

## **Aviation Security – More Regulation - less Risk?**

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### ***Foreword***

*This brochure intends to make a contribution to the current discussion on a new framework regulation on European civil aviation security. The adoption of the Regulation is still expected in 2007.*

*After the terrorist attacks of 11 September 2001, this topic has become one of the most important and most frequently discussed aspects of aviation. Regulation (EC) 2320/2002, which was swiftly drawn up in the aftermath of the events, and its implementing measures had consequences for services at airports, partly to a disadvantage. Firstly, the provisions aimed at establishing a consistent uniform application of security measures on the highest possible level within the European Union. It soon became evident, though, that the Regulation posed problems in some aspects, so it would have to be reviewed in order to meet the requirements of the objective of harmonised air traffic and simplify security-relevant procedures.*

*Civil aviation security has at all times been of high priority. The terrorist attacks led to a reassessment of threats, though. The Regulations, having come into being under pressure of time, are partly non-systematic due to predominantly reactive action. For example, the Regulation on liquids which is currently subject of a great deal of controversy is a result of the intended bomb attacks in London. Accordingly, the calls for preventive security measures, which are subject to a thorough impact assessment, have increased. Rather often, the particular regulations are not integrated in the overall context, which leads to redundancies, operational problems with their implementation or disharmony of specific measures. In general, there is quite some actionism in security policy. The question of whether there is a sense of increased security or not is difficult to answer. How can it be put across to a transfer passenger, for example, that the goods purchased in a duty-free shop in a third country are seized when changing planes in a EU-country? Why is it sometimes necessary to pass several security controls on the way to the boarding gate?*

*Another aspect which is not really unimportant and also related to competitiveness is the relation towards other modes of transport like the German Railways. In respect of potential threats, the measures can hardly be considered as proportionate.*

*The main part of the brochure will first give a review of the regulations concerning aviation security up to now followed by description of the problems and effects of the Regulations. Finally, an outlook outlines possible solutions for the security questions.*

*Solutions can only be acceptable if they meet the requirements of transport policy, provide long-lasting effects and contribute to a harmonisation of standards at least on a European level.*

## **1. Legal Framework**

Aviation security has at all times been of high priority. In civil aviation, there is a distinction between safety - dealing with operational and technical regulations concerning the use of an aircraft as well as the safe operation of a flight - and security, aiming at preventing acts of unlawful interference.<sup>1</sup> The following statements only refer to the field of security.

On a global scale, ICAO<sup>2</sup> Annex 17, which is binding for all contracting states, has already been in existence since the seventies. Based on this regulation, ECAC<sup>3</sup> Doc. 30 was established on a European level. As a consequence of the attacks of September 11 and the terrorist attacks at London and Madrid, further Regulations were issued that went more into detail, among them Regulation<sup>4</sup> (EC) 2320/2002 and the German Aviation Security Act. All of the regulations serve the purpose of protecting civil aviation from and preventing acts of unlawful interference.

### **1.1 ICAO Annex 17**

The International Civil Aviation Organisation (ICAO), a sub-organisation of the United Nations, frames the rules for civil aviation. ICAO provides standards with the aim of standardising the regulations of all contracting states. Annex 17 solely rules security in international air traffic to protect civil aviation from acts of unlawful interference. This concerns the air carriers as well as the airports. The Annex was already adopted on 22.03.1974 and has been amended ten times since then; the last time following the events of 11 September 2001. In general, the Annex rules aspects of administration and coordination for all contracting states, but it also sets up technical standards. In doing so, it aims at conveying the contracting states a high responsibility for security by calling on them to implement their own, effective national security programme. These should also include the security specifications of other institutions. Annex 17 sets up minimum standards that must, by no means, be fallen below. Although ICAO mainly uses multilateral agreements to create international framework conditions, the states were encouraged to create a common basis through bilateral agreements.<sup>5</sup>

### **1.2 ECAC Doc. 30**

On a European level, the European Civil Aviation Conference (ECAC) sets up standards ruling aviation security regulations in the form of a manual. With regard to security measures, "ECAC Doc. 30" is the basis for the definition of European standards.



ECAC Doc. 30 was developed by the Member States during the last 30 years and contains provisions on European aviation security only. The activities of ECAC are merely of an advisory nature, though, i.e. they are just recommendations without a binding effect on the ECAC-Member States. The regulations adopted by the Conference only gain legal validity if they are converted into national legislation. ECAC Doc. 30 is based on the international ICAO Annex 17 and contains several additions. Especially concerning security aspects, higher standards than in ICAO Annex 17 are defined.<sup>6</sup>

### **1.3 Regulation (EC) 2320/2002**

In the aftermath of the attacks of September 11, Regulation (EC) No 2320/2002 was drawn up, serving the purpose of protecting civil aviation from acts of unlawful interference. Its aim is to close security leaks and establish a Community-wide harmonised legislation in aviation security.

Regulation 2320/2002 mainly focuses on uniform objectives regarding airport security, screening of passengers and cargo, protection of aircraft, cargo, mail and catering safety, staff training etc. In contrast to the regulations issued by ICAO and ECAC, Regulation 2320/2002 contains detailed measures that have to be fulfilled. Two examples for important measures to maintain the “sterility” of a passenger are preventing passengers from mingling (i.e. separating arriving and departing passengers) and reorganising security areas at airports. In order to comply with the newly created security standards, each Member State has to introduce a national civil aviation security programme and a quality control and training programme as well as to designate a single appropriate authority responsible for the coordination and monitoring of the implementation.

Furthermore, the development of a procedure is taken into consideration which evaluates to what extent flights from third countries fulfil the basic security requirements. Numerous implementing measures supplement the effects of Regulation 2320/2002. These contain specific measures to improve aviation security. For security reasons, the annexes of these rules are not open to the public, but classified as “EU-official use only”, which means they are only made available to persons who have to be familiar with the matter for professional reasons.<sup>7</sup>

## 1.4 Aviation Security Act

In Germany, apart from the regulations mentioned above, the Aviation Security Act (Luftsicherheitsgesetz, LuftSiG), which became effective in 2005, applies. It contains the most important elements of the manifold international regulations. As regards content, the main focuses are in the field of 100%-checks to be carried out on luggage and employees and the obligation to complete staff training. The only specialty is paragraph 14 which allows armed forces to shoot down an airplane in case of an emergency. The paragraph has been declared unconstitutional by the Federal Constitutional Court, though.<sup>8</sup>

## 1.5 American Legislation

In the USA, operational aviation security measures passed by the Transportation Security Administration (TSA) prove to be diverse to the European regulations. The TSA was founded after the attacks on September 11 with the aim of tackling security aspects. The security measures in the USA, for example concerning the screening of passengers, are much more stringent than in Europe.

Furthermore, the Advanced Passenger Information System (APIS = the transmission of personal data before flying to the USA) and the “No Fly List” (= a list of passengers who are barred from flying to the USA for security reasons) play an important role. The American security system concentrates especially on passenger surveillance. This leads to an increased time and cost expenditure for European airports and air carriers flying to the USA. Additional controls of passengers and cargo are necessary, possibly even biometrical data entry and verification, aircrafts must be kept under surveillance, Sky Marshals deployed and so on. First and foremost, the legal basis is the “Code of Federal Regulations (CFR) Title 49: Civil Aviation Security”. Other than in Europe, the control procedures and coverage of the costs are mainly taken over by the state. New regulations are also implemented much faster – within 72 hours – in the form of the so called “Emergency Amendments”.<sup>9</sup>

## 2. General Provisions

Further to the specific provisions stated above, the most important European security provisions of Regulation (EC) 2320/2002 and its implementing rules can be described as follows:

- **Security restricted areas:** This term relates to the airside of an airport, i.e. the areas into which access is controlled to ensure security of civil aviation. Such areas will normally include all passenger departure areas (between screening points and aircraft), baggage storage areas, cargo hangars, mail centres and airside cleaning and catering premises. Detailed implementing provisions (Regulation 1138/2004) defining critical parts and serving the purpose of distinguishing the airside and landside areas of the airport determine the access areas of all persons at the airport.
- **Prohibited articles:** A prohibited article is defined as an object which can be used to commit an act of unlawful interference and therefore it must not be introduced into security restricted areas. An implementing regulation (Regulation 68/2004) includes an indicative list of such articles being forbidden on board as well in the hold of an

aircraft. Every passenger must be informed about the content of this list before take-off. The list contains all sorts of weapons currently rated as dangerous (firearms, knives and cutting tools, explosives, flammable liquids, corrosives, articles of any kind that may be used to simulate a deadly weapon etc.)

- **Passengers:** Every passenger is subjected to screening for security purposes when entering the critical parts in order to ensure that no unauthorised person enters these areas and that no prohibited articles can be introduced into the airside. Moreover, it must be ensured that screened departing passengers do not mix with arriving passengers in order to maintain the “sterility” of passengers. The reason for this clause is the possibility that arriving passengers might not have been screened according to the level of the European standard.
- **Hold baggage:** Close screening and tracing of hold baggage must be maintained at any time. In addition, identification with the relevant passengers must be possible. Besides that, it is essential that hold baggage is held in an area of an airport to which only authorized persons have access.
- **Baggage reconciliation:** Items of baggage can only be carried on a flight if the passenger is on board of the same aircraft. This rule is based on the assumption that the owner of the baggage won't risk his own life so he wouldn't get on board.
- **Cabin baggage:** The cabin baggage of all departing passengers must be screened prior to being allowed into security restricted areas and on board of an aircraft in order to prevent passengers taking prohibited articles with them. On 7 November 2006, the tightened cabin baggage control provisions of the “liquids-Regulation” 1546/2006 became effective as a reaction to the planned attacks in London. This measure was taken to limit the quantity of liquids in cabin baggage. According to this, passengers are only allowed to carry liquids in their hand luggage in individual containers with a maximum capacity of 100 ml each. These containers must be packed in one transparent, re-sealable plastic bag of not more than one litre capacity per passenger. The second part of the Regulation aims at limiting the maximum size of hand luggage to 56 cm x 45 cm x 25 cm as of 6 May 2007 with a view to reducing controls to a minimum. This provision was postponed by the European Commission by another twelve months, though. The aviation industry criticized this requirement as too restrictive and not adequate as regards the aim of protection against unlawful interference.



- **Staff:** All staff having access to security restricted areas is subjected to a minimum five-year background check which is repeated at regular intervals. Moreover, crew and ground personnel must be trained. During this training, they are, amongst others, given instructions on how to deal with possible threats to security. Airport identification cards must be issued to all staff and be worn by them in a visible place at all times while its holder is on duty. They bear the name and photograph of the owner and are valid for a limited period only. Just like passengers, all staff, including flight crew together with items carried, must be screened before being allowed to access into critical parts of security restricted areas.
- **Aviation security inspections and quality control programmes:** The Commission will conduct inspections of Member States and airports to monitor the application of Regulation 2320/2002. Besides, each Member State should adopt a national quality control programme. Both topics are described in the Regulations 1486/2003 and 1217/2003, stating the requirements regarding the appropriate methodology and specific audits.
- **Cargo, mail, catering and cleaning:** All cargo must be handled by specially trained staff only and be screened (with x-ray equipment, visual inspection etc.). Transshipment cargo or cargo received from a known consignor is exempt. This requires that the consignor declared that cargo has been treated according to civil aviation security standards. Security controls also apply to mail and air carrier company mail. The postal authority declares that the mail was handled according to the security measures. Air carrier catering and cleaning companies have to appoint a security officer responsible for the correct application of security requirements. Supplies and cleaning articles are also subjected to stringent security controls and must be screened on a random basis after delivery. Staff having access to security restricted areas must fulfil the same requirements as airport staff.
- **Airplanes:** As regards aircraft, there are two methods of searching. If the aircraft is not in service, it is subjected to an aircraft security search immediately before or immediately after being taken into a security restricted area for a flight. Aircraft in service, during turn-around or transit stops, are subjected to an aircraft security check immediately after passenger disembarkation or as late as possible before passenger boarding and baggage/cargo loading as appropriate. Both are conducted once all service providers (caterers, cleaners and others) have left the aircraft. Access to the aircraft must be controlled and aircraft must be placed under surveillance in order to prevent unauthorised access. Aircraft not in service have to be locked and protected against being tampered with e.g. sealings.

### 3. Current Status of the New Regulation

In its inspection report, the European Commission<sup>10</sup> declared that security at European airports was enhanced significantly, yet there was still potential for improvement. The Regulation is characterised by provisions that are too detailed, company-oriented and technical. This leads to a lack of flexibility and too much regulation, which could hold the risk of unequal interpretation of the legal requirements.

On 22 September 2005, the European Commission submitted a proposal for an amendment of Regulation 2320/2002<sup>11</sup>. Its main aim is replacing the provisions that are too detailed with a simplified, more general and clearer Regulation. The details should be

laid down in implementing regulations in the future. This is based on the assumption that certain security measures are only meant for a limited group of experts and not the general public, anyway. Besides, this should make it more difficult for certain groups to find gaps in the security system.



The proposal for a new version of the Regulation contains legal provisions concerning in-flight security. These relate primarily to cockpit access, security measures for handling potentially dangerous passengers and the deployment of Sky Marshals on board. The regulations should not generally be binding for all Member States, though. The European Commission proposes to principally prohibit the carrying of arms unless the respective Member State authorized it and the security requirements are fulfilled. The deployment of Sky Marshals requires that they have completed the corresponding training and fulfil the security requirements. Nevertheless, the Member States have the right to refuse the deployment of such security officers.

The concept of one-stop security is also emphasized in order to avoid transfer passengers having to undergo unnecessary controls. For this purpose, it must be made sure that the security regulations are equivalent to those of the Community.

Another aspect the current Regulation has not dealt with is financing security. The Parliament is in favour of the costs being borne equally by both the Member States and the passengers. In case more stringent measures are applied, the costs should be borne solely by Member States. Up to now, an agreement between Parliament and Council of Ministers has not been reached.

In April 2007, the European Parliament voted on the new framework regulation in second reading. In this vote, besides the question of access controls, prohibited articles and passenger controls, it argued for more stringent provisions concerning the carrying of weapons and deployment of Sky Marshals on board of the aircraft in particular. The reaction of the Council remains to be seen. In general, it is assumed that an Arbitration Commission will be set up since there is further discord especially as regards the question of financing. A final conclusion therefore is not expected before autumn.

#### **4. Problems and Effects**

During the practical application of the framework and implementing regulations, numerous problems occurred. In particular, human factors proved to be a significant factor.

In the EU, staff is provided by the state as well as by private companies, which leads to unequal standards as a result of the high economic pressure on the employees of private service providers. Uniform training standards and appropriate wages and working conditions should be the basis of all considerations on a European level in order to work against that. Furthermore it is necessary to provide for a low staff turnover rate. Another possible measure could be the deployment of more technical tools which would relieve or at least support personnel. At present, though, there is no technology available that can guarantee absolute security and make human efforts dispensable.

#### **4.1 Liquids in Hand Luggage**

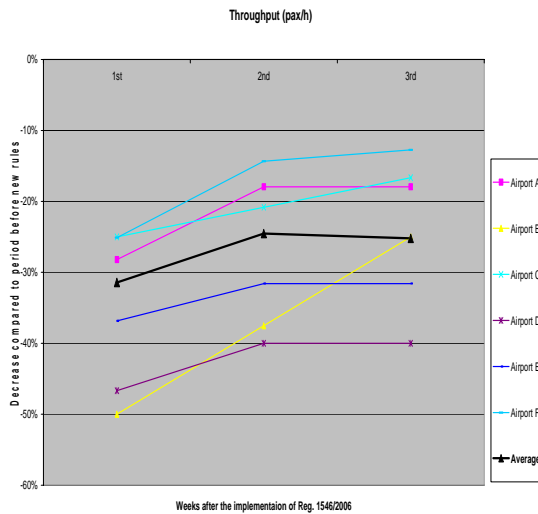
Since 6 November 2006, the Regulation 1546/2006 limiting the quantity of liquids in cabin baggage is in force. This regulation, which was implemented on rather short notice, is a measure aimed at minimising security risks with regard to explosives. The fact that all EU-flights are to be protected leads to certain operational disturbances as regards check in. Besides, delays, inconveniences for passengers and an increased demand for security staff were the result. Various kinds of liquids can be used as a basis for explosives. Therefore, they are prohibited in hand luggage if they amount to more than 100 ml each. This concerns any kind of liquids, for example beverages, perfumes, gels, pastes or lotions. In order to expedite security procedures and make it easier for the screeners to focus on liquids, passengers should fulfil the following criteria: Laptops and other electric equipment as well as coats and jackets must be separated from other hand luggage before screening.<sup>12</sup>

Medicines (proof that they are needed may be required) and dietary requirements like baby foods in quantities needed during the flight are exempt. Furthermore, articles bought in the security area or on the airside of the airport are not affected if the shops adhere to the known security procedures. Finally, goods purchased on board EU-air carriers and at EU-airports are also counted among the exemptions. A tamper-proof wrapping is also a requirement.

After the impeded attacks in London in August 2006, long delays occurred because of the tightened security measures. In Great Britain, 22 %<sup>13</sup> of the delays were attributed to security checks. The implementation of Regulation 1546/2006 took place after 6 November 2006 without a significant delay, though, which can be explained with the season leading to less traffic volume.

The chart below shows the developments during the first three weeks after introducing the liquids-Regulation. It becomes quite obvious how the number of passengers checked in within an hour decreased after the Regulation entered into force. The number dropped by 25 % despite almost 10 % additional staff. While an average number of four passengers per minute could be checked in at the major European airports before, it's only three per minute now.<sup>14</sup>





Moreover, new equipment was needed, i.e. more controlling devices, one-litre bags as well as campaigns aimed at informing passengers. This led to additional costs at hubs of 0.4 – 0.5 € per passenger<sup>15</sup>; small and medium sized airports are affected even more. Costs for the disposal of the liquids seized also arise (up to three tons per day in Frankfurt<sup>16</sup>). At some smaller airports, numerous small, landside shops have *stopped* their business activity as a result of rapidly declined turnover. As regards travellers, even after several months no learning effects have occurred with respect to the confiscations. With rising passenger volume, increasing operational disturbances can be observed. This problem has to be taken seriously in view of the holidays, especially in summer. Employing more security staff or personnel for passenger information services, more checkpoints or combinations of such measures could serve as methods of resolution leading to a smoother application of the Regulation.



The requirements concerning personnel have increased immensely: Apart from their normal duties of screening they now have to see that all liquids are presented and put into the correct plastic bags as prescribed by the regulations. Duty free goods have to be checked for their origin in order to decide on accepting them or not.

From the view of the air carriers, there are still delays even after four months since establishing the Regulation. This leads to an exceedance of the Minimum Connecting

Time (MCT) resulting in less competitiveness, longer check in time, worsening service and, related to that, possibly losing transfer passengers.

The changes have the worst effects on transfer passengers having to deliver goods bought outside the EU without compensation. Very often, this is met with incomprehension (especially because the same articles can be bought again once the controls have been passed).

Finally, it can be noted that the mutual recognition of the regulations concerning liquids (on the basis of an ICAO recommendation) as well as technological progress are expected in order to make the security system more efficient. A device which not only shows an x-ray of the hand luggage, but automatically categorises it as dangerous or not, would be desirable. Another possible option would be to deliver goods bought in the duty free area at the destination airport.

## **4.2 Restrictions of the Size of Hand Luggage**

The implementation of rules to limit the size of hand luggage which was planned for May 2006 has been postponed for one year. The aviation industry argued that their introduction would involve another considerable operational disturbance of procedures and a financial burden without any noticeable gain in security. Moreover, being occupied with checking the luggage size would distract security staff from their principal tasks. Similarly to the liquids-Regulation, this would result in further nuisances for transfer passengers that could not really be eased, not even with a comprehensive information campaign.

In the end, the question of suitable procedures for non-standard pieces of hand luggage occurs. Disposing of them like liquids violates property rights and changing it to hold baggage in most cases is not possible at all or would require building alterations at great expense.<sup>18</sup> Originating passengers could go back to the check in counter to turn in their luggage if there was enough time and localities allowed for it. Transfer passengers mostly do not have such possibilities.

The basic approach in limiting the size of hand luggage is keeping demands on screening personnel on a reasonable level, thereby contributing to facilitate check in. Most air carriers follow IATA<sup>19</sup>-standards with regard to the size of hand luggage anyway, so further restrictions would only lead to less acceptance and even longer queues and higher costs.

## **4.3 Third Countries**

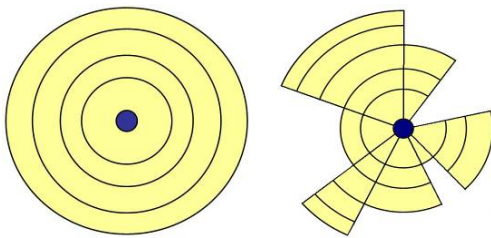
Due to a lack of harmonised standards between the EU and third countries, problems occur at check in: Especially the liquids-Regulation is problematic. Despite an ICAO-recommendation concerning uniform rules on liquids and its implementation by most countries the standards aren't mutually recognised. This leads to the problem of duty free goods having been bought in a third country must be turned in during transfer within an EU Member State (in many cases even in spite of sealed duty free bags). The reason for this is that some transfer passengers were categorised as unsafe after the Commission's security inspection. Insufficient information on the new security requirements lead to a lack of acceptance by the persons concerned. An approach to a solution must be brought about urgently among the EU and third countries. At first, the different regulations on liquids should be harmonised and mutually recognised.

However, there are also difficulties in other areas: There is the risk that the Minimum Connecting Time, which at some hubs amounts to only 45 minutes, may not be adhered to in cases where passengers from third countries want to change planes in an EU country. For the airports, this means a loss of competitiveness compared to other hubs outside the EU. In order to avoid this, investing in check in counters and luggage conveyor belt systems, even devices to measure the size of pieces of hand luggage in the transit area, would be necessary.<sup>20</sup> Furthermore, the convenience of self check in isn't really feasible any more because in such cases, passengers can not be informed about the liquids-Regulation or prohibited articles.

#### 4.4 Redundancies and Security Defects

Numerous redundancies can be noted in the Regulation 2320/2002 and its implementing measures, which complicate civil aviation security and lead to inefficiencies and frictions resulting from different standards. Looking at the real level of security, big differences between theory and practice can be observed:

Sicherheit in der Theorie    Sicherheit in der Praxis



Quelle: ESPAS; Presentation to SAGAS & AVSEC Committee; Feb 28<sup>th</sup>,2007

In particular, the feasibility of implementing new security measures is a large problem, so that a rift between formal and practical security has opened up.

The most striking redundancy concerns the field of aircraft protection, especially in cases where the plane goes from one EU-country to another. The current Regulation rules that the surroundings of the aircraft as well as access to it must be placed under surveillance; all passengers including their hand luggage, hold baggage, ground personnel and crew are already screened by then. This should guarantee that no forbidden article can be brought on board.

Surveillance of baggage and its storage areas outside the aircraft could be cancelled if they were attributed to the field of critical parts and all items as well as the entire staff was security-checked.

Moreover, checking the cabin, i.e. controlling seat bags, underneath the seats etc. is considered as inefficient regarding EU flights. Repealing this bothersome measure could lead to considerable reductions of costs and time. Therefore, it seems only logical to demand repealing aircraft security controls for flights between two EU airports. After all, the aircraft does not leave the critical parts throughout the whole operation and therefore there is no risk of forbidden articles etc. threatening civil aviation security.

Unloading luggage in cases where the relevant passenger is not on board the aircraft presents another aspect to be looked at. The provisions of the Regulation were passed at a

time when luggage could not be considered completely safe. Today, as all pieces of luggage go through the complete security measures (especially with the aid of EDS<sup>21</sup>) and therefore can be considered as “clean”, such time-consuming and costly unloading is unnecessary. The suitcase is no obvious danger for the secure operation of the flight. The four-phase EDS-system for the screening of baggage is the most secure one at present because it even detects explosives. If anything conspicuous attracts attention at the first control point, the baggage is subjected to a closer check. Should further irregularities occur, it is either separated out or, after even more specific checks, accepted.

These redundancies only apply to such countries having implemented Regulation 2320/2002 and its implementing regulations. The security measures should persist concerning flights between an EU- and non-EU-airport, though, because security measures in third countries possibly do not satisfy those required by EU standards.<sup>22</sup>

In contrast to areas with too much regulation, there are also such with security defects. Above all, these can be found in passenger checks. On one hand there is a danger of personnel not being trained appropriately or making mistakes when screening due to the high workload. On the other hand, the detectors for travellers only screen metals and are not capable of detecting explosives or similar substances. Only the deployment of more powerful technologies could lead to increased security as regards check-in. As new equipment is installed, outdated devices and procedures should be done away with in order to avoid an agglomeration of more and more different methods which would slow down procedures and not bring about any gain in efficiency.

#### **4.5 Sunset-Clause**

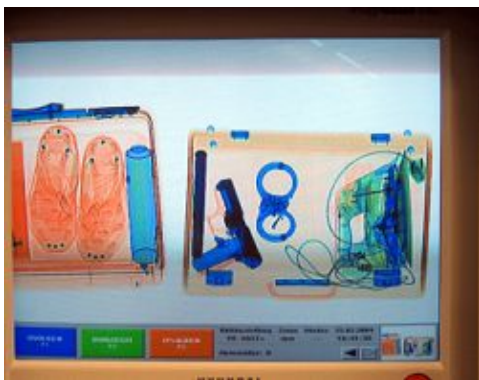
The implementing regulations ruling the details of the security measures can be adopted rather swiftly within the framework of the so called comitology procedure. Roughly every six weeks, questions and interpretations of security legislation are discussed with the industry and brought into agreement in a Regulatory Committee consisting of representatives from all 27 Member States and the Commission. Once a resolution has been passed, the Parliament has four weeks time to express its opinion regarding the Regulations. After that, the regulation enters into force. Such a speedy implementation bears the risk that impacts or repercussions and alternatives are not accounted for adequately which might result in redundancies, increased expenditures or other operational problems. Therefore, the Parliament requires the introduction of a “Sunset Clause”. This means that new Regulations should become ineffective after six months unless proof is delivered on the basis of a cost-benefit analysis that the Regulation is sensible and has positive effects on security in flight operations. The background of this intention is that new risks may occur or technological progress may be achieved making existing regulations unnecessary or amendments inevitable.

The “Sunset Clause” required by the Parliament would limit the duration of validity to a fixed term. A continuation would require another cost-benefit analysis. On the one hand, this would account for the need for swift introduction of new regulations. On the other hand, this could help counter the political dilemma that once security measures have been introduced, any kind of reduction only takes place rather slowly; so shifting the burden of proof for the appropriateness of the Regulation to the legislator could be helpful. This procedure should be applied to all implementing regulations in the future.

The Parliament looks rather sceptical at the detailed measures regarding the liquids-Regulation, for example, and recommends its expiry. In this specific case, the Sunset Clause would not help, though, because it cannot be applied retrospectively.

#### 4.6 Research

One of the latest research projects in the aviation industry is Safee (Security of Aircraft in the Future European Environment), an on board security system with a financial volume of more than 30 million Euros that is supposed to act against threats in form of terrorist interferences during the flight. Its basic principle is based on the assumption that security checks aimed at identifying persons and the currently applied special security measures are of limited effect<sup>23</sup>. The new system aims at locating conspicuous passengers with the help of small cameras and microphones. Furthermore, aviation electronics should be developed that hackers cannot log into and radio communication between cockpit and tower should be secured. In the last resort, an aircraft in danger should be remote controlled and led to especially prepared runways. First tests of Safee are expected in 2008, the target completion date of the project is 2015. What is yet to be decided is the question of who will bear the costs. There is also need for discussion as regards data security concerning partial or complete recording.



EDS (an explosives detection system) is another innovation concerning the screening of luggage. This system combines different technologies that are, amongst others, capable of detecting explosives in baggage and either indicate the result or sort out the substances automatically. This system is used as standard equipment on new terminals in nearly all European countries and ensures the highest security level possible in screening baggage. One method which could replace the outdated generation of metal detectors is the so called “Backscatter” procedure. Harmless x-rays could make it possible to screen material, thus screening passengers virtually down to their skin. The fact that almost anything the travellers are wearing on them appears see-through allows the detection of nearly all objects, even such like plastics or ceramics. Therefore, this method could considerably reduce the difficulties in detecting forbidden articles and threats to security. The “Backscatter” procedure is debatable from the view of data security and civil rights and liberties, though.<sup>24</sup>

Biometrical procedures represent another technology to automatically and unambiguously recognise humans by means of specific physical features or behaviour. With this method, a passenger can be identified by a technical device. In aviation, capture systems like iris detection (to speed up entry) or finger prints (used to enter the United States of America)

could be considered. Voice recognition would also be conceivable. Such methods would be justified in particular by almost forge-proof, convenient and quick identification of passengers. Their application, which currently takes place only at few airports, could mean a significant progress in aviation security, especially in terms of accelerating the overall processes. These procedures, though, raise substantial questions from the view of data security as well.

#### 4.7 Financing

Regulation 2320/2002 did not contain clear rules on financing the security measures which has been introduced. Therefore, the Commission was invited to carry out a study on financing models in order to reveal possible distortions of competition and work out an appropriate financing arrangement between the Government and the industry. It was noted that, shortly after the introduction of the Regulation 2320/2002 (in 2002), security and airport charges together only amounted to between one and two percent of the average air fares.<sup>26</sup> The study comes to the conclusion that security is financed by the passengers, no matter in which form (e.g. security taxes, surcharges, airport charges up to general fees or taxes). With regard to competitive distortions it was noted that they are most obvious in the relation between the EU and the USA. While the US authorities granted substantial financial aids after 11 September, this was not the case within the EU.

The arising expenses consist of administrative expenses (to adhere to security measures), such resulting from the application (investments in security devices, salaries, training, extraordinary expenses) and such in consequence of terrorist attacks. The study also advocates more transparency as to security fees, for example by explicitly itemising them on the ticket, in order to achieve comparability of the amount charged in different countries.

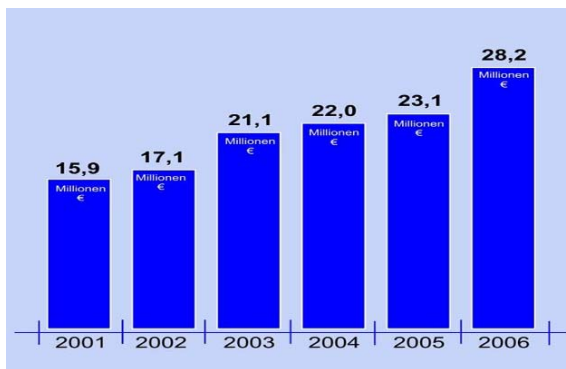


Chart: Increase of aviation security costs at Munich airport

The chart shows that the costs of aviation security at Munich airport have risen by 12.3 million Euros between the years 2001 and 2006. In 2006, they reached a peak level of 28.2 million Euros; for the time being, a decrease cannot be expected. Of this total amount, 11.5 million Euros are attributable to checking personnel, 8.6 million of this amount are covered by landing charges.

Financing security measures is arranged rather differently in the respective Member States (from large-scale government aid to predominant funding by the industry or allocating the costs to the passengers<sup>27</sup>) which leads to a distortion of competition. In particular, this is

the case if some Member States introduce more stringent measures, even noticeably exceeding EU standards, than others.<sup>28</sup>

The differences in financing result from such in the allocation of tasks: In Germany, following the German Aviation Security Act, the screening of passengers and baggage, for example, are responsibilities of the civil aeronautical authorities, whereas in the Netherlands or Great Britain they are assigned to the airports. This also leads to differences in cost distribution; on one hand via aviation security fees as part of the air fare and displayed on the ticket, on the other via increased landing charges etc.

The European Parliament and the aviation industry argue that financing security regulations prescribed by law is not purely a commercial activity, but also a responsibility of the public service. The Parliament wants costs to be shared equally between the state and the industry. In view of passing a new framework regulation it would also be conceivable to arrange for the state covering the costs, at least for such measures that go beyond the scope of EU standards.

It is expected that progress will be made toward convergence in terms of financing security measures through the industry. The question of who will assume responsibility for such funding has to be resolved first, though. The costs incurred (especially since 11 September 2001), divided into categories (like taxes and charges), should be pointed out and their financing is to be clarified. As long as this has not been achieved, the procedures used by the countries or the airports remain very diverse.<sup>29</sup>

#### **4.8 One-Stop Security**

Currently, passengers from non-EU countries entering an EU country have to be subjected to re-screenings very often. The same applies for luggage and cargo. This may be inefficient and lead to little acceptance by the travellers. Therefore, the request for a complete implementation of one-stop security between the EU and Third Countries is truly welcome.

Equivalent security systems in Third Countries should be mutually recognised. Security inspections should follow procedures that are applied country-wide and not specifically at each airport. This would facilitate their recognition and reduce the number of agreements needed. If the security systems cannot be fully recognised, the countries concerned would have to establish additional measures individually, for example additional screening of passengers or keeping aircraft under surveillance. This could help putting aside further security measures at the transfer point and speed up procedures for flights arriving in the EU.<sup>30</sup>

European legislation conveys the impression that the principle of one-stop security has been fully implemented across the Community already. In reality, this is not the case, though, because every EU Member State is at liberty to apply more stringent measures than those prescribed by the EU. France, for example, requires a renewed security check each time an aircraft arrives at its sovereign territory. This even applies to flights within the country.

An effective one-stop security system with the advantages of simplified security checks is in the interest of the passengers as well as of the air carriers. The Commission should bear this in mind and include the industry and its experiences when conducting its security inspections.<sup>31</sup>

Due to a lack of harmonisation, one-stop security does not seem feasible in the near future. Moreover, an air of easy-going confidence plays quite an important role and appears to be worthy of improvement.

It cannot be expected that the security systems of Third Countries exactly match those of the EU. Therefore, equivalent systems with the same level of security should be recognised. Different approaches to security should be analysed with the aim of figuring out which are of similar value.

#### **4.9 In-flight Security**

In-flight Security, i.e. ensuring security on board of an airplane, could be considered as a final step to ensure civil aviation security because the measures applied before, between check in and take-off, should already have resulted in eliminating all threats on ground. In the new framework regulation, security measures on board will be regulated on a European scale for the first time. The regulations concerning the carrying of weapons on board, the deployment of Sky Marshals, inaccessible cockpit doors as well as the exclusion of potentially disruptive passengers remain assigned to the Member States. As to the deployment of security officers, their recruitment should meet strict criteria and they should have passed the appropriate training. The conditions of the carrying of weapons also must be formulated clearly. With regard to this, the Parliament proposed the following three conditions in its second reading: 1. The respective security requirements are fulfilled; 2. the Member State concerned gave its authorisation and, finally, 3. the permissions must be presented to the state of departure, the state of arrival and any state flown over or on the territory of which stopovers are carried out. In case states decide to deploy Sky Marshals, they should also bear the costs for such a deployment.

#### **4.10 Distortions of Competition**

The varying forms of funding as well as the fact that the principle of one-stop security has not been put into practice lead to distortions of the market within the EU as well as between the EU and Third Countries. As the security regulations (like the liquids Regulation) tighten steadily, the processing of transfer passengers, who, for instance, represent up to 53 % of the overall passenger volume in Frankfurt, via hubs in Third Countries gains increased incentive. The risk of the MCT (currently about 45 minutes) being prolonged intensifies this tendency.

Concerning financing, the EU Member States suffer competitive disadvantages because the passengers pay security charges; especially compared with the USA or Dubai, for example, where security costs are almost completely subsidised by the state.





The EU security regulations are mainly based on the British level which causes difficulties for other European airports to adjust their own measures. One example is the implementation of the provisions on separating arriving and departing passengers, which has not been fully accomplished at Frankfurt, Munich and Amsterdam airport. The competitive distortions that have arisen have to be reduced using the new framework Regulation as well as bilateral agreements between the EU and Third Countries. Certain security measures should be introduced in this process only after having performed cost-benefit analyses. The aim is to avoid pushing up the costs and pay attention to efficiency.

Common security standards are the highest good for a global aviation system based on hubs. They must be implemented between the EU and Third Countries as well as within the EU. On one hand, problems occur if single states apply higher standards than others. On the other hand, security gaps always occur if single states do not adhere to the security standards and therefore cannot be recognised as secure after the European Commission's security inspections.

#### 4.11 Cargo Security

One of the studies on Air Cargo Security<sup>34</sup> carried out by the EU describes to what extent the implementation of Regulation 2320/2002 has been accomplished in this specific field. The first priority is to establish a secure EU-wide data base of “regulated agents” and “known consignors”. This is meant to ensure the availability of large-scale information and the usability of accreditation and certification procedures. Furthermore, EU-wide standards on data management should be implemented. Similar to the situation in passenger transport, the cargo carriers stand up for mutual recognition of their security measures, between EU Member States as well as between the EU and Third Countries.

Further problems in cargo security arise concerning cargo checks that are time-consuming and depend highly on the type and size of cargo. The “regulated agent”, who conducts business with an operator and carries out the prescribed security checks, is considered as a possible approach to a solution. He guarantees that the freight is harmless. A “known consignor” on the other hand is described as a person sending articles and therefore has established business with a regulated agent or air carrier. This consignor fulfils the requirements with regard to identity, secure premises, reliable staff, protection against unauthorised interference etc. Cargo has to be searched by hand or physical check in order to ensure security. Other options are subjecting it to simulation or pressure chambers, sealing or other means, both technical and bio-sensory (e.g. explosives detection dogs).

In contrast to passenger checks, state-of-the-art equipment is used in the field of cargo. Tools like explosives detectors (also called “electronic sniffers”) provide for the highest

possible level of security. Such tools can be devices that analyse and detect even smallest amounts of explosives, x-ray equipment, high definition video monitors, stringent access controls of suppliers, staff, visitors etc.



Cargo can only be shipped without additional security if it can be assigned to a known consignor or regulated agent. In all other cases, security checks are necessary.<sup>35</sup>

#### **4.12 Registered Travellers**

In July 2004, the aviation industry and the TSA launched the pilot project “Registered Travellers” (RT) in the USA. Its provisions state that certain registered passengers at selected airports are subjected to different security checks than “normal” passengers when entering the country. Once the travellers have transmitted numerous personal data (photographies, finger print, iris scan, reliability checks etc), they can pass the controls more quickly and conveniently. On one hand, so called fast security lanes are reserved for them, on the other hand they are sometimes – depending on the type of programme – entitled to an advanced level of service like concierge-service, privileges regarding parking spaces and certain rebates. The TSA attaches great importance to the latest technologies to ensure an equivalent or even higher security standard than usual. At the same time, it should be made sure that passengers not taking part in the programme do not suffer undue disadvantages (for instance, longer queues at the control points).<sup>36</sup>

The European Commission, too, is currently working on an EU-wide programme to implement the “Registered traveller”-concept. At present, there are only individual RT-programmes in certain countries (for example MiSense in Great Britain or biometric border controls at Frankfurt airport). Therefore, the Commission is examining just now whether a European approach towards differentiating between passengers complying with different security standards is feasible. Again, the basic approach is that security should not only be checked at the airport, but already in advance by collecting security-related data. Several complementary measures are applied. Whereas, at present, all passengers pass the same security controls that only cover a small part of the potential risks, there should be two groups of passengers in the future: The normal group and one with a reduced risk, “Registered Travellers”. The latter is characterised by being registered at an authority, certain background or security checks focusing on the passenger’s past, biometric data etc. Additional information gathered from random checks or the application of technically improved equipment could achieve a higher level of security than today. Applying the latest in technology also means, amongst other things, combining several methods like metal and explosives detectors. Since an all-embracing application would be very time-consuming, a random generator could gain special

importance: It appears conceivable that passengers no longer pass every single control point, but only a few selected at random. This would make it impossible for an alleged terrorist to predict the checks he will have to pass. Therefore, such a “reduced” security check would offer the same deterrent effect as having to pass all points as a whole.



Some basic problems have to be solved, though, with regard to implementing the RT-programme: Where do you draw the line between a registered and non-registered passenger, i.e. who may join the programme and who may not? Non-discrimination would surely play an important role in the political discussion of such provisions. Another question is: Which authority is responsible for governing data? And how can the protection of data privacy be handled?<sup>37</sup>

If these open questions could be answered and improved technologies applied, then there was hope for a great leap forward towards more convenient and quicker security and passport controls without lowering the security standard; in contrast, maybe even enhancing it. An Irish company, Accenture, is currently working on the development of such a programme in form of a feasibility study.

## 5. Position of the Parties Involved

### 5.1 Airports and Air Carriers

The air carriers require the following elements with a view to harmonising the process in the future:

- 1. An intensified involvement of the industry:** This should make it easier for legislators to establish practical and efficient security measures. At present, this task is performed by the Stakeholder Advisory Group on Aviation Security (SAGAS). This is an advisory group of the parties involved in this economic sector that holds no official advisory position. This status should be changed in order to allow for the European Commission and the EU Member States being advised by the group, i.e. SAGAS should be formally institutionalised as an advisory board.
- 2. Risk and impact assessment:** Cost-benefit analyses should be carried out before, during and after the implementation of security measures in order to evaluate their efficiency with regard to security risks and threats. The air carriers support the

Commission's policy of "Better Regulation" in this respect. The major objective should be using resources in such a way that risks are reduced significantly. In view of this, it is essential to detect threats, to examine the efficiency of the measures in force and to evaluate the impact of new regulations when they are about to be introduced.

- 3. Financing security measures:** The aviation industry is of the opinion that fighting terrorism is a responsibility the state has to take on. Therefore, each EU Member State should introduce security policies that protect the citizens against terrorist threats. If more stringent security measures than in Regulation 2320/2002 are introduced, the Member States should bear the costs. The European Commission is called upon to submit a proposal on how a solution for the question of funding could look like that enables the states as well as the industry to fulfil their responsibilities concerning security in aviation.
- 4. One-stop security:** In a European Union fulfilling all the security requirements of Regulation 2320/2002 regarding passengers, baggage, cargo and aircraft, there is no need for additional controls at other EU airports. With regard to Third Countries, agreements should be concluded containing mutual recognition of the respective security measures in order to extend the principle of one-stop security beyond the borders of the EU.
- 5. Comitology vs. codecision procedures:** The aviation industry demands that decisions on fundamental security measures will continue to be drawn within the frame of codecision procedures, i.e. including the positions of the European Parliament and the Council. An advisory committee with representatives of the industry is also necessary in order to give practice-oriented advice to the decision makers. Finally, it is required that the wording of the Regulations passed through comitology procedures is made available to all persons or entities responsible for security.<sup>38</sup>



## 5.2 European Commission

1. **Adopting the new framework regulation** is of **highest priority** for the Commission, just as it is for the industry. Clarifying the legal requirements will be of help towards simplification and further harmonisation. The new Regulation should set out the basic principles while implementing regulations define the precise technical and procedural details.
2. **Worldwide standards:** One of the main objects of the Commission is to establish worldwide standards concerning civil aviation security. Therefore, it supports initiatives like bilateral agreements between the EU and Third Countries to promote worldwide harmonisation.
3. **One-stop security:** The Commission, too, wants only one security check to being performed on all flights within the EU in the near future. Therefore, it supports technical innovations, especially with regard to screening.
4. **Financing:** The Commission (as well as the Council) rejects setting up common rules on the allocation of security costs in a Regulation. The reason is that a Regulation of a technical nature should not contain requirements concerning financing measures.
5. **Risk and impact assessment:** Risk and benefit analyses including an estimation of the costs should be performed for all proposed implementing measures. Following the Commission, SAGAS is supposed to form the framework for detailed evaluations. This advisory group has already been established unofficially, but should be turned into an official body in the future.
6. **In-flight security:** In the opinion of the Commission, it should be left up to the Member States to decide in how far they prohibit or allow the carrying of arms on board or deploy Sky Marshals.<sup>39</sup>

## 6. Outlook: Security in the Future

At present, the security systems are exposed to different dangers. These include not only politically or religiously motivated terrorism, but also corruption, classical forms of organised crime etc. Another important factor is that the scenarios of threats are changing continuously. Maybe bomb attacks soon will be a thing of the past and replaced by other threats (for example attacks with chemical or biological materials). This means that security measures will tend to be increased in the future by adding new procedures and technologies to the current standard. This might be welcome from the view of mere security considerations, but it also poses risks. On one hand, long-term negative effects on the efficiency of the European aviation system are imminent when piling up more and more new procedures and technologies leads to increasing delays and bureaucratic expenditure. On the other hand, the question arises whether a constant detriment to the liberty rights of the citizens is acceptable at all in an open, democratic society and if so, to what extent.



One option to reduce the pressure on the security systems at the airports would be shifting the main focus of security measures into the area of prevention. In this respect, intelligence findings as well as new and safer procedures for passenger and staff control through biometric identification of persons play an important role. The above mentioned “Registered Traveller” programme holds considerable potential with a view to improve the efficiency, but it is hard to push through politically.

Another key element is qualifying security staff and limiting their workload to a reasonable amount. From the view of the industry, including SAGAS in helping policy in its search for practical solutions will be of great importance in the future. The airport and airline associations ACI and AEA have already installed a working group (ESPAS = European Strategic Partnership for Aviation Security).<sup>40</sup> Its aim is to reach a consistent and efficient aviation security policy in Europe. In order to contribute to this goal, ESPAS works in close cooperation with the Commission.

## **7. Assessment from the View of Transport Policy**

As shown above, the current regulatory framework and the implementing regulations hold a high potential of problems concerning implementation and enforcement, of misinterpretation and discontent of many persons involved. The political pressure in the face of actual and theoretical threats often leads to impractical security measures and too much regulation. Aviation is the safest mode of transport from a statistical point of view, yet it is subjected to the tightest security measures. Other modes of transport – especially rail and road transport – have only little to none at all. This is an enormous imbalance that should be kept in mind in view of the aim of optimising the entire traffic system.

Legislation on aviation security mostly is reacting to incidents. Such incidents often lead to a new Regulation (for example the liquids Regulation), which sets up mainly technical and organisational details leaving the overall concept and the impact unaddressed. New security measures often lead to negative impacts on product quality as well as large-scale expenditures and bureaucratic burdens without an adequate gain in security. Therefore it is very welcome that the new framework regulation aims more at active, risk-related and sustainable provisions.

For the future system of civil aviation security an adjustment of security standards worldwide, i.e. harmonisation on an equally high level instead of too much regulation in single areas (especially in the USA and the EU) is desirable. Measures like one-stop

security, consistent procedures and avoiding competitive distortions should be given special attention. Adequate measures in Third Countries should be mutually recognized, for example within the scope of agreements between the EU and certain selected countries. In case this should not be feasible on a global scale, at least a solution between the EU and the USA or on the G8-level would be favourable because the largest part of worldwide activities in air traffic is attributable to these countries.

The future assignment of security legislation is to achieve a proper balance between the authorities' task to fight terrorism on one side and the financial burden for companies and passengers of funding security measures on the other. Using new technologies could play an important role in increasing convenience for the passengers and speed up procedures.

Adopting the new framework regulation will help achieving security for all parties concerned while at the same time enhancing convenience for the passengers. Moreover, it offers the chance to do away with outdated and unnecessary measures in order to save costs and time for everybody involved.

The new framework regulation yields more flexibility regarding measures to be implemented and a more consistent approach. Harmonising all standards is the most important aim of the provisions. Reaching this would mean a significant improvement of security in civil aviation and pave the way to well-balanced security architecture. Therefore, a positive decision should result from the conciliation proceedings as soon as possible.

Remarks: *This article reflects the personal opinion of the authors*



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- <sup>3</sup> European Civil Aviation Conference
- <sup>4</sup> Hereafter called Regulation
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