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Achieving the Single European Sky **Goals and Challenges**

DANIEL CALLEJA CRESPO AND PABLO MENDES DE LEON (EDS)



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Achieving the Single European Sky

Goals and Challenges

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and

Pablo Mendes de Leon



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Achieving the Single European Sky

Aviation Law and Policy Series

Volume 8

Series Editor

Pablo Mendes de Leon

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The global liberalization regime of the past two decades has fundamentally affected the operation of international air transport services.

This process calls for reflection and analysis across a wide range of legal and policy areas, including but not limited to public international air law and policy, with special reference to safety, security and environmental concerns, liability, competition law regimes, company law, and the complex relationship between European Community law and public international law.

The *Aviation Law and Policy Series* critically examines developments around liberalization of air services internationally resulting in the establishment of Open Aviation Areas; institutional questions such as the external powers of the European Community and the relationship between international organizations such as ICAO and EUROCONTROL; the coming into force of unlimited liability regimes and related case law; the granting of antitrust immunity to international airline alliances; and cooperation between competition authorities. Attention will also be paid to topical safety and security issues, and the growing impact of aviation in relation to the environment, dictating the design of emission trade systems. Last but not least, commercially oriented subjects such as aircraft financing and leasing will be addressed, both from the perspective of national and international legal regimes, taking into account practical cases and case law.

The objective of the *series* is to make a contribution to legal thinking on the multifaceted aspects of this important field of law. The publications are designed to document and anticipate the evolution of aviation law and policy in the twenty-first century.

The titles published in this series are listed in the back of this volume.

*To the memory of Loyola de Palacio who continues to inspire
us to achieve the Single European Sky*

Foreword

An integrated cross border transport sector is essential for a well-functioning internal market. At the same time transport by land, sea and air has traditionally been characterized by heavy state intervention. For that reason the original EEC Treaty foresaw the establishment of a European common transport policy to replace and complement the large variety of national legislations in Europe. This has proven to be a formidable task. It has taken decades before a European policy has taken shape in the various transport sectors.

In particular European air transport policy has been governed for many years by liberal bilateral agreements between individual EU Member States and third parties, the so-called *Open Skies* Agreements. The jurisprudence of the Court of Justice of the EU has been of decisive influence in overcoming national fragmentation. Hundreds of discriminatory agreements between national and third states have been replaced by a more transparent European framework.

In the same vein, the creation of a Single European Sky regime has been decided in 2004. This regime already has produced a useful European legislative framework. It has formed the starting point of a wide range of measures designed to improve efficiency in air traffic management in Europe. National borders have been adapted by European measures in order to achieve a Single European Sky. The concept of absolute sovereignty over national skies has been abandoned and is replaced by legal and political structures facilitating a common air space in the whole of Europe. This comprises not only the territories of the EU states, but also the western Balkan states, as well as Norway, Iceland and Switzerland.

The legislation of 2009 is designed to increase cross-border coordination, to remove administrative and organizational bottlenecks in decision-making and to enhance enforcement in air traffic management in Europe. Since air transport is basically a global activity, it will also facilitate a common European voice in the worldwide management of airspace.

Against this background the publication of *Achieving the Single European Sky (SES): Goals and Challenges* is very timely. The editors-in-chief, Daniel Calleja Crespo and Pablo Mendes de Leon, each have a wealth of experience both in policy-making and academia. They have succeeded in selecting a team of highly competent collaborators who together represent a great variety of skills on the management of the Single European Sky. The publication gives a thorough explanation of what has been achieved so far, not only in theory, but also in practice. Moreover, it also covers a catalogue of future challenges, such as technological, environmental and safety concerns. In short, it is an indispensable tool for students and practitioners alike; hence, it is a welcome addition to an important field of European policy.

Laurens Jan Brinkhorst
Professor of Law, Leiden University, the Netherlands
Chairman of the International Institute of Air and Space Law

List of Abbreviations

ACAS	Airborne Collision Avoidance System
ACC	Area Control Centers
ACI	Airports Council International
AEA	Association of European Airlines
AESA	Agencia Estatal de Seguridad Aérea
AIRE	Atlantic Interoperability initiative to Reduce Emissions
AIS	Aeronautical Information Services
ANP	Air Navigation Plan
ANS	Air Navigation Services
ANSB	Air Navigation Services Board
ANSP	Air Navigation Service Provider
ASAS	Airborne Separation Assistance System
ASM	Air Space Management
ASNP	Air Navigation Services Provider
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATM SD	Air Traffic Management Social Dialogue
ATS	Air Traffic Services
BoD	Board of Directors
CAA	Civil Aviation Authority
CAD	Computer-Aided Design
CANSO	Civil Air Navigation Service Organization
CDA	Continuous Descent Approaches
CDG	Charles De Gaulle
CDO	Continuous Descent Operations
CE	Central Europe

List of Abbreviations

CEATS	Central European Air Traffic Services
CEO	Chief Executive Officer
CFMU	Central Flow Management Unit
CMG	Crisis Management Group
CMIC	Military Interface Standing Committee
CO ₂	Carbon Dioxide
CONOPS	Concept of Operations
CRD	Comment Response Document
CRS	Computerized Reservation System
DoD	Department of Defense
EACCC	European Aviation Crisis Coordination Cell
EANPG	European Air Navigation Planning Group
EASA	European Aviation Safety Agency
EATMS	European ATM System
ECA	European Cockpit Association
ECAA	European Common Aviation Area
ECAC	European Civil Aviation Conference
ECIP	European Convergence and Implementation Plan
ECJ	European Court of Justice
EDA	European Defence Agency
EEA	European Economic Area
EEC	European Economic Community
ENAC	Italian Civil Aviation Authority
ERA	European Regions Airlines
ESPI	European Space Policy Institute
ETF	Eurocontrol Task Force
EVITA	Crisis Visualization Interactive Tool for AFTCM
FAA	Federal Aviation Administration
FAB	Functional Airspace Block
FABEC	FAB Europe Central
FASID	Facilities and Services Implementation Document
FDPS	Flight Data Processing Systems
FEP	Flight Efficiency Plan
FIR	Flight Information Region
FRY	Federal Republic of Yugoslavia
FYROM	Former Yugoslav Republic of Macedonia
GASP	Global Aviation Safety Plan
GNSS	Global Navigation Satellite System
HF	High Frequency
HLG	High Level Group
IATA	International Air Transport Association
ICANN	Internet Corporation for Assigned Names and Numbers
ICAO	International Civil Aviation Organization
ICB	Industry Consultation Body
IETF	Internet Engineering Task Force

IFATCA	International Federation of Air Traffic Controllers Associations
IP	Internet Protocol
IPCC	Intergovernmental Panel on Climate Change
ISOC	Internet Society
IVATF	International Volcanic Ash Task Force
LCIP	Local Convergence and Implementation Plan
MBE	Model-Based Enterprise
MoC	Means of Compliance
MUAC	Maastricht Upper Area Control
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NEFAB	North European FAB
NGMT	Next Generation Manufacturing Technologies
NMB	Network Management Board
NOP	Network Operations Portal
NSA	National Supervisory Authority
PLM	Product Life-cycle Management
PRAC	Council and the European Parliament
PRB	Performance Review Body
PRC	Performance Review Commission
QoS	Quality of Service
RM	Resource Management
RNP	Required Navigation Performance
RPA	Remotely Piloted Aircraft
RPAS	Remotely Piloted Aircraft System
SARP	Standards and Recommended Practice
SEAC	SESAR European Airports Consortium
SES	Single European Sky
SESAR	Single European Sky ATM Research
SJU	SESAR Joint Undertaking
SLA	Service Level Agreements
SME	Small and Medium Enterprise
SMS	Safety Management System
SRC	Safety Regulation Commission
SSC	Single Sky Committee
SWIM	System Wide Information Management
TCAS	Traffic Collision Avoidance System
TFEU	Treaty of the Functioning of the European Union
UAS	Unmanned Aerial System
UAV	Unmanned Aerial Vehicles
UGC	User Generated Contents
UNCLOS	UN Convention on the Law of the Sea
VAAC	Volcanic Ash Advisory Centre
VoIP	Voice over Internet Protocol
WG	World Group
WSIS	World Summit on the Information Society

Preface

The International Civil Aviation Organization (ICAO) was formed on 7 December 1944 with the signing of the Convention on International Civil Aviation. From the outset, its mission has been to foster the development of international civil aviation in a 'safe and orderly manner' and to make sure that international air transport services are 'established on the basis of equality of opportunity and operated soundly and economically'.¹

As the forum for cooperation among its now 190 Member States, ICAO has always provided leadership in the evolution of aviation as a modern, efficient, affordable and safe mode of transport. Today, ICAO further demonstrates its ability to tackle daunting challenges in the areas of safety, security and environmental protection, as well as operational performance and overall sustainability of the global air transport system.

In this wide-ranging collaborative effort, Europe continues to play a determinant role. On the one hand, it provides the aviation community with systems and equipment on the leading edge of technological progress. On the other, its unique political and geographical configuration offers many lessons. Europe is composed of a fragmented patchwork of nations of medium to relatively small size, with many different languages and cultures. It has one of the world's densest airspaces in terms of traffic and related operational requirements. Many capital cities are not more than a few hundred kilometres from each other. The intensity and complexity of the aviation challenges in Europe, and mostly the way they are being addressed, have made the 'old continent' into a kind of laboratory where cross-border and international solutions can be developed and tested. The experience gained can be taken on board at ICAO, for adaptation and adoption in other parts of the world.

1. Preamble of the Convention on International Civil Aviation ('Chicago Convention').

The European Union's Single European Sky (SES) initiative is a prime example. It seeks to fundamentally transform the way air transport is organized and operated in Europe, by putting into place a 'more sustainable and better performing aviation'.² With its distinct network and gate-to-gate approaches, it also aims to extend beyond the borders of the EU, in partnership with its many neighbouring countries.

To achieve these results, the European Union's Single Sky legislation explicitly and systematically refers to ICAO's vast body of rules and regulations. Article 1 of Regulation (EC) No. 549/2004 (the so-called 'Framework Regulation'), as amended by Regulation (EC) No. 1070/2009 states:

The application of this Regulation and of the measures referred to in Article 3³ shall be without prejudice to the rights and duties of Member States under the 1944 Chicago Convention on International Civil Aviation (the Chicago Convention). In this context, an additional objective of this Regulation is, in the fields it covers, to assist Member States in fulfilling their obligations under the Chicago Convention, by providing a basis for a common interpretation and uniform implementation of its provisions, and by ensuring that these provisions are duly taken into account in this Regulation and in the rules drawn up for its implementation.

ICAO welcomes the SES initiative. It will monitor and, where it can, contribute to the development of the concept.

This is in line with our Organization's policy of encouraging regional approaches to aviation issues which is more likely to reduce fragmentation, improve safety and generate economies of scale. In Europe, these purposes were initiated decades ago with the creation of EUROCONTROL and the Joint Aviation Administrations. The time has come to speed up the process and provide more support to it, given the SES undertaking and the development and implementation of associated concepts: the European-wide performance target setting, cross-border Functional Airspace Blocks, network management functions, SESAR for a pooling of the European R&D, leading to harmonized and synchronized technological choices and EASA entrusting to a single regional entity the responsibility of the entire aviation safety chain.

In this contexts, ICAO and the European Union share common goals. Not surprisingly, there exists a permanent and fruitful interaction between work carried out in Europe and within ICAO.

In the performance area, Europe's input was a key success factor in ICAO Conferences on the Economics of Airports and on Air Navigation Services – ANSConf 2000 of June 2000 and CEANS of September 2008, respectively.

2. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Single European Sky II: Towards More Sustainable and Better Performing Aviation {SEC(2008) 2082}

3. I.e. all the Regulations adopted for the creation of the Single European Sky.

This latter event was linked to a ‘Worldwide Symposium on Performance of the Air Navigation System’, which in turn led to a revision of ICAO Documents 9082 and 9161 aimed at incorporating the performance element in the provision of airport and air navigation services. I am confident that Europe’s experience in performance target setting will prove very useful in the development by ICAO of a performance-based ATM system in the coming years.

On the technology side, and with the aim of supporting improvement on a worldwide basis, ICAO hosted in November 2008 the ‘Forum on Integration and Harmonization of NextGen and SESAR into the Global ATM Framework’, during which various national and regional initiatives were presented. ICAO follows with great interest the developments of SESAR and similar programmes from other regions as useful contributions to the Global ATM concept. It cooperates with Europe and other regions in the preparation of the 12th Air Navigation Conference in November 2012, designed to update the ICAO Global Air Navigation Plan (GANP) and prepare the aviation world for the future ATM system concepts in a globally harmonized manner.

Civil/military coordination and in particular the concept of Flexible Use of Airspace are the key elements of the SES package to improve the use of available airspace and thus generate efficiency gains. The need for strengthened civil/military cooperation and coordination was discussed at ICAO’s 36th Session of the Assembly in September 2007. This resulted in the decision to prepare guidance material for identifying best practices and defining steps to support the establishment of national and regional airspace management plans that meet the needs of all civil and military airspace users. A civil/military forum was held at ICAO in 2009 to enhance airspace organizations and management.

The Eyjafjallajökull ash cloud crisis of 2010 generated real-time intensive cooperation between Europe and ICAO aiming at mitigating disruption to air transport. ICAO now works, with valuable input from Europe, on the establishment of tools and standards that will make it possible to tackle the next crises in a more efficient way.

On the institutional side, following the establishment of an office in Montréal to represent the EU at ICAO, the signature of a Memorandum of Cooperation (MoC) between the European Union and ICAO is the next step in intensifying cooperation between the two institutions. This MoC also reflects ICAO’s efforts to promote the establishment of regional safety oversight organizations, much like EASA in the European Union. The agreed exchange of safety-related data between ICAO and the EU is another example of fruitful cooperation leading to concrete safety improvements. The MoC also covers security, air traffic management and environmental protection.

At the regional level, the ICAO office for the EURNAT region has an observer seat in the Single Sky Committee, the Comitology body assisting the European Commission in the implementation of the SES. This allows ICAO to ensure that its requirements are taken into consideration and that it stays abreast in real time of SES progress. In return, the European Commission has observer status in the ICAO European Air Navigation Planning Group (EANPG).

Preface

With such coordination and cooperation, ICAO and the EU advance hand in hand to ensure a coordinated approach to the main challenges facing an ever evolving aviation world, for the benefit of international civil aviation, and thus for the global economy and the travelling public.

I would like to end this contribution with a personal note. In my previous professional capacity as Executive Secretary of ECAC, I had the honour to meet the late Mrs Loyola de Palacio several times. Apart from her warm personality, I was each time struck by her determination to reach concrete outcomes and bring improvements wherever she focused her attention. For her, this made the creation of a single European sky a formidable, yet logical challenge to take up. This unrelenting focus on tangible results is a great source of motivation for me at the helm of ICAO.

Raymond Benjamin
Secretary General of the International Civil Aviation Organization

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