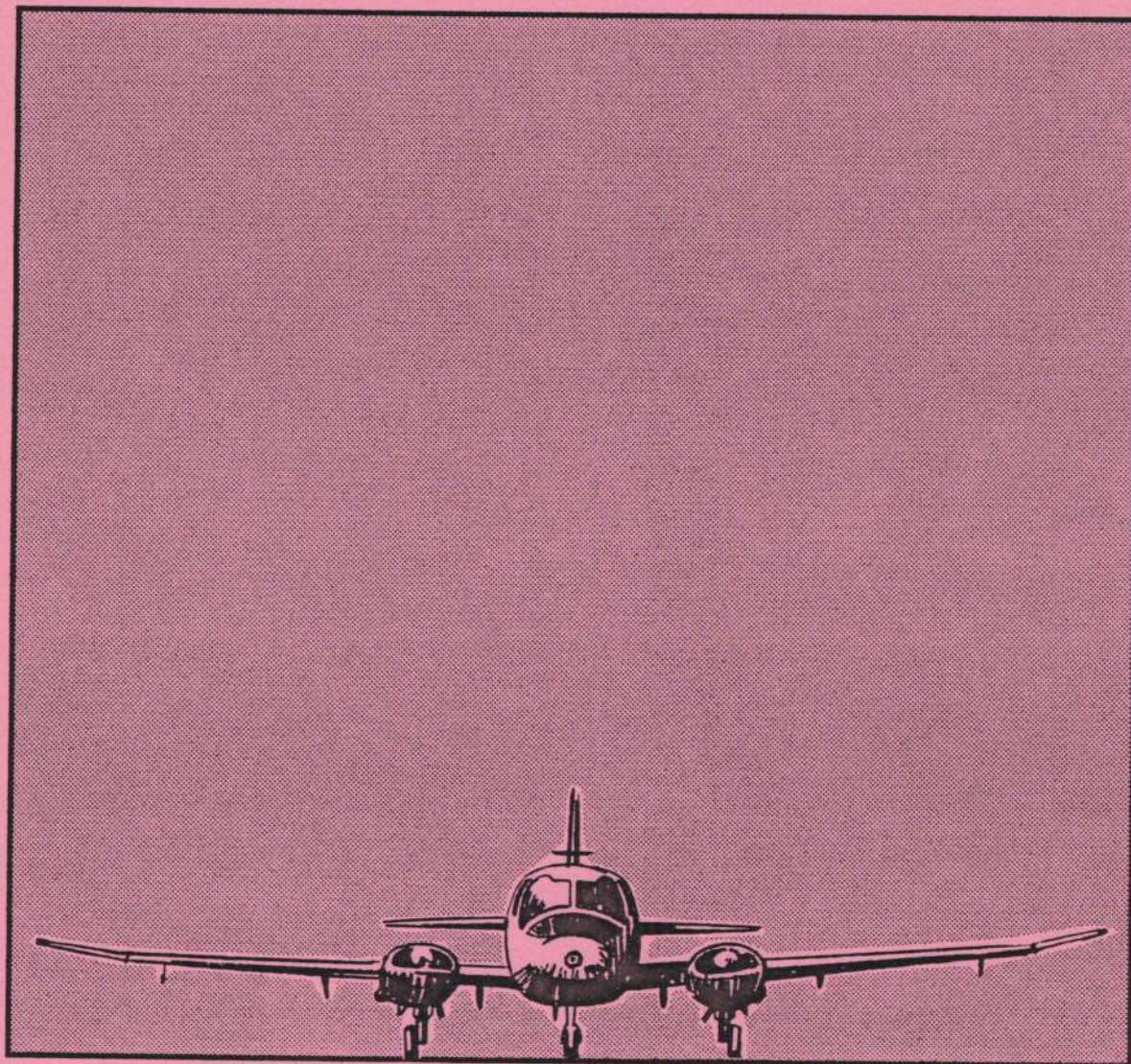


CLEAR FOR TAKE-OFF

The concept of feeder-reliever airports

Edited by Keith Boyfield & Eamonn Butler



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ADAM SMITH
INSTITUTE

1995

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As for the possibility of easing congestion by building a new airport on a completely new site, even if that was thought to be desirable, it has so many environmental and other problems, that such an airport would be unlikely to come into operation in less than twenty years.

Given all this, the most acceptable solutions to the problem of providing

The feeder-reliever debate

In November 1994 the Institute published Keith Boyfield's report *Plane Commonsense*, which explored the case for developing feeder-reliever airports at Northolt (near to Heathrow) and Redhill (near to Gatwick) as a way of reducing runway congestion in the South East.

The report, and the one-day conference in London which followed it, sparked a lively public debate about the feeder-reliever idea, which in turn threw up some important issues of detail which must be settled if the concept is to progress further.

One of the key questions raised at the conference, for example, was the issue of surface access between feeder-relievers and the major international airports at Heathrow and Gatwick. To give this point some of the deeper consideration it so obviously deserves, we have included in this symposium a specially commissioned paper from Peter Cuming, who is a planning consultant and former Senior Planning Inspector for the Department of Environment and Welsh Office, and who has an expert knowledge of the issues involved in airport access.

Parameters of a solution

Since the turn of the year, the Secretary of State for Transport, Dr Brian Mawhinney, has announced the government's response to RUCATSE (the official Department of Transport working party on Runway Capacity to Serve the South East). The key points made in this statement of 2nd February are that the government has decided that a third runway at Heathrow or a second runway at Gatwick should not be considered further; any future development of runway capacity in the South East must take pay close attention to the likely environmental impact.

Accordingly, it is the government's intention to look at the possibility of less damaging options for increasing capacity than those considered by RUCATSE. One of these options to be considered further is a close-in parallel runway at Gatwick.

An issue singled out by the Secretary of State as of particular importance is surface access to airports, including the scope for improved public transport links to and between airports in the South East. The Secretary of State said that he expected these further studies to take two to three years to complete.

As for the possibility of easing congestion by building a new airport on a completely new site, even if that was thought to be desirable, it has so many environmental and other problems, that such an airport would be unlikely to come into operation in less than twenty years.

Given all this, the most acceptable solutions to the problem of providing additional runway capacity with the least environmental damage will be those based on existing operational airports or airfields. With the rejection of new full scale runways at both Heathrow and Gatwick, the only options available are those based on increasing capacity by greater utilisation of the existing runways, or the construction of close-in parallel runways.

However, in the case of Gatwick, the legal agreement between BAA and West Sussex County Council which stipulates that no additional runway should be built before 2019 would seem to rule out such options. Given the adamant position of the West Sussex County Council, it is unlikely that this agreement could be re-negotiated, nor is the government likely to overturn it. The opposition that such a move would generate among local residents would be colossal. It would also set a dangerous precedent for similar agreements and the planning system elsewhere.

Ready for take-off

If further urgently needed capacity is going to be provided by the turn of the century, this leaves the feeder-reliever concept as the only option. In the case of Redhill, this could be comfortably up and running before the end of this decade, and Northolt should not be far behind, once an arrangement has been made with the Ministry of Defence.

To realise their full potential, good transport links between feeder-relievers and the main international airport are essential. There must also be excellent transport connections to the places the travelling public wish to go to, notably central London. As Peter Cuming explains in his paper, Redhill passes both these tests. With a dedicated access to the M23 – a mere 400 metres away – it is only some five miles along the M23 to Gatwick and the Gatwick Express to Victoria.

In the case of Northolt, there are excellent potential underground services to both the West End and the City, via the Piccadilly, Metropolitan and Central Lines which pass in close proximity to the airport. By building an interchange where the three lines cross north-west of Northolt, it is possible to give direct connections to a quarter of the stations on the entire Underground network. Peter Cuming suggests that a "people mover" would be needed to connect travellers between Heathrow and Northolt. The A312 road connecting the two

airports is fortunate in having a wide verge for most of its length and it would appear perfectly possible to construct such a conveyor on the verge.

Clearly, feeder-reliever airports situated close to major international airports such as Heathrow may pose some problems for air traffic control. Indeed, in the case of Redhill, the CAA's National Air Traffic Services (NATS) have taken the view that these problems are difficult to resolve. However, an independent real-time computer simulation shows that any problems that may arise are minor and have no adverse effect on Gatwick or other airports.

It should also be borne in mind that NATS have already increased Heathrow's ATM capacity from a hourly "maximum" of 69 in 1978 to 79 in the summer of 1993 (see *Slot Allocation: A Proposal for Europe's Airports*, CAP 644). Moreover, a recently published report by NATS, IATA and BAA entitled *Report of the Heathrow Runway Capacity Enhancement Study* puts forward some innovative suggestions to increase Heathrow's capacity from 78 air transport movements to 92 an hour, albeit with some environmental downside. In the words of CAP 644 (p58): "As a generalisation additional slots have been created by a combination of NATS' ability to exceed its own expectations...."

As *The Economist* of 4 February 1995 commented, our policymakers must bite the bullet and take some decisions with regard to runway capacity in the South East. Otherwise, "Much international air traffic, and the lucrative business that goes with it, might start to move to the other side of the English Channel". This would have a highly damaging impact on the UK economy and threaten London's role as one of the world's great capitals. It is sobering to note that Paris Charles de Gaulle airport is already planning its fifth runway, long before it is necessary.

It must be recognised that the airline industry is seeking increased capacity now. Even if a full-scale runway was to be considered today, it would be too late. In this country no such runway has been operational within fifteen years of it first being promoted. Plans to increase capacity must be implemented without delay if London is not to forfeit its premier position in world aviation.

Such provision is not just dictated by airline or airport profit motives and passenger convenience. Those are indeed important considerations; but one must also take account of the impact on the UK economy. Failure to deliver adequate capacity will force airlines to consider the attractions of such airports as Amsterdam or Paris which have capacity to spare and are encouraging airlines to move there. It is not difficult to envisage the domino effect if one or more large operators were to base their operations at one of those airfields. If operators were to move in large numbers, there would undoubtedly be a long-term negative effect on the UK economy both in terms of inward investment opportunities and tourism.

However, difficulties arise if the responsibility for providing adequate capacity is unclear, or if those responsible have to consider interests other than those of the needs of the travelling public - the interests of their shareholders, for example. Government cannot dictate to privately owned companies such as BAA, where

SOUTH-EAST AIRPORTS CAPACITY OPTIONS – AIRLINE VIEWS

By Howard Davies, British Air Transport Association

The background debate

It is perhaps necessary at this point to review very quickly the background to the calls for future capacity provision. In their advice to the Secretary of State for Transport in July 1990 (CAP 570), the CAA identified a need for an additional

It is not my intention to look at detailed forecasts of traffic growth, since many experts have already pronounced on this subject. I will therefore review in general terms (i) the current situation as seen by airlines, (ii) the RUCATSE options, and (iii) how we might provide the much needed capacity in the future.

Liberalisation of air services within the EU supposedly offers great opportunities for expansion of services, as indeed do the rapidly expanding economies of the Pacific rim countries. However, there are many issues which concern our industry and which will impact on our ability to remain competitive and provide affordable products for our customers. Potential threats to fair competition include the continuing injection of massive state aid into certain inefficient airlines which helps to suppress fair competition and artificially distorts the market. Nevertheless, the greatest threat to continued growth in air traffic, in our view, would be a failure to provide sufficient terminal and runway capacity in a timely fashion.

Those responsible for infrastructure – encompassing airspace, airport, runway and terminal capacity requirements – must be fully aware of its importance and make efforts to ensure it meets both current and future demands.

Such provision is not just dictated by airline or airport profit motives and passenger convenience. Those are indeed important considerations; but one must also take account of the impact on the UK economy. Failure to deliver adequate capacity will force airlines to consider the attractions of such airports as Amsterdam or Paris which have capacity to spare and are encouraging airlines to move there. It is not difficult to envisage the domino effect if one or more large operators were to base their operations at one of those airfields. If operators were to move in large numbers, there would undoubtedly be a long-term negative effect on the UK economy both in terms of inward investment opportunities and tourism.

However, difficulties arise if the responsibility for providing adequate capacity is unclear, or if those responsible have to consider interests other than those of the needs of the travelling public – the interests of their shareholders, for example. Government cannot dictate to privately owned companies such as BAA, where

capacity should be provided. It may well be that the need to provide capacity at a location attractive to the industry is in conflict with the demands of shareholders. The approach is much more straightforward when an airport has only to take its own needs into account, and not also to consider the other elements in the group. The positive action which Manchester Airport plc have taken to provide sufficient terminal capacity and the active steps they are taking to provide adequate runway capacity for the future are to be congratulated.

The background debate

It is perhaps necessary at this point to review very quickly the background to the calls for future capacity provision. In their advice to the Secretary of State for Transport in July 1990 (CAP 570), the CAA identified a need for an additional runway's-worth of capacity to serve the needs of the South East by 2005. They went on to state that further detailed assessments would be needed to confirm these initial findings. The options to be considered were:

- a third parallel runway at Heathrow;
- construction of a second runway at Gatwick;
- construction of a second runway at Stansted;
- full use of the runway at Luton; and
- limited development at use of Bristol, Bournemouth, Southampton, Manston and Lydd.

These options formed the basis of the RUCATSE study which commenced its work in February 1991 and produced its report in July 1993. Airlines had consistently made the point that any future development should be at the major locations which were serving their needs. Moving to new bases, or diversifying their operations between several, could only increase costs and downgrade the efficient operations which are essential, particularly to those in the leisure market. As it was, analysis of the limited development options (Southampton, Bournemouth etc.) indicated they could make little contribution to the long-term needs of the South East.

Of the other options, some adjustments were made to the alignments and lengths of the runways to be considered. The outcome of the deliberations was that a new runway at either Heathrow or Gatwick would be substantially taken up from around 2010, whereas demand for the Stansted and Luton options was unlikely to be strong before about 2015. However, latest DTp forecasts and those produced elsewhere, together with latest traffic growth figures produced by the CAA suggest that there will be a substantial Heathrow/Gatwick overspill between 2005-2010, with the likelihood that it will occur nearer to the former than the latter. It is therefore highly likely that those airports will become gridlocked by that time.

RUCATSE also showed that development at Heathrow in particular would afford the greatest benefits to the air transport industry and passengers, with that at Gatwick only marginally less so. If there is to be no development at either of

these locations, how will the aspirations of the passengers who wish to use these two airports be met? It is conceivable that some may be prepared to use an airport other than their "local" one (that is, to travel to either Stansted or Luton). However, it is just as likely that some may be lost to the system and that others may find it as easy to position to Paris or Amsterdam and fly from these – with the adverse long-term implications for the UK economy, tourism and employment that I have already mentioned.

Airlines and their passengers find Heathrow (and to a lesser extent Gatwick) attractive because they have achieved a critical mass which enables them to offer the wide range of services which the consumer wants. As the desire to travel increases, and as rising disposable incomes allow more people to do so, the demand put on these airports to provide the necessary capacity will similarly increase.

There have been predictions which suggest that passengers per aircraft movement will increase significantly, resulting in a slowing down of the demand for additional slots. Aircraft manufacturers' forecasts, and the evidence of their order books, suggest that this is an over-optimistic approach. Indeed, passengers per aircraft movement are likely to grow much slower than assumed by RUCATSE (other than at Heathrow, perhaps).

There will therefore be increasing demand on slots as scheduled carriers look to take advantage of liberalisation opportunities and provide levels of frequency sufficient to mount a viable operation, while those in the leisure market will continue to look to three rotations of their aircraft in order to achieve the high aircraft utilisation they require to enable them to offer the affordable product the consumer has been shown to want.

The need for action

It would therefore appear that we face a major problem in terms of capacity by early next century unless action is taken fairly soon to address the issue. The analysis undertaken by RUCATSE indicates that whilst there are significant passenger benefits associated with Heathrow and Gatwick developments, there are nevertheless environmental disbenefits which may make it difficult for government to take the positive action which we in the airline industry would desire.

There are those who suggest that forecast traffic growth and capacity available are such that nothing needs to be done until approaching 2020. We believe that accepting this view, and as a consequence taking no further immediate action, would have long-term harmful implications for both our industry and the UK economy as a whole.

The disbenefits of the Heathrow and Gatwick options as detailed in the RUCATSE report, together with assurances from the major airport supplier that sufficient system-wide capacity is available, might be used as a reason for

deferring action on this issue. Whilst the environmental impacts and costs must be taken into account, it is also essential that the economic consequences of *not* providing sufficient capacity must also be evaluated. This particular factor has not so far been taken into account and we believe that government needs to make a thorough assessment of the economic consequences of doing nothing.

There is only one obvious option and that is that *something* must be done. Doing nothing is *not* an option. The messages which the government are receiving from some quarters may lead them to believe that the difficult decisions associated with the RUCATSE work can be delayed indefinitely. This is a course of action which we believe must be avoided. This issue must be kept alive, and indeed other options should be considered which would help to provide the additional capacity requirements, particularly for Gatwick and Heathrow.

The Adam Smith Institute, with their Northolt and Redhill proposals, are to be congratulated for identifying possible alternative options which may make some contribution to the problem as a whole. However, from an airline user's point of view, it is difficult to see how these options will solve the problem of peak-time demand at Heathrow and Gatwick. These two airports may very well develop significantly improved facilities and access for business, aircraft users and indeed some limited regional feeder services, but we do not see them as a long-term solution to the capacity problem. For example, at Heathrow, business aircraft currently account for less than 5% of the available slots.

However, such innovative initiatives should not be discouraged. These and other options which take advantage of improved and enhanced systems might be sufficient to provide the capacity which will be desperately needed. If major new developments are considered to be unacceptable in the short or medium term, then every effort must be made to fully develop the potential of Heathrow and Gatwick.

Preferred options for the airlines

What then are the options available to us? We certainly have to accept that the London airports do not operate as a system, despite claims by some that they do. Adequate and speedy ground links between the several airports are virtually non-existent. It therefore follows that capacity available at one airport will not necessarily be taken up by the unfulfilled demand of another.

In an ideal world, to us that is, there is no question that development of a full-length runway at Heathrow would be the choice of the airline industry. Scheduled airlines could then develop and expand their services to meet future opportunities, and the range of services available for passengers could be greatly increased. In addition there would be a relaxation of the pressure on slots at Gatwick as more scheduled services were able to satisfy their desire to fly from Heathrow.

The option of a second runway at Gatwick, whilst not offering the same benefits as development at Heathrow, would nevertheless be attractive as it would offer capacity to meet the demand of the critical catchment area.

The Stansted and Luton options are seen as being less attractive as it is difficult to see how they would fully meet the demand requirements forecast for Gatwick and Heathrow. However, it would be inappropriate to discard any reasonable option to provide additional capacity without considering all the implications.

In this context, feeder airports such as Northolt and Redhill which have not so far received much support from airlines should not be discounted entirely. However, one does need to put clearly into context the role they will play. I certainly feel that they must, at the very least, be able to take aircraft of the 737/MD80/A320 category (and indeed possibly larger aircraft such as the B757) before they can be seriously considered by airlines. In addition, the infrastructure must be in place to provide speedy and reliable links between the feeder and main airport. At present it appears that the proposals do not fully meet the airlines' requirements, but that does not mean these should be discarded.

The provision of adequate capacity requires the government to make difficult decisions. It would be very easy for a decision on major development to be deferred simply because of the conflicting forecasts being produced, or because of the fact, mentioned earlier, that they cannot simply direct owners to make this extra capacity available. However, to defer things now will only leave government with a more difficult decision in the future. If nothing is done, the issue will raise itself again.

In view of this, we believe it is important to consider all options which might make a contribution to the problem. When such options are added together they might well provide sufficient capacity to be used efficiently and effectively by airlines. Some of the options, however, have not so far been considered in detail and perhaps the time is now right to do so. Maximising the potential capacity of existing resources by such means as mixed mode, reduced separation, close-in short parallel runways, and so on, could provide a temporary solution and give some valuable breathing space while the long-term needs are further considered. We must not, however, lose sight of the fact that the long-term health of UK civil aviation, and of those other industries which rely on it, can be assured only if a runway's-worth of capacity is made available in the South East in a timely fashion.

The crux of the problem

Our two major international hubs - Heathrow and Gatwick - are increasingly congested. Heathrow, the world's busiest airport, is bursting at the seams. Its four terminals were originally designed to cope with a maximum of 50 million passengers a year but in the twelve months to 31 December 1994 they handled 51,362,300!

Gatwick is clogging up too, due to a lack of slots at peak times. In the year to 31 December 1994, BAA's second busiest airport handled 21,051,000 passengers.

THE CASE FOR FEEDER-RELIEVER AIRPORTS AT NORTHOLT AND REDHILL

By Keith Boyfield, author of *Plane Commonsense*

The initial response of many people to the idea of feeder-reliever airports is sometimes one of bemused puzzlement. Why should anyone propose to develop neighbouring airports to Heathrow and Gatwick? Yet, once people pause to reflect on the fact that the government has ruled out the idea of constructing an additional full scale runway at either of these two international airports, the idea begins to impress them as an ingenious and very sensible way of resolving an increasingly urgent problem, namely the lack of runway capacity in the South East.

London is one of the world's major capitals. Central to this pre-eminence are excellent airline links. But this success may be jeopardised if policy makers do not allow the market to meet the growing demand for air travel.

RUCATSE (the official Department of Transport working party on Runway Capacity to Serve the South East) forecast that the increase in passenger numbers was likely to increase from 69 million in 1992 to 170 million in 2015, even with no new runway in the South East. However, this forecast is, in my view, unrealistically optimistic because the present airport system in the South East could not cope with such a surge in demand. To meet this goal, additional runway capacity is essential.

The crux of the problem

Our two major international hubs – Heathrow and Gatwick – are increasingly congested. Heathrow, the world's busiest airport, is bursting at the seams. Its four terminals were originally designed to cope with a maximum of 50 million passengers a year but in the twelve months to 31 December 1994 they handled 51,362,300!

Gatwick is clogging up too, due to a lack of slots at peak times. In the year to 31 December 1994, BAA's second busiest airport handled 21,051,000 passengers,

almost a 5 per cent increase on the previous year.

Notwithstanding this trend the Government has rejected the options considered by RUCATSE involving the construction of additional full scale runways at either of these two hubs.¹ Moreover, any incoming Labour government is hardly likely to reverse this policy. It is clear, too, that the construction of a fifth terminal at Heathrow, albeit a welcome improvement in passenger facilities, will not be sufficient to meet the expected demand for air travel through Heathrow. One essential truth emerges from this present picture: runway slots determine capacity and so long as Heathrow's two runways and Gatwick's sole runway are clogged with smaller aircraft, their total capacity will be constrained.

And, in case we needed reminding, the political pressures which can be mobilised to oppose other options to increase traffic throughput at Heathrow and Gatwick were manifested once again in December 1994 when the High Court ruled in favour of local residents' objections with regard to night flights.

The proposition

My report *Plane Commonsense* advocates the idea of developing feeder-reliever airports close to the main hubs in the South East of England. These neighbouring runways are at Northolt, six miles from Heathrow, and Redhill which is situated five miles north of Gatwick. To underline this close proximity I recommend that Northolt should be renamed "Heathrow North" and Redhill should be dubbed "Gatwick North".

The target market for these underused airfields is a mix of scheduled, charter and general aviation. It is envisaged that by extending the runway at RAF Northolt to 1,800 metres, aircraft with a capacity to carry some 160 passengers could be accommodated. Redhill Aerodrome Ventures Ltd plan to develop a 1,600-metre runway which would be sufficient to handle aircraft carrying some 120 passengers.

The advantages to be gained from such an approach

Adopting such a strategy would provide valuable relief to congested Heathrow and Gatwick. Over 25 per cent of the aircraft currently using Gatwick, but carrying a mere 5 per cent of passengers, could transfer to Redhill. The scope is even greater at Northolt. Extending the runway as suggested would, in theory, allow this new feeder-reliever airport to accommodate 70 per cent of the aircraft types presently using Heathrow (albeit not all of them would be able to transfer to Northolt).

Through smaller civil aircraft transferring to these two neighbouring runways precious slots are freed at the two major airports, thus boosting capacity. Combined with Heathrow and Gatwick, developing Northolt and Redhill would provide capacity for as many as 30 million additional passengers a year by 2005 –

equivalent to the total capacity of one full scale runway at Heathrow.

A further advantage associated with this approach is that such a strategy is relatively quick to implement. For example, Redhill could be operational by 1998/9. The sale and lease-back of RAF Northolt could also offer the opportunity to upgrade VIP facilities.

But the most attractive feature of developing feeder-reliever airports at Northolt and Redhill is the minimal environmental disruption which would be caused.² This strong case is supported by an environmental assessment of Redhill, compared to the various proposed runway options for the South East, which was undertaken by Ove Arup & Partners. Compared with the alternative of developing runways at either of the three principal BAA airports, the Northolt and (particularly) Redhill options emerge as clear winners in terms of their noise impact, and the potential disruption caused to the countryside and surrounding communities.

The alternatives

As the government has concluded, any proposal to develop *a third full scale runway at Heathrow* is environmentally unacceptable. Such a move would absorb 600 hectares of green belt land, involve the demolition of 3,300 houses and result in an additional 56,000 houses being adversely affected by increased noise disturbance.

A second full scale runway at Gatwick has also been ruled out on environmental grounds. This would necessitate the acquisition of 607 hectares of green belt land, a large slice of Stan Hill would have to be removed and the residents of Charwood village would be sandwiched between two runways – as many as 560 homes might be badly affected by such a move.

A third option would be to construct *a second full scale runway at Stansted*. However this would take a long time to plan and develop and the environmental costs are as bad as those associated with a second full scale runway at Gatwick. A second runway would absorb a further 633 hectares, much of it high quality agricultural land; 81 homes including 25 listed buildings would need to be demolished; the project would require considerable earthworks and the whole development would act as a catalyst on the urbanisation of this attractive area of open countryside. Most of all, Stansted is poorly located, being on the wrong side of London for many travellers; what is more the airport is too far from Heathrow and Gatwick for interlining.

A fourth option is *development at Luton*. But this site, too, is inconvenient for many potential travellers and has little or no interlining capability. Although less environmentally disruptive than other options such a development would mean that 126 hectares of open countryside would have to be acquired; almost 3,500 households would be adversely affected by aircraft noise and development would encourage the further urbanisation of the local region, creating a planning

problem. In sum, Luton has a role to play but expansion would put severe pressure on the rural environment.

Will the idea take off?

Central to the question of developing feeder-reliever airports at Northolt and Redhill is the issue of air traffic control. In the past, National Air Traffic Services (NATS), the organisation which deals with these matters on behalf of the government, can be criticised from adopting an unhelpful approach.

NATS opposed the outline planning submission made by Redhill Aerodrome Ventures Ltd in 1994 on air traffic control grounds. However, to prove that their ideas are practical, the Redhill developers commissioned SERCO-IAL Limited, a leading air traffic control training and simulation company, to design a computer model which simulates precisely the effects of an introduction of regional services into and out of Redhill on air traffic at Gatwick.

Referred to in the technical jargon as a "real time simulation exercise", the results of this detailed analysis show that the developer's goal of achieving 15 air traffic movements per hour could comfortably be accommodated without any delays to air traffic at Gatwick.

Northolt is of course already an operational airfield used by military and civil aircraft. Over the last five years total landings and take offs from RAF Northolt have totalled between 12,960 and 15,100 a year.³ It is worth pointing out that an independent research study commissioned by a UK regional carrier of the air traffic control implications of developing Northolt as a feeder-reliever for Heathrow concluded that such a move would be perfectly feasible. What is clearly needed is a similar real time simulation exercise to that undertaken by the developers of Redhill to establish the appropriate ATM ceilings at Northolt.

Three key recommendations

The Adam Smith Institute study *Plane Commonsense* contains three main recommendations.

- 1 Secretary of State for Transport's statement, Department of Transport press release 1995.
 - 2 Secretary of State for Transport's statement, Department of Transport press release 1995.
- * First, the Secretary of State for the Environment should grant outline planning permission to the consortium, Redhill Aerodrome Ventures Ltd., which is seeking to build a new runway, terminal building and other facilities at Redhill for 2.5 million passengers; such a development would also allow an extra 8 million passengers to pass through Gatwick.
 - * Secondly, a private promoter or consortium should be invited to buy and lease-back some facilities to the RAF. The response from the private sector to this proposal since the publication of our report is most encouraging.
 - * Thirdly, the air traffic control branch of the CAA, National Air Traffic

Services (NATS), should adopt a more market sensitive approach. The proposed privatisation of the air traffic division of the CAA should encourage such an attitude.⁴

Conclusion

Finally, it is worth recalling an observation on the value of incremental additions to the nation's infrastructure by Adam Smith in his classic work on *The Wealth of Nations*. "The proud minister of an ostentatious court [he writes] may frequently take pleasure in executing a work of splendour and magnificence, such as a great highway which is frequently seen by the principal nobility, whose applauses, not only flatter his vanity, but even contribute to support his interest at court".

This observation, written over two hundred years ago, is just as valid today, particularly in relation to airports, which so often assume the role of prestige national projects. In this regard, Kansai International airport, built at a cost of £9.2 billion on its own artificial island two and a half miles offshore from Osaka, Japan, immediately springs to mind.

In commenting on infrastructure spending, Adam Smith went on to add: "But to execute a great number of little works, in which nothing that can be done can make any great appearance, or excite the smallest degree of admiration in any traveller, and which, in short, have nothing to recommend them but their extreme utility, is a business which appears in every respect too mean and paltry to merit the attention of so great a magistrate".⁵

Today, I would suggest, it would appear that two such "little works", Northolt and Redhill aerodromes, have at the very least caught the imagination of the general public and merit serious consideration by our policy makers.

Notes

- 1 Secretary of State for Transport's statement, Department of Transport press notice 032, 2 February 1995
- 2 This should strike a chord with a key passage in the Transport Secretary's statement of 2nd February 1995, where Dr Mawhinney said "The government wishes to ensure that capacity can be made available in response to future demand, but in such a way that recognises and takes reasonable account of the environmental impacts, including the impacts of increased air traffic associated with additional runway capacity". See Department of Transport press notice 032, 2 February 1995.
- 3 *Hansard*, 25 January 1994, written answers, col 169.

- 4 One of the last hurdles to such a privatisation was said to be the opposition of Eurocontrol, the international body which oversees air traffic safety throughout Europe. However, this view was dismissed by Yves Lambert, Eurocontrol's Director General, at a conference held in London in November 1994, where he made it clear that his organisation had no constitutional objections to privatisation of NATS. (see *Privatising Air Traffic Control: The International Perspective in Privatising Air Traffic Control*, the proceedings of a conference organised by the Waterfront Partnership and the Royal Aeronautical Society, 24th November 1994).
- 5 Book V, part 3: "Of the Publick Works and Institutions for facilitating the Commerce of the Society".

The RUCATSE report

The availability of adequate runway capacity in South-East England has been a major concern for many years. The Civil Aviation Authority (CAA) study of the issue in the late 1980s led the Secretary of State to set up the RUCATSE (Runway Capacity to Serve the South East) working group. The RUCATSE group which was made up of representatives from the air transport industry, Whitehall and local governments, and from various interest groups, reported in July 1993.

RUCATSE approached its task by first comparing the supply and demand for capacity at four London airports (Heathrow, Gatwick, Stansted and Luton). RUCATSE calculated the capacity of the five existing runways at these four airports, taking into account future changes in the size of the aircraft, air traffic control improvements, etc. Its projections of demand took account of growth in GDP, the maturity of air transport markets, and other factors. This demand was then allocated to the individual airports using a mathematical model. When a particular airport was full, demand spilled over to the next alternative site, or was suppressed.

The result of this analysis (see Exhibit 1) showed that in the year 2005, some 85 per cent of the combined capacity of the four airports would be utilised; by the year 2015 this proportion had grown to 99 per cent. However, at the beginning of the period studied, Heathrow was already operating at capacity.

In addition to its analysis of the supply and demand for runway capacity, RUCATSE also calculated the economic benefits of expanding each airport site. In the case of adding a runway at Heathrow in 2010, for example, benefits were calculated at £48.6 billion. The estimated capital costs, including transport infrastructure, expressed on the same basis (i.e. 1992 prices at a 2010 base) was £3.5 billion.

The RUCATSE report was surprisingly equivocal on the timing of the need for additional runway capacity. Various dates for constructing an additional runway were mentioned in the report. Moreover, the Department of Transport press notice which accompanied the release of the RUCATSE report, suggested that a new runway might not be necessary for 20 years. This view seemed to ignore the

A MISSING PIECE OF THE PUZZLE

By David Starkie, Putnam, Hayes & Bartlett

The proximity of Northolt

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economic case established in the RUCATSE study. Northolt would also protect slots from encroachment by long-haul jets.

On the basis of RUCATSE's economic calculations, an immediate expansion of runway capacity could be justified. Offsetting this, of course, is the major environmental impact that building a new runway would have. At Heathrow the full runway option considered by RUCATSE (albeit perhaps not the least damaging option) would seriously affect 3,300 homes and 600 hectares of green belt land. 10 slots to serve nine important European routes). Regional services switching to Northolt would, of course, free up slots at Heathrow, and these released slots might be used in the manner envisaged by the authors of CAP 623.

The proximity of Northolt

In my view, the results of the RUCATSE analysis beg the question whether there is something that could be done to ease pressures on capacity while inflicting much less environmental damage; not necessarily a perfect solution, but at least an easing of the immediate problem.

In Exhibit 8, I have compared the total aircraft movements from Northolt in 1950. There exists a pair of existing runways located only six miles due north of Heathrow, at RAF Northolt (Exhibit 2) – so close, in fact, that if one were to overlay some of the larger US airports, such as Dallas-Fort Worth or Denver, these would cut through or encompass both the Heathrow and Northolt sites. This proximity to Heathrow is a special advantage of Northolt, as are its road connections to central London, which are arguably better than the current connections to Heathrow (Exhibit 3 shows the A40 running along its southern boundary, and the Central Line and BR services to Marylebone passing within a few hundred yards to the north).

In the years immediately after the Second World War Northolt was Europe's busiest airport (Exhibit 4) reflecting the fact that, until 1954, it was the main operating base for British European Airways (BEA). The total number of aircraft movements at Northolt in 1950 was approximately the same as that from Leeds/Bradford and Cardiff-Wales airports in 1993 (Exhibit 5), both of which are significant regional airports.

The potential of Northolt

Northolt, I believe, has the potential to address two problems which currently face UK aviation policy.

The first is that access for thin regional routes to the world's foremost international hub at Heathrow is slowly being squeezed (Exhibit 6). The statistics show a significant fall in the number of movements by aircraft with 80 seats or fewer during the last few years. These routes carry a high proportion of passengers interlining with European or long-haul services (Exhibit 7). For many such services, Gatwick and Stansted provide a poor or imperfect substitute, and the alternative is to interline through a continental airport such as Schipol. By treating RAF Northolt as Heathrow North, a reasonably close substitute to landing on the main runways at Heathrow could be established. If used by

regional services, the relatively short runways at Northolt would also protect slots from encroachment by long-haul jets.

The second problem which Northolt could address is the need for more competition on routes from Heathrow. A recent study by the CAA (CAP 623) identified a number of European routes which appeared to justify a third carrier if slots could be made available at Heathrow. (The CAA calculated a requirement for 26,000 slots to serve nine important European routes). Regional services switching to Northolt would, of course, free up slots at Heathrow, and these released slots might be used in the manner envisaged by the authors of CAP 623.

The capacity issue

At this point let me summarise the requirements.

In Exhibit 8, I have compared the total aircraft movements from Northolt in 1950 (when its previous use for civil purposes was at a maximum) with the number of small aircraft (mostly turboprops) using Heathrow in 1986/7 and 1991/2. The difference in movements between these two latter years is indicative of the Heathrow squeeze factor on low-volume regional routes. Also included in the comparison is the number of slots suggested by the CAA as needed for effective competition on major European routes from Heathrow.

The comparison suggests that the capacity required at Northolt for low-volume regional services and to provide competition on European routes, is relatively modest, and well within the movement rates experienced at Northolt since the Second World War.

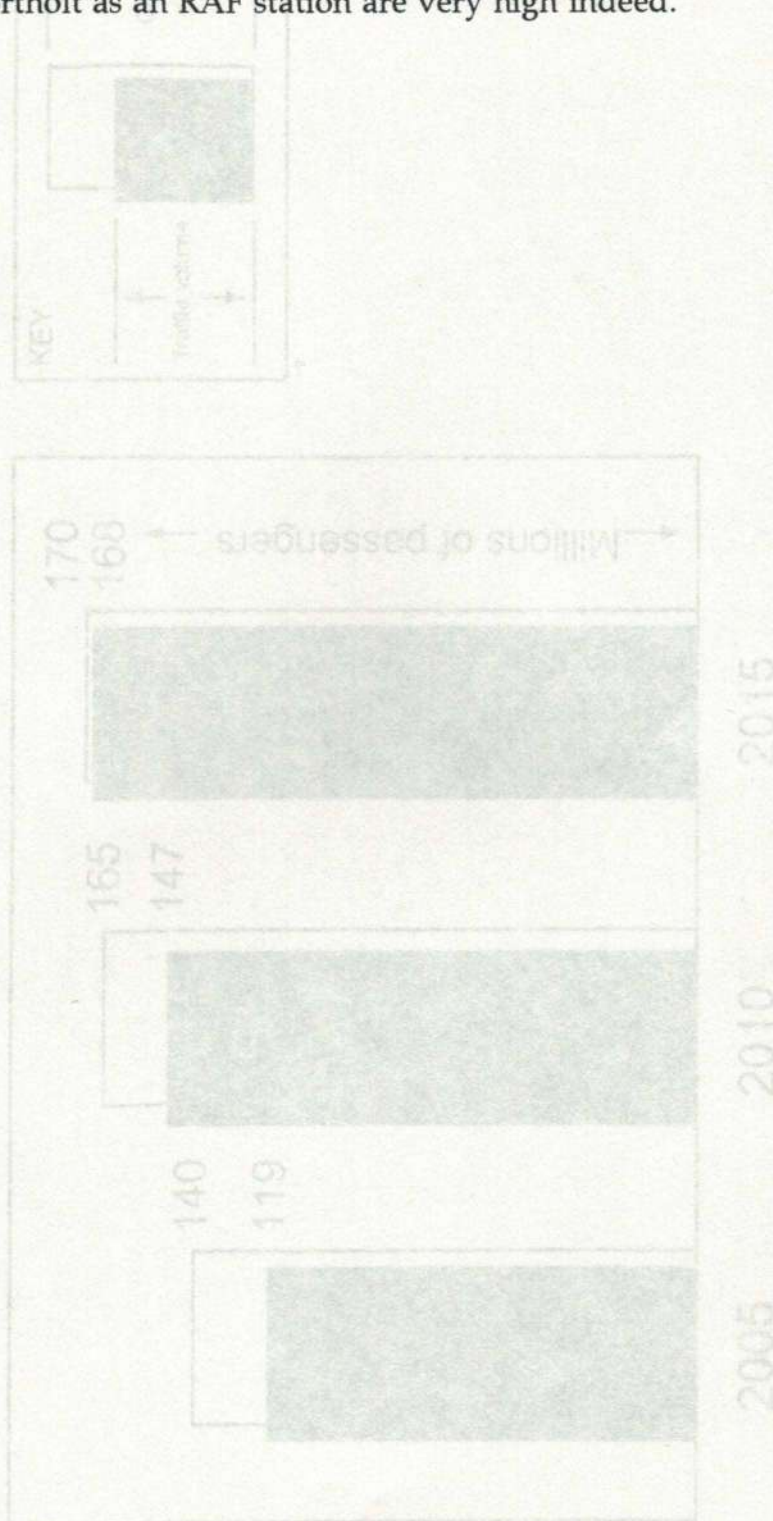
Obstacles and potential benefits

There are, of course, a number of problems to be addressed if Northolt is to be used in the manner described. Providing additional air traffic control capacity without prejudicing movements at other airports is probably the more serious one. The environmental issues, I suspect, are more apparent than real. After all, at the present time Northolt is used by a large number of helicopters which are not generally regarded as particularly quiet aircraft. And as for the current use of Northolt for military flights, VIPs and the Royal Family, this is relatively small in scale and some movements might be rationalised to other South-East aerodromes.

A study of the problems and possibilities of developing the use of Northolt is therefore very desirable. It should consider the ATC and environmental issues; the possible joint (civil/military) use of the site (perhaps on a sale and lease-back basis); and the calculation of the opportunity cost of using the site exclusively for its present purposes.

In fact, I have made a stab at such an opportunity cost figure. This is based upon

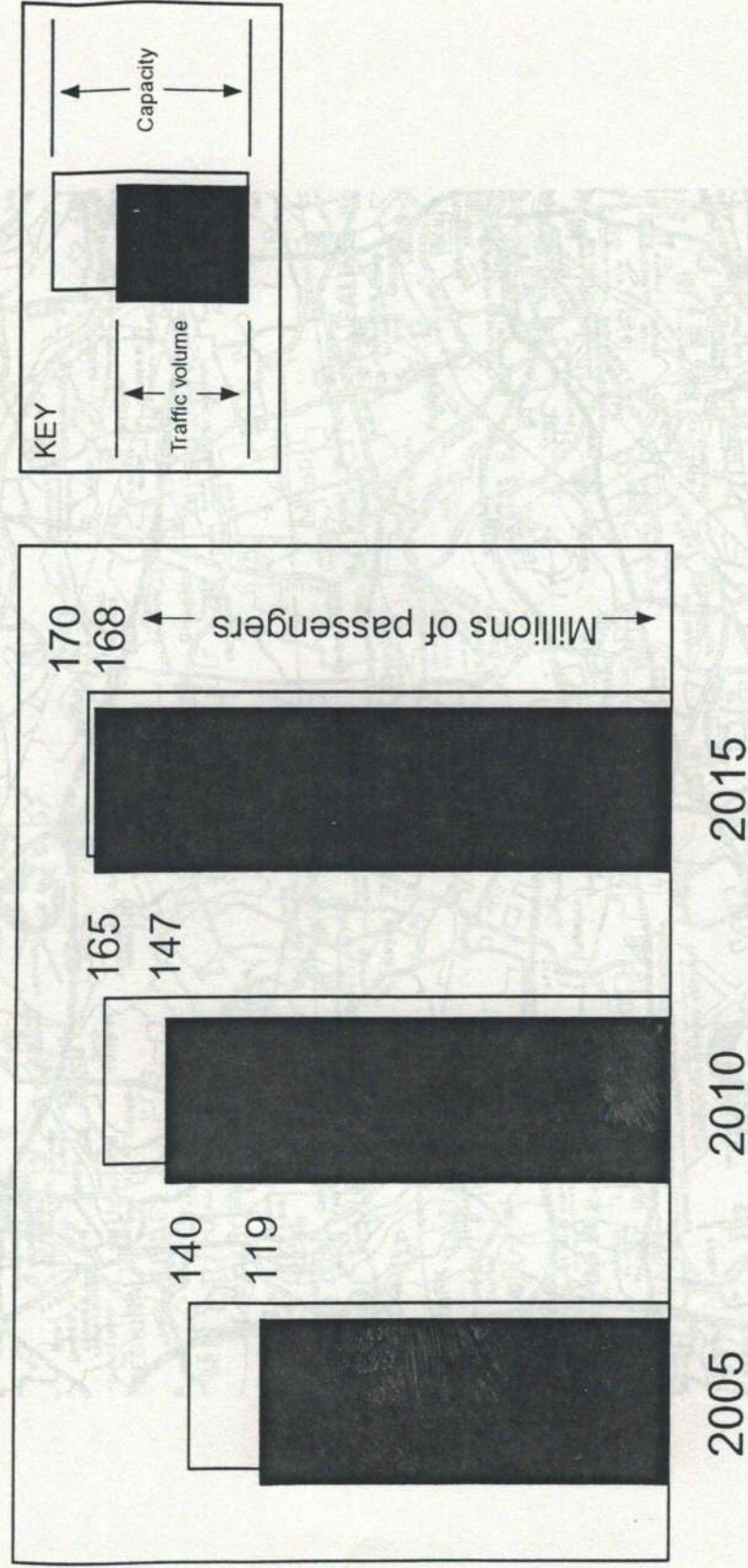
analysis in the RUCATSE report, but modified with some additional modelling work. I would stress that it is a very rough and ready estimate. Nevertheless, you might be interested to hear that the use of 9,000 slots at Northolt has the equivalent value of £1 billion (1992 prices at a 2005 base). The number of military movements at Heathrow last year was 9,000. This indicates that the opportunity costs of using Northolt as an RAF station are very high indeed.



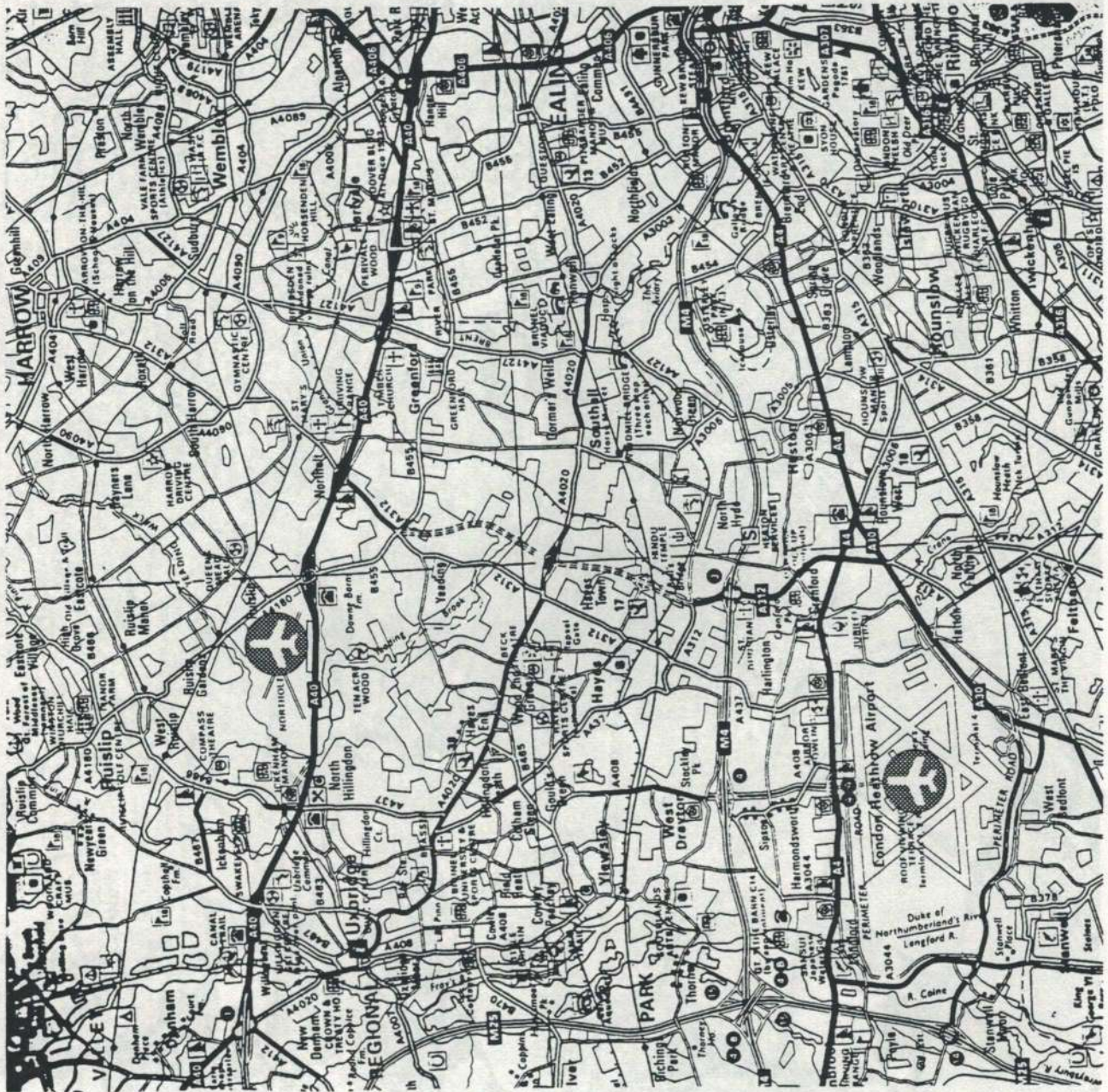
PUTNAM, HAYES & BARTON

EXHIBIT 1

COMPARISONS BETWEEN AIRPORT CAPACITY AND DEMAND IN THE SOUTH EAST



PUTNAM, HAYES & BARTLETT LTD



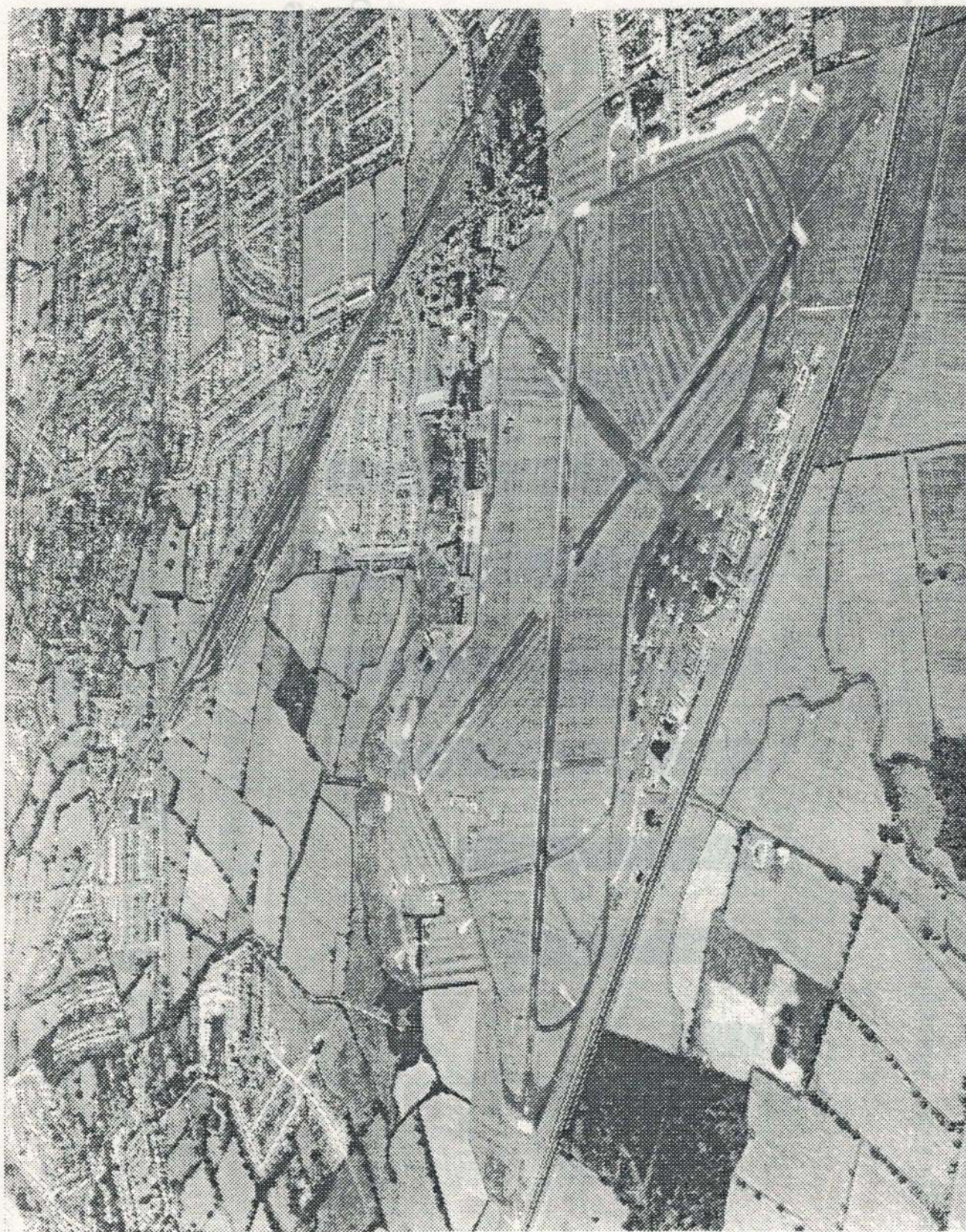
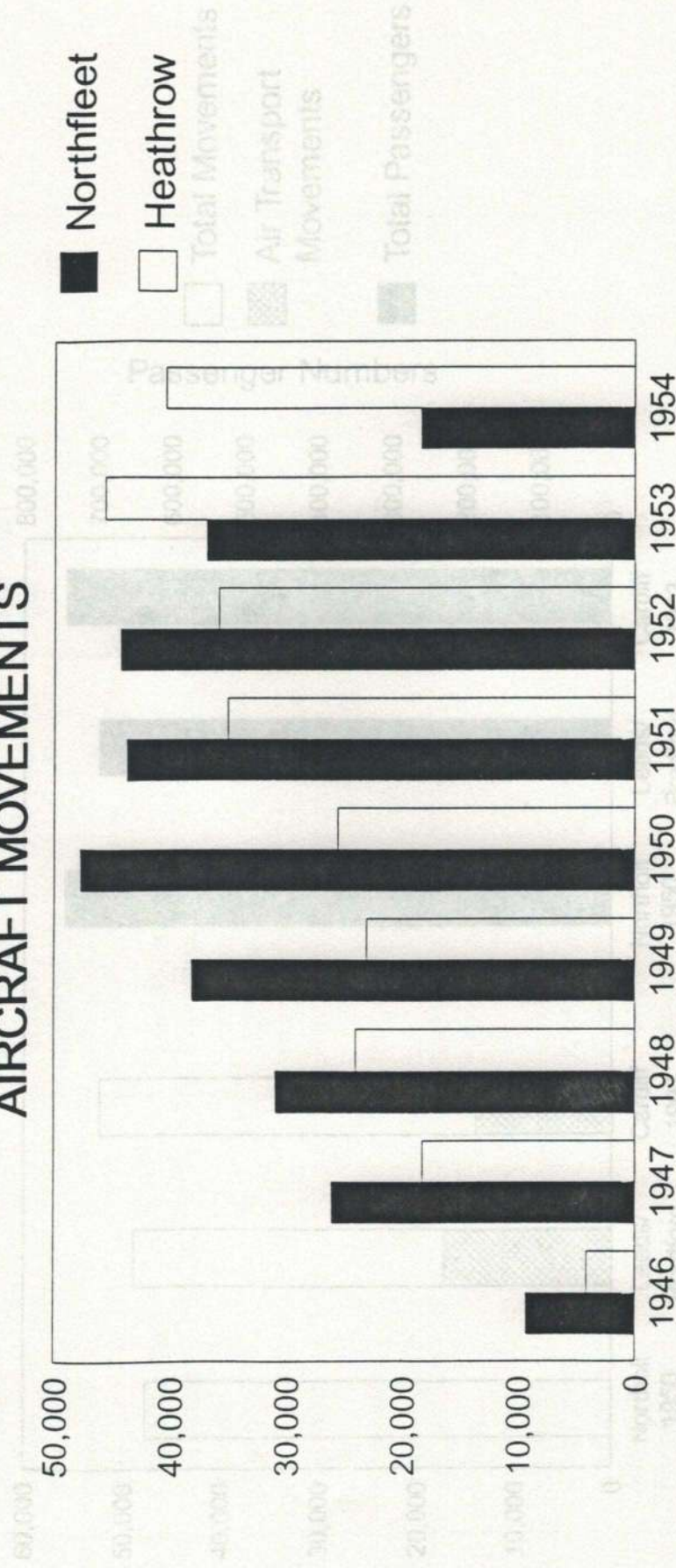


EXHIBIT 3

ACTIVITY AT NORTHOLT 1950 AND SELLING EUROPE'S BUSIEST AIRPORT! 1993

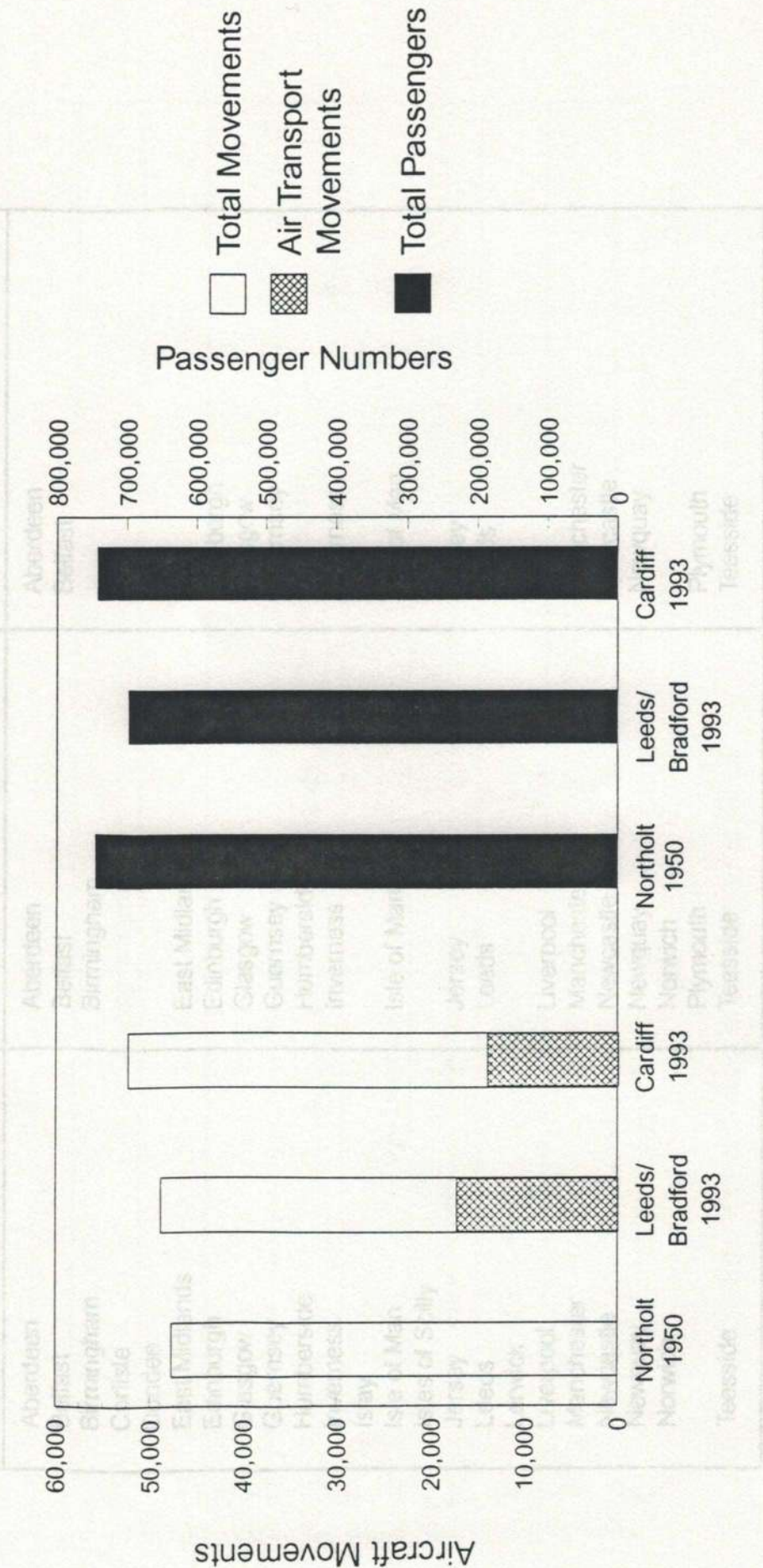
AIRCRAFT MOVEMENTS



Source: Sir Peter Masefield Cipta

PUTNAM, HAYES & BARTLETT LTD

ACTIVITY AT NORTHOLT 1950 AND SELECTED REGIONAL AIRPORTS 1993



Source: Sir Peter Masefield/Cipfa

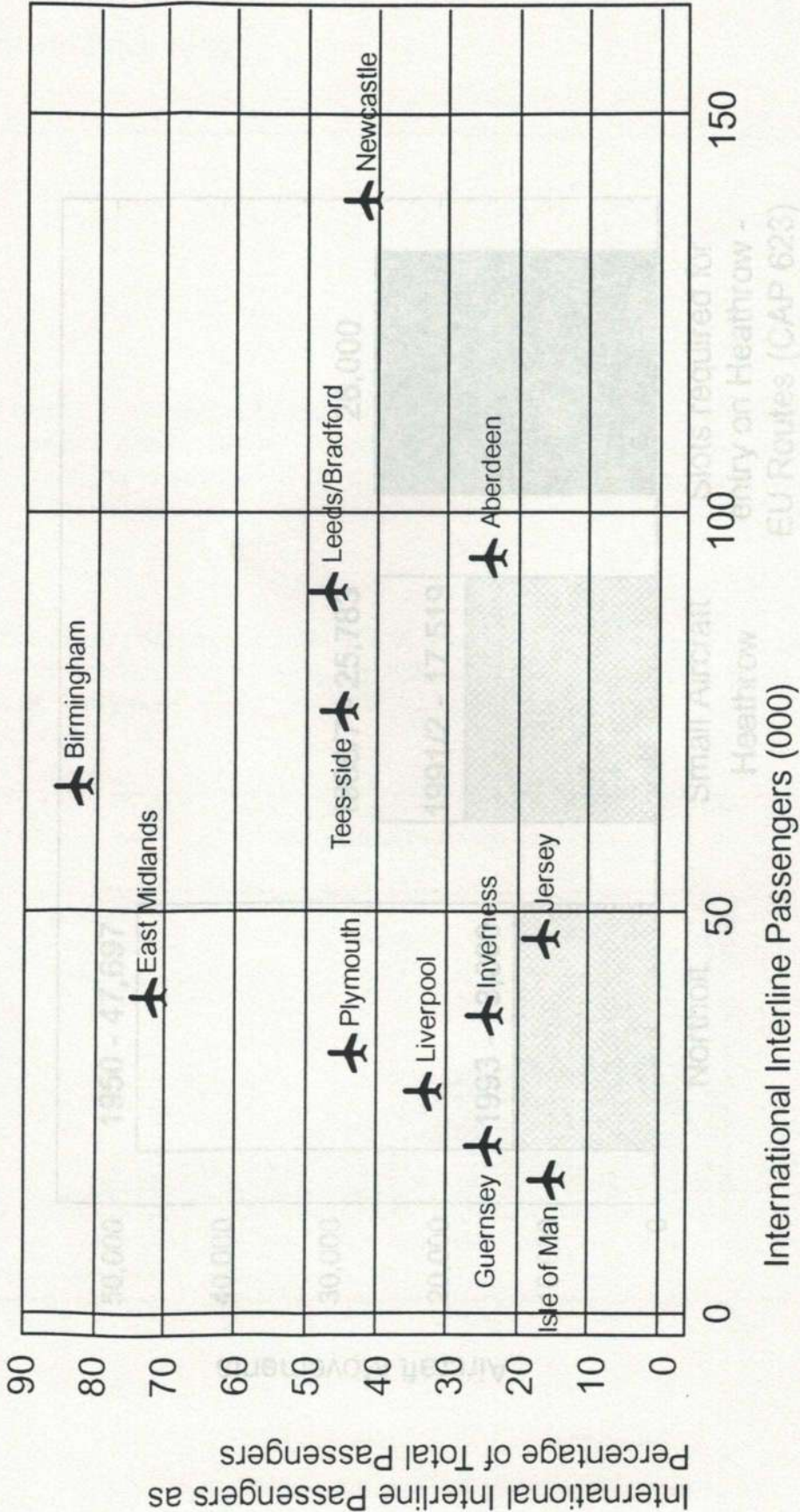
PUTNAM, HAYES & BARTLETT LTD

HEATHROW DOMESTIC ROUTES OPERATED IN 1981, 1987 AND 1994		
1981	1987	1994
Aberdeen Belfast Birmingham Carlisle Dundee East Midlands Edinburgh Glasgow Guernsey Humberside Inverness Islay Isle of Man Isles of Scilly Jersey Leeds Lerwick Liverpool Manchester Newcastle Newquay Norwich Teesside	Aberdeen Belfast Birmingham East Midlands Edinburgh Glasgow Guernsey Humberside Inverness Isle of Man Jersey Leeds Liverpool Manchester Newcastle Newquay Norwich Plymouth Teesside	Aberdeen Belfast Edinburgh Glasgow Guernsey Inverness Isle of Man Jersey Leeds Manchester Newcastle Newquay Plymouth Teesside

PUTNAM, HAYES & BARTLETT LTD

INTERNATIONAL INTERLINE PASSENGERS ON HEATHROW

LOW VOLUME DOMESTIC ROUTES IN 1991



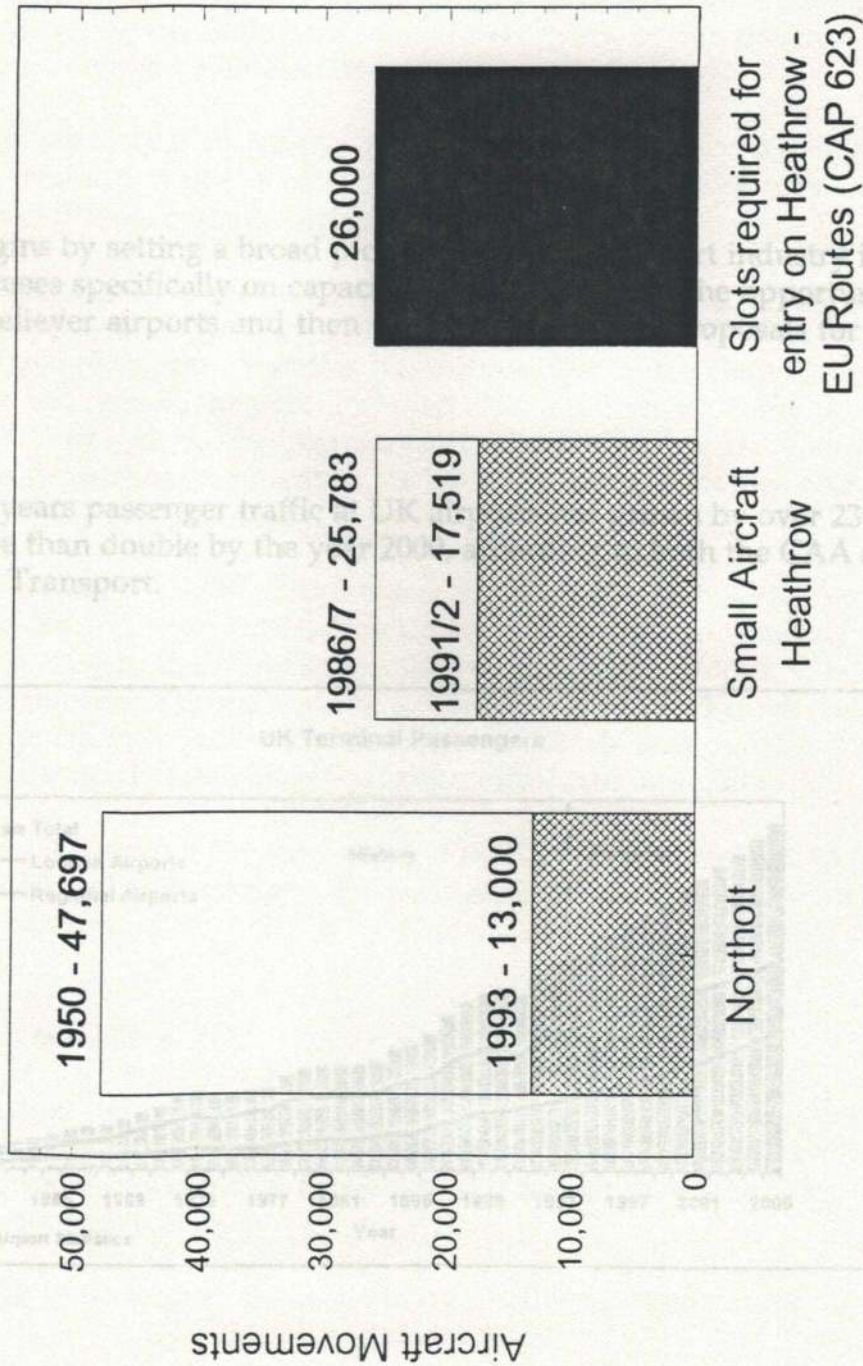
Source: CAA

PUTNAM, HAYES & BARTLETT LTD

NORTHOLT AND HEATHROW: SELECTED COMPARISONS

REDHILL AIRPORT AS A RELIEVER FOR GATWICK

By Laurence N Price, SH&E



PUTNAM, HAYES & BARTLETT LTD

REDHILL AIRPORT AS A RELIEVER FOR GATWICK

By Laurence N Price, SH&E

The lack of runway slots is constraining competition, service to passengers and frustrating the realisation of the EU deregulation objectives. The only solution is to provide for additional runway capacity as soon as possible.

This paper begins by setting a broad picture of the air transport industry in the UK. It then focuses specifically on capacity issues at Gatwick, the opportunity presented by reliever airports and then concentrates on the proposals for Redhill.

Schiphol, in Amsterdam, now handles more passenger traffic than Gatwick, and serves as many UK regional airports as Heathrow and Gatwick combined. It is

Traffic

In the last five years passenger traffic at UK airports has grown by over 23% and is forecast to more than double by the year 2000, according to both the CAA and Department of Transport.

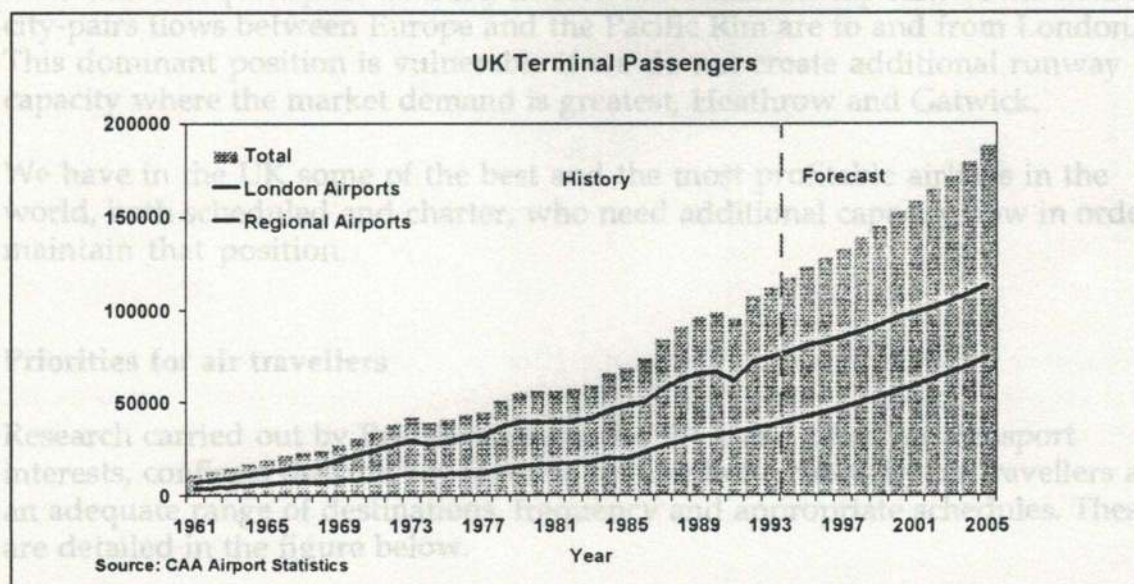


Figure 1. three of these require the availability of adequate runway slots.

Saturation

Both terminals and runways are already under pressure. It is increasingly difficult to obtain runway slots at peak times at Heathrow and Gatwick. The DTp Committee that looked at runway capacity for London and the South East of England (RUCATSE), indicated that there was turn away of demand when runway throughput reached 70% of annual capacity. Gatwick is already at 81% and Heathrow over 90%! It is worth noting in this context that the RUCATSE terms of reference were very narrow and only considered "conventional" options, innovative, or part solutions, such as relievers, or the development of close parallel runways were outside its terms of reference.

The lack of runway slots is constraining competition, service to passengers and frustrating the realisation of the EU deregulation objectives. The only solution is to provide for additional runway capacity as soon as possible.

Whilst the UK continues to vacillate, Continental airports are growing faster than the major London airports in both passenger numbers and movements. Schiphol, in Amsterdam, now handles more passenger traffic than Gatwick, and serves as many UK regional airports as Heathrow and Gatwick combined. It is developing new terminal and runway capacity. Paris, Charles De Gaulle airport has significant development potential for both additional runways and terminal capacity that already has planning approval.

The CAA publication, CAP 639, *Competition on Long Haul Routes*, (November 1994), confirms the UK's current leading position in Europe in terms of points served and frequency to the USA. It also shows that the top nine of the densest 25 city-pairs flows between Europe and the Pacific Rim are to and from London. This dominant position is vulnerable if we do not create additional runway capacity where the market demand is greatest, Heathrow and Gatwick.

We have in the UK some of the best and the most profitable airlines in the world, both scheduled and charter, who need additional capacity now in order to maintain that position.

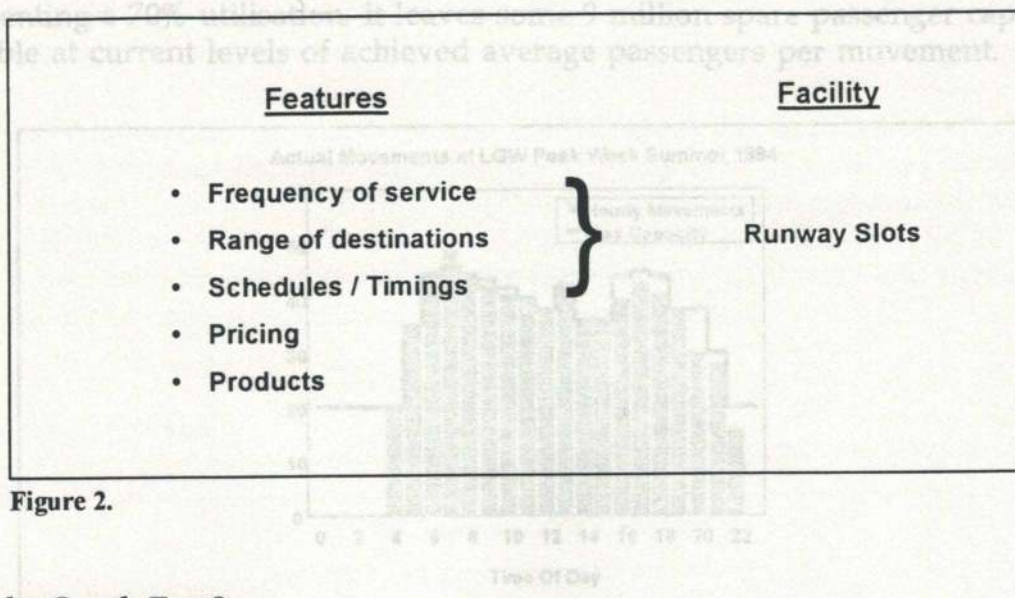
Priorities for air travellers

Research carried out by British Airways, the BAA and other air transport interests, confirms that the key features required of airports by air travellers are an adequate range of destinations, frequency and appropriate schedules. These are detailed in the figure below.

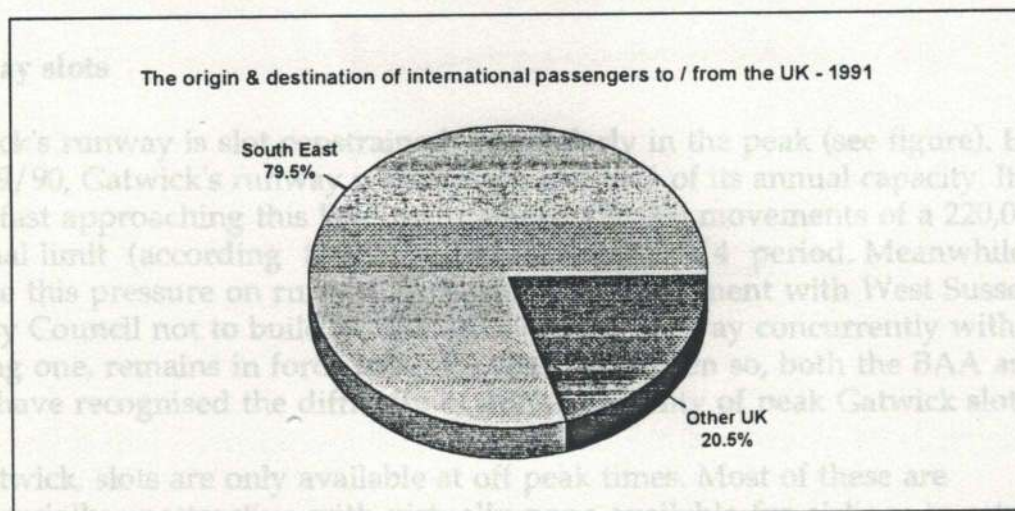
The first three of these require the availability of adequate runway slots.

Gatwick Airport

In the twelve months ended October 1994, Gatwick's terminals handled almost 21 million passengers. It is the UK's second busiest airport after Heathrow. Its passenger throughput compares with a notional 30 million passenger capacity.



Why the South East?



According to CAA Survey data, in 1991 almost 80% of international passengers had an origin destination in London and the South East. It is essential that any additional runway capacity must be provided there in order to serve the market.

Regional airports are already growing faster than London but are not a substitute for adequate capacity for London.

Heathrow diversion

Gatwick Airport

Survey confirmed that over 3 million air journeys to and from the Gatwick catchment area were using Heathrow due to a combination of factors. In the twelve months ended October 1994, Gatwick's terminals handled almost 21 million passengers. It is the UK's second busiest airport after Heathrow. Its passenger throughput compares with a notional 30 million passenger capacity,

representing a 70% utilisation. It leaves some 9 million spare passenger capacity, unusable at current levels of achieved average passengers per movement.

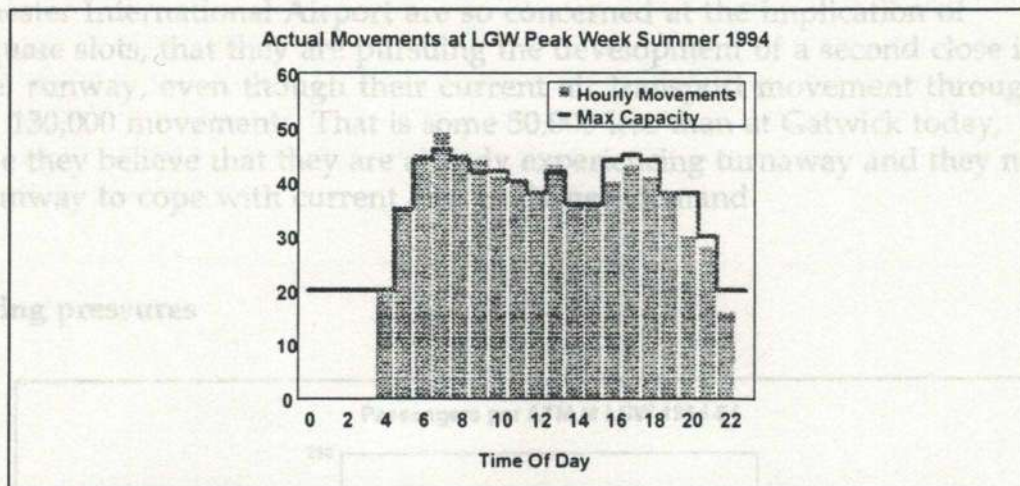


Figure 4.

Runway slots

Gatwick's runway is slot constrained, particularly in the peak (see figure). Even in 1989/90, Gatwick's runway was operating at 86% of its annual capacity. It is again fast approaching this level with almost 180,000 movements of a 220,000 notional limit (according to RUCATSE), in the 1993/4 period. Meanwhile, despite this pressure on runway slots, the BAA agreement with West Sussex County Council not to build or operate a second runway concurrently with the existing one, remains in force until the year 2019. Even so, both the BAA and CAA have recognised the difficulty of non-availability of peak Gatwick slots.

At Gatwick, slots are only available at off peak times. Most of these are commercially unattractive with virtually none available for airlines to establish high frequency, short haul operations. The availability of peak slots is fundamental to maximising connectivity, particularly with long haul services.

Alitalia, Ryanair and Air Liberte have recently announced new and increased activity at Gatwick thereby increasing pressure on available runway capacity. Already, the latest information for summer 1995 is that bids for slots, particularly in peak hours greatly exceed the available capacity.

Heathrow diversion

The CAA 1991 Survey confirmed that over 3 million air journeys to and from the Gatwick catchment area were using Heathrow due to a combination of inadequate frequency, schedules or range of services at Gatwick.

It remains very difficult to set up a hub at a single runway airport even if that

runway offers a capacity of 47 air transport movements per hour. I am unaware of any existing or aspiring hub airport in the world that relies on a single runway.

Manchester International Airport are so concerned at the implication of inadequate slots, that they are pursuing the development of a second close in parallel runway, even though their current air transport movement throughput is only 130,000 movements. That is some 50,000 less than at Gatwick today, because they believe that they are already experiencing turnaway and they need a new runway to cope with current and envisaged demand.

Relieving pressures

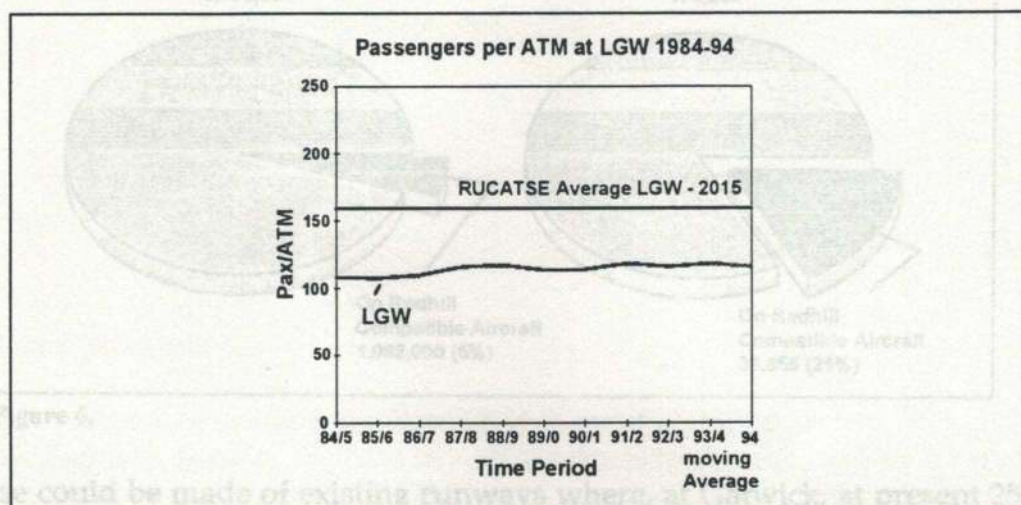


Figure 5.

If we accept that Gatwick is slot-constrained now, there remain legal, physical and environmental constraints to developing a new on-site runway there.

A solution to current slot problems is only possible through developing a new runway and/or making better use of current capacity. This is where adopting lateral solutions might apply.

The BAA's position on runway development is quite clear. They consider that no new runway is required in the South East until 2017 at the earliest. It assumes that there will be a substantial increase in passengers per ATM. As the figure above shows, over the last ten years the average passenger ATM at Gatwick has been fairly static. In future any significant increase in activity will only be achieved at the expense of carriers such as the regional airlines, as the pressure mounts to replace 50-100 seaters with those of 200 seats or more. Yet it is precisely these aircraft that provide a large proportion of the network of high frequency scheduled air services at Gatwick today and are essential to its continued development as a major London and UK airport. Yet unless the operation of such services are replaced by substantially larger aircraft, then achieving the necessary increases in average passengers per air transport movement to fully

utilise the existing terminal will be difficult. It should be able to offer fast transfer and access to the main airport. It should be marketed as part of the main airport. A consequence of de-regulation, is an increase in frequency, which tends to mean use of smaller aircraft. There is a proven, strong correlation between level of frequency and achieved market share. Even on the North Atlantic, some 50% of departures are now handled by twin-engines aircraft of some 250 seats or less which has increased pressure on slots. Business travellers respond to schedules as their main priority. The only way that their needs can be met is by providing more slots at peak times.

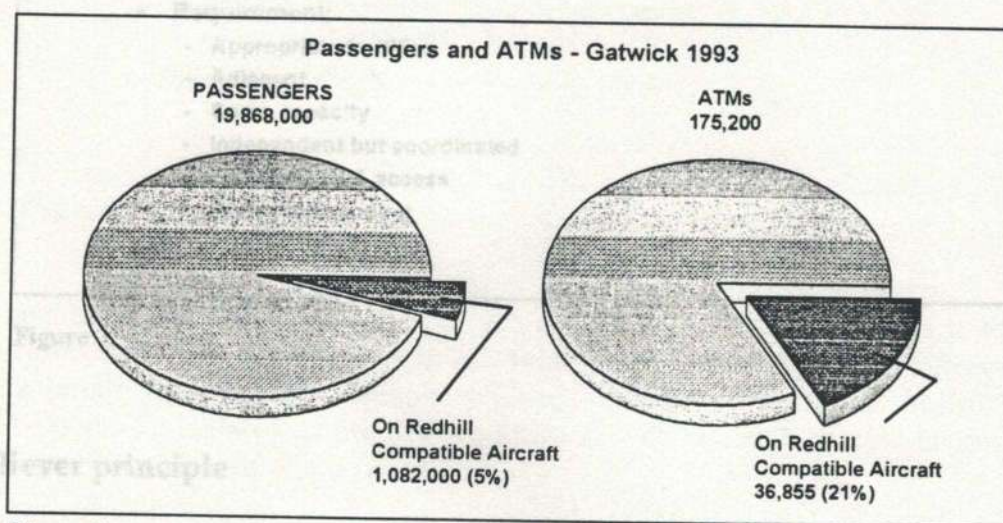


Figure 6.

Better use could be made of existing runways where, at Gatwick, at present 25% of the air transport movements with 110 or less seats account for only 5% of the passengers. In the peak this class of aircraft accounts for 33% of movements.

Encouraging such traffic to use reliever runways could provide timely, lower cost and least intrusive solutions to pressing runway capacity problems.

Reliever airports

There are a number of definitions required here. One is an airport that provides additional capacity to major facility by giving relief to either a runway slot or terminal capacity shortfall.

The US Congress definition contained in a recent General Accounting Office report, indicated that a reliever airport was one that relieves congestion at a commercial airport and provides additional aviation access to the community.

In order to serve as a reliever airport, it must have appropriate facilities. It should be located within some five to ten miles radius of the existing facility and by definition have spare capacity.

It also needs to be capable of being operated independently but with all its

operations co-ordinated with the main facility. It should be able to offer fast transfer and access to the main airport. It should be marketed as part of the main airport, with common branding.

- Redhill for Gatwick
- One which provides additional capacity to a major facility
- Relieves congestion - Runway / Terminal
- Provides additional general aviation access to the community
- Requirement:
 - Appropriate facilities
 - Adjacent
 - Spare capacity
 - Independent but coordinated
 - Fast transfer & access
 - Common Branding

Figure 7.

The reliever principle

The reliever principle is not new, though it is most common in the USA. It has been considered in Britain, in the early 1970's, British Air Services (a forerunner to British Airways) proposed an INTERSTOL network of which Northolt was a key hub.

The concept of relievers has gained wide acceptance in the US and elsewhere. Already major US carriers serving Gatwick, for instance American and TWA, together with Jersey European have endorsed the concept. Whilst Manx and the European Regional Airlines Association have expressed interest in the idea. Most of the major aircraft manufacturers have also expressed support for the idea of Redhill as a Gatwick reliever.

The level of support for the proposal for the development of Redhill is greater than might be anticipated, given that slots have a capital value to most airlines, and most would wish to protect their positions until they know that the concept is a proven and that planning permission has been granted.

Short-term solutions

Reliever airports present a short term opportunity to pressing runway capacity problems. Full scale runways or airports are long term solutions which inevitably mean long lead times for planning and construction, with increasing prospect of environmental damage as the sites are usually "green field". The increasing pressure on capacity means that something needs to be done now.

Terminal and access

The new Redhill terminal would be developed to handle some 2.5 million passengers a year.

aim is for a minimum distance from aircraft to car of some 80 yards.

This compares with the 150 yards at Gatwick today. This would represent a significant improvement in the quality of service to passengers.

A new junction will be developed on the A23 near to Redhill, which would provide fast motorway access to Gatwick.

away and five miles from the airport (see above). It would also give excellent access to Gatwick British Rail Station. This distance and time can be compared with the existing transfer time between Terminal 4 and the central area at Heathrow, which is some four miles and 18 minutes due to the single carriage and traffic congestion in the area.

up and running by 1998

New full scale runway could take 10-12yrs

Figure 8.

There are international precedents in the USA and in Australia, it is common for international and domestic terminal facilities to be split. A new reliever airport is being developed at Badgeries Creek to relieve Sydney, Kingsford Smith Airport. In Athens, there are separate scheduled and charter terminal facilities at either side of the airport.

The Redhill opportunity

Redhill has existed for over 60 years. It was originally the diversion airport for Croydon and has existed for two thirds of the time since the Wright Brothers first flew a Kittyhawk in 1903.

The proposal for Redhill is for it to operate as a new Gatwick North Terminal but one with its own integral runway.

With Redhill in operation, by 2005 Gatwick could handle an additional 8 million passengers a year through more optimal use of the released slots at Gatwick. In addition Redhill itself could be handling 2.5 million additional passenger through Redhill. Together, that would represent a 50% increase in current throughput at Gatwick, which is constrained because of the lack of runway slots and the associated relatively low achieved average passengers per movement.

Between them, a combination of Gatwick and Redhill could absorb the equivalent of up to three years traffic growth in the South East. By way of contrast, a new runway may take ten/twelve years to develop. Stansted took over ten years to develop from the Planning Inquiry stage.

Redhill could serve the essential dense UK and European regional routes as part of the Gatwick complex and also provide new facilities to business aircraft users.

Terminal and access

The new Redhill terminal would be developed to handle some 2.5 million passengers a year. It would offer 5 airbridges and a further 13 gates. The design aim is for a minimum walking distance from aircraft to car of some 80 yards. This compares with between 500-1,000 yards at Gatwick today. This would represent a significant improvement in the quality of service to passengers.

A new junction would be developed on the M23, near to Redhill, which would provide fast, motorway standard, access to Gatwick, five miles and eight minutes away and five miles up to the M25 (see the figure above). It would also give excellent access to Gatwick British Rail Station. This distance and time can be compared with the existing transfer time between Terminal 4 and the central area at Heathrow, which is some four miles and 18 minutes due to the single carriageway road and traffic congestion in the area.

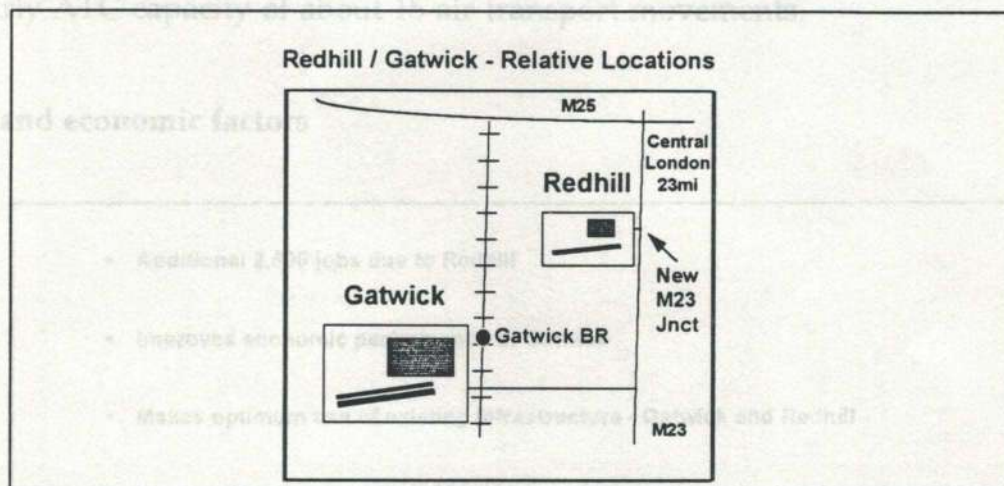


Figure 9.

The time from landing and to getting into the car from a domestic flight at Gatwick can be 25 minutes and in some cases more, due to delays in the stack. At Redhill the process is unlikely to take more than eight minutes due to the compact nature of the site and the type of traffic.

Operations

Redhill would be developed with a hard, 1,600 metre all weather Category III runway, suitable for operations by all modern regional airliners. It would have a new control tower from which all operations would be co-ordinated with the Gatwick Air Traffic Control with no adverse impact on Gatwick's capacity.

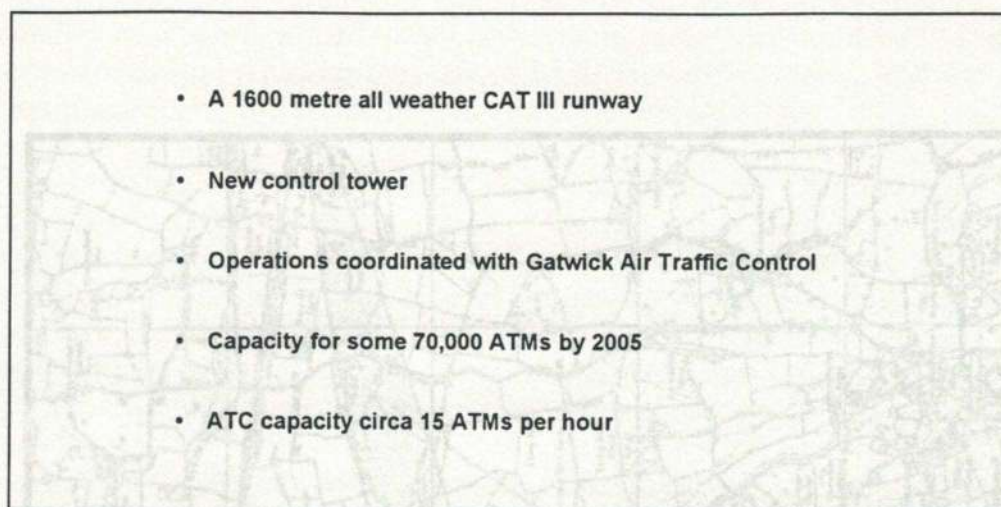


Figure 10.

Some 70,000 air transport movements a year would be handled by 2005, within an hourly ATC capacity of about 15 air transport movements.

Social and economic factors

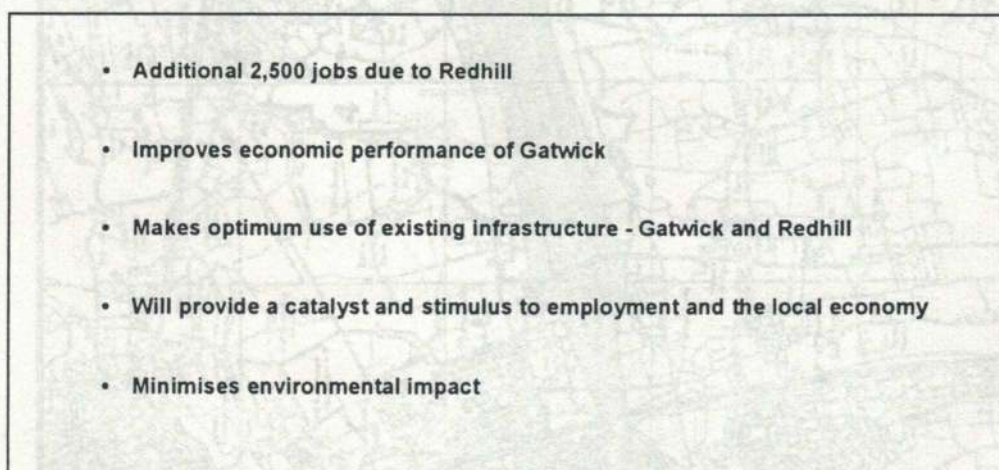


Figure 11.

The development of Redhill would add a further 2,500 direct jobs into the region. There is a view that the economy of the area is already overheated, but up until June 1993 there were over 15,000 people out of work in the Crawley travel to work area. Even today, the unemployment rates in both Croydon and Brighton are hovering around 17%.

Operation of Redhill would significantly improve Gatwick's economic performance. The replacement of each 50 seater with aircraft of 300 or more seats would have a substantial impact on the operational and commercial revenues of Gatwick Airport Limited. All could be achieved with no public investment.

Figure 13.

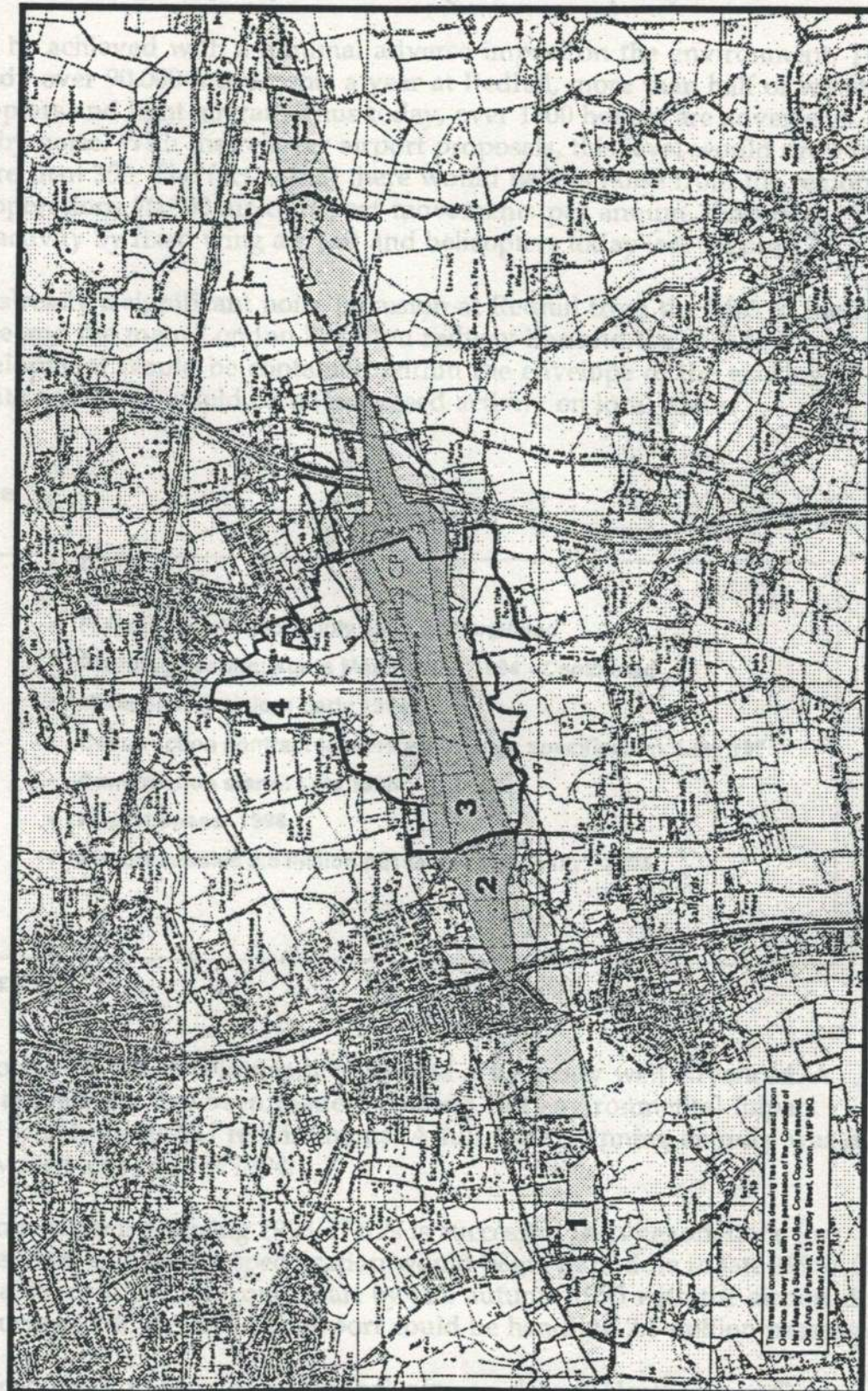


Figure 12.

The availability of Redhill would allow Gatwick to make optimum use of its existing infrastructure, including best use of its 3,000 metre runway and the 30 million plus passenger capacity of its existing terminal capacity.

This can be achieved with a minimal adverse impact on the environment. There are already over 90,000 movements a year at Redhill, more than half of which are by helicopters and light aircraft. Thus today, over 1500 houses are adversely affected by noise. With the reliever airport proposals, this level would drop to little more than 300. The fact is that there would be less noise from the regional airlines operations 70,000 air transport movements per annum, than from training activity by fixed wing aircraft and helicopters today (see Figure 12).

There is already a significant noise intrusion at Redhill from the M23 to the east of the site and the main London-Brighton railway line and the A23 to the west. The development would be contained within the envelope of the existing airfield site and there would be no increased activity on local roads.

Timetable

- **Planning application: July 1993 - Completed**
- **Planning hearing: starts March-June 1994 - Completed**
- **Ministerial decision: Early 1995**
- **Construction contract tenders and design specification: Late 1995**
- **Construction starts: Late 1995**
- **Airport opens: 1998**
- **Airport handles 2.5 million passengers annually: 2005**

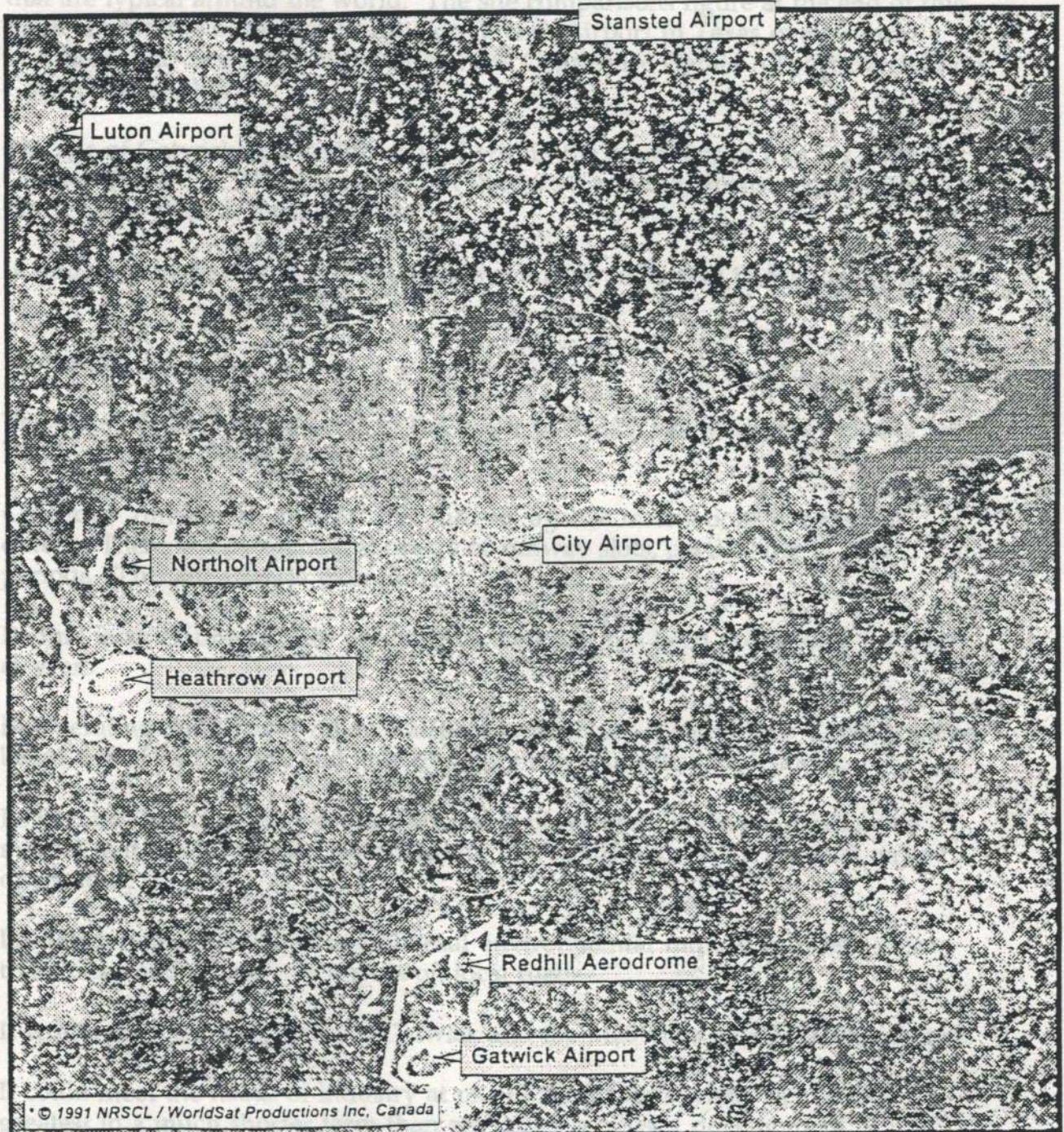
Figure 13.

The proposals for the development of Redhill are already well advanced. A planning application has been made including full environmental impact statement which meets EU requirements. A full scale planning enquiry was held between March and June of 1994.

A decision is expected during 1995. If this is successful then negotiations for contract tenders and design specification would begin in middle to late 1995. On that timetable, construction could start by late autumn 1995 with the airport due to open during 1998. By 2005 the airport could be handling 2.5 million passengers.

No other proposals to provide additional runway slots at Heathrow or Gatwick and relieve the increasing pressure at those airports are as well advanced as those for Redhill.

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1 — Dallas/Fort Worth Outline

2 — Paris Charles de Gaulle Outline

Figure 14.

Site comparisons

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The site of Gatwick and Redhill is well within the boundary of that for Paris Charles De Gaulle. The distance is not that great and the means of connection are much better than at most airports.

In addition, there is potential rail access available to Redhill in the longer term.

Summary

This paper has identified some of the major problems facing airport capacity for London and the South East.

Gatwick's runway is already full judged against internationally accepted criteria. There is a substantial shortage of runway slots, particularly at peak periods. This situation is worsening.

Redhill is an exiting airfield uniquely located and has been operational for over 60 years.

By operating Redhill as a reliever airport for Gatwick it could help Gatwick make better use of its facilities and help to meet proven unsatisfied demand.

Its facilities could be built to meet the needs of the specific types of traffic and market that might operate from Redhill, especially short-haul regional airline operations.

Its development would cause minimal environmental impact with less noise than today and no adverse impact on local roads.

It would offer excellent links to Gatwick and the M25 via a new M23 interchange.

It could meet the needs of industry at one of the airports where demand is greatest in a much shorter term than any other proposed development. It is an innovative concept in the UK but not one that is new or unknown around the world.

Achieving this goal might pave the way for the development of Northolt to relieve Heathrow.

The site could be operational as an airfield to relieve Gatwick by 1998.

Achieving the goal requires vision, lateral thinking and a willingness to endorse new concepts of service and new ways of operating.

If we fail to do anything to meet the short term capacity shortfall then London and the UK will have lost an opportunity and the UK will have sacrificed one of the catalysts for its sustained economic development into the 21st Century.

By 2015, even with no new runway in the South East, we expect the number of passengers using the main South East airports each year to increase from the 69 million last year to around 170 million... Depending on which development took place, the total number of passengers at the main London airports could be as high as 195 million in 2015.

— from the RUCATSE report

Predictions for the overall level of air traffic growth in the South East have been remarkably reliable over past decades. Fortunately for Britain, air traffic growth exceeds the growth in national product; but the international aviation hub of Heathrow has grown especially fast because, as a hub and because of its particular history and geography, it has been able to percolate global traffic growth.

The South East will inevitably experience continued and substantial growth, largely as a consequence of London's geographical position on the edge of Europe en route to the Americas and its situation in a time zone between the Orient and the East Coast of the United States. Being at a major centre of the international language of business and of aviation may also be a factor in its pre-eminence. However, for such growth to be maintained, with appropriate standards of efficiency, comfort and convenience, it is vital that travel:

- to airports,
- between airports, and
- between terminals at airports

should be reliable, and indeed upgraded.

The positions of the proposal 'feeder-reliever' airports of Redhill and Northolt are such that there is an exceptional opportunity to:

- set new quality standards for airport access;
- demonstrate how transport can integrate separate airfield facilities; and
- provide appropriate access to the overall locality of the feeder-reliever airports.

RELIEVER ACCESS: CONNECTIONS AT REDHILL AND GATWICK

By Peter Cuming, planning consultant

The existing busy aerodrome is reached via a network of small country lanes, London-Brighton or London-Reading railway lines. Previous proposals to develop Redhill Aerodrome were, in part, frustrated by the inadequacy of access to the airport. The airport is only 10 miles from London, but it is difficult to reach. The airport is only 10 miles from London, but it is difficult to reach. The airport is only 10 miles from London, but it is difficult to reach.

Accordingly, the current airport proposal was planned, from the outset, to rely for road access exclusively upon a new short motorway spur to Redhill Aerodrome. Eventually the development of Redhill will allow 2.5 million passengers per annum to pass through its terminal, with an additional bonus of up to 8 million passengers using Gatwick as a consequence of the contribution of Redhill to the overall capacity of the South East.

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At Redhill the M23 motorway passes only 400 metres from the eastern perimeter of the airfield. This adjacent motorway is one of the few major roads in southern England. Predictions for the overall level of air traffic growth in the South East have been remarkably reliable over past decades. Fortunately for Britain, air traffic growth exceeds the growth in national product; but the international aviation hub of Heathrow has grown especially fast because, as a hub and because of its particular history and geography, it has been able to purloin global traffic growth.

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- set new quality standards for airport access;
- demonstrate how transport can integrate separate airfield facilities; and
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Access to Redhill

The existing busy aerodrome is reached via a network of small country lanes, many of which are constricted by narrow railway arches carrying either the London-Brighton or Tonbridge-Reading railway lines. Previous proposals to develop Redhill Aerodrome were, in part, frustrated by the inadequacy of access which relied upon roads apparently contrived more to deter visitors than to promote easy travel.

Accordingly, the current airport proposal was planned, from the outset, to rely for road access exclusively upon a new short motorway spur to Redhill Aerodrome. Eventually the development of Redhill will allow 2.5 million passengers per annum to pass through its terminal, with an additional bonus of up to 8 million passengers using Gatwick as a consequence of the contribution of Redhill "freeing" slots for aircraft at Gatwick.

Access to Redhill will be regarded in the same way as the public access to the central island at Heathrow, which carries the bulk of those visiting, working or leaving that airport and is the exclusive entry point for the three original terminals.

At Redhill the M23 motorway passes only 400 metres from the eastern perimeter of the airfield. This adjacent motorway is one of the few major roads in southern England with existing spare capacity. The motorway spur is also the most direct means of reaching Redhill and connecting it to Gatwick.

A fleet of vehicles with up to 25 seats linking Redhill Airport to both the Gatwick terminals and the railway station would function in such a way that Redhill would be seen by travellers arriving by train at Gatwick as Terminal 3 or Gatwick North. It should be borne in mind that transfers from such a Terminal 3, via the M23, would be scheduled to allow no more than 45 minutes; this target time is comparable with the 60-90 minutes at present recommended between the North and South Terminals at Gatwick. Using landside or public roads to effect inter-terminal connections is commonplace as travellers across Europe can testify.

Thus Redhill, with its throughput of 2.5 million passengers and many visitors and staff, is likely to generate the need for a public transport link to Gatwick of sufficient capacity to carry 1 million passengers. It is not sensible that the Victoria to Gatwick fast train services should be slowed by having trains stop at the existing lightly used Salfords Station close by Redhill Aerodrome when fewer than 15% of London-Gatwick rail/air travellers would use the stop. People travelling to Redhill from Victoria would travel directly to Gatwick and then travel by bus, giving a 45-minute overall journey from Victoria to the Redhill terminal – still two minutes less than the travelling time from Piccadilly Circus to Heathrow Terminals 1/2/3 by tube!

Those travelling to and from Redhill by public transport from places other than Central London and not using rail connections will use the M23. In many cases,

because Redhill is nearer to centres of population than Gatwick, the duration of a motorway trip will be reduced as travellers will be leaving the motorway system to go to Redhill five miles short of Gatwick.

Access to Northolt

The development of Northolt as the reliever airport for Heathrow offers very particular public transport opportunities for:

- travellers to both airports:
- the general public in the Borough of Hillingdon and nearby Heathrow: and
- London Underground Ltd and its customers.

As many as 10 million passengers will be using Northolt alone. By means of Northolt being developed, some 10 million additional passengers a year would be able to pass through Heathrow simply as a consequence of available slots there being used more effectively. This extra throughput at Heathrow alone would be equivalent to 20% of its existing passenger numbers. The accumulative result of such development would mean that some 20 million additional air passengers would be arriving and departing West London. Of these, some 50% would be likely to use public transport, the majority of them, rail. The sheer inability of the highway infrastructure and the environment to accept more road traffic in the locality, indicates that rail and bus priority schemes will inevitably have to be implemented to enable both Heathrow and Northolt to function well in the future.

It would be essential to make the fullest sensible use of the substantial existing investment in the Underground system. Northolt has three lines passing in close proximity to the airport. These are the Central, Piccadilly and Metropolitan lines. By building an interchange station where the three lines cross, north-west of the airport, it is possible to give direct connections from the Northolt locality to a quarter of the stations on the entire Underground network. As an example, the City of London would be accessible within about 45 minutes, involving no change of trains.

A new Northolt Underground station could be linked by a people conveyor over the short distance directly into a new Northolt terminal building. Furthermore, from the station, the Metropolitan Line – the branch of which terminates at Uxbridge, two stations down the line – has the potential of being extended into the M25 open corridor, where an existing freight rail route offers scope for its projection along this open corridor and thence into Terminal 5 and beyond. Such a development would provide new public transport for Hillingdon, giving access to its biggest employment centre.

Northolt has the additional advantage of being flanked by the lightly used High Wycombe-Marylebone BR route which, for a 12km section between Ruislip (near Northolt) and North Acton (on the edge of Inner London), offers the potential for being electrified and used as an Express Central Line. Measured from Oxford

Circus, access by such an upgraded Underground route to Northolt would give a 34-minute journey time (including 4 minutes waiting time). By comparison the Heathrow Express route from Heathrow to Central London will offer a journey time of 37 minutes, including waiting time.

In other words, if the Central Line were to be given an Express section (using BR tracks) at a cost of £10 million, Northolt would be more easily reached than Heathrow.

If the line were not improved it would still be only 40 minutes away from Central London (Oxford Circus). Currently, Heathrow Central is 47 minutes from Piccadilly Circus.

A link from Northolt to Heathrow, using the alignment of the comparatively recently opened Hayes by-pass either to form an exclusive track for a light rail facility, or to form a busway, or to create a monorail, will be essential.

With 50% of all those going to Northolt (including passengers, workers, and meeters & greeters) likely to be demanding public transport, a total of 6-7 million additional trips per annum would be generated, mostly by Underground. Furthermore, the creation of a Piccadilly/Central/Metropolitan Line interchange at Northolt would add a very worthwhile increase in the flexibility of the overall Underground network in West London. With a possible extension of the Metropolitan line to Heathrow, the considerable labour force there would have a much better choice of public transport links northwards.

South-East airports as a network

Feeder-reliever airports will generate an overall increase in the demand for improved inter-airport links. Yet even without that new demand, the underlying failure to create realistically attractive rail connections between the bigger London airports of Heathrow, Gatwick, Stansted and Luton stands in the path of those who might wish London's airports to function as a coherent network able to compete with Europe's best.

If the available South-East airports are all to be so intensively used in the future, access between and to each of them will have to be of comparable quality. Unless we are prepared to provide an even standard of comfort and convenience in access, it is foolhardy to plan South-East airports as if they were all part of a single network.

Ultimately, something akin to the Crossrail concept linking Heathrow to Stansted and the Thameslink 2000 concept connecting Luton to Gatwick, with the lines meeting at Faringdon, would enable all the major London area airports to be interconnected with fixed links and almost seamless ease. Such rail links would avoid the uncertainties and frustrations of the M25 motorway that render it increasingly ineffective as an airport link route.

The need for a new strategy

Over the decades, the South-East airport debate has been conducted as if meeting demand was an exercise in traffic plumbing, rather than in planning for passenger comfort and convenience.

Increasingly, any failure to match the quality of mainland and provincial airports' competition will threaten London's airports. Currently, London's supremacy seems secure but those trying to solve the problems of future capacity have concentrated too little on the quality of terminal facilities and the character of inter-airport connections and too much on the issue of how future passenger numbers might be reallocated between the different South-East airports.

Such concentration on moving future passenger numbers around the South East is clearly off-target when the ideal of most operators would be for all their operations to be concentrated at Heathrow; and it is ironic too, when so little has been done to make other airports acceptable alternatives by boosting their ease of access.

The best hope of turning the four major South-East airports – Heathrow, Gatwick, Luton and Stansted – into an effective aviation network would be to make their use as interchangeable as their respective facilities will allow. In the end, it is passengers, as users of airport facilities, who will decide their fate – particularly so when the choice extends beyond London to European mainland airports easily accessible by Eurostar trains. One of Jacques Delors' recent pieces of parting advice was for cities like London to set up 'port authorities' to integrate and co-ordinate public transport provision. Britain as a front-runner of airport and rail privatisation, has chosen to replace public monopolies with private ones. The benefits of competition and choice depend upon customers being able to reach the marketplace in the first place. Now is the time to devise an effective air strategy which will deliver London a real choice.