companies to control the availability of information to consumers and its unusually high public profile, make this so. Each of these factors of course are apparent in other industrial sectors, but it is their combined presence within the one industry that gives the airline sector its uniqueness. From a production perspective, given the important network effects of air transport systems, its closest parallel would appear to be either another transport industry or one of the naturally monopolistic public utilities. In reality though there are many significant differences. From the point of view of a constraint on available infrastructure its closest neighbours would appear to be radio and television. Again though there are enormous differences, as is apparent from the list given above. Nonetheless, some of the experiences gained from the use of different forms of regulatory policy in other sectors do provide some degree of insight to the response that can be anticipated in the airline industry to varying forms of economic regulation.

References and Footnotes:

170. Kay, J.A. and Vickers, J.S., supra note 3, p.292.
171. Carried out by both the Office of Fair Trading and the Monopolies & Mergers Commission.
172. For example, the investigation into the Sealink/Townsend Thoresen duopoly of the short sea cross-Channel ferry trade by the Monopolies and Mergers Commission.
173. Iain Vallance, British Telecom Chairman, 5th Annual General Meeting, July 1989.
174. To help overcome the problem of natural monopoly governments had taken industries into public ownership.
175. 1981 Telecommunications Act.
176. Littlechild, S., Regulation of British Telecommunications Profitability, HMSO, London, 1983.
177. OFTEL has scrutinised BT's pricing behaviour much more vigorously than was required under the RPI - X mechanism. As regards BT's rival Mercury, the regulatory body has acted to promote a competitive environment. The quality of BT's services have also been closely monitored by OFTEL.
178. Kay, J.A. and Vickers, J.S., supra note 3, p.294.
179. Beesley, M. and Glaister, S., 'Deregulating the Bus Industry in Britain - A Response', Transport Reviews, Vol.5, 1985.
180. Gwilliam, K.M., Nash, C.A. and Mackie, P.J., 'Deregulating the Bus Industry in Britain - The Case Against', Transport Reviews, Vol.5, 1985.
181. Robinson, D., 'Where will it all end?', Transport,

September 1989, p.197.

182. Robinson,D., supra note 181, p.197.

183. Robinson,D., supra note 181, p.198.

184. Robinson,D., supra note 181, p.197.

185. Demsetz,H., 'Why Regulate Utilities?', Journal of Law and Economics, April 1968, pp.55-65.

186. This particular method is generally referred to as the Chadwick-Demsetz proposal.

187. Demsetz,H., supra note 185.

188. Williamson,O.E., 'Franchising Bidding for Natural Monopolies - In General and With Respect to CATV', Bell Journal of Economics, Spring 1976, pp.73-104.

189. Williamson,O.E., supra note 188.

190. Posner,R.A., 'The Appropriate Scope of Regulation in the Cable Television Industry', Bell Journal of Economics and Management Science, Spring 1972, pp.98-129.

191. Williamson,O.E., supra note 188, p.89.

192. Assuming cost of service terms, with prices being adjusted periodically to reflect changes in the cost of providing the service.

193. Schmalensee,R., The Control of Natural Monopoly, Heath, Lexington, 1979.

194. Shleifer,A., 'A Theory of Yardstick Competition', Rand Journal of Economics, Vol.16, No.3, Autumn 1985, pp.319-27.

195. Williamson,O.E., supra note 188.

Chapter 8 How Best to Achieve a Competitive Environment for
Europe's Airline Industry - Franchising v's Anti-Trust

"Merger policy will have to play an important role in EC air transport. It is however unlikely to be able to deal with those fundamental characteristics of the airline industry which create the opportunity for anti-competitive behaviour in the first place, or with the extension of dominance which results from means other than merger or acquisition. This is so, even if the industry is prevented from becoming yet more concentrated."

Civil Aviation Authority¹⁹⁶

That companies ordinarily engage in activities aimed at enhancing their competitive positions vis a vis their rivals is clear. The more successful of these tactics however are regarded generally as being unacceptable, because the competitive advantage so created is sufficiently large either to eliminate existing competitors, dissuade potential rivals from entering a market, or to force existing firms to operate in a manner that poses no threat to the instigator. In order to prevent the type of US experience being replicated in Europe, it is essential that those charged with economic regulation are able to prevent the more extreme forms of anti-competitive behaviour. For its part the Commission is intending to rely on the use of anti-trust legislation to accomplish this, but it is

far from clear that this will pose sufficient of an obstacle to powerful carriers. An alternative approach involves the adoption of a franchising system for the allocation of route licences. This it will be argued below has the potential to offer a more effective and less costly means of achieving this aim. An assessment of these two options in terms of their abilities to perform this task forms the basis of this chapter, whilst chapter nine is concerned with the actual implementation of a franchising system.

In order to undertake such an evaluation it would seem appropriate firstly to define which objectives the Commission is seeking to fulfil. Of key concern has been the desire to create a sustainable competitive environment. This as the Civil Aviation Authority has argued provides "...the best available mechanism to ensure the widest possible range of choices for users, that service quality is maintained and that fares are set at reasonable levels in relation to cost, as well as providing a powerful incentive to efficient operation and the sound allocation of resources".¹⁹⁷ It follows from this that anything that restricts competition is likely to have a detrimental impact on one or all of these goals. The number of competitors likely to be required to produce a satisfactory standard with regard to these factors however cannot be scientifically determined. It is perfectly feasible that such a requirement could be satisfied by the presence of just two carriers on a route, but it is also possible that a similar

route served by as many as four companies may not achieve the desired result. All depends on the nature of the relationships existing between the various participants.

One standard approach when undertaking an evaluation of this nature would involve the selection of a number of near identical city-pair markets so that the two methods could be tested simultaneously. If one adopts the CAA's analysis it would follow that three factors should form the prime focus of attention in such a comparison: unit cost, yield, and level of service. (The other matters identified by the CAA, namely that of achieving as wide a choice for consumers and that of providing an incentive for efficient resource allocation, do not lend themselves to any form of precise measurement. Given their ostensibly subjective nature, it would seem sensible to set them aside.) In practice however this type of comparison would be extremely difficult to undertake not simply because routes with near identical economic characteristics would be hard to find, but also as a result of regulatory authorities being unwilling to experiment in this manner.¹⁹⁸ In addition, and of crucial importance as will be made clear below, this approach would be unlikely to provide any clear result for a number of years. Given the real danger that the intervening period would be used by Europe's more powerful carriers to develop effective anti-competitive strategies, it is imperative that an answer is forthcoming as soon as is possible. Given this requirement one must rely to a large extent on a comparative assessment of the two schemes anticipated merits,

based on relevant past experience. This is a far from scientific approach to the matter, but in the circumstances it provides the only viable means by which to proceed.

Given that airlines do ordinarily engage in anti-competitive behaviour, an important requirement for a liberalised regime is that it is able to deal adequately with the problem. The method of approach adopted in this comparative assessment involves firstly identifying the major means by which carriers in the US have been successful in developing anti-competitive strategies, secondly outlining the particular mechanisms that the anti-trust and franchising approaches would seek as a way to curtail each of these activities, thirdly providing a subjective judgement as to which is likely to prove the superior method in each instance, and finally producing an overall summary of the main advantages and disadvantages of the two alternatives.

8.1 Controlling Anti-Competitive Behaviour

Table 8.1 lists the various forms of anti-competitive behaviour that have been adopted by US airlines over the past decade.¹⁹⁸ In each case the means by which it is intended that the specific activity should be curtailed is identified for both the anti-trust and franchising approaches.

Table 8.1 A Comparison of the Means by which to Control Anti-Competitive Behaviour

<u>Activity</u>	<u>Anti-Trust</u>	<u>Mechanism</u>	<u>Franchising</u>
Hub Dominance	Anti-Merger		Carrier selection
Excess Capacity	Limit capacity		Revoke franchise
Predatory Pricing	Limit fares		Revoke franchise
Agency Commission	Impose standards		Stipulated in franchise
CRS exploitation	Impose standards		Impose standards
Frequent Flier	Ban activity		Ban activity
Slot control	Impose standards		Stipulated in franchise
Gate control	Impose standards		Stipulated in franchise
Collusion	Ban activity		Carrier selection

Hub dominance already forms a significant feature of Europe's scheduled airline markets. The Commission is seeking to prevent this situation from worsening through the use of anti-merger controls. How effective this will be in practice remains to be seen, but even if it does succeed in preventing powerful carriers from merging it is not at all obvious that collusion will not immediately follow. This practice is much more difficult to control for the reasons cited below. With a franchising system hub dominance can be tackled directly,

through the initial choice of carrier. This latter point is discussed in detail below.

The use of excess capacity provision would be handled under anti-trust by the regulator stipulating after the activity had manifested itself the number of seats that the offending airline could offer on the particular route. Under a franchising system such action would invite revocation of the franchise and could therefore be anticipated to provide a strong deterrent.

Predatory pricing would be tackled under a franchising system in a similar manner. With an anti-trust approach it would be necessary for the regulating authority to prove in each and every case that such action was indeed designed to stifle competition. The burden of proof would rest much more with the airline in the case of franchising as it would have to prove that it had not been engaging in such action, whilst under anti-trust it would be for the regulator to prove predatory behaviour. The balance of power currently held by the CAA when determining route licence awards it is assumed would be retained under franchising.

The use of large commissions to influence travel agents to book their clients on the services of a particular airline would again need to be proven conclusively to be aimed at eliminating competition under anti-trust. Unfair action of this kind under franchising could be curtailed through loss of the franchise. The burden of proof would again fall on the offending carrier.

Exploitation of CRS has proved to be of such significance in the US that it has already provoked the setting of standards in Europe with regard to their use. Given the satisfactory implementation of these guide-lines it is anticipated that further measures would be unnecessary.

As regards the use of frequent flier programmes it is anticipated that under both anti-trust and franchising the practice would be outlawed.

Slot provision would be allocated with each franchise in order to prevent exploitation of this most scarce resource. With anti-trust it would be necessary to develop a set of standards regarding their use. This could prove highly controversial and involve considerably legal action. Gate availability could be expected to be handled in exactly the same way.

The likelihood of collusive action could be considerably reduced under a franchising system through the careful choice of carriers. The aim would be to award franchises in such a way as to minimise the risk of such activity occurring. If after the award of a franchise such action was observed the airlines involved would be liable to the forfeiture of their licences. Under an anti-trust approach collusion is likely to pose a considerable problem. It can be expected to take many years to develop a sufficiently precise and workable set of guide-lines where collusive action is concerned. By the time an acceptable means of controlling the activity has evolved it may well prove too late, in that powerful carriers by then will have had

sufficient time to control the markets in which they choose to operate. In many respects it is the long period of time that it is likely to take the Commission to implement an effective set of anti-trust rules that forms one of the strongest arguments in favour of a franchising approach.

Of key importance in this comparison concerns which of the two regimes is likely to be more able to deter companies from employing any of the above means by which to engage in anti-competitive behaviour. With a system of franchising the initial choice of carrier forms a crucial part in its defence against anti-competitiveness. The aim would be to select a carrier that had formed no previous collusive alliance or feeder arrangement with existing operators of the route. Genuine rivalry would be the goal. To avoid excessive disruption to service provision and allow the regulatory authority to reduce the risk of strategic action by a consortium of carriers the franchises available on each particular route would not come up for renewal at the same time. They would be spaced at regular intervals.

In addition the penalties for such action are more likely to be perceived by carriers as being more severe under franchising, given the possible loss of a route licence, than under an anti-trust regime. The more likely course of action with the latter approach would be for the offending carrier to be forced to curtail the particular activity and possibly face a fine. It is not at all obvious that this would prove

sufficient of a deterrent to dissuade powerful and resourceful carriers from embarking on such a strategy.

By way of conclusion table 8.2 provides an overall general summary of the main advantages and disadvantages of the anti-trust and franchising approaches.

Table 8.2 A Comparison of Anti-Trust and Franchising

Advantages of Anti-Trust

- a) Greater freedom of choice for airlines, enabling them to take full advantage of available economies of scope, scale and density.
- b) Less direct market intervention by the regulator - therefore potentially less costly and politically contentious.

Disadvantages of Anti-Trust

- a) Need to determine in each case whether the particular activity is contravening regulations.
- b) Delay in setting up a workable set of anti-trust laws may be sufficient to allow powerful carriers to achieve positions of dominance that are irreversible.
- c) Operates in an ex-post manner - anti-competitive behaviour has to have clearly manifested itself before action to curtail it can be undertaken.

Advantages of Franchising

- a) Provides a greater control over a developing anti-competitive strategy.
- b) Legal battles over what constitutes anti-competitive behaviour considerably reduced, as greater control retained by the regulator.
- c) Provides for direct control of slots.
- d) Growth of infrastructure can be taken into consideration in licence allocation.

Disadvantages of Franchising

- a) Requires a ready availability of non-colluding rivals.
- b) Maximum potential improvements in airline efficiency not achieved, particularly in terms of economies of scope.

It is important to acknowledge that powerful airlines will seek effective ways to protect their interests. If one approach fails it would be naive to assume that further options will not be available. The approach advocated by the Commission suffers from the major disadvantage that it invites such challenge. Fine tuning anti-trust legislation into a set of workable guide-lines can be expected to take many years and cost a great deal of time, effort, and money. The time factor is critically important here as delay will considerably advantage the more powerful carriers. Rather sadly, despite the best efforts of a highly committed group of regulators a replication of the US experience is the most likely outcome.

References and Footnotes:

196. Submission of the Civil Aviation Authority to the House of Lords Committee dealing with the European Commission's Proposals for the Development of Civil Aviation in the Community, January 1990, p.8.

197. Civil Aviation Authority, supra note 197, pp.6-7.

198. If one were to undertake such an exercise it would seem unreasonable to use the standards attained by charter carriers as suitable cost targets, given the different operating characteristics of their business. However, it would be reasonable to expect scheduled carriers to be able over a period of time to match the operating costs of the most efficient scheduled carrier. A former charter carrier that had moved into mainstream scheduled operations, such as Air Europe, could provide such a set of suitable target levels.

Fares would pose a more difficult problem owing to the extent to which carriers rely on price discrimination. As a consequence of this it would be necessary to set both average yield and full economy fare targets for each route type. New entrants would again be the most likely choice for a set of standards in this area. As regards level of service this would need to include not only in-flight quality, but also frequency and total seat availability.

In order to make this task more manageable the selection of a small number of general route types, each with their own specific economic characteristics, could be used to represent

the full range of possibilities likely to be encountered in Europe. Using this yardstick approach each particular market could then be set a reasonable target for each selected feature. In this way it would be possible to trace out the evolving competitive environment in each specific city-pair in order to ensure that competition was not being stultified. As in the case of telecommunications, the path towards selected target levels could be set in terms of an annual percentage reduction in costs and associated fares. Deviations from these norms could be expected to provoke investigation by the regulatory authority, which might ultimately result in market intervention. Such deviations could arise for a number of different reasons, but primarily they could be expected to result from the use of predatory behaviour and/or collusive action by larger and more powerful carriers.

199. The Commission recently listed the following predatory practices as being most significant:

- a) provision of excess capacity on a route;
- b) setting fares appreciably below fully allocated costs;
- c) provision of override commissions to travel agents;
- d) use of frequent flier programmes.

Explanatory Memorandum to the draft regulation providing for temporary relief against anti-competitive practices in the air transport sector. European Commission, 1990.

Chapter 9 The Implementation of a Franchising System

The introduction of a franchising system would appear to offer the best prospect for achieving and preserving a competitive environment in the scheduled airline markets of Western Europe. Whilst it would be the case that maximum productive efficiency would be unlikely to result from the adoption of such a policy, given that all potential economies of scope and density would be unlikely to be exploited, the maintenance of competition would appear on balance to offer a better overall prospect for the consumer and overall economic welfare.²⁰⁰

Under such a regime licences would come up for renewal and be tendered for every few years.²⁰¹ Only those routes or city pairs which manifested the existence of powerful entry barriers would need to be incorporated within the franchising scheme. This would probably mean that virtually all of the existing major traffic routes within the twelve Member States would require to be licensed. The number of franchises available for each route would be determined on the basis of existing traffic flows. As traffic levels increased so could the number of carriers licensed to operate. Where a particular route did not appear to reflect normal traffic flows special conditions would apply.²⁰² In certain instances it may be that the award of franchises on the basis of groups of routes will be administratively more convenient both from operators' and the

regulatory authority's viewpoints, and in addition be more satisfactory for users.

A small number of standard route types could be used as a basis for the purposes of comparison. Table 9.1 provides outline characteristics for three general types of city-pair market. Such a system would allow the appropriate regulatory body flexibility to amend the franchising terms governing individual routes in response to changing market conditions. In addition, in the unlikely event that an insufficient number of carriers bid for the available franchises, the authority could impose controls on fare levels and capacity if a monopoly were likely to result.

Table 9.1 Standard Route Types for Franchising Purposes

	<u>Trunks</u>	<u>Secondary</u>	<u>Inter-regional</u>
Range of Traffic Volumes (mn pax per year)	>1	>0.1	<0.1
Number of airlines	3 or 4	1 or 2	1
A/craft seating capacity	>150	<150	<100

As regards the type of entry barrier that would necessitate the incorporation of a route within the franchising system, the following would be of particular relevance:

- i) insufficient take-off and landing slots;
- ii) limitations in airport terminal facilities (including ownership or effective control of these by one or more carrier);
- iii) domination of travel agencies in specific traffic

generating locations by one or a small group of carriers' CRS. In addition, once evidence of anti-competitive behaviour by one or more carriers on an unconstrained route manifested itself the route would become subject to franchise. This would tend to discourage the larger carriers from abusing their power.

9.1 Licence Allocation - the Tendering Process

In order to foster a competitive environment all franchised routes would need to be subject to a tendering process every few years. In awarding franchises regulatory authorities would need to take into consideration a number of factors, particularly:

i) the level and conditions (including availability) attached to each fare type that the airline had been offering on similar routes. New entrants would need to put forward specific estimates for the route in question.

ii) an approximate indication of the total amount of revenue the firm aimed to extract from its operations on the route.

iii) the total capacity the carrier planned to offer.

iv) the quality of inflight service proposed.

v) the reliability of the company to date in fulfilling the conditions of previous franchise awards.

vi) details of any interline arrangements or marketing agreements with connecting carriers, which were particularly relevant to the route.

vii) any restrictions on the distribution of tickets or exclusive deals with retailers.

In addition, special credit could be given for environmentally friendly and other generally beneficial proposals (eg. the use of quiet/fuel efficient aircraft; the more efficient use of available infrastructure; and coordination with other transport modes).

However, of crucial importance and the prime motive for proposing this particular approach, is the desire to allow carriers considerable discretion in the ways in which they choose to operate. It would be their decision as to which route franchises they wished to tender for in the first place and it would be entirely up to them as to the precise ways in which they choose to operate them. Anti-competitive practices, as defined by the regulator, would be the one exception to this freedom of action. As the industry naturally lends itself to the successful exploitation of such activities it falls to Government to rule 'out of court' this unwelcome feature of economic freedom. Ensuring that carriers are forced periodically to compete for 'their' routes should act as a strong deterrent to airlines operating in this way, for, if discovered, they would have much to forfeit.

Providing that carriers had not colluded 'behind the scenes' in an attempt to carve up the total scheduled market and that for each route more airlines had tendered than the number of franchises available, it would fall upon the appropriate regulatory authority to make a judgement as to which company(s) to select. Evidence of any form of developing anti-competitive strategy would result in a carrier failing to renew its franchise. It is clear that those charged with regulating the industry would need to be especially vigilant in this matter. Ensuring the continuance of a healthy, but not excessively, competitive environment would be of key concern to the authority in determining which company(s) to award a

franchise. A number of examples are given below to illustrate the approach that would need to be followed.

Case A

LHR-CDG. At present operated by the two flag carriers. With franchising this slot constrained route could initially support a third airline and ultimately possibly a fourth. Each franchise awarded for the route would carry with it an entitlement to a reasonable number of take-off and landing slots spread throughout the day. In this way no one carrier would be unfairly advantaged.

Let us assume that the following carriers had tendered for the three available franchises: Air France, British Airways, Air Europe, British Midland, Britannia, Dan-Air, Air Inter, and UTA. Each could be anticipated to fulfil the basic necessary conditions in terms of their safety record, financial viability and operating experience. Previous evidence of collusion however would mean that only one of Air France and Air Inter could be awarded a franchise. A carrier noted for a strongly competitive stance, such as Air Europe, could well provide sufficient of a spur to fulfil requirements. The inclusion of an airline which had earned a majority of its revenue from charter operations could be expected to have the effect of exerting a downward pressure on operating costs.

It may be necessary in the early operation of this system to include at least one French and one British carrier.

Case B

MAN-FRA. Currently operated by British Airways and Lufthansa,

with each carrier operating two flights per day with 100/110 seat aircraft. Total annual traffic is approximately 150,000 passengers. To introduce an element of competition on this secondary route it would seem essential to replace at least one of the present incumbents with a carrier that has not operated in collusion with the remaining party. For example, BA could be replaced by Dan-Air or Loganair. If this tactic did not produce a favourable outcome then the threat of the addition of a third carrier could have the effect of persuading the franchise holders to avoid anti-competitive action. It would be unlikely though that more than two carriers could operate efficiently on this type of route.

Case C

LBA-BRU. At present operated by two carriers, Air UK and Capital. The former with one F.27 rotation per day and the latter with two Shorts 360 services. It is most unlikely that this type of route would necessitate inclusion in the franchising system.

To sustain a competitive environment on constrained routes after the awarding of franchises, it would be necessary to terminate these earlier than the normally allotted duration if evidence of collusion or any other form of anti-competitive behaviour manifested itself. The onus in any investigation of alleged such malpractices would be on the carrier to prove that it was not contravening the conditions agreed when it commenced operating the franchised route. There would appear to be no

necessity to control fares as the threat of the loss of a franchise should provide sufficient of a disincentive for carriers to engage in charging excessive prices. Predatory pricing would serve little purpose as the enforced withdrawal of one carrier from a route would result in the franchise being offered to other carriers. Other aspects of an airline's services could be anticipated to be treated in a similar manner.

Initially the tendering system could be operated by individual Governments on a reciprocal basis, but ideally these activities should form an important part of the duties of a central European Community Regulatory Authority. The bilateral arrangements existing between Member States and external countries could continue as at present with each State determining policy, but once a common multinational practice had been agreed the same form of franchising system could be instituted if the route(s) in question were subject to high entry barriers. To benefit carriers based within the twelve Member States route franchises ordinarily would be awarded only to such airlines.

References and Footnotes:

200. Two important preconditions here would be that all airlines were in private ownership and that there were no state subsidies to the sector.

201. Five years would be a reasonable time interval in this regard, as this would allow a carrier sufficient time to have established itself on a route and to have operated profitably.

202. For example, if a national or regional Government determined that operations to remote or difficultly accessed locations were not to be considered as normal commercial ventures, a system of direct subsidy could be introduced. A tendering system could apply in this situation with the lowest subvention being the determining factor in terms of which carrier to select, but it would necessitate the regulator stipulating a target level of service and the fares to be charged.

Chapter 10 The Quest for Efficient Regulation

The art of finding a generally acceptable balance between the conflicting objectives of efficiency and equity rarely has been mastered. Staunch advocates of the power of market forces regard as anathema any form of Government intervention, arguing, with some justification, that inefficiency will be the only outcome. For this relatively extreme viewpoint to be at all convincing however presupposes the existence of market forces sufficiently powerful to overcome the unbridled self interest of individual participants. The reality, unfortunately, is that in many sectors this degree of constraining influence is most apparent by its almost total absence. The 'invisible hand' having disappeared!

That firms ordinarily engage in activities designed to protect their interests against existing and would-be rivals is an entirely logical response; to anticipate otherwise would reflect a profoundly naive comprehension of human behaviour. It is a matter of political judgement as to which of these multifarious practices is consistent with the best interests of society. All activities of this kind are by their very nature anti-competitive, but it is only the more successful that necessitate the attention of Government. The scope for engaging in behaviour of this kind varies considerably between industries, as indeed does the propensity for such endeavours between different schools of management; the latter partly

reflecting philosophical and cultural differences and partly variations in imagination, insight and adeptness.²⁰³

That it must rest to Government to determine what should constitute an acceptable framework of behaviour for firms is clear. Differences in political philosophy and perspective however mean that a universally acceptable formula cannot exist. The norm has been to make use of both structural and behavioural devices in the weaving of this constraining web. In recent years the former has been regarded increasingly as too blunt and intrusive an instrument of public policy; one that has been ineffective and counter-productive, acting against the best interests of consumers. As a consequence, the placing of a growing reliance on behavioural controls has altered the balance of power in favour of established firms, for they have been provided with a voice in the debate as to how much and in what precise ways they are to be constrained. Massaging public opinion and extending largesse to those with influence has itself taken on an art form.

The parameters of 'the market place' have altered fundamentally over the past two decades. Companies are no longer constrained in terms of the range of products they traditionally have produced. The tremendous developments in the fields of communications and information processing has also freed them of national identity. Mobility of capital and the search for the best return has turned each product market place into a global one. Money itself has no national identity, being capable of instant translation into which ever currency happens

to be appropriate at the particular time. Achieving the best return for shareholders invariably means searching the world for the best opportunities and may involve the playing of one country off against another. Consumers, on the other hand, although partly internationalised through the global branding of goods and services, are still very much preoccupied with concerns of a domestic nature. The conflict of efficiency and equity as a consequence has become more complex and much more difficult to resolve.

Matters of public policy invariably involve Governments in making decisions which can never be regarded as being devoid of political motive. Where matters of politics are concerned polarisation of view generally occurs. Deriving a consensus on such a controversial matter as to where and under what conditions to sacrifice efficiency in favour of greater equity could well prove to be an impossible task. There can be no one ideal balance, it is a matter of personal and collective preference. Devising a regulatory regime which recognises this reality requires tremendous ingenuity, as the system would require considerably flexibility, providing those charged with carrying out the task an ability to respond to the changing characteristics of individual markets and varying general political demands. The extremes of the political pendulum, so often reflecting changes in public policy in matters concerning economic regulation, would strongly militate against the likelihood of such an achievement.

The virtual impossibility of keeping all interested

parties happy, or at least not too disgruntled, rests on those charged with carrying out the regulatory task. It would be totally unreasonable to expect higher standards of human behaviour from these individuals than one would expect to find from other mortals. Even given the existence of an ingenious regulatory framework its ultimate success would depend to a large extent on the integrity and resolve of human beings. The 'capture' in some shape or form of the regulatory authority should therefore not come as a totally unexpected outcome.

Adequate information disclosure by those subject to economic control forms another stumbling block in the quest for efficient regulation. The need to keep abreast of all developments in the industry would necessitate a close monitoring by the appropriate authority. This would be both expensive to undertake and tend to counterbalance the attributed benefits of the policy.

A completely efficient form of regulation would appear therefore to be an unattainable pipe-dream. Many factors stand in the way of it ever becoming a reality. The franchising of licences on routes displaying strong barriers to entry however would appear to provide a realistic prospect of ensuring a genuinely competitive market place. Such a system would enable a reasonable balance to be maintained between the interests of shareholders and those of consumers. The increasing globalisation of business more than ever requires that adequate safeguards be provided by Governments to protect their citizens against modern day buccaneering.

References and Footnotes:

203. For example, James Goldsmith's perception of himself not as a corporate raider, but as a saviour of weary corporations. Sampson, A., *The Midas Touch*, Hodder & Stoughton, 1989, pp.40-59.

Concluding Remarks

Over the past decade the US airline industry has provided a clear insight into the ways in which modern business organisations respond to an increase in competitive pressure. The response of carriers to economic freedom has provided a comparatively rare opportunity to observe the ways in which incumbent airlines have sought to regain control over their markets. In certain respects it has replicated the kind of controlled experimentation that ordinarily would be the preserve of the scientific world. It has captured the interest of a wide audience not only because of its impact on large numbers of consumers, but also because the transformed industry has borne increasingly less and less resemblance to the confident predictions of those that advocated deregulation.

It has been the speed with which this transmogrification has occurred that has surprised many observers. The tactics employed to recreate effective measures to deter competitors have been clearly visible. That the specific features of this service industry have been such as to provide a number of comparatively easy ways of doing this has made the contrast even more stark, heightening the surprise. The blatancy of the cruder attempts has tended to undermine market doctrine. Carriers have undergone a rapid metamorphosis, emerging in many respects as carbon copies of business enterprises in other industrial sectors. The distinctive characteristics of

operating an airline have been subsumed. In many respects the industry has simply caught up with other sectors after its forty years of being held in a regulatory time warp. Transition in other industries has been much more gradual and provided opportunity to present a more palatable picture to observers.

This restructuring of US carriers has had a major impact on the strategic development of airlines based in other parts of the world. The preservation of national interests expressed in the form of flag carriers continues, but for the economically weak provides an increasingly expensive means to express a nation's virility. The concentration of the industry into a small number of global consortia would appear to be inevitable. The economics of the sector, both in terms of operating costs and revenue generation, strongly favouring this outcome. Global branding in this industry relies much on strong national identity and has tended to mask much of what has been occurring.

Reliance by individual nations on behavioural means to restrict the activities of such powerful alliances will prove an unequal struggle. Retrospective action by national regulatory bodies having been taken into consideration and countered long in advance. Multinational regulatory authorities adopting a similar approach are likely to fare no better, as diverse interests will make decision making a long winded affair and produce watered down policies. Structural regulation imaginatively aimed at creating and preserving competition is likely to provide a better balance between the fulfilment of

the interests of powerful world carriers and those of consumers.

Bibliography

- Aeropa, 'The Court of Justice of the European Communities "breaks" the System of Air Tariff Agreements', Brussels, April 1989.
- Akerlof, G., 'The Market for Lemons: Qualitative Uncertainty and the Market Mechanism', Quarterly Journal of Economics, 1970.
- Argyris, N., 'Competition in European Air Transport - The Role of the European Commission', Symposium of Air Law Group of the Royal Aeronautical Society on 'Airline Competition and the Treaty of Rome', London 25 February 1988.
- Bailey, E.E. and Baumol, W.J., 'Deregulation and the Theory of Contestable Markets', Yale Journal on Regulation, Vol.1:111, 1984.
- Bailey, E.E., Graham, D.R., and Kaplan, D.R., Deregulating the Airlines, MIT Press, Cambridge, Mass., 1985.
- Bailey, E.E. and Williams, J.R., 'Sources of Economic Rent in the Deregulated Airline Industry', Journal of Law and Economics, Vol. XXXI, April 1988.
- Bain, J.S., Barriers to New Competition: Their Character and Consequences in Manufacturing Industry, Harvard University Press, Cambridge, Mass., 1956.
- Barlow, P., Aviation Antitrust, Kluwer, 1988.
- Bator, F., 'The Anatomy of Market Failure', Quarterly Journal of Economics, 1958.
- Baumol, W.J., Panzar, J.C., and Willig, R.D., Contestable Markets and the Theory of Industry Structure, Harcourt-Brace-Jovanovich, San Diego, 1982.
- Beesley, M.E. and Glaister, S., 'Deregulating the Bus Industry in Britain - A Response', Transport Reviews, Vol.5, 1985.
- Beesley, M.E., 'Commitment, Sunk Costs, and Entry to the Airline Industry', Journal of transport Economics and Policy, May 1986.
- Bluestone, D.W., 'The Problem of Competition Among Domestic Trunk Airlines - Part 1', Journal of Air Law and Commerce, Vol.20, Autumn 1953.
- Button, K.J., 'New Approaches to the Regulation of Industry', The Royal Bank of Scotland Review, 1986.
- Caves, D.W., Christensen, L.R., Tretheway, M.W. and Windle, R.J., 'The Effect of New Entry on Productivity Growth in the US Airline Industry 1947-1981', Logistics and Transportation Review, Vol.21, No.4.
- Caves, D.W., Christensen, L.R., and Tretheway, M.W., 'Economies of Density versus Economies of Scale: Why Trunk and Local Service Airlines Differ', Rand Journal of Economics, Vol.15, no.4, Winter 1984.
- Caves, R., Air Transport and Its Regulators: An Industry Study, Harvard University Press, 1962.
- Caves, R.E. and Porter, M.E., 'From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived Decisions and Contrived Deterrence to New Competition', Quarterly Journal of Economics, Vol.5, 1977.
- Civil Aviation Authority, 'Deregulation of Air Transport - A

- perspective on the experience in the United States', CAA Paper 84009, May 1984.
- Crew, M.A. and Kleindorfer, P.R., *The Economics of Public Utility Regulation*, Macmillan, 1986.
- Cunningham, L.F. and Eckard, E.W., 'US Small Community Air Service Subsidies', *Journal of Transport Economics and Policy*, September 1987.
- Davies, R.E.G., *Airlines of the United States Since 1914*, Smithsonian, Washington, DC, 1972.
- Demsetz, H., 'Why Regulate Utilities?', *Journal of Law and Economics*, April 1968.
- Doganis, R., *Flying Off Course: The Economics of International Airlines*, George Allen & Unwin, 1985.
- Doganis, R. and Dennis, N., 'Lessons in Hubbing', *Airline Business*, March 1989.
- Douglas, G.W., 'Excess Capacity, Service Quality and the Structure of Airline Fares', *Transportation Research Forum*, October 1971.
- Eads, G.C., 'Competition in the Domestic Trunk Airline Industry: Too Much Or Too Little?', forms chapter 2 of *Promoting Competition in Regulated Markets*, edited by Almarin Phillips, The Brookings Institution, Washington, DC, 1975.
- Evans, L. and Garber, S., 'Public-Utility Regulators Are Only Human: A Positive Theory of Rational Constraints', *American Economic Review*, Vol.78, No.3, June 1988.
- Feldman, J., 'Regional Airlines in the USA', *Travel & tourism Analyst*, May 1987.
- Feldman, J., 'CRS in the USA', *Travel & Tourism Analyst*, September 1987.
- Feldman, J., 'CRS and Fair Airline Competition', *Travel & Tourism Analyst*, 1988.
- Fisher, F.M., 'Horizontal Mergers: Triage and Treatment', *Economic Perspectives*, Vol.1, No.2, Fall 1987.
- Forsyth, P., 'Airlines and Airports: Privatisation, Competition and Regulation', *Fiscal Studies*, February 1984.
- French, T., 'So Far, So What?', *Airline Business*, August 1988.
- Frere Cholmeley, 'The EEC's New Air Transport Package', 1988.
- Fruhan, W.E., *The Fight for Competitive Advantage: A Study of the United States Domestic Trunk Air Carriers*, Harvard Graduate School of Business Administration, Division of Research, Boston, Mass., 1972.
- Galbraith, J.K., 'Time and the New Industrial State', *American Economics Association Papers and Proceedings*, May 1988.
- Gialloredo, L., *Strategic Airline Management: The Global War Begins*, Pitman, 1988.
- Graham, D.R., Kaplan, D.P. and Sibley, D.S., 'Efficiency and Competition in the Airline Industry', *Bell Journal of Economics and Management Science*, Vol.14, 1983.
- Gronau, R., 'The Effect of Travelling Time on the Demand for Transportation', *Journal of Political Economy*, Vol.78, March/April 1970.
- Gwilliam, K.M. and Mackie, P.J., *Economics and Transport Policy*, George Allen & Unwin, 1975.
- Gwilliam, K.M., Nash, C.A. and Mackie, P.J., 'Deregulating the Bus

- Industry in Britain - The Case Against', *Transport Reviews*, Vol.5, 1985.
- Harrison,G.W. and McKee,M., 'Market Behaviour, Decentralised Refulation, and Contestable Markets: An Experimental Evaluation', *Rand Journal of Economics*, Vol.16, No.1, Spring 1985.
- Hensher,D.A., 'Some Thoughts on Competitive Tendering in Local Bus Operations', *Transport Reviews*, Vol.8, No.4, 1988.
- Hirst,R.B., 'The CRS Mess, 1984-89: From Display Bias to Travel Agency Franchises', *American Bar Association, Forum on Air and Space Law*, Seattle, May 1989.
- Humphreys,B., 'The Myth of Contestability', *Avmark Aviation Economist*, January 1987.
- IATA, *Deregulation Watch - First, Second and Third Reports*.
- Jenks,C., 'US Airlines Hubs and Spokes', *Travel & Tourism Analyst*, August 1986.
- Johnson,P., 'The Impact of New Entry on UK Domestic Air Transport: A Case Study of the London-Glasgow Route', *The Service Industries Journal*, 1988.
- Jordan,W.A., *Airline Regulation in America: Effects and Imperfections*, The John Hopkins Press, Baltimore, 1970.
- Jordan,W.A., 'Producer Protection, Prior Market Structure and the Effects of Government Regulation', *Journal of Law and Economics*, Vol.15, April 1972.
- Jordan,W.A., 'Problems Stemming from Airline Mergers and Acquisitions', *Transportation Journal*, Summer 1988.
- Kahn,A.E., *The Economics of Regulation: Principles and Institutions*, Vol.2, John Wiley, 1970.
- Kahn,A.E., 'Surprises of Airline Deregulation', *American Economics Association Papers and Proceedings*, May 1988.
- Kahn,A.E., 'Airline Concentration at Hub Airports', *Testimony before the US Senate Committee on Commerce, Science and Transportation*, 22 September 1988.
- Kanafani,A., 'Aircraft Technology and Network Structure in Short-Haul Air Transportation', *Transportation Research A*, Vol.15, 1981.
- Karnani,A., 'Generic Competitive Strategies - An Analytical Approach', *Strategic Management Journal*, Vol.5, 1984.
- Katz,R., 'Liberalisation of Air Transport in Europe', *Travel & Tourism Analyst*, March 1987.
- Katz,R., 'Europe's Secondary Airports', *Travel & Tourism Analyst*, No.1, 1989.
- Kay,J.A. and Vickers,J.S., 'Regulatory Reform in Britain', *Economic Policy*, October 1988.
- Keeler,T.E., 'Airline Regulation and Market Performance', *Bell Journal of Economics and Management Science*, Vol.3(2), Autumn 1972.
- Kyle,R. and Phillips,L.T., 'Airline Deregulation: Did Economists Promise Too Much or Too Little?', *Logistics and Transportation Review*, Vol.21(1), March 1985.
- Levine,M.E., 'Regulating Airmail Transportation', *Journal of Law and Economics*, Vol.18, No.2, 1975.
- Levine,M.E., 'Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy', *Yale Journal on*

- Regulation, Vol.4, 1987.
- Littlechild,S., Regulation of British Telecommunications Profitability, HMSO, London, 1983.
- Malloy,J.F. and Sarathy,R., 'Staying in the Race: Growth and Survival at Commuter Airlines', Transportation Journal, Summer 1986.
- Moore,T.G., 'US Airline Deregulation: Its Effects on Passengers, Capital, and Labor', Journal of Law and Economics, Vol.XXIX, April 1986.
- Morrison,S.A. and Winston,C., The Economic Effects of Airline Deregulation, The Brookings Institution, 1986.
- Morrison,S.A. and Winston,C., 'Empirical Implications and Tests of the Contestability Hypothesis', Journal of Law and Economics, Vol.XXX, April 1987.
- Niskanen,W., Bureaucracy and Representative Government, Aldine-Atherton, Chicago, 1971.
- Nuutinen,H., 'Charter Airlines in Europe', Travel & Tourism Analyst, November 1986.
- Oster,C.V. and Pickrell,D.H., 'Marketing Alliances and Competitive Strategy in the Airline Industry', Logistics and Transportation Review, Vol.22, No.4.
- Peltzman,S., 'Towards a More General Theory of Regulation', Journal of Law and Economics, Vol.14, 1976.
- Peltzman,S., 'The Gains and Losses from Industrial Concentration', Journal of Law and Economics, Vol.20, 1977.
- Phillips,L.T., 'Air Carrier Activity at Major Hub Airports and Changing Interline Practices in the United States' Airline Industry', Transportation Research A, Vol.21A, No.3, 1987.
- Porter,M.E., Competitive Strategy: Techniques for Analyzing Industries and Competitors, The Free Press, New York, 1980.
- Posner,R.A., 'The Appropriate Scope of Regulation in the Cable Television Industry', Bell Journal of Economics and Management Science, Spring 1972.
- Posner,R.A., 'Theories of Economic Regulation', Bell Journal of Economics and Management Science, 1974.
- Pryke,R., Competition Among International Airlines.
- Pryke,R., 'European Air Transport Liberalisation', Travel & Tourism Analyst, No.2, 1989.
- Robinson,D., 'Where will it all end?', Transport, September 1989.
- Ruppenthal,K.M., 'US Airline Deregulation - Winners and Losers', Logistics and Transportation Review, Vol.23, No.1.
- Salop,S. and Stiglitz,J., 'Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion', Review of Economic Studies, 1977.
- Salop,S.C. and Scheffman,D.T., 'Raising Rivals' Costs', American Economic Association Papers and Proceedings, May 1983.
- Sampson,A., The Midas Touch, Hodder & Stoughton, 1989.
- Schmalensee,R., The Control of Natural Monopoly, Heath, Lexington, 1979.
- Shepherd,W.G., '"Contestability" versus Competition', American Economic Review, Vol.74, No.4, September 1984.
- Shepherd,W.G., 'Competition, Contestability, and Transport Mergers', International Journal of Transport, Vol.XV, No.2,

June 1988.

Shleifer, A., 'A Theory of Yardstick Competition', Rand Journal of Economics, Vol.16, No.3, Autumn 1985.

Sinha, D., 'The Theory of Contestable Markets and US Airline Deregulation: A Survey', Logistics and Transportation Review, Vol.22, No.4.

Solberg, C., Conquest of the Skies: A History of Commercial Aviation in America, Little Brown & Co., Boston, 1979.

Stigler, G., 'The Theory of Economic Regulation', Bell Journal of Economics and Management Science, Vol.2, 1971.

Stigler, G. and Friedland, C., 'What Can Regulators Regulate: The Case of Electricity', Journal of Law and Economics, 1962.

Taneja, N.K., 'Airline Competition Analysis', Flight Transportation Laboratory Report R-68-2, Massachusetts Institute of Technology, September 1968.

Toh, R.S. and Higgins, R.G., 'The Impact of Hub and Spoke Network Centralization and Route Monopoly on Domestic Airline Profitability', Transportation Journal, Summer 1985.

US Dept. of Transportation, 'Top City Pairs, 1970', 1971.

US Dept. of Transportation, 'USAir-Piedmont Acquisition Case', Docket 44719, Office of Hearings, Washington, DC, September 1987.

Viton, P.A., 'Air Deregulation Revisited: Choice of Aircraft, Load Factors, and Marginal Cost Fares for Domestic Air Travel', Transportation Research A, Vol.20, No.5, 1986.

Wardell, D., 'Airline Reservation Systems in the USA', Travel & Tourism Analyst, January 1987.

Wheatcroft, S. and Lipman, G., 'Air Transport in a Competitive European Market - Problems, Prospects and Strategies', Economics Intelligence Unit Special Report, September 1986.

White, L.J., 'Economies of Scale and the Question of "Natural Monopoly" in the Airline Industry', Journal of Air Law and Commerce, Vol.44, 1979.

Williams, J.R., 'Understanding Where You Belong: Sources and Stability of Competitive Advantage', Working Paper No.20-86-87, Carnegie Mellon University, Graduate School of Industrial Administration, March 1987.

Williamson, O.E., 'Franchising Bidding for Natural Monopolies - In General and With Respect to CATV', Bell Journal of Economics, Spring 1976.

In addition to the material listed above extensive use has been made of the following publications: Airline Business, Avmark Aviation Economist, Air Transport World, Aviation Daily, and Aviation Week & Space Technology. The various publications of the Civil Aviation Authority concerning regulatory policy and commercial air transport have also been widely used.

Appendix 1

Table A US Carriers Domestic Market Shares 1978-88 (%RPM)

<u>1978</u>		<u>1983</u>		<u>1988</u>	
United	21.1	United	18.7	Texas Air	17.5
American	13.5	American	13.8	United	17.3
Delta	12.0	Delta	11.1	American	17.1
Eastern	11.1	Eastern	11.1	Delta	14.1
TWA	9.4	TWA	7.1	USAir	9.5
Western	5.0	Republic	4.2	TWA	6.5
Continental	4.5	Northwest	4.2	Northwest	4.6
Braniff	3.8	Western	3.9	Southwest	2.4
National	3.6	Continental	3.5	America West	2.2
Northwest	2.6	Pan Am	3.3	Pan Am	2.0
Allegheny	2.2	Southwest	1.7	Braniff	1.4
Frontier	2.0	Frontier	1.7	Alaska	1.1
Top 4	57.7		54.7		66.0
Top 6	72.1		66.0		82.0
Top 12	90.8		84.3		95.7

Sources: Air Transport World and Aviation Daily.

Table B New Interstate Market Entrants since Deregulation

<u>Carrier</u>	<u>Year of Entry</u>	<u>Year of Exit</u>	<u>Reason for Exit</u>
<u>Former Intrastate Airlines</u>			
Air California	1979	1987	Acquired by American
Air Florida	1979	1984	Bankruptcy
Pacific Southwest	1979	1987	Acquired by USAir
Southwest	1979		
<u>Former Charter Airlines</u>			
Capitol	1979	1984	Bankruptcy
World	1979	1985	Withdrew from scheduled services
<u>Newly Formed Carriers</u>			
Air Atlanta	1984	1987	Bankruptcy
Air One	1983	1984	Bankruptcy
American Intern.	1982	1984	Bankruptcy
America West	1983		
Braniff	1984	1989	Bankruptcy
Florida Express	1984	1988	Acquired by Braniff
Hawaii Express	1982	1983	Bankruptcy

Jet America	1981	1987	Acquired by Alaska
MGM Grand	1987		
Midway	1979		
Midwest Express	1984		
Muse	1981	1985	Acquired by Southwest
Northeastern	1983	1985	Bankruptcy
Pacific East	1982	1984	Bankruptcy
Pacific Express	1982	1984	Bankruptcy
People Express	1981	1986	Acquired by Texas Air
Presidential	1985	1989	Bankruptcy
Regent Air	1985	1986	Bankruptcy

Sources: Air Transport World, Avmark Aviation Economist, and Flight International.

Appendix 2

Market Concentration

An early defensive strategy to be adopted by the majority of established US carriers was the restructuring of their routes into hub and spoke networks. By concentrating operations at hubs, airlines made access to these points expensive, if not impossible, for aspiring new entrants. Considerable economies were derived from this reorganisation of routes, especially when supported by a dominance of company owned computer reservation terminals in the major traffic generating travel agencies surrounding the hub.

In order to be able to derive the most benefit from this new system the operation of more than one hub was required. Developing a new hub could be time consuming, expensive and risky. Acquiring one by taking over or merging with another airline had the double advantage of providing an already successfully established hub and eliminating a former competitor. Merger mania thus became a second important phase in the process of organisational change following deregulation.

As mergers concentrate market power the prospect of it being used to exploit consumers or unfairly disadvantage competitors is increased. Ordinarily in the US matters relating to such issues would be referred to the Antitrust Divisions of the Department of Justice (DOJ). However in the case of air

transport the CAB had been the responsible agency, providing carriers with a considerable degree of immunity from antitrust legislation. On the demise of CAB responsibility for this passed to the Department of Transportation. Considerable debate had taken place as to whether such matters should rightly have been under the jurisdiction of the DOJ. In the event the acknowledged expertise of the DOT in matters of transportation proved decisive. Despite this demarcation, both Departments have made recommendations about each of the major airline merger proposals.

The most recent airline merger case, that of USAir and Piedmont Airlines, is interesting in that it throws into sharp focus many of the complex issues that Governments face when deciding on policy relating to market intervention. The DOJ, with reference to the Hirschman Herfindahl Index (HHI)¹, argued that as the domestic airline industry system wide showed only a moderate degree of concentration the merger should be approved. The index takes into consideration both the number of carriers operating in a particular market and their relative traffic shares, and is calculated by summing the square of each carrier's market share. A summary measurement is thus provided, its relative simplicity making it an attractive measure to adopt. However, although it provides a reasonable way of measuring changes in market concentration it provides no insight as to the ways in which firms are most likely to use their greater market power. The simple example given below illustrates this.

The table gives details of the traffic shares of airlines operating in three markets, whilst the graph shows the cumulative concentration curve for each market.

Traffic Shares(%)

Market	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	HHI
A	50	50				5000
B	65	15	10	10		4650
C	60	25	5	5	5	4300

The duopolistic market is shown as having the highest degree of concentration. However, assuming that these firms do not collude, it is possible that the dominant firm in market B may be able to exert sufficient control over its competitors that it is able to force consumers to pay higher prices than they would in market A for comparable journeys. By contrast, if firm 2 in market C is in some way contractually tied to firm 1, as in the role of a feeder operator, this market may be more likely to exhibit greater degrees of anti-competitive behaviour and consumer exploitation.

The degree of collusion between carriers is an aspect of oligopolistic markets that the HHI, or indeed any other concentration measure, cannot take adequately into account. Such measures in practice can only sensibly be employed to provide a rough guide as to when an in-depth appraisal of a proposed merger is advisable. Choosing an appropriate trigger

level then becomes the crucial concern. This can only realistically be determined after a detailed examination of the behaviour of firms in a large number of markets of varying degrees of concentration. The DOJ for its purposes has adopted the following convention: HHI valuations of less than 1000 are interpreted as indicating low levels of concentration; values of between 1000 and 1800 as showing moderate concentration; and values of over 1800 as demonstrating high concentration. The fact that system wide the US domestic airline industry exhibited an HHI of only 1303 in 1987 (842 in 1977) was a key factor in the decision to allow the USAir-Piedmont merger to proceed.²

At the micro level however many of the individual city pairs operated by these two carriers showed very high levels of concentration. Given the high degree of commonality in the routes operated by both companies it seems to have been highly inappropriate to have assessed the pros and cons of this particular merger proposal using an industry wide measure of concentration. The higher than average net yields earned by the two airlines can only be explained by their adoption of near monopoly prices, given their near industry average costs and lack of an in-house CRS. The view that the merger would be most likely to result in greater exploitation of consumers was expounded by DOT Administrative Law Judge Ronnie Yoder. He advised against approval, but this recommendation was officially overruled a month later by the DOT.

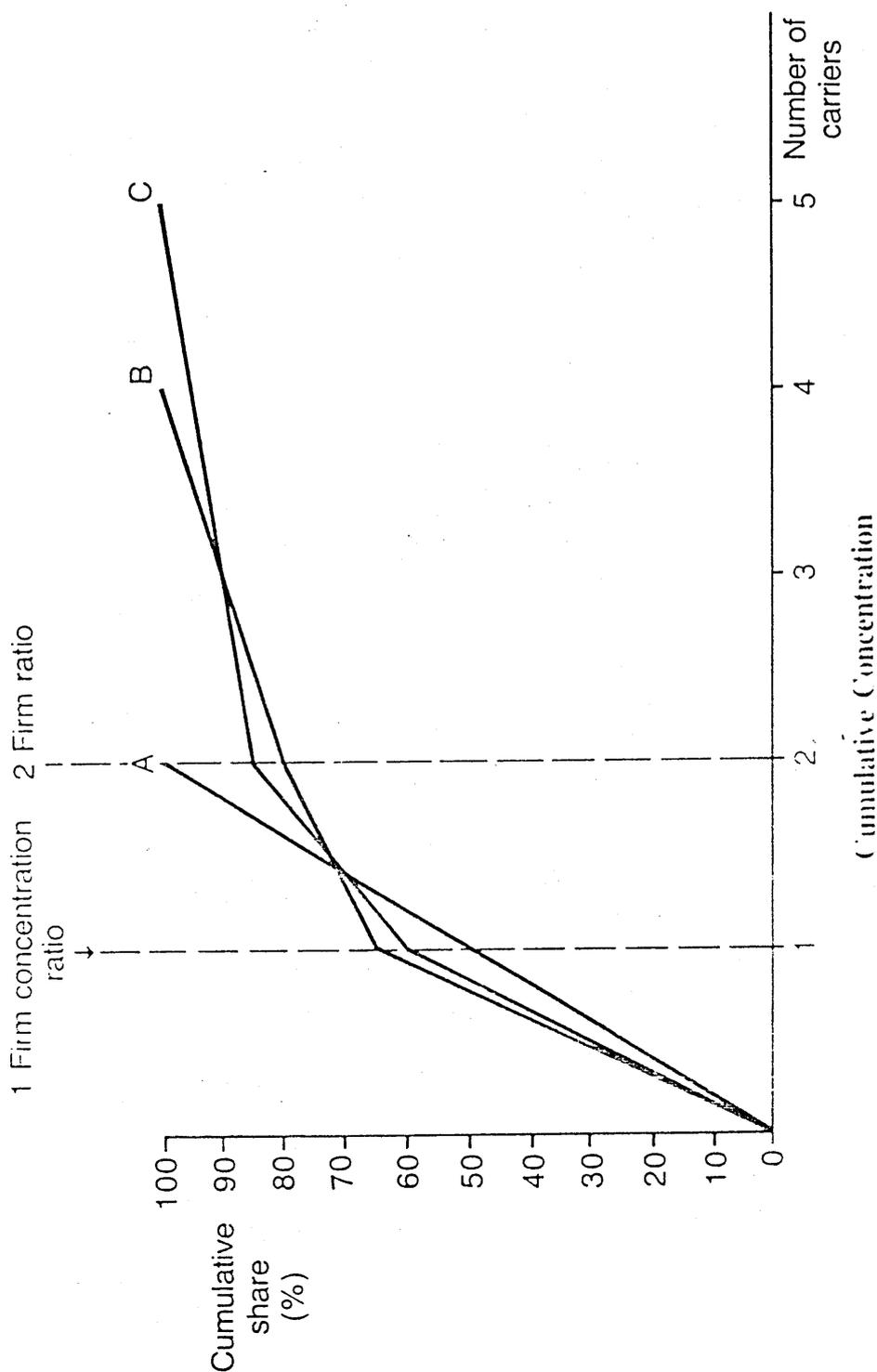
The DOJ's 1982 guide-lines on horizontal mergers are in

the words of Steven Salop "...built on the premise that collusion... is less likely to succeed in less concentrated markets, in markets where few entry barriers exist, and in markets where competitive price cuts are more difficult for rivals to detect quickly."³ Substantial entry barriers do however exist in today's airline markets. Carriers have expended considerable time, money and imagination in their establishment. The view expounded by many economists before and during the early days of deregulation that airline markets could be expected to exhibit high degrees of contestability has not proved to be the case. In the circumstances it is difficult not to draw the conclusion that the real reason for the DOT allowing the merger rested on the view that it would be better in the long term to have seven mega carriers rather than six.

Future debate about airline regulation will increasingly focus on issues concerned with obtaining a more equitable distribution of the benefits that a more efficiently organised industry has brought. Successful carriers have adopted strategies that have been aimed at increasing their competitive advantage. Achieving this objective provided them with the ability to organise their markets leading to still greater competitive advantage. Monopoly or collusive oligopoly is the end result of this process, as we are increasingly witnessing in the US. Wresting organisational control of airline markets from an increasingly powerful group of carriers is likely to be an expensive and highly controversial further phase in the process of 'deregulation'. Given the inefficiencies produced by

earlier attempts at regulating the industry, the onus will be on Governments to establish convincingly when campaigning for re-regulation that on balance any benefits likely to be derived will outweigh the costs of implementing such a policy.

Cumulative Concentration Curves for Each Market



References and Footnotes:

1. The formula for the HHI is: $H = \sum_{i=1}^n s_i^2$ where s is the traffic share of the i 'th carrier, and n represents the total number of operators in the specific market. The usual convention is to measure market share as a proportion resulting in index values of between 0 and 1, but in the US percentages have been adopted producing valuations of between 0 and 10,000.
2. The seven largest carriers and their market shares in 1988 were: Texas Air Corpn.(Continental and Eastern) 18.8%, United 16.8%, American 16.3%, Delta 13.6%, Northwest 7.1%, TWA 6.2%, and USAir/Piedmont 9.1%.
3. Salop, Steven C., "Symposium on Mergers and Antitrust," Journal of Economic Perspectives, Fall 1987, pp.3-12.