'Africanisation' of South Africa's international air links, 1994–2003

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Abstract

In the first decade of democratic rule in South Africa scheduled commercial passenger flights across the country's borders more than doubled. Additional flights served new African air passenger markets and secondary airports in established markets. Overseas flights increased more slowly, serving a diminishing number of overseas countries and cities. In 1994 the Republic was linked directly by air with more overseas than African countries and cities; within a decade the pattern reversed. The changing geography of South Africa's international air links reflects developments in the international airline industry, and South Africa's increasingly prominent political and commercial role in Africa.
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1. Introduction

The reconfiguration of international and regional air routes has become a subject of concerted inquiry as globalisation proceeds. Analysts have focused on civil aviation confronting economic, trading, organisational and technological shifts in the last decade. Most attention has been given to examining the nature and impact of airline deregulation, privatisation, mergers and alliances (e.g. Debbage, 1994). Recent research analyses the consequences for airline freight and passenger markets—and airport geography—in Europe (Graham, 1998; Thompson, 2002; Burghouwt and Hakfoort, 2002; Burghouwt et al., 2003), Britain (Humphreys, 1999), Spain (Costas-Centivany, 1999), the United States (Vowles, 2000), Australasia and India (Hooper, 1998; Kissling, 1998a,b), Asia (Bowen, 2000, 2004; Rimmer, 2000), and the South Atlantic (Martin and Román, 2003). The passenger traffic implications of airline corporate strategies and of new global business interconnections have also been explored (O'Connor, 2003). The research stresses the development of single and multiple hub-and-spoke airline networks. Their particular alignment depends, among others, on the geography of the evolving space-economy and air traffic market, the aircraft used, the degree of airline competition, and the centrality, intermediacy and proximity of airports. The research raises the issue of corporate efficiency objectives complementing or compromising coherent national and regional aviation planning. It also raises the matter of linking aviation to regional integration and development strategies.

The events that unsettled bilateral aviation agreements and point-to-point air services erupted fastest in developed aviation markets in the 1990s. Change has been slow in Africa's comparatively small aviation sector. The reverberations have not been traced systematically, but country studies in Nigeria (Akpoghomeh, 1999) and Zimbabwe (Turton and Mutambirwa, 1996; Mutambirwa and Turton, 2000) indicate that despite protective policies, small, unrestructured African air services have been vulnerable to global and local (sometimes franchised) competition. The restructuring of African commodity chains as a result of globalisation will likely reinforce tendencies to regionalisation and hubbing. African air freight—carried largely in the holds of passenger aircraft—is predicted to concentrate at

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three key airport hubs (Pedersen, 2001). Policy responses (such as legislative liberalisation and carrier rationalisation) need to be formulated to complement African multilateral aviation initiatives, and to capitalise on investment already sunk in aviation and airports. Not least, civil aviation must be used consciously to help attain sustainable national and regional development in Africa (Oxford Economic Forecasting, 2003).

Even as a fringe market, Africa has not been immune to the restructuring of civil aviation in the rapidly evolving global political economy. Forces of deregulation, liberalisation and privatisation have affected the continent's transport sectors generally (Mwase, 2003). In addition, the continent's peculiarities have also had an effect on civil aviation links within Africa and with the rest of the world. As in the Middle East (Feiler and Goodovitch, 1994) and Eastern Europe, political realignments may be expected to have had a disproportionate influence on scheduled commercial air services. The reorganisation of post-apartheid international air links to and from the continent's most prosperous country and busiest air hub are the subject of this paper.

From 1963 to 1990 in Africa, airports, airlines and air space became part of a political strategy to cripple governments of the last minority white-ruled states, notably South Africa (Gaile, 1988; Griffiths, 1989; Pirie, 1990). Airline sanctions against the Republic started to ease in 1990 when the country's last minority government abolished statutory apartheid. The step ended South Africa's political isolation and its status as a world pariah. International diplomatic, commercial, cultural and sporting links resumed.

The 1990–1994 period of political transition featured withdrawal of bans on cross-border aviation between South Africa and her continental neighbours, and between South Africa and many overseas countries. Several African and international carriers landed in the Republic for the first time, or after a long absence. Re-equipment and maintenance of national flag carrier aircraft became less problematic; South African orders for custom-built sanctions busting ultra long-range wide body jets ended. Airline sales offices were reopened beyond the country's borders (Pirie, 1992).

The restructuring of air links with South Africa occurred because of international political strategising and because of short-term commercial airline manoeuvring and opportunism. After election of President Mandela's majority government in April 1994, international commercial airline activity settled down and was driven less by positioning and posturing in the new nation than by markets and profit (Goldstein, 2001, 2003). Similarly, South Africa's state-owned airline had to adjust to new political and economic realities, not least to its obligations as a readmitted member of international aviation bodies (IATA, ICAO) and the African Civil Aviation Commission (AFCAC). On a

wider canvas, in the 1990s all overseas airlines serving South Africa confronted deregulation, privatisation, mergers and alliances, technological shifts, and route reconfiguration. This paper examines the changing geography of international passenger air services operated to and from South Africa by scheduled commercial airlines during the first decade of the Republic's fledgling democracy.

2. Data and methods

In the absence of freely available, officially published time-series data on the origins and destinations of scheduled commercial passenger flights into and out of South Africa, the research used flight timetable summaries produced monthly for the country's travel industry (GSA Magazine, 1994–2003). The data provide a comprehensive but unofficial record of 'direct' (single carrier operated, but not necessarily non-stop) scheduled flights to and from the Republic. The published data show scheduled flights to and from a list of 48 African airports (outside South Africa) and 41 overseas airports for each day of the week in the month of publication.

Listing flights day-by-day for just one week in a month, the compilation assumes there are no flight alterations from week to week during the month. The listings do not show how many of each of the days there are in each publication month, so multiplying the weekly number of flights by four to arrive at a monthly total may be misleading. Aggregation would misrepresent flight patterns that changed markedly within a month. Annualising such 'monthly' data would undercount actual flight totals because the arithmetic would yield information for only 48 weeks in a year. Extrapolating 'weekly' flight data into annual flight counts would fail to account for air links that only lasted a short time within or between months.

Published in advance of actual flights, the data (unlike official air traffic records) includes flights that were rescheduled or cancelled for technical, logistical, financial or security reasons. Any resulting inaccuracies would overlook particularly the performance vulnerability of small regional carriers operating few aircraft. The published data would also be slow to reflect the case of mid-month withdrawal of intercontinental service operated by airlines that suddenly ceased flying because of bankruptcy (e.g. Alliance, Austrian, Swissair, Sabena), or air services that were abruptly terminated because of political violence (e.g. in West, Central and East Africa). Similarly, new air links would not be recorded precisely if they commenced mid-month, if the announcement of the start date was wrong, or if the notification was too late to meet the publication deadline. The focus here is more on origins and destinations than airlines, so it matters less that the published lists are slow to record

any mid-month airline rationalisation, mergers or code-sharing that does not disrupt the geography of flight links.

The most comprehensive picture of air route developments in the decade would have entailed analysis of the origin and frequency of every incoming flight, and the destination and frequency of every outgoing flight for 120 months between January 1994 and December 2003. In view of the data flaws, the uncertain returns from capturing every piece of flight information, and the laborious and error-prone process of manually transcribing 150, 120 items of data, the listings were sampled to detect major trends. Flight information for the decade 1994–2003 was collected for four equally-spaced years, 1994, 1997, 2000 and 2003. The two end years coincide with the start and end of the first decade of democratic rule in South Africa.

Detailed information about the non-South African origin and destination of weekly flights was collected for January, April, July and October in each of the four years. These four sample months coincide approximately with the summer (December–February) and winter (July–August) high and low seasons for tourist air traffic, and with the intermediate shoulder seasons. The reasonableness of the 33% annual sampling was validated for the year 2000: there were only minor discrepancies between a full count of 'weekly' flights in all months of that year and the 'grossed up' four-month totals.

Spreadsheets comprising 20,160 items formed the basis of the study. The effective sampling rate for the decade is 13%.

3. Air links with South Africa

The sample 'weekly' flight data for four representative months suggest that the number of scheduled commercial passenger flights crossing South Africa's borders more than doubled in the decade 1994–2003 (Table 1). The number of flights between the Republic and other African countries increased throughout the decade and resulted in more than a three-fold leap in continental air links. The share of continental flights in the total increased by almost 20% points from 50% in 1994 to 68% in 2003.

The number of flights between South Africa and countries overseas also increased, but less markedly. There was even a millennial decline in intercontinental flights, probably owing to the global economic slump. Between January and October 2000 there was a 29% drop in intercontinental flights to and from South Africa. The growth in flight numbers on overseas services was always less than on African continental services. Slight growth after 2000 reflects unprecedented collapses in the global airline industry in the years 2001 and 2002. Major world airlines were bankrupted, services curtailed, and routes abandoned. The causes included over-capacity, mismanagement, and events that discouraged air travel. The most notable deterrents were '9/11' (the Twin Tower bombing in New York on 11 September 2001), and in 2003, the US invasion of Iraq (April) and the outbreak of Severe Acute Respiratory Syndrome (SARS) in March, April and May. During 2001, 4,000 seats per month were cut from the South Africa–Europe route owing to unprofitable services by SABENA, Austrian Airlines and Alitalia (Dean, 2001). South African Airways cut 16 out of 60 flights to and from New York in April 2003 (Wings, April 2003).

The greatest increase in cross-border flights to and from South Africa involved flights made entirely within Africa. In 1994 African flights accounted for half of all flights across the Republic's borders. Ten years later, African flights constituted about two thirds of the total. In 2003 there were twice as many flights made between South Africa and other African countries as between South Africa and countries overseas. The normalisation of political, commercial, sporting and recreational ties between South Africa and the rest of Africa found expression in a booming intra-continental air passenger market that was little touched by global airline industry woes, global terrorism and public health scares.

Another measure of the expansion of air links with South Africa was growth of international traffic and handling capacity at the Republic's three gateway airports. During the decade, privatisation of these airports (see Prins and Lombard, 1995) coincided with massive investment in extended apron facilities, and in enlarged and upgraded international passenger terminals. As both cause and effect, the number of international airlines handled at Johannesburg, Cape Town and Durban airports rose from 56 in 1995 to a peak of 63 in 1997.

Table 1
Country origin and destination of one week's scheduled passenger aircraft flights to and from South Africa in January, April, July and October, 1994–2003

Countries	1994	%	1997	%	2000	%	2003	%
African	966	*50*	1769	*55*	2125	*61*	3283	*68*
Others	969	*50*	1462	*45*	1357	*39*	1549	*32*
Total	1935	*100*	3231	*100*	3482	*100*	4832	*100*

Source: Compiled from GSA Magazine.

Thereafter, airline rationalisation and consolidation reduced the number of foreign airlines calling at South Africa to less than 50 in 1999. In 2002 and 2003 the number was 41 (Airports Company of South Africa, 1998, 2003).

4. Intercontinental air links with South Africa

Realignments in overseas air links with South Africa between 1994 and 2003 are evident at the scale of countries and cities.

4.1. Overseas air links: countries

The sample weekly flight data show a 66% increase over 10 years in the number of intercontinental direct flights in both directions between South Africa and countries overseas. All seven major overseas regional air passenger markets registered an increase in the number of air links with South Africa, but five markets registered a relative decline in their share of flights. Mainland Europe's share tumbled. Only the Middle East and the United Kingdom markets increased their share of flights (Table 2).

The high proportion (60% in 1994; 61% in 2003) of all overseas flights to and from South Africa that originated or terminated in mainland Europe and the UK reflects a pattern of aviation, trade and tourism of more than fifty years standing. Throughout the last decade, mainland Europe has remained South Africa's pre-eminent overseas flight partner although it has lost ground and no longer generates or receives twice as many flights as the next most important market, the UK. As for the wider subcontinent, so too for post-apartheid South Africa there has been no 'principal axis shift' equivalent to that in Asia (O'Connor, 1995).

Repeating the pre-1994 pattern, flight connections between post-apartheid South Africa and Europe have been concentrated in Western Europe. The development of sustained direct air links with former iron-curtain countries was minimal, despite favourable political ties

between former communist states and South Africa's liberation and anti-apartheid movements. Presently, links with Eastern Europe are served indirectly. The 'direct' air services between South Africa and Russia, Scandinavia and Bulgaria in the immediate post-apartheid era have been abandoned. Post-apartheid air links with Spain resumed. Air links to and from Austria and Belgium have been lost due to flag carrier failure.

Throughout the decade the UK was the overseas country that had the most air links (and the most rapidly growing air links) with South Africa. Since colonial times, there have been strong business, social and sporting ties between the two countries. The UK is South Africa's major overseas trading partner, and is also its largest single-country origin and destination tourist market.

Mainland Europe's majority share of overseas flights to and from South Africa—and Britain's increasing share—hide a stable or declining share of all other world regions excepting the Middle East. Since 1994, when it only ranked 22nd in the list of overseas airports linked to South Africa, Dubai catapulted to second place in 2003. The traffic growth likely comprised expatriate South African workers, as well as visiting family members, and tourists using Gulf Air's generous airfares and stops between Europe and South Africa.

In the Americas, the United States has always had the best direct air links with South Africa. A range of carriers has operated various routes. There have never been direct flights between Canada and South Africa; the growth in direct air links involved only the USA. Air links between South Africa and South American countries have always focussed on Argentina and Brazil. Flight frequencies across the south Atlantic peaked in 1997, then halved.

In Australasia, Hong Kong knocked Singapore from its top-rated position as the place best linked by air with South Africa. Air service frequencies with Hong Kong more than doubled in the decade, whereas those with Singapore declined. India experienced the fastest rate of increase in South African flights. Thailand's share was stable. Taiwan and Sri Lanka featured in only one

Table 2
Global regional distribution of scheduled overseas passenger aircraft flights to and from South Africa during one week in January, April, July and October, 1994–2003

World regions	1994	%	1997	%	2000	%	2003	%
Asia	156	16	238	16	173	13	208	13
Australia	60	6	91	6	78	6	67	4
Mainland Europe	414	43	565	39	565	42	533	34
Middle East	54	6	99	7	77	6	176	11
North America	76	8	87	6	75	6	104	7
South America	45	5	82	6	40	3	46	3
United Kingdom	164	17	300	21	349	26	415	27
Total	969	100	1462	100	1357	100	1549	100

Source: Compiled from GSA Magazine.

of the sampled years. During the latter years of apartheid the Australian government banned direct flights to and from South Africa, and the market (including a large South African diaspora) was served via Zimbabwe. Direct flights between South Africa and Australia resumed in 1992. There have never been direct air links with New Zealand.

Intercontinental South African flights became geographically more concentrated during the decade 1994–2003. In that period the number of overseas countries linked by 'direct' air services to South Africa declined from 26 to 21 (Table 3). New air links with Abu Dhabi, Bahrein, Denmark, Luxembourg, Russia, Spain, Sri Lanka, Taiwan and Turkey proved unsustainable.

The changing geography of South Africa's overseas air links from 1994 to 2003 accords with entrenched economic and social interaction, and with developments over the decade. Having shunned apartheid South Africa, foreigners were eager to celebrate and experience the 'rainbow nation'. They were lured by a favourable exchange rate, sunshine, scenery, and wildlife. After '9/11', SARS, Iraq, and the Bali bomb blast in 2003, southern Africa was regarded as a relatively safe haven on the global tourist map. Indeed, the ranking of the seven regional flight markets reflects patterns of overseas tourism (only a minute percentage of overseas visitors arrive in South Africa by sea). Of the 748,000 overseas tourist arrivals in South Africa in 1994, 21% were from the UK, 61% from mainland Europe, and 12% from North America. In 2000, when annual overseas visitor arrivals soared to 1.8 million, the respective percentage shares were 19%, 56% and 12%. Asian visitors accounted for the single largest increase in overseas tourist visitors, reaching 8% of the total (South Africa, 2003).

Travel to and from special events in politically liberated South Africa would have contributed significantly to filling overseas flights in the last decade. Thousands of delegates and observers jetted to meetings in the new South Africa that could not conceivably have been held there during the five decades of apartheid rule. The large-scale gatherings included the Non-Aligned Movement Summit (1998), the Commonwealth Heads of Government meeting (1999), the UN AIDS Conference (2000), the UN World Conference Against Racism (2001), and the World Summit on Sustainable Development (2002). International sporting events hosted by South Africa included the Rugby World Cup (1995), and World Cup Cricket (2003). The tournaments attracted thousands of spectators in addition to players and officials. Hosting the World Cup football tournament in 2010 will extend the effect.

4.2. Overseas air links: cities

Contraction in the number of overseas countries linked by air with South Africa matched reduction in the number of overseas cities linked by direct air service with the Republic (Table 3). New air links with centres such as Colombo, Copenhagen, Istanbul, Moscow and Sofia were short-lived. Links with Dusseldorf, Madrid, Manchester and Rome lasted briefly. In the years 1994–2003 New York always rated in the top ten linked overseas airports, but some of its share deflected to Atlanta (2 years) and Miami (1 year). Perth and Sydney dominated Australian air links; Melbourne served South African flights in just one sampled year. The Brazilian air link was most consistent with Sao Paulo; Rio de Janeiro's lost its dominance in 1994, and the link had ended by 2000.

In the period 1993–2003, airports in 41 overseas cities had links with South Africa at one or another time (Fig. 1). The sample data suggest that only half of these have sustained unbroken links throughout the decade. A quarter (10) of the cities linked with South Africa kept links in only two years. The eight cities that were serviced in only one of the four sample years included national capital cities (Colombo, Luxembourg, Copenhagen, Bahrein, Istanbul) and secondary cities (Manchester, Melbourne, Washington, DC). Three cities (Vienna, Milan, Miami) maintained services for three years.

Table 3
The number of overseas cities and countries (non-federated states and emirates) linked by scheduled weekly passenger air services with South Africa, January, April, July and October 1994–2003

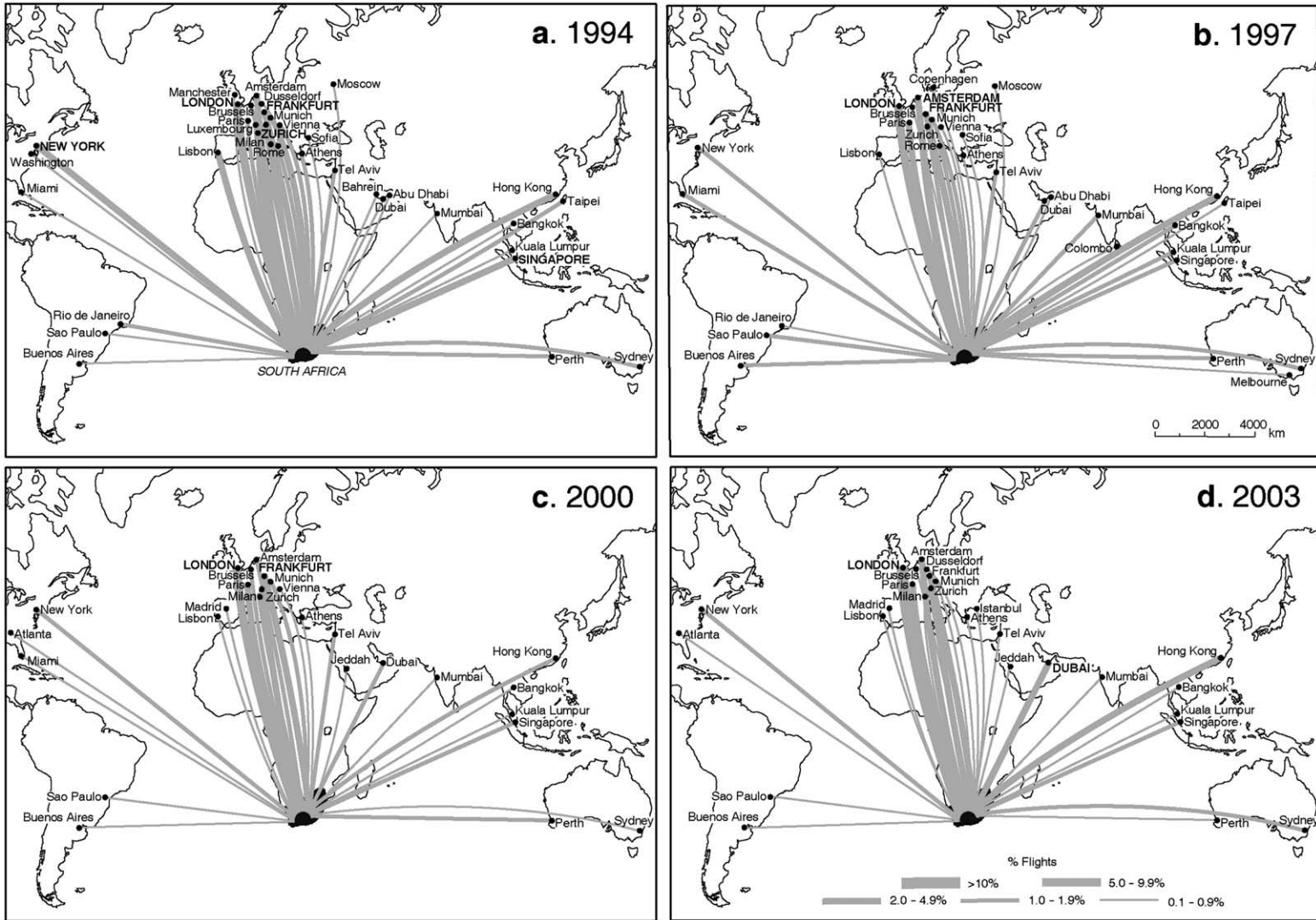| World regions	1994		1997		2000		2003	
	Cities	States	Cities	States	Cities	States	Cities	States
Asia	6	5	7	6	5	5	5	5
Australia	2	1	3	1	2	1	2	1
Mainland Europe	15	12	13	13	11	10	11	9
Middle East	4	4	3	3	3	3	4	3
North America	3	1	2	1	3	1	2	1
South America	3	2	3	2	2	1	2	1
United Kingdom	2	1	1	1	1	1	1	1
Total	35	26	32	27	27	22	27	21

Source: Compiled from GSA Magazine.

Fig. 1. Overseas cities linked directly by air with South Africa, and the percentage share of overseas routes in scheduled weekly international passenger services (continental and overseas) to and from South Africa in: (a) 1994 (35 cities, 50%), (b) 1997 (32 cities, 45%), (c) 2000 (27 cities, 39%), (d) 2003 (27 cities, 32%). Sequential maps show fewer overseas cities in the top ten cities (continental and overseas) linked to South Africa by air (city names in bold) 1994–2003.

In 1994 eight such cities accounted for half the overseas flights to and from South Africa. In 1997, six cities handled the same proportion. In 2003 just four cities (London, Dubai, Frankfurt and Zurich) handled half of all overseas direct air links with South Africa. Put differently, in 1994 the ten overseas cities that handled the most South African air traffic accounted for 60% of all flights. Ten years later the ten highest ranked cities handled 75% of flights to and from the Republic.

London has consistently had the most direct intercontinental air links with South Africa. Heathrow airport specifically has always anchored the British air link. In the period 1993–2003, the capital city of South Africa's largest trading partner, biggest foreign investor, and biggest single-country tourist market, increased its share of South African overseas flights from 16% to 27%. The absolute number of sampled weekly flights in both directions more than doubled from 164 in 1994 to 415 in 2003 (Table 2).

Heathrow's 'monopoly' is matched to some degree in South Africa by Johannesburg's primacy. The Republic's principal gateway airport (Johannesburg) has always handled most direct flights to and from London. On a typical January weekday ten years ago, the number of flights to and from London handled at Johannesburg was 5; in 2003 there were three times as many. London's share of all South African international flights rose from 8% in 1994 to 11% in 2003.

5. Continental air links with South Africa

After years of politically motivated prohibition of commercial airline flights between apartheid South Africa and other African countries, the lifting of airway sanctions in the early 1990s led to a rapid redrawing of the African airway map and airline services timetable.

The threefold increase in the number of flights between South Africa and the rest of Africa between 1994 and 2003 took the process further. Over the 10 years there was an increase in the number of flights in each direction between South Africa and each of six main geographical regions of Africa. In the period 1997–2000 the number of flights between South Africa and four African regions slumped, even though the total number of flights increased (Table 4). At the start of 1994, before the end of apartheid, the number of flights between South Africa and the rest of the continent was half the number made in October, by which time democracy was five months old.

The proportionately greatest increase in continental flights between 1994 and 2003 was to and from West Africa, a region implacably opposed to air links with South Africa in the apartheid years, and one that is historically and culturally remote from the Republic. The least increase in flights was to and from the Indian Ocean islands, suggesting saturation of a high-end tourism market for South African holidaymakers.

Table 4
African regional distribution of one week's scheduled passenger aircraft flights to and from South Africa in January, April, July and October, 1994–2003

African regions	1994	%	1997	%	2000	%	2003	%
Central Africa	22	*2*	71	*4*	30	*1*	114	*3*
East Africa	57	*6*	94	*5*	111	*5*	223	*7*
Indian Ocean	83	*9*	165	*9*	115	*5*	163	*7*
North Africa	32	*3*	43	*2*	40	*2*	52	*2*
Southern Africa	760	*79*	1320	*75*	1745	*82*	2659	*81*
West Africa	12	*1*	76	*4*	84	*4*	72	*2*
Total	966	*100*	1769	*100*	2125	*100*	3283	*100*

Source: Compiled from GSA Magazine.

Table 5
The number of African cities and countries linked by scheduled weekly passenger air services with South Africa, January, April, July & October 1994–2003

African regions	1994		1997		2000		2003	
	Cities	States	Cities	States	Cities	States	Cities	States
Central Africa	3	*1*	4	*2*	2	*2*	6	*3*
East Africa	3	*2*	2	*2*	2	*2*	5	*2*
Indian Ocean	6	*6*	5	*5*	5	*5*	6	*5*
North Africa	2	*2*	3	*3*	3	*3*	3	*3*
Southern Africa	10	*7*	13	*10*	13	*9*	19	*10*
West Africa	3	*3*	3	*3*	3	*3*	5	*3*
Total	27	*21*	30	*25*	28	*24*	44	*26*

Source: Compiled from GSA Magazine.

Flights to and from Mauritius counted for approximately half of the island flights throughout the decade. Air links with Madagascar, Reunion and the Seychelles increased then declined; service to the Comores was erratic. Indian Ocean carriers increasingly seek direct flights to and from Europe, the Middle and Far East, and Australia.

The numerical significance of increased flights to and from South Africa should be discounted by the high frequency of flights made by small capacity passenger airliners between the Republic and the capital city airports of its six immediate neighbours Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe. In the sampled years, between 63% and 69% of all flights between South Africa and other African countries crossed only South Africa's international borders. Throughout the decade, between 75% and 82% of flights between South Africa and other African countries involved flights only within the southern African region.

Unlike in the overseas case, in Africa the number of cities and countries connected directly by air with South Africa increased between 1994 and 2003 (Table 5). The number of countries with air links to the Republic increased from 21 to 26, the largest numerical change being in southern Africa. In 1994 flights serviced 27 airports in 21 countries. Ten years later the number of countries linked by air with South Africa had risen to 26, but the number of airports involved had increased disproportionately to 44. Air services had widened to include secondary urban places in countries whose capital cities were already served by air.

In southern Africa, the number of cities connected by air with the Republic increased by 63% in the decade. In 2003 Beira, Luanda, Livingstone, Maseru, Matsapa, Maun, Ndola, Oranjemund and Walvis Bay appeared on scheduled commercial flight arrivals and departures boards in South African airports, affording regional travellers enhanced mobility. In 2003 it was possible for the first time to fly direct between South Africa and Algiers, Dakar, Entebbe, Kigali, Kilimanjaro, Kinshasa, Lagos and Zanzibar. Flights to and from Brazzaville, Casablanca, Lubumbashi and Mombasa were subject to withdrawal at erratic intervals.

Another indicator of the geographical widening of African air connections with South Africa is the dilution in the proportion of flights handled at the most important airports. The spatial diversification in Africa contrasts with spatial intensification overseas. In 1994 the 10 African cities best linked with South Africa handled 84% of flights to and from the Republic. In 1997 the proportion had declined to 76%. After a minor increase in 2000, in 2003 the share of the top ten African cities had declined to 72% of South African flights. Consistent with observations about contemporary global air travel at large (O'Connor, 2003), secondary-order (provincial) cities benefited most, and overshadowed smaller airports (Fig. 2). In each of the four sampled years, the 20 cities in Africa that had the best air links with South Africa were responsible for handling more than 90% of the flights there and back.

Cities that were linked by air for only one of the sampled years include capital cities far from South Africa: Algiers, Casablanca, Dakar, Kampala, Kigali, Kinshasa and Lagos. Maseru, capital of the small landlocked kingdom of Lesotho surrounded by South Africa was used for only one year. Several cities that recorded direct flights in just one of the sampled years are in countries where direct flights were already made to another airport. In the African case, these are not paired or second airports in the same city-region, but airports in distant and distinct urban centres. The 'secondary' cities are in Botswana (Maun), Zambia (Livingstone), Namibia (Oranjemund), Mozambique (Beira), Swaziland (Matsapa). Similarly, the second cities of Mombasa (Kenya) and Walvis Bay (Namibia) were only used in two years.

Not surprisingly, cities in southern Africa have the best direct air service to and from the Republic. The best-linked cities are the nearby capital cities of South Africa's neighbouring states, namely Botswana (Gaborone), Namibia (Windhoek) and Zimbabwe (Harare). The trio rank as the three best-linked cities in all years except 2003 when Manzini (Swaziland) edged Harare into fourth place. In the four sample years the three cities accounted for 48% (1994), 39% (1997), 42% (2000) and 36% (2003) of all continental flights to and from South Africa.

Flights between South Africa and East, Central, North and West Africa would have comprised a mix of business and leisure passenger traffic. South Africa's hosting of the African Cup of Nations (1996), the All Africa Games (1999), and the African Union Launch Summit (2002) boosted flying on official business and for leisure travel. The location near Johannesburg International Airport (JIA) of the office headquarters of the pan-African NEPAD (New Economic Plan for African Development) initiative generates considerable intergovernmental traffic. Traffic will increase when the continent's newly established Joint African Parliament sits nearby. The development of JIA as an African aeronautical hub will be enhanced as its serve-traffic role increases. The centre can already provide relatively rapid and inexpensive aircraft maintenance services, and this may improve because of procurement offsetting that, for example, secures reciprocal inward investment from aero-engine suppliers as contractual elements of home-carrier fleet replacement (Lourens, 2004).

Unlike in the intercontinental case, the pattern of flights within southern Africa is a poor match with continental tourist arrivals and departures. The market for mass intra-regional tourism is booming in South Africa especially (Rogerson, 2004), but most people who reside
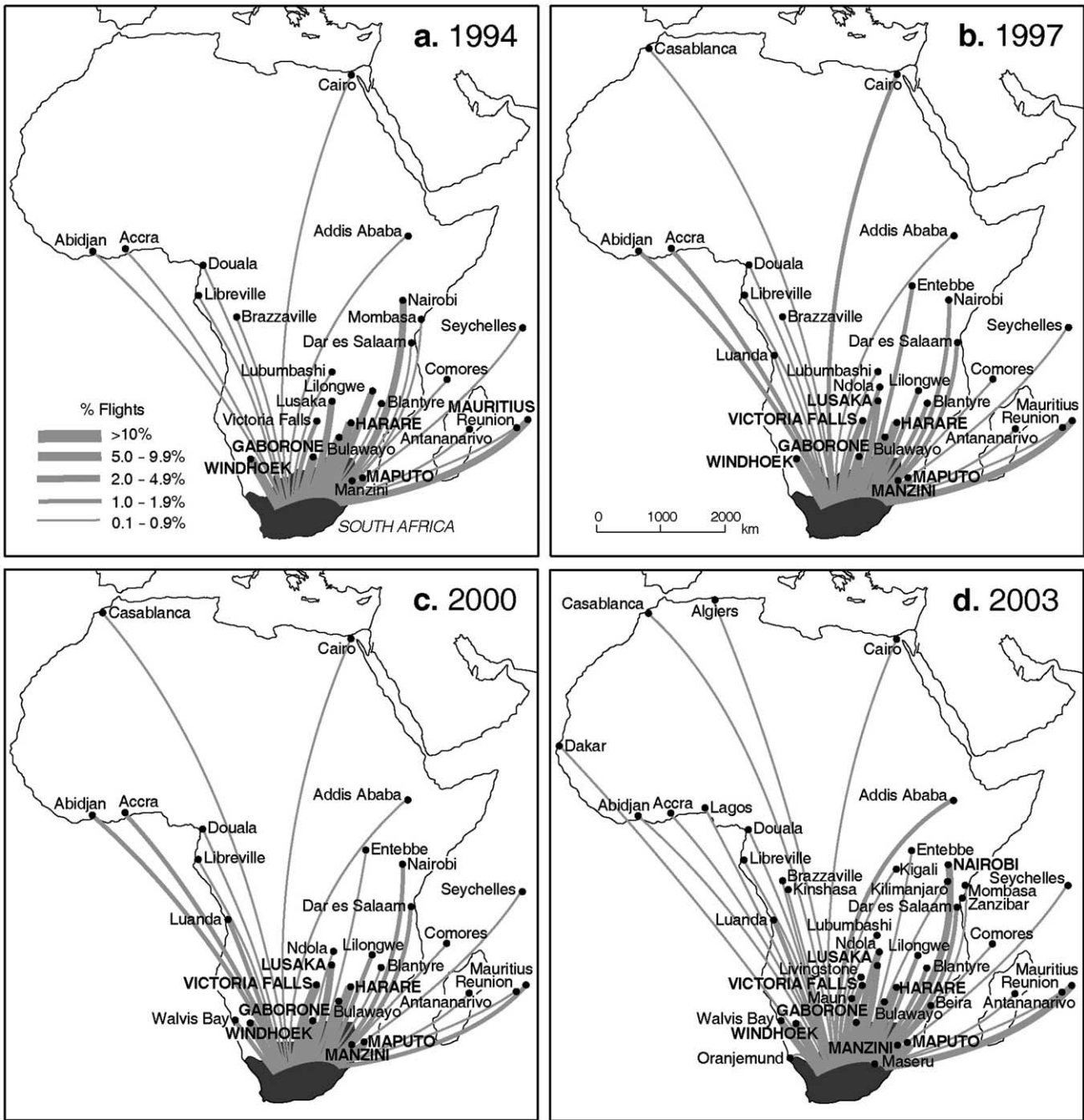
Fig. 2. African cities linked directly by air with South Africa, and the percentage share of African routes in scheduled weekly international passenger services (overseas and continental) to and from South Africa in: (a) 1994 (27 cities, 50%), (b) 1997 (30 cities, 55%), (c) 2000 (28 cities, 61%), (d) 2003 (44 cities, 68%). Sequential maps show more African cities in the top 10 cities (continental and overseas) linked to South Africa by air (city names in bold) 1994–2003.

in southern Africa and who visit neighbouring countries for business, social, shopping, holiday or health reasons make use of overland road transport (Cope, 2002). A particular category of sightseeing tourist (including, most likely, many overseas tourists) was carried on leisure flights between South Africa and Victoria Falls that ranked that holiday destination the fourth busiest airport for South African flights in 1997 and 2000.

Scheduled flights to and from Windhoek's second airport (Eros) are designed deliberately for convenient onward connections by charter aircraft. Air links with Maun would carry mostly Okavango tourists. In 2002, the opening of a new airport that effectively opened the Kruger National (wildlife) Park to scheduled jet service took game lodge access by air one step further.

During the past decade, African air links to and from South Africa have evolved in the context of continental aviation operations characterised by plentiful small domestic carriers but few and short-lived Africa-based long haul airlines. Carriers licensed for international service in a rigidly policed, nationalistic operating environment have struggled to birth, stumbled on, and then merged or died. Carriers like Air Namibia and Air Zimbabwe operate in the substantial shadow of their South African rival (Mutambirwa and Turton, 2000). Multinational initiatives have included Alliance Airlines that launched in 1994 as a joint venture between South Africa, Uganda and Tanzania, but flopped. African Star Airlines flew for three years (1999–2002). AfricaOne was founded with airline manufacturer money in 2002 and served Entebbe, Dubai and Lagos and Nairobi in the wake of Air Afrique's collapse.

Unlike the fluid airline business in Africa, its regulatory environment is static. Facing considerable challenges of preserving market access and share (Abeyratne, 1999), there have been repeated meetings about airline liberalisation (World Airnews, March 2003, 2004). Despite agreements to deregulate their skies, African governments have been slow to reverse the historic but unsustainable pattern of bilateral airline negotiations and monopolistic state-controlled and nationally flagged airlines. The decision taken in 1988 by African aviation ministers to integrate the continent's civil aviation sector and liberalise its aviation policies has been revisited but never implemented (Abeyratne, 2003; Goldstein, 2003). Efforts to align aviation more closely with tourism imperatives (including charter service) remain urgent but problematic (Endres, 1995; Ndlovu, 2001; Vellas, 2001).

In one of the world's weakest aviation markets South African aviation interests have chased aviation opportunities in Africa in the last decade. SAA, the country's principal airline (by far the African leader in terms of flights, fleet and passengers) has a short-term strategy to expand into Africa by increasing flight frequencies through bilateral agreements with other countries. Passenger bookings have been augmented by expanding SAA's in-house travel agency into 22 African countries and by extending the reach of its computerised reservation service (Singh, 2002; Wings, February 2002).

In pursuance of the African market, SAA acquired a minority 49% share in the privatisation of Air Tanzania early in 2003 (Chalmers, 2003). It also placed a bid for a majority share in the small Malawi airline before withdrawing for strategic reasons (Wings, March 2003). Subsequently, SAA swung its attention west. The bankruptcy of the West African federal carrier Air Afrique in February 2002 removed an entrenched competitor. Plans for a new sub-regional airline (ECOAIR) stalled quickly (World Airnews, April 2002). Several

months after liquidation of debt-ridden, two-aircraft Nigeria Airways in May 2003, SAA acquired a 30% equity stake in Nigerian Eagle, Nigeria's new airline (Chalmers, 2003; Phasiwe, 2004).

The South African carrier's longer-term goal is to develop a three-hub facility comprising a major airport in the east, west and south of Africa. As the continent's prime airport, Johannesburg International would be the prime hub of the envisaged pan-African air network. Situated in Africa's most prosperous metropolitan centre, the airport handled 12.7 million international and domestic passengers in 2003, and was the busiest on the continent (ranking 76th globally). Cape Town International Airport handled five million passengers that year, ranking third in Africa after Cairo, ahead of Algiers and Nairobi (World Airnews, September 2003). Recognising that Johannesburg's airport has the best air links into the rest of Africa, in 2004 the United Nations Children's Fund (Unicef) opened an emergency supply facility nearby. The Fund's first outstation beyond its Copenhagen headquarters will be used to store medicines and non-perishable food for humanitarian and emergency relief operations in Africa (Business Day, 22 October 2003).

South Africa's three-hub airway aspiration is being complemented by South African efforts to control and develop airports elsewhere in Africa; outward investment already occurs in other transport sectors. Following privatisation and commercialisation of the Republic's state-owned airports in 1993, the South African Airports Company bid to become an airport concessionaire in Maputo, and to acquire airport management and administration contracts in Addis Ababa (Airports Company of South Africa, 2003).

6. Conclusion

There was a significant reconfiguration of air links between South Africa and other countries in the period 1994–2003. During the decade South Africa positioned itself geo-politically and socially as an African country, with attendant 'Africanisation' in the geography of its scheduled, commercial air links. Sample weekly data indicate that in 1994 the country was linked to African and overseas countries by an equal number of flights. Ten years later the number of flights across South Africa's international borders had more than doubled. Most of the increase involved intra-continental as opposed to inter-continental flights. In the new century the Republic was linked by air with more African countries and cities than with overseas nations and airports, the reverse of the situation in 1994. There were more inter-continental flights to and from South Africa in 2003 than in 1994, but they served fewer overseas cities. The trebling in cross-border flights between the Republic and the rest

of Africa was associated with landings and departures at more African airports in 2003 than in 1994. The number of weekly flights to Gaborone and Windhoek exceeded the number on the highest frequency long-haul route (Johannesburg–London) in both 1994 and 2003. In 1994 five overseas cities ranked among the ten cities linked with South Africa by the most weekly air services; in 2003 their number was only two.

The 'Africanisation' of the Republic's international air links in the last decade is indexed by the surge in air services within Africa relative to overseas. Albeit difficult to map, the most salient finding about the geographical realignment is the phenomenon of intercontinental concentration and continental diversification. This is not unlike in Europe. The degree and shape of the process at an intercontinental scale runs counter to reconstruction of the Republic's international image, and to the country's return to the fold of nations. But globalisation and consolidation in the global airline industry, and political events beyond Africa, shrank the number of carriers in the South African intercontinental air passenger market, and concentrated direct services into hub airports overseas. Paradoxically, in a postcolonial age, European colonial legacy-links remain the most robust and the most dominant.

After 1994 (by when prohibited air links with African states had been lifted for four years), there were not air connections with significantly more African countries. Rather, there were more frequent flights, and new connections with secondary airports, mostly in southern Africa. Outward investment in the continent by aviation interests in South Africa has complemented the 'Africanisation' process. The Republic's aviation sector is far more influential in Africa than on the world stage. The national airline's admission to the global Star Alliance group of airlines early in 2004 is likely to strengthen its continental superiority in service, organisation and financial muscle; scheduled for privatisation, the airline and its associated service providers have sub-continental and continental influence and ambitions. Yet it may be a simple geographical consideration that ultimately restricts the dominance of South African civil aviation to southern Africa: a peripheral location—not to say a terminal location—on the vast African continent is a substantial obstacle. The Republic's eccentric, end-of-line position on the African and world air route map may reduce the demographic, trading and tourism advantages that would otherwise have justified the emergence of a more significant airline service hub in South Africa.

Acknowledgment

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