

Council for Trade in Services

DEVELOPMENTS IN THE AIR TRANSPORT SECTOR SINCE THE CONCLUSION OF THE URUGUAY ROUND

PART ONE

Note by the Secretariat

This Note has been produced at the request of the Council for Trade in Services in the framework of the review of the Air Transport Annex which stipulates in paragraph 5 that "The Council for Trade in Services shall review periodically, and at least every five years, developments in the air transport sector and the operation of this Annex with a view to considering the possible further application of the Agreement in this sector.". The Secretariat has been asked through the Council for Trade in Services to update document S/C/W/59, dated 5 November 1998 and document S/C/W/129, dated 15 October 1999.

This Note addresses both the economic and regulatory developments in the sector, in both a historical (1993) and contemporary (1999) framework. Since the Annex provides no definition of the sector, the paper tries to encompass all aspects of air transport and air transport-related services following the model of the former Secretariat document S/C/W/59 on the same subject examined during the exchange of information program in 1998. It largely draws on this document as well as on ICAO publications and in particular, the annual report *"The World of Civil Aviation"* (first edition, 1992). Additional professional sources such as IATA documents and press sources have also been used.

As indicated during the Council session held on July 2000, the Council requested due to time constraints, that the document be in three parts. The present first part will deal with items (a) to (g) listed in document job n° 2451, dated 19 April 2000.

Due to the extensive subject matter, the paper is not meant to be exhaustive. To the contrary, in spite of the mass of documentation that was compiled and used, and the existence of an even wider literature available, the paper shows a considerable lack of information as compared to what is available in the maritime transport sector or in the telecommunications sector.¹

This is true both for country-specific information (particularly for developing countries) and for information on specific sectors or issues, such as leasing or ancillary services. This lack of information is felt both on the economic side and on the regulatory side, but is particularly compelling on the regulatory side where apart from OECD countries virtually no information on national regulatory regimes is available.

¹ For a comparison see for maritime documents S/NGMTS/W/2 and S/NGMTS/W/2/Add.1 to 37 and for telecommunications S/NGBT/W/3 and S/NGBT/W/3/Add.1 to 39.

This Note uses the date of 15 December 1993 as a starting point since this is the date of the finalization of the existing disciplines by the conclusion of the Uruguay Round, rather than the date of the entry into force of those disciplines on 1st January 1995. However, in certain instances such a clear cut date did not make sense and has therefore not been used. Similarly, in certain instances historical data were only available on a wider time span (1991-1999) or on a shorter one (1995-1999) and these have been used when considered relevant.

The structure adopted for this note is a sectoral one sub-divided when necessary by themes. In each of the subsectors or themes, economic developments are addressed first, followed by regulatory developments.

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I. AIRCRAFT REPAIR AND MAINTENANCE

1. Economic developments

1. Aircraft repair and maintenance activities are defined in paragraph 6(a) of the Annex as meaning "...such activities when undertaken on an aircraft or a part thereof while it is withdrawn from service and do not include so-called line maintenance.". This definition broadly corresponds with what the industry calls "maintenance, repair and overhaul" (MRO).

2. MRO standards and procedures are very detailed due to the requirements that not only must an aircraft be certified, but also every part that goes into an aircraft. In both cases there are predetermined repair and overhaul cycles for aircraft and life-span for parts (the number of times, and/or the number of hours a part can be re-used, re-installed, or re-cycled before it is replaced). The pre-determination of these maintenance requirements for both new and old generation aircraft has been through the cumulative experience of the "Maintenance Steering Group" (MSG). This group dates back to the late 50s and consists of experts from National Transportation Departments, manufacturers, and airline operators. It is this group which created the standards for old generation aircraft (e.g. DC-8s DC-9s,) checks (known as MSG-1) which are denominated by the letters A, B, C, and D, and is a process driven scheduling for maintenance. The directives that apply to the generation of aircraft that include *inter alia* DC-10, B-737 series, and B-747 series) are maintained under the directives of MSG - 2.

3. However, due to both technological advancements and the continual search for cost reduction, MSG has found that the same safety standards can be met or exceeded and the overall costs reduced by modifying the C check and abolishing the D check for new generation aircraft (A-3 series, B-767 series). These changes are found under MSG-3 whereby the aircraft are certified under the new "Heavy Maintenance Visit" (HMV). These are "task driven" procedures that have a predetermined set of maintenance checks occurring in numerical sequence (e.g. HMV-1, HMV-2...). Each contains a list of required procedures and by HMV - 6 the aircraft will have undergone repair and overhaul equivalent to the old D check without being removed from operations for the same amount of time. Anything over HMV 6 will have accomplished more than a standard D check.

4. The following table (Table 1) extracted from the ICAO annual compilation of airline operating revenues and expenses shows a steady growth over recent years in the proportion of maintenance and overhaul costs among total operating costs.

TABLE 1
Proportion of maintenance repair and overhaul costs in airlines operating expenses

1993	1994	1995	1996	1997	1998
10,1%	10,0%	10,5%	10,5%	11,0%	11,1%

5. In so far as this growth is significant, it probably has to be attributed to the tightening of safety policies and even more to the tightening of their implementation, as described below in the regulatory developments section. This growth is also a change when compared to the tendency described in paragraph 10 of document S/C/W/59 that was based on a 1987-1995 series and a different methodology. In any case, despite any direct impact on operating expenses, maintenance remains a central preoccupation by the airlines because it determines aircraft availability. This in turn affects the revenue-generating ability of an airline.

6. Micro-economic data based on maintenance company's revenues seem to confirm the expansion of this business during the 1993 to 1999 period. Additionally, forecasts by independent

professional sources also project high growth rates into the future (2006). In 1998, the turnover of the sector grew as a whole by 8% (engine maintenance by 10% and 15% for other equipment). The MRO turnover of Rolls Royce increased by 50% between 1997 and 1999, and General Electric increased from US\$ 2.3 to US\$ 5.5 billion between 1996 and 1999. The International Transport Workers Federation* (ITF) estimated the sector at US\$ 25 billion in 1998 (US\$ 22 billion for civilian, US\$ 35 billion for military). The consultants Frost and Sullivan* estimate a total market of 37 billion in 2006, whereas according to the manager of the MRO division of Rolls Royce the sector had already reached US\$ 42 billion in 1999. Within the latter figure US\$ 25 billion is attributed to engines, US\$ 5.3 billion for line maintenance, US\$ 4.2 billion for accessory overhaul, and US\$ 7.5 billion for airframe maintenance. The industry journal *Interavia** has forecast a total market of US\$ 61 billion by 2005.

7. It should be noted also from the various breakdowns above that commercial aviation is not the only customer of the MRO industry. The military market is taking an increasingly important place as air forces faced with budgetary constraints begin to outsource a part of their maintenance (recent operations of that kind include contracts awarded by the air forces of the United States, UK, Italy, South Africa, Belgium, New Zealand, Australia, Indonesia, Colombia and United Arab Emirates).

8. General aviation is also an important client as for instance 500 new planes enter the market every year in the United States. As mechanics and engineers are paid less in the facilities dedicated to general aviation than in the facilities dedicated to commercial air transport, it can be said that general aviation is largely at the source of the labour shortage experienced by the sector in North America (a 4,000 persons deficit a year on a total workforce of 137,000 in the U.S. only) and in Europe at least. Also the growing significance of general aviation as a MRO customer evidenced by the creation of a joint-venture between Lufthansa Technik, Bombardier, and LBAS (Lufthansa Bombardier Air Services) to maintain the business jets. This particular segment of the market is undergoing dramatic growth due to the rapid expansion of fractional ownership programs (discussed in General Aviation section below).

9. One may also note from these figure the economic importance (US\$ 5,3 billion in one of the breakdown) of line maintenance, which is currently excluded from the scope of the Agreement.

10. Table 2 below lists the top-ten MRO providers of 1997 by sales and by workforces. Please note however, that this table is incomplete because it excludes engine manufacturers. If these manufacturers were included then GE would be number 1, and Pratt and Whitney number 3. Table 2 also shows that there are different types of MRO providers and does not include Original Equipment Manufacturers (OEM), who may be engine makers, aircraft manufacturers (Boeing's BOLD subsidiary for instance), or avionics manufacturers.

TABLE 2
LEADING MROs*

Rank	Company	Type of Provider ***	Sales 97 (US\$ m)	Workforce
1	Lufthansa Technik (GER)	i	1,750	10,000
2	Air France Industries (F)	ii	870	5,100
3	Sogerma (F)	iii	685	3,700
4	SR Technics (CH)	i	650	3,000
5	Singapore Technologies, incl Dalfort, ST Mobile (SING)	i	580	4,000
6	BFGoodrich Aerospace (U.S.)	iv	400	3,700
7	Hong Kong Aircraft Engineering (HK,C)	I	312	4,500
8	FLS Aerospace (DK)	iv	177	1,250
9	Aeronavali (IT)		163	1,500
10=	Dee Howard (U.S.)		130	1,200
10=	Precision Standard (Pemco) (U.S.)		130**	3,000

11. Over the period 1993-1999, the market has seen a progressive consolidation in favour of OEMs and the autonomous subsidiaries of airlines. This category of global maintenance providers includes: Lufthansa, Swissair, Air France, Singapore Airlines, Cathay Pacific. This consolidation has been to the detriment of independent providers and of in-house maintenance divisions² especially in airlines that have chosen to divest and to concentrate on their core transport business (such as BA) and of smaller airlines that have reduced their in-house maintenance to use the facilities of their alliances partners. This latter phenomenon has raised concerns among airline unions, who fear in particular that the concentration of the maintenance of certain types of aircraft in certain dedicated facilities may translate into delocalization of jobs as well as the closure of in-house maintenance divisions or their outsourcing to subsidiaries offering less social benefits. In certain instances unions have been able to impose a ceiling on outsourcing, as for instance in the case of United Airlines, where this ceiling is at 20%. A parallel phenomenon is the tendency of the major remaining actors to develop facilities in countries with relatively lower labour costs such as Ireland for Lufthansa and Swissair (which jointly own and manage Shannon Aerospace) or Philippines for Lufthansa; Morocco for Air France Industries, China for Cathay Pacific, Lufthansa Technik and SR Technics. In the case of China however, this can also be explained by the need to be present in a very rapidly expanding market.

12. Recent examples of the consolidation movement include the take over of TEAM Aer Lingus in 1998 by FLS (Denmark, independent provider), Flight Safety by Boeing, Cade Industries and Sundstrand by United Technologies, National Airmotive by Rolls Royce, and Greenwich Air Services, UNC, Aviall and Garrett Aviation Services by General Electric.

* Classified by overall sales figures, where available. Services offered include heavy commercial air transport MRO, and may include military aircraft. Excluded are specialist engine-only and components facilities. Air-line owned MRO facilities are also not included, unless they have been spun off as independent business units, and publish financial data.

** Reflects loss on closing facility in Copenhagen.

*** (i) airline subsidiaries; (ii) semi autonomous providers; (iii) providers linked to manufacturers; and (iv) independent providers.

² The proportion of in-house maintenance world-wide has fallen from 90% in 1970 to 73% in 1998, Source: *Airline Business*, September 1999

13. It is generally agreed that OEM will continue to grow, especially in the engines segment. OEMs may even give or lease engines and draw their revenues from long term maintenance contracts, while independent providers will probably have to concentrate on niche markets. This could occur in diverse areas such as total support for start up (e.g. FLS-Easy Jet), aircraft painting, GPS avionics, satellite enabled communications, passenger telephones, in-flight entertainment systems, hush kits and conversion of older passenger planes into freighters. In short, multi-year contracts and total support contracts with flat rates (allowing the planning of maintenance costs), are becoming a common feature of the industry.

14. The various actors in the market tend to multiply joint ventures in order to be present in all segments and geographical zones. The following typology of joint-ventures identifies the geographical and sectoral tendencies, and include:

- joint-ventures between airlines which are members of the same alliances, for example Star, Lufthansa Technik and SAS on CFM engines; Lufthansa Technik and United on Boeing 777; and Lufthansa Technik and Air Canada on Bombardier aircraft;
- joint-ventures between airlines of different alliances (Lufthansa Technik and SR Technics in Shannon Aerospace; Lufthansa Technik and Air China in AMECO; Lufthansa Technik and Lan Chile; Air France Industries and Royal Air Maroc; Air France Industries and TAP; Air France Industries and Air Canada);
- joint-ventures between independent maintenance providers and airlines (SOGERMA and Middle East airlines);
- joint-ventures between engine or equipment manufacturers and airlines (General Electric and Asiana; General Electric, All Nippon Airlines and IHI; General Electric and LOT; General Electric and EVA Air; MTU and China Southern; MTU and Canadian, SNECMA and Royal Air Maroc; SNECMA and Sabena; SNECMA and China Southwest; Rolls Royce and Cathay Pacific in HAES; Rolls Royce and Singapore Airways; Pratt and Whitney with GAMCO-Gulf Air; Pratt and Whitney and American Airlines; Pratt and Whitney and Singapore Airlines; Allied signal and Malaysian Air System);
- equipment manufacturers and aircraft manufacturers (Sextant Avionique and Airbus in Beijing);
- airlines and aircraft manufacturers (Lufthansa Technik and Bombardier in LBAS);
- joint-ventures between government, airlines and aircraft manufacturers (Abu Dhabi Government and Gulf Air in GAMCO; Cathay Pacific, Singapore Airlines, Boeing, Civil Aviation Authority of China, local government of Xiamen in TAECO).

15. The economic developments in the sector also exhibit regional variations. In Europe, the consolidation has been centered around airline subsidiaries (SR Technics, Lufthansa Technik and Air France Industries) which have rapidly developed third party activities (up to 46% in the case of Lufthansa Technik) through rationalizing activities on the basis of alliances, joint ventures and take-overs. The independent providers have consolidated (e.g. FLS-Team) and many airlines have downsized their in-house maintenance or concentrated their third party work on niches (e.g. British Airways).

16. In North America and in the U.S. in particular, airlines have maintained strong in-house maintenance divisions (the in-house proportion of maintenance is 85% in the United States where it stands at 73% world wide). The only exceptions are being Southwest Airlines, and to a lesser extent

America West. U.S. airlines tend to use third party MFOs only in the busiest periods. Among the factors explaining this tendency is the tightening of the FAA controls, the legal liability regime, and the reluctance of the unions. In the 1980's, many U.S. airlines tried to develop third party activities and then withdrew from them. Delta and United are now trying again to develop these activities though not on a massive scale. There remains however a strong sector of independent providers. It is worth noting also that largely because of the age of the domestic fleet, maintenance costs of U.S. airlines are on average higher than those of their international competitors: for instance they reach 15% of the total costs at Northwest Airlines.

17. In Asia, until the recent financial crisis, all major airlines were investing heavily in in-house maintenance facilities. Asia, and especially China, appear also to be the "promised land" for joint-ventures as mentioned in paragraph 14. Additionally, certain Asian maintenance companies have begun investing on other continents (e.g. Singapore Technologies Aerospace in the United States with the control of ST Mobile Aerospace Engineering and Dalfort Aerospace).

18. In Oceania, Air New Zealand Engineering Services (ANZES) has invested heavily in modern equipment such as enterprise resources planning software, coordinated its maintenance activities with the Australian parent company Ansett and invested in China. Apart from the various joint-ventures or contracts mentioned above, it has proved impossible to gather any data in the specialized press or in the studies of international organisations in Latin America, Middle East, CIS countries, the Indian sub-continent and Africa.

19. In terms of modes of delivery, mode 2 and mode 3 are essential for this activity, but technological evolutions have also led to a growing importance of trade conducted electronically under modes 1 and 2, while economic developments have made mode 4 more important than it used to be.

20. Mode 2 is highly relevant because planes are a mobile asset which can be repaired anywhere. Additionally, the advancement of mutual recognition and regulatory convergence in the developed world, but also at universal level under the aegis of ICAO (see regulatory section below) has led to the certification of a growing number of repair stations who serve mainly to foreign-based customers. A recent proposal to repatriate all maintenance of national planes to the national territory was not accepted, *inter alia* because it would have conflicted with a mode 2 commitment of the country concerned.

21. As the sector is characterized by heavy investment with only long term return, mode 3 is also essential, especially regarding the conditions attached to joint-ventures, as this is a very frequent form of commercial presence in this sector.

22. Electronic trade has of course had an important impact over the last seven years on this high-tech sector. CD ROM and now on-line internet based databases have replaced the huge paper documentation required and have allowed a constant updating, searches and in certain instances on-line dialogue on technical questions with the editors of the documentation. This dialogue can go as far as tele-diagnosis. For instance, Boeing's data base BOLD (Boeing On-Line Delivery program) registers 20 million transactions a year. Some of these transactions are devoted to the purchase of parts but many are linked to consultation of the documentation and to exchanges of data between the maintenance provider, the airline and the aircraft or engine manufacturer. These transactions help the manufacturer to establish databases on the life span of parts, on trouble-shooting (helped by artificial intelligence) and on predictive maintenance. In a second stage, this facilitates the design of new parts and speeds the regulatory process of approval. Another example of these electronically enabled feedback mechanisms is the CRMS (Collaborative Reliability Management System) put in place by Embraer. The U.S. Federal Aviation Administration and the European Joint Aviation Authorities are

now in the process of drafting rules that will mandate reliability feedback from the operators to the manufacturers.

23. One of the most sophisticated electronic maintenance sites is certainly the one put in place by General Electric. This web-site contains the following functions: data transfer, records management, inventory control, on-line engine record and configuration management tools, self help support including animated engines disassembly techniques, on-line training and three-dimensional rotating views of parts and components, "chat room", ordering of parts and verification of shipping status, services bulletins, simulations allowing the calculation of the effects of potential upgrades in terms of shop visits rate, cost of ownership and money saved ("what if ?" option), tele-diagnosis including 24 hour hot-line analyzing web photographs of damaged parts, trend analysis (comparing maintenance performances of the fleet to the performance of competitor's fleets), frequently asked questions, data bases with intelligent search tools and performance measurement in terms of costs and visits. Internally the use of enterprise resource planning (ERP) software such as Baan and SAP is also increasingly common.

24. In addition business to business (B2B) platforms have also developed in the maintenance sector, especially for the sale of parts. This includes component manufacturers platform as well as "neutral platforms", original parts as well as second hand parts, negotiated price systems as well as reverse auction bids and clearing-house and inventory services. Examples include: Airliance (United Airlines, Lufthansa Technik, Air Canada), Myaircraft.com (United Technologies Honeywell), Aerospace.com (SITA and AAR corp.), Airbus, the association of BAE Systems, Boeing, Lockheed Martin, Raytheon, and Commerce One and tradeAir.com

25. Finally, in terms of mode 4, the shortage of qualified personnel described above has triggered the development of companies specialized in the recruitment and placement of aviation engineers and mechanics world-wide. Those companies are experiencing at the moment double-digit growth. PARC's aviation technical and maintenance division based in Ireland is a typical example with its 24 clients on four continents and a growth in 1999 of 22% in man-hours provided.

2. Regulatory developments

26. The main regulatory developments that have occurred during the period 1993-2000 are linked to safety considerations, of which maintenance is an essential parameter. However, these safety regulations can have an impact on trade and have sometimes generated trade frictions. In addition, there have been instances where new regulations concerning the provision of maintenance services has been inspired by pure economic reasons.

27. As far as safety and safety-related regulations are concerned, at a universal level, the major development has been the inception of two major safety oversight programs by ICAO involving very detailed audits of the national legislation and practices of Members regarding safety, including maintenance. Following the 1992 Resolution A29-13 on "improvement of safety oversight" which recognized that the ICAO international safety standards required effective government oversight for their implementation, the ICAO Council agreed in 1994 to establish an ICAO safety oversight program whose objective was to identify deficiencies through assessments decided on a voluntary basis and to provide advice and assistance to enable States to implement the relevant ICAO Standards And Recommended Practices (SARP). A mechanism for the financial and technical contributions to this program was set up in 1995 and the program effectively began operating in March 1996. The voluntary program ended in 1998 after having received 88 requests for audits and processed 67 of them. It was replaced on 6 May 1998 by the ICAO "Universal Safety Oversight Audit Program".

28. This new universal and compulsory program stemmed from the conclusions of the meeting in November 1997 of Directors General of Civil Aviation from 147 States. They agreed on a set of five recommendations to reinforce the ICAO safety oversight:

- through regular, mandatory systematic harmonized safety audits;
- through the enhanced transparency of those audits;
- through the expansion of those audits to other areas of civil aviation having an impact on safety such as air traffic services, aerodromes and support facilities and services; and
- through the coordination of the ICAO oversight program with regional and national oversight programs.

These recommendations were endorsed by the ICAO Assembly in September/October 1998 (Resolution A32-11). A safety oversight audit unit was established to this end inside the air navigation bureau of ICAO and this unit conducted 49 audits by the end of 1999 the objective being to have assessed all ICAO Member States by the end of 2001. No data are yet available on the activity of the program in 2000.

29. As an element of support to this program and also as a result of the experience of its International Aviation Safety Assessment program (IASA), the FAA has developed and promoted a set of model civil aviation regulations largely based of the FAA regulations and the European Joint Aviation Authorities³ regulations. One of the eleven parts (part 6) of this model regulation is devoted to maintenance. The complete text of these model regulations can be found at the following electronic address: <http://www.faa.gov/avr/iasa/calr.htm>

30. In the United States, the Federal Aviation Administration put in place in 1992 an International Aviation Safety Assessment program (IASA), which assesses the safety oversight of foreign carriers serving, or willing to serve the United States and which can translate into limitation of services or prohibition of servicing the United States in cases of non-compliance with ICAO standards. It was decided in 1994 to make those results public.

31. On several occasions, the application of this program has generated tensions with partner countries, especially with those having signed a bilateral open skies agreement. In May 2000, the FAA changed its IASA regulations⁴ by reducing the number of categories for foreign airlines from three (acceptable, conditional, unacceptable) to two (compliant, non compliant).

32. The regulatory convergence process, first with the European Joint Aviation Authorities but also with Canada, already described in document S/C/W/59, has intensified over the last years. JAA and FAA hold annual harmonization conferences and agreed in May 1997 on the Maintenance Implementation Procedures (MIP) that will form the basis of agreements to be signed by the FAA and each national aviation authority of the JAA. From an operational point of view the differences between their respective regulation FAR 145 and JAR 145 have been identified and the FAA has the authority to grant JAR 145 approval of facilities located in the United States territory and participates to joint JAA-FAA Maintenance International Standardization Teams which audit regularly on a sample basis JAR 145 approved facilities.

33. The U.S. is also pursuing a policy of international cooperation and regulatory convergence on a wider scale than the transatlantic cooperation. Typically this involves the signing of Bilateral

³ The Membership of the JAA is the following: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Monaco, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. The following countries are candidate Members: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Moldova, Poland, Romania, Slovak Republic, Slovenia, The former Yugoslav Republic of Macedonia, Turkey.

⁴ Federal register, May 25, 2000 volume 65, number 102, page 33751-33753.

Airworthiness Agreements (BAA before 1996) or Bilateral Aviation Safety Agreements (BASA since 1996) on technical cooperation and reciprocal airworthiness certification of civil aeronautical products followed by Implementation Procedures on Airworthiness agreements (IPA) and by Maintenance Implementation Procedures agreements (MIP). BASA have been concluded with Austria (1997), Denmark (1998), France (1996), Germany (1996), Ireland (1997), Malaysia (1996), Netherlands (1995), Russia (1998), Sweden (1998), Switzerland (1996) and United Kingdom (1995), and are under negotiations with Brazil, Canada, Italy, Norway, Spain and Thailand. MIP have been signed with France (1999), Germany (1997) and Ireland (1999) and IPA with Germany (1999), Malaysia (1997) and Russia (1998)⁵.

34. In a recent notice of proposed rulemaking⁶ the Federal Aviation Administration has opened for comment a proposal for a complete rewriting of FAR145. As far as foreign repair stations are concerned the suggestion is to remove in nearly all instances the distinction between national and foreign repair stations and to apply the same regime to them. It is also proposed to create an advisory panel to identify areas where foreign repair stations pose special issues with respect to oversight on safety. Those proposals whose deadline for comment expired in December 1999 are presently debated and face some criticisms by independent providers and small businesses on the ground of over regulation.

35. In Europe, in 1994, the International Air Carrier Association (IACA) appealed to the European authorities to curb, on the grounds of aviation safety, the growing influx of low-cost flag of convenience charter operators flying aircraft registered in countries where the government safety oversight was felt to be less stringent. In 1996 this public opinion campaign found an echo through the adoption by the European Union of the Safety Assessment of Foreign Aircraft program (SAFA) finally endorsed by the Council of Ministers in June 1997 whose philosophy is comparable to the IASA program.

36. The assessment will be mainly done through ramp spot checks and the enforcement of this program has been delegated jointly to the European Civil Aviation Conference (ECAC)⁷ and to the Joint Aviation Authorities, its final institutional shape remaining to be determined. The system also includes an exchange of information with the FAA and a recommendation for the Member States of the EU to include in their bilateral agreements a safety clause and the right to audit foreign carriers contracted by European tour operators. The European Civil Aviation Conference has also signed in May 1999 a memorandum of understanding with ICAO on safety oversight issues.

37. The Joint Aviation Authorities adopted in 1991 the JAR 145 regulations on the approval of maintenance organizations. Those regulations have already been revised once and are again in a process of consultation since the last quarter of 1999. There are now 3,000 maintenance organizations having obtained the JAR 145 certification, 1,750 in Europe, 1,100 in North America and 150 in the rest of the world. JAA regulations on maintenance also include qualification and licensing regulation (JAR 66), training regulation (JAR 147), specific maintenance rules for aircraft not used for commercial transport (JAR-M). The JAA organize multinational Maintenance Standardization Teams (MAST) that jointly conduct audits in JAA Members territories as well as Maintenance International Standardization Teams (MIST) that conduct jointly with FAA and Transport Canada sample audits on

⁵ Situation as of 17 February 2000. Source: FAA website.

⁶ Docket n°FAA-199-5836, notice n°99-09, June 1999, part 145 review: repair station, see <http://www.faa.gov/avr/arm/n99-09.pdf>, for foreign repair station see notably pages 9, 48-49, 59-63 and 76-79.

⁷ The membership of ECAC is the following: Albania, Armenia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, Turkey, Ukraine, and the United Kingdom.

JAA approved facilities outside the territories of JAA Members. The JAA countries signed in May 1996 an agreement with Canada.

38. In Latin America six Central American States concluded in June 1996 the Ilopango Agreement which committed them to the adequate implementation of homogeneous inspection procedures for which the agreement established an Aeronautical Technical and Operational Inspection Service to assist in the task. Also in this region the Andean Committee of Aeronautical Authorities conducted in 1995 consultations with the United States on the implementation of the IASA program. The Latin American Civil Aviation Commission signed in September 1998 a coordination agreement on safety oversight issues with ICAO.

39. In Asia, the transport ministers of the Member States of the Asia Pacific Economic Cooperation (APEC) established in April 1996 a group of experts on aviation safety which issued five recommendations in 1997. Australia undertook in 1997 to harmonize unilaterally its safety rules with those of FAA.

40. As far as regulatory developments based on economic considerations are concerned, one may note the recent directive by the Indian Civil Aviation Ministry requiring that all maintenance up to C-checks (that is to say all except very heavy maintenance: D checks) must henceforth be carried out domestically, a measure that is applicable to more than 150 aircraft and that has been based on balance of payments and industrial considerations.⁸

⁸ See the electronic newsletter Aerosafety and Maintenance, Mac Graw and Hill Editors, 16 June 2000, issue page 7 on <http://www.awgnwews.com/cgi-bin>

II. COMPUTER RESERVATION SERVICES (CRS)

Computer reservation services (CRS) are defined by paragraph 6(c) of the Annex as "services provided by computerised systems that contain information about carriers' schedules, availability, fares and fare rules, through which reservations can be made or tickets may be issued.". They are all dealt with in document S/C/W/59 paragraphs 17 to 30 and in document S/C/W/129, para 5, 19C(a), 19D(a), 20(a) and Annex 1, page 11.

In 1990-1993 when the Annex was elaborated, there was an absolute identity between CRS services and CRS providers: CRS services were only provided by CRS providers, CRS providers were only providing CRS services. Between 1993 and 2000 this absolute identity has disappeared. On the one hand, CRS providers have begun providing other services, such as non-air transport bookings ("GDS" Global Distribution Services, whose classification remains an open subject) travel agent services, computer services or even telecom services. On the other hand, since the definition of CRS is vague and does not demand for instance that the information contained in the system covers all airlines, the activities of travel agents, airlines, airline alliances and others who have begun to offer on-line bookings and tickets could possibly be classified as CRS services.

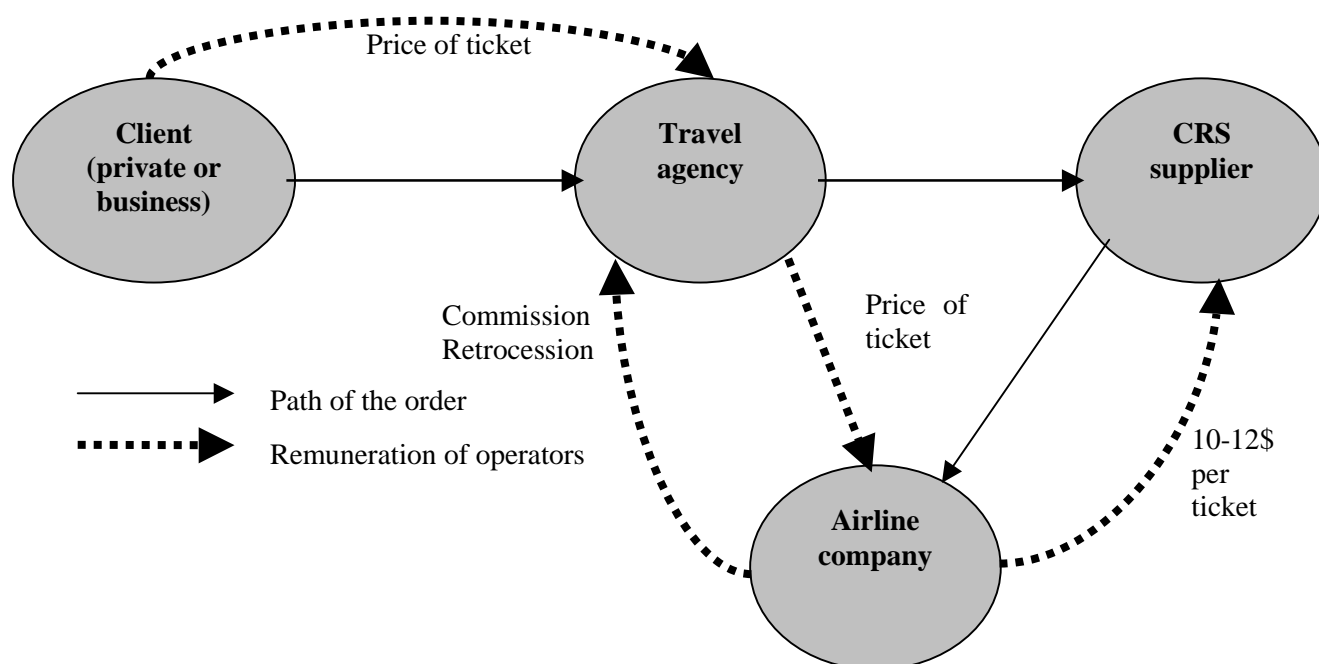
This double movement was already partially reflected in document S/C/W/59, where paragraphs 17 to 19 and 24 to 30 were devoted to CRS services provided by CRS providers and paragraphs 19 to 23 were devoted to emerging new forms of CRS services. After nearly two years the situation has evolved and clarified, and figures, data and forecasts are now available on these new forms. In the meantime the world of traditional CRS has undergone notable changes. This section will deal successively with the classical CRS and with the new forms of CRS:

A. CLASSICAL CRS

1. Economic developments concerning the classical CRS

The "classical" CRS can be described by the following table:

Figure 1



The information contained in table n °1 page 8-9 of document S/C/W/59 can be updated and completed by the following table:

TABLE 3

	SABRE	GALILEO	AMADEUS	WORLDSPAN	ABACUS
Foundation date	1946 - 1959	1971 (United's Apollo) 1987 COVIA 1990 Galileo 1993 General merger in Galileo international	1987	1982 (Delta-DATASII) 1976 (TWA -PARS) 1990 (Merger)	1988
Revenues 1999	US\$ 2.435 billion	US\$ 1.526 billion	US\$ 1.272 billion		
Market share⁹	24%	28%	34%	13%	
Initial share holders	AMR corp. (holding company of American Airlines)	Aer Lingus, Air Canada, Alitalia, Austrian, British Airways, KLM, Olympic, Swissair, TAP, United-Airlines, US Airways	Lufthansa: 29.2% Air France: 29.2% Iberia: 29.2% SAS: 12.4%	Delta Northwest TWA	Cathay Pacific, Singapore Airlines
Share holders as of July 2000	100% public since march 2000 ongoing repurchase plan for US\$ 100 million	73,2% public since May 1999 including 6,7% self control (former BA shares) remaining shares: United: 17,6%, Swissair: 7,7% Olympic, Air Canada, Alitalia, Aer Lingus, Austrian: 1,5% - repurchase plan for US\$ 500m	40% public 23,3% Air France 18,3% Iberia 18,3% Lufthansa (A shares) since Oct – Dec 1999 voting rights: 35,7% Air France, 27,9% Iberia, 27,9% Lufthansa, 8,4% public	Delta: 40% Northwest: 34% TWA: 26%	All Nippon Airways, Cathay Pacific, China Airlines, EVA Airways, Garuda, Hong Kong Dragon Air, Malaysian Airlines, Philippines Airlines, Royal Brunei, Silkair, Singapore Airlines: 65% Sabre: 35% since February 1998
Intermediary ownership movements	18% sold to the public in 1996	35% sold to the public in 1997	Replacement of SAS by Continental in 1995		China Airlines, Malaysian Airlines, Philippines Airlines, Royal Brunei: 1988-90, Silkair:1990, Dragon Air, ANA 1992, Garuda 1993, EVA Airways 1994
Number of employees	10,000	2600	2,800 including majority owned National marketing companies (NMC), 1700 without them	3,200	Headquarters: 400 NMC: 450

⁹ Source Amadeus, only four global players taken into account, one may hint at different results from other partial figures presented by the other CRS providers.

	SABRE	GALILEO	AMADEUS	WORLDSPAN	ABACUS
Number of air booking 1999	331.1 million	320.6 million	343.9 million		
Value of bookings	71 bn \$	55 bn \$			
Number of travel agencies connected	47,000	41,000	48,500	18,000	9,300
Number of terminals	210,000	169.700	205,700 (134,300 in travel agencies 71,400 in airlines sales offices of 114 airlines)		23,300
Countries covered	45	107	134 through 67 National marketing companies (NMC)	60	18 (all in Asia) through 38 NMC
Cooperation with other CRS	Share of 35% in Abacus	Absorbed GETS in 1997 with a system conversion staged on two years (97-99)	- absorbed system one in 1993 - joint-venture with Korea airlines (Amadeus: 32%, KAL: 68%) to operate the CRS system TOPAZ in Korea		- System hosted and maintained by Sabre system since 1997 after the termination of an agreement with World span - 40% share in Infini (Japan- 60% ANA) also a Sabre operated system - joint-venture with Air India and Indian Airlines (49%) and Tata consulting services(2%)
Numbers of airlines bookable	440	537	505	527	
GDS: non air booking and percentage of total	38.8 millions 10,8% of total bookings	29.3 millions 9,1% of total bookings	28.8 millions 7,7% of total bookings		
GDS: Number of car rental companies bookable and of their location	50 companies	38 companies in 18,000 locations	48 companies in 23 500 locations	44 companies in 17,300 locations	50 companies
GDS: Number of bookable properties and of bookable hotels companies	45,000 properties	45,000 properties 225 companies	51,300 properties 319 companies	39,000 properties 200 companies	50,000 properties

	SABRE	GALILEO	AMADEUS	WORLDSPAN	ABACUS
GDS: Other GDS products		350 tour operators	Ferries, rail tour operators, cruises, insurance	27 tour operators, 49 special travel services suppliers	
IT: provision and/or management of airlines web-sites		Ual.com, Sabena	55	80	
IT: provision and/or management of travel agency web-site		GetThere.com Uniglobe.com	3,162	Expedia Price.line.com	
IT: provision and or management of other travel vendors web-sites			Wal-Mart Expresso Group (e.viaggi.com)		
IT: management of multi-airlines portals			On-line Travel Portal (OTP)	Orbitz	
IT: alliance displays		"Preferred Availability" for Star	"Alliance display" for Star	"Worldspan alliance display" for Skyteam and qualiflyer	"Alliance Manager" for OneWorld and Star
IT: mobile commerce cooperations¹⁰	Oracle Sabre- Vodafone, Travelocity–BT Cellnet	Motorola	Nokia, Ericsson, Wideroe		
IT: other IT activities	- Sabre E Market place with Ariba (business to business platform) - Encryptix (ticket home printing systems)	- Stamp.com and encryptix (ticket home printing systems) - Shepherd systems (software for airlines) - Quantitude (telecom services for airlines)	Cooperation with Broadvision (software editor) Hewlett Packard and Bank of America		

¹⁰ i.e provision of airline information and booking on mobile telephone handset, personal digital assistants and notebooks.

	SABRE	GALILEO	AMADEUS	WORLDSPAN	ABACUS
IT revenues and percentage of IT in total revenues if available	US\$ 1,865 billion 40% of total revenues	US\$ 650 million	US\$ 200 million		
Travel agent services: directly owned (partially or totally) virtual travel agencies	Travelocity.com Preview.travel ¹¹	Trip.com ¹²	Amadeus.net Vacation.com ¹³ Terra Networks		
Travel agent services: directly owned business travel dedicated companies	Sabre Business travel solution		Joint-ventures with SAP systems		

Nota bene: A blank in this table does not mean that the CRS provider has no activities in the area concerned, but only that it has proven impossible to gather the relevant data.

¹¹ About to be merged, 1.2 billion revenues, 17 million registered customers, 3rd largest e-commerce site.

¹² 3.5 millions registered users.

¹³ 9,400 travel agencies in the US.

41. From Table 3 above and from information drawn from various sources (specialized press, web-sites of those companies, ICAO) one may consider that five main evolutions have characterized the classical CRS over the period 1993-2000:

- (i) concentration;
- (ii) an expansion fuelled by geographical extension and by an increasingly challenged price model;
- (iii) extension to other leisure and travel areas
- (iv) initial public offerings and severing of the link with parent carriers;
- (v) erosion of the predominant role of traditional CRS provider in the issuing of air transport tickets and subsequent diversification into other electronic travel activities.

(i) *Concentration*

42. In 1994, Amadeus took over System One, a CRS owned by Continental and operated by Electronic Data System. The same year Air Canada and Canadian Airlines dissolved their partnership in Gemini, Canadian joining the SABRE system while Air Canada joined Galileo. In 1997 Galileo took over GETS with a two-year conversion period. The same year SABRE took a 35% participation in Abacus International and replaced Worldspan as the operating system of Abacus. Abacus itself took a 40% share in the Japanese CRS INFINI (the remaining 60% belonging to All Nippon Airways). In 1998 Amadeus took a 32% share in the Korean CRS TOPAZ (the remaining 68% belonging to Korean Airlines) and became its operating system. There had been talk in 1998 of a merger between Amadeus and Worldspan but they seem to have been abandoned since. Arthur Andersen made an attempt to enter this market in 1998-1999 but withdrew. EDS is still managing a proprietary system for Continental but apparently without plans of expansion. This leaves for the moment four global players (Sabre, Galileo, Amadeus and Worldspan), one strong regional actor (ABACUS) and two notable local systems (Infini and Topaz), all regional and local actors being somehow linked to the global players.

(ii) *An expansion fuelled by geographical extension and by an increasingly challenged price model*

The following table gives an idea of the progressive geographical extension of CRS:

TABLE 4

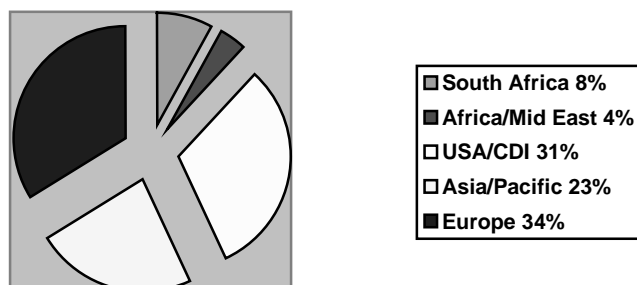
	1994	1995	1998
Countries with no CRS available	56	55	45
Countries with one CRS only	45	49	43
Countries with two or more CRS	82	81	97

Source: ICAO

43. CRS services are now available in more than three-quarters of ICAO members. In individual terms Amadeus is the system covering the greatest number of countries (134) followed by Galileo (107) Worldspan (60), SABRE (45) and Abacus (18). The form of the coverage is also an interesting feature: the CRS provider does not create a national marketing company in each and every country. For instance Amadeus is covering its 134 countries with only 67 national marketing companies. This seems to show that mode 3 is not the only relevant mode for CRS but that mode 1 plays a central role in countries where no national marketing companies has seen set up. Symmetrically in the case of Abacus, as one can see by the table above, 18 countries are covered by 38 national marketing companies, which shows that there can be several national marketing companies in the same country.

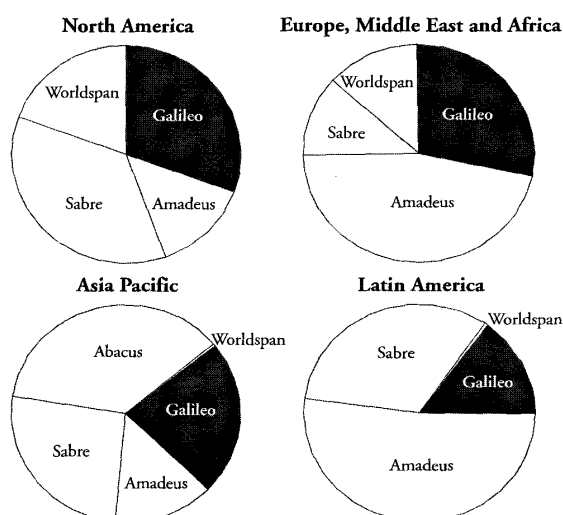
44. The size of the respective markets is extremely variable as one can see by the following pie chart.

The International Market of CRS



45. The U.S. market alone accounts for more than 30% of a market valued at US\$ 5 billion a year. The only global data available on market shares (Amadeus 34 %, Galileo 28%, SABRE 24%, Worldspan 13%), is limited to the four global players. The precise methodological basis of this figure is unknown and partial figures given by other CRS are inconsistent among themselves¹⁴. Therefore, one must take this figure with certain precautions. The respective strength of the five major players on the regional markets is also extremely variable as shown by the following pie charts.

Global CRS Share of Travel Agency Locations by Market



Source: Galileo International, Travel Distribution Report

¹⁴ The addition of the proportion of the booking claimed by each system is well over 120%.

46. All these companies have reported over the last seven years a regular expansion in their number of bookings and in their revenues. However, a large part of this growth in recent years is linked to the geographical expansion described above, as new markets are growing much quicker than mature ones. Until recently, the pricing system of CRS, a flat fee of about US\$ 10-12 per segment booked, guaranteed to CRS an activity indexed on the volume of air traffic that was in any case growing. Even price competition among airlines did not have a negative effect on CRS: since the CRS remuneration was a fixed sum transaction, competition merely contributed to raise the volume of traffic and thereby CRS revenues.

47. This position may however change relatively rapidly. Under the pressure of their customers and of the regulatory authorities CRS have already progressively stopped charging fees on duplicate and fictitious reservations. Secondly, when acting as booking engines of new channels of distribution (virtual travel agencies, airline web-sites, etc.) CRS fees are closer to the US\$ 1 to 2 range than to US\$ 10-12 and the share of those channels is growing. Finally as parent airlines have divested from CRS they do not have the same interest in having CRS charging high fees.

(iii) *Extension to other leisure and travel areas*

48. Over the last ten years the CRS have transformed themselves into Global Distribution Systems. GDS activities are the extension of the CRS booking system to other types of transport such as rail, ferry tickets or car rental, but also more widely to travel-related activities such as hotels, resorts, cruises, tour operator packages, or leisure activities such as opera, cinemas and theatre tickets, or even to non-travel activities such as insurance.

49. For the three global CRS providers for which data are available this represents already around 10% of bookings (10,8% for SABRE, 9,1% for Galileo, 7,7% for Amadeus). Those bookings are growing three times quicker than air bookings for Galileo, twice as fast for Sabre but only half as fast for Amadeus although the offers of those three CRS are comparable as one can see from the relevant rows of the general chart.

(iv) *Initial public offerings and severing of the link with parent carriers:*

50. The initial share holders, the state of play as 1 July 2000 and the intermediary movements of stocks are described in the fourth, fifth and sixth columns of table 3. The tendency is clearly to go public as two major players are already majority owned by the public (SABRE 100% since March 2000, Galileo 73,2% since March 1999). Amadeus is currently 40% public and intends to open its capital up even more in the future. Out of the major players, only Worldspan remains totally owned by its airline founders, which is also the case for the regional player Abacus. This represents a shift in strategy for the airline founders and especially for SABRE-AMR which was presented as the archetype of the integrated company covering the whole spectrum: airline (American), CRS (SABRE) and virtual travel agency (Travelocity).

51. Several factors have triggered that movement:

- the ownership of a CRS system has become less important as a means of channelling clients with the progressive improvement of codes of conduct (U.S., EU, ECAC, ICAO) that have forbidden certain unfair practices;
- the fashion has switched back to the concentration on the core business of air transport;
- new channels of distribution have emerged that have diminished the weight of CRS and that do need cash injections to be developed and airlines controlled. This is the

case of multi-airlines portals (such as Orbitz or On-line Travel Portal), of virtual travel agencies (such as priceline.com where airlines have taken stakes) and of the airline and alliance web-sites (for more details on these new channels of distribution see paragraphs 65-114). The initial public offerings of CRS have given airlines an opportunity to get the pay-back of their huge investment in the eighties, and to generate the cash needed for these new investments.

52. One may also suspect that the airlines have tried to disengage themselves from a service bound to decline with the emergence of new channels of distribution and the progressive capping of fees. A final reason for spinning off, especially in the case of SABRE, has been the fact that third party clients, for IT software and outsourced systems management including web-sites, were reluctant to give confidential information on bookings trends and profiles to a company owned by a competitor. The spin-off resolves that problem.

53. The consequence of this movement is that "parent carriers of CRS" in the Codes and GATS MFN exemption regulatory sense tend to become the exception. There remains in most instances only "participating carriers", and their obligations have in certain circumstances been lightened (see paragraph 61). It is also worth noting that as far as participating carriers are concerned significant movements have taken place among CRS such as the recent switch of BA from Galileo to Amadeus.

(v) Erosion of the predominant role of traditional CRS provider in the issuing of air transport tickets and subsequent diversification into other electronic travel activities

54. As one can see by the table 3, CRS providers have diversified massively and recently into other activities. One can attempt to draw a typology of these diversifications by distinguishing downstream and upstream diversification.

55. Downstream diversification is the fact of trying to get into direct contact with the customer, individual or corporate, thereby bypassing the traditional intermediary of travel agencies. All major players have done so, to various extents. The most typical case is SABRE who pioneered the concept of the virtual travel agency with Travelocity (1996), the third biggest e-commerce site in the world after its merger with preview travel, with 17 million registered users, US\$ 1,2 billion revenues and a 32% market share among virtual travel agencies in the U.S. market. SABRE Business travel solution dedicated to corporate business enjoyed the same competitive edge. Since then Amadeus with Amadeus.net, Vacation.com and Terra.networks and Galileo with Trip.com have followed the move. As far as corporate customers are concerned Amadeus has reached an original agreement with SAP, the most used Enterprise Resources Planning software. SAP R 3 software now contains built in travel booking functionalities linked to Amadeus, thereby guaranteeing a constant flow of revenues to Amadeus.

56. Upstream diversifications are more heterogeneous. Their common point is to use the expertise gained by CRS in information technology management to offer materials, software, outsourcing, or services to airlines, alliances, multi-airlines portal, travel agencies and distributors such as Wal Mart in the area of travel distribution. This ranges from takeover in hardware companies producing home printing tickets systems (SABRE and Galileo - with Encryptix and Galileo with stamp.com), to the creation of a company dedicated to the provision of telecoms services to travel vendors (Quantitude by Galileo), to the complete outsourcing of the information technologies system (SABRE notably) to the provision and management of web-site and booking engines to travel agents, airlines, distributors, alliances, and multi airlines portals. This represents already 40% of SABRE revenues and a comparable proportion for Galileo, Amadeus and Worldspan are being one step behind in that respect.

2. Regulatory developments concerning classical CRS

57. Regulatory intervention concerning CRS was traditionally governed by market access and non-discrimination preoccupation, that is to say to avoid discrimination among carriers through unfair display on the screens. The various codes of conduct regulating to that aspect have been updated and extended to new activities such as rail transport during the period. In addition, competition and transport authorities have also intervened in the area of pricing.

58. As far as the codes of conduct are concerned, ICAO revised its 1991 Code of Conduct for CRS in 1994 - 1996, notably to take into account the results of the Uruguay Round negotiations. This new code took effect on 1 November 1996. The main changes are the expansion to non-scheduled services and, if States deem it necessary, to new information systems such as the internet, stronger measures to safeguard privacy of personal data, the prohibition of fictitious bookings, more specific criteria on flight display order, provisions concerning display and consumer information for code-shared flights, suggested model clauses for bilateral agreements and market access and exemption provisions. Documents S/C/W/59 (page 11, paragraph 27) and S/C/W/129 (Page 11, paragraph 5, Annex 1) describe in more detail the content of this code. At the end of 1999, 31 countries either followed this code or had CRS regulations consistent or compatible with it. It is worth noting that the transitional exemption to the market access obligations required by two of those countries will expire on 31 December 2000.

59. In the European Communities the code of conduct for CRS was amended by Council regulation n°323/99 dated 30 April 1999. The main changes are the inclusion of rail services in principal displays for those vendors who wish to do so, and additional rules on the protection of personal data, on the responsibilities of the subscribers, on fees and on billing data. Those changes were designed to be consistent with the revised ICAO CRS code of 1996. In 1999, the Commission fined Lufthansa for not having opened before December 1998 an electronic ticketing function introduced in 1997.

60. The European Civil Aviation Conference also adopted a new code in June 2000 (ECAC/24 dated 29 -30 June 2000) replacing its 1994 code (CEAC/16-1), extending the provisions of the new EU code to the whole European continent and incorporating the 1996 ICAO code provisions.

61. In 1997, the U.S. Department of Transportation in reviewing its CRS regulations, decided that airlines which were not CRS owners need not participate at the same level in all CRS systems in which they choose to participate. In addition the DOT amended its rules to require each CRS vendor to offer one display that lists flights without giving all on-line connections a preference over interline connections. It also prohibited systems from creating displays that neither use elapsed time as a significant factor in selecting flights nor give single plane flights a preference over connecting services. The DOT extended the validity of its rules until 31 march 2000 in order to allow time for completion of its review.

62. Canada adopted a comprehensive set of CRS rules in June 1995. Australia amended in 1996 its code of conduct to require systems vendors to offer CRS access to subscriber groups using a communication system different from that of the system vendor and to include more detailed conciliation procedures for dispute settlement.

63. On pricing several airlines made complaints in 1994 to their regulatory authorities in the European Communities and in the U.S. regarding the level and nature of booking fees charged by CRS vendors resulting from duplicate and fictitious reservations. In other terms, CRS were charging a flat fee (generally US\$ 2) for each segment booked even if it did not materialize in an actual ticketing, as is often the case with precautionary multiple reservations. In 1995, the European Commission issued a study on options for the funding of CRS booking and submitted to public

debate. As a consequence of the complaints made by airlines on the charging of fictitious bookings the CRS vendors began tightening their charging policy by linking the charge to the issuance of the ticket and by reprogramming the systems in order to enhance the airline's ability to refuse bookings which they regarded as unnecessary and to refuse booking for impracticable travel. In 1996, the European Commission drafted a Charging Principles Guidance Note in order to clarify some of issues involved in CRS pricing, such as incentives for travel agents, passive and duplicate bookings, unfeasible segments, cancellations and higher functionality charges.

64. From a GATS point of view when acting in second line as a booking engine behind a travel agency web-site, a distributor web-site, an airline web-site, an alliance web-site or a multi airline portal, CRS providers are still providing CRS services. But the question arises if the "frontlines" providers cannot be qualified also as CRS services providers since they provide on-line bookings and reservations.

B. NEW FORMS OF CRS

65. The present section will firstly attempt to trace back the history of the appearance of these new forms of CRS, secondly try to draw a typology of those main new services providers and thirdly, describe for each type the economic data available and the ongoing regulatory debate.

2. A brief history of on-line travel distribution:

66. In 1993, there were only three ways for customers to buy a plane ticket:

- either to go through a travel agent that would use its CRS provider to book and issue the ticket; or
- to call by phone the reservation center of an airline; or
- to go to an airline sales office and buy a ticket from that airline. In this latter case, the airline would not use a CRS but access through its internal network to its inventory. It would use a CRS for interlining i.e. for ticketing connection flights on other airlines, which explains why even airlines sales offices use CRS (see for instance the number of terminals for airlines for Amadeus above).

67. Although there are no global figures available one can estimate from the respective numbers of CRS terminals and from the statistics from various individual airlines that the first mode of ticket emission (i.e. travel agent- CRS - airline) was largely dominant and represented more than 80 to 85% on average of the tickets sold, direct sales by the airlines accounting for the remaining 15-20%.

68. The 1993 Air Transport Annex and more widely CPC/W/120 reflected that state of play by defining three categories of service providers: travel agents, CRS and sales and marketing by the airlines themselves. This simple scheme has now exploded as many more actors and combinations of actors now offer airline bookings.

69. Historically, if one excepts the geographically limited French experience of the minitel¹⁵ one can trace back the appearance of direct on-line bookings by the customer, by-passing the travel

¹⁵ Degriktours minitel site dates back 1991 and Degriktours, now n°1 of the virtual travel agencies in Europe with a 15% market share still owes a large though declining part of its revenue to the minitel (333 million French francs on 454 in 1998, 280 million on 580 in 1999, 150 million on 800 forecasted for 2000, the remaining coming from internet), the same could be said of the minitel site of Air France which with 4,5 million visitors a year is the third largest minitel site of France.

agency as far as 1993, with the establishment of the ETDN (Electronic Ticket Delivery Network) network by Galileo.

70. In 1995, five major airlines were already offering tickets via CD-ROM and diskettes to be read on personal computers, while more than 100 airlines and the then five major CRS providers had opened web-sites, like several travel agents groups and numerous individual agents although most of those sites were initially limited to information of the consumer and not yet to on-line booking.

71. Yield management techniques began to be applied on the internet in 1996 through the auction of a fixed number of seats or the offer of restricted discounts on certain flights and routes where bookings were weak. 1996 is also the year of foundation of the two leading virtual travel agencies, Expedia owned by Microsoft and Travelocity owned by SABRE.

72. In 1997, IATA, in view of the growing use of internet for airline booking (still representing less than 1% of airline revenues but growing very fast) established a special code for electronic reservations services providers which would enable airlines to readily identify such bookings. In 1997 - 1998 further refinements were added to certain of these web-sites such as accessing frequent flyer accounts, redeeming mileage awards and tracing baggage.

73. In 1998, the first "name your price" service (a reverse auction system) was introduced by the virtual travel agent Priceline.com. The creation of alliances web-sites followed closely the announcement of the various alliances (Star 1997, Qualiflyer, Oneworld 1998, Skyteam, 1999-2000). The same year Expedia and Travelocity began extending their activities to the UK. From a GATS point of view this is an interesting element: it shows that electronic commerce is not only, in the case of travel distribution a question of modes 1 and 2 but that the legal and probably, financial and marketing peculiarities of each market necessitate some kind of mode 3 presence.

74. In 1999, Alaska Airlines, followed by Continental, began to use internet for on-line check in. The creation of multi-airlines portal was announced in 1999 in the United States (Orbitz) and in 2000 in Europe (On Line Travel Portal), in the U.S. again (Hotwire.com) and in Asia (still unnamed). Finally, the same year IATA and IBM announced that they were working on the creation of a global electronic system and common formats and machines allowing the interchange of electronic tickets.

3. Analysis of the main types of on-line booking providers

75. Assessing the size of the global market for on-line air travel distribution and the respective shares of the various kind of operators is a difficult task, like any attempt at describing of the new economy: data are essentially available for the U.S. market, scarce for Europe and practically inexistent for the rest of the world. Market shares of individual companies or types of providers vary greatly year after year. Figures do not always distinguish airline bookings from travel bookings nor do they clearly indicate if they refer to the U.S. market, the world-wide market, or distinguish necessarily the channels of distribution. Past figures do not give a sound idea of this exploding market since growth is exponential and since certain types of providers which are likely to capture in the future an important share of the market, have either just become operational (alliance web-sites) or are not yet operational (multi airlines portals). In addition certain types of currently dominant providers like virtual travel agencies not owned by GDS, are economically fragile and may even disappear since they follow the general business model of the new economy and have constantly made losses since their creation. One has therefore to have recourse to forecasts, which are of course divergent in their methodological basis and in their results. With those methodological limitations in mind the figures available are the following:

TABLE 5

	1998	1999	2000	2001	2002	2003
Phocus wright: On-line Travel Worldwide		7bn \$ or 3% of total travel of which 73% of airlines bookings	20.2 bn \$ or 8% of total travel of which 63% of airlines bookings			
Phocus wright: European on-line travel market		200 EUR million	1.1 EUR billion	3.1 EUR billion	5.7 EUR billion	9 EUR billion
Gartner group: On-line travel worldwide		US\$ 5 billion		US\$ 30 billion		
Jupiter communications: On-line travel world-wide	US\$ 2.2 billion	US\$ 4.2 billion	US\$ 6.3 billion	US\$ 8.9 billion	US\$ 12.6 billion	US\$ 16.6 billion

76. The same sources have tried to trace and foresee the respective shares of airlines and of virtual travel agency in the market of on-line travel booking. Their results can be summed up by the following table:

TABLE 6

	Travel agent share	Airlines shares	Others ¹⁶
1993 US General Accounting Office (US market only, offline¹⁷)	85%	15% ¹⁸	not taken into consideration
1996 US General Accounting Office - (US market only, offline and on-line)	75%	25% ¹⁹	not taken into consideration
1999 Phocus wright year book (on-line market only, world-wide)	52%	33%	15%
December 1999 Jupiter Communications (on-line market only, world-wide)	54%	46%	not taken into consideration
2005-2006 Arthur Andersen	60 %	40%	not taken into consideration

77. To sum up those extremely heterogeneous figures and forecasts, one can say that the on line travel market is expected to grow five to six fold in the next five years, Airline bookings will still constitute the majority of this market, but with a share declining from three quarters to two thirds.

78. As far as airline booking are concerned, airlines are expected to at least double (from 15-20% to 40-50%) their share in the distribution system, essentially to the detriment of travel agents. This movement has already begun in the United States, where the number of travel agencies has begun to decline and where although their revenues are still growing, travel agencies have lost, according to the

¹⁶ Web-sites of car rental companies, hotel chains and cruises and tour operators

¹⁷ GAO /RCED99-221"domestic aviation: effects of changes in how airlines tickets are sold", July 1999.

¹⁸ tickets offices, call centers.

¹⁹ tickets offices, call centers, first web-sites.

General Accounting Office, US\$ 4,5 billions of commission through capping over the last five years. They have consequently begun to charge service fees to their customers as an alternative source of revenues.

(ii) *Virtual travel agencies*

79. By this denomination one may regroup three of the cases listed and illustrated in document S/C/W/59:

- case 2(a), page 5 (Virtual travel agency owned by a CRS e.g. Travelocity, Amadeus.net, Galileo.com)
- case 2(b), page 6 improperly named then Electronic Reservation Services Provider (pure virtual travel agency or travel-selling dedicated part of a web-site owned by anybody else than a CRS or a physical travel agency be it by the public, by airlines²⁰, by software companies by a distributor, by a bank, etc., e.g. priceline.com, Expedia); and
- case 3(c), page 7 (web-site of a physical travel agency, e.g. Carlson.com).

80. The only economic difference separating those companies is that the agencies owned by CRS do not have to pay, or do not have to pay to the same extent, the bookings to the CRS, which gives them a competitive edge. For the rest, they are all, or nearly all, "powered" by a CRS booking engine and their contractual relationship with airlines is common: being seen as rival in the conquest of low cost distribution markets they suffer at least in the United States tougher conditions than their physical counterparts in terms of number of passengers, flight segments, length of time they can hold a reservation and payment. In terms of remuneration their commissions stand at 5% (versus 8% now for their physical counterparts) and are capped at US\$ 10 per ticket, compared to US\$ 50 on average for a domestic U.S. flight and US\$ 190 on average for an international flight.

81. One may note that a movement of consolidation has already taken place. In the United States, the first five virtual travel agencies account for 73% of the gross travel bookings (Travelocity/ Preview: 32%, Expedia: 20%, Priceline.com 10%, ITN.net (GetThere.com): 7%, cheap tickets: 4%). The movement is similar, though less advanced, in Europe where the six first account for 53% of the market (Degriftour: 15%, Expedia.co.uk 14%, Ebookers.com 10%, Leisure.planet.com: 9%, Lastminute.com 4% and Edreams 1%). However, this movement may be reversible. There may be market exits and in a market growing five fold in a year (from 0.2 billion EUR in 1999 to 1.1 billion forecasted in 2000 in Europe)²¹ a new entrant in 2000, Edream, has managed to achieve a forecasted 1% share.

82. The economic characteristics of the sector are a mix a of CRS economy and new economy. As for CRS, airlines, at least certain of them, invest heavily in those new businesses (for instance United in Buy.travel.com or in priceline.com: United American, US Airways, Continental, Northwest, TWA, America West and Delta) in a move parallel to the investment in CRS twenty years ago. As for CRS, airlines plan to divest in the long term and argue that the management of the system will be made by a neutral management team, guaranteeing equality of treatment even to non-equity holder airlines.

83. At the same time on-line travel belongs typically to the new economy. Although travel distribution is reputed to be structurally more profitable than e-commerce of physical goods because of the absence of warehousing, shipping and delivery costs, the profitability of the sector for non

²⁰ this refers to companies totally or partially owned by airlines such as priceline.com but not to airline web-sites which are in a different economic and legal situations and are described below.

²¹ source . phocuswright.com/events/liveurope2000/press/sileo

CRS-owned companies remain to be demonstrated while stock capitalizations reach heights without comparison to those of the "physical" industry of air transport. For instance the capitalization of priceline.com had reached at a given point US\$ 13 billion, more than the total of the capitalization of United Airlines, Continental and Northwest, while the site has registered only US\$ 35 million of effective sales in 1999 and has accumulated losses of US\$ 114 million since its foundation.

84. The regulators in the United States have already ruled twice on virtual travel agencies. In September 1996, the DOT refused to intervene against Expedia as requested by the travel agents associations. In April 1999, the DOT also dismissed a 1996 complaint of the Association of Retail Travel Agencies (ARTA) on the sale of internet tickets below rates²².

(iii) *Airline web-sites*

85. As of January 2000, according to an inquiry by Airline Business International and SITA, only 40% of the IATA airlines offered on-line booking facilities but 37% more were planning to do so in the next two years. The extent of this movement varies greatly from region to region. It is achieved in the U.S. and nearly achieved in Western Europe and developed Asia Pacific and unequally embryonic in the rest of the world. It is also worth noting that airlines do not rely on one web-site. They segment it not only by type of business (low cost with auction, leisure, individuals, small businesses, big businesses) but also by countries. For instance, Air France has 36 different sites, of which only five allow on-line bookings. The extent to which dedicated web-site entails an effective commercial presence in the country concerned remains unknown.

86. Low cost carriers tend to use internet booking to a much wider extent than traditional carriers. For instance, where as in 1999 the proportion of on-line sales by U.S. airlines was between 3 and 5%, Southwest had a 27% rate (but only 8% in 1997 and 19% in 1998) of on-line booking which in terms of gross bookings led it to compete with US\$ 877 million with Travelocity/ Preview (US\$ 1,1 billion) and Expedia (US\$ 750 millions). In Europe, Easy Jet is in a similar situation with 50% on-line bookings in the first quarter of 2000 followed distantly by Ryan Air with 20%. At the beginning of 1999, Delta went so far as to impose a systematic surcharge of US\$ 2 for each ticket not booked on internet but had to pull back in view of the hostility of travel agents.

87. All major airlines are nowadays announcing ambitious strategies and targets for their on-line sales. For instance, BA plans to raise the share of on-line tickets in its global sales from 2% in 1999 to 50% in 2003, or from £45 million in 1999 to £700 million in 2002. Similarly Air France plans to improve this figure from 5% in 1999 (a relatively high figure by international standards that can be explained by the minitel experience) to 50% in 2005 and Iberia from 1% in 1999 to 30% in 2006. Continental shows even more ambition by planning to triple in one year its e-sales, from US\$ 300 million in 1999, to US\$ 800 to 1000 million in 2000.

88. Although these figures may look excessively optimistic, especially when one recalls that the 8 million visitors to the Swissair web-site in 1999 only translated into 10,000 bookings²³, they seem corroborated by exponential past growth. For instance the revenues of on-line booking for American Airlines jumped from US\$ 75 million in 1998 to US\$ 575 million in 1999.

89. These ambitious targets can be explained by three main reasons. First airlines realized very quickly that internet was by far the cheapest channel of distribution available. For instance a study by Merrill Lynch, "E-commerce virtually there" dated April 1999 computed that the cost of processing a

²² source: US general accounting office report GAO /RCED99-221" domestic aviation: effects of changes in how airlines tickets are sold", July 1999.

²³ In the United States though, a more mature internet markets this ratio is approximately one to three.

ticket for America West was of US\$ 6 on its own web-site, US\$ 13 with the airline own reservation services, US\$ 20 through an independent travel agent and US\$ 23 through a traditional travel agent. Similarly Southwest Airlines, the main U.S. low cost carrier, considers that booking through its web-site, costs ten time less than a booking through a travel agent, and five time less than a booking through in house reservation staff (call center or ticket office) and in any case well under US\$ 1 per ticket.

90. Secondly airlines have used the web as a tool of yield management, as a way to sell at marginal prices seats that would have otherwise remained empty. The instantaneity, the possibility of targeting certain customers ("push" technologies) and the possibility of holding auctions in addition to the very low cost, make internet a perfect instrument for optimizing the load factor of planes.

91. Thirdly, after this initial discount orientation airlines have realized that the web was also the ideal instrument to gather data on customers and then to analyze them through "web-mining" techniques in order to identify customer preferences and practice personalised marketing. This has created a complete new branch of yield management techniques known as CRM (Customer Relations Management). The mastering of these instruments is essential for airlines since they constitute a tool, alongside frequent flyer programs and lounges, to develop loyalty from high contribution passengers. That is why for instance, Delta has decided to apply those personalised marketing techniques first to the 9% of passengers that generate 35% of its revenues. From a regulatory point of view the use of those techniques may conflict in certain instances with regulations on data privacy protection but this is a general problem for e-commerce and not something specific to air transport.

92. One can distinguish three types of airline web-sites:

- (i) those which sell only the tickets of the company concerned;
- (ii) those who sell also the tickets of allied companies (e.g. KLM); and
- (iii) those who sell tickets from many airlines or even car rental hotels and tour operators (e.g. Lufthansa Infoflyway or united.com) in an attempt to capture a bigger part of the distribution market to the detriment of travel agents, other airlines and even CRS.

93. As far as this third type is concerned a typical example is the Lufthansa web-site Infoflyway which already offers 500 bookable airlines and sells five per cent of non-Lufthansa ticket a large majority of which are also probably non-Star tickets. Lufthansa has even gone further by spinning off its IT activities in a subsidiary called Lufthansa e-Commerce, applying thereby the strategy already followed for its maintenance and catering activities. This new subsidiary is now actively seeking third party customers. United.com is another airline web-site offering the whole gamut of world travel: 500 airlines, 45 car rental companies and 30,000 hotels, figures that are comparable to the offer of the main GDS providers (see Table 3).

94. There are no detailed figures allowing a breakdown between the three types of airlines' individual web-sites (mono-seller, alliance seller or universal seller) and it is also difficult to identify as yet a tendency or a move between those three types.

95. The distinction between them may seem anecdotal but it makes sense in economic terms (since commissions are exchanged in two of the cases) and even more so in regulatory terms and this in a double manner. Firstly, while it is admitted that dedicated sites (selling one airline tickets or alliance tickets) are by essence not required to be neutral, the question of the neutrality of the display and of the implementation of the codes of conduct arises for individual airlines' web-sites selling tickets from all airlines. The regulators have not yet tackled this issue.

96. Secondly, when an airline is selling its own ticket it seems to qualify in GATS terms both as a CRS provider and as selling and marketing provider since it sells directly its own tickets and thereby

falls into the definition of paragraph 6(b) of the Annex "opportunities for the air carrier concerned to sell and market its transport services including all aspects of marketing such as market research, advertising and distribution. These conditions do not include the pricing of air transport services nor the applicable conditions"²⁴.

97. When an airline is selling its partners tickets, it probably still qualifies as a CRS but the question arises if the tickets of its ally can be considered as its "transport services". A common sense answer would be to say no, but when examining the characteristics of the alliances (which will be done in the second part of the paper), one realizes that they are increasingly integrated, that they create positive gains that are more than the simple addition of the traffic of their Members, that there are complex code-share agreements, and a common promotion of a brand and of frequent flyer programs and that one can in the end measure precisely the financial benefits of the alliance. Therefore cross selling tickets under a common brand may appear as another way of selling its own services. One may argue of course that the sectors of cooperation of the alliances are excluded from the scope of the definition of selling and marketing services since they touch upon pricing and applicable conditions, but the scope of the alliances is wider than pricing and conditions (for instance common marketing of a brand) and therefore the question remains posed.

98. When an airline is selling a ticket from a non partner alliance it probably still qualifies as a CRS but it is difficult to imagine how it could fall under the actual definition of selling and marketing services.

(iv) *Alliance web-sites*

99. Alliance web-sites are relatively heterogeneous. As of 1 July 2000, only one, STAR Alliance's allows direct booking on alliance partners while three others (Qualiflyer, Skyteam and OneWorld) are just portals of entry sending the visitor through a hypertext link to the web-site of the partner which may or may not comprise booking facilities, though these facilities are tending to become increasingly common. The Wings Alliance constitutes a particular case since it has no web-sites of its own and has infact split its on-line booking facilities in two web-site one for the alliance KLM-Northwest and one for the now defunct alliance KLM-Alitalia, each one with common booking facilities. There may be other web-sites dedicated to "one-to-one" alliances but to our knowledge this has not yet been studied in detail.

100. From a regulatory point of view there is no problem of neutrality. The only legal problem arising from a GATS point of view is to know if the common booking facility of an alliance web-site can be considered to be covered not only by CRS commitments, but also by selling and marketing commitments, since strictly speaking it is not the carrier itself (here Star instead of Lufthansa or Varig) that sells the ticket. The same line of argument as above in the case of individual web-site selling tickets from their alliance partner can be developed.

(v) *Multi-airline portals*

101. Multi-airline portals could be the next major development in the area of on-line travel distribution. It is difficult, however, to formulate any forecasts in that respect since they have not come yet into operation. This is partly because of internal dissensions among carriers that are hesitant to share confidential customer, pricing and sales information into a common system and partly because of the considerable opposition they face and of the regulatory hurdles this opposition has created.

²⁴ This in itself creates a legal problem since the list of countries having commitments in CRS and in selling and marketing are not identical, certain countries having commitments in selling and marketing but none on CRS and symmetrically.

102. Multi-airline portals are designed by airlines to compete with travel agents, virtual or physical, for the market of customers whose brand loyalty is weak and who look for a wider choice than the one offered by airline or alliance web-sites. They group airlines belonging to different alliances and are up to now region based although the historically first one and most important, Orbitz also gather associated airlines from other regions than North America. Their main characteristics can be summed by the following table:

TABLE 7

Grouping	Orbitz (ex "T2")	Hotwire.com	On-line travel Portal	Asian "T2" (still unnamed)
Date of announcement	Autumn 1999	June 2000	May 2000	July 2000
Date of planned entry in operation	Initially summer 2000, postponed to end 2000			End 2000
Founding members		United , Northwest, Continental, US air, America West	BA, Air France, Lufthansa, Alitalia , KLM, Iberia ,SAS, Aer Lingus, Austrian, British Midland, Finnair	Cathay Pacific, Qantas, Singapore airlines, China airlines, Malaysia Airlines, Royal Brunei Airlines, Air New Zealand, Ansett Australia and Asiana
Associated airlines	US: American, US Airways, ATA, Airtran, Hawaian, Midwest express, Midway ,Vanguard Non-US: Air Canada, Air Jamaica, Air New Zealand, Alitalia, All Nippon Airlines, Austrian , British Midland, COPA, CSA Czech, Iberia, KLM; Korean Airlines, Mexicana, Singapore, Varig			
Operator	Worldspan		Amadeus	Undecided
legal action under way	Investigation by the US DOJ antitrust division since May 2000 and by the US DOT since June 2000			
Other characteristics		No auction, carrier hidden	Voluntary commitment of not sharing proprietary information	Travel agent associated

103. Orbitz being the oldest project is also the one that has triggered most opposition and hence will be the regulatory test case. The American Society of Travel agents (ASTA) lodged a complaint with the Antitrust division of the DOJ in May 2000 while the Association of Retail Travel Agents (ARTA) lodged a similar complaint in June with the DOT.

104. The internal rules of Orbitz stipulates that airline members will have the right to continue having their own web-site but will be obliged to put their lowest internet tariffs on Orbitz . The main worry of ASTA is the special fares posted by airlines on Orbitz only. Orbitz denies such charges by

arguing that it contractually requires the complete neutral display of fares, that it will make its living from commissions like other on-line and offline travel agent and has therefore no interest in seeking to reduce those commissions, that there will be no collusion on the prices of the tickets thanks to built in electronic firewalls that will prevent information sharing and finally that it will enjoy no exclusivity on special web fares as companies will be free to offer the same discount tickets to other travel agencies.

105. The European travel portal OTP is not yet under formal attack and to avoid it had promised that its members would not share proprietary information.

106. In the case of the still unnamed Asia-Pacific multi-airlines portal, the founding airlines, precisely again to avoid these attacks, have indicated that they would associate travel agencies to the business-to-business aspect of their project by enabling them to implement their customized private label version of the services delivered by the site. The concrete details of this association remain however to be determined. It is also worth noting that the two main Japanese airlines JAL and ANA, which have close relationships with travel agents are not among the founding members of the portal.

107. On the whole, the regulatory regime of on-line travel although probably more advanced than in many areas of e-trade, remains largely embryonic as one can see for instance from the list of nine pending dockets of the U.S. Department of Transport on petition, requests and notice of rule-making contained in the Annex of the General Accounting Office Report "Domestic aviation: effects of changes in how airline tickets are sold" (GAO /RCED99-221, July 1999).

108. However, this situation may change relatively quickly. For instance, the U.S. department of Transport has just issued on 24 July 2000 a supplement advanced notice of proposed rule-making on Computer Reservation Services regulations (Federal Register, Volume 65, Number 142, Monday, 24 July 2000, proposed rule). By this document, the DOT requires additional comments from interested parties by September 2000 (comments) and October 2000 (reply comments) on the re-examination of its CRS rules to take into account two major recent developments of the CRS industry already outlined in the present paper:

- the reduction of the ties between the CRS systems and airline owners and;
- the development of internet distribution channels.

109. With regard to the reduction of the ties between airlines and CRS providers, the DOT goes as far as questioning, at least academically speaking, the need for any remaining regulation. As far as internet is concerned, this document distinguishes two possible types of regulation: on the one hand proposals for regulating web-sites including those operated by on-line agencies and on the other hand proposals for regulating the airlines use of the internet, both with respect to airline web-sites and third party web-sites.

110. It notes also that no one has yet suggested that the DOT adopts rules governing web-sites operated by individual airlines although some contend that the DOT should bar airlines from offering fares available only through their own web-site. As an example of a possible regulation of internet sites the DOT suggests that certain problems could be alleviated by barring airlines from seeking or obtaining preferential displays or discriminatory fees.

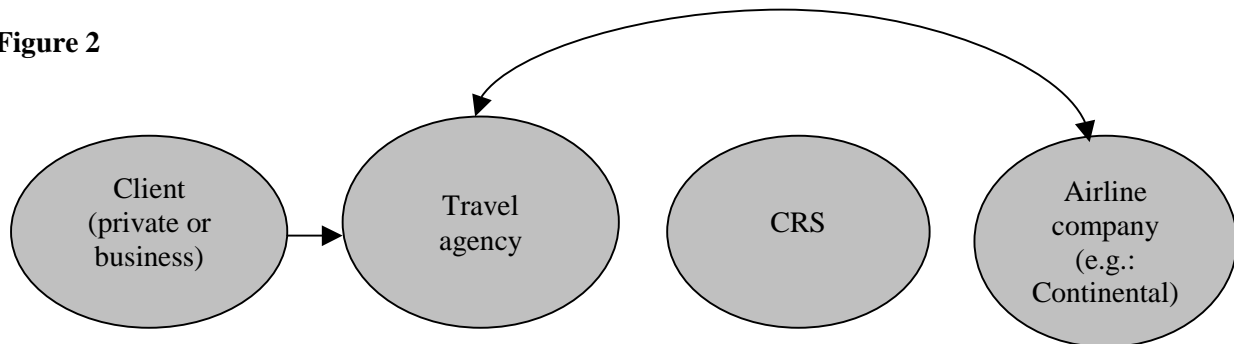
111. The DOT also requires specific comments on multi-airline portals and asks interested third parties to demonstrate why the rules should, or not, treat differently on-line travel agencies from traditional travel agencies. The DOT also asks interested parties to explain if and how the various reasons for regulating traditional CRS providers remain valid, or not, for internet bookings.

112. On the whole it seems clear that at least for one WTO Member, the various regulatory questions raised by the present paper in respect of new forms of CRS will be addressed soon. This process may however take a certain time since the first notice of proposed rule-making on the question dates back to 1997 and has not yet materialized into an effective regulation.

(vi) *Other types of providers*

113. Document S/C/W/59 distinguished another category of CRS whereby an airline was opening its inventory directly to the travel agent and bypassing thereby the CRS provider. This scheme is illustrated below.

Figure 2



114. It seems that this scheme inaugurated by Continental has had no posterity since no other mention of it appears in the specialized press over the last two years. The likely reason for that is that this scheme offers less productivity gains than internet ones, since it maintains one of the most costly actors of the distribution chain, the travel agent.

III. SELLING AND MARKETING

115. To a very large extent the economic and regulatory developments in the sector of selling and marketing have been covered above in the subsections dedicated to the evolution of the respective market share of airlines and travel agencies (paragraph 75 above), to airlines web-sites (paragraphs 85 to 98), alliances web-sites (paragraphs 99 to 100) and multi airline portals (paragraphs 101 to 106). They are dealt with in document S/C/W/59 paragraphs 31 to 36 and Annex 2, page 54 and S/C/W/129 paragraphs 19(a) and 20(b).

116. The distribution by the companies themselves of their tickets which can roughly be estimated at 15-20 % of their total sales, continues to be 95% assured by call centers and ticket offices at airports and city centers, except for certain low cost carriers, but as we have seen above this situation is bound to change as airlines plan to at least double their direct sales and to switch to on-line sales for at least thirty to forty percent of their sales in the next five years.

117. As far as the evolution of the activity is concerned one may note the development of electronic ticketing. Electronic ticketing is different from on-line sales: it is a simple printable confirmation or a reservation number that will allow check in without the cost of issuing and processing a paper ticket. There again the productivity gains are very notable since the processing cost falls approximately from US\$ 7-8 to US\$ 1-2. Not all on-line sales give rise to an e-ticket and not all e-ticket are delivered following an on-line sale, however they very often go together.

118. Introduced in 1994 by United, e-tickets have become the majority of the tickets delivered by this airline at the beginning of this year. E-ticketing has met greater success in the United States than in Europe partly because public trust in new technologies is higher in North America (the problem is

similar to the use of credit card numbers over the web) and partly because it creates a problem of proof *vis-à-vis* custom and immigration authorities which often demand proof of possession of a return ticket (80 % of trips are domestic in the U.S. but 80% are international in Europe).

119. Moreover, they were not exchangeable among airlines a problem that will soon belong the past since IATA and IBM have been mandated to work on a computer system of inter-linability with common formats and even common reading machines. Naturally because of its low costs this technique is widely used by low cost carriers.

120. As the definition of selling and marketing in the sense of the Annex includes also marketing, market research and advertising one may note the development over the period 1993-2000 of personalized marketing techniques such as customer relations management (CRM) and "web-mining" (see above) as well as the growing importance of the promotion of the common brand of alliances. All alliances are now announcing the formation of "central teams". The question of the coverage of the activities of these central teams by the definition of the Annex is now posed.

IV. FRANCHISING

Airline franchising is a commercial practice under which one airline ("the franchisee") purchases the right to assume the public face or brand of another ("the franchisor"), together with the brand's associated services, intellectual property and know-how. Elements of the brand include aircraft livery and interior, crew uniforms, and flight designator code. Services include the sales and reservations operations of the franchisor, access to its frequent flyer programme, and revenue accounting. The franchisee airline abandons its own public identity for all services operated under the franchise but continues to operate under its own AOC (aircraft operating certificate) and to maintain its operational identity and independence.

In most cases the franchisee continues to make its own decisions on routes, schedules and pricing, although there is normally an agreement not to compete head-to-head on the same routes as the franchisor. (*OWNCO Report on Airline Franchising to ECOSTRAT Chairman* page 1)

121. Although franchising is an important and growing sub-sector activity in air transport, the industry participants do not follow a common, or legally defined framework. According to professional sources²⁵, there is no published or standardised framework for franchise agreements: instead, each franchise arrangement is defined by the interested parties. In other words, it is a contract between two independent airlines that is often, although not exclusively, created between an international flag carrier (franchisor) and a smaller regional airline (franchisee).

122. Although there appears to be no globally accepted definition for a regional airline, there are four general definitions in use. The first three relate to aircraft size and the fourth to airports. First, in Europe, according to professional sources²⁶, regional carriers generally operate aircraft having between 19 and 150 seats. Second, airlines with less than 100 seats are considered 'regionals'²⁷. The third, includes aircraft with between 19 and 100 seats²⁸, and the last definition uses airport criteria. A 'regional' airline will operate either between a secondary airport and a major hub centre, or it will connect two secondary airports²⁹. It is important to note also, that these definitions apply to all

²⁵ Director of Air Transport Policy at the European Regional Airline Association) ERA.

²⁶ Director of Air Transport Policy for the European Regional Airline Association (ERA).

²⁷ *Airline Business* (May 1998).

²⁸ US Regional Airline Association (RAA)

²⁹ *Airline Business* editor, Kevin O'Toole (July 2000).

'regional airlines' whether they are wholly or partially owned airlines, independent regionals, or franchise regionals.

123. While a franchise airline operates in the same market as a regional carrier, both types are usually linked with a major airline. Most often, regional franchise carriers operate feeder routes that link smaller communities and secondary airports to the franchisor's international hub airport and do not compete directly with the franchisor. However, the regional franchise airlines may, and often do, operate across international borders (e.g. across European borders). Additionally, a regional franchise airline can be linked to the major carrier in remote locations, as the British Airways franchisee Comair does in South Africa. In both cases, the regional carrier (or franchisee) and the major airline (franchisor) have commercial agreements that usually include *inter alia*: a single brand name, aircraft livery, cabin interiors, crew uniforms, dual marketing codes, and CRS displays.

124. However, it is the commercial agreements between the franchisor airlines, the lack of equity investment by the franchisor, and the subsequent independence of the franchisee, that distinguish the latter from a regional subsidiary. They also remain different insofar as equity investments are concerned. Regional airlines are usually partially or wholly owned subsidiaries of the national flag carriers and are therefore under a relatively high level of control by the parent airline. Franchisor airlines however, rarely take any equity position in the franchisee. Instead it is the franchisee which pays the franchisor for the right to use the brand logo. This gives the franchisee a significantly higher level of independence than a regional subsidiary.

125. It is therefore necessary to highlight that although in one sense a franchise airline is virtually identical to a regional airline, it is the purpose of the actual franchise that differentiates the two types of corporations. A franchise is ultimately for the dissemination of a brand identity to a broader market and is therefore primarily a marketing tool not unlike other franchises (e.g. Body Shop, McDonalds etc). A franchise does not alter underlying traffic rights for either corporate partner. Nor does franchising arbitrarily affect or alter established route structures. Moreover, franchising does not change the number of slot allocations for either the franchisee or the franchisor and each must have their own aircraft operating certificate (AOC). In short, all the traffic right elements that exist for an independent airline remain intact during the life of the franchise. What a franchise does affect is the ability of either party to penetrate new or otherwise unused markets to sell the brand name service. This is true for both the core and periphery markets. The same argument does not hold true for wholly or partially owned regional airlines.

126. The 'regional subsidiaries' (like many franchisees) act as feeder airlines for national trunk routes or international routes. The aircraft are normally smaller in size (as mentioned above) and the flights are displayed in conjunction with the owner carrier on CRS displays. One of the main differences however, pertains to slot allocation. The airport slots that are made available to the regional carrier at hub centres are controlled by the parent airline, and flights are co-ordinated in conjunction with the parent airline in hub-and-spoke networks, whereas franchise airline control their own slot allocation and any co-ordination needs to be mutually acceptable between the independent partners.

127. The reasons for developing franchises between airlines can be seen from both the franchisor and franchisee perspectives. Franchisor airlines gain economic benefits through increased efficiency on route structures, through improved aircraft utilisation. In other words, aircraft that were previously used on thin or marginal routes can be reallocated to more profitable routes without discontinuing service. The franchisor also benefits from the continuation of feeder traffic that might otherwise be taken over by a competitor airline. The franchisee benefits economically from this arrangement through the use of a well known and established brand name, access to frequent flyer programs, international passenger and cargo feed, and global distribution systems. It must also be noted that franchise airlines' aircraft livery is not necessarily limited to the franchisor brand. In some cases the

franchise airline will maintain its own brand identity or operate aircraft with both their own livery and the franchisor's livery. In the latter cases, the aircraft will operate specific routes under one brand while maintaining their independent brand on others (e.g. Gill Airways, and Jersey European).

128. The recent study conducted by ECAC/CEAC and endorsed by DGCA/108 in December 1999 has examined the franchise airline industry throughout Europe to establish whether current regulations and/or legislation covers adequately the franchise airline sector of the industry, and if franchising affects the level of competition on any given route. The conclusions of this study indicate that "the practice of airline franchising" does not contain elements that are not already covered by existing regulations in the EU, and that there appears to be no significant alteration in competition on different routes.

129. Due to the definitional similarities between 'regional' and franchise airlines, there is no available data that addresses each type independently. Nevertheless, in order to show how the industry is structured, and provide a typology of the growth of the industry, the tables below have been compiled from various sources. The largest regional airline industry is found in the U.S. market, followed by Europe and then the rest of the world. However, within the top 100 largest regional airlines around the world there was, and still exists, a broad representation for all geographic locations. Table 8 - 11 provide annual comparisons of the regional airline industry between 1994 and 1999 (using the top 20 airlines in this category). Table 12 shows which franchise operations are in the top 100 regional airlines for 1999 and finally, Figure 3 highlights the linkages between 'regional' airlines and the global alliances.

TABLE 8
Geographic representation of all regional airlines including franchise operations

1994	Passenger (000)	Per cent of Global Market	Number of Carriers
North America	57,861	55.9	35
Europe	27,120	26.2	36
Asia-Pacific	11,461	11.1	15
Latin America –Caribbean	5,624	5.4	10
Middle East –Africa	1,353	1.3	4
Total	103,419	100.0	100

TABLE 9
Geographic representation of all regional airlines including franchise operations

1999	Passenger (000)	Per cent of Global Market	Number of Carriers
North America	85,572	49.1	32
Europe	58,669	33.7	44
Latin America	14,504	8.3	8
Asia-Pacific	11,900	6.8	8
Middle East –Africa	3,480	2	8
Total	174,125	100	100

Source: Airline Business data bank; and *Airline Business* May 2000

TABLE 10
Top 20 Regional Airlines by Passenger numbers 1994

Rank 1994	Airline	Country	Passenger Numbers 000's	1 year change %
1	AMR Eagle	U.S.	11,841	13.7
2	USAir Express	U.S.	5,471	3.4
3	Mesa Airlines Group	U.S.	5,170	16.2
4	Merpati Nusantara	Indonesia	4,153	73.4
5	Continental Express Airlines	U.S.	3,933	-5.9
6	Air Canada Connectors	Canada	3,700	42.3
7	Horison Air Industries	U.S.	3,482	26.5
8	Comair	U.S.	3,300	26.9
9	Atlantic Southeast Airlines	U.S.	3,120	17.2
10	TransAsia Airways	Taiwan	3,072	50.7
11	Air UK	UK	2,605	17.7
12	Lufthansa CityLine	Germany	2,260	11.9
13	SkyWest Airlines	U.S.	2,064	26.4
14	Binter Canaarias	Spain	2,000	3.7
15	Crossair	Switzerland	1,970	13.2
16	Business Express	U.S.	1,800	-11.2
17	Deutsche BA	Germany	1,800	63.6
18	Express Airlines I Inc	U.S.	1,800	5.9
19	ACES Colombia	Colombia	1,794	12.4
20	Trans States Airlines	U.S.	1,700	22.5

Source: *Airline Business* data bank.

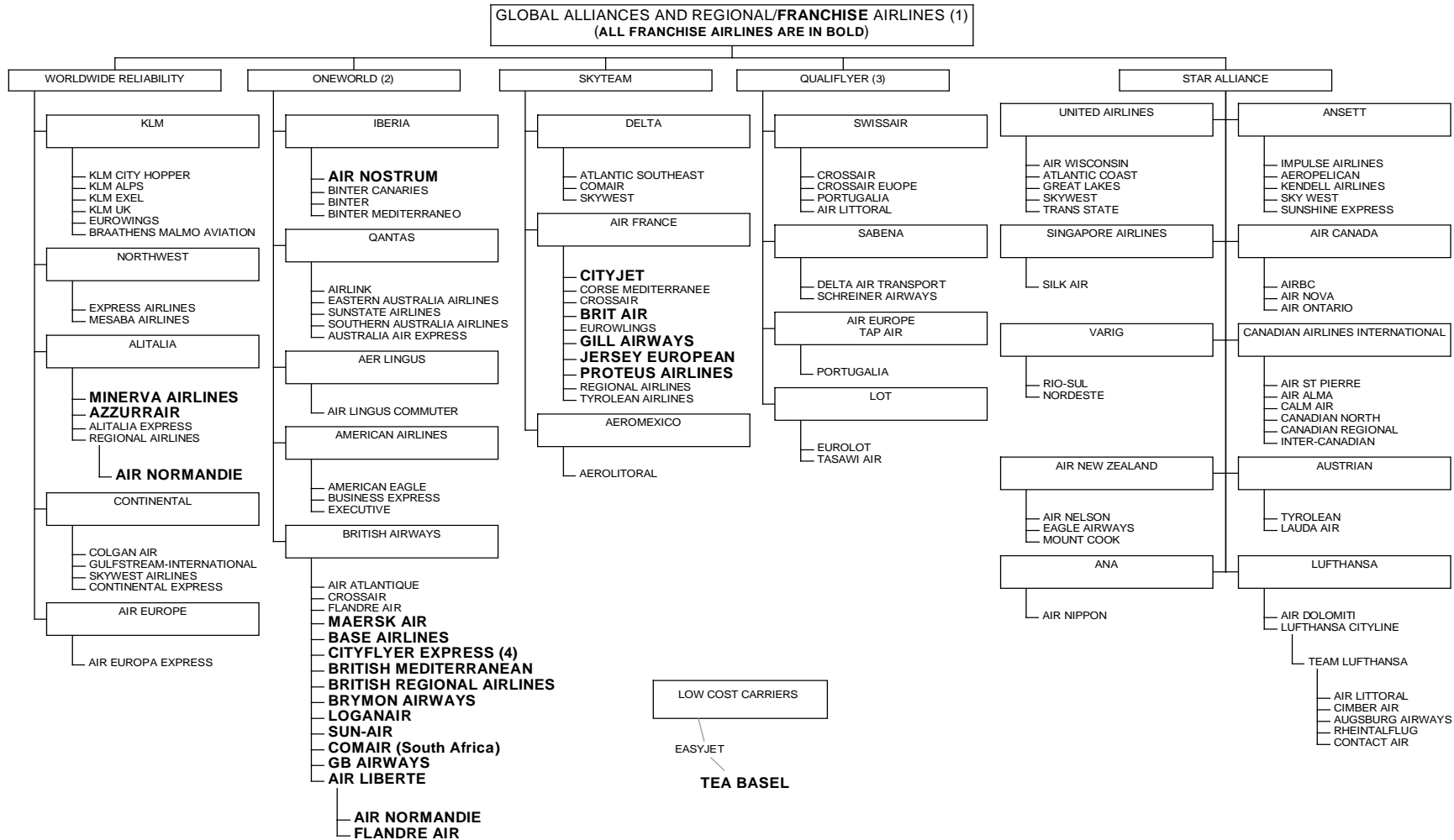
TABLE 11
Top 20 Regional Airlines by Passenger numbers 1999

Rank 1999	Rank 1998	Airline	Country	Passenger Numbers 000's	1 year change %	Passenger Traffic (RPK) millions	1 year change %
1	1	American Eagle Airlines	U.S.	11,458	0.1	4,375	9.7
2	2	Comair	U.S.	7,032	13.9	4,076	22.2
3	3	Continental Express	U.S.	6,687	18.5	3,462	37.6
4	4	Crossair	Switzerland	5,990	10.9	3,088	21.0
5	11	Mesaba Airlines	U.S.	5,452	32.4	2,338	30.7
6	6	Horizon Air	U.S.	4,984	13.5	2,219	20.7
7	13	Atlantic Southeast Airlines	U.S.	4,960	23.2	2,277	36.0
8	17	SkyWest Airlines	U.S.	4,901	64.0	1,635	36.4
9	5	Luftansa CityLine	Germany	4,900	11.4	3,043	9.8
10	14	TAM Regionais	Brazil	4,900	24.4		
11	9	UNI Airways Corp	Taiwan	4,540	7.3	1,416	18.8
12	7	Mesa Airlines	U.S.	4,530	4.7	2,317	23.4
13	8	KLM uk	UK	4,113	-4.3	2,129	1.1
14	12	Air Canada Connector	Canada	4,000	-0.9		
15	10	Canadian Regional Airlines	Canada	3,992	-4.6	1,850	-4.9
16	15	Rio-Sul Regionais	Brazil	3,570	13.8	2,155	12.5
17	19	Air Wisconsin	U.S.	3,372	18.4	1,838	30.3
18	21	Atlantic Coast Airlines	U.S.	3,234	27.7	1,664	30.4
19	16	Piedmont Airlines	U.S.	3,162	2.0		
20	20	Delta Air Transport	Belgium	3,137	22.6		

Source: *Airline Business* data bank

TABLE 12
Franchise airlines in the top 100 Regional Airline count.

Rank 1999	Airline	Country	Passenger Numbers 000's	1 year change %	Passenger Traffic (RPK) millions	1 year change %
22	Jersey European Airways	UK	2,832	33	870	5.1
26	British Regional Airlines	UK	2,300	-0.4	843	-0.5
27	Brit Air	France	2,300	52.7	1,415	133.9
34	Air Nostrum	Spain	1,848	18.5		
52	AZZURRAir	Italy	960	92		
54	Brymon Airways	UK	922	20.7	384	14.3
62	Maersk Air	UK	688	11.7	529	15.3
71	Proteus Airlines	France	500			
82	Gill Airways	UK	322	-19.5	174	-20.2



(1): Not all franchise airlines are linked directly to a global airline alliance. This chart represents only the top 100 regional airlines and 6 extra franchise airlines.

(2): OneWorld Members Cathay Pacific, Finnair, and Lan Chile have no regional affiliates

(3): Other Qualiflyer members have no regional airlines

(4): Now fully owned by British Airways

Source: Airline Business May 2000; OWNCO Report.

130. Members may wish to consider the possible relevance of existing commitments with regard to the question of airline franchising in view of three factors.

- the absence of any link between the franchising contract and the hard rights, as explained above;
- the absence of any sectoral qualification in the CPC definition of franchising;
- the role played by airline franchising for the selling and marketing of air transport services both from the franchisor and the franchisee.

131. Franchising is a special case in section 4 "Distribution" of document MTN/GNS/W/120 because it is the only item that is not linked specifically to the distribution of goods. Unlike the first three items (commission agent, wholesale, or retail) it is not subdivided by type of goods sold but referred through a correspondence with CPC 89290 to "royalties for the right to use similar exclusive rights as above, not elsewhere classified owned by economic agents". The items above themselves refer clearly to goods and services (see notably the definition of trade mark in CPC 89220).

132. In other terms, whereas the distribution of services is not covered by CPC in general, the franchising of services (for instance a dry cleaning chain or a restaurant chain such as Mac Donald's) is clearly covered by both provisional CPC and MTN.GNS/W7120. This definition focuses on the payments rather than on the contract between the franchisor and the franchisee but is clearly and uniquely linked to this type of contract (see discussion of this point in S/C/W/37 "Distribution services, background note by the Secretariat" dated 10 June 1998, paragraph 7). The following question therefore arises: does the practice of franchising in air transport fall within the definition of franchising in general?

133. Franchising in air transport is a way for the franchisee to better sell its own services to customers by attracting them through a famous brand and for the franchisor to sell its brand to customers more widely. It could therefore be deemed to fall within the definition of selling and marketing by the Annex ("opportunities for the air carrier concerned to sell and market freely its air transport services including all aspects of marketing such as market research, advertising and distribution"). There are already 36 commitments on the selling and marketing of air transport services.

134. Such a "selling and marketing" qualification could be alternative or cumulative with the preceding one (franchising). The legal problems raised by cumulative qualifications and classifications of services are not unknown to the sector of air transport services as one can see by the development above on the new on-line channels of distribution which could probably be qualified both as CRS and as selling and marketing services. In addition, the question of the overlaps between CPC (in this case franchising) and the transport Annex in particular is discussed in some detail paragraphs 37-40 of document S/C/W/59.

135. Finally, Members may also wish to envisage the possibility of considering airline franchising as a still unidentified, unclassified and uncommitted sector of services not directly related to traffic rights and therefore covered by the scope of the GATS.

V. SERVICES AUXILIARY TO ALL MODES OF TRANSPORT WHEN DELIVERED IN AN AIR TRANSPORT CONTEXT (FREIGHT FORWARDING AND WAREHOUSING)

136. Freight forwarding and warehousing were dealt with in S/C/W/59, paragraphs 62 and 63, because they are services auxiliary to all modes of transport, including air transport. On reflection, it appears that it was a mistake, to include these services in a paper devoted to air transport services. It is certainly true that freight forwarders and warehousing companies provide services to the air transport industry, as parts of the supply chain linking the manufacturer and shipper of goods with their final destination, but they are not air transport services in themselves. They are not cargo carriers and their activities are not covered by air services agreements. Each is a part of a larger transportation industry network which includes trucking, shipping and rail transport as well as air transport. Other industries which provide essential auxiliary services to air transport include insurance and tourist agencies, for example, but they certainly could not be considered part of the air transport industry on that account. Moreover, it would be systemically damaging if, by including freight forwarding and warehousing in a survey of air transport services, we were to create any doubt as to their coverage by the GATS: such doubt might arise, if any service having an interface with air transport were alleged to be an air transport service and therefore potentially covered by the exclusion in the Annex - even though it could hardly be maintained that freight forwarding and warehousing are "directly related to the exercise of traffic rights".

137. However, there are companies providing full logistical services, sometimes called Logistics Corporations, which provide freight forwarding and warehouse services as part of a total package which may include the carriage of goods by air. These situations occur frequently in what is referred to as multi-modal transport. It should be made clear that some of these activities may well qualify as air transport services, whether or not they are "directly related to the exercise of traffic rights", but that this would not remove freight forwarding and warehousing, and many other services performed by such companies, from the scope of the Agreement.

138. In the provisional CPC freight forwarding and warehousing are classified in Division 74 "Supporting and Auxiliary Transport Services", not in Division 73 "Air Transport Services". "Storage and warehousing services", sub-sections (7421), 74210 are described as "Storage services of frozen or refrigerated goods", 74220 - "Bulk storage services of liquids and gases", and 74290 - "Other storage or warehousing services". Each sub-section and the explanatory notes apply to the type of goods being stored, and the facility required to properly store the goods. For any type of goods stored, it would be feasible (if in some cases not very economical) to transport them by air. The differences between the storage facilities is directly related to the type of goods that would be stored in them. 74210 requires specialised refrigeration capabilities, 74220 requires special handling and storage for potentially "dangerous goods", and 74290 is a general goods warehouse. No distinction is made according to the mode of transport by which goods arrive at the warehouse. The contracting of such services by the shipper (manufacturer, producer etc) is commonly done through a freight forwarder.

139. "Freight transport agency services" (CPC 7480, 74800) are described as "Freight Brokerage services, freight forwarding services (primarily transport organisation or arrangement services on behalf of the shipper or consignee), ship and aircraft space brokerage services, and freight consolidation and break-bulk services." The description of services does not include the actual shipping or movement of goods by air (or any other means) for any of these service providers.

140. The logistics corporation also operates freight forwarding and warehousing services in the traditional sense, but is likely to have extensive international affiliates and is often (although not always) linked to cargo carriers by way of independent subsidiaries or long term contract agreements with cargo carriers. Conversely, cargo carriers, integrators, and postal operators may establish

independent freight forwarding subsidiaries, long term contractual agreements with independent forwarders, or make equity investments in freight forwarding companies.

141. Freight forwarders contract with air carriers for the physical carriage of goods from authorised operators (this is the same for shipping companies) and normally do not effect any carriage by air themselves. Thus the traditional forwarder is ultimately an agent for shippers and the airlines, and is therefore treated by regulators separately from air carriers. Global operators or logistics corporations go beyond pure freight forwarding and offer seamless services from point of origin to destination. Freight forwarding is often only one element in the corporate structure. They may be allied with, or form part of a group which includes, an air carrier. The U.S. provides an example of the regulatory differences between cargo operators (under bilateral jurisdiction) and those who are separate but linked to air carriers. "in order to conduct indirect air transportation activities (air cargo forwarding and other charter activities other than as actual operators of aircraft) must obtain authority from DOT (OECD - DSTI/DOT(99)1).

142. Below (Table 1) we have constructed a matrix that highlights the extent to which the traditional freight forwarders have expanded the scope of their operations. The table is not to be read in a strictly comparative sense due to the lack of base commonality in some of the figures. Where possible we have identified the specific freight forwarding numbers. However, most corporations consolidate their figures. One might also argue that corporations like Nippon Express should be classified with global integrators rather than freight forwarders, although a significant element of the global operations do involve freight forwarding directly.

TABLE 13
Global freight forwarders/Logistics Corporations -1999

	Number. of Countries	Number of Locations	Warehousing & distribution centres	Employees	Total Revenue \$US billions except where noted	Headquarters
Danzas*	135	711 (312 owned and operated)	451 (every Continent)	4,976	2.2 (1.96 freight forwarding) **	Germany
Nippon Express Worldwide (includes all corporate sectors)	33	213		+64,000	16.1 (1.78 freight forwarding)	Japan
Panalpina****	65	312		11,000	5.2 sfr billion (\$1.73 freight forwarding)	Switzerland
Schenker***	100 (freight forwarding only)	1,000 (340 freight forwarding only)		28,500 (6,600 freight forwarding only)	5.2 (1.8 freight forwarding)	Germany
MSAS (the main component of Ocean PLC)*****	112	675 (freight forwarding +460)		+15,000	1.11 (freight forwarding)	UK
Kuehne & Nagel	80	500	1.25 million square metres (5% of operations)	13,000	6.6 sfr billions (\$1.06 freight forwarding)	Switzerland
BAX	121	500		+7,600	1.8	U.S.
KWE		203	123	+5,100		Japan
Circle	100	300		4,900	814.1 millions	
Exel Walsh Western	28			35,000	2.4	Dublin Ireland

* Danzas has been involved in a number of mergers and acquisitions over the past year and a half. 1) Danzas was acquired by Deutsche Post in March 1999 becoming part the Deutsche Post World Net Group (Deutsche Post Group had already acquired interests in DHL and various parcel delivery and logistics firms in Europe). 2) In February 2000 Danzas acquired Air Express International (AEI), the largest U.S. freight forwarder.

**The freight forwarding section of the entire group is called Intercontinental and has also made a number of acquisitions since the beginning of 1999: Hammond International Ltd in New Zealand, and the French project forwarder Start SA.

*** November 2, 1999 it was announced that the Stinnes subsidiary Schenker AG, Essen/Germany, and the Japanese Seino Transportation Co. Ltd., Ogaki agreed to form a strategic alliance for integrated logistics and freight forwarding. (Joint press release)

**** In July 1999 SRAir Logistics purchased 10% of Panalpina and together the two companies co-founded SwissGlobalCargo.

***** Ocean Group plc and Exel plc (formerly NFC plc) have merged. The merger brings together Ocean, MSAS and Exel. The new company is called Exel plc.

VI. RENTAL AND LEASING SERVICES

A. DEFINITION AND ASSESSMENT

143. In addition to the information contained in S/C/W/59, paragraph 65 and in S/C/W/129, paragraphs 6-7, 15(a), 19C(b), Annex 2 on pages 12-13, and Annex 6 on pages 25-27, Members might wish to consider the following elements:

144. This activity is already the object of commitments (CPC 83104 rental and leasing of aircraft without crew: 19 commitments; CPC 734 rental and leading with crew: 4 commitments; CPC 81120 financial leasing services: 67 commitments). However, partly due to uncertainties of terminology, it could be argued that certain aspects are covered by the carve out of the Annex (see S/C/W/59, paragraph 65). That is why, as a preliminary to the description of the economic and regulatory developments in this sector, it is useful to offer some definitions, mostly drawn from the ICAO study on aircraft leasing (document EC2/82, LE 4/55-99-54, dated 14 May 1999).

145. The ICAO manual on regulations of international transport (document 9626) describes a **leased aircraft** as an aircraft used under a contractual leasing arrangement. **To charter** an aircraft means that the entire capacity is hired or purchased by one or more entities who may resell it to the public (this occurs most frequently in non-scheduled passenger operations, which is why they are popularly known as "charter flights"). A **blocked space agreement** is the contract by which an operator leases only a part of an aircraft operating in a scheduled air service on a continuing basis (for example, 15 seats on a specific flight during a season).

146. From an economic perspective the main division is between **financial, capital leases and operating leases**. The aim of financial leases is to avoid the substantial capital outlays and debts required for the purchasing of an aircraft and to reduce taxation and other costs. It has the appearance of ownership by the lessee (lessee's logo, registration in the flag state of the lessee). The lessor can be a bank, an export credit agency, a manufacturer or a long term lessor such as IFLC or GE. Operating leases are designed to meet an air carrier's need for additional aircraft, often on a seasonal or a short-term basis.

147. From a regulatory point of view one can also distinguish the **dry lease** i.e. the lease without a crew and the **wet lease** i.e. the lease with crew, and even the **damp lease** i.e. the lease with partial crew. These definitions do not, however, have a universal acceptance. The European Civil Aviation Commission (ECAC), a pan-European organization, defines dry lease as the lease of an aircraft when the aircraft is operated under the Aircraft Operating Certificate (AOC) of the lessee, whereas wet lease is defined as the lease of an aircraft operated under the AOC of the lessor. In turn, this definition partially rejoins the distinction between financial and operating leases insofar as the lessor in case of a financial lease never has an operating certificate.

148. These overlapping and divergent economic and regulatory definitions make the gathering and the reading of statistics on these activities difficult. For instance, ICAO has collected in its annual publication "The World of Civil Aviation" the following figures:

TABLE 14

	1993	1994	1995	1996	1997	1998
Number of major leasing companies	40	40	36	34	40	
Fleet owned by these companies	1,900 jets	1,820	1,740	1,760	2,140	2,200
Value of this fleet	US\$ 33 bn	US\$ 36 bn	US\$ 36 bn	US\$ 41 bn		
Part of the fleet owned by GE and IFLC	57%	61%	60%	61%	60%	54.4%
Proportion of aircraft owned or managed by operating leasing companies in the total number of commercial Jet aircraft	17%(*)	16%(*)	14.2%	13,5%	16%	
Proportion of western built fleet directly owned by airlines	no data	no data	55.7%	55.7%	54%	50%
-among which aircraft leased to other carriers	no data	no data	no data	4.6%	no data	no data
Other types of leases	no data	no data	not computable	35.4%	not computable	not computable

(*) excluding China and CIS

149. One can see from this table that there are three main types of lessors: "major leasing companies", "carriers" (inter carrier market) and "others" meaning banks, export credit agencies and manufacturers. Complete figures are lacking for those categories and have even stopped being collected for 1999. The only complete year giving an idea of the total breakdown between these three types of actors is 1996, where the major leasing companies accounted for 13.5% of the value of the world western-built fleet, the inter-carrier market for 4.6% and the other financial lessors for 35.4%, the rest of the fleet (51.1%) being owned by the airlines themselves.

150. The major leasing companies such as IFLC and GE are operating on the two markets of financial leases and operating leases but the distribution of their activities between the two respective markets remains unknown.

151. A second table compiled on the basis of the ICAO leasing study figures gives a regional breakdown and an idea of the evolution of the global leasing market between 1989 and 1998.

TABLE 15
Jet aircraft leased by airlines offering international scheduled services, 1989 and 1998

ICAO Statistical Region	Number of						Number of aircraft leased from							
	aircraft in service		airlines without leased aircraft		airlines with leased aircraft		other airlines		leasing companies		Others (Manufacturer, banks, etc...)		Total	
	1989	1998	1989	1998	1989	1998	89	98	1989	1998	1989	1998	89	98
Africa	309	359	26	14	12	35	8	24	4	17	7	39	19	80
Asia/Pacific	1,012	1,971	19	15	20	55	13	58	32	209	36	255	81	522
Europe	2,791	3,589	23	46	36	113	49	115	52	536	108	684	209	1,335
Middle East	294	324	9	5	5	9	5	6	3	18	8	13	16	37
North America	4,014	4,945	9	6	26	38	104	30	155	504	125	199	384	733
Latin America/Caribbean	495	765	14	9	26	44	15	27	48	299	58	186	121	512
TOTAL	8,915	11,953	100	95	125	294	194	260	294	1,583	342	1,376	830	3,219

Source: ICAO, jp on-line-fleet international.

152. This table shows that in 1989 leasing was already a common practice as companies with leased aircraft outnumbered companies within four out of the six regions. In 1998, this was the case for all regions and in some cases by substantial margins. As far as the respective shares of the different types of lessors are concerned, one can note an important decline of the inter-carriers markets (from 33% in 1989 to 8% in 1998), a growth of the share of leasing companies (from 35% to 49%) and a quasi-stability of the "other" lessors (1989: 41%, 1998: 43%). In terms of regional breakdown, one may note a substantial growth of the share of Europe where 41% of the leases were found in 1998 (1989: 26%), a decline of North America (23% in 1998, 46% in 1989), a growth of the Asia Pacific region (from 10% to 16%) a quasi stability of Latin America (from 15% to 16%) and an absolute stability of the Middle East and Africa (4% altogether).

153. The following table shows that developments in developing countries have followed the same pace as the global trend in respect of the number of airlines with leased aircraft, total aircraft leased and aircraft leased from leasing companies. In terms of aircraft in service the increase for developing countries was however half the global increase.

TABLE 16
Developing country airlines with leased aircraft offering international scheduled services 1989 and 1998

Period	Number of			Number of aircraft leased from			
	aircraft in service	airlines without leased aircraft	airlines with leased aircraft	other airlines	leasing companies	Others (banks, etc...)	Total
1989	1,789	62	58	32	108	68	208
1998	2,080	40	132	89	539	347	975
Change	+291	-22	+74	+57	+431	+279	+767

Source: ICAO, jp on-line-fleet international.

154. In terms of planes leased the market has grown fourfold in nine years. One may note however that the North American figures are probably underestimated because of the difficulties in identifying financial leases by "other" lessors.

155. Among the factors that have led to an increase in the use of leased aircraft in international transport, the ICAO lists the following: the high cost of new aircraft has encouraged the leasing alternative for smaller as well as newly established air carriers; established air carriers see leasing aircraft as a means of reducing costs and gaining tax benefits; in certain circumstances the sale and lease back of its own aircraft by an air carrier can reduce its debt level; air carriers can meet seasonal demand for additional capacity through leasing without incurring large capital outlays or debt from purchasing aircraft; leasing can permit air carriers, particularly smaller ones from developing countries to operate unused traffic rights; air carriers with excess or under-utilized aircraft and/or crews can employ them through leasing to other carriers and leased aircraft can be used to serve routes for which the air carrier does not own the appropriate equipment.

156. The following table gives an approximate idea of the impact of leasing on airlines' accounts:

TABLE 17

	Number of airlines concerned	Spending on flight rental equipment (US\$ million)	Spending on flight rental equipment for the 42 airlines concerned in 1989 & 1997	Total operating costs for the 42 airlines concerned in 1989 & 1997 (US\$ million)
1989	97 airlines from 47 countries	7,043	3,915	101,778
1997	106 airlines from 41 countries	10,679	9,310	159,402
changes 1989-1997		+52%	+138%	+57%

(Source: ICAO leasing study)

157. This shows that for airlines using leasing spending on leasing has grown about two and half times as fast as operating costs across the period. However, this table reflects only the impact of operating leases; the impact of financial leases appears in the long term-debt item of the balance sheet of air carriers, along with many other items and cannot be isolated as such.

158. The regulatory and economic context of financial leases and operational leases are extremely different and should be treated separately.

B. FINANCIAL LEASING

159. Financial leasing seems, from an economic and regulatory point of view, to belong more to the world of financial services than to the world of air transport.³⁰ The main actors in this market, the public export credit agencies (U.S. Exim bank, Germany's Hermes, UK's ECGD, France's Coface, etc.), the banks, the manufacturers and the major leasing companies work together on complex financial schemes frequently involving the creation of specific structures. The regulatory oversight of these activities is largely in the hands of national fiscal administrations and at multilateral level is ensured by the Large Aircraft Sector Understanding concluded under the aegis of the OECD, which limits the duration of the credit and the participation of export credit agencies. Certain WTO agreements such as the GATT, the Subsidies and Countervailing Measures Agreement and the Agreement on Trade in Civil Aircraft contain rules relevant for those activities as three recent dispute settlement cases have shown.

160. During the 1993/1999 period, the economic and regulatory developments of the sector have been closely intertwined: under the pressure of the markets, States have created or allowed new schemes that have been more or less successful and have been followed by similar schemes abroad. Key elements of those schemes are the depreciation rules, the residual value of the assets, the repartition of the risks and the bankruptcy rules.

161. One of the most popular schemes, the Japanese Leveraged Lease (JLL), ceased to exist in 1998 after a ruling from the Japanese national tax authority and was replaced in the second half of 1999 by the Japanese Operating Lease (JOL). Users of these Japanese schemes include airlines such as Iberia, SAS, Korean, Aer Lingus and Austrian. Another classical scheme is the Enhanced Equipment Trust Certificate (EETC) based on the securitization of the assets, which is frequently used in the U.S.. The value of the contracts using this structure has amounted between 1994-1999 in the U.S. to US\$16 billion. America West, Atlas Air Continental Airlines, Fedex, Northwest Airlines, US Airways and United Airlines were among the clients. This form is beginning to extend in Europe where for instance Iberia concluded a US\$ 190 million deal for six A320 at the beginning of the year 2000. Quantas and Ansett have also recently used similar schemes. Other "tax based" leases include ownership-FSC (of which British Airways and Cargolux have been clients) and "grandfathered deals" in France and Germany. Another major development is the growing involvement of aircraft manufacturers, who in order to attract orders have begun giving Asset Values Guarantees (AVG's). The net exposure of the two main aircraft manufacturers is valued at US\$ 25 billion.

162. In terms of volume the financial leasing activity is cyclical and linked largely to orders and deliveries of aircraft. In GATS terms, this is trade conducted essentially under mode 1 and mode 2 as planes are mobile assets whose lease does not demand a commercial presence.

³⁰ It is worth noting that the CPC makes distinctions that apparently reflect perfectly the economic and regulatory categories of financial leasing and operational leasing (dry and wet):

- CPC 81120 "financial leasing services" is defined as "leasing services where the term approximately covers the expected life of the asset and the lessee acquires substantially all the benefits of its use and takes all the risk associated with its ownership. Exclusion: operational leasing services are classified in Division 83 according to the goods leased";

- CPC 83104 "leasing or rental services aircraft without operator" is defined as "renting, hiring or leasing services concerning aircraft (e.g. helicopters, aeroplanes) without operator";

- CPC 73400 "rental services of aircraft with operator: rental and leasing services of freight or passenger-carrying aircraft (including helicopters) or of spacecraft of any type and for any purpose with operator. These services are generally supplied on a time basis and several different destinations are frequently involved.

163. With regard to the leasing companies strictly speaking the following table for 1999 gives the ranking of the main companies (by fleet value).

TABLE 18
TOP 40 LESSORS – BY FLEET VALUE, 1999

Rank	Leasing Company	US\$ million	Rank	Leasing Company	US\$ million
1.	ILFC	19,133	21.	Itochu AirLease	704
2.	GECAS	18,410	22.	BAe Asset Mgt – T/props	615
3.	Flightlease	3,322	23.	Triton Aviation Services	598
4.	Ansett Worldwide	3,162	24.	Sunrock Aircraft	589
5.	Babcock & Brown	2,741	25.	Bavaria Fluggesellschaft	567
6.	debis AirFinance	2,329	26.	Deutsche Structured Finance	520
7.	ORIX Aircraft Corp	1,744	27.	Aviation Capital Group	519
8.	Pegasus Capital Corp	1,730	28.	CIT Leasing	485
9.	BAe Asset Management	1,701	29.	C-S Aviation Services	402
10.	GATX Capital	1,688	30.	First Chicago Leasing	395
11.	Airbus Asset Management	1,670	31.	SAAB Aircraft Leasing	359
12.	SALE	1,344	32.	ATR Leasing	259
13.	Boullioun Aviation	1,228	33.	ING Lease	253
14.	The CIT Group	1,163	34.	Raytheon Aircraft Credit	218
15.	Saab Aircraft Leasing	1,098	35.	Potomac Capital Leasing Group	204
16.	Tombo Aviation	969	36.	Aircraft Financing and Trading	196
17.	Finova Capital	968	37.	Arkia Leasing	147
18.	UniCapital Air Group	862	38.	Dornier Aviation	126
19.	Indigo Aviation AB	764	39.	International Air Leases	118
20.	Pembroke Group	724	40.	US Airways Leasing & Sales	117

Source: *Airline Business*, February 2000.

164. These 40 lessors account for a fleet of 3,800 aircraft worth US\$ 74,5 billion, the bulk of that fleet - 2800 planes - being passenger jet airliners which represent around a quarter of the world fleet of western-built commercial jets. Two U.S. companies, General Electric Capital Aviation (GECAS), which absorbed Guinness Peat Aviation in 1993, and International Lease and Finance Company (ILFC) have consistently dominated the market over the period. Both groups have a fleet estimated at around US\$ 20 billion although GECAS owns twice as many planes. A dozen companies have portfolios valued over US\$ 1 billion and are controlled by much more geographically diversified interests including Japanese, Australian, Singaporean, Dutch, French, UK, German, Spanish and the United Arab Emirates interests to take a few examples.

C. OPERATIONAL LEASING

165. There are no specific statistics on operational leases. The only statistical element available is the following table compiled by ICAO on the use of wet-leased aircraft in international scheduled services in 1997.

TABLE 19
Use of wet-leased aircraft, international scheduled services, 1997

Wet leases	Less than 25 departures/ year		25 through 50 departures/year		More than 50 departures/year	
	Number of wet leases	Total km flown (thousands)	Number of wet leases	Total km flown (thousands)	Number of wet leases	Total km flown (thousands)
Airlines of the same State	2	14	3	297	29	33,005
Airlines of different States	15	317	7	720	60	55,751

Source: ICAO Leasing Study

166. Of some 3,000 bilateral air services agreements only 41, involving 38 states, were found by ICAO in 1997 to contain provisions on leased aircraft, three of which contained leasing clauses dealing with safety aspects. This means that in most instances leasing is regulated not at a bilateral but at a national level. However, there has recently been a renewed interest in multilateral rules on leasing, be it in a plurilateral European context (ECAC resolution No. 21-1, dated 3 July 1997 on leasing, and Joint Aviation Authorities JAR-OPS 1.165 on leasing dated 1 March 1998) or at universal level in ICAO through the amendment of Article 83 *bis* of the Chicago Convention. It is also worth noting that common rules on leasing are one of the elements of the draft Transatlantic Common Aviation Agreement (TCAA) which the European airlines and the European Commission would like to create in the future with the United States.³¹

167. The regulation of leasing is justified by two types of preoccupation: the first is safety, as leasing from abroad creates a risk of introduction in a given market of planes whose safety oversight is not up to the standard followed by the receiving state. The second preoccupation is economics, as leasing could be a way for a third party lessor from country C to bypass a cabotage monopoly or the limitations of the bilateral agreement between A and B.

168. Those regulations are relatively complex in their functioning and cover policies that range from complete protectionism to relative liberalism. For instance one may distinguish three types of clauses related to leasing in bilateral agreements:

- the first requires simple notification of the lease to the competent authorities;
- the second authorizes the lease from a third party only on the condition that this third party does not derive any economic benefit from the bilateral agreement;

³¹ See "Towards a Transatlantic Common Aviation Area", Association of European Airlines policy statement, September 1999, point 32-35 and a speech by Mrs de Palacio, European Commissioner for Transport, at the "Beyond Open Skies" conference held in Chicago on 6 December 1999 on the web-site <http://www.eurunion.org/news/speeches/991206ldp.htm>

- the third demands, in addition to the preceding conditions, "appropriate authority" (i.e the underlying traffic rights) and reciprocity from the state of the lessor.

169. At national or plurilateral levels the main regulatory developments that have occurred during the period 1993-2000 concern the European region, where two bodies with wider membership, but working in close coordination with the EU, the European Civil Aviation Commission (ECAC) and the Joint Aviation Authorities (JAA), have adopted detailed regulations on the subject, respectively ECAC recommendation on leasing of aircraft 21-1, dated 3 July 1997 and JAR-OPS 1.165-leasing, dated 1 March 1998.

170. With respect to aircraft leasing in the European Union, Council Regulation (EEC) No. 2407/92 of 23 July 1992 on the licensing of air carriers, recognizes that leased aircraft may be used to meet the requirement that an air carrier have one or more aircraft at its disposal, and allows a Member State to waive the requirement to register an aircraft used by an air carrier on its national register in the case of short-term lease agreements to meet temporary needs of the air carrier or otherwise in exceptional circumstances. The regulation requires prior approval for such agreements and prohibits a Member State from approving agreements leasing aircraft with crew unless safety standards equivalent to those for the issuance of national Air Operator Certificates are met.

171. In addition, by a European Council resolution dated 19 June 1995, the Council called on the Commission to analyse *inter alia* the current practice of Community air carriers as well as national regulations and administrative procedures concerning the use of non-community resources, and if necessary to draw up guidelines enabling the leasing provisions of regulation No. 2407/92 to be uniformly applied. This work is still underway but it can be reasonably said that work in ECAC and JAA has partially fulfilled this mandate.

172. ECAC's Recommendation on Aircraft Leasing (ECAC No. 21-1, 2-3 July 1997) calls for prior approval of all leasing arrangements, lists information to be submitted for such approval, and states that Article 83 *bis* should normally be used for dry leases. The Recommendation sets out a number of specific conditions on wet leases (such as that they be time-limited and that consumers be informed of their use prior to boarding) and conditions approval on the aeronautical authority's satisfaction that the lessor of a wet-leased aircraft meets safety standards equivalent to those which its own airlines are required to meet under their Aircraft Operating Certificate. The text of this Recommendation and a more detailed analysis of it can be found in document S/C/W/129, pages 7 and 25-27.

173. Finally, the Joint Aviation Authority Regulation No. 1.165 regarding leasing adopted on 1 March 1998 distinguishes leases to or from other JAA state and leases to or from third countries. For leases to or from another JAA state the Regulation requires prior approval of the lease, except in the case of wet lease out where the lessor remains the operator and therefore no authorization is needed. For the leases to or from a third country the approval of lease is conditioned on compliance with safety, maintenance and operational JAR regulations and standards and by the transfer of responsibility to the receiving state in the case of dry lease out. The complete text of this provision can be found in Annex 1 as an update of S/C/W/129.

174. The U.S. market is one of the major markets for leasing. For wet leasing only, for instance, it is estimated to amount to 40% of a US\$ 4 billion market according to certain commercial sources.³² Its legislation did not undergo major changes during the 1993-2000 period.

175. The wet lease out of a U.S. plane to a non-U.S. operator remains subject to approval by the Department of Transportation, which in order to disclaim jurisdiction requires the demonstration that the lessee will exercise the true operational control and safety responsibility, failing which the

³² Source: British cargo alliance.

agreement is considered to be a charter agreement (part 218 of 14 CFR). In addition, long-term leases are subject to a specific prior authorization procedure following three criteria (conformity to any bilateral agreement, existence of substantial reciprocity, absence of violation of these rules by the lessor in the past (part 207.10 of 14 CFR) Finally a specific authorization by the FAA is required to ensure for all leases that the safety operational and airworthiness requirements of the United States will be respected and in particular that each aircraft shall be maintained according to a programme approved by the FAA (FAR part 129).

176. For safety reasons the United States does not approve the wet lease of aircraft registered in another state to its national carriers.³³

177. Unfortunately there are no similar regulatory data available for other countries and especially for developing countries, even at ICAO level. Members might wish to consider the usefulness of the review of the air transport Annex of gathering such data on a country by country basis.

178. Finally at a universal level, in 1990 the ICAO Legal Committee undertook to resolve some of the ambiguities related to the safety responsibilities arising out of certain situations involving leased aircraft through an amendment to the Chicago Convention. Article 83 *bis* on the transfer of certain functions and duties. This provision sets out a means of transferring, by agreement, all or part of the duties and functions of safety supervision to the state of the operator (the lessee air carrier) under the supervision of which the aircraft will be operated. This provision entered into force on 23 June 1997 - that is to say in the middle of our period of reference 1993-2000 - through a protocol and will be binding among the members of the protocol. The text of this provision as well as a more detailed analysis can be found in document S/C/W/129, pages 2 and 12-13. These pages also contain a list of the states having ratified the protocol as of 31 March 1999. Since that date, the following countries have also ratified the protocol: Albania, Armenia, Kyrgyzstan, Mongolia, Slovenia. This brings the number of ratifying countries to 119.

VII. CATERING

179. There is no specific CPC classification for airline catering services. Sub-divisions 6421 and 6431 of the provisional CPC refer to the service of meals and beverages "in transport facilities", instancing trains and ships. They also cover airline catering. They fall under Division 64, "Hotel and Restaurant Services". As stated in S/C/W59 paragraph 67, it is questionable whether catering services can be regarded as "directly related to the exercise of traffic rights".

1. Economic Developments

180. The catering services industry is an important sector in economic terms. During 1999 the global industry produced over 670 million meals for airline around the world, employed more than 78,000 people, and generated approximately US\$ 12 billion in gross revenue. Airline catering is the primary industry, although substantial earnings are generated through retail food outlets, catering services (other than airlines), and logistics.

181. Until the early 1990s in-flight catering was usually an internal department of an airline, with most airlines providing their own catering requirements. However, independent and international airline catering corporations also existed.

³³ Quote from paragraph 4.2 page 13 of the ICAO study on aircraft leasing EC2/82, LE 4/55-99/54, dated 14 May 1999. See also OECD "principles for the liberalization of air cargo" DSTI/DOT(2000)1, dated 2-6 June 2000, point 16 to 22 and footnote 3 and Airline Business International, June 2000, page 13.

182. Since 1992 there has been both significant revenue growth and consolidation of service suppliers in the global market (see Table 20 below). In 1992, the industry was valued at approximately US\$ 9 billion, and was dominated by 10 corporations (both airline and non-airline operators). Although the number of suppliers increased by 2 in 1993, from 1994 until 2000 the absolute number of operators has decreased while the percentage of market share controlled by each has increased significantly. In 1993, 12 corporations controlled 60% of the world market, and by 1996, 5 corporations controlled 60% of the market. Based on early 2000 figures for 1999, the global market has 2 dominant corporations controlling 56% of the market in a US\$ 12 billion industry.

TABLE 20
Global Market Consolidation

Year	% of Global Market	Number of Corporations	Value of Industry US\$
1992	56	10	9
1993	60	12	
1994			
1995			
1996	60	5	
1997			
1998	60	4	
1999	56	2*	12
	74	12	

* The two largest inflight catering corporations are both independent subsidiaries of airline holding companies. LSG-Sky Chefs is part of the Lufthansa Holding AG corporate group and controls 34% of the global market. Gate Gourmet is an independent subsidiary of the Swissair Group (SAirGroup AG) and controls 22% of the global market.

183. Table 2 (below) provides an overview of the global market distribution for the largest seven catering corporations around the world.

TABLE 21
Global Industry Leaders – Employment – Geographical spread

	LSG Sky Chefs	Gate Gourmet	Alpha Catering Services	Servair	JAL Tokyo	CPCS	SATS SIA	Eurest	Other
Market Share	34%	22%	4%	4%	4%	2%	2%	2%	26%
Turnover (US\$ millions)	3,000	2,084	484	394					
Country Locations	35+	27	5						
Production Kitchens	200	132	31	22					
Airlines Clients	260	200+	100+			33			
Meals per year (millions)	390	255	21	29		15			
Employees	40,000	26,000	5,750	5,200					
Ownership	LH/ Onex	Sair Group	Alpha Airports	Air France *	Japan Airlines	Cathay Pacific		General Food Service	
Headquarters	Ger/ U.S.	CH	UK	France	Japan	Hong Kong	Sing- apore	Sweden **	
* Servair is 78% owned by Air France ** Eurest is a subsidiary of COMPASS Group PLC (UK) which operate in over 70 countries world-wide.									

2. Regulatory developments

184. In all the sources that have been located to date, there are no references or information about regulatory standards in any geographical region or country. Pending verification, in-flight catering appears to be regulated in the same manner as all food service providers.

Sources:

Inflight Asia - May 2000

Airline Business - January 2000

Les Echos - lundi 31 janvier 2000

Interavia - July/August 1999

Airline Business - April 1999

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Inflight Caterers - 1998

International Inflight Food Services Association (<http://www.ifsanet.com>)

Annual Report 1999 - SAirGroup

Facilities 2000: The Global Network of LSG Sky Chefs. - (<http://www.lsg-skychefs.com>)

Annual Report 1999 - Cathay Pacific

COMPASS GROUP PLC. - (<http://www.compass-group.com/foodservice/global.html>)

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ANNEX

Regulation JAR-OPS 1.165 on Leasing

Date: March 1, 1998

(a) *Terminology*

Terms used in this paragraph have the following meaning:

- (1) *Dry lease* - Is when the aeroplane is operated under the AOC of the lessee.
 - (2) *Wet lease* - Is when the aeroplane is operated under the AOC of the lessor.
 - (3) *JAA operator* - An operator certificated under JAR-OPS Part 1 by one of the JAA Member States.
- (b) *Leasing of aeroplanes between JAA operators*
- (1) *Wet lease-out.* A JAA operator providing an aeroplane and complete crew to another JAA operator, and retaining all the functions and responsibilities prescribed in Subpart C, shall remain the operator of the aeroplane.
 - (2) *All leases except wet lease-out*
 - (i) Except as provided by subparagraph (b)(1) above, a JAA operator utilising an aeroplane from, or providing it to, another JAA operator, must obtain prior approval for the operation from his respective Authority. Any conditions which are part of this approval must be included in the lease agreement.
 - (ii) Those elements of lease agreements which are approved by the Authority, other than lease agreements in which an aeroplane and complete crew are involved and no transfer of functions and responsibilities is intended, are all to be regarded, with respect to the leased aeroplane, as variations of the AOC under which the flights will be operated.
- (c) *Leasing of aeroplanes between a JAA operator and any entity other than a JAA operator*
- (1) *Dry lease-in*
 - (i) A JAA operator shall not dry lease-in an aeroplane from an entity other than a JAA operator, unless approved by the Authority. Any conditions which are part of this approval must be included in the lease agreement.
 - (ii) A JAA operator shall ensure that, with regard to aeroplanes that are dry leased-in, any differences from the requirements prescribed in Subparts K, L, and/or JAR-26, are notified to and are acceptable to the Authority.
 - (2) *Wet lease-in*
 - (i) A JAA operator shall not wet lease-in an aeroplane from an entity other than a JAA operator without the approval of the Authority.
 - (ii) A JAA operator shall ensure that, with regard to aeroplanes that are wet leased-in:

- (A) The safety standards of the lessor with respect to maintenance and operation are equivalent to JARs;
 - (B) The lessor is an operator holding an AOC issued by a State which is a signatory to the Chicago Convention;
 - (C) The aeroplane has a standard Certificate of Airworthiness issued in accordance with ICAO Annex 8. Standard Certificates of Airworthiness issued by a JAA Member State other than the State responsible for issuing the AOC, will be accepted without further showing when issued in accordance with JAR-21; and
 - (D) Any JAA requirement made applicable by the lessee's Authority is complied with.
- (3) *Dry lease-out*
- (i) A JAA operator may dry lease-out an aeroplane for the purpose of commercial air transportation to any operator of a State which is signatory to the Chicago Convention provided that the following conditions are met:
 - (A) The Authority has exempted the JAA operator from the relevant provisions of JAR-OPS Part 1 and, after the foreign regulatory authority has accepted responsibility in writing for surveillance of the maintenance and operation of the aeroplane(s), has removed the aeroplane from its AOC; and
 - (B) The aeroplane is maintained according to an approved maintenance programme.
 - (d) *Leasing of aeroplanes at short notice.* In circumstances where a JAA operator is faced with an immediate, urgent and unforeseen need for a replacement aeroplane, the approval required by sub-paragraph (c)(2)(i) above may be deemed to have been given, provided that:
 - (1) The lessor is an operator holding an AOC issued by a State which is a signatory to the Chicago Convention; and
 - (2) The lease-in period does not exceed 5 consecutive days; and
 - (3) The Authority is immediately notified of the use of this provision.
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