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On Integration of Environmental Protection into Air Transport Law: A German and EC Perspective

1. Introduction

Two major waves have shaped air transport law over the past 50 years: that of State organization, followed by that of market organization. With regard to the environmental problems caused by air transport, neither wave registered very much beyond the effects associated with the construction and operation of airports, i.e., land consumption and aircraft emissions, in particular noise. Until now, the law has remained virtually mute on the other problems provoked by air transport, such as energy consumption and the risks posed for both the stratospheric ozone layer and the earth's climate in general. But even the problems it *did* address – those connected with airports – remained of secondary importance, regardless of how extensively they may have been dealt with, because the successes achieved were rapidly dwarfed by the sheer growth in the volume of air transport.

This is hardly surprising, since in both waves the overriding concern was to foster growth. The legal-policy and legal-theoretical debates have mainly centered on the issue of whether the State or the market does a better job of serving the ever-increasing demand for transport services, and whether government control over or competition for airports, airlines, takeoff and landing times and prices more effectively increases supply – not whether the spiralling increase of demand and supply themselves might constitute the real problem. A third wave will unavoidably have to address this issue. If the answer proves to be yes, and if air transport reduction and (more broadly) a reduction of transport levels in general are consequently acknowledged to be vitally necessary, the debate about State or market or the right mixture of the two will have be reopened – although this time on admittedly unfamiliar terrain, because for once it will be about the proper organization of *sustainability*, not unlimited growth.

In order to be prepared for the coming third wave, we must first take a closer look at certain characteristics of the first two.[1]

2. First Phase: Public Sector

In the first phase, air transport was shaped by *public sector structures*. These were first of all characteristic of the *organizational forms* of the participating actors and resources: since air transport was regarded as part of the infrastructure supporting the rest of the economy, the construction and operation of airports as well as the major airlines themselves were all in the public sector. Although many airport and airline undertakings took the form of private companies, in most cases the majority of their shares were held in varying proportions by federal, State and local governments.

The main legal resources of air transport, the *take-off and landing times* (referred to as slots) and the *transit rights* over national territory, were regarded as public monopolies, by which the national States limited foreign competition conceding access to other States and their airlines only in exchange for the reciprocal granting of access to the foreign airspace and airports. The public character of air transport was also expressed in the power of *eminent domain* exercised for building airports, and in the limitations on construction heights around them.

Along with the public-sector organization of the field came a relatively tight *framework of governmental regulation and oversight*. In Ger-

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1. A good overview of currently applicable German air transport law can be found in U. Steiner, *Recht der Verkehrswirtschaft*, in: R. Schmidt (ed.) *Wirtschaftsverwaltungsrecht*, volume 3, 1995, p. 204 ff., and W. Schwenk, *Handbuch des Luftverkehrsrechts*, 2nd. ed. 1996.

many, this included the requirement for airfields of official authorization introduced with the Air Transport Law of 1922, to which the requirement of a public inquiry and plan approval procedure was added in 1958 as a second step for the authorization of certain larger airports. Further instruments of regulation were the license for air transport companies, approval of aircraft, pilot's and trainer's licenses, the authorization of airlines, the air tariff authorization, drafting of transport regulations, air traffic control and supervision.[2]

This introduction of public-sector and regulatory structures was accepted at the level of *international law*. The European Economic Community, which under Article 84 paragraph 2 EECT did possess rule-making powers, nevertheless stayed in the first phase almost completely out of any regulatory activity.

More activity was to be found on the international level. The *Chicago Agreement* of 1944 founded a multilateral organization, the International Civil Aviation Organization (ICAO), which devoted itself to, e.g., harmonizing personnel qualifications and the technical requirements imposed on airplanes, developing air transport rules, and resolving customs-related issues. Yet the Agreement left it to the individual States to freely determine their internal form of organizing air transport, and also recognized that the states had extensive freedom *vis-à-vis* the rest of the world to do as they saw fit with their own airspace and take-off and landing capacities.[3]

And so, numerous *bilateral agreements* were concluded in which individual States granted one another traffic rights, and a multitude of less formal understandings were reached and declarations promulgated in which the details of the scheduled service and air transport companies to be authorized were established. Under such bilateralism, the contracting partners, in their role as States, could at the same time act as representatives of the interests of their own national companies, and they readily did precisely that.

The same was true for setting *air tariffs*; here, the contracting partners reserved the power of authorization, but otherwise turned the tariff-setting over to the large cartel of the International Air Transport Association (IATA), which had been founded by the air transport companies.[4]

Traffic rights in the air space over areas not subject to national sovereignty were omitted from this system. In these areas – which make up around 70 per cent of the earth's surface – freedom of use, as understood by international law, i.e., unlimited access by the individual States, which by the same token are prohibited from excluding others, applied and still applies.

What was the status of *environmental protection* in the first phase of air transport law sketched here?

As already mentioned, it was above all the *airport* which was perceived as a problem, primarily as a source of noise, but also increasingly as a massive encroachment upon nature and landscape. The legal strategy in Germany marking this phase – corresponding to the character of the airport as infrastructure – was so to speak 'suffer and cash' ('*dulde und liquidiere*'), i.e., the law demanded the neighbours to tolerate the noise but entitled them to financial compensation.

As far as *noise* is concerned, at first certain legal obstacles had to be cleared away, since the traditional strict civil law on the respective interests of neighbours threatened to bring expansion of airports to a grinding halt. It was above all the standard of 'local custom' as a trigger for injunctive relief in neighbourly relations which got in the way. This standard was neutralized by the thesis that a major installation could impose its mark on a landscape. Peaceful neighbourhoods could thus be turned into industrial zones, the local custom changing from patterns of dog barking etc. to patterns of zones or pollution. In 1972 (and without any elaborate justification), the *Bundesgerichtshof* (BGH – German High Court) applied this notion, originally developed for

2. *See* the *Luftverkehrsgesetz* of 1 August 1922, Reichsgesetzblatt I, p. 681. For the many amendments *see* Schwenk, *op. cit.* p. 10 *seq.*

3. Treaty on international civil abiation of December 7, 1944. *See* there Article 1 (national air sovereignty), Article 6 (national power over international scheduled airline traffic) and Article 7 (national power over transport between two domestic sites [cabotage]. Free transport was agreed upon only for unscheduled air traffic, although reduced to the so-called first and second freedoms, i.e., to non-commercial landings in and transit flight through the territory (Article 5).

4. For an example of such a bilateral agreement, *see* that between the FRG and Great Britain of 22.7.1955, *Bundesgesetzblatt* 1956 II, p. 1071, there Article 2 on transport rights and Article 7 on air tariffs. On the structure of IATA *see* Schwenk, *op. cit.* p. 115 *seq.*

neighbouring industrial facilities, to airports as well.[5]

The environmental protection policy at the end of the 1960s contributed the idea of prevention rather than compensation of harm, but for the field of air transport at that time prevention did not mean, e.g., low-noise aircraft, but instead keeping the residential population away from the sources of noise by creating so-called noise protection areas.[6] Such 'separation thinking' was widely adopted in the town and country planning developed at that time.

Moreover, to the extent that noise had to be tolerated, reliance was placed entirely on the lump-sum compensation offered by the *Fluglärmgesetz* (the Flight Noise Law), under which there was only a low and one-shot expense compensation for noise protection measures in the protected zone 1 (starting at 75 dB(A)), but not even in zone 2 (from 67 dB(A) to 75 dB(A)). Although alongside this, claims based on the general neighbours' interests law could also be made, even when the high noise limits established by the Flight Noise Law had not been exceeded[7] this opportunity was not frequently taken up in practice – perhaps due in part to the cost risks and evidentiary problems. Thus, the primary source for compensations claims remained the lump-sum setting Flight Noise Law. In practice, it is true, the airport companies not infrequently provided further compensation, either voluntarily or as ordered in the plan approval decision.

As for *land consumption* with the requirements of the plan approval procedure that:

- the project must satisfy a public interest;
- alternatives are to be considered;
- an EIA must be prepared;
- the public and private interests negatively or positively affected by the project must be considered and adequately balanced; and
- encroachments upon nature and landscape must be compensated;

a number of instruments were developed which, had they been vigorously applied by the approval boards and the courts, could have sharply limited the construction of airports.

In practice, however, a public interest in the development, i.e., the existence of a need for further ground facilities, was simply assumed without critical examination, and the consideration of alternatives was very narrowly conceived; in particular, other modes of transportation, e.g., the possible replacement of individual by public transport means, were not taken into account. Large-scale projects were virtually never rejected – the only one which comes to mind is the Kaltenkirchen airport project near Hamburg, which, however, ultimately ran aground on the political decision against supersonic jets, not on planning considerations. Application of the plan-approval law led only to changes in the specific location and dimensions of several projects, in particular the airports at Frankfurt and Munich,[8] as well as in compensatory measures for encroachments upon nature and landscape.

The frequent insurgent protests of the local population gained a hearing in the public injury procedure, but were generally worn down and ultimately absorbed in subsequent frustrating court battles.[9] Most often, the actual decision proved to have already been made at the preliminary stage, that of the ministerial authorization, thus rendering the second step, i.e., the public plan approval procedure, a fake. The ministerial authorization could, however, not be appealed by third parties because they were considered to be affected only by (and therefore to have standing against) the subsequent plan approval.[10] Court review of this plan approval was, however, restricted to checking whether the individual suffering of the plaintiff had been considered.[11]

Summing up the first phase of air transport de-

5. BGHZ 59, 378 *et seq.* (military airports).
6. Thus the approach of the *Fluglärmgesetz* of 30.3.1971, Bundesgesetzblatt I, page 282, paragraph 5 (building prohibitions in the noise protection area) and paragraph 8 (compensation in the event of building prohibitions).
7. BGHZ 69, 105 *et seq.*
8. On this, *see* BVerwGE 56, 110 *et seq.* and 75, 214 *et seq.*
9. Still valuable on this function of the court procedure: N. Luhmann, *Legitimation durch Verfahren*, 1969, p. 55 *et seq.*
10. A right of appeal was conceded exclusively to the local communities, *see* BVerwGE 56, 110 *et seq*, at 136.
11. BVerwGE 48, 56 *et seq.*, at 65. Consideration of public interests, as e.g. nature preservation can only be checked in cases where land owners whose property might be taken lodge an appeal. *See* BVerwGE 75, 214 *et seq.*

velopment, we can say that the law was preoccupied with organizing the growth of air transport, and that to attain this goal it developed public-sector structures firmly set within a regulatory framework. With respect to environmental consequences, the perception of air transport law was selectively restricted to land consumption and noise. The public interest in the projects generally received priority, so that private interests and the interests of nature were relegated to compensation measures.

3. Second Phase: 'Market'

The second phase of air transport law was characterized by a turn towards market forms. The goal was still growth, but now the structure of combined public sector organization and tight governmental regulation was regarded as unsuitable for effectively satisfying the increasing demand for air transport. To put it another way, private capital had discovered that air transport did not require heavy subsidies, but could constitute a profitable market.

The impetus for this development came from the USA, with the American deregulation policy of the 1970s and 1980s finding avid supporters in Europe as well. It was the European Commission which became the main promoter of deregulation of the air transport sector here. Given the rather cozy structures of the first phase, the Commission found itself having to goad European capital on, instead of the other way around.

As so often where new political initiatives lacked clear competences, the ground was prepared by the European Court of Justice. In its '*Nouvelles Frontières*' decision of 30 April 1986,[12] the Court held that the competition rules of the European Economic Community Treaty (Article 85 ff.) also applied to air transport and were not excluded by the special competence of Article 84 paragraph 2, which authorized the development of a common air transport policy. This meant that anti-competitive agreements (e.g., on tariffs) infringed Article 85 EECT, and furthermore that State tariff approvals which reinforced such agreements violate the Member States' duty of cooperation deriving from Article 5 EECT.

Thus, the closely coordinated system of public-sector cartels within the IATA framework and supporting State regulation fell under increasing pressure, simply through extension of *EC primary law*, i.e., without a single secondary-law regulation becoming (in pure legal terms) necessary. However, the well-entrenched system was too complicated to be successfully transformed via primary law alone.[13] The excesses brought forth by the American deregulation – ruinous price wars, massive concentration – also had a sobering effect.[14]

The reorganization was therefore implemented step-by-step via EC *secondary law*. Three packages of measures dating from 1987, 1990 and 1992-1993 have established a regulatory framework which, on the one hand, dissolved the structure of public sector cartels and tight regulation, while on the other hand providing safeguards against market failure.[15]

With respect to tariff regulation, for example, this results in agreements being fundamentally disallowed;[16] the Commission may, however, grant, and has granted,[17] a group exemption for tariff 'consultations'. Moreover, tariffs may no longer require State approval, but the Member

12. Cases 209 through 213/84, ECR 1986, 1425 *seq.*; confirmed in the *Ahmed Saeed* decision of 11 April 1989, Case 66/86, ECR 1989, 803 *et seq.*

13. The ECJ had seen this and prevented radical consequences by taking certain precautionary measures. *See* P.D. Dagtoglou, 'Air Transport after the Nouvelles Frontières Judgement', in: *Liber amicorum* Pierre Pescatore, 1987, p. 115 *et seq.*

14. On these *see* PS Dempsey, 'Airline Deregulation and Laissez-Faire Mythology. Economic Theory in Turbulence', in: *Journal of Air Law and Commerce 1990/91*, page 21 ff.

15. The regulations of the 3 packages of measures have frequently been presented, *see* most recently J.M. Baumann, *Die Luftverkehrspolitik der Europäischen Union*, 1995, p. 105 *et seq.* On the assessment of the economic consequences, particularly compared with the measures and starting conditions of the US deregulation, *see* B.J. Höfer, *Strukturwandel im Europäischen Luftverkehr. Marktstrukturelle Konsequenzen der Deregulierung*, 1993, p. 691 f.

16. Regulation (EEC) No. 3975/87 of the Council concerning the details of the application of the competition rules to air transport companies, OJ 1987 L 374, page 1, extended in its range of application by Regulation (EEC) No. 2410/92 of the Council, OJ 1992, L 240, p. 18.

17. Regulation (EEC) No. 2410/92 of the Council, OJ 1993 L 144, p. 18.

States – under the supervision of the Commission – may prohibit excessively high and low prices.[18]

With respect to the allocation of *time slots*, a middle course of liberalization is being followed: while earlier, the slots were regarded as a monopoly that the government-controlled airports transferred for the long term to the equally government controlled airlines, which thus acquired a sort of property right in them, the slots have now become entitlements in the hands of, and allocated by, a neutral and independent so-called 'flight plan coordinator', who must also give newcomers a chance at access.[19] Upon closer look, nevertheless, the old slot holders continue to enjoy some priority with respect to new allocations,[20] and agreements between air transport companies concerning the allocation of slots are group-exempted,[21] so that liberalization does not really go very far here,[22] all the more so, because hard-line market concepts proposing a continuous and short-term re-auctioning of slots were firmly rejected.

With respect to the allocation of *traffic rights* in national air space, the EEC introduced complete freedom for routes within the Community for EU airlines.[23] Each company of the Community can now serve any airport within the Community, provided that it also receives the necessary slots. The Member States have retained room to manoeuvre only in the area of the concession of cabotage rights, i.e., flights from one domestic airport to another, as well as with respect to regulating their domestic air transport companies, dividing up traffic within a system of airports, imposing specific obligations for remote routes, as well as in cases of serious overburdening and environmental problems (a subject to which we will return below).[24]

This greater transport freedom replaces the system of bilateral agreements on traffic rights for the territory of the EU. The traffic rights lose their character as a monopoly which countries use to protect their own airlines and buy access to foreign markets. These rights are generally available, limited only by a regulatory framework, one which will be further relaxed in 1997 with respect to cabotage rights and the regulation of domestic airlines. Beyond this, the Commission is preparing regulations which will transfer to it exclusive authority to allocate traffic rights within the Community in relation to third countries.[25] It is presently disputed whether this would create enormous problems in terms of the allocation criteria and the necessary administrative work,[26] but also with respect to compatibility with the Chicago Agreement.[27]

Further steps in the direction of the market can be seen in a tighter control by the European Commission of State aid for the air transport com-

18. Regulation No. 2409/92 of the Council concerning flight prices and air freight tariffs, OJ 1992, L 240, p. 15, Article 6. Not implemented was the frequently propagated and even more liberal concept of double disapproval (constructive authorization, if not rejected by the departure and arrival States), *see* J.M. Baumann, p. 107.

19. Regulation (EEC) No. 95/93 of the Council concerning common rules for the allocation of time slots at airports in the Community, OJ 1993 L 14, p. 1, Article 4 and 8; Regulation No. 1617/93 Article 5(1)(d). Already in the 1980's there was a debate in the FRG about how to regulate the allocation of slots. The requirement of the BVerwGE 82, 246 ff., 255 f., that a statutory basis be created for this purpose, was met by the issuance of §§ 27a and 31a, 31d LuftVG.

20. Regulation No. 95/93 Article 8(1)(a).

21. Regulation No. 1617/93 Article 1.

22. Cf. G. Kandulski (Lufthansa), *Slot Allocation*, in: K.H. Böckstiegel (Ed.) 'The New Legal Framework for Aviation in the European Community', 1993, p. 63 *et seq.* ('reasonable compromise').

23. Regulation (EEC) No. 2408/92 of the Council, OJ 1992 L 240, p. 8.

24. Regulation No. 2408/92 Article 3(2) and (3), 4, 8, 9. On the Commission's decision-making practice with respect to reviewing exceptions, *see* J. Dutheil de la Rochère, *L'accès des transporteurs aériens au marché communautaire. Le règlement 2408/92 et son interprétation*, in: *Revue Française de Droit Aérien et Spatial*, 1994, p. 389 *et seq.*

25. Such treatymaking competence would follow the *AETR* decision, *cf.* Advisory Opinion 1/94 of the ECJ on the agreement for establishing the World Trade Organization, VII A. This means that a system of joint allocation would first have to be provided through an internal Community regulation, which then would have to be safeguarded through treaties with the rest of the world.

26. U. Meier, 'Die Gestaltung der Luftverkehrsbeziehungen der Mitgliedstaaten der EG mit Drittstaaten – eine gemeinschaftliche Aufgabe?' *Zeitschrift für Luft- und Weltraumrecht 1993*, p. 3 *et seq.*, at 10.

27. A. Loewenstein, *European Air Law. Towards a new system of International Transport Regulation, 1991*. One possibility would be a violation of Article 7 Sentence 2 of the Agreement, under which no State may grant another an exclusive transport right. But this is precisely what would happen with respect to the Commission (*op. cit.* p. 119 f.).

panies,[28] in the control of mergers of such companies,[29] in the development of freedom of establishment for operating airlines outside the EU,[30] in the privatization of flight plan coordination and air traffic control, as well as in the gradual reduction of State ownership in airport and air transport companies.[31]

Now, under this second, market phase, if we ask how *environmental protection* has been treated in the legal system, we again find that it is the airports – with their consequences for noise pollution on the one hand, and land consumption on the other – which stand in the foreground. Also of concern is air pollution, waste disposal, soil and ground water pollution through pesticides, defrosting agents and various leaks, all problems which are, however, also connected with the airport.

A striking characteristic of the corresponding measures is the weight placed on *technological solutions*, particularly with respect to noise reduction. While it is true that the earlier approach of zoning airports and residential areas continues, the emphasis is focused on developing and introducting quieter airplanes. The ICAO has taken the lead in issuing legal requirements in this area. On noise emissions, comprehensive directives with technical standards – Annex 16 to the Chicago Convention[32] – were already adopted in the early 1980s, and since then those directives have driven technical development forward. Today, the noise of the latest aircraft lies significantly below the noise emission limits established in Annex 16.[33]

As a result, high noise-pollution areas around the airports in the industrialized countries have been substantially reduced. On the other hand, the technical possibilities have now most likely been largely exhausted, because any further noise reduction would require additional airplane weight, meaning greater fuel consumption and lower transport efficiency.[34] Moreover, in the core areas progress at the level of individual airplanes is being outstripped by the sheer increase in the number of flights and the introduction of longer aircraft.[35]

Some minor successes were won by airport neighbours with respect to flight suppression during night time[36] and the management of low-height military flights.[37]

With respect to *land consumption*, in the second phase there was no change in the material requirements of the plan approval; however, since the political majorities increasingly perceived the procedural provisions more as a drag on investments than as an opportunity for interested and affected parties to be heard, in 1993 the institution of a simplified plan approval was introduced which, under certain conditions (e.g., if objections are not be expected) provides for neither an Environmental Impact Assessment nor public participation. Moreover, by setting tighter deadlines, the

28. *Cf.* the guidelines of the Commission for applying the regulations on State aids to civil aviation, November 1994.

29. *See* on this the report of J. Dutheil de la Rochère, 'Le contrôle communautaire des restructurations d'entreprises comme instrument d'une politique de l'aviation civile', in: *Revue Française de Droit Aérien et Spatial 1993*, page 389 ff. For a case example, *see* the European Court of First Instance, decision of 19 May 1994, Case T-2/93, ECR 1994, p. 534.

30. *Cf.* Regulation No. 2407/92 of the Council, OJ 1992, L 240 p. 1, Article 4(2), under which the nationality clause for airlines is defined in such a way that nationals of other Member States may also participate. *Cf.* on this J. Balfour, 'Licensing', in: K.H. Böckstiegel, *op.cit.* p. 42.

31. Such tendencies are not prescribed by EC law, but they can be observed to varying degrees in the Member States. *See* on flight plan coordination and air traffic control §§ 31a-d Luftverkehrsgesetz, and on the privatization of airports G. Reimer, 'Flughafenkooperationen im Windschatten des Wettbewerbsrechts der EG?' *Zeitschrift für Luft- und Weltraumrecht 1989*, p. 345 *et seq.*, at 349.

32. Excerpts of which are reprinted in H. Hochgürtel, *Das Recht des Umweltschutzes in der Zivilluftfahrt*, 1984, p. 153 *et seq.* On the elaboration and implementation of Annex 16 *see also* R.I.R. Abeyratne, 'Aircraft Engine Emissions and Noise', in: *Environmental Policy and Law 1994*, 238, at 244. On the role of ECAC in the implementation, especially as to the phasing-out of the older aircraft (so-called Chapter 2-aircraft) *see* Environmental Policy Statement of the ECAC Preparatory Committee of the 1996 Regional Conference on Transport and the Environment, September 1995. The implementation on the EU-level was promoted by Council Directives 89/629 and 92/14.

33. Lufthansa 1994 Umweltbericht, p. 19.

34. ICAO, Interim Report of the Committee on Aviation Environmental Protection (CAEP) of 16 February 1995, C-WP/10156, sub 2.2.

35. M.J.T. Smith, 'Evolving Noise Issue Could Persist into the Next Century?', in: *ICAO Journal Vol. 47 No. 8*, p. 11 ff.; Abeyratne, *op. cit.* p. 245.

36. Schwenk, *op. cit.* p. 138 *et seq.*

37. R. Wolfrum, 'Tiefflüge vor den Verwaltungsgerichten', *Neue Zeitschrift für Verwaltungsrecht 1990*, 237 *et seq.*

plan establishment procedure was accelerated and the legal protections against plan approval decisions were trimmed back in several ways.[38]

The bottom line is that the acceleration concept seems to be taking hold in Germany's new federal Länder. Whether this has improved the *quality* of the planning is, however, doubted, for participation procedures generally have the effect of increasing quality.

Summing up the second phase, we find that air transport law is still – and perhaps even more energetically than before – aimed at air transport growth, and to achieve this it has developed (particularly via Community law regulations) structures of market organization of the services within a framework of stripped-down national and Community economic control. With respect to environmental consequences, perception remains restricted to airport-related problems, although instead of construction zoning, greater emphasis has been placed on technical improvements of aircraft and installations. In keeping with the deregulation wave, public participation and the legal protection of third parties in connection with airport planning were reduced.

3. A Third Phase

Naturally, we can only speculate about what the future will bring. Two different scenarios are imaginable, one which seems more likely but which, in my opinion, is ecologically more problematic, and another which, because it would entail significant economic problems, is less likely to be implemented even though it would be more environmentally friendly.

In both cases, one can say with some certainty that the main problem to be resolved will be the increase in air transport *per se*. In 1988, international air transport amounted (for passenger traffic) to 1.87 billion passenger kilometers, constituting 45 per cent of overall international passenger transport. The ICAO anticipates annual increases of 5-6 per cent.[39] The growth rates for 1993 (5.9 per cent), 1994 (6.7 per cent) and 1995 (7.3 per cent)[40] show that this is underestimated, and (even more alarmingly) that the rates themselves have constantly increased.

3.1. Scenario 1

In the first scenario, this situation is primarily perceived as a cause of increasing *capacity bottlenecks*, firstly with respect to airport capacity (slots, check-in) in the most densely-populated areas, and secondly with respect to the available air corridors, particularly on the routes between the USA and Europe.[41] The consequences are obvious: better exploitation of the existing capacities through flight-plan coordination, mobilization of all unused slot rights and shifting traffic to less active airports, creation of new capacites by merging national airlines at the European level, building airports and opening up new air corridors.

To a limited extent, however, within shorter ranges of up to around 300 miles, attempts will also be made to shift passenger loads to other modes of transport, e.g., by means of regulating tariffs or disincentives like charges schemes.

The EU in particular will concern itself with these strategies. The direction is being set right now. A 'committee of wise men' was instituted which, reflecting the perplexing one-sidedness of interests represented in it, already produced proposals for new infrastructure and growth.[42] Guidelines for the European transport networks are being drafted, priority airport projects identified, air traffic management systems developed and the subsidies for project studies (and in some cases even the projects themselves) are being arranged.[43] With such a fundamentally capacity-ex-

38. *See* the changes in §§ 8-10. Luftverkehrsgesetz on the basis of the Planungsvereinfachungsgesetz (Planning Simplification Act) of 17 December 1993, Bundesgesetzblatt I, p. 2123.

39. U. Schumann, 'On the Effect of Emission from Aircraft Engines on the State of the Atmosphere', Institut für Physik der Atmosphäre, *Deutsche Forschungsanstalt für Luft- und Raumfahrt, Report No. 1, 1993*, p. 5.

40. *See* the ECAC statement, cited *supra* fn. 32.

41. For more details on this, *see* P.J. Krämer, *Kapazitätsengpässe im Luftraum, 1994*, p. 5 *et seq.*

42. Europe Documents No. 1878 of 7 April 1994.

43. *See* the modified proposal of the Commission of 19 June 1995 for a Decision of the European Parliament and the Council based on Article 129d paragraph 1 ECT concerning Community guidelines for the development of a trans-European transport network, Com(95) 298 final. On the subsidization procedure, *see* the modified proposal of the Commission of 16 March 1995 for a Regulation of the Council based on Article 129c paragraph 1, ECT concerning general rules for the grant procedure governing Community subsidies for trans-European networks, Com(95) 32 final.

pansion-oriented approach, environmental protection can play only a secondary role. Thus the specifications of the EC for projects of common interest mention only 'improvement of environmental compatibility with respect to noise and treatment of airport waste waters' as well as 'improvement or extension of connections to other transport networks, in particular the railway network,[44] while the selection criteria for subsidies still say that 'less environmentally harmful infrastructure projects ... shall receive priority'.[45]

To the extent that it concerns the allocation of traffic rights, it is true that the Member States may, under Council Regulation 2409/92, take aspects of environmental endangerment into consideration;[46] however, this clause only applies for extreme transport intensities with all their exhaust and noise consequences.

In the first scenario, the issue of the impact on the *ozone layer* and the *climate* will presumably be treated rather defensively. There will be demands that ironclad scientific results be established before incisive measures are taken. Yet even comprehensive research programs like those now planned or already being conducted[47] will not bring certainty and will be followed by further projects.

Nevertheless, certain data, which appear fairly undramatic upon adequate statistical presentation, may come to guide practice. A study of the *Deutsche Forschungsanstalt für Luft- und Raumfahrt* (DLR – the German Research Institute for Air and Space Transport) may serve as an example.[48] The study found that, despite an overall air transport growth of 5-6 per cent, fuel consumption will grow by only 3-4 per cent annually. Given the high level of background pollution in the upper atmosphere, the CO_2 emitted may be safely ignored. By contrast, in the area of the main air corridors the NO_X emissions lead to an increase of the NO_X in the troposphere of 30-100 per cent. That leads to an increase (*sic*!) of the ozone by 4-12 per cent. In the upper stratosphere, by contrast, ozone is decomposed. The study contains a reference to the possibility that the additional production of troposphere ozone might offset the decrease of stratospheric ozone with respect to the absorption of UV radiation.[49] On the other hand, the ozone and the water vapor, plus the vapor trails and cirrus clouds which these produce in the cold layers, all generate a warming effect, which, however, is said to total only betwen 0.01 and 0.1 Kelvin.

To the extent that consequences for action are cautiously drawn from these (ultimately rather comforting) data, the *improvement of technology* – in particular the development of jet engines which consume less fuel – will stand in the foreground, which could also result in a tightening of the exhaust emission limits for aicraft.

Some may be driven to believe that the management of the atmosphere will become possible. Air transport with its ozone production troposphere might then even be counted as a positive item.

Besides this, in scenario 1 a critical public will make itself heard. Means of calming it down will be looked for, among which the further *reduction of public participation* in plan approval procedures will rank high (for public participation in fact appears to further critique more than creating acceptance).

A measure close to the market would take recourse to a product and services design which, at the same time, thematizes and dethematizes environmental effects, like, for instance, the so-called environmental journeys (*Umweltreisen*) offered by the Lufthansa, where a visit in the 'rain forest academy' in Brasil, a hiking tour through the South African bush and a sailing trip around the Canary Islands are offered, each target, for sure, to be reached by jet.

3.2. Scenario 2

(a) Perception of the given situation

In the second scenario, the question of the impact on the atmosphere will presumably be discussed more precautiously. This will lead to a different type of statistical presentation as well. Let us take a study of the Wuppertal Climate Institute as an example.[50] Air transport's share of 6 per cent of

44. Annex 6 of the proposal of 19 June 1995.
45. Article 7 of the proposal of 16 March 1995.
46. *See* footnote 23 *above*.
47. *See* the overview of D. Wurzel, 'Schadstoffe in der Luftfahrt, Wirkung und Prävention. Ein Verbundprogramm von Forschung und Industrie', *DLR December 1994*.
48. Schumann, *op. cit.*
49. The figures are taken from the cited expert opinion by Schumann, who is accepted as an authority in the field, *See op. cit.* p. 16, 31, 33, 39.
50. Wuppertal Institut für Klima, Umwelt und Energie (author K.O. Schallaböck), 'Luftverkehr und Klima – Ein Problemfall –', February 1995.

total domestic fuel consumption, as the DLR determines it, or the share of 7.4 per cent of fuel consumption of total transport, as assumed by the Wuppertal study, is placed in the context of the differing shares of industrialized and developing countries. This results in a perspective in the issue which focuses on the site of the *cause* of the trip, and attributes the return trip to this place as well. In this way, e.g., for Germany, the share of the final energy consumption through German-caused air transport in the consumption of the total domestically originating transport jumps to 13.8 per cent. When considering the exhaust gas impact of this value for the greenhouse effect, account is taken of the fact that the exhaust gases are emitted at a great height, where they persist longer than they would close to the earth's surface, and that the warming effects are in part stronger, for example due to the formation of vapor trails. As a rough estimate, a factor of 2 is used for this. In this way, air transport's share of total transport-related climatic pollution for 1987 is calculated at 24.3 per cent. If one further takes into consideration the fact that, with respect to the reduction goal for climate-effecting pollutants, emissions should actually have already decreased by now, while in fact they have increased, air transport's share of the politically conceded transport-related climate pollution lies considerably above 24.3 per cent and will continue to grow until the year 2005.

In light of such figures, in the second scenario one will reckon with the fact that technical improvements of the airplanes are not enough, and alternative ways must be sought which actually reduce the overall *quantity* of air transport.

The same policy direction results from a consideration of capacity bottlenecks. In this view, the rise in demand for air transport services is taken not as an imperative to increase the supply of flight routes, air corridors and airport capacity, but rather as a reflection of the fact that increasing supply only generates new demand, and that the solution must therefore lie in reducing both demand *and* supply.

(b) Measures

Neither the public sector model nor the market model was designed for quantity reduction, and neither of the two variants would *per se* appear to be better suited for the task. Therefore, an appropriate mixture of the two will be sought in the second scenario.

In light of the widespread mistrust which concepts of State rationing arouse, presumably it is primarily *information* and *incentive* systems which will be considered as measures.

(aa) Information systems

Avoiding air transport wherever possible presupposes that those purchasing transport services or transport intensive products are informed about alternatives.

With respect to air travel, advisory structures will be established. In particular, travel agencies will possibly be qualified to offer better advice, so that if (for example) the remuneration schemes were modified one could ensure that they would place more emphasis on the ecological consequences of transport alternatives when advising about travel goals and means of transportation.

As for products that have been transported over long distances, labelling concepts will be considered.

A stock exchange for transport services might be introduced where transport capacities and even product flows may be optimized.

Moreover, a legal duty to perform a type of '*transport consequences assessment*' might be established. This is an obligation on all public bodies (and later perhaps on private actors), as part of their decision-making process, to examine and consider the consequences on the generation of transport flows. A transport-consequences analysis of this kind could influence such widely varying decisions as selecting a conference site, setting the amounts per kilometer for business travel tax deductions, choosing an agency headquarters, or promoting telework and 'just-in-time' production. In principle, however, this analysis could be performed not only for air transport, but all forms of transport generally. Air transport may nevertheless be given special attention.[51]

(bb) Incentive systems

As for incentive systems, an attempt will be made to make flying more expensive compared to other forms of transportation.

(aaa) Kerosene tax

Imposing a kerosene tax of similar dimension to the petroleum taxes for road transport will meet resistance, first because the costs are different (the

51. This kind of 'need management' is also recommended in a recent EC Commission paper, *see* Com(95) 624, p. 43.

airways have no construction costs, airport construction is partly financed through take-off and landing fees), and second because airplanes could be refueled more easily than road vehicles in cheaper foreign countries. The kerosene tax would therefore only have a real impact if it was introduced internationally.[52]

(bbb) CO_2 Charge

A CO_2 charge would be ill-suited as a disincentive to air transport, since the main climatic effects of air transport derive from NO_x and water vapor.

(ccc) Airplane charge

One might consider a charge on the routes flown worldwide by domestic airplanes. However, since this would impose a competitive disadvantage on the domestic airlines, a European-wide regulation would be searched. But then, of course, European companies would still be disadvantaged *vis-à-vis* the rest of the world. One solution could be to incorporate this tax into the bilateral agreements with third states (which then would indeed be better concluded by the EC itself, rather than by the individual Member States) and to concede traffic rights inside Community airspace to the major foreign competitors only if they imposed similar charges themselves.

If things got to that point, however, the step to a *multilateral agreement on air transport charges* would not be very great. One might object that an international kerosene tax would then be preferable. Yet in this case, individual states which did not participate could more easily get around the concept. For example, tax paradises and cheap tanking paradises could develop. In contrast to this, shortfalls in the airplane charge which would arise through non-participation of smaller States and their airlines would be less detrimental to the guidance goal.

It is an open question whether an agreement on air transport charges could be put together more easily within the framework of the *World Trade Organization* (WTO) or under the *ICAO framework*. The ICAO would probably be more restrained, because it represents only *one* transportation branch and one would effectively be asking it to abandon its original *raison d'être* of organizing growth. By contrast, the WTO and, in particular, the General Agreement on Trade in Services (GATS) (which until now has excepted air transport) would be more flexible, since the losses of one branch (air transport) would simply rebound to the benefit of the other modes of transport represented in the same organization. Also, despite all its growth euphoria and rhetoric, the WTO has in the meantime become quite aware of the necessity of environmental protection.[53]

However, if one also considers standard-setting *below* the level of Treaty modification, the ICAO system proves more flexible: directives could be adopted which possess some validity (which need not be discussed here in detail)[54] for all Member States. The directives are not adopted (as is otherwise the case) by the conference of the Member States, but rather by an elected council, and indeed by majority vote of its members.[55] The only question is whether the competences within which directives may be issued extend to incisive measures of air transport avoidance. For this to be the case, they would have to be interpreted as matters of the 'efficiency of air navigation', one of the competence areas of the agreement,[56] which is a bit laboured but not inconceivable, An imaginable result would be an ICAO directive which – perhaps with binding targets and optional means – designed an air transport charge system.

Besides ICAO and WTO, a convention in the *UNEP framework* may be considered. This would disentangle the transport problem from the preponderant economic perspective characteristic

52. A Kerosene tax was recently proposed by the Royal Commission on Environmental Pollution, *See* 8th Report: Transport and the Environment, October 1994, HMSO Cm. 2674, No. 7.75 where mention is made that Sweden has already introduced such tax. A similar proposal is contained in the *Umweltgutachten* 1994 of the German *Rat von Sachverständigen für Umweltfragen*, sub No. 826, as well as in the green paper on 'Fair and Efficient Pricing of Transport', Com(95) 691.

53. In the WTO framework, however, from the inclusion of air transport services there would result additional far-reaching structural changes, in particular the application of the most favoured nation clause, which would end the bilateralism of the ICAO system. On this, *see* R. Ebdon, 'A Consideration of GATS and of its Compatibility with the Existing Regime for Air Transport', in: *Air and Space Law 1995*, p. 71 *et seq.*, at 72-74.

54. *Cf.* Article 38 of the Chicago Agreement.

55. Article 50, 52, 54(1) of the Agreement.

56. *Cf.* Article 37 paragraph 2, at the end.

of both ICAO and WTO.[57] Ministers for environmental protection would then be responsible rather than the ministers for transport and/or the economy. The Rio Climate Convention may serve as an umbrella.

In view of the effort which European and international solutions require, it must not be forgotten that there is another path to internationalization alongside the one through the international institutions, i.e., the *pioneering by individual States*. This alternative path would entail national imitation of models which other States have adopted. True, the State which boldly takes the lead runs the rather dispiriting risk that other States simply will not follow. The pioneering achievement, however, might also be associated with other advantages for that State's economic development, e.g., that the economy and the State apparatus will adapt earlier to air transport alternatives. This could also be the case if a State were to introduce an airplane tax on its own.

(ddd) Route charge

A somewhat different approach from the airplane charge would be a charge placed on the routes flown in domestic space. For international air transport, it would represent an incentive to slow the use of German airports and flights through the airspace over German territory. From a domestic perspective, this would be ecologically welcome, and in economic terms it would be desirable at least for the overburdened airports, but it would be more likely to shift air transport abroad rather than reduce it. Therefore, a charge only on domestic flights would have a better chance of implementation. Since an equal burden would be imposed on *all* airlines, there would be no violation of the discrimination ban contained in Article 76 ECT.[58]

Doubts might arise with regard to *compatibility with* Article 15 paragraph 3 of the *Chicago Agreement*, according to which 'the Treaty States (may impose) no fees, taxes or other charges for their sovereign territory solely for the right of transit, entry or exit of an aircraft of a Treaty State or of the persons or goods on board'? However, such doubts vanish upon closer examination. Firstly, the definition, by referring to 'aircraft of a Treaty state', is apparently only aimed at charges which are imposed on foreign but not domestic aircraft. Furthermore, the passage 'solely for the right of transit ...' refers to the fact that it involves charges which are imposed only as compensation for granting the traffic right.

An environmental charge differs from this in two ways. Firstly, its structure is different: it is not part of an exchange relationship (money for transport right), but is intended to influence behaviour. Secondly, its substantive goal is different. It is aimed at promoting environmental protection, not generating revenues. Thus it is imposed not 'solely' for the right of transit, etc., but only for the harm done to the environment. The link with the granting of transport rights is thus not essential, but of a merely legal technical character.

Naturally, the route charge would also be more effective if it were introduced at the EC level. The competence of the EC could be derived from Article 84 paragraph 2 ECT in connection with the environmental integration clause of Article 130r paragraph 2 Sentence 3 ECT, not from Article 130s ECT.[59] Beyond this competence definition, the integration clause raises a substantial duty to take atmospheric pollution into consideration when working out the common transport policy and to undertake a thorough search for ways to reduce it, i.e., means of transport avoidance must also be considered.[60]

One unsatisfactory aspect of the European route charge, however, is that the routes over areas not subject to national sovereignty would not be included. Here only a world-wide multilateral approach could go farther.

57. On 'economic' and 'ecological' agreements aiming at environmental protection *see* R. Knieper, G. Winter, 'Free trade and environmental protection', in: *Verfassung und Recht in Übersee*, 1993, p. 283 *et seq.*

58. The road use for heavy trucks declared incompatible by the ECJ is distinguishable since it was combined with tax relief for German vehicles. *See* ECJ of 19 May 1992, Case C-195/90, not yet reprinted in ECR.

59. On the competence-regulating function of the cross-section clause, *see* (among others) ECJ of 29 March 1990, Case C-62/88 ECR 1990 I 1527; on this C.O. Lenz, 'Die Rechtsprechung des EuGH auf dem Gebiet des Umweltschutzes', in: H.-W. Rengeling (Ed.), *Umweltschutz und andere Politiken der Europäischen Gemeinschaft 1993*, p. 15 *et seq.*, at 21.

60. On the substantive significance of the integration clause *see* K. Hailbronner, 'EG-Verkehrspolitik und Umweltschutz', in: H.-W. Rengeling, *op.cit.*, p. 149 *et seq.*, at 159, and L. Krämer, 'Integrierung umweltpolitischer Erfordernisse in die gemeinschaftliche Wettbewerbspolitik', in: H.-W. Rengeling, *op. cit.*, p. 47 *et seq.*, at 51.