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An assessment of the regulation of air cargo security in Europe: A Belgian case study

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A B S T R A C T

The discovery of explosive devices concealed in air cargo in October 2010 triggered an action plan to strengthen air cargo security in Europe. This paper addresses the potential implications for different actors with respect to the introduction of recent European Union (EU) regulation. The focus is on the legislative efforts to reinforce air cargo security and, in particular, the issue of third countries flights to Belgium. Based on existing literature, a review of the legislation and several interviews with experts and different stakeholders in Belgium, it can be concluded that the current air cargo and mail security framework is not satisfactory. Evidence from both the literature review and the interviews points to a necessary policy paradigm shift towards a risk assessment based security process. Special emphasis should be put on a collaborative industry driven supply chain security and the urgent need to harmonize air cargo security procedures at EU level.

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1. Introduction and rationale

In this paper, **air cargo** is defined as any property (e.g.: freight, mail, express parcels) carried on a full-freight aircraft or under the main deck of a passenger aircraft (belly cargo). ICAO's Annex 17 to the Convention on International Civil Aviation defines **security** as safeguarding civil aviation against acts of unlawful interference, through a combination of measures, human and material resources (ICAO, 2011).

Air cargo has recorded significant growth in the last years even outpacing passenger growth rates, becoming a significant revenue source for airlines as well as for airports (Scholz and von Cossel, 2011). This increase in worldwide trade is closely followed by public and private investments in securing cargo from different risks and menaces.

However, the securitization of the supply chain is of great complexity. From the practical implementation viewpoint, there are numerous actors and therefore different views that must be considered. From big containers to the tiniest piece of cargo, all freight goes through different operators from the production

facility to its final destination. This starts with the shipper, passes through the haulier to the freight forwarder, and then to the ground handler and airline, with eventual transhipment points, governmental agencies and finally to the consignee. Moreover, this process includes other actors such as the security industry, international organizations as well as national and international political governments. Consequently, the political decision-making process becomes extremely complex. In particular, ICAO has not been capable of providing a legal framework that ensures a level of protection that satisfies all countries, leading to the proliferation of national legislation.

The continuous introduction of new regulations in this framework envisages safeguarding lives and protecting trade from external threats. However, concerns with potential bottlenecks and market disruptions arise as emergency amendments create a sense of uncertainty in the industry. This paper explores the current security framework, its implications for different stakeholders and what can be done to improve air cargo security in Europe.

An incident in October 2010 involving air cargo consignments transferring in Europe to the United States of America (USA) has received attention related to the issue of whether the current regulatory framework on air cargo and mail security was appropriate.[3] In previous years the key priority of newly introduced and

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[3] An overview of the commercial airline bombing history can be consulted in Aerospaceweb.org (2013).

strengthened regulations and standards has been on ensuring the highest security standards for the air transportation of passengers, with little attention being paid to cargo and mail. In December 2010, the European Commission (EC) presented an action plan to strengthen air cargo security. In practice this action plan aimed at replacing the emergency security measures put in place by several EU Member States (MS) following the events of October 2010 by a joint approach to addressing the new threat to civil aviation (European Commission, 2010d). It resulted in the adoption, by August 2011, of new rules on air cargo and mail security, including for consignments being carried into the EU coming from third countries.[4]

In summary, since February 2012 any aircraft operator carrying cargo or mail from an airport located in a third country into the EU is designated as an "Air Cargo or Mail Carrier operating into the Union from a Third Country airport" (ACC3) by an appropriate authority of a Member State. To obtain such a designation the air carrier must, amongst other elements, ensure that its security programme covers the points listed in Regulation No 859/2011. These points aim at ensuring that security control actions similar to those that exist in the EU are applied to the cargo, i.e. all cargo is screened unless security controls have been applied to the consignment by a regulated agent[5] (RA), a known consignor[6] (KC) or an account consignor[7] (AC) (in this case if not carried in a passenger aircraft) and the cargo is protected from unauthorized interference. By 1 July 2014 at the latest additional requirements will have to be fulfilled to obtain the ACC3, namely the air carrier will have to ensure that an on-site verification of its cargo and mail operations at the relevant third country airport has been carried out by an independent auditor. Similarly, regulated agents and known consignors in those third countries will also have to be independently validated (Macário et al., 2012). This has further increased the debate around which pathway to follow in order to ensure air cargo and mail security. The typical alternatives are ensuring 100% cargo screening (as envisaged by the USA) or by means of supply chain security (SCS).

The paper is organized as follows. In Section 2, the importance in Belgium and Europe of air cargo and its security is illustrated. Section 3 provides an examination of air cargo security through a review of literature and legislation. Section 4 illustrates the Belgian reality by discussing interviews held with several experts from different fields. In Section 5, the results from Sections 3 are related to those of Section 4. Finally, conclusions are drawn in Section 6.

2. Importance of air cargo security in Belgium and Europe

Belgium's geographic position has allowed it to become an important European logistics centre. In 2011, the Port of Antwerp was the second biggest operator in Europe, handling over 187 million tonnes of loaded and unloaded freight.[8] In the same year, two airports of the eleven busiest European ones (in terms of freight) were Belgian (European Commission, 2013). On the basis of

Table 1
Freight and mail air transport by country as percentage of EU27's total.

	2009	2010	2011
Germany	28%	30%	31%
United Kingdom	18%	18%	17%
The Netherlands	12%	12%	12%
France	12%	11%	12%
Belgium	7%	7%	7%
Italy	5%	5%	5%
Luxembourg	5%	5%	5%
Spain	4%	4%	4%
Austria	2%	2%	2%
Others	7%	7%	6%

Source: European Commission (2013)

the 40 major EU airports, Belgium ranks fifth as EU27's largest country in terms of transported air cargo and mail (Table 1).

In 2011 air transport represented merely 0.6% of EU27 external trade's weight whilst sea transport represented almost 75% (Table 2). On the other hand, in terms of value, air transport is responsible for 747.8 billion EUR, or 22.8% of external trade's value.[9] Taking into account values of total external trade as indicative, it means that on average, a tonne of cargo carried by air is nearly 52 times more valuable than one tonne carried by sea. This is due to the high value cargo (currency, artwork, laptops, smartphones, etc.), time/temperature-sensitive goods (perishables, organs for transplants, pharmaceutical products, etc.) and dangerous goods (radioactive material, inflammable products, toxic and infectious substances, etc.) that are transported by air. Moreover, considering imported cargo alone, the ratio between the unit cost of cargo carried by air and sea rises to 110. This is explained by the fact that imports account for 19% and 55% of the total cargo's value carried by air and sea respectively, whilst in terms of weight, imported cargo accounts for 0.2% of air cargo and 75% of sea cargo. This is highly relevant for the importance of air cargo coming from third countries to the EU and the eventual need of more stringent security measures.

With respect to cargo-related risks, there is an increasing demand for detection and identification capabilities[10] of terrorist acts (weapons, explosives), illegal movement of goods (drugs, weapons, alcohol) and fraud and revenue avoidance (Ecorys, 2009). These risks along with foreseeable increasing volumes of cargo result in a growing security market. This means there is an increasing need to finance air transport security.

However it is rather difficult to obtain estimates of the size of the market for air transportation security. This is related both to the reluctance in providing information on the level of security of the equipment purchased (for security reasons) and in providing commercially sensitive information. Nonetheless, there is consensus on an average annual growth of the security market of around 5–6% (Ecorys, 2009). All things combined result in a huge market with increasing passenger and cargo traffic forecasts, and massive potential socio-economic losses in the event of the above-mentioned risks materializing. Therefore this requires clear

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[4] See European Commission (2011a).

[5] A 'regulated agent' is an air carrier, agent, freight forwarder or any other entity who ensures security controls with respect to cargo or mail. See Article 3 (26) of European Commission (2008).

[6] A 'known consignor' is a consignor who originates cargo or mail for its own account (i.e. not received from a third party) and whose procedures meet common security rules and standards sufficient to allow carriage of cargo or mail on any aircraft. See Article 3 (27) of European Commission (2008).

[7] An 'account consignor' is a consignor who originates cargo or mail for its own account and whose procedures meet common security rules and standards sufficient to allow carriage of that cargo on all-cargo aircraft or mail on all-mail aircraft. See Article 3 (28) of European Commission (2008).

[8] See Vlaamse Havencommissie (2013).

[9] See European Commission (2013, p. 29). External trade by mode does not include trade between Member States. It refers to EU27's total trade with other regions of the world.

[10] Such capabilities are related to the ability of detecting (i.e. determining and transmitting by a surveillance system that an event has occurred) and identifying (i.e. discriminating between recognizable objects as being friendly or hostile) the presence of any form of smuggling of both 'genuine' (e.g. weapons, explosives, viruses, etc) and counterfeit goods. Moreover, the capability of detection and identification is often linked to the issue of authentication regarding the protection of trademarks and other intellectual property by their owners.