

# Issues in Aviation Law and Policy

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# Issues in Aviation Law and Policy

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# Abstracts

## **Complex Connections: The Challenge of Improving Air Service to Downstate Illinois, 2009–Present**

by Joseph P. Schwieterman

The large size and relatively low population density of downstate Illinois has for generations been an obstacle to providing high-quality intercity air, bus, and rail transportation to many of the region's cities. This challenge is magnified by the absence of metropolitan areas with a population greater than 175,000, a level well below that generally considered necessary to support frequent low-cost airline service, or even frequent intercity bus service, to points several hundred miles away. Despite this, the system of airports and bus and train routes serving the region has significantly improved in recent years, and some of the policies created to support these routes deserve recognition for their exemplary qualities.

This article provides a broad perspective on how scheduled air passenger service to downstate Illinois has evolved in recent years and identifies trends relevant to understanding how mobility in the region can be improved. Although the analysis focuses primarily on passenger traffic, the success of Rockford in cultivating cargo traffic is considered in the latter part of the article.

The analysis of small and mid-size airports in downstate Illinois points to several promising areas of research relevant to airport planning throughout the continental United States, particularly on the interplay between airports to better understand how their changing orientation affects their transportation role. It behooves federal and state governments to consider the fundamental "gestalt" of their air system – the idea that the whole is greater than the sum of its parts.

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## **The Unintended Consequences of Automation and Artificial Intelligence: Are Pilots Losing their Edge?**

by Brandon A. Bordenkircher

Commercial airline safety is at an all-time high. Advances in the aviation sector, thanks to automated systems, have allowed for gradual improvements to safety, particularly due to a decline in cognitive fatigue facing pilots. This fact was driven home in a recent study that showed airline fatalities have been reduced by roughly a factor of two every decade and have edged toward a factor of three in the last decade.

However, the recent crashes of two Boeing 737 MAX aircraft have shown us that not only is there still room for improvement, but that technological gains in one area can have unintended – and negative – impacts in other areas. The question we seek to answer: are technological advances, such as automation, eroding piloting skills? Other sectors, such as health care, seem to be facing the same dilemma with artificial intelligence and surgical skills.

The paper consists of three parts. Part 1, *Automation and Artificial Intelligence in Context*, defines and explores the history of automation and artificial intelligence, lays out how automation came to airplane cockpits, and explains its value to the cockpit. Part 2, *The Negative Implications of Automation and Artificial Intelligence*, covers the problems introduced by these new technologies. Finally, Part 3, *Moving Forward*, conducts a brief analysis of issues involving automation in the cockpit, what we should be doing to address these issues, and what other sectors are doing to address their own automation and AI issues.

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**Drone versus Manned Aircraft: An Analysis of  
the Application of the Discretionary Function  
Exception to the Federal Tort Claims Act to  
Accidents Caused by a Collision Between  
a Drone and a Manned Aircraft**

by Douglas M. Marshall

This article offers a history of the Federal Tort Claims Act (FTCA) in the context of the introduction of Unmanned Aircraft Systems (UAS) into a regulatory environment that has, for the most part, facilitated safe air travel in the United States for many decades. The Federal Aviation Administration has been slow to respond to demands from many stakeholders to allow commercial operations of unmanned aircraft for a wide variety of uses, and the agency has struggled with promulgating rules, policies, and regulations to deal with the proliferation of unmanned aircraft in the National Airspace.

As the UAS industry matures, and systems evolve with greater capabilities and degrees of complexity, inevitably there will be mishaps that invoke an examination of the design integrity of the systems, as well as the role played by the FAA in certifications, regulatory waivers, and authorizations of particular operations. The FAA's mandate to promote commercial aviation while maintaining high standards of safety will be challenged if something goes wrong with a UAS flight and someone is injured or killed.

The discretionary function exception to the FTCA has thus far shielded the FAA from liability under circumstances where its policies and procedures underlie the agency's decision-making process, but the federal courts have yet to deal with the unique components of a UAS operation. Placing these elements into the context of a Supreme Court aviation case involving the discretionary function exception will present a challenge to the parties and the courts to draw parallels between unmanned and manned aircraft design, certification, and operation, and may well impact how UAS activities are regulated in the future.

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## **Change Is in the Air in the U.S. and Canada . . . but what about Brazil?**

by Delphine Defossez

While passengers in Europe have enjoyed the protection of Regulation 261/2004 for well over a decade, across the Atlantic passengers have had to fight for their rights to be recognized and enforced. However, the trend toward a greater balance between passengers' rights and airlines' needs seems to have increased in 2019, with the Federal Government of Canada implementing new air passenger protection regulations and the U.S. Congress introducing an Airline Passengers' Bill of Rights proposal.

The Canadian regulations and the U.S. proposal both reflect lessons learned from the deficiencies in the EU Regulation. Having a fixed amount of compensation increases legal certainty for airlines and passengers. The U.S. proposal includes fixed amounts for delays and cancellations, in stark contrast to that nation's current scheme, which has never required airlines to provide such compensation.

Meanwhile, in Brazil, a 2010 Bill to modernize the nation's passenger rights scheme has languished, and the government's most recent Resolution is silent on delays and cancellations, leaving these situations to be resolved by the courts. While the Brazilian system offers one of the highest levels of passenger protection, its fragmented approach is detrimental to both airlines and passengers because of its lack of legal certainty. Much could be learned from the Canadian and American efforts, suggesting that Brazil should craft its own legislation to better balance the rights of passengers and the needs of airlines.

**See page 269.**

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## **A Comparative Law, Economics, and Technology Perspective on Aviation Energy and Carbon Policy**

by Matthew G. Andersson

Like nearly all modern transportation systems, the aviation sector relies on some form of combustion technology and on some form of petroleum as fuel. Unlike all other forms of individual or mass transportation, however, current aviation operations are less able to adapt to either alternative fuels with sufficient energy coefficients or alternative thrust machinery that is not powered by kerosene products. Airplanes may be among the last human machines to burn fossil fuels.

Given the constraints on aviation to migrate or substitute energy sources, and the more fundamental requirement it faces for scientific research and development, it makes little sense to treat aviation in a financially punitive way from a public policy perspective. Such currently favored policy programs as carbon tax schemes; cap, capture, credit, and trade; or so-called offset arrangements, act counterproductively in at least two regards. First, they retard or delay the ability of manufacturers and operators to develop and adopt new, cleaner flight technology; and second, they result in no measurable improvement in net carbon emissions, critical to many state, city, and federal ambitions.

The European Union, Asia, and the United States each have different economic perspectives, legal and regulatory standards, and institutional architecture committed in various ways and at different stages, to aviation energy technology advancement, and thereby emissions production. What all share in common is some form of public-private cooperation necessary to address and solve for the technical and financial complexity of the problem. How each pursues such cooperation will determine both the relative national competitive outcomes among them and the rate of development of what will become a new technology leading sector, including its ramifications for aviation's next frontier, aerospace. China has already moved to that stage. Will the United States and the European Union follow?

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## **European Court of Justice Rulings on the EU Passenger Rights Regulation: Topics and Case Studies**

by Joakim Forsberg

This paper provides a practical guide to air passenger rights case law within the European Union (EU) and European Economic Area (EEA) in relation to delayed flights, cancellations, lost baggage, and other service obligations of air carriers.

Regulation 261/2004, the EU Air Passenger Rights Regulation, has proven to be a challenge for the aviation industry. With more than 30 preliminary rulings to date – and more pending – it has become clear that the EU Court of Justice frequently tends to interpret the Regulation in favor of the passengers claiming compensation from air carriers under its terms. This is in line with the focus on increased consumer protection created over the years by various EU regulations and directives in different industries, and it is expected to continue. The number of questions forwarded to the Court of Justice by various national courts throughout the European Union suggests that the rights and obligations of air carriers toward their passengers will continue to be challenged.

The paper consists of three parts. The first part introduces the Regulation and offers a short high-level description of its historical background. The second part is a useful practitioner's guide that provides concise listings of each interpretation of the Regulation by the Court of Justice, conveniently arranged by topic. The final part, a detailed reference document, contains a study of each case.

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# Commentary

## Covid-19: The Airlines' Battle for Survival

by Michael McLaren QC\*

Much has been written on the rights of air passengers resulting from Covid-19. But for many airlines, Covid-19 poses a much more existential threat. It threatens the survival of not just small airlines like Flybe. British Airways warned on March 13 that Covid-19 is “*more serious*” for aviation than the 2009 SARS or 9/11,<sup>1</sup> and more recently reported that Covid-19 threatens its very survival. Likewise, Korean Air has warned that it might not survive.<sup>2</sup> Cathay Pacific has warned of substantial losses.<sup>3</sup> Each day brings a fresh flood of dire news from the aviation industry.

Even in pre-Covid times, airlines faced huge challenges. Many airlines are barely viable; about 40 percent of passenger flights in Europe are on airlines which trade at no better than break-even.

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<sup>1</sup> *BA Chief Warns of Job Cuts and Axed Routes in Crisis ‘More Serious’ than 9/11*, FIN. TIMES, Mar. 14, 2020, at 1 (“Some of us have worked in aviation through the global financial crisis, the Sars outbreak and 9/11 . . . . What is happening right now as a result of Covid-19 is more serious than any of these events. It is a crisis of global proportions like no other we have known.” (quoting British Airways CEO Alex Cruz)).

<sup>2</sup> *‘Survival of the Fittest’ as Airlines Take Drastic Steps to Ride Out Virus*, FIN. TIMES, Mar. 14, 2020, at 11.

<sup>3</sup> *Cathay Pacific Expects ‘Substantial Loss’ This Year*, BBC.COM (Mar. 11, 2020), <https://www.bbc.com/news/business-51813478>.

Others, such as Norwegian, are known to be already heavily shackled by debt. Relatively few airlines are commercially highly successful.

This commentary considers Covid-19 from an airline perspective, not a passenger perspective; and offers a few thoughts as to how airlines might seek to reduce their vulnerability to failure – both now and in the longer term.

### *The Short-Term Problem*

#### *The Liquidity Issue*

The survival of an airline in a fast-moving crisis depends not only on business decisions (present and future) and external factors. The intrinsic resilience of the business, and above all liquidity, are likely to be other key factors. Airlines with weak balance sheets, particularly if heavily leveraged, will be more vulnerable to failure. So airlines will urgently be looking at how best to reassure lenders or investors that their exposure to claims is limited and manageable – and how to avoid needing to make provisions in their accounts or excessively pessimistic profit warnings.

Some airlines, such as easyJet, have grounded all their aircraft and furloughed staff.<sup>4</sup> But that will not arrest their losses. There are many expenses which cannot just be turned off at the drop of a hat – for instance, aircraft leasing and maintenance costs, finance costs, forward purchases of fuel, to name but a few. So while cutting expenditures by suspending operations might help, it is far from a complete answer.

Increasingly, it seems that many airlines will only survive with heavy government support. The U.K. government is currently playing hardball, although Virgin has warned that it probably will not survive without support.<sup>5</sup> On the other hand, Air France/KLM is reportedly in line to be supported by the French

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<sup>4</sup> *Coronavirus: EasyJet Grounds Entire Fleet of Planes Due to Virus*, BBC.COM (Mar. 30, 2020), <https://www.bbc.com/news/business-52084003>.

<sup>5</sup> *Branson Says Virgin Atlantic Will Need UK Government Help to Survive*, REUTERS.COM (Apr. 20, 2020, 4:30 AM), <https://www.reuters.com/article/us-health-coronavirus-virgin-atlantic/branson-says-virgin-atlantic-will-need-uk-government-help-to-survive-idUSKBN22213R>.

state.<sup>6</sup> Which airlines will succeed in getting state support is unknown at the time of writing, and in any case beyond the scope of this paper.

### *Passenger Claims*

One obvious vulnerability for airlines is their liability to passengers, not limited to claims for delayed or cancelled flights. But the exceptional nature of Covid-19 might provide a defense to compensation claims for at least some airlines. The compensation regime in Europe deprives passengers of a right to compensation if the delay was caused by an “*extraordinary circumstance*.”<sup>7</sup>

Covid-19 might justifiably be thought to be an extraordinary circumstance. Indeed, on March 18, the European Commission issued a Notice comprising “*Interpretative Guidelines on EU passenger rights regulations in the context of the developing situation with Covid-19*.”<sup>8</sup> Broadly, the Commission’s guidance is that where a flight is prohibited by public authorities or the movement of persons is banned in a manner which excludes the flight in question being operated, that would satisfy the 5(3) test. However, it is clear from the Commission’s guidance that the situation is more nuanced where the flight would be empty if not cancelled; “*depending on the circumstances, [such] a cancellation may still be viewed as ‘caused’ by the measure taken by the public authorities*”<sup>9</sup> and thus satisfy the 5(3) test. So it might still be a fact-specific question whether Covid-19 caused a particular flight to be delayed or cancelled. Airlines will be looking for excuses not to fly flights with a low load factor, but will need to give careful advance consideration to the issue of whether the “*extraordinary*

<sup>6</sup> Liz Alderman, *Air France-KLM Gets € 10 Billion Bailout as Coronavirus Hits Travel*, NYTIMES.COM (Apr. 25, 2020), <https://www.nytimes.com/2020/04/25/business/air-france-klm-bailout.html>.

<sup>7</sup> Council Regulation 261/2004, Common Rules on Compensation and Assistance to Passengers in the Event of Denied Boarding and of Cancellation or Long Delay of Flights, and Repealing Regulation (EEC) No. 295/91 (Text with EEA relevance) art. 5(3), 2004 O.J. (L 46) 1, 4 [hereinafter EU Regulation 261/2004] (“An operating air carrier shall not be obliged to pay compensation in accordance with Article 7, if it can prove that the cancellation is caused by extraordinary circumstances which could not have been avoided even if all reasonable measures had been taken.”).

<sup>8</sup> *Commission Notice: Interpretative Guidelines on EU Passenger Rights Regulations in the Context of the Developing Situation with Covid-19*, C (2020) 1830 final (Mar. 18, 2020).

<sup>9</sup> *Id.* at 5.

*circumstance*” defense will apply. Another factor might be any possible relaxation of EU rules on airlines needing to operate flights in order to avoid losing valuable landing slots.

Even if the airline “*can prove that the cancellation is caused by extraordinary circumstances which could not have been avoided even if all reasonable measures had been taken*”<sup>10</sup> (for the purpose of the EU regulation), that would stop far short of relieving the airline of all its burdens. Some of the biggest challenges facing airlines in Europe are the requirements to offer re-routing as well as refunds, and the need to offer care and assistance including hotels during that time – which could be for a very long time. Airlines are naturally keen to offer vouchers instead of cash refunds, to maintain liquidity. IATA has raised both points with the EU Commission, but the Commission has so far (at the time of writing) taken a hard line on both, showing no leniency to the carriers whatsoever.

Obviously, the EU compensation regime does not apply across the globe. Therefore, many cancelled flights elsewhere are not covered by EU Regulation 261/2004.

Airlines wishing to reassure nervous investors or lenders as to their viability will proactively be considering all their arguments as to how they can robustly defend such claims and, importantly in a cashflow crisis, how far they can legitimately delay paying out on any claims – as well as keeping under tight control their obligation to provide re-routing, refunds, and care and assistance to passengers.

### ***Running Costs***

#### **Staff Costs**

A greater pressure point for airlines than passenger claims (which will be finite) will be the ongoing running costs of the airline, in circumstances where not only the duration of the Covid shutdown but also the rate of post-Covid recovery of passenger numbers are both uncertain. Staff costs are just one significant expense. But how airlines can reduce staff costs is a business decision, dependent on the jurisdiction, and is outside the scope of this article.

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<sup>10</sup> EU Regulation 261/2004, *supra* note 7, art. 5(3).

## Aircraft Leasing Costs

Aircraft leasing costs are another major expense, potentially crippling for an airline if it cannot earn revenue from those aircraft. What recourse have airlines against aircraft lessors? From a legal perspective, in most cases probably not much. Aircraft leases are almost invariably boiler-plated in favor of the lessor. The lessee's (airline's) payment obligation is typically "*absolute and unconditional irrespective of any contingency whatsoever*" (to quote from one aircraft lease currently on my desk). So even if a pandemic such as Covid-19 might fall within a well-drafted force majeure clause, such clauses tend not to feature in aircraft leases. But greater recourse to well-drafted force majeure clauses is a lesson which airlines might take from Covid, as discussed *infra* under the heading "Longer-Term Opportunities."

In the short term, there might be another option. Particularly if airlines band together to act in concert, they might well have considerable leverage to negotiate payment holidays with aircraft lessors. Like airlines, aircraft lessors will also be deeply worried by Covid-19. Realistically they cannot foreclose on all aircraft leases where the lessees are in default, because that risks making the situation for lessors far worse. If there were to be widespread lease terminations, the lessors' chances of re-leasing aircraft during a pandemic or any time soon would be close to nil, even with the market demand which would otherwise be generated by the continued suspension of the 737 MAX. So market forces should give airlines leverage to negotiate payment holidays and other relief with lessors. The earlier an airline raises those issues with its lessors, the sooner it might be able to reach a deal and be able to give definitive good news to its investors or lenders.

## Other Variable Costs

Certain variable costs (such as fuel costs), by contrast, might be less of a problem for airlines, due to both flight numbers being much reduced and the price of aviation fuel recently falling. On the other hand, if an airline has forward-purchased fuel at pre-crash prices and in fixed or minimum quantities, that could prove to have been an extremely expensive decision for it.

Airlines will also need to consider how to cap their liabilities to maintenance providers (MROs), catering companies, and the

myriad other businesses which depend on the aviation industry. Typically, airlines will have long-term contracts with such other businesses, often at reduced rates because of the airlines' leverage. How best can airlines mitigate their liabilities to those companies? Early and careful review of all those contracts, including any force majeure clauses which might cover pandemics, might well assist airlines wishing to reassure investors or lenders of their financial resilience in the face of Covid-19.

### *Other Revenue Streams*

One area of aviation less badly hit by Covid is the cargo sector. There are reports of an increased, or at least steady, amount of air cargo being flown around the world, including PPE (personal protection equipment). Flight tracker apps show that many of the remaining flights overhead are cargo flights. Various airports are reportedly only open for cargo operations or are seeing the majority of aircraft movements being cargo flights. Cargo-only airlines are seeing an upturn in business; one such client of mine is certainly benefitting financially from improved trading during Covid.

Against that background, some conventional airlines are using some of their passenger flights and aircraft to carry a greater amount of cargo than usual. However, the reality is that this is likely only to soften to a small degree the hit from Covid – it will not negate the effect of Covid, much less yield big profits.

### *Longer-Term Opportunities*

Covid-19 will pass. After extensive bankruptcies of weaker airlines, surviving airlines might well benefit from a rosier post-Covid landscape, with a reduced number of airlines in competition for resurgent traffic. But what lessons might those surviving airlines take from Covid-19?

This is the first pandemic to cause global economic disruption on anything like this scale. It is a wake-up call for airlines, and indeed other businesses, to build into their future commercial contracts some degree of protection against onerous liabilities should another pandemic strike in the future. The introduction of force majeure clauses into commercial contracts, with the definition of the force majeure event expressly specified to include a



pandemic (capable of definition as one declared by the WHO), is one obvious way forward.

In English law, force majeure clauses typically do not cover economic downturns and travails. For instance, the “*unforeseeable and cataclysmic downward spiral of the world’s financial markets*” in 2008, as the defendant put the position in *Tandrin Aviation Holdings Ltd. v. Aero Toy Store LLC*,<sup>11</sup> was held not to be a force majeure event within the defining clause in that aircraft purchase agreement. However, force majeure is not a term of art. The parties can define for themselves what they will treat as force majeure, at least in common law jurisdictions. (By contrast, in civil code jurisdictions, force majeure may be statutorily defined.) In the *Tandrin* case (in which the current author appeared for the successful party), the purchaser of a new aircraft declined to complete the purchase because of the 2008 financial crash; and the wording of the force majeure clause in question, properly construed, did not expressly or by implication include a financial crash within the force majeure events. However, the judge<sup>12</sup> postulated that matters relevant to delivery of the aircraft in question would be caught by the clause, “*such as the seller being unable to deliver the aircraft on time due to a pandemic causing a dearth of delivery pilots.*”<sup>13</sup> This illustrates that it would be perfectly possible for future force majeure clauses to be drafted so as to include a pandemic as being one of the defined force majeure events.<sup>14</sup>

In many fields (not limited to aviation), there is as yet untapped scope for force majeure clauses to be introduced into future contracts so as to include pandemics and other events of comparable magnitude or effect (e.g., another 9/11). As regards airlines, such clauses might relieve them from liability not only in respect of aircraft leasing obligations but potentially other obligations, for instance to MROs or other service providers on long-term contracts.

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<sup>11</sup> [2010] EWHC (Comm) 40 (Eng.).

<sup>12</sup> Hamblen J., now Lord Hamblen JSC.

<sup>13</sup> [2010] EWHC (Comm) 40, [46(b)].

<sup>14</sup> See Patricia Robertson QC et al., *COVID-19, Force Majeure and Frustration: Key Legal Principles and Industry Implications*, FOUNTAINCOURT.CO.UK (Apr. 2020), <https://www.fountaincourt.co.uk/wp-content/uploads/Force-Majeure-and-Frustration-April-2020.pdf> (for more detail on the legal principles of force majeure and frustration in the context of Covid-19).

Surprisingly, even large airlines typically don't seem to me to have used to maximum effect their own considerable leverage when negotiating major contracts with aircraft or engine manufacturers or lessors, at least in terms of tightening the legal terms (as opposed to commercial issues such as prices). Would aircraft lessors in fact be willing to introduce into aircraft leases such clauses which would potentially work to their disadvantage? It has been suggested that individual airlines will lack the leverage to be able to negotiate with aircraft lessors<sup>15</sup> the inclusion in future aircraft leases of force majeure clauses relieving them of certain liabilities during future pandemics. But I doubt that such pessimism is justified. Many individual airlines are very substantial; and many more form parts of alliances (such as oneworld or Star Alliance), where the member airlines could exercise collectively substantial clout. Also, aircraft lessors operate in a highly competitive market; so if Lessor A is unwilling to accept a force majeure clause specifying a pandemic as a force majeure event but Lessor B is willing to do so, in the post-Covid era of heightened appreciation of the catastrophic risks of a future pandemic, my guess is that Lessor B would be likely to win the business, other factors being broadly equal.

### ***Conclusion***

Covid-19 should be a wake-up call to airlines to flex their muscles when negotiating major contracts with aircraft or engine manufacturers or lessors. Tough contractual bargaining aside, other lessons for the future will surely be able to be learned from the Covid-19 debacle, once the dust has settled.

The key point for airlines is perhaps this: once Covid-19 has passed, airlines should not just breathe a sigh of relief and focus on rebuilding their balance sheets on the basis of "*business as usual*." The world has changed. "*Business as usual*" is no longer adequate in whatever will be the post-Covid-19 landscape.

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<sup>15</sup> Most of them huge corporations owning many aircraft, typically through Special Purpose Vehicles (SPVs).

# Articles

## Complex Connections: The Challenge of Improving Air Service to Downstate Illinois, 2009–Present<sup>#</sup>

by Joseph P. Schwieterman\*

### *Introduction*

The large size and relatively low population density of downstate Illinois has for generations been an obstacle to providing high-quality intercity air, bus, and rail transportation to many of the region's cities. This challenge is magnified by the absence of metropolitan areas larger than Bloomington-Normal, which has

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<sup>#</sup> Portions of this article were derived from Joseph P. Schwieterman et al., *Complex Connections: The Challenge of Improving Air, Bus and Rail Service to Downstate Illinois, 2009–Present*, 4 ILL. MUN. POLICY J. 161 (2019), [https://las.depaul.edu/centers-and-institutes/chaddick-institute-for-metropolitan-development/research-and-publications/Documents/IMPJ\\_161-190\\_Complex\\_Connections\\_copy.pdf](https://las.depaul.edu/centers-and-institutes/chaddick-institute-for-metropolitan-development/research-and-publications/Documents/IMPJ_161-190_Complex_Connections_copy.pdf). I thank the Illinois Municipal League (IML), publisher of the *Illinois Municipal Policy Journal*, for permission to reprint these portions, as well as Matthew Jacques and Kevin Snyder, Chaddick Institute graduate students and my co-authors for that article. Readers interested in the status of bus and rail service to downstate Illinois will find more analysis in the same article.

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an estimated population of 175,000, a level well below that generally considered necessary to support frequent low-cost airline service, or even frequent intercity bus service, to points several hundred miles away.<sup>1</sup> Despite this, the system of airports and bus and train routes serving the region has significantly improved in recent years, and some of the policies created to support these routes deserve recognition for their exemplary qualities.

This article provides a broad perspective on how scheduled air passenger service to downstate Illinois has evolved in recent years and identifies trends relevant to understanding how mobility in the region can be improved. Although the analysis focuses primarily on passenger traffic, the success of Rockford in cultivating cargo traffic is considered in the latter part of the article. Throughout the article, the term *downstate* is used to refer to the entirety of Illinois outside of metropolitan Chicago, including the north-central and northwestern parts of the state. The phrase *commercial air service* refers only to regularly scheduled passenger flights and excludes charter, cargo, and general aviation flights.

### ***Downstate Access to Commercial Airports***

Nearly all of the ten downstate airports with scheduled air-passenger service have experienced dramatic traffic fluctuations during the past decade (Figure 1). Sudden withdrawals by air carriers, passenger diversions to Chicago and St. Louis, and new flight patterns due to the realignment of major hubs have left some bereft of the “critical mass” needed to attract significant numbers of business flyers. As a result, the prognosis for most airports attracting large numbers of corporate flyers is mixed.

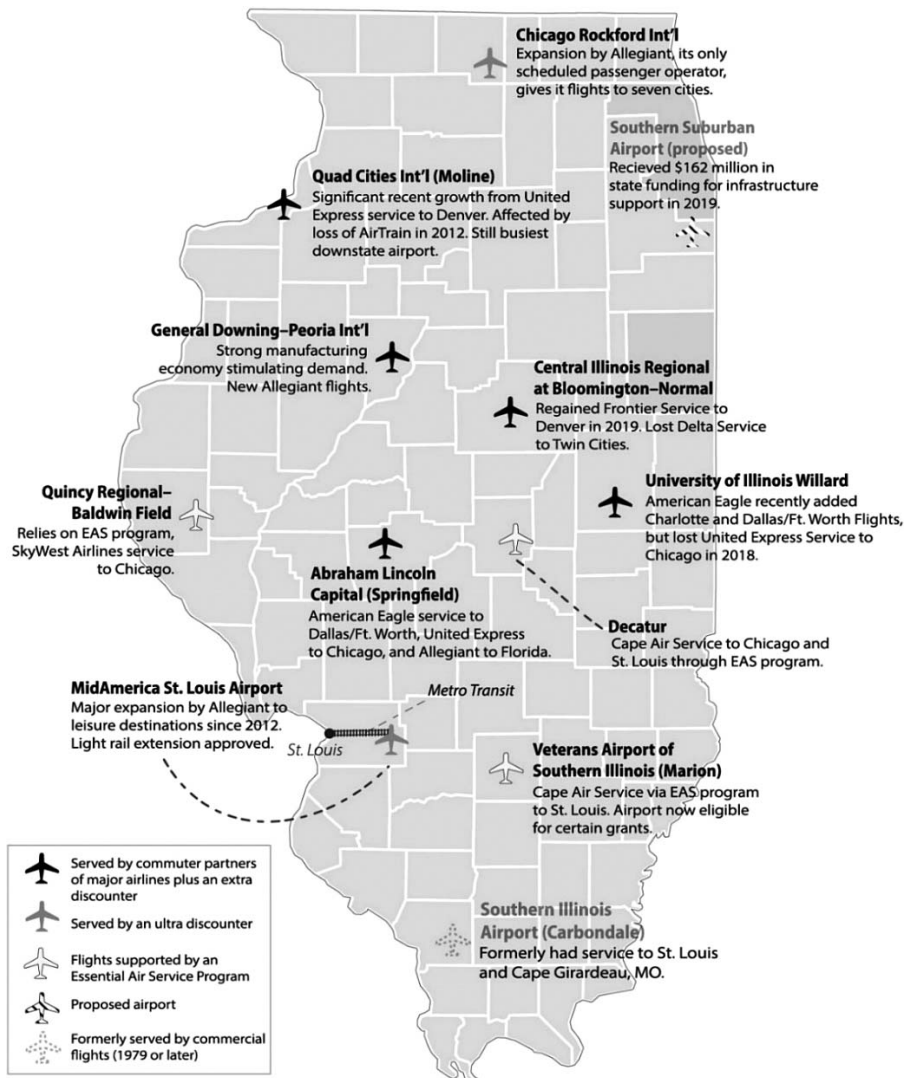
At the same time, air-passenger traffic is generally growing, mirroring the trend in air travel nationwide. As described *infra*, American Airlines and United Airlines are returning to downstate airfields with smaller jets, typically having fewer than 80 seats, operated by their regional partner affiliates as they vie for market share at O’Hare International Airport and other hubs. Ultra-discounters, mostly notably Allegiant Airlines, which specializes in flights from mid-size airports to major leisure destinations, and Frontier Airlines, which caters to many underutilized airports sit-

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<sup>1</sup> The Illinois portion of metropolitan St. Louis has an estimated population of around 600,000, but is not a distinct metropolitan area.

uated near major metropolitan areas, are also on the rise. These airlines bring the bounty of lower fares to places previously attractive only for business flyers willing to pay a premium. Although the scheduled offerings to any given destination are limited to a few days a week, they attract leisure travelers heading to Arizona, Colorado, Florida, and other vacation destinations.

**Figure 1 – Commercial Airports in Downstate Illinois with Scheduled Passenger Flights**



### *Changes in Service Coverage*

The seven most heavily used airports located downstate, ranked from largest to smallest on the basis of passenger enplanements in the year leading up to June 2019 are: (i) Quad Cities International in Moline; (ii) MidAmerica Airport St. Louis near Belleville; (iii) Chicago Rockford International in Rockford; (iv) General Downing–Peoria International; (v) Central Illinois Regional at Bloomington–Normal; (vi) University of Illinois Willard, in Savoy, part of the Champaign-Urbana area; and (vii) Abraham Lincoln Capital in Springfield. Our estimates of annual enplanements for 2019 (i.e., the number of passengers boarding scheduled departures) are based on traffic reported on U.S. Department of Transportation T-100 reports through May of 2019 (Table 1). All estimates are rounded to the nearest 1,000 except those for the airports with Essential Air Service, due to the manner in which this data is reported.<sup>2</sup> Total passenger volume, which encompasses both enplanements and deplanements, is roughly twice these amounts.

Quad Cities, by far the largest, is projected to have 369,000 enplanements (an average of more than 1,000 enplanements per day). Peoria International – the second busiest – is projected to have around 341,000, followed by Central Illinois (Bloomington–Normal), projected to have 206,000. The smallest, Veterans Airport of Southern Illinois, near Marion, is on pace to have 9,091 (an average of about 25 enplanements daily).

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<sup>2</sup> Enplanement information was obtained from the U.S. Bureau of Transportation Statistics (BTS). See Bureau Transp. Stats., Airport Snapshots (Dec. 2019), <https://www.transtats.bts.gov/airports.asp>. Annual airport totals were determined by reviewing 12-month totals, January to December, for each year except 2019, which are based on projections made from data through May 2019. Several airports, including Chicago Rockford, have experienced rising traffic since May 2019, which will likely result in end-of-year totals being significantly different than these estimates. On the BTS website, enplanement statistics are rounded to the nearest 1,000 for most large airports. Our analysis shows that historical enplanement totals differed between BTS sources; please contact the author for details of our efforts to reconcile these statistics.

**Table 1 – Trends in Enplanements at Illinois’ Commercial Airports**

Airport	Annual Enplanements		Recent facility highlights	Airlines
	2009	2019e		
<b>Quad Cities International</b>	461,000	369,000	Solar project, parking improvements underway.	Allegiant, American Eagle, Delta Connect, United Express
<b>General Downing–Peoria International</b>	241,000	341,000	Ray LaHood International Terminal opened in 2017.	Allegiant, American Eagle, Delta Connect, United Express
<b>Central IL Regional Airport, Bloomington-Normal</b>	243,000	206,000	Wrapping up five-year \$5.2 million pavement improvement plan; received FAA grant in 2018.	Allegiant, American Eagle, Delta Connect, Frontier
<b>MidAmerica Airport St. Louis (near Belleville)</b>	<500	148,000	Light-rail extension to airport approved.	Allegiant
<b>Chicago Rockford International</b>	82,000	104,000	Terminal expansion launched in 2017; expanding cargo service attracted \$9 million federal grant in 2019. Country’s 22nd-busiest airfreight hub.	Allegiant, Apple Vacations (periodic service)
<b>University of Illinois Willard (Champaign)</b>	86,000	101,000	Adopted <i>Fly Local</i> campaign for employers. Received FAA grant in 2018.	American Eagle
<b>Abraham Lincoln Capital (Springfield)</b>	53,000	66,000	\$10.25 million grant for 225 more parking spaces. Received FAA grant in 2018.	Allegiant, American Eagle, United Express
<b>Quincy Regional-Baldwin Field</b>	1,735	11,178	Considering proposals for expanded service.	United Express (Essential Air Service)
<b>Decatur</b>	645	9,696	Received \$2.9 million federal grant in 2019 for runway improvements.	Cape Air (Essential Air Service)
<b>Veterans Airport of Southern Illinois (Marion)</b>	2,456	9,091	Received \$1.2 million grant in 2017 for lighting improvements.	Cape Air (Essential Air Service)

*Of the ten downstate airports, six have experienced traffic growth since 2009. Quad Cities International Airport handles the greatest volume of scheduled passengers despite periodic declines during the past decade. All ten have recently made facility improvements. Estimates for 2019 are based on traffic through June 2019. All estimates are rounded to nearest 1,000 except those for the airports with Essential Air Service.*

The three airports with the least commercial traffic, Decatur, Veterans Airport of Southern Illinois (in Williamson County, near Marion), and Quincy Regional-Baldwin Field, are all heavily reliant on the federal Essential Air Service program.<sup>3</sup> The funds from this program, generally available only to places more than 90 miles from a larger hub airport,<sup>4</sup> are used to subsidize service to outlying airports otherwise unable to sustain service. Veterans Airport of Southern Illinois, for example, has had approximately \$2 million allocated annually to support this service in recent years.<sup>5</sup>

Much can be learned about the diverging performance of these airports by looking at enplanement totals during two distinct periods: (i) in the years leading up to 2009, which ended amid the Great Recession; and (ii) the more recent 2009–2019 period. Bloomington-Normal and Quad Cities, in particular, saw buoyant growth between 2000 and 2009. Quad Cities, in fact, appeared poised to galvanize its position as the most dominant downstate airport, having 461,000 enplanements in 2009, nearly twice the number of any other downstate facility. Bloomington-Normal, ranking second, benefitted from mainline Delta Air Lines jets having more than 100 seats flying to distant hubs, as well as AirTran’s DC-9 departures to its Atlanta hub. The resulting traffic growth prompted a variety of terminal improvements and attracted many travelers from Decatur and Springfield.

Administrators at MidAmerica Airport, meanwhile, struggled to shed that airport’s image as a chronic underperformer. MidAmerica, adjacent to Scott Air Force Base, lacked any scheduled passenger service during much of the period leading up to 2009, with fewer than 500 enplanements that year. Critics derided its architecturally striking yet mostly vacant terminal, built partially at state expense, as an example of wasteful government

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<sup>3</sup> See *Essential Air Service*, U.S. DEP’T OF TRANSP. (Nov. 22, 2017), <https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service> (“The Essential Air Service (EAS) program was put into place to guarantee that small communities that were served by certificated air carriers before airline deregulation maintain a minimal level of scheduled air service.”).

<sup>4</sup> See 49 U.S.C. § 41731(a)(1)(B).

<sup>5</sup> See *Subsidized Essential Air Service Communities: November 2019*, U.S. DEP’T OF TRANSP., <https://www.transportation.gov/sites/dot.gov/files/docs/mission/office-policy/aviation-policy/356036/subsidized-eas-report-communities-outside-alaskanovember-2019.pdf>.



spending.<sup>6</sup> Springfield, another underperformer, struggled to be more than a niche player, handling a mere 53,000 passengers in 2009, less than a quarter of either Bloomington-Normal or Quad Cities. In fact, the University of Illinois Willard at Champaign-Urbana had more than one-and-a-half as many enplanements – 86,000 – at the time.

The next decade, however, brought dramatic change (Figure 2). Between 2009 and 2019, Peoria rose to greater prominence, growing from being slightly smaller than Bloomington-Normal, in terms of passenger volume, to more than 50 percent greater. The airport added 100,000 enplanements during the period (derived from projections for 2019 based on traffic through May), bolstered by a booming manufacturing economy – the result of stepped-up production at Caterpillar Inc., a major manufacturer of construction and mining equipment.<sup>7</sup> Peoria joined the Quad Cities airport as one of only two downstate facilities served by the regional partners of all the country’s three largest network airlines – American, Delta, and United.

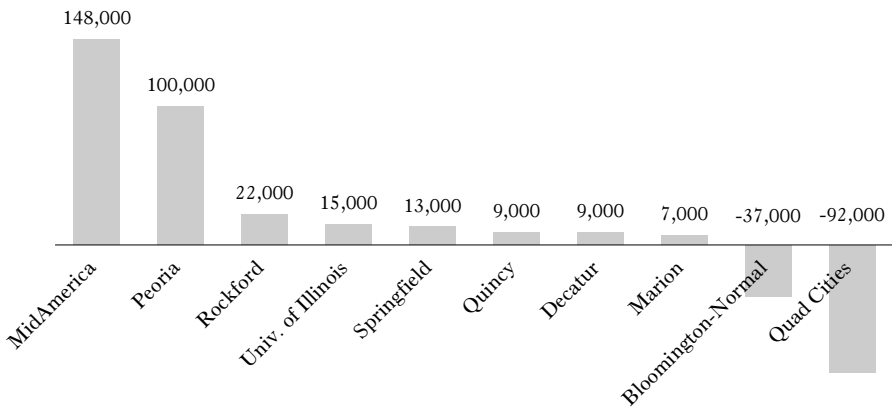
Bloomington-Normal surrendered ground after 2009, suffering the loss of AirTran in 2012<sup>8</sup> and Delta service to the Twin Cities. Flight reductions pushed enplanements downward by 37,000 between 2009 and 2019. Fortunately for the city’s residents, Frontier relaunched service to Denver in April 2019, laying the groundwork for a comeback, suggesting that passenger traffic may return to 2009 levels in the next few years. In both absolute and relative terms, Quad Cities suffered an even greater loss in passenger traffic than Bloomington-Normal, in part due to United downsizing service, although it still has the most traffic of any downstate facility, even if by a diminishing margin. Its traffic, too, appears to be recovering.

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<sup>6</sup> Lee Provost, *Airline Woes Affect Third Airport Plan*, DAILY-JOURNAL.COM (June 10, 2008), [https://www.daily-journal.com/search/?l=25&sd=desc&s=start\\_time&f=html&t=article%2Cvideo%2Cyoutube%2Ccollection%2Cpdf&app=editorial&q=Provost%2C+Airline+Woes+Affect+Third+Airport+Plan&nsa=eedition](https://www.daily-journal.com/search/?l=25&sd=desc&s=start_time&f=html&t=article%2Cvideo%2Cyoutube%2Ccollection%2Cpdf&app=editorial&q=Provost%2C+Airline+Woes+Affect+Third+Airport+Plan&nsa=eedition).

<sup>7</sup> *See About Caterpillar*, CATERPILLAR.COM, <https://www.caterpillar.com/en/company.html> (last visited Mar. 9, 2020).

<sup>8</sup> Karen Hansen, *CIRA Adding Airlines, Expanding Service after AirTran’s Departure*, PANTAGRAPH.COM (July 7, 2013), [https://www.pantagraph.com/business/local/cira-adding-airlines-expanding-service-after-airtran-s-departure/article\\_1638ee42-e69c-11e2-bdbd-0019bb2963f4.html](https://www.pantagraph.com/business/local/cira-adding-airlines-expanding-service-after-airtran-s-departure/article_1638ee42-e69c-11e2-bdbd-0019bb2963f4.html).

**Figure 2 – Change in Passenger Enplanements, 2009–2019**

*Eight of the ten downstate airports have seen growth in passenger enplanements since 2009. Six of the ten, however, have experienced only modest increases, with enplanements growing by around 22,000 passengers or fewer annually (roughly 60 passengers/day), or overall declines, with Quad Cities International Airport (Moline) particularly hard hit. Traffic changes rounded to the nearest 1,000.*

MidAmerica continued to struggle after 2009 but eventually turned the corner, welcoming many new customers attracted to Allegiant, which made the airport a full-fledged hub. The no-frills operator began flying directly to nine destinations, albeit with some flights operating only a few days a week. The airport went from having no scheduled passenger service in 2013 (although it did serve a general aviation traffic role at the time) to having a projected 148,000 enplanements in 2019. In the process, MidAmerica is approaching roughly three-quarters the volume of Bloomington-Normal.

Other airports have had mixed results. Springfield, for example, expanded its traffic by 13,000 passengers between 2009 and 2019, the fifth-largest amount among the ten airports. This airport's traffic is now roughly a quarter greater than it was a decade ago, although there was a modest downturn in early 2019. Rockford and University of Illinois Willard also enjoyed growth, while at a more modest pace, rising by 22,000 and 15,000 passengers, respectively. After suffering the loss of United in 2018, University of Illinois Willard regained momentum when its only passenger airline, American, added regional-jet service to both Charlotte and Dallas-Ft. Worth. Rockford suffered the loss of several carriers, leaving Allegiant as its only scheduled passenger airline. However, its traffic is again growing due to aggressive

expansion by the discounter. Enplanements are likely to exceed 100,000 in 2019, well above Rockford's volume in 2009.

The three airports reliant on Essential Air Service funds have experienced only slight changes over the past decade, in part due to their continuing dependence on planes with 12 or fewer seats and the availability of nonstop service only to Chicago, St. Louis, or both. Decatur and Quincy had modest traffic losses between 2016 and 2017 before seeing a rebound, while Marion's traffic has risen more steadily. Service at Decatur and Marion is provided by Cape Air, and Quincy's flights are operated by SkyWest Airlines, a United Airlines affiliate.

### *Trend Analysis*

Despite the recent growth in passenger traffic, the cumulative traffic of downstate airports continues to be only a small fraction to that of Chicago's Midway and O'Hare. Our analysis of U.S. Department of Transportation data shows that all downstate airports combined handled just 3.1 percent of Chicago's airport passenger traffic in 2019 (Figure 3). In other terms, Chicago has more than 30 times as many enplanements as all downstate airports combined. This small percentage, while up from 2.9 percent in 2009, speaks to the stiff competition facing these outlying facilities. When MidAmerica (which draws heavily from the St. Louis metropolitan area) is excluded from these comparisons, downstate airports have a mere 2.8 percent as many enplanements as Chicago. Yet downstate airports have modestly outperformed Chicago since 2017, as is evidenced by the upward-ticking trend lines on the figures for 2018-19.

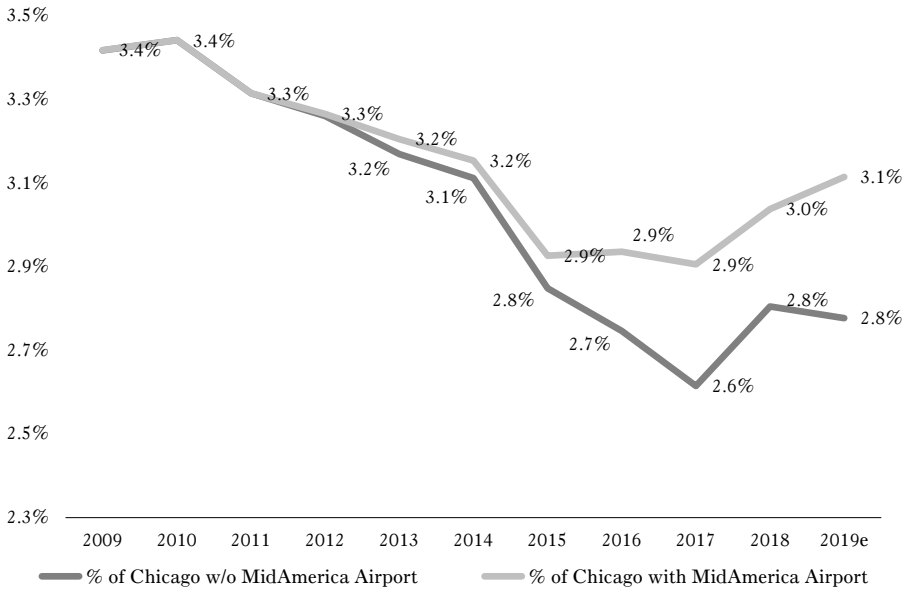
Several caveats should be kept in mind when interpreting these statistics. The Chicago metropolitan area has nearly three quarters of the state's population.<sup>9</sup> It should be expected, therefore, that its passenger traffic is several times higher. Enplanements at both Midway and O'Hare are bolstered by passengers

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<sup>9</sup> Based on 2018 population estimated by the U.S. Census Bureau. Illinois' population was estimated at 12,741,080 on July 1, 2018. See *QuickFacts: Illinois*, CENSUS.GOV, <https://www.census.gov/quickfacts/IL>. Metropolitan Chicago's population was estimated at 9,461,538. See Press Release, U.S. Census Bureau, New Census Bureau Estimates Show Counties in South and West Lead Nation in Population Growth (Apr. 18, 2019), <https://www.census.gov/newsroom/press-releases/2019/estimates-county-metro.html#table6>.

making connections between flights, a practice that is rare at downstate facilities. A significant share of traffic at O’Hare involves international flights, which are typically not available at smaller airports. Nevertheless, the comparison shows why the incentive for air passengers to divert from downstate airports to Chicago or St. Louis is so strong.

**Figure 3 – Downstate Enplanements as Percentage of Chicago Enplanements, 2009–2019**



*Enplanements at downstate airports as a percentage of enplanements at Chicago’s airports gradually fell between 2009 and 2017 before rebounding, largely due to expansion at MidAmerica and Peoria. Chicago’s enplanement numbers are bolstered by large numbers of passengers making connections on trips between out-of-state destinations.*

Underscoring the struggle facing downstate airports is their inability to sustain *mainline* service by a major network airline, such as American, Delta, or United. This service, typically provided on jets with 140 or more seats (such as newer-model Boeing 737 and Airbus A320 planes), is often regarded as more comfortable than the regional jets that dominate downstate airports. Larger planes typically allow airlines to offer lower fares, which stimulates traffic.

The inability of downstate airports to attain the critical mass necessary to support mainline service may be partially attributable to the diffusion of traffic over so many facilities. Airports at

Bloomington-Normal, Decatur, Peoria, and the University of Illinois compete for many of the same passengers. Only one downstate airport that had service in 1979, Southern Illinois Airport near Carbondale, has lost passenger service. By comparison, three airports in Indiana have lost service.<sup>10</sup> Simply put, on a per-capita basis, downstate Illinois has many small and mid-size airports.

The diffusion of traffic across airports raises the difficult question of whether state government policy should seek to develop airports that serve pairs or clusters of cities. The performance of airports elsewhere in the Midwest serving pairs of non-contiguous cities, such as Kalamazoo/Battle Creek International Airport in Michigan, Akron-Canton Airport in Ohio, and Eastern Iowa Airport (which serves Cedar Rapids and Iowa City), suggests that promoting airports serving pairs of cities may be an effective strategy. Each has more than 150,000 enplanements annually and is served by all three of the largest network airlines.<sup>11</sup> Quad Cities International Airport is also notable for serving a cluster of four cities, each with a population of more than 35,000; but unlike the above out-of-state examples, these cities are contiguous.<sup>12</sup>

Nevertheless, the lessons these out-of-state airports offer for downstate Illinois are limited. In each of the above cases, driving distance between the downtowns of the cities involved is less than 35 miles, whereas most Illinois cities are separated by longer distances. For example, the driving distances from Bloomington to Peoria and Springfield are 38 and 74 miles, respectively. Peoria and Moline are 93 miles apart. Longer drive times, together with the enormous financial outlay needed to restructure the airport system (which would likely mean building new airports at locations halfway between cities), render significant changes difficult to contemplate for the foreseeable future.

Moreover, consolidation proposals would likely generate strong opposition in most cities with commercial service. Most airports

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<sup>10</sup> OFFICIAL AIRLINE GUIDE, Jan. 1977 (listing service from Carbondale to both Cape Girardeau and St. Louis, MO at the time). The three Indiana cities with airports that lost service are Lafayette, Muncie, and Terre Haute.

<sup>11</sup> Bureau Transp. Stats., *supra* note 2.

<sup>12</sup> The Metropolitan Airport Authority of Rock Island County is governed by a board of commissioners, with members appointed by the Rock Island County Board Chairman and the mayors of East Moline, Moline, Milan, Rock Island, and Silvis.

are in the midst of improvements in anticipation of traffic increases. In 2019, Bloomington completed a five-year, \$5.2 million pavement renovation project.<sup>13</sup> Quad Cities is undertaking a solar energy and parking project,<sup>14</sup> while Peoria is benefitting from its relatively new Ray LaHood International Terminal, which opened in 2017.<sup>15</sup> Rockford is leveraging its growing cargo traffic to support passenger-service improvements,<sup>16</sup> and MidAmerica will become the endpoint of a new light-rail line linking it with St. Louis.<sup>17</sup> In summer 2019, Decatur received an FAA grant for runway improvements.<sup>18</sup>

Regardless of what policy the state pursues, market forces may ultimately result in some degree of consolidation. Southwest Airlines' entry into a downstate airport, for example, would accelerate this process. Research has shown that many travelers would gravitate to an airport served by this Texas-based carrier in order to take advantage of the airline's discount fares, frequent service, and flexible ticket rules – a phenomenon known as “the Southwest Effect.”<sup>19</sup> In 2010, there were reports that Southwest, fol-

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<sup>13</sup> Derek Beigh, *CIRA to Finish 5-Year Pavement Project this Fall*, PANTAGRAPH.COM (May 3, 2019), [https://www.pantagraph.com/news/local/govt-and-politics/cira-to-finish—year-pavement-project-this-fall/article\\_ec992b1b-3279-5d66-b3c3-7d181e38cbf2.html](https://www.pantagraph.com/news/local/govt-and-politics/cira-to-finish—year-pavement-project-this-fall/article_ec992b1b-3279-5d66-b3c3-7d181e38cbf2.html).

<sup>14</sup> Eric Sorensen, *Covered Parking and Clean Energy Coming to Quad City International Airport*, WQAD.COM (Sept. 23, 2019, 8:11 PM), <https://www.wqad.com/article/news/local/drone/8-in-the-air/covered-parking-and-clean-energy-coming-to-quad-city-international-airport/526-5ab23139-0de4-44d2-a2b3-0dca17c71fd8>.

<sup>15</sup> Paul Gordon, *Another Stellar Year at Downing Peoria International Airport*, PEORIAN.COM (Jan. 17, 2017, 4:05 PM), <http://www.peorian.com/news/news/local/2474-pia-stellar-year>.

<sup>16</sup> Bradley Hamilton, Crawford, Murphy & Tilly, *Airport Master Plan Update: Chicago Rockford International Airport (RFD)*, <https://www.cmtengr.com/project/master-planning-ealp/> (last visited Mar. 9, 2020).

<sup>17</sup> Mark Schlinkmann, *Illinois to Pay for Long-Sought MetroLink Extension to MidAmerica Airport*, STLTODAY.COM (June 14, 2019), [https://www.stltoday.com/news/local/govt-and-politics/illinois-to-pay-for-long-sought-metrolink-extension-to-midamerica/article\\_473ea616-75fc-57d1-a131-6ae83a69eea2.html](https://www.stltoday.com/news/local/govt-and-politics/illinois-to-pay-for-long-sought-metrolink-extension-to-midamerica/article_473ea616-75fc-57d1-a131-6ae83a69eea2.html).

<sup>18</sup> Analisa Trofimuk & Kennedy Nolen, *Decatur Airport Gets \$2.9 Million Federal Grant for Runway Improvements*, HERALD-REVIEW.COM (July 26, 2019), [https://herald-review.com/news/local/govt-and-politics/decatu-airport-gets-million-federal-grant-for-runway-improvements/article\\_0a2d932f-d066-5c83-8465-de4929de4340.html](https://herald-review.com/news/local/govt-and-politics/decatu-airport-gets-million-federal-grant-for-runway-improvements/article_0a2d932f-d066-5c83-8465-de4929de4340.html).

<sup>19</sup> David E. Pitfield, *The Southwest Effect: A Time-Series Analysis on Passengers Carried by Selected Routes and a Market Share Comparison*, 14 J. AIR TRANSP. MGMT. 113, 113 (2008).

lowing its purchase of AirTran, considered entering Bloomington-Normal, but that never came to fruition.<sup>20</sup>

Adding to the complexity facing downstate airports, a new facility – the South Suburban Airport – could enter the mix in the next several years. Interest in this airport, envisioned being built (on land that is largely state-owned) between Peotone and Monee on metropolitan Chicago’s southern periphery, is being fueled by the expansion of the logistics business along Interstate 57, including Amazon distribution centers.<sup>21</sup> This airport, potentially opening by 2023, would primarily serve Chicago’s south suburbs and the east-central part of the state, including Kankakee and Rantoul. The state government’s land holdings, plus modest additions, would allow for a so-called “starter airport” having a single runway and small terminal.<sup>22</sup> A vocal anti-airport group has emerged in Peotone, although many other stakeholders in this part of the state have voiced support.<sup>23</sup>

The state government approved \$162 million in funds for a new Interstate 57 highway interchange and other ancillary improvements needed for the airport in 2019.<sup>24</sup> Although the state has not committed to funding the airport’s construction itself, optimism has grown that a private concessionaire can be found to build the runway and terminal. Even so, some observers are skeptical that it can be built without significant state government outlays.<sup>25</sup> Even if the proposed airport comes to fruition and

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<sup>20</sup> Don Dodson, *No Sure Thing that Southwest Will Come to Bloomington after Takeover of AirTran*, NEWS-GAZETTE.COM (Sept. 28, 2010), [https://www.news-gazette.com/news/no-sure-thing-that-southwest-will-come-to-bloomington-after/article\\_1e12262f-be4c-5250-b629-c825547722b0.html](https://www.news-gazette.com/news/no-sure-thing-that-southwest-will-come-to-bloomington-after/article_1e12262f-be4c-5250-b629-c825547722b0.html).

<sup>21</sup> Mary Wisniewski, *Does the Chicago Area Need Another Airport? Plans for a Peotone Airport are Back, This Time with an E-Commerce Spin*, CHICAGO TRIBUNE.COM (Aug. 12, 2019, 6:33AM), <https://www.chicagotribune.com/business/transportation/ct-biz-peotone-airport-proposal-car-go-shipping-amazon-getting-around-20190812-nrhtcaku7rgvbmhkhtbtxyfz6u-story.html>.

<sup>22</sup> ILL. DEP’T OF TRANSP., LONG RANGE TRANSPORTATION PLAN app. B 9–10 (Draft 7.0, Dec. 2018). See also *South Suburban Airport: Master Plan Process*, ILL. DEP’T OF TRANSP., <https://www.southsuburbanairport.com/MasterPlan/MP-process.htm>.

<sup>23</sup> Wisniewski, *supra* note 21.

<sup>24</sup> *Id.*

<sup>25</sup> Editorial, *Stop Spending Public Money at Peotone Until Airlines and Shippers Get On Board*, CHICAGO TRIBUNE.COM (Aug. 26, 2019, 6:30 AM), <https://www.chicagotribune.com/opinion/editorials/ct-editorial-peotone-airport-amazon-ecommerce-20190826-kidilb6bsvbtjljvb3ojouv4rh4-story.html>.

proves successful in attracting commercial flights, it would likely do relatively little to improve mobility in central Illinois, considering that its passenger-service offering would likely remain, at best, limited in its early years, and driving distances would be considerable.

### ***Rockford Standing Alone: The Challenge of Promoting Air Cargo***

Efforts to foster the growth of air cargo at Illinois' downstate airports have had varying success. At one end of the spectrum, Chicago Rockford International Airport is widely regarded as a success story, having emerged as one of the busiest cargo airports in the United States.<sup>26</sup> At the other end, several downstate airports with appreciable passenger traffic report virtually no air cargo traffic at all.

Air cargo, while perhaps less prominent than passenger traffic on most policymakers' agenda, can contribute significantly to the finances of airport operations. Cargo and passenger traffic generally play complementary roles in the improvement of airside facilities. Some cargo often moves in the belly compartments of passenger airplanes, which makes passenger operations more sustainable.<sup>27</sup> Cargo moving in freighters (all-cargo planes) tends to operate at different times than passenger-oriented flights.<sup>28</sup> Whereas most passenger traffic moves during daytime and evening hours, many freighters, such as those operated by express-shipment providers (integrators), such FedEx Express (formerly Federal Express) and United Parcel Service (UPS), move between 10 p.m. and 5 a.m., with most package sorting occurring in the middle of the night. Such complementarity can help spread the fixed cost of airport facilities over a larger base, thereby making runway and taxiway improvements and other capital investments more cost effective.

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<sup>26</sup> Damian Brett, *A Record Year for Cargo at Chicago Rockford*, AIR CARGO NEWS (Feb. 13, 2020), <https://www.aircargonews.net/cargo-airport/a-record-year-for-cargo-at-chicago-rockford/>.

<sup>27</sup> Thijs Boonekamp & Guillaume Burghouwt, *Measuring Connectivity in the Air Freight Industry*, 61 J. AIR TRANSP. MGMT. 81, 81–82 (2017).

<sup>28</sup> Yupo Chan & Ronny J. Ponder, *The Small Package Air Freight Industry in the United States: A Review of the Federal Express Experience*, 13 TRANSP. RES. PT. A 221, 229 (1979).



Chicago Rockford, formerly Rockford Municipal Airport, offers a compelling example of the potential for cargo development at airports with relatively little passenger traffic. This two-runway airport, a former National Guard facility that is located 78 miles northwest of downtown Chicago, has for decades been Rockford's principal commercial airport.<sup>29</sup> During the 1950s, Lake Central Airlines, Ozark Airlines, and Trans World Airlines offered passengers a wide array of flight options. In the 1960s, however, passenger traffic diminished sharply due to improved access to O'Hare International Airport, which is little more than an hour away on Interstate 90.<sup>30</sup>

By 1970, nonstop service had been reduced to flights to Dubuque, Iowa and O'Hare. The nadir was reached in 1981, when Rockford was without any scheduled passenger service for a brief period. Airlines came and went over the next decade, and the prospects for the airport ebbed and flowed with the changing economy.<sup>31</sup> Recognizing that many passengers preferred to use Chicago's airports, United Airlines established a through ticketing arrangement involving bus service from O'Hare to serve customers living in the Rockford area.<sup>32</sup>

A resurgence, however, began after United Parcel Service (UPS) made Rockford a hub for its air cargo division in 1993. The UPS hub's rapid growth pushed domestic cargo shipments upward from 402 million pounds in 2003 (the first year complete Bureau of Transportation Statistics T-100 data is available) to 710 million pounds in 2019.<sup>33</sup> These estimates likely understate the actual growth in freight shipments as they exclude international cargo shipments, which are not reported in the T-100 data. Analysis of scheduled activity indicates that UPS's hub has grown to 50–60 weekday freight arrivals and departures, many of

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<sup>29</sup> Joseph Schwieterman & Euan Hague, *The Evolving Role and Scale of Cargo-Focused Hub Airports in the United States, 2003–2020* (Chaddick Inst. for Metro. Dev., working paper, Mar. 20, 2020) (on file with author).

<sup>30</sup> JOSEPH SCHWIETERMAN, *TERMINAL TOWN: AN ILLUSTRATED GUIDE TO CHICAGO'S AIRPORTS, BUS DEPOTS, TRAIN STATIONS AND STEAMSHIP LANDINGS* 229 (2014).

<sup>31</sup> *Id.* at 229–30.

<sup>32</sup> *Id.* at 230–31.

<sup>33</sup> Bureau Transp. Stats., Form T-100 Data: Chicago/Rockford Int'l (RFD) (Dec. 2019), [https://www.transtats.bts.gov/airports.asp?pn=1&Airport=RFD&Airport\\_Name=Rockford,%20IL:%20Chicago/Rockford%20International&carrier=FACTS](https://www.transtats.bts.gov/airports.asp?pn=1&Airport=RFD&Airport_Name=Rockford,%20IL:%20Chicago/Rockford%20International&carrier=FACTS).

which operate during nighttime hours.<sup>34</sup> UPS's operation is supported by a large system of truck routes that take advantage of Rockford being at the intersection of several interstate highways and the availability of land for the development of large-scale sorting facilities. Rockford is now UPS's second-largest U.S. air cargo hub, behind Louisville International Airport.<sup>35</sup>

In 2019, Chicago Rockford International Airport ranked 14th among airports on the U.S. mainland in domestic cargo traffic.<sup>36</sup> The airport stands out among the 25 mainland airports with the most domestic cargo traffic for the relative dearth of passenger traffic: it handles only around a tenth as many passengers (well under 150,000 enplanements annually) as any other airport in this grouping. Similarly, the airport handles less than 1/15 as many passengers per pound of cargo as any of the other U.S. airports in this group of 25. For these reasons, Rockford is a compelling example of the potential for cargo-oriented airports to gain prominence in the movement of packages and other time-sensitive freight.

Only one other airport so heavily focused on freight ranks among the top 75 airports on the U.S. mainland: Fort Worth Alliance Airport in Texas.<sup>37</sup> That airport, opened in 1989, handled 321 million pounds of cargo in 2019, about half as much as Rockford. It is situated near large-scale logistics hubs to serve as a gateway to the northern part of Texas.<sup>38</sup> While it operates as a FedEx cargo hub, it has no regularly scheduled passenger traffic.<sup>39</sup> Columbus, Ohio's Rickenbacker Airport and Sacramento's Mather Field, while handling less traffic, also stand out as successful examples of cargo-focused airports.<sup>40</sup>

Illinois' Peoria International Airport, handling 32 million pounds of air cargo in 2019, has had modest success with cargo shipments. This airport's cargo role supports manufacturing at Caterpillar's assembly plants in the Peoria metropolitan region

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<sup>34</sup> See FlightAware, *Chicago/Rockford Int'l Airport*, Jan. 15, 2020, <https://flightaware.com/live/airport/KRFD>.

<sup>35</sup> Brett, *supra* note 26.

<sup>36</sup> Schwieterman & Hague, *supra* note 29, at 16, 21.

<sup>37</sup> *Id.* at 16.

<sup>38</sup> *Where It All Started*, FT. WORTH ALLIANCE AIRPORT (2020), <https://www.allianceairport.com/about-us/history> (last visited Mar. 21, 2020), <https://www.allianceairport.com/about-us/history>.

<sup>39</sup> *Id.*

<sup>40</sup> Schwieterman & Hague, *supra* note 29, at 21–22.

and augments the company's global supply chain. Peoria's domestic air cargo traffic, however, has been declining, falling from 61 million pounds in 2003 to 47 million in 2015 before falling to its present level. Central Illinois Airport at Bloomington-Normal is third among downstate airports in domestic cargo shipments, with 18 million pounds in 2019. Neither it nor Peoria, however, handle even 1/20th of the cargo traffic as Rockford, despite serving metropolitan populations that are comparable in size. The stagnation of cargo traffic at some airports may be attributable to the effect of shipping packages and goods by truck to major air cargo hubs such as Rockford, Indianapolis (a major FedEx hub), and Louisville (UPS).

As expected, the ratio of domestic cargo to passenger traffic is much higher at Rockford than at other Illinois airports. Rockford handles 3,127 pounds of domestic cargo per passenger served.<sup>41</sup>

By comparison, Peoria handles 47 pounds of cargo per passenger, whereas the Central Illinois Airport handles 43. Chicago's Midway International and O'Hare handle 2 and 18 respectively. Quad Cities International Airport, Springfield, and all other downstate airports handle less than 0.1 pounds of cargo per passenger. These latter airports are minor players, handling under a million pounds of domestic cargo annually, less than one-fourth of one percent of that of Rockford.

The expansion of Amazon Air (formerly Amazon Prime Air) could alter the trajectory of cargo traffic at Illinois airports. This division of Amazon is creating hubs at locations close to major metropolitan areas near its sorting centers and warehouses. Rockford has been selected as one of its hubs.<sup>42</sup> The carrier will cross-utilize UPS sorting facilities to support its package shipments. Notably, neither Midway nor O'Hare International have been named as Amazon hubs, suggesting that the retailer's traffic at Rockford will be appreciable. Amazon's planned expansion includes 120,000 square feet of space to support its local operation and extensive use of Boeing 767 airplanes, which have significant cargo capacity.<sup>43</sup> As a result, the gap separating Rockford from other downstate airports with respect to cargo will likely grow.

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<sup>41</sup> Bureau Transp. Stats., *supra* note 33.

<sup>42</sup> Brittany Shoot, *Amazon to Expand 'Amazon Air' With Investments in Chicagoland Airport*, FORTUNE.COM (Dec. 12, 2019, 4:43 PM), <https://fortune.com/2018/12/04/amazon-prime-air-chicago-rockford-airport-hub/>.

<sup>43</sup> *Id.*

Amazon's growth is also adding interest in the proposed South Suburban Airport near Peotone. The creation of this facility is being promoted partially to cater to rising Amazon traffic, including its extensive shipments directly to people's homes.<sup>44</sup> Several Amazon warehouses are now located in the southern part of the metropolitan Chicago region. At this writing, however, a timetable for the possible development of this airport remains unclear.<sup>45</sup>

### *Conclusion and Topics for Future Research*

When viewed in its totality, the evolution of air service to the downstate region of Illinois is a mix of positive and negative developments. The analysis presented *supra* points to several strengths and weaknesses of Illinois' downstate airport system while also providing insights relevant to airport planners in other parts of the United States and researchers exploring the changing role of small- to mid-size commercial airports.

1. *The downstate airport system is recovering from a turbulent period but is generally in the midst of a rebound.* Nearly all airports in this region have experienced significant gains since 2017, in some cases due to the expansion of ultra-discounters. The MidAmerica, Peoria, and Springfield airports have made particularly large strides in recent years. Bloomington-Normal and the Quad Cities, while hit hard by the Great Recession, have seen their fortunes improve recently. Rockford has made impressive gains in promoting itself as an air-cargo hub due to expansion by UPS and, more recently, Amazon Air.

As in many other areas of the country, however, the large number of airports vying for passenger traffic suggests that funding agencies should resist the efforts of metropolitan regions to pursue "build it and they will come" strategies with regard to airport expansions that do little more than shift traffic from one airport to the next. Although quelling the urge of regional leaders to expand facilities may be politically difficult, doing so is especially important in areas experiencing declining population, as is occurring in many

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<sup>44</sup> Joseph Cahill, *Why an Airport in Peotone Still Unlikely to Fly*, CHICAGOBUSINESS.COM (Mar. 7, 2019, 3:58 PM), <https://www.chicagobusiness.com/joe-cahill-business/why-airport-peotone-still-unlikely-fly>.

<sup>45</sup> *Id.*

rural areas in the American Midwest and Great Plains states. Decisions about funding should be made on metrics that consider the degree to which investments increase mobility and stimulate statewide economic development rather than merely reallocating traffic among airports and promoting driving between them.

2. *The differing proximities of several airports relying on Essential Air Service funds to alternate airports with more attractive service offerings suggest that the social benefits of EAS funding vary widely by location – and that more sophisticated ways to allocate such funding should be considered.* The EAS program allows funding for airports as little as 40 miles from a small hub airport.<sup>46</sup> Such a liberal standard allows EAS to be created at airports for which passengers have reasonable options. Decatur, which has EAS service, for example, is only 44 miles and 52 miles from the Bloomington and Springfield, IL airports, respectively.<sup>47</sup> Highways connecting them primarily traverse rural areas, resulting in little traffic congestion and few travel-time variables. Being in such close proximity suggests that the benefits to Decatur from the program may be less than that for airports in more remote regions. The relatively short travel distance from Decatur to downtown Chicago (182 miles via highway) also suggests that Decatur's EAS service to O'Hare may not be an attractive option for many travelers ending their trips in metropolitan Chicago, as the drive is only about three hours. Future research could explore whether the funds spent might be better allocated for, say, frequent bus service from this city to Chicago or St. Louis Lambert International Airport, which is 123 miles away.

The case for Essential Air Service appears stronger in Quincy, IL, which is 277 miles (via highway) to downtown Chicago. The nearest alternative airport served by a network airline, located in Springfield, IL is 112 miles away, while the nearest airport served by *several* network airlines, St. Louis Lambert International Airport, is 124 miles away. The degree of remoteness facing Marion, IL, which

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<sup>46</sup> *Essential Air Service*, *supra* note 3.

<sup>47</sup> Mileage estimates are based on estimated Google Maps distance and recommended route.

also has EAS service, falls somewhere between Decatur and Quincy. It is 57 miles from the nearest airport served by a network airline (Paducah, KY) and 120 miles from St. Louis Lambert.

3. *The dispersed nature of the downstate airport system presents serious challenges that result in significant diversion to airports in Chicago and St. Louis.* Passenger traffic is spread thinly across airports, which limits the economies of agglomeration and prevents airports from offering main-line service of major airlines. An unfortunate result of this dispersion has been that Chicago's airports have tended to outperform downstate airports during the past decade. In many cases, passengers can save large sums of money by driving to major airports further away. The incentive to do so is particularly great for those traveling in groups, who can share a personal vehicle on drives to major hubs. Although the prognosis for the proposed South Suburban Airport along the Interstate 57 corridor has improved, it is unclear how this will affect the accessibility to convenient and affordable air-passenger transportation for downstate residents. The need for research on the effects of such diversion to other airports is discussed in the final section of this paper.
4. *A notable shortfall in state policy is the absence of a coordinated strategy to build stronger links between the state's air, bus, and rail systems.* Different modes of transportation remain poorly integrated in Chicago, where, for example, Amtrak trains and most intercity bus lines operate from different locations and are absent from the city's major airports. Nearly all intercity buses and trains use the same stations in Champaign and Galesburg, but connections between modes are not as tightly coordinated as in other states. The state has not invested in large-scale co-branding of Amtrak Thruway service<sup>48</sup> that has proven successful in California, Oregon, and Wisconsin.

With respect to airport planning, however, strategies being used by transportation agencies in Massachusetts, Michigan, and New Hampshire are particularly relevant. These

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<sup>48</sup> See *Amtrak Thruway Connecting Services Multiply Your Travel Destinations*, AMTRAK, <https://www.amtrak.com/thruway-connecting-services-multiply-your-travel-destinations> (last visited Mar. 5, 2020).

states have developed novel ways to connect outlying areas and major airports. Massachusetts has developed an entire system of remote park-and-ride facilities that allow passengers to park and travel to Boston Logan International Airport at modest cost.<sup>49</sup> The regular fare from one such facility, located in Framingham, to Logan (a 36-mile trip), for example, is just \$12, considerably less than one might expect to pay on a shuttle bus operated without public financial support. Parking at Framingham is offered for just \$7 per day, making it considerably less expensive than on-airport parking and thus attractive for those not able to be dropped off or picked up at the bus stop. New Hampshire's financial support allowed for the creation of a new motor coach line, Boston Express, to improve connectivity between Concord, NH, and Boston Logan airport, a distance of about 70 miles.<sup>50</sup> Many Boston Express runs continue to downtown Boston, allowing the service to cater to two distinct markets: airport travelers and those making short-hop trips to Boston. Michigan's service focuses on a shuttle service linking East Lansing, Brighton, Ann Arbor, and other points to Detroit Metro International Airport. This service, called the Michigan Flyer, received subsidies from the Michigan Department of Transportation and has arrangements for customers to park their cars at a superstore's parking lots at modest cost.<sup>51</sup>

It behooves policymakers in Illinois and other states to explore the extent to which these services foster a stronger sense of connectivity and a reduced sense of geographic isolation experienced in outlying areas. Although privately operated bus lines connect several downstate Illinois points to O'Hare, fares are higher than those on these state-supported networks, making them less attractive, particularly for people traveling in groups, and long-term parking is

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<sup>49</sup> *Logan Express*, BOSTON LOGAN, <http://www.massport.com/logan-airport/to-from-logan/transportation-options/logan-express/> (last visited Mar. 30, 2020).

<sup>50</sup> Andru H. Volinsky, *Legislators Can Take a Big Step in Support of Commuter Rail*, N.H. BUS REV. (Jan. 18, 2019), <https://www.nhbr.com/legislators-can-take-a-big-step-in-support-of-commuter-rail/>.

<sup>51</sup> Dana Afana, *Michigan Flyer Expands Airport Service to Brighton, Adds Ann Arbor Routes*, MLIVE.COM (Aug. 29, 2019), <https://www.mlive.com/news/ann-arbor/2019/08/michigan-flyer-expands-airport-service-to-brighton-on-adds-ann-arbor-routes.html>.

generally not provided.<sup>52</sup> For example, the roundtrip fare on Coach USA's South Beloit, IL to O'Hare service, a distance of 83 miles each way, is \$64 roundtrip, while Michigan Flyer's roundtrip fare from East Lansing to Detroit's airport, a distance of 89 miles, is \$54. On the Flyer, discounts reduce the cost to groups of three or more to \$42 per person roundtrip, an option not available on the Coach USA service, suggesting that the actual difference in the average fare paid between the two systems is even greater. Another limitation of Illinois' bus service is that few routes serve Midway Airport, which is home to a large Southwest Airlines hub.

Despite the challenges, the push to improve downstate mobility – a process filled with unexpected turns in recent decades – appears destined to remain a high-profile component of the state's policy agenda.

### *Reassessing the Role of Small and Mid-Size Airports*

The analysis of small and mid-size airports in downstate Illinois points to several promising areas of research relevant to airport planning throughout the continental United States. A particularly fruitful area for exploration is the changing orientation of airports in relatively small metropolitan regions. As the experiences of the Bloomington-Normal, Peoria, and Quad Cities airports show, many such airports were once directly served by major network carriers operating to distant hubs. Today, however, they are served by the regional affiliates of these carriers that operate smaller regional jets and turbo-prop equipment.

The larger jets previously used to serve these airports tended to be more spacious than the smaller planes replacing them. Many of these jets had larger compartments for carry-on baggage and more legroom.<sup>53</sup> Due to their greater weight, the effects of turbulence were less acute. In some cases, connections at major hubs

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<sup>52</sup> *Van Galder Bus Schedule*, Mar. 17, 2020, <https://www.govangalder.com/shuttle-bus-new-schedule>. See also *Fares/Promotions*, MICHIGANFLYER.COM, <https://www.michiganflyer.com/FaresPromotions.aspx> (for Michigan Flyer's schedule and fares at the time of publication).

<sup>53</sup> Catey Hill, *7 Secrets for Getting the Most Comfortable Airline Seat*, MARKETWATCH.COM (Nov. 26, 2016, 11:24 AM), <https://www.marketwatch.com/story/7-secrets-for-getting-the-most-comfortable-airline-seat-2014-04-22>.



involved less walking than they do today; transfers often now require walking between the regional affiliate's concourse and the network airline's main terminal. In addition to this shift to smaller planes, an off-again on-again cycle of service changes has emerged at some airports. The experiences of Champaign-Urbana, described *supra*, suggest that the variability in the schedules of network airlines involving small metropolitan regions may have grown, with routes added and dropped with considerable regularity.

The aggregate effects of such changes point to the need for more research exploring the degree to which such shifts have encouraged certain travelers to divert to other airports in which the perceived quality of service is higher. Such research could also explore the success of efforts to overcome such perceptions through targeted local marketing. For example, it could consider the outcomes of efforts to work with employers at the Champaign-Urbana airport as part of its Fly Local campaign, in which employers are invited to sign the "Fly Local Pledge."<sup>54</sup> A systematic review of the outcomes would be instructive for smaller airports nationwide.

Another important topic for research is the increasing dominance by ultra-discounters at airports in smaller metropolitan regions. These carriers generally offer low-fare flights to a handful of leisure destinations without opportunities for connections to a large number of other cities, as their flights do not generally stop at centralized hubs. Allegiant Airlines is the notable carrier in this category, having grown to serve more than 400 routes to 122 cities nationwide.<sup>55</sup> Some of these cities have few, if any, other scheduled passenger operators. Flights by Allegiant and other ultra-discounters often operate no more than three times weekly to any given destination and involve relatively larger planes. Their flights are overwhelmingly used by travelers making pleasure trips. The Rockford and MidAmerica airports, which are only served by ultra-discounters, are prominent examples of airports in which ultra-discounters have almost complete dominance of local service options.

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<sup>54</sup> *Fly Local Pledge*, IFLYCU.COM, <https://iflycu.com/about/fly-local-pledge/> (last visited Mar. 30, 2020).

<sup>55</sup> ALLEGiant AIRLINES, 2018 ANNUAL REPORT 4 (2019), <http://ir.allegiantair.com/static-files/5a0d9d7d-2492-4d6b-a36e-684ebc851666>.

The combination of larger planes used by ultra-discounters and the infrequent nature of their service has changed the character and economic orientation of many mid-size airports. Activity surges at some airports when the flights of ultra-discounters arrive and depart while, at other times of the day, concourses and waiting areas sit mostly vacant and ticket counters are closed. Ultra-discounters, by virtue of the destinations they serve, cater primarily to *local* travelers making outbound trips. At some airports, one notable effect of this pattern may be that the demand for airport hotels or car rental services on or near airport property has appreciably fallen, as these businesses cater primarily to *in-bound* travelers arriving from out of town. Gaps between flights may also make it less viable for restaurants and shops in airport terminals to stay open, and taxicab operators may no longer be as willing to wait in hope of securing a paid customer (although the availability of Lyft and Uber lessen the significance of this problem).

On the positive side, the growth of ultra-discounters has apparently created considerable demand for long-term parking, as travelers to warm-weather leisure destinations tend to have longer stays than many business travelers. Such demand may improve the economics of operating airports, although it appears that many airports charge only nominal fees for such parking. These observations, while based on case-studies from Illinois, remain speculative in nature. Nevertheless, it seems clear that more research is needed to explore their potential implications and the effectiveness of strategies to deal with them.

Interpreted broadly, the downstate Illinois experience highlights the need for more research on the interplay between airports to better understand how their changing orientation affects their transportation role. It behooves federal and state governments to consider the fundamental “gestalt” of their air system – the idea that the whole is greater than the sum of its parts.

# The Unintended Consequences of Automation and Artificial Intelligence: Are Pilots Losing their Edge?

by Brandon A. Bordenkircher\*

## *Introduction*

Automated systems and artificial intelligence (AI) have been used to advance industries such as finance (where financial services firms are achieving companywide revenue growth of 19 percent), health care (with AI-enabled robots helping surgeons perform minimally invasive operations), public health (where AI is helping to fight pandemics), education (where it is taking over tasks such as grading and optimizing coursework), transportation (where companies like Waymo are testing autonomous trucks in the United States), and more.<sup>1</sup>

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<sup>1</sup> Louis Columbus, *Why AI Is The Future of Financial Services*, FORBES.COM (Aug. 15, 2019, 8:47 AM), <https://www.forbes.com/sites/louiscolumnbus/2019/08/15/why-ai-is-the-future-of-financial-services/#3ae2cbad3847>; Sam Daley, *Surgical Robots, New Medicines and Better Care: 32 Examples of AI in Healthcare*, BUILTIN.COM (Sept. 23, 2019), <https://builtin.com/artificial-intelligence/artificial-intelligence-healthcare>; Craig S. Smith, *The Machines Are Learning, and So Are the Students*, NYTIMES.COM (Dec. 20, 2019), <https://www.nytimes.com/2019/12/18/education/artificial-intelligence-tutors-teachers.html>; Amrita Khalid, *Waymo Resumes Testing Self-Driving Trucks in Arizona*, ENGAGET.COM (May 29, 2019), <https://www.engadget.com/2019/05/29/waymo-resumes-testing-self-driving-trucks-in-arizona/?guccounter=1>.

Commercial airline safety is at an all-time high. Advances in the aviation sector, thanks to automated systems, have allowed for gradual improvements to safety, particularly due to a decline in cognitive fatigue facing pilots. This fact was driven home in a recent study that showed airline fatalities have been reduced by roughly a factor of two every decade and have edged toward a factor of three in the last decade.<sup>2</sup>

One such automated system being utilized in the cockpit is known as the Maneuvering Characteristics Augmentation System (MCAS), a system designed for the Boeing 737 MAX, in order to help it fly more smoothly (due to its bigger engines) during maneuvers to avoid obstacles and to escape a powerful vortex from another plane, as well as to help adjust the tendency of the plane to nose up excessively during takeoff.<sup>3</sup>

However, as flying has become safer, recent issues with MCAS have resulted in two Boeing 737 MAX crashes: Lion Air Flight 610, which crashed minutes after taking off from Jakarta, Indonesia, killing 189 people and Ethiopian Airlines Flight 302, which crashed minutes after takeoff from Addis Ababa, killing all 157 on board.<sup>4</sup> These recent tragedies have shown us that not only is there still room for improvement, but that technological gains in one area can have unintended – and negative – impacts in other areas.

The question we seek to answer: are technological advances, such as automation, eroding piloting skills? Other sectors, such as health care, seem to be facing the same dilemma with artificial intelligence and surgery. The paper consists of three parts. Part 1, *Automation and Artificial Intelligence in Context*, defines and explores the history of automation and artificial intelligence, lays out how automation came to airplane cockpits, and explains its value to the cockpit. Part 2, *The Negative Implications of Auto-*

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<sup>2</sup> Arnold Barnett, *Aviation Safety: A Whole New World?*, 54 *TRANSP. SCI.* 84, 89 (2020).

<sup>3</sup> Jack Nicas et al., *Boeing Built Deadly Assumptions Into 737 Max, Blind to a Late Design Change*, *NYTIMES.COM* (June 1, 2019), <https://www.nytimes.com/2019/06/01/business/boeing-737-max-crash.html>.

<sup>4</sup> Megan Specia, *What We Know About the Lion Air Flight 610 Crash*, *NYTIMES.COM* (Nov. 9, 2018), <https://www.nytimes.com/2018/11/09/world/asia/air-lion-crash-610.html>; Hadra Ahmed et al., *Ethiopian Airlines Plane Is the 2nd Boeing Max 8 to Crash in Months*, *NYTIMES.COM* (Mar. 10, 2019), <https://www.nytimes.com/2019/03/10/world/africa/ethiopian-air-lines-plane-crash.html>.

*mation and Artificial Intelligence*, covers the problems introduced by these new technologies. Finally, Part 3, *Moving Forward*, conducts a brief analysis of issues involving automation in the cockpit, what we should be doing to address these issues, and what other sectors are doing to address their own automation and AI issues.

## ***Part 1 – Automation and Artificial Intelligence in Context***

### ***1. Definitions: Automation vs. Artificial Intelligence***

For the purpose of this paper, it is important to distinguish the definitions of automation and artificial intelligence. The dictionary definition of automation is “the technique of making an apparatus, a process, or a system operate automatically,” while the International Society of Automation’s definition is “the creation and application of technology to monitor and control the production and delivery of products and services.”<sup>5</sup> In automation, the environmental parameters are known at the time of programming and do not change during operations, with the purpose of letting machines perform monotonous repetitive tasks. This allows people (e.g., pilots) to focus on more important tasks that require human judgment and creativity.

On the other hand, artificial intelligence is a system that can respond and make decisions according to varying environmental parameters, which are not known at the time of design, by mimicking human decision-making. The term “artificial intelligence” is the overarching branch of computer science that focuses on building smart machines capable of performing tasks that usually require human intelligence.<sup>6</sup> The difference between artificial intelligence and machine learning is that machine learning is the *utilization of* artificial intelligence (i.e., inputting data, from which the machine then learns without any human involvement).<sup>7</sup> Machine learning can produce a system capable of artificial intelligence by taking in data and weighing that data in order

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<sup>5</sup> Int’l Soc’y of Automation, *What is Automation?*, <https://www.isa.org/about-isa/what-is-automation/> (last visited Feb. 17, 2020).

<sup>6</sup> John McCarthy et al., A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence (Aug. 31, 1955) (unpublished manuscript available at <http://www-formal.stanford.edu/jmc/history/dartmouth/dartmouth.html>).

<sup>7</sup> Bernard Marr, *What Is the Difference between Artificial Intelligence and Machine Learning?*, FORBES.COM (Dec. 6, 2016, 2:24 AM), <https://www>

to adjust responses, which is what the brain does: analyze information in order to adjust responses.<sup>8</sup> For the purposes of this paper, we will refer to the utilization of artificial intelligence as AI.

## 2. *A Brief History of Automation*

The term “automation” first appeared in 1936, when used by D.S. Harder to describe General Motors Corporation’s production process;<sup>9</sup> however, the history of automation is extensive, with its earliest mention in Homer’s *Iliad*.<sup>10</sup> In this epic poem, Homer describes the god Hephaestus, who was tasked with manufacturing all of the weapons used by the gods of Mount Olympus. To help Hephaestus build a mass of weapons in his workshop, he created what he called “automata,” which were self-operating machines made from metal.<sup>11</sup>

Automation in the field of manufacturing began to take root in the 11th century with innovations in mining as population booms resulted in an increased demand for metals.<sup>12</sup> Water wheels, water-powered draining engines, were invented to assist with draining water out of shafts and tunnels.<sup>13</sup> By 1722, we saw the appearance of the horse-and-water-powered cotton spinning wheel called a “water frame.”<sup>14</sup> By the 1800s, the Industrial Revolution was in full swing, particularly in the cotton and textile

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.forbes.com/sites/bernardmarr/2016/12/06/what-is-the-difference-between-artificial-intelligence-and-machine-learning/#76b7a5482742.

<sup>8</sup> Anila Siraj, *How Artificial Intelligence and Machine Learning Have Advanced with Data Proliferation*, KALIBRATE.COM (Oct. 13, 2017), <https://www.kalibrate.com/hot-topics/how-ai-and-machine-learning-advanced-with-data-proliferation>.

<sup>9</sup> Katsundo Hitomi, *Automation – Its Concept and a Short History*, 14 *TECHNOVATION* 121, 122 (1994).

<sup>10</sup> Dimitrios Kalligeropoulos & Soultana Vasileiadou, *The Homeric Automata and Their Implementation*, in 6 *HISTORY OF MECHANISM AND MACHINE SCIENCE: SCIENCE AND TECHNOLOGY IN HOMERIC EPICS* 77, 78–79 (Stephanos A. Paipetis ed., 2008).

<sup>11</sup> *Id.*

<sup>12</sup> Product Handling Concepts, *A Brief History of Automation* (Sept. 7, 2016), [www.phcfirst.com/words-in-motion/2016/9/7/a-brief-history-of-automation](http://www.phcfirst.com/words-in-motion/2016/9/7/a-brief-history-of-automation) (last visited Feb. 17, 2020).

<sup>13</sup> Brigitte Weinstein, *The Medieval Roots of Colonial Iron Manufacturing Technology*, [www.engr.psu.edu/mtah/articles/roots\\_colonial\\_iron\\_technology.htm](http://www.engr.psu.edu/mtah/articles/roots_colonial_iron_technology.htm).

<sup>14</sup> *Richard Arkwright*, HISTORY.CO.UK, [www.history.co.uk/biographies/richard-arkwright](http://www.history.co.uk/biographies/richard-arkwright).

industries. In the 1900s, developments in electronics and control engineering helped advance the use of automation as we continued to see further developments by World War II with the manufacturing of tanks, warships, and fighter planes.

### 3. *A Brief History of Artificial Intelligence*

Although the term “artificial intelligence” wasn’t coined until 1955, for a study titled *A Proposal For The Dartmouth Summer Research Project On Artificial Intelligence*,<sup>15</sup> its history can be traced back to 1308 when the Catalan poet Ramon Llull had a visionary, yet simple, idea. Llull utilized input (i.e., intake) and output, via a mechanical device made of paper, in order to create new knowledge from combinations of concepts, which he used to publish *The Ultimate General Art*.<sup>16</sup> However, it wasn’t until 1763 that Thomas Bayes developed a framework for reasoning the probability of events, called “Bayesian inference,” that became a leading approach in machine learning.<sup>17</sup> By 1914, Spanish engineer Leonardo Torres y Quevedo created the first chess-playing machine, capable of playing king and rook against king endgames without any human intervention.<sup>18</sup> Then, in 1943, Warren S. McCulloch and Walter Pitts published *A Logical Calculus of the Ideas Immanent in Nervous Activity*, discussing networks of idealized and simplified artificial “neurons” able to mimic the brain and perform simple logical functions.<sup>19</sup>

It wasn’t until the 1950s that the concept of artificial intelligence made a significant jump forward with Alan Turing, whose paper, *Computing Machinery and Intelligence*, suggested that humans utilize all accessible information and reason to make decisions, and that it might be possible for machines to do the same

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<sup>15</sup> See McCarthy, *supra* note 6.

<sup>16</sup> RAMON LLUL, *ARS MAGNA GENERALIS ET ULTIMA* [THE ULTIMATE GENERAL ART] (Minerva-Verlag ed. 1970) (1308). See Gil Press, *A Very Short History of Artificial Intelligence (AI)*, FORBES.COM (Dec. 30, 2016, 9:09 AM), [www.forbes.com/sites/gilpress/2016/12/30/a-very-short-history-of-artificial-intelligence-ai/#66ce64c56fba](http://www.forbes.com/sites/gilpress/2016/12/30/a-very-short-history-of-artificial-intelligence-ai/#66ce64c56fba).

<sup>17</sup> TYLER D. DEVLIN ET AL., *SEEING THEORY* 49 (2018), <https://seeing-theory.brown.edu/bayesian-inference/index.html>.

<sup>18</sup> Jon Turi, *Chess and the Automaton Endgame*, ENGADGET.COM (Feb. 9, 2014), [www.engadget.com/2014/02/09/torres-quevedo-chess-player-automaton/](http://www.engadget.com/2014/02/09/torres-quevedo-chess-player-automaton/).

<sup>19</sup> Warren S. McCulloch & Walter Pitts, *A Logical Calculus of the Ideas Immanent in Nervous Activity*, BULL. MATHEMATICAL BIOPHYSICS, Dec. 1943, at 115–33.

thing.<sup>20</sup> Turing discussed how to build intelligent machines and how to test their intelligence by proposing “the imitation game” which later became known as the “Turing Test.” Turing’s studies were stunted due to the primitive technology available at the time: first, computers couldn’t store commands, only execute them (i.e., computers could be told what to do but couldn’t remember what they did); and second, computing was extremely expensive (leasing a computer could cost up to \$200,000 a month).<sup>21</sup>

In December 1955, Allen Newell, Cliff Shaw, and Herbert Simon developed the first artificial intelligence program that was created to imitate the problem-solving skills of a human; the program was called the “Logic Theorist.”<sup>22</sup> With technological advances, computers were able to store more information and compute faster, making them more accessible. This persuaded government agencies, such as the Defense Advanced Research Projects Agency (DARPA), to fund AI research at several institutions, leading to AI advancements from 1957 to 1974.<sup>23</sup> DARPA was especially focused on building a machine that could translate spoken language and transcribe it.

AI continued to progress in the 1980s with the assistance of increased capital and the introduction of “deep learning” techniques that allowed computers to learn by experience and expert systems which copied the decision-making process of a human expert.<sup>24</sup> Expert systems and other AI-related endeavors were heavily funded from 1982 to 1990 as part of the Japanese government’s Fifth Generation Computer Project (FGCP) that invested \$400 million into improving artificial intelligence, developing computer processing, and implementing logic programming.<sup>25</sup>

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<sup>20</sup> Alan M. Turing, *Computing Machinery and Intelligence*, 59 MIND 433 (1950).

<sup>21</sup> Robert Garner, *Early Popular Computers 1950–1970*, ENG’G & TECH. HIST. WIKI, [https://ethw.org/Early\\_Popular\\_Computers,\\_1950\\_-\\_1970](https://ethw.org/Early_Popular_Computers,_1950_-_1970).

<sup>22</sup> Leo Gugerty, *Newell and Simon’s Logic Theorist: Historical Background and Impact on Cognitive Modeling*, 50 HUM. FACTORS & ERGONOMICS SOC’Y ANN. MEETING PROC. 880, 881 (2006).

<sup>23</sup> Rockwell Anyoha, *The History of Artificial Intelligence*, HARV. U. SITN BLOG (Aug. 28, 2017), <http://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/>.

<sup>24</sup> Edward A. Feigenbaum, *Expert Systems in the 1980s* (1980) (unpublished manuscript, available at <https://pdfs.semanticscholar.org/40d4/a42f70a7436b2ddf21d88187c874186cf97e.pdf>).

<sup>25</sup> *Japan Gain Reported in Computers*, N.Y. TIMES, Nov. 12, 1984, at D1.



AI thrived even after the FGCP's funding dissolved, and by the 2000s AI had achieved many of its milestones: Arthur Samuel wrote the first computer learning application in 1952; a program allowing a computer to create a set of rules based on training data – called Explanation Based Learning (EBL) – was introduced in 1981; NetTalk, a program where computers learned to pronounce words, was introduced in 1985; machine learning shifted in the 1990s from a knowledge-driven approach to a data-driven approach focusing on extracting patterns from large amounts of data; and in 1997, IBM's Deep Blue system defeated the world champion of chess.<sup>26</sup> A computer beating the world's greatest chess player is impressive, but what has arguably been more impressive is the implementation of artificial intelligence and machine learning for practical uses, such as stopping the spread of pandemics and even utilizing AI-enabled robots to assist surgeons with minimally invasive operations.<sup>27</sup>

#### 4. *History of Automation in the Cockpit*

As aircraft design progressed, the need for more complicated systems became a necessity. Automated flight systems have made long flights simpler by freeing pilots of the tiresome constant handling and correction of aircraft controls. It is estimated that today, “over 90 percent of most flights are flown with the autopilot engaged,” with autopilot utilized for the climb, enroute, and descent phases of flight. The autopilot system has a minimum engagement altitude, meaning once a certain altitude is reached, it is up to the pilot to decide whether or not to turn it on.<sup>28</sup> Cockpit automation evolved in three phases: mechanical, electrical, and electronic.<sup>29</sup>

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<sup>26</sup> Anyoha, *supra* note 23; Bella Wilson, *Major Milestones of Artificial Intelligence from 1949 to 2018*, MEDIUM.COM (Apr. 18, 2018), <https://medium.com/@angelapowell/major-milestones-of-artificial-intelligence-97d42bb5714c>.

<sup>27</sup> Eric Niiler, *An AI Epidemiologist Sent the First Warnings of the Wuhan Virus*, WIRED (Jan. 25, 2020, 7:00 AM), <https://www.wired.com/story/ai-epidemiologist-wuhan-public-health-warnings/>; Daley, *supra* note 1.

<sup>28</sup> John Cox, *Ask the Captain: How Often is Autopilot Engaged?*, USATODAY.COM (Aug. 11, 2014, 6:10 PM) <https://www.usatoday.com/story/travel/columnist/cox/2014/08/11/autopilot-control-takeoff-cruising-landing/13921511/>.

<sup>29</sup> Antonio Chialastri, *Automation in Aviation*, in AUTOMATION 79, 84 (Florian Kongoli ed., 2012), [https://cdn.intechopen.com/pdfs/37990/intech-automation\\_in\\_aviation.pdf](https://cdn.intechopen.com/pdfs/37990/intech-automation_in_aviation.pdf).

### **a. Phase One: Mechanical**

Automation in aviation was introduced not long after Wilbur and Orville Wright first took to the skies in 1903. The first automation was put in place in the 1920s, to keep the aircraft flying straight. Prior to this introduction, there were no instrumental aids to help pilots fly, such as systems to indicate airspeed and altitude, which were not introduced for many years.

During this time, a piece of string was attached to the wings to indicate if airflow was adequate to sustain flight. Soon after, the first anemometers and altimeters, tools to indicate airspeed and altitude, were introduced, followed by the pneumatic gyroscope. This device was used to help stabilize an artificial horizon and help pilots understand their situation during poor visibility, thus preventing dangerous vestibular illusions caused by the inner ear.

In phase one, the purpose of automation was to assist pilots with their manual flying and with situational awareness. As planes grew in size, the aerodynamic forces increased, and pilots' physical force was insufficient to control the aircraft. At this time, it became necessary to amplify the pilot's physical force via pneumatic or hydraulic actuators. In the 1930s, the first fly-by-wire system was introduced. It replaced conventional mechanical flight controls with an electric interface to control the actuators, which in turn moved the aircraft's control surfaces.<sup>30</sup>

### **b. Phase Two: Electrical**

Electric innovations in the cockpit followed with electrically driven instruments replacing older instruments that were powered pneumatically. New electronic navigation systems, such as VORs (Very High Frequency Omni-directional Range) were introduced that allowed pilots to navigate from one ground-based station to another using onboard equipment. With the introduction of the ILS (Instrument Landing System), pilots were provided with lateral and vertical guidance to the runway, allowing planes to safely land in lower-visibility conditions.

The 1960s brought additional electric advancements, such as autopilot, autothrottle (controlling power to the engine), flight di-

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<sup>30</sup> Stephen Pope, *Fly by Wire: Fact versus Science Fiction*, FLYING (Apr. 23, 2014), <http://www.flyingmag.com/aircraft/jets/fly-by-wire-fact-versus-science-fiction/>.

rectors (the brain of the autopilot system), onboard weather, and system-monitoring equipment capable of alerting the pilot of impending equipment malfunctions. With up to 600 various devices, the second phase of automation gave rise to a new worry: “the inflation of information with hundreds of additional gauges and indicators inside the cockpit.”<sup>31</sup>

### c. Phase Three: Electronic

The third phase of automation, characterized by electronics in the cockpit, came in the 1980s. This new wave of automation replaced conventional instruments with colorful glass displays (e.g., liquid crystal displays (LCDs)) that presented air data, attitude, heading, reference, and system-monitoring information in an easily readable format. Known as “glass cockpits,” the displays also helped to cut down on the clutter of multiple instruments, and individual LRUs (Line Replaceable Units) made for easier maintenance and technology upgrades.

During the third phase, the Flight Management System shifted from tactical to strategic. In Phase Two, pilots received immediate feedback after entering their input; however, in Phase Three, after the data was entered, the effects were no longer immediately accessible. This made coordination, mutual cross-checking, and operational discipline – in flying tasks and also in monitoring activity – extremely important. The Flight Management System database has an enormous amount of data (i.e., navigational routes and performance capabilities).

This phase also birthed the “electronic echo-system,” a phrase used to describe the extremely complex electrical systems pilots are currently forced to utilize. Prior to this phase, pilots were acquainted with the inner logic of the systems they utilized, the components, and procedures for dealing with potential issues. In this new phase, pilots were found to sometimes be “out of the loop.” This is a big part of the issue with automation in the cockpit.<sup>32</sup>

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<sup>31</sup> Chialastri, *supra* note 29, at 85 (citing Guy A. Boy, *A Human-Centered Design Approach*, in *THE HANDBOOK OF HUMAN MACHINE INTERACTION: A HUMAN-CENTERED DESIGN APPROACH* (Guy A. Boy ed., 2011)).

<sup>32</sup> *Id.* at 86.

## d. Automated Systems

### 1. Fly-by-wire Controls and Automated Flight Systems

Fly-by-wire (FBW) systems are semi-automatic, computer-controlled flight control apparatus that replace traditional mechanical flight controls with an electronic interface.<sup>33</sup> The concept of fly-by-wire systems evolved slowly as aircraft design progressed with increases in size and speed. Since the beginning of flight in the early 1900s, flight control systems that allow pilots to climb, bank, turn, and descend, were originally controlled by cables, bellcranks, and pushrods connected to sticks and rudder pedals in the cockpit.<sup>34</sup> Increases in aircraft size and speed required power-boostered controls in order to enable the pilot to fully maneuver the aircraft. The first aircraft to utilize the FBW system was the Avro Arrow, which used an analog circuit dual-channel fly-by-wire system.<sup>35</sup> The Apollo Lunar Module was fly-by-wire, and NASA's F-8 aircraft also tested the system.<sup>36</sup>

As aircraft continued to progress, the Digital Fly-By-Wire (DFBW) program (pioneered by the Concorde and Airbus A320 in civil aviation) – an electronic flight control system teamed with a digital computer – was introduced.<sup>37</sup> This successfully replaced mechanical control systems between 1972 and 1985. Electronic signals transmitted via *electronic wires* were the linkage between the cockpit and control surfaces on a DFBW aircraft.<sup>38</sup> Command signals from the cockpit are processed by the digital flight control computer and transmitted to actuators that move control surfaces correspondingly. The fly-by-wire system allows the aircraft's computers to send automatic signals to carry out work without the pilot's input. Flight control computers determine the

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<sup>33</sup> *What are Fly-by-Wire Systems?*, BAE SYSTEMS.COM, <https://www.baesystems.com/en-us/definition/what-are-fly-by-wire-systems> (last visited Feb. 18, 2020).

<sup>34</sup> *NASA Dryden Technology Facts – Digital Fly By Wire*, NASA, <https://www.nasa.gov/centers/dryden/about/Organizations/Technology/Facts/TF-2001-02-DFRC.html> (last visited Feb. 18, 2020).

<sup>35</sup> *What is Fly-by-Wire?*, STACK EXCHANGE, <https://aviation.stackexchange.com/questions/21690/what-is-fly-by-wire> (last visited Feb. 18, 2020).

<sup>36</sup> *Digital Fly By Wire: Aircraft Flight Control Comes of Age*, NASA, [https://www.nasa.gov/vision/earth/improvingflight/fly\\_by\\_wire.html](https://www.nasa.gov/vision/earth/improvingflight/fly_by_wire.html) (last visited Feb. 18, 2020).

<sup>37</sup> *NASA Dryden Technology Facts – Digital Fly By Wire*, *supra* note 34.

<sup>38</sup> *What is Fly-by-Wire?*, *supra* note 35.

ordered response, which automatically helps stabilize the aircraft and prevent unsafe maneuvers outside of its performance capabilities. Together, machine learning and AI technology were able to reduce the workload of pilots.<sup>39</sup>

In 1983, Airbus introduced fly-by-wire to control flaps and spoilers in the A310, as well as parts of the A300-600 the following year. The biggest advantage of fly-by-wire is that it is ideally suited for computer use. Aircraft manufacturers adopted fly-by-wire technology to control supersonic aircraft, like fighter jets, which would be impossible to control by human inputs alone. Planes under computer control have quicker response time to turbulence and other changes in flying conditions, and the use of computers placed limits on pilot behavior, to ensure that an aircraft is never forced into a maneuver it is not designed to handle (e.g. a turn so sharp that it would crack an aircraft's body).<sup>40</sup>

Aircraft design engineers prefer the all-electric approach because it offers weight savings, easier installation, and lower maintenance costs.<sup>41</sup> Other fly-by-wire benefits include a decrease in cost of ownership and savings pertaining to design (flexibility of cockpit layout and incorporation of automatic flight and landing systems), an increase in flight control system reliability, improved aircraft handling qualities, and resistance to aircraft structural changes due to flexing, bending, and thermal expansion.<sup>42</sup>

## 2. Autopilot and Flight Director (FD)

Autopilot is a system with the ability to automate maintenance of altitude, climbing or descending to an assigned altitude, maintaining and intercepting a course, guiding an aircraft between waypoints, and flying a precision or nonprecision approach. The first part of the autopilot system is a set of servo actuators that physically control movement, along with control circuits that make the servo actuators move the correct amount for the se-

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<sup>39</sup> Alyson Behr, *More Than an Auto-Pilot, AI Charts Its Course in Aviation*, ARSTECHNICA.COM (Dec. 5, 2018, 10:00 AM), <https://arstechnica.com/information-technology/2018/12/unite-day1-1/>.

<sup>40</sup> Barnaby J. Feder, *The A320's Fly-by-Wire System*, N.Y. TIMES, June 29, 1988, at D7.

<sup>41</sup> *Id.*

<sup>42</sup> J.P. Sutherland, *Fly-By-Wire Flight Control Systems*, Presented at the Joint Meeting of Flight Mechanics and Guidance and Control Panels of AGARD (Sept. 3, 1968), <https://apps.dtic.mil/dtic/tr/fulltext/u2/679158.pdf>.

lected task. The second part is the flight director (FD) – the brain of the autopilot system – which has the power to accomplish these tasks and usually displays the indications to the pilot for guidance.<sup>43</sup>

### 3. Control Wheel Steering

Control Wheel Steering (CWS) is a cross between fully automated flight and manual flying. It is less used as a stand-alone option in modern airliners. CWS autopilots typically have three positions: off, CWS, and CMD. CMD mode, short for Command mode, gives the autopilot full control over the aircraft, as it receives input from the heading/altitude setting, radio and nav aids, or the FMS (Flight Management System). In CWS mode, the pilot controls the autopilot through inputs via the stick. The inputs are translated to heading and attitude, which the autopilot holds until notification from the pilot.

### 4. Stability Augmentation Systems (SAS)

As aircraft performance and size increased, adding stability augmentation became requisite in order to aid the pilot. SAS were limited in the scope they controlled; however, for some flight regimes, SAS were required for the safety of the aircraft. SAS's success led to the development of the Control Augmentation System (CAS), which was an electrical system that worked in parallel with the mechanical control system.<sup>44</sup>

### 5. Automatic Dependent Surveillance Broadcast (ADS-B)

The Automatic Dependent Surveillance Broadcast (ADS-B) system was originally developed for unmanned aerial vehicle (UAV) safety for traffic situational awareness but was later introduced to manned aircraft.<sup>45</sup>

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<sup>43</sup> FED. AVIATION ADMIN., *ADVANCED AVIONICS HANDBOOK 4-2* (2009), [www.faa.gov/regulations\\_policies/handbooks\\_manuals/aviation/advanced\\_avionics\\_handbook/media/aah\\_ch04.pdf](http://www.faa.gov/regulations_policies/handbooks_manuals/aviation/advanced_avionics_handbook/media/aah_ch04.pdf).

<sup>44</sup> *Id.*

<sup>45</sup> Fed. Aviation Admin., *Automatic Dependent Surveillance-Broadcast (ADS-B)*, [www.faa.gov/nextgen/programs/adsb/](http://www.faa.gov/nextgen/programs/adsb/) (last visited Feb. 18, 2020).

## 6. Maneuvering Characteristics Augmentation System (MCAS)

Systems such as MCAS were developed to increase safety to compensate for aircraft handling characteristics (i.e. using sensor data to adjust the control surfaces of an aircraft automatically, based on flight conditions). In the case of the Boeing 737 MAX, the MCAS was used to help stabilize the plane during flight and help correct the plane from going nose up during takeoff due to its bigger engines.<sup>46</sup>

## 7. Runway Overrun Protection (ROPS)

Runway Overrun Protection software was introduced to calculate aircraft approach speed and weight, comparing it with the runway length and current local weather. If an unsafe situation is detected, an alert sounds “Runway too short!” ROPS also has the ability to assist in landing approach, taxiing, takeoff, and other aspects of flight.<sup>47</sup>

### e. U.S. Automation Regulations

With the increase in cockpit automation, and with the exception of most landings and takeoffs, planes have largely been flying themselves. While it is irrefutable that automation has led to the airline industry’s much-improved safety record in the past few decades, it is perhaps ironic that it has also been a cause of several crashes in the past few years. The co-chairman of the FAA committee on pilot training warned of a pattern of accidents in state-of-the-art planes, due to U.S. regulations requiring greater reliance on computerized flying.<sup>48</sup>

In 2014, the FAA created the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) to gather feedback from the U.S. aviation community in order to develop recommendations

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<sup>46</sup> Nicas et al., *supra* note 3.

<sup>47</sup> Press Release, Airbus, Airbus’ Runway Overrun Prevention System (ROPS) Certified by EASA on A330 Family (July 20, 2015), <https://www.airbus.com/newsroom/press-releases/en/2015/07/airbus-runway-overrun-prevention-system-rops-certified-by-easa-on-a330-family.html>.

<sup>48</sup> *Study: Automatic Pilot May Add to Flight Risk*, CBSNEWS.COM (Aug. 30, 2011, 10:13 AM), <https://www.cbsnews.com/news/study-automatic-pilot-may-add-to-flight-risk/>.

regarding flight automation. The Committee, which specifically focused on operations and training pertaining to 14 C.F.R. parts 121, 135, and 142,<sup>49</sup> resulted in the issuance of an Audit Report by the DOT's Office of Inspector General.<sup>50</sup>

As of 2016, the FAA had implemented more than 1,550 automated procedures, and with advances in cockpit automation that number is set to increase. As the number of automated procedures increases, manual flight opportunities will continue to diminish. New procedures that hinder pilots' ability to practice manual flying skills include the utilization of automated systems such as area navigation (RNAV) and required navigation performance (RNP), as well as the requirement to maintain a reduced 1,000-foot vertical separation minimum at altitude.<sup>51</sup>

As automation continues to progress, the Federal Aviation Regulations (FARs) will need continued revisions and updates. A 1996 report by the FAA's Human Factors Team resulted in a series of regulatory revisions, including: warning, caution, and advisory lights (§ 25.1322); flight director (§ 25.1335); reporting automation failures and anomalies (§ 121.703); and the consideration of pilot errors (§ 25.1309).<sup>52</sup> The specific section pertaining to automation – 14 C.F.R. § 25.1329 – is titled “Autopilot Regulatory Standards.”

### 5. *Why Automation is Valuable to the Cockpit*

As stated *supra*, automation in the cockpit has helped give rise to many benefits resulting in safer airline travel. A recent study noted that airline fatalities have been reduced by a factor of two in every decade for 50 years and have edged toward a factor of

<sup>49</sup> Part 121 regulates the operating requirements for, inter alia, scheduled commercial airlines. Part 135 regulates commuter and on-demand air carrier operations. Part 142 regulates training centers.

<sup>50</sup> DEP'T OF TRANSP., OFFICE OF INSPECTOR GENERAL, AUDIT REPORT: ENHANCED FAA OVERSIGHT COULD REDUCE HAZARDS ASSOCIATED WITH INCREASED USE OF FLIGHT DECK AUTOMATION (Jan. 7, 2016), [www.oig.dot.gov/sites/default/files/FAA%20Flight%20Deck%20Automation\\_Final%20Report%5E1-7-16.pdf](http://www.oig.dot.gov/sites/default/files/FAA%20Flight%20Deck%20Automation_Final%20Report%5E1-7-16.pdf).

<sup>51</sup> Bill Carey, *FAA's Oversight of Pilot Automation Training Questioned*, AINONLINE.COM (Jan. 12, 2016, 10:12 AM), <https://www.ainonline.com/aviation-news/air-transport/2016-01-12/faas-oversight-pilot-automation-training-questioned>.

<sup>52</sup> FED. AVIATION ADMIN., HUMAN FACTORS TEAM, THE INTERFACES BETWEEN FLIGHTCREWS AND MODERN FLIGHT DECK SYSTEMS (June 18, 1996), <http://www.tc.faa.gov/its/worldpac/techrpt/hffaces.pdf>.



three in the last decade.<sup>53</sup> Automation helps pilots by preventing unsafe maneuvers and helping to reduce pilots' cognitive load and cognitive fatigue.

### a. Preventing Unsafe Maneuvers

With the introduction of the Digital Fly-By-Wire (DFBW) program, an electronic flight control system with a digital computer, commands from the cockpit were processed by the computer and sent to actuators that shift the corresponding control surfaces.<sup>54</sup> The flight control computer then determines how to move the actuators at each control surface to administer the ordered reaction. These systems help to automatically steady the aircraft and avoid unsafe maneuvers beyond the aircraft's performance capabilities. Fly-by-wire technology allows aircraft manufacturers to design supersonic airplanes that are easier to manipulate while being less inherently stable than a conventionally built airplane. Airplanes, such as fighter jets, which are unstable, are both more maneuverable and more efficient than stable ones. Increased maneuverability allows pilots to perform maneuvers without exceeding the structural limits of aircraft (e.g., a turn so sharp that it would crack an aircraft's body).<sup>55</sup> Thus, unstable aircraft are more desirable in all ways except that they are more difficult for humans to handle, hence the need for fly-by-wire systems.<sup>56</sup>

### b. Reducing Pilot Cognitive Load and Cognitive Fatigue

Modern airplanes collect an incredible amount of data through their sensors, and it would be next to impossible for pilots to analyze all of that data in order to make an educated decision for every issue during a flight. Approximately 50,000 sensors gather 2.5 terabytes of data daily on an Airbus A350 XWB. Obviously, this is an immense amount of data to analyze. Automated systems, such as the DFBW program, have the ability to reduce the amount of data analyzed by the pilots by making unsafe maneu-

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<sup>53</sup> Barnett, *supra* note 2. See also Peter Dizikes, *Commercial Air Travel Is Safer than Ever*, SCIENCE DAILY.COM (Jan. 24, 2020), <https://www.science.daily.com/releases/2020/01/200124124510.htm>.

<sup>54</sup> NASA Dryden Technology Facts – Digital Fly By Wire, *supra* note 34.

<sup>55</sup> Pope, *supra* note 30.

<sup>56</sup> Feder, *supra* note 40.

vers impossible to initiate, which reduces the cognitive load, and the resulting cognitive fatigue, placed on the pilots. Assigning these analytical tasks to automated systems allows the crew to spend more time focusing on the broad strategy and mission and less time concentrating on the “small sub-problems of piloting an aircraft.”<sup>57</sup>

## ***Part 2 – The Negative Implications of Automation and Artificial Intelligence***

### ***1. The Issues with Automation in the Cockpit***

As stated *supra*, it is somewhat ironic that automation has been a cause of several airplane crashes in the past few years. One of the reasons might be because humans stop relying on their own intellectual abilities as they rely more on computer assistance and automation.<sup>58</sup> Some of the most frequent mistakes made by pilots pertaining to the automated systems are:

- Pushing the wrong buttons at the right time;
- Pushing the right buttons at the wrong time;
- Pushing the right buttons in the wrong sequence;
- Thinking that an automated function is off when it is on; and
- Thinking that an automated function is on when it is off.<sup>59</sup>

In addition to those common mistakes, there are other human factors in relation to automation that also cause problems.<sup>60</sup>

#### **a. Automation Bias**

Automation bias occurs when users of an automated system tend to apply greater weight to the system’s recommendations

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<sup>57</sup> Behr, *supra* note 39.

<sup>58</sup> Masoud Yazdani, *Intelligent Machines and Human Society*, in *ARTIFICIAL INTELLIGENCE: HUMAN EFFECTS* 63, 65 (Masoud Yazdani & Ajit Narayanan eds., 1984).

<sup>59</sup> Robert P. Mark, *Cockpit Automation Is Still Very Much a Work in Progress*, AINONLINE.COM (Jan. 11, 2008, 9:10 AM), <https://www.ainonline.com/aviation-news/aviation-international-news/2008-01-11/cockpit-automation-still-very-much-work-progress>.

<sup>60</sup> *Id.*

than to their own judgment or expertise. Three main factors contribute to the occurrence of automation bias. The first factor is to favor the automated system to handle more complex analysis. The second is referred to as “complacency,” where pilots do not conduct sufficient checks of the system and assume everything is fine, even though a dangerous condition may be developing. The final factor, “diffusion of responsibility,” occurs when humans reduce their own effort when working with an automated system. These three components arise when a pilot becomes overly comfortable with automated systems. As long as the automation works properly, these factors are insignificant; however, if the automated system fails to alert the pilot or provides an incorrect recommendation the results can lead to tragedy.<sup>61</sup>

### **b. Automation Surprise**

Automation surprise occurs when a pilot is “out-of-the-loop” while confronted with an unpredictable and difficult-to-grasp system performance. Automation was initially developed to improve accuracy and eliminate the chance for human error. As automation continues to advance, the computer performs more operations that have typically been human-related. With these advances, the human user can become distracted, and disconnected with the flying of the plane and the automated system. When a pilot is out-of-the-loop, s/he becomes less engaged in the process, which limits the pilot’s knowledge of the situation. This leads to a pilot’s inability to identify problems, verify the state of the system, comprehend the situation, and react to the situation. In short, pilots suffer from a loss of situational awareness, where they are surprised by the demeanor of the automation.<sup>62</sup>

### **c. Additional Human-Factor Issues**

In addition to automation bias and automation surprise, experts warn about the following human-factor issues when flying automated aircraft:

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<sup>61</sup> Julian Hiraki & Mike Warnink, *Cockpit Automation Fact Sheet: Automation Bias and Surprise*, AVIATIONFACTS.EU (Feb. 2016), [https://aviationfacts.eu/uploads/thema/file\\_en/56cb04c570726f3ee1010000/Cockpit\\_Automation\\_Fact\\_sheet.pdf](https://aviationfacts.eu/uploads/thema/file_en/56cb04c570726f3ee1010000/Cockpit_Automation_Fact_sheet.pdf).

<sup>62</sup> *Id.*

- Absorption – when a pilot is so focused on a task that other issues are excluded;
- Fixation – when a pilot becomes locked into one solution despite evidence suggesting other actions;
- Preoccupation – when a pilot is distracted because the plane is flying smoothly; and
- Underload – when workload is low and it becomes difficult to pay attention.<sup>63</sup>

## 2. *Negative Effect on Pilots*

The FAA completed a study in 2011 that found 60 percent of 46 accidents occurred due to a lack of manual flying skills and lack of ability to handle the automated controls.<sup>64</sup> The study also found that complicated automation systems confuse pilots, causing them to respond when they do not need to.<sup>65</sup>

Pilots currently spend less time practicing hands-on flying and more time learning these new automated systems. According to interviews with pilots at major airlines and aviation universities around the world, this has resulted in novice pilots being less comfortable with taking manual control when the automated system is not working correctly.<sup>66</sup> With the pilots' skills dulled, they may not know how to recognize what is happening or have the time to figure out how to fix the problem. Some airline pilots and experts have worried this has led us to a false sense of security – and they may have a point. With Lion Air Flight 610 and Ethiopian Airlines Flight 302, the pilots failed to control the aircraft because they did not fully understand how the automated system (MCAS) functioned.<sup>67</sup> In 2014, investigators found the crash of an Asiana Airlines jet in San Francisco that left three dead in

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<sup>63</sup> Mark, *supra* note 59.

<sup>64</sup> Study: *Automatic Pilot May Add to Flight Risk*, *supra* note 48.

<sup>65</sup> Mark, *supra* note 59. See also Study: *Automatic Pilot May Add to Flight Risk*, *supra* note 48.

<sup>66</sup> Jack Nicas & Zach Wichter, *A Worry for Some Pilots: Their Hands-On Flying Skills Are Lacking*, NYTIMES.COM (Mar. 14, 2019), <https://www.nytimes.com/2019/03/14/business/automated-planes.html>.

<sup>67</sup> *Id.*

2013 was caused by pilots over-relying on the automated systems in the cockpit.<sup>68</sup>

There were hundreds of casualties from 2006 to 2011 due to “loss of control” accidents where planes got into abnormal positions and pilots were not able to recover them. In a few cases, pilots made incorrect fraction-of-a-second decisions, with fatal results (e.g., turning the plane’s nose skyward causing a stall when it should have remained down to stabilize the flight).<sup>69</sup>

The issue of automation eroding piloting skills has been known for decades, as an American Airlines pilot-training video warned about the issue back in 1997.<sup>70</sup> In 2013, the FAA released a 267-page report that concluded pilots relied on automation too much while recommending they be required to improve their manual flying skills.<sup>71</sup> Even with knowledge of these fatal issues, the FAA has been slow to correct them. The DOT’s Office of Inspector General issued a report in 2016, with the finding that the FAA did not track how often pilots flew manually, and the additional finding that airline companies had not adequately trained pilots on how to monitor a plane on autopilot or for hands-on flying.<sup>72</sup>

The aviation industry’s most experienced pilots are being forced into retirement<sup>73</sup> and, as a result, the global pilot shortage is forcing airlines to hire pilots with less experience in the cockpit. Automation in the cockpit masks this lack of experience. Boeing and Airbus have encouraged a reliance on automation and have been marketing aircraft to accommodate less-experienced pilots, according to a spokesman for an airline pilots’ union.<sup>74</sup>

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<sup>68</sup> Press Release, Nat’l Transp. Safety Bd., Board Meeting: Crash of Asiana Flight 214 Accident Report Summary (June 24, 2014), [https://www.nts.gov/news/events/pages/2014\\_Asiana\\_BMG-abstract.aspx](https://www.nts.gov/news/events/pages/2014_Asiana_BMG-abstract.aspx).

<sup>69</sup> *Study: Automatic Pilot May Add to Flight Risk*, *supra* note 48.

<sup>70</sup> Videotape: Automation Dependency: Children of the Magenta Line (Am. Airlines, Apr. 21, 1997), <https://vimeo.com/159496346>.

<sup>71</sup> FED. AVIATION ADMIN., OPERATIONAL USE OF FLIGHT PATH MANAGEMENT SYSTEMS: FINAL REPORT OF THE PARC/CAST FLIGHT DECK AUTOMATION WORKING GROUP (Sept. 5, 2013), [www.faa.gov/aircraft/air\\_cert/design\\_approvals/human\\_factors/media/OUFPMS\\_Report.pdf](http://www.faa.gov/aircraft/air_cert/design_approvals/human_factors/media/OUFPMS_Report.pdf).

<sup>72</sup> DEP’T OF TRANSP., *supra* note 50.

<sup>73</sup> U.S. airline pilots are required to retire at age 65. See 14 C.F.R. § 121.383(d)–(e) (2019).

<sup>74</sup> Nicas & Wichter, *supra* note 66.

### 3. *An Example from Medicine: The Negative Impact of AI-Assisted Surgery*

AI-assisted surgery, with the physician operating a robotic system that performs the surgery through small incisions, is beginning to replace traditional surgery, in which a surgeon operates through a long skin incision. According to some doctors, it leads to less blood loss, shorter hospital stays, faster recoveries, a better chance of not leaving behind parts of a malignant tumor, and is actually easier to master than traditional open surgery. The main advantage for doctors is precision, as it uses smaller instruments, allowing for more exacting movements during procedures. Smaller, more precise cuts result in much faster healing and less pain medication. Robotic surgery also has a quicker learning curve by eliminating certain negative human aspects of the surgery, such as vibrating or shaky hands.<sup>75</sup>

There are many positive aspects of AI-assisted surgery; however, because of this reliance on technology, surgeons are facing a dilemma much like that of the pilots. A study was published showing how robotic surgery practices may be limiting the amount of hands-on surgical practice trainees receive, and leaving many new surgeons unequipped to perform surgery without the aid of artificial intelligence.<sup>76</sup> Matthew Beane, Ph.D., conducted a two-year study comparing the outcomes of traditional and robotic surgical practices. The study found traditional surgical training methods were successful in teaching trainees how to become surgeons, while the robotic surgery techniques limited the abilities for trainees due to lack of experience.<sup>77</sup> Dr. Beane concluded that premature specialization in robotic surgery led to incompetence in general surgery and contributed to troubling outcomes for the group of novice surgeons and the profession as they begin to see a decreasing supply of experts. In summary, these new surgeons are comfortable working within the context of artificial intelligence and robotic surgery, which led to what

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<sup>75</sup> *Is Robotic Prostate Surgery Better Than Traditional Surgery?*, WALL ST. J. (June 24, 2018, 10:03 PM), [www.wsj.com/articles/is-robotic-prostate-surgery-better-than-traditional-surgery-1529892180](http://www.wsj.com/articles/is-robotic-prostate-surgery-better-than-traditional-surgery-1529892180).

<sup>76</sup> Matthew Beane, *Shadow Learning: Building Robotic Surgical Skill When Approved Means Fail*, 41 ADMIN. SCI. Q. 404 (2018).

<sup>77</sup> Emily Rappleye, *Robot-Assisted Surgery Leaves New Surgeons Without Crucial Skills, Study Finds*, BECKER'S HOSP. REV. (Mar. 19, 2019), <https://www.beckershospitalreview.com/artificial-intelligence/robot-assisted-surgery-leaves-new-surgeons-without-crucial-skills-study-finds.html>.

Beane calls “premature specialization.” If a problem were to arise and they had to perform surgery without assistance from a machine, they were ill-prepared.<sup>78</sup> Or, as Andrew Hill stated in an article on the strategic dilemmas of artificial intelligence: “When the Machine suffers a cataclysmic failure, the . . . society collapses with it.”<sup>79</sup> This problem is not siloed specifically in the aviation and surgery spaces. Another paper notes that wide usage of Web agents (AI helpers that help people navigate websites and answer questions for them) can cause the erosion of people’s Internet competence over time.<sup>80</sup>

#### 4. *The Negative Impact of Self-Driving Vehicles*

Autonomous vehicles have the potential to make the road safer for both drivers and pedestrians. The U.S. government’s National Highway Traffic Safety Administration (NHTSA) has found that 94 percent of all serious motor vehicle crashes are due to human error, and although automated safety technology can help mitigate these crashes, autonomous vehicles still have a way to go.<sup>81</sup> Three autonomous-vehicle-related deaths have demonstrated that automation bias, automation surprise, preoccupation, and underload are not just phenomena found in aviation. The first autonomous vehicle crash occurred in Florida in May of 2016. A Tesla Model S was driving on autopilot mode and failed to detect a tractor-trailer crossing the highway. The incident, which left the driver of the Tesla dead, occurred because the system failed to differentiate a white tractor-trailer crossing the highway from the bright sky behind.<sup>82</sup> The driver in the Florida

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<sup>78</sup> *Id.* See also Jingyan Lu, *Will Medical Technology Deskill Doctors?*, 9 INT’L EDUC. STUD. 130 (2016).

<sup>79</sup> Andrew Hill, *Artificial Intelligence Creates Real Strategic Dilemmas*, FIN. TIMES (May 19, 2019) (citing E.M. FORSTER, *THE MACHINE STOPS* (Penguin Classics 2011) (1909)), [www.ft.com/content/8e3d9386-77c6-11e9-bb-ad-7c18c0ea0201](http://www.ft.com/content/8e3d9386-77c6-11e9-bb-ad-7c18c0ea0201).

<sup>80</sup> Alexander Serenko, Umar Ruhi & Mihail Cocosila, *Unplanned Effects of Intelligent Agents on Internet Use*, 21 AI & Soc’y 141, 157 (2007), <https://link.springer.com/article/10.1007/s00146-006-0051-8>.

<sup>81</sup> Nat’l Highway Traffic Safety Admin., *Automated Vehicles for Safety*, <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety>.

<sup>82</sup> *Tesla Driver Dies in First Fatal Crash While Using Autopilot Mode*, THEGUARDIAN.COM (June 30, 2016), [www.theguardian.com/technology/2016/jun/30/tesla-autopilot-death-self-driving-car-elon-musk](http://www.theguardian.com/technology/2016/jun/30/tesla-autopilot-death-self-driving-car-elon-musk).

crash had his hands on the steering wheel for 25 seconds out of the 37 minutes that the vehicle was in automated control mode.<sup>83</sup>

The second autonomous vehicle-related death, and the first to involve a pedestrian death, occurred in March 2018, when a self-driving Uber struck and killed a woman on an Arizona street.<sup>84</sup> Police reported the self-driving car was in autonomous mode when it hit the woman, who was walking outside of the crosswalk.<sup>85</sup> Investigators instead highlighted the human errors, including the fact that the vehicle operator in the car at the time of the crash was not paying attention. Investigators found that the driver had been glancing down at a telephone for over a third of the car ride, and during the crash the driver was streaming a television show on the phone, in violation of Uber's policy banning phone use during driving.<sup>86</sup>

The driver had one chance to save the pedestrian's life, as she was detected by the car 5.6 seconds before impact; however, because the driver was not paying attention, the pedestrian was killed. Bruce Landsberg, a National Transportation Safety Board member, said that "automation complacency" was the culprit, but we could just as well call it automation bias.<sup>87</sup>

The third autonomous-vehicle-related death occurred in 2018 in Mountain View, California. The accident could have been avoided; however, the driver was playing a game on his phone and had been relying too heavily on Tesla's Autopilot driver-assistance system. The system had been engaged for nearly 19 min-

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<sup>83</sup> NAT'L TRANSP. SAFETY BD., COLLISION BETWEEN A CAR OPERATING WITH AUTOMATED VEHICLE CONTROL SYSTEMS AND A TRACTOR-SEMI-TRAILER TRUCK NEAR WILLISTON, FLORIDA MAY 7, 2016, NTSB/HAR-17/02, PB2017-102600 (2017).

<sup>84</sup> *Self-Driving Uber Kills Arizona Woman in First Fatal Crash Involving Pedestrian*, THEGUARDIAN.COM (Mar. 19, 2018), [www.theguardian.com/technology/2018/mar/19/uber-self-driving-car-kills-woman-arizona-tempe](http://www.theguardian.com/technology/2018/mar/19/uber-self-driving-car-kills-woman-arizona-tempe).

<sup>85</sup> *Self-Driving Uber Car Hits, Kills Pedestrian in Tempe*, ABC15.COM (Mar. 21, 2018, 2:51 PM), [www.abc15.com/news/region-southeast-valley/tempe/tempe-police-investigating-self-driving-uber-car-involved-in-crash-over-night](http://www.abc15.com/news/region-southeast-valley/tempe/tempe-police-investigating-self-driving-uber-car-involved-in-crash-over-night).

<sup>86</sup> Andrew J. Hawkins, *Uber Is at Fault for Fatal Self-Driving Crash but It's Not Alone*, THEVERGE.COM (Nov. 19, 2019, 4:46 PM), [www.theverge.com/2019/11/19/20972584/uber-fault-self-driving-crash-ntsb-probable-cause](http://www.theverge.com/2019/11/19/20972584/uber-fault-self-driving-crash-ntsb-probable-cause).

<sup>87</sup> Andrew J. Hawkins, *The World's First Robot Car Death Was the Result of Human Error – and It Can Happen Again*, THEVERGE.COM (Nov. 20, 2019, 2:23 PM), [www.theverge.com/2019/11/20/20973971/uber-self-driving-car-crash-investigation-human-error-results](http://www.theverge.com/2019/11/20/20973971/uber-self-driving-car-crash-investigation-human-error-results).



utes during the trip, and post-crash data showed the driver's hands were not on the wheel in the six seconds before impact. According to investigators, the driver had previously complained of problems with Autopilot on that part of the highway and the data from the vehicle confirmed a similar problem near another part of the highway.<sup>88</sup>

### ***Part 3 – Moving Forward***

#### ***1. Addressing the Issues of Automation in the Cockpit***

Adding more computers in the cockpit may not be the best solution. Solving one problem can create an entirely new set of problems. According to Dr. David Woods, a professor at Ohio State University and a technical advisor for an FAA human-factors report: “One of the myths about the impact of automation on human performance is that as the investment in automation increases, the investment needed in human expertise decreases. In fact, increased automation creates new knowledge and skill requirements.”<sup>89</sup>

Some options for addressing the deleterious effects of automated systems in the cockpit are: more flight simulator training; abnormal-situation training simulations; mandated manual flying training; more automated system training and encouragement to override automation; enforcement and regulation; simplifying cockpit design; and monitoring pilots' attention via artificial intelligence. The genie is out of the bottle, automation is here to stay, and artificial intelligence in the cockpit is not that far into the future. It is time we start to redefine the role of the pilot.

##### **a. More Flight Simulator Training**

In a reversal of Boeing's long-held stance that computer-based training alone was adequate, the company has recommended that pilots receive additional flight simulator training before they allow the 737 MAX to return to the skies.<sup>90</sup> The previous position

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<sup>88</sup> Niraj Chokshi, *Tesla Autopilot System Found Probably at Fault in 2018 Crash*, NYTIMES.COM (Feb. 25, 2020), <https://www.nytimes.com/2020/02/25/business/tesla-autopilot-ntsb.html>.

<sup>89</sup> Mark, *supra* note 59.

<sup>90</sup> David Koenig, *In a Reversal, Boeing Says Pilots Need Simulator Training Before 737 Max Returns to Skies*, CHICAGOTRIBUNE.COM (Jan. 7, 2020,

of Boeing and the FAA was that pilots who can fly older 737s can avoid time-consuming and costly training in simulators, and only needed a minimal hour-long course (completed on a tablet computer) in order to fly the MAX.<sup>91</sup>

### b. Abnormal-Situation Training Simulations

Another possibility is improving training simulators in order to reproduce realistic scenarios of abnormal situations and recreate the effects of automation surprise, so pilots are prepared to face these phenomena on the job. This training would focus on helping pilots understand when to abandon the automated system and revert to manual flying.<sup>92</sup>

### c. Mandate Manual Flying Training

Some scholars have called for an entirely new training process because the current process is generating less well-rounded pilots.<sup>93</sup> The European Aviation Safety Agency (EASA) performed a study that concluded that manual flying skills are declining due to lack of practice.<sup>94</sup> As stated *supra*, the FAA found in 2011 that 60 percent of 46 accidents resulted from human error due to pilots who lacked proficiency in hand flying aircraft and the ability to

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1:35 PM), [www.chicagotribune.com/business/ct-biz-boeing-737-max-pilot-simulators-20200107-tyijydnyorgrdo7hw3aucpx5am-story.html](http://www.chicagotribune.com/business/ct-biz-boeing-737-max-pilot-simulators-20200107-tyijydnyorgrdo7hw3aucpx5am-story.html).

<sup>91</sup> *Id.*

<sup>92</sup> Hiraki & Warnink, *supra* note 61.

<sup>93</sup> Karlene Kassner Petitt, *Safety Culture, Training, Understanding, Aviation Passion: The Impact on Manual Flight and Operational Performance* (Jan. 2019) (unpublished Ph.D. dissertation, Embry-Riddle Aeronautical University), <https://commons.erau.edu/edt/436/>.

<sup>94</sup> See EUR. AVIATION SAFETY AGENCY, EASA AUTOMATION POLICY: BRIDGING DESIGN AND TRAINING PRINCIPLES (May 28, 2013), <https://www.easa.europa.eu/sites/default/files/dfu/sms-docs-EASp-SYS5.6—Automation-Policy—28-May-2013.pdf>. See also EUR. AVIATION SAFETY AGENCY, EASA SAFETY INFORMATION BULLETIN: MANUAL FLIGHT TRAINING AND OPERATIONS, SIB No. 2013-05 (Apr. 23, 2013), [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiLotaV9oPoAhVGBs0KHceUC7oQFjAAegQIAhAB&url=https%3A%2F%2Fad.easa.europa.eu%2Fblob%2FSIB\\_201305\\_Manual\\_Flight\\_Training\\_and\\_Operations.pdf%2FSIB\\_2013-05\\_1&usg=AOvVawOULy\\_\\_dmuSukso4kuqTx2g](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiLotaV9oPoAhVGBs0KHceUC7oQFjAAegQIAhAB&url=https%3A%2F%2Fad.easa.europa.eu%2Fblob%2FSIB_201305_Manual_Flight_Training_and_Operations.pdf%2FSIB_2013-05_1&usg=AOvVawOULy__dmuSukso4kuqTx2g).

handle automated controls.<sup>95</sup> The fix seems fairly simple: mandate manual flying training.<sup>96</sup>

#### **d. More Automated System Training & Encouragement to Override Automation**

The pilots of Lion Air Flight 610 and Ethiopian Airlines Flight 302 failed to control the aircraft after the MCAS system malfunctioned because they did not fully understand how the automated system functioned.<sup>97</sup> It has also been shown that the 2013 Asiana Airlines crash was caused by pilots over-relying on the automated system in the cockpit.<sup>98</sup> If pilots are given the training to understand automated systems and the problems that may occur, and they are adequately equipped to handle manual flying, we can potentially avoid tragedies like these crashes in the future.<sup>99</sup>

#### **e. Enforcement and Regulation**

In March of 2019, the FAA began enforcing a rule mandating that pilots practice how to handle stalls in flight simulators. The rule was enacted as a reaction to a 2009 accident but took six years to enforce after originally being introduced.<sup>100</sup> The FAA needs to be nimbler in addressing and enforcing issues pertaining to automation.<sup>101</sup>

Manufacturers like Boeing and Airbus are increasingly committed to automating flight and transferring control of the airplane from pilots to computer systems to prevent pilot error.<sup>102</sup> It

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<sup>95</sup> See *Study: Automatic Pilot May Add to Flight Risk*, *supra* note 48.

<sup>96</sup> *Id.*

<sup>97</sup> Nicas & Wichter, *supra* note 66.

<sup>98</sup> Christopher A. Hart, Acting Chairman, Nat'l Transp. Safety Bd., Opening Statement, NTSB Board Meeting: Crash of Asiana Flight 214 (June 24, 2014) [https://www.nts.gov/news/speeches/CHart/Pages/Hart\\_140624o.aspx](https://www.nts.gov/news/speeches/CHart/Pages/Hart_140624o.aspx).

<sup>99</sup> Press Release, Nat'l Transp. Safety Bd., *supra* note 68.

<sup>100</sup> See Qualification, Service, and Use of Crewmembers and Aircraft Dispatchers, 78 Fed. Reg. 67,800 (Nov. 12, 2013) (codified in scattered sections of 14 C.F.R. Part 121). See also *Air Carrier Training: Enhanced Pilot Training and Qualification Requirements*, FED. AVIATION ADMIN. (Mar. 12, 2019, 6:06 PM), [https://www.faa.gov/pilots/training/air\\_carrier/enhanced\\_pilot\\_training/](https://www.faa.gov/pilots/training/air_carrier/enhanced_pilot_training/).

<sup>101</sup> Nicas & Wichter, *supra* note 66.

<sup>102</sup> Andy Pasztor & Andrew Tangel, *MAX Crashes Strengthen Resolve of Boeing to Automate Flight*, WALL ST. J. (Dec. 31, 2019, 5:20 PM), <https://>

is the job of the FAA to ensure that things don't go too far too fast without proper training. This issue has the potential to worsen as automation in the cockpit continues to expand with the development of artificial intelligence. NASA's Ames Research Center is currently developing aviation-related AI, and DARPA's Aircrew Labor In-Cockpit Automation System (ALIAS) project is expecting to perform its first zero-pilot test in 2020 with an unmanned Black Hawk helicopter.<sup>103</sup> Correcting the issues we are currently facing with automation is a must, but being forward-thinking about future technologies potentially exacerbating our current problems is something the FAA should keep in mind.

#### f. Simplifying Cockpit Design

One final consideration is improving and simplifying current cockpit design. This potential solution was proposed in a 2012 study that suggested two choices: Pilot as Pilot and Pilot as Manager.<sup>104</sup> In the *Pilot as Pilot* approach, the cockpit design supports the pilots in their traditional role as pilots. The pilots would be actively involved in flight control and have complete jurisdiction and responsibility over the aircraft. The pilots manage the cockpit automation, and assign tasks to the automation, with the option to resume manual control over the plane as they see fit. A negative aspect of this option is the higher workload, which can result in cognitive fatigue, negatively influencing the ability of the pilots to perform in a complex environment.<sup>105</sup>

The *Pilot as Manager* approach, on the other hand, is where the pilots share responsibility with the automated system. Most flight tasks would be performed by cockpit automation and managed by the pilots. Cockpit automation would be responsible for a large amount of the aircraft control and information processing. One of the benefits of *Pilot as Manager* is that pilots will have more time to oversee other aspects of the flight because they are not encumbered with low-level manual tasks. A negative side ef-

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[www.wsj.com/articles/max-crashes-strengthen-resolve-of-boeing-to-automate-flight-11577816304](http://www.wsj.com/articles/max-crashes-strengthen-resolve-of-boeing-to-automate-flight-11577816304).

<sup>103</sup> Behr, *supra* note 39; Lauren C. Williams, *Aviation Automation Climbs New Heights with ALIAS*, FED. COMPUT. WK. (Apr. 17, 2019), <https://fcw.com/articles/2019/04/17/darpa-alias-autonomous-aviation.aspx>.

<sup>104</sup> Emmanuel Letsu-Dake et al., *Innovative Flight Deck Function Allocation Concepts for NextGen*, in *ADVANCES IN HUMAN ASPECTS OF AVIATION* 301, 304–10 (Steven J. Landry ed., 2012).

<sup>105</sup> Hiraki & Warnink, *supra* note 61.

fect of the *Pilot as Manager* design is that it may be difficult to keep the pilots engaged in the flying process.<sup>106</sup>

### **g. Monitoring Pilots' Attention via Artificial Intelligence**

Advances in artificial intelligence have the potential to improve human-machine interaction. France's Man Machine Teaming (MMT) defense research program is using nonintrusive monitoring of a pilot's brain during flight to help the pilots better understand their own workload.<sup>107</sup>

In order to improve crew coordination, the MMT and the Neuroergonomics and Human Factors Department of ISAE Supaero, the French national higher institute of aeronautics and space engineering division, have been studying the brains of two people who cooperate while flying to determine whether they are coordinating well. Their experiments have led to the study of human-AI interaction and cooperation where a human pilot was not told when AI was replacing the other human participating. Analysis is ongoing, but results have shown promise. One possible outcome may be to design a communications system that switches over to AI if it notices poor cooperation or a poor mental state (e.g., cognitive overload).<sup>108</sup>

## **2. Analogous Applications of Artificial Intelligence**

### **a. Addressing the Issues of Artificial Intelligence in Surgery**

According to Patrick M. McCarthy, MD, the Executive Director at the Bluhm Cardiovascular Institute and Vice President of the Northwestern Medical Group, new surgeons starting their careers "with extensive open surgery [experience] . . . can fall back to the conventional approach when/if needed . . . like pilots can

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<sup>106</sup> Letsu-Dake et al., *supra* note 104.

<sup>107</sup> Thierry Dubois, *Research on Brain Activity to Help Cockpit Design*, AVIATIONWEEK.COM (Jan. 23, 2020), [https://aviationweek.com/aerospace/research-brain-activity-help-cockpit-design?utm\\_rid=CPEN1000000509608&utm\\_campaign=22915&utm\\_medium=email&elq2=214236a96af74998bb35581231f03245](https://aviationweek.com/aerospace/research-brain-activity-help-cockpit-design?utm_rid=CPEN1000000509608&utm_campaign=22915&utm_medium=email&elq2=214236a96af74998bb35581231f03245).

<sup>108</sup> *Id.*

still hand fly the planes when the systems aren't working well."<sup>109</sup> Surgeons who do not have extensive open surgery experience "will have to develop Plan B, C, D with new fallback positions" that other doctors have never had to consider.<sup>110</sup> This adoption will be "slow, methodical, [with] occasional big notable failures." Dr. McCarthy also warned that the next generation of surgeons may not be sufficiently well-trained to fall back on the conventional open surgery approach, much like "pilots who can't land on the Hudson."<sup>111</sup>

### **b. Addressing the Issues of Self-Driving Vehicles**

Parallels can also be drawn between the autonomous vehicle deaths mentioned *supra* and the recent aviation tragedies surrounding the MCAS. The Tesla Model S driver in Florida had his hands on the wheel for only 25 seconds out of the 37 minutes the vehicle was in automated control mode, and the driver in the Arizona Uber crash had been glancing down at a telephone for over a third of the ride. This over-reliance on automation (e.g., automation bias, automation surprise, preoccupation, or underload) led these drivers to be less engaged and unable to respond to the situations at hand, which ultimately resulted in two deaths.

The fatal incidents involving autonomous vehicles demonstrate how dangerous the area between semi-automated driving and human oversight is. This has led Waymo and Ford to push for fully autonomous cars.<sup>112</sup> This is a big ask and is likely to go

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<sup>109</sup> E-mail from Patrick M. McCarthy, MD, Exec. Dir., Bluhm Cardiovascular Inst., V.P., Nw. Med. Grp., Chief, Div. of Cardiac Surgery, Heller-Sacks Professor of Surgery, Nw. Med., to Stephen B. Rudolph, Mgr., Air Transp. Pol'y Initiative, Chaddick Inst. for Metro. Dev., DePaul Univ. (May 19, 2019, 6:59 CDT).

<sup>110</sup> *Id.*

<sup>111</sup> *Id.* Not all artificial intelligence has had drawbacks in the health field. A study released in June 2019 shows that a new AI-enabled stethoscope can detect heart murmurs with 96 percent accuracy, while an office- or ER-based doctor may only be 50 percent accurate using a traditional stethoscope. Dr. McCarthy predicts that, eventually, all doctors will lose their skills with traditional stethoscopes and they will be using AI stethoscopes 100 percent of the time.

<sup>112</sup> WAYMO, WAYMO SAFETY REPORT: ON THE ROAD TO FULLY SELF-DRIVING (2017), <https://assets.documentcloud.org/documents/4107762/Waymo-Safety-Report-2017.pdf>; *Looking Further*, FORD.COM, <https://corp>

nowhere. More achievable ideas on how to make autonomous vehicles safer follow.

### 1. Monitoring Drivers' Attention via Facial-Recognition Technology

Several car companies, such as Subaru, have begun introducing facial-recognition technology to identify whether a driver is distracted. The technology uses an infrared sensor that collects and analyzes the driver's facial image, which performs driver identification (from memory), and identifies the specific driver. The sensor enables the software to determine if the driver is paying attention, and emits an audible beep when a driver is distracted or fatigued.<sup>113</sup>

### 2. Incident-Response Protocols

One way self-driving car companies can deal with safety issues is to develop incident-response protocols, including sharing data about collisions and other safety-related incidents. The data collected would be shared among autonomous car makers, government regulators, academic research labs, and the public. The data would be analyzed and shared to enable all the companies to learn from each other's mistakes and become safer faster.<sup>114</sup>

### 3. Only Operate in Unambiguous Environments

Research shows that humans are poor at paying constant attention when they are driving and as the technology becomes more sophisticated, situations where human assistance is required are going to be more complex and difficult to diagnose. A possible fix is for automated systems to collect, classify, and respond to information in an unambiguous environment at first because auto-

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orate.ford.com/articles/products/autonomous-2021.html (last visited Feb. 18, 2020).

<sup>113</sup> Paul Weissler, *Subaru Introduces Facial-Recognition Technology to Identify Driver Distraction, Fatigue*, AUTONOMOUSVEHICLETECH.COM (Apr. 5, 2018), [www.autonomousvehicletech.com/articles/857-subaru-introduces-facial-recognition-technology-to-identify-driver-distraction-fatigue](http://www.autonomousvehicletech.com/articles/857-subaru-introduces-facial-recognition-technology-to-identify-driver-distraction-fatigue).

<sup>114</sup> Jamie Williams & Peter Eckersley, *Some Easy Things We Could Do to Make All Autonomous Cars Safer*, ELEC. FRONTIER FOUND. (Mar. 29, 2018), [www.eff.org/deeplinks/2018/03/some-easy-things-we-could-do-make-all-autonomous-cars-safer-faster](http://www.eff.org/deeplinks/2018/03/some-easy-things-we-could-do-make-all-autonomous-cars-safer-faster).

mous car manufacturers cannot foresee every possible combination of conditions that will occur on the road (or even foresee whether or not their drivers are going to pay attention).<sup>115</sup>

#### 4. Standardize Driving Environments

Autonomous vehicles have to navigate a shared environment consisting of pedestrians crossing the road, cyclists, animals, debris, inanimate objects, and bad weather. Further complicating matters are road infrastructure, regulations, and driving laws that vary from city to city. It would be very difficult to standardize the driving environment due to the fact that it is governed by many different regulatory bodies; however, standardizing driving environments would allow fewer moving parts for the vehicle to analyze and understand. As smarter infrastructure is constructed (radio transmitters replacing traffic signals, wireless data networks managing vehicle-to-vehicle and vehicle-to-infrastructure communication, as well as sensors supplying real-time weather and traffic data), we will begin to see more standardized environments.<sup>116</sup>

#### *Conclusion*

Although advances in the aviation sector have helped reduce airline fatalities by roughly a factor of two in every decade, the recent concerns surrounding automation in the cockpit – and the resulting tragedies – have demonstrated that new safety issues must be considered.

The global pilot shortage has forced airlines to hire pilots with less experience in the cockpit, and as more of the aviation industry's seasoned pilots age out of the profession, large airlines will continue to encourage a reliance on automation to accommodate less-experienced pilots.<sup>117</sup>

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<sup>115</sup> Keith Barry, *Too Much Safety Could Make Drivers Less Safe*, WIRED (July 27, 2011, 7:00 AM), [www.wired.com/2011/07/active-safety-systems-could-create-passive-drivers/](http://www.wired.com/2011/07/active-safety-systems-could-create-passive-drivers/).

<sup>116</sup> Nick Oliver et al., *To Make Self-Driving Cars Safe, We Also Need Better Roads and Infrastructure*, HARV. BUS. REV. (Aug. 14, 2018), <https://hbr.org/2018/08/to-make-self-driving-cars-safe-we-also-need-better-roads-and-infrastructure>.

<sup>117</sup> Nicas & Wichter, *supra* note 66.



As indicated *supra*, the aviation industry has known since at least 1997 that automation is eroding piloting skills, with negative effects such as automation bias, automation surprise, absorption, fixation, preoccupation, and underload adding to a lack of situational awareness.<sup>118</sup> Compound this fact with a lack of manual flying skills and we have a recipe for disaster. Even with this knowledge, and several reports documenting these concerns, the FAA has been slow to correct them.

A myth of automation is that “as the investment in automation increases, the investment needed in human expertise decreases.”<sup>119</sup> This observation hits the nail on the head, and this paper has identified several ways to invest in human expertise as artificial intelligence and automation progress.

As stated *supra*, some of these investments should take the form of more flight simulator training, abnormal-situation training simulations, mandated manual flying training, more automated system training and encouragement to override automation, more enforcement and regulation by the FAA, simplifying cockpit design, and monitoring pilots’ attention via artificial intelligence. These are all viable options that should be considered by the aviation industry and the FAA.

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<sup>118</sup> Videotape: Automation Dependency: Children of the Magenta Line, *supra* note 70.

<sup>119</sup> Mark, *supra* note 59 (quoting Dr. David Woods, Professor, Ohio State University, and technical advisor for the 1996 and 2013 FAA human-factors reports, cited *supra* at notes 52 and 71).



# **Drone versus Manned Aircraft: An Analysis of the Application of the Discretionary Function Exception to the Federal Tort Claims Act to Accidents Caused by a Collision Between a Drone and a Manned Aircraft**

by Douglas M. Marshall\*

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## I. *Introduction*

In 2015, the operator (“remote pilot”) of a small unmanned aircraft (“drone”) lost control of his “quadcopter” (a small drone powered by four electric motors, and equipped with a camera, weighing about 3.5 pounds) during a parade in downtown Seattle. The falling drone injured two people. One of those injured was a lawyer. The remote pilot claimed to be a professional videographer, and this flight was conducted as a part of his business. The pilot possessed a remote pilot’s license with an Unmanned Aircraft Systems (UAS) rating issued by the Federal Aviation Administration, was operating his drone for commercial gain, and had applied for a waiver to operate his drone over people. The waiver was denied after the incident in question. His drone was registered with the FAA pursuant to applicable Federal Aviation Regulations.<sup>1</sup>

To obtain that pilot certification, the remote pilot had to fulfill the following requirements: Be able to speak, write, and understand the English language; not have a physical or mental condition that would interfere with the safe operation of a small unmanned aircraft system; and demonstrate aeronautical knowledge by passing an initial aeronautical knowledge test covering 12 specified areas of comprehension. An applicant for a traditional pilot’s certificate or rating must demonstrate to an FAA examiner sufficient knowledge, skills, and attitudes to hold such a license before the certificate may be issued. This requires a flight with the examiner so that the examiner can observe the pilot’s aeronautical skills first-hand. The applicant must also pass a medical examination and hold a medical certificate, which must be renewed on a periodic basis, depending upon the type of rating the pilot possesses. Neither the practical test nor the medical qualifications for manned aviation are required to operate an unmanned aircraft under current Federal Aviation Regulations.

On October 29, 2018 and March 10, 2019, two Boeing 737 MAX 8 jetliners crashed in Indonesia and Ethiopia under nearly identical circumstances, killing all 346 people on board the two aircraft. Families of victims (and other entities such as insurance companies and the airlines themselves) sued Boeing for installing an unsafe anti-stall system called the “MCAS” that allegedly caused the pilots to lose control of the aircraft shortly after take-

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<sup>1</sup> 14 C.F.R. §§ 107.13, 91.203(a)(2).

off. Boeing is alleged to have made significant changes to the software that played a role in the crashes without properly alerting its airline customers so that they could provide appropriate training to their pilots. The 737 MAX 8 is a derivative of the B737 series, the most popular commercial aircraft ever built, but it required a new type certificate from the FAA. The U.S. Justice Department initiated a criminal investigation into Boeing's Federal Aviation Administration certification. Pending lawsuits against the FAA allege a conspiracy between Boeing and the FAA to certify a defective airplane that wasn't safe and also claim that the FAA colluded with Boeing in the certification process to overlook or bypass regulatory requirements.

Other than the aviation component, what do these two scenarios have in common? They both involve the regulatory, oversight, and certification requirements of the Federal Aviation Administration. In the Boeing 737 MAX 8 cases, the FAA has been sued for negligence under the Federal Tort Claims Act (FTCA).<sup>2</sup> The suits will probably claim that the FAA's airworthiness certification process was flawed, in that it delegated some or all of its regulatory oversight responsibilities to Designated Airworthiness Representatives (DARs) and Designated Engineering Representatives (DERs) who, although authorized to fill those roles by the FAA, were in fact Boeing employees. Since the FAA does not have a sufficient number of engineers on staff to oversee the intricacies of the design and construction of a complex commercial aircraft such as the B737 MAX 8, it delegates those duties to select manufacturer's employees, who are themselves certified by the FAA to fulfill those duties. Although ostensibly representing the FAA in that capacity, their paychecks come from Boeing, which allegedly creates a conflict of interest and an opportunity to put profits over safety.

With regard to the unmanned aircraft scenario, the FAA's policy and practice in authorizing unmanned aircraft to operate in the National Airspace has taken a dramatically different path from nearly a century of regulatory oversight of manned aviation. Unmanned aircraft have only been statutorily recognized as "aircraft" (rather than recreational "toys") since 2012 with the passage

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<sup>2</sup> 28 U.S.C. §§ 1346(b)(1), 1402(b), 2402, 2671–80 (2006). The FTCA first appeared as law in Title IV of the Legislative Restoration Act of 1946, Pub. L. No. 79-601, 60 Stat. 812.

of the FAA Modernization and Reform Act of 2012.<sup>3</sup> Since 2012, Congress has passed two more major pieces of legislation dealing in part with unmanned aircraft: The FAA Extension, Safety and Security Act of 2016<sup>4</sup> and the FAA Reauthorization Act of 2018.<sup>5</sup> In contrast, the Federal Aviation Act of 1958,<sup>6</sup> which created the new Federal Aviation Agency (now Administration), empowered the FAA to oversee and regulate safety in the airline industry and the use of the National Airspace for military and civilian aircraft. That original statute has been revised and recodified to incorporate existing regulations and update others to encompass what is now 49 U.S.C. §§ 40101-50105 (Aviation Programs, Subtitle VII under the Department of Transportation).

This article offers a history of the Federal Tort Claims Act in the context of the introduction of the new technology of UAS into a regulatory environment that has, for the most part, facilitated safe air travel in the United States for many decades. The Federal Aviation Administration, as the sole regulatory body for commercial, public, and general aviation, has been slow to respond to demands from many stakeholders to allow commercial operations of unmanned aircraft for a wide variety of humanitarian, scientific, and business uses. Not all users of the U.S. National Airspace System (NAS) were comfortable with the integration of unmanned aircraft systems into their domain, notably the airlines, charter operations, airline unions, aircraft owners' organizations, and many others, largely because of the perception that unmanned aircraft systems are not held to the same regulatory rigor as manned aviation, and thus present a safety hazard to the other users of the airspace. Some of these groups and organizations have accepted the inevitable and have supported ongoing efforts by the FAA and the aviation community to further integrate UAS into the NAS.<sup>7</sup> But the realm of UAS regulation is still very dynamic and controversial on many levels. For example, on December 31, 2019 the FAA published a proposed rule in the *Federal Register* that would implement systems for remote identi-

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<sup>3</sup> Pub. L. No. 112-95, 126 Stat. 11.

<sup>4</sup> Pub. L. No. 114-190, 130 Stat. 615.

<sup>5</sup> Pub. L. No. 115-254, 132 Stat. 3186.

<sup>6</sup> Pub. L. No. 85-726, 72 Stat. 731, *revised, repealed & recodified* by Pub. L. No. 103-272 (1994).

<sup>7</sup> *AOPA's UAS Policy Position*, AOPA.ORG, <https://www.aopa.org/go-fly/aircraft-and-ownership/drones/aopa-and-drones/aopas-uas-policy-position> (last visited Apr.29, 2020).

fication of unmanned aircraft systems.<sup>8</sup> As of the close of the comment period, the FAA had received over 53,000 comments, all of which have to be adjudicated by the agency under the Administrative Procedure Act.<sup>9</sup>

As the UAS industry matures, and systems evolve with greater capabilities and degrees of complexity, inevitably there will be mishaps that invoke an examination of the design integrity of the systems, as well as the role played by the FAA in certifications, regulatory waivers, and authorizations of particular operations. The FAA's mandate to promote commercial aviation while maintaining high standards of safety will be challenged if something goes wrong with a UAS flight and someone is injured or killed. The discretionary function exception to the FTCA has thus far shielded the FAA from liability under circumstances where its policies and procedures underlie the agency's decision-making process, but the federal courts have yet to deal with the unique components of an unmanned aircraft system operation. Placing these elements into the context of one Supreme Court aviation case involving the discretionary function exception will present a challenge to the parties and the courts to draw parallels between unmanned and manned aircraft design, certification, and operation, and may well impact how UAS activities are regulated in the future.

## II. *The Federal Tort Claims Act*

Federal law authorizes suits against the United States for damages in U.S. District Courts, which have exclusive jurisdiction:

for injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.<sup>10</sup>

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<sup>8</sup> Remote Identification of Unmanned Aircraft Systems, 84 Fed. Reg. 72,438 (proposed Dec. 31, 2019) (to be codified at 14 C.F.R. pts. 1, 47, 48, 89, 91 & 107).

<sup>9</sup> Pub. L. No. 79-404, 60 Stat. 237 (1946).

<sup>10</sup> 28 U.S.C. § 1346(b)(1).

The FTCA specifically provides that the United States shall be liable for tort claims “in the same manner and to the same extent as a private individual under like circumstances, but shall not be liable for interest prior to judgment or punitive damages.”<sup>11</sup>

The Westfall Act<sup>12</sup> provides federal government employees with immunity from individual liability for common law torts committed while acting within the scope of their office or employment by making the remedies provided by 28 U.S.C. §§ 1346(b) and 2672 the exclusive remedy for acts of negligence by government employees.

Federal tort claims must be filed in a U.S. District Court, after the claimants have exhausted the statutory claims process.<sup>13</sup> Suits may not be filed against the federal agency involved until the claimant has first presented the claim and the claim shall have been finally denied by the agency. The failure of the agency to dispose of the claim within six months after it is filed is deemed to be a final denial of the claim. Tort claims against the United States must be presented in writing to the appropriate federal agency within two years after the claim accrues, or within six months after notice of final denial of the claim by the agency to which it was presented.<sup>14</sup> All tort claims must be tried before a federal district court judge. Jury trials are not permitted.<sup>15</sup>

The Act includes a number of exceptions to this broad waiver of sovereign immunity. The exception relevant to this article, and arguably the most controversial of those exceptions, is the discretionary function immunity, which bars claims that are:

based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.<sup>16</sup>

If, however, in any case wherein death was caused, the law of the place where the act or omission complained of occurred provides, or has been construed to provide, for damages only punitive in

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<sup>11</sup> *Id.* § 2674.

<sup>12</sup> *Id.* § 2679.

<sup>13</sup> *Id.* § 2675(a).

<sup>14</sup> *Id.* § 2401(b).

<sup>15</sup> *Id.* § 2402.

<sup>16</sup> *Id.* § 2680(a).



nature, the United States shall be liable for actual or compensatory damages, measured by the pecuniary injuries resulting from such death to the persons respectively, for whose benefit the action was brought, in lieu thereof.<sup>17</sup>

This discretionary function exception is not merely a defense to a tort claim that can be raised by the government in defending a lawsuit, but acts as a jurisdictional bar to the case going forward.<sup>18</sup> When the exception applies, the court must dismiss the claim before ever reaching its merits. Since the exception is a jurisdictional matter, the facts of the underlying negligence claim are irrelevant.<sup>19</sup> Agency decisions or actions that are “grounded in consideration of public policy” generally fall under the exception and are jurisdictionally barred from traditional tort litigation.<sup>20</sup>

### III. *The Cases*

#### A. *Dalehite (1953)*

The seminal U.S. Supreme Court case addressing the discretionary function exception is *Dalehite v. United States*.<sup>21</sup> *Dalehite* involved a claim for damages for a death (actually it was a test case for hundreds of deaths) resulting from a catastrophic explosion of ammonium nitrate fertilizer at the Port of Texas City, Texas in 1947. The fertilizer was made, stored, and readied for shipment according to specifications and under control of the United States for export to increase food supply in post-World War II occupied areas (Germany, Japan, and Korea). The basic ingredient of the fertilizer was ammonium nitrate, which was long used as a component of explosives. A total of about 2,850 tons of the Fertilizer Grade Ammonium Nitrate (FGAN) were shipped by rail from manufacturing plants to be loaded onto two steamships in the Port of Texas City, at Galveston Bay. In addition to the FGAN, one ship held a large cargo of explosives and the other 2,000 tons of sulfur. Somehow a fire broke out on the ship carrying explosives, and in spite of attempts to extinguish the

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<sup>17</sup> *Id.* § 2674.

<sup>18</sup> *Id.* § 2680.

<sup>19</sup> *Lopez v. United States*, 376 F.3d 1055, 1056 (10th Cir. 2004).

<sup>20</sup> *Reichhart v. United States*, 695 F. Supp. 2d 8 (W.D.N.Y. 2010).

<sup>21</sup> 346 U.S. 15 (1953).

fire by the Coast Guard and the local fire department, the cargo on both ships exploded, leveling the city and killing 581 people, including all but one member of the Texas City fire department. The families of the deceased brought negligence claims against the government under the FTCA, alleging that the United States made a cabinet-level decision to institute a fertilizer export program, and without definitive investigation of FGAN properties, drafted a basic plan for manufacture and failed to properly police the shipment to a congested area without warning of the possibility of explosions under certain conditions. In addition, the petitioners alleged that the Coast Guard incompetently or negligently responded to the fire, deploying improper tactics for the type of fire they were fighting, thus aggravating rather than suppressing the conflagration.

The District Court accepted plaintiffs' theory of negligence, but the Court of Appeals reversed, and the Supreme Court granted certiorari to address the issue of whether the District Court had jurisdiction of the case under the Tort Claims Act.

The Court developed a long exposition of the legislative history of the Tort Claims Act and the policy decisions that led to its passage. In addressing the limits of the government's liability and the application of the discretionary function exception to the Act, the Court held:

It is unnecessary to define, apart from this case, precisely where discretion ends. It is enough to hold, as we do, that the "discretionary function or duty" that cannot form a basis for suit under the Tort Claims Act includes more than the initiation of programs and activities. It also includes determinations made by executives or administrators in establishing plans, specifications or schedules of operations. Where there is room for policy judgment and decision there is discretion. It necessarily follows that acts of subordinates in carrying out the operations of government in accordance with official directions cannot be actionable.<sup>22</sup>

The Court's decision in favor of the government set the stage for decades of cases decided in the federal courts that attempted to put a fence around and more definitively address just what

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<sup>22</sup> *Id.* at 35–36.

“discretionary function” means and under what circumstances an injured party can avoid dismissal of an ordinary negligence claim on jurisdictional grounds.

### **B. *Indian Towing (1955)***

In *Indian Towing Co. v. United States*,<sup>23</sup> decided two years after *Dalehite*, the owner of the tugboat *Navajo* sought recovery under the FTCA for damages allegedly caused by the negligence of the Coast Guard in the operation of a lighthouse light. The tug ran aground on one of the Chandeleur Islands in the Mississippi River delta, destroying the value of its cargo. The tug owners claimed that the grounding was solely due to the failure of the light on the island, which in turn was caused by the Coast Guard’s failure to properly inspect and maintain the light. The question for the Court was one of liability for negligence at the “operational level” of government activity.<sup>24</sup>

Distinguishing *Dalehite* (even though both cases involved allegations of negligence by the Coast Guard, and in neither case did the government claim that the Coast Guard’s decisions rose to the administrative or policy-making level), the Court held that the Coast Guard’s operational negligence was actionable under the FTCA. However, in a point emphasized by later Supreme Court decisions, the government conceded in *Indian Towing* that the discretionary function exception did not confer immunity, arguing instead that the Coast Guard’s activity was uniquely governmental in nature, and thus immune from liability. The Court disagreed, stating:

The Coast Guard need not undertake the lighthouse service. But once it exercised its discretion to operate a light on Chandeleur Island and engendered reliance on the guidance afforded by the light, it was obligated to use due care to make certain that the light was kept in good working order; and, if the light did become extinguished, then the Coast Guard was further obligated to use due care to discover this fact and to repair the light or give warning that it was not functioning.<sup>25</sup>

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<sup>23</sup> 350 U.S. 61 (1955).

<sup>24</sup> *Id.* at 64.

<sup>25</sup> *Id.* at 69.

All governmental activity is inescapably a “uniquely governmental function,” in that the government performs it, but that does not confer governmental immunity under the FTCA. *Indian Towing* has been distinguished and criticized because the applicability of the discretionary function exemption was not at issue, and the decision rested upon what activity is or is not “uniquely governmental.”<sup>26</sup>

### C. *Varig Airlines (1984)*

*United States v. S.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines)* presented two consolidated aviation cases. In two separate incidents, a Boeing 707 airliner and a DeHavilland Dove commuter aircraft caught fire in flight, killing most of the occupants of the B707 (124 out of 135) and all four souls on board the DeHavilland. The aft lavatory in the B707 was ignited (although not stated in the case report, the source was probably smoking materials), and although the pilots were able to land the aircraft, it was consumed by fire on the ground, with the ensuing loss of life. In the case of the DeHavilland, the defective installation of a cabin heater was the source of the fire, which caused the airplane to crash.

Boeing was issued a type and production certificate for the B707 by the FAA’s predecessor, the Civil Aeronautics Agency (CAA), pursuant to the agency’s system of regulatory compliance review that involved certification of aircraft design and manufacture. Specifically, survivors of the victims alleged that air safety regulations required that waste receptacles be made of fire-resistant materials and incorporate covers or other provisions for containing fires, and the CAA was negligent when it inspected the B707 model and issued a type certificate to an aircraft that did not comply with CAA’s fire protection standards.

Similarly, the FAA issued a Supplemental Type Certificate (STC) for the DeHavilland Dove aircraft involved in the subject accident. This aircraft was owned by an air taxi service, Air Wisconsin, which had contracted with Aerodyne Engineering Corp. to install a gasoline-burning cabin heater in the airplane, which required the issuance of the STC. Another air taxi service pur-

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<sup>26</sup> *United States v. S.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines)*, 467 U.S. 797, 812 (1984). *See also Ayer v. United States*, 902 F.2d 1038 (1st Cir. 1990).

chased the aircraft from Air Wisconsin, relying in part on the STC as an indication of the airplane's airworthiness. The owner of the aircraft and his insurance companies filed suit under the Act seeking reimbursement for moneys paid for liability coverage on behalf of the owner. The U.S. District Court found that the crash resulted from defects in the installation of the gasoline line leading to the cabin heater, that the installation did not comply with applicable FAA regulations, and held that the government was therefore negligent and not immune from liability under the FTCA.

At the core of both cases was the FAA's (and CAA's) policy, backed by regulation, of providing for the appointment of private individuals to serve as DERs to assist the FAA in its certification process. FAA Order 8110.4 (now 8110.4C<sup>27</sup>) described the methods used by the FAA employees or their representatives to determine an applicant's compliance with minimum safety standards, including type certificates and supplemental type certificates. The *Varig* court pointed out that the FAA only had 400 engineers on staff to complete the elaborate compliance review process (there are many more than that now), so as a matter of policy the CAA designated private individuals who were not employed by the CAA to represent the agency.<sup>28</sup> DERs and DARs are empowered to issue type certificates for aircraft, aircraft engines, and propellers, and specify in regulations those appliances that reasonably require a type certificate in the interest of safety, as applicable to the type certification function.<sup>29</sup> Section 44702(d) authorizes the (FAA) Administrator to designate a qualified private person or an employee under the supervision of that person to perform examinations, testing, and inspection necessary to the issuance of such certificates.<sup>30</sup> In Boeing's case, the DERs were Boeing employees who possessed detailed knowledge of the air-

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<sup>27</sup> TYPE CERTIFICATION, FAA Order 8110.4C (CHG6) (2017), [https://www.faa.gov/documentLibrary/media/Order/FAA\\_Order\\_8110\\_4C\\_Chg\\_6.pdf](https://www.faa.gov/documentLibrary/media/Order/FAA_Order_8110_4C_Chg_6.pdf).

<sup>28</sup> The DER process is codified at 14 C.F.R. § 183.29. See also DESIGNATED ENGINEERING REPRESENTATIVE (DER) GUIDANCE HANDBOOK, FAA Order 8110.37F (2017) [hereinafter DER HANDBOOK].

<sup>29</sup> 49 U.S.C. § 44704.

<sup>30</sup> *Id.* § 44702(d).

craft's design based upon their day-to-day involvement in the development of the B707 model.<sup>31</sup>

In both cases, the CAA/FAA fulfilled its statutory duty to ensure that an aircraft conforms to applicable safety regulations by a process of "spot-checking" the work of the DERs rather than requiring its own engineering staff to review and certify each and every plan, drawing, report, or engineering rendering (of which there were hundreds of thousands for a new type certificate). In fact, there was no evidence in the records of either case that an FAA inspector or representative ever inspected or reviewed the design of the B707 lavatory receptacle or the installation of the cabin heater in the DeHavilland Dove, relying instead upon the "spot-check" program to encourage manufacturers and operators to comply fully with minimum safety requirements. The Court endorsed the government's argument that the duty of compliance with the regulations lies primarily with the manufacturer and operator, and the FAA's policy of performing "spot-checks" to ensure compliance was a reasonable exercise of its discretion, intended to accommodate the goal of air transportation safety and the reality of finite agency resources.

Once again, as in *Dalehite*, the Court engaged in a lengthy exposition of the history of the FTCA, and stated:

Judicial intervention in such decisionmaking through private tort suits would require the courts to "second guess" the political, social, and economic judgments of an agency exercising its regulatory function. It was precisely this sort of judicial intervention in policy-making that the discretionary function exception was designed to prevent.<sup>32</sup>

. . . .

. . . The FAA has the statutory duty to *promote* safety in air transportation, not insure it.<sup>33</sup>

Furthermore, the Court stated that it is the "nature of the conduct, rather than the status of the actor that governs whether the discretionary function exemption applies . . . ." <sup>34</sup> Thus the basic

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<sup>31</sup> Sixty-two years later, that aircraft type, with its many subsequent STC modifications, still serves the United States Air Force as the KC-135 air refueling tanker.

<sup>32</sup> *Varig*, 467 U.S. at 820.

<sup>33</sup> *Id.* at 821.

<sup>34</sup> *Id.* at 813.

inquiry is whether the acts of a government employee, regardless of rank, are of the nature and quality that Congress intended to shield from tort liability.<sup>35</sup> “Second, whatever else the discretionary function exception may include, it plainly was intended to encompass the discretionary acts of the Government acting in its role as a regulator of the conduct of private individuals.”<sup>36</sup>

In analyzing *Varig* with respect to the two factual scenarios introduced at the beginning of this article, it is important to note that the survivors of the Varig crash victims alleged that the CAA was negligent in issuing a type certificate for the B707 because the lavatory trash receptacle did not satisfy applicable safety regulations. Likewise, the claimants in the DeHavilland case alleged the government was negligent in issuing a supplemental type certificate for installation of a gasoline-burning cabin heater that did not comply with applicable Federal Aviation Regulations (FARs). In both cases, it was the inspection, or lack thereof, of the certified aircraft components that formed the basis for the claims of negligence, rather than the negligence of Boeing or Aerodyne Engineering Corp. in designing or installing the failed components.<sup>37</sup>

The FTCA suits were characterized as challenges to the FAA’s decision to certify airplanes without inspecting them. The court glossed over the fact that there were very specific aviation regulations with which those companies were bound to comply, and specific procedures that the FAA was to follow in carrying out its safety oversight functions. In addition, the DER surrogates, representing the CAA/FAA, also had very specific guidelines to follow in examining, inspecting, and testing aircraft for purposes of certification. In both cases, those surrogates apparently overlooked the faulty design and installation of the aircraft equipment and certified the aircraft as airworthy regardless of the obviously defective designs, which would be negligence under any other legal regime.

Still, the Court found that even these acts of negligence on the part of the DERs (the decision to either not inspect at all or to inspect and issue the airworthiness certificates, apparently disregarding the obviously defective design) were protected by the

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<sup>35</sup> *Id.*

<sup>36</sup> *Id.* (citing *Dalehite*).

<sup>37</sup> It is likely that there were contemporaneous suits against the manufacturers and others involved in the design and installation of the relevant components.

FTCA's discretionary function exception, that the burden of compliance with the regulations falls on the manufacturer or operator, and that even when the FAA determines the extent to which it will supervise the safety procedures of private individuals, it is exercising basic discretionary regulatory authority, regardless of the outcome, for which it cannot be held liable for negligence. Rather than liability without fault (or strict liability), the standard becomes no liability regardless of fault if discretion is involved. The discretionary function exception "marks the boundary between Congress' willingness to impose tort liability on the United States and its desire to protect certain governmental activities from exposure to suit by private individuals."<sup>38</sup>

The *Varig* court noted that Congress had given the Secretary of Transportation broad authority to establish and implement a program for enforcing compliance with airplane safety standards. The FAA, as the Secretary's designee, devised their system for "spot-checking" airplanes for compliance with the regulations, which in reality meant that not every airplane manufactured (or altered with an STC) was inspected, simply because the FAA did not have the resources to do so, and the FAA had placed confidence in the manufacturer to comply with the regulatory requirements.<sup>39</sup>

#### D. *Berkovitz (1988)*

*Berkovitz v. United States*<sup>40</sup> was decided four years after *Varig*, and the unanimous opinion authored by Justice Marshall attempted to clarify *Varig* and propose a more orderly approach to determining discretionary function immunity. The Court rejected the Government's argument that the discretionary function exception bars all claims arising out of federal agencies' regulatory activities, but held that the licensing and release of polio vaccines are wholly discretionary actions protected by the exception. Only those governmental actions and decisions that involve an element of judgment or choice and that are based upon public policy considerations are immune from liability. The

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<sup>38</sup> *Varig*, 467 U.S. at 808.

<sup>39</sup> With respect to Boeing, but that may not have been the case with Aerodyne Engineering Corp., as the record does not reveal that detail.

<sup>40</sup> 486 U.S. 531 (1988).



case involved decisions by two federal agencies<sup>41</sup> to license Lederle Laboratories to produce a polio vaccine. The plaintiff was a 2-month-old infant who was inoculated with the vaccine and immediately contracted a severe case of polio, which permanently paralyzed him.

Citing *Varig*, the Court created a two-step test for courts to determine the applicability of this exception. The first step is to determine whether a federal statute, regulation, or policy mandated a specific course of action, or whether the government actor retained an element of judgment or choice with respect to carrying out the challenged action. If the government action did involve choice or judgment, the second step is to determine whether that judgment is “of the kind that the discretionary function exception was designed to shield,” namely, “only governmental actions and decisions based on considerations of public policy.”<sup>42</sup> If the challenged action or omission satisfies these two prongs, the government is immune from suit based on that action or omission – and federal courts lack subject matter jurisdiction – even if that action or omission constituted an abuse of discretion or was a wrong choice under the circumstances. “The discretionary function exception applies only to conduct that involves the permissible exercise of policy judgment.”<sup>43</sup> If a federal statute or regulation specifically prescribes an employee’s course of conduct, the exception does not apply because “the employee has no rightful option but to adhere to the directive.”<sup>44</sup>

The Court held that the discretionary function exception does not preclude liability for any and all acts arising out of federal agencies’ regulatory programs, but insulates from liability only those governmental actions and decisions that involve an element of judgment or choice and that are based on public policy considerations. The Court of Appeals’ holding that the discretionary function exception barred the claims was in error and was reversed. Petitioners’ suit raised two broad claims: First, petitioners asserted that the Division of Biological Standards (DBS) violated a federal statute and accompanying regulations in issuing a license to Lederle Laboratories to produce the vaccine

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<sup>41</sup> Division of Biological Standards of the National Institute of Health and the Bureau of Biologics of the Food and Drug Administration.

<sup>42</sup> *Berkovitz*, 486 U.S. at 536–37.

<sup>43</sup> *Id.* at 539.

<sup>44</sup> *Id.* at 536.

Orimune. Second, petitioners argued that the Bureau of Biologics of the FDA violated federal regulations and policy in approving the release of the particular lot of Orimune that contained Kevan Berkovitz's dose.

The Court described a detailed process for licensing of vaccines, as mandated by multiple sections of Title 42 of the United States Code. DBS was required to comply with certain statutory and regulatory provisions, which required, among other things, examination of the product, review of test data, and continued oversight to ensure that the product complies with relevant regulatory standards. A license may not be issued until the DBS determines that the product complies with all of those standards. The petitioners alleged that, in spite of the Bureau of Biologics' policy of testing all vaccine lots for compliance with safety standards, which allegedly left no room for implementing officials to exercise independent policy judgment, employees of the Bureau knowingly approved the release of a lot that did not comply with safety standards.

This case came to the Supreme Court on a motion to dismiss, and the Court reversed, holding that the claims were not barred by the discretionary function exception, and that the petitioners would have the opportunity to prove their allegations of negligence in the trial court.

### **E. *Gaubert* (1991)**

*United States v. Gaubert*<sup>45</sup> involved a claim under the FTCA by a former officer and major shareholder of a savings and loan association that was subject to federal regulatory oversight and was eventually forced into receivership by two federal agencies, allegedly due to negligent supervision and day-to-day management of the association by agency employees. A Texas federal district court granted the government's motion to dismiss on the grounds that the discretionary function exception barred the action. The Fifth Circuit reversed, relying upon *Indian Towing Co.* in distinguishing between "policy decisions," which fall within the exception, and "operational actions," which do not.

The Supreme Court granted certiorari to address the Fifth Circuit's interpretation that operational, or low-level management

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<sup>45</sup> 499 U.S. 315, 111 S. Ct. 1267 (1991).

decisions fall outside the scope of the government's discretionary function immunity. "[I]f a regulation mandates particular conduct, and the employee obeys the direction, the Government will be protected, because the action will be deemed in furtherance of the policies which led to the promulgation of the regulation."<sup>46</sup>

In construing the language of 28 U.S.C. § 2680(a) the Court held that: "[a] discretionary act is one that involves choice or judgment; there is nothing in that description that refers exclusively to policymaking or planning functions."<sup>47</sup> The exception only protects governmental actions and decisions that are based on considerations of public policy.<sup>48</sup> An agency can rely on internal guidelines rather than published regulations.<sup>49</sup>

The Court went on to create what appears to be a presumption of discretionary function by declaring:

When established governmental policy, as expressed or implied by statute, regulation, or agency guidelines, allows a Government agent to exercise discretion, it must be presumed that the agent's acts are grounded in policy when exercising that discretion. For a complaint to survive a motion to dismiss, it must allege facts which would support a finding that the challenged actions are not the kind of conduct that can be said to be grounded in the policy of the regulatory regime. The focus of the inquiry is not on the agent's subjective intent in exercising the discretion conferred by statute or regulation, but on the nature of the actions taken and on whether they are susceptible to policy analysis.<sup>50</sup>

In other words, are the actions taken uniquely governmental in nature, or are they no different from what a private person or entity is capable of doing?

In a footnote, the Court attempted to distinguish these types of discretionary decisions from a situation where a government employee makes a bad decision while driving and negligently col-

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<sup>46</sup> *Id.* at 324.

<sup>47</sup> *Id.* at 315.

<sup>48</sup> *Id.* (citing *Berkovitz*).

<sup>49</sup> *Id.* at 314.

<sup>50</sup> *Id.* at 314–15.

lides with another automobile, a decision that “can hardly be said to be grounded in regulatory policy.”<sup>51</sup>

Thus, a blurred line between “operational negligence” (where the exemption does not confer governmental immunity), and “discretionary negligence” (where the government’s agent, while attempting to comply with or enforce a regulations or statute, makes an unwise decision, under circumstances where that decision could be deemed negligent or a tort under the law of the state where the decision caused harm) has emerged. In ruling for the Government, the *Gaubert* court attempted to clarify the discretionary function exception, but may well have invented additional barriers to FTCA claimants seeking compensation from the government for negligent conduct that are not supported by the legislative history of the Act (as fully explored in *Dalehite*, *Varig*, *Indian Towing*, and *Berkovitz*).

#### IV. *The Aviation Statutes*

##### A. *The Federal Aviation Act*

The Federal Aviation Act of 1958 created the Federal Aviation Administration.<sup>52</sup> The statute was enacted in response to a series of fatal accidents and mid-air collisions involving commercial passenger aircraft. The FAA is part of the Department of Transportation and derives its rulemaking and regulatory power from Title 49 of the United States Code, Section 106. The Commerce Clause of the U.S. Constitution grants Congress broad authority to “regulate commerce with foreign nations, and among the several states.”<sup>53</sup> The U.S. government therefore has exclusive power to regulate the airspace of the United States.<sup>54</sup> A citizen of the United States has a public right of transit through the navigable airspace.<sup>55</sup> Among other powers the statute confers upon the Administrator of the FAA is the mandate to develop plans and policies for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety

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<sup>51</sup> *Id.* at 315 n.7.

<sup>52</sup> Pub. L. No. 85-726, 72 Stat. 731 (codified at 49 U.S.C. § 1301, as amended).

<sup>53</sup> U.S. CONST. art. I, § 8.

<sup>54</sup> 49 U.S.C. § 40103(a)(1).

<sup>55</sup> *Id.* § 40103(a)(2).

of aircraft and the efficient use of airspace.<sup>56</sup> The Administrator may modify or revoke a regulation, order, or guidance document when required in the public interest. The Administrator shall prescribe air traffic regulations on the flight of aircraft (including regulations on safe altitudes) for navigating, protecting, and identifying aircraft; protecting individuals and property on the ground; using the navigable airspace efficiently; and preventing collisions between aircraft, between aircraft and land or water vehicles, and between aircraft and other airborne objects.<sup>57</sup>

### **B. FAA Policy and Rulemaking**

Pursuant to its rulemaking authority, the FAA has promulgated the standards for the operation of aircraft in the sovereign airspace of the United States.<sup>58</sup> Commonly known as the Federal Aviation Regulations, or FARs, these regulations are the “rules of the road” for certification of all civil aircraft,<sup>59</sup> airmen,<sup>60</sup> and airspace;<sup>61</sup> certification and operations for air carriers and operators for compensation or hire;<sup>62</sup> air traffic and general operating rules;<sup>63</sup> and schools and other certificated agencies,<sup>64</sup> airports,<sup>65</sup> and navigational facilities.<sup>66</sup> The FARs are codified under Title 14 of the Code of Federal Regulations (CFR).<sup>67</sup>

The FAA issues a number of guidance materials for both public and internal use by FAA employees. Three of the tools that the FAA uses to administer the FARs are Advisory Circulars (ACs), Airworthiness Directives (ADs), and policy statements. An AC or AD may be issued in response to a safety-related event or system anomaly, or a Technical Standards Order (TSO) could be developed to remediate a technical problem. An AC provides guidance to owners or operators of aircraft or systems to facilitate compli-

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<sup>56</sup> *Id.* § 40103(b)(1).

<sup>57</sup> *Id.* § 40103(b)(2).

<sup>58</sup> 14 C.F.R. pt. 1.1 et seq.

<sup>59</sup> *Id.* pts. 21–49.

<sup>60</sup> *Id.* pts. 61–67.

<sup>61</sup> *Id.* pts. 71–77.

<sup>62</sup> *Id.* pts. 119–35.

<sup>63</sup> *Id.* pts. 91–105.

<sup>64</sup> *Id.* pts. 141–47.

<sup>65</sup> *Id.* pts. 150–61.

<sup>66</sup> *Id.* pts. 170–71.

<sup>67</sup> See Fed. Aviation Admin., *FAA Regulations* (Feb. 19, 2020, 2:31 PM), [https://www.faa.gov/regulations\\_policies/faa\\_regulations](https://www.faa.gov/regulations_policies/faa_regulations).

ance with the applicable regulations. An AD is a notification to owners and operators of certified aircraft that a known safety deficiency with a particular model of aircraft, engine, avionics, or other system exists and must be corrected. A TSO is a minimum performance standard for specified materials, parts, and appliances used on civil aircraft. An authorization to manufacture a material, part, or appliance to a TSO standard is referred to as a TSO authorization. Issuance of a TSO authorization constitutes both design and production approval. However, issuance of a TSO authorization is not an approval to install and use the article in the aircraft. It simply means that the article meets the specific TSO and the entity is authorized to manufacture it.

ACs are utilized to advise the aviation community on issues pertaining to the regulations, but are not binding on the public (in other words they do not have the same legal force as a regulation for enforcement purposes). The exception would be when an AC is specifically referenced in a regulation. The ACs are issued in a numbered-subject system corresponding to the subject areas of the FARs.

Another advisory tool is the policy statement. Administrative implementation (as announced or documented by a published policy statement) of a particular statutory provision may be accorded deference by the courts when it appears that Congress delegated authority to the agency generally to make rules carrying the force of law and that the agency's interpretation claiming deference was promulgated in the exercise of that authority. Delegation of such authority may be shown in a variety of ways, as by an agency's power to engage in adjudication or notice-and-comment rulemaking, or by some other indication of a comparable congressional intent.<sup>68</sup>

The FAA has issued a number of policy statements pertaining to unmanned aircraft, including AFS-400 UAS Policy Statement 05-01,<sup>69</sup> a clarification published in the *Federal Register* titled "Unmanned Aircraft Operations in the National Airspace System,"<sup>70</sup> and *Interim Operational Approval Guidance*

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<sup>68</sup> United States v. Mead Corp., 533 U.S. 218, 121 S. Ct. 2164, 150 L. Ed. 292 (2001).

<sup>69</sup> FED. AVIATION ADMIN., AFS-400, UNMANNED AIRCRAFT SYSTEMS OPERATIONS IN THE U.S. NATIONAL AIRSPACE SYSTEM – INTERIM OPERATIONAL APPROVAL GUIDANCE, UAS POLICY 05-01 (2005).

<sup>70</sup> 72 Fed. Reg. 6689 (Feb. 13, 2007).

08-01,<sup>71</sup> which likewise references 14 C.F.R. Part 91. In addition, since 2007 the FAA has published policies regarding Inspection and Maintenance Program Requirements for Airworthiness Certification of Unmanned Aircraft Operating Under 55 Pounds,<sup>72</sup> Aviation-Related Videos or Other Electronic Media on the Internet,<sup>73</sup> UAS Temporary Flight Restrictions for Sporting Events,<sup>74</sup> Education, Compliance, and Enforcement of Unauthorized Unmanned Aircraft Systems Operators,<sup>75</sup> as well as no fewer than seven Orders, two additional ACs,<sup>76</sup> three Guidance documents, multiple Legal Interpretations on a wide variety of issues, and one special Rules Interpretation.

## V. *Unmanned Aircraft Statutes*

Addressing the ongoing controversy over the FAA's response to the growing demand for approval (or in some cases, disapproval) of unmanned aircraft operations in the National Airspace, Congress passed three major statutes specifically dealing with unmanned aircraft.

### A. *FMRA of 2012*

The first was the FAA Modernization and Reform Act of 2012 (FMRA),<sup>77</sup> which firmly stated Congress' intention to create (or recognize) a new class of aircraft to be regulated by the FAA, and offered three definitions of unmanned aircraft, small-unmanned aircraft, and public unmanned aircraft systems (UASs). The Act mandated a timetable for integration of civil UASs into the National Airspace, and specifically exempted aircraft flown strictly

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<sup>71</sup> FED. AVIATION ADMIN., INTERIM OPERATIONAL APPROVAL GUIDANCE 08-01: UNMANNED AIRCRAFT SYSTEMS OPERATIONS IN THE U.S. NATIONAL AIRSPACE SYSTEM (Mar. 13, 2008), <https://www.hsdl.org/?view&did=723339>.

<sup>72</sup> FAA Notice 8900.413 (Apr. 5, 2017) (replaced by FAA Order 8130.34D (Sept. 8, 2017)).

<sup>73</sup> FAA Notice 8900.292 (Apr. 8, 2015) (cancelled Apr. 8, 2016).

<sup>74</sup> FDC NOTAM 4/3621 (Oct. 27, 2014) (replaced by FDC NOTAM 7/4319 (July 20, 2017)).

<sup>75</sup> FAA Notice 8900.268 (July 15, 2014) (cancelled July 15, 2015).

<sup>76</sup> FED. AVIATION ADMIN., ADVISORY CIRCULAR 21-12, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE, FAA FORM 8130-6 (2012); FED. AVIATION ADMIN., ADVISORY CIRCULAR 45-2D, IDENTIFICATION AND REGISTRATION MARKING (2009).

<sup>77</sup> Pub. L. No. 112-95, 126 Stat. 11.

for hobby or recreational use from regulation. The Act further mandated establishment of six test ranges; approval of commercial operations in the Arctic; coordination of operational approvals with public agencies; the creation of regulations, standards, and requirements for civil unmanned system operations; and a number of other methods to achieve full integration of UASs into the National Airspace. The statute requires the Secretary of Transportation (parent agency of the FAA) to determine if certain UASs may operate safely in the NAS before the completion of the plan and rulemaking required in Section 332.

Section 333 of the Act literally opened the floodgates for civil commercial UAS operators and entrepreneurs to petition the FAA for authority to conduct a wide variety of commercial operations, including aerial photography, precision agriculture, power line and pipeline infrastructure inspection, newsgathering, building inspections, insurance adjusting, and many more, in low risk, controlled environments.

Civil operators are given the option of obtaining a Special Airworthiness Certificate in the experimental category for civil aircraft performing research and development, crew training, and market surveys, or may go through the UAS type and airworthiness certificate in the restricted category process under 14 C.F.R. § 21.25(a)(2) and § 21.185 for a special purpose, or a type certificate for production under 14 C.F.R. § 21.25(a)(1) or § 21.17(b). These processes are the same for manned or unmanned aircraft.

Pursuant to its rulemaking authority, the FAA began the process of developing a set of rules for unmanned aircraft in 2008. The final rule,<sup>78</sup> after more than seven years of development, went into effect August 29, 2016, four years after Congress passed the FMRA. The key elements of the final UAS rule require that the aircraft must weigh less than 55 lbs., operate within visual line-of-sight of the pilot in command or visual observer, not operate directly over people, operate in daytime only, yield right-of-way to other aircraft, observe maximum airspeed of 100 mph (87 kts), stay below a maximum altitude of 500 feet above ground level (AGL), only fly with minimum weather visibility of three miles, not operate in Class A airspace, and only in other classes except Class E with ATC permission, and must only be operated

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<sup>78</sup> Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064 (June 28, 2016) (codified as amended at 14 C.F.R. pts. 21, 43, 61, 91, 101, 107, 119, 133 & 183).



by a person holding a valid remote pilot certificate, which has some testing and qualifications requirements. Numbering 44 subsections in all, the current rule includes Sections 107.200 and 107.205, which create a waiver process wherein applicants can seek permission from the FAA to waive the nine listed regulations that are subject to waiver. On June 21, 2016, the FAA issued AC 107-2,<sup>79</sup> which was intended to provide guidance for conducting UAS operations in the NAS in accordance with 14 C.F.R. Part 107.

### ***B. The FAA Extension, Safety and Security Act of 2016***

Since the FMRA of 2012 was enacted, Congress has passed two more comprehensive statutes dealing with unmanned aircraft. The FAA Extension, Safety and Security Act of 2016, in “Subtitle B—UAS Safety,”<sup>80</sup> amended the FMRA of 2012 and ordered the FAA and the Department of Transportation to undertake a number of tasks intended to enhance the safety of UAS operations in the NAS. These mandates include, among others, developing consensus standards for remote identification of UAS; setting requirements for UAS manufacturers to include safety literature for customers at the point of delivery of a system; facilitating cooperation among firefighting and public utility organizations to support restoration of services after a disaster or catastrophic event; sanctions for interference with wildfire suppression efforts; creating a pilot project for airspace hazard mitigation around airports; setting up an emergency exemption process for civil and public operators responding to a disaster or emergency; developing a research plan for UTM (unmanned traffic management) development and deployment; creating an application process for designating a fixed-site facility for prohibition of flights around critical infrastructure; preparation of a UAS research and development roadmap; setting up a testing and modeling protocol focused on collisions between unmanned and manned aircraft; and finally to conduct a probabilistic metrics research and development study assessing the risks of integrating UAS into the National Airspace.

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<sup>79</sup> FED. AVIATION ADMIN., ADVISORY CIRCULAR 107-2, SMALL UNMANNED AIRCRAFT SYSTEMS (sUAS) (2016).

<sup>80</sup> Pub. L. No. 114-190, 130 Stat. 615.

### C. *FAA Reauthorization Act of 2018*

The most recent major legislation was the FAA Reauthorization Act of 2018.<sup>81</sup> This Act extends the FAA's funding and authorities through FY 2023, and was the first five-year reauthorization since 1982. The FAA website states:

The bill includes important legislative changes related to increasing the safety and pace of UAS integration, expediting the financing and development of airport capital projects, directing the FAA to advance leadership in the field of international supersonic aircraft policies, addressing aircraft noise, and ensuring safe lithium battery transport. Furthermore, the bill directs FAA to promote U.S. aerospace-related standards globally and allows the Agency to work with foreign partners to streamline certification processes for U.S. aircraft. The legislation also streamlines the FAA certification process to ensure that U.S. aviation manufacturers can compete globally and get their products to market on time, and fosters collaboration with industry stakeholders to streamline certification and regulatory processes and establish clear FAA performance objectives and metrics.<sup>82</sup>

Since the passage of the FAA Reauthorization Act of 2018, the FAA has proposed three rules dealing with unmanned aircraft: "Safe and Secure Operations of Small Unmanned Aircraft Systems," "Operation of Small Unmanned Aircraft Systems Over People," and "External Marking Requirements for Small Unmanned Aircraft," and issued a Notice implementing an "Exception for Limited Recreational Operations of Unmanned Aircraft."<sup>83</sup> Comment periods have closed on all three of the pro-

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<sup>81</sup> Pub. L. No. 115-524, 132 Stat. 3186.

<sup>82</sup> Fed. Aviation Admin., *FAA Reauthorization* (June 21, 2019, 5:27 PM), <https://www.faa.gov/about/reauthorization>.

<sup>83</sup> Safe and Secure Operations of Small Unmanned Aircraft Systems, 84 Fed. Reg. 3732 (proposed Feb. 13, 2019) (to be codified at 14 C.F.R. pt. 107); Operation of Small Unmanned Aircraft Systems over People, 84 Fed. Reg. 3856 (proposed Feb. 13, 2019) (to be codified at 14 C.F.R. pt. 107); External Marking Requirement for Small Unmanned Aircraft, 84 Fed. Reg. 3669 (Feb. 13, 2019) (codified at 14 C.F.R. § 48.205(c)); and Notice: Exception for Limited Recreational Operations of Unmanned Aircraft, 84 Fed. Reg. 22,552 (May 17, 2019).

posed rules, but no new rule has been finalized for any of these efforts except for the External Marking Interim Final Rule, which took effect February 25, 2019, before the closing date for comments.

## VI. *Policy v. Practice*

### A. *FAA Policy for All Aviation Activities*

The requirements that Congress has placed on the Department of Transportation and the Federal Aviation Administration to promote commercial aviation while maintaining the highest levels of safety in the national and international airspaces are set forth in Title 49 U.S. Code § 44701. The clear language of the statute mandates that the Administrator of the FAA do certain things:

(a) **PROMOTING SAFETY.**—The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing—

(1) minimum standards required in the interest of safety for appliances and for the design, material, construction, quality of work, and performance of aircraft, aircraft engines, and propellers;

(2) regulations and minimum standards in the interest of safety for—

(A) inspecting, servicing, and overhauling aircraft, aircraft engines, propellers, and appliances;

(B) equipment and facilities for, and the timing and manner of, the inspecting, servicing, and overhauling; and

(C) a qualified private person, instead of an officer or employee of the Administration, to examine and report on the inspecting, servicing, and overhauling;

(3) regulations required in the interest of safety for the reserve supply of aircraft, aircraft engines, propellers, appliances, and aircraft fuel and oil, including the reserve supply of fuel and oil carried in flight;

(4) regulations in the interest of safety for the maximum hours or periods of service of airmen and other employees of air carriers; and

(5) regulations and minimum standards for other practices, methods, and procedure the Administrator finds necessary for safety in air commerce and national security.

(b) **PRESCRIBING MINIMUM SAFETY STANDARDS.**—The Administrator may prescribe minimum safety standards for—

(1) an air carrier to whom a certificate is issued under section 44705 of this title; and

(2) operating an airport serving any passenger operation of air carrier aircraft designed for at least 31 passenger seats.

(c) **REDUCING AND ELIMINATING ACCIDENTS.**—

The Administrator shall carry out this chapter in a way that best tends to reduce or eliminate the possibility or recurrence of accidents in air transportation. However, the Administrator is not required to give preference either to air transportation or to other air commerce in carrying out this chapter.

(d) **CONSIDERATIONS AND CLASSIFICATION OF REGULATIONS AND STANDARDS.**—When prescribing a regulation or standard under subsection (a) or (b) of this section or any of sections 44702–44716 of this title, the Administrator shall—

(1) consider—

(A) the duty of an air carrier to provide service with the highest possible degree of safety in the public interest; and

(B) differences between air transportation and other air commerce; and

(2) classify a regulation or standard appropriate to the differences between air transportation and other air commerce.<sup>84</sup>

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<sup>84</sup> 49 U.S.C. § 44701(a)–(d).

Pursuant to this mandate, the FAA has developed, and continues to supplement and update, a Designated Engineering Representative Handbook.<sup>85</sup> This 66-page handbook defines the procedures, technical guidelines, limitations of authority, and tools and resources for DERs. “We designed this handbook to give FAA managing offices and the DERs a better understanding of their individual and mutual responsibilities.”<sup>86</sup> This document can be considered the “Bible” for DERs in fulfilling their functions and responsibilities while certifying aircraft design processes.

#### CHAPTER 6. ADMINISTRATIVE INFORMATION

3. DEVIATIONS. Adherence to procedures in this order is necessary for uniform administration of the DER program. Any deviations from this guidance material must be coordinated and approved by Aircraft Certification Service, Policy and Innovation Division (AIR-600). If a deviation becomes necessary, the FAA employee involved must ensure the deviations are substantiated, documented, and concurred with by the appropriate supervisor. A copy of the deviation must be submitted to AIR-600 for review and concurrence.<sup>87</sup>

The handbook explicitly sets forth the scope and limitations of the DER’s authority to approve minor or major design changes at any stage of the design and manufacturing process. The FAA will decide when to get directly involved in a project and the nature of that involvement, and “the DER will accept increased involvement as necessary for conducting business and obtaining certification. The FAA’s interaction with the DERs is highly interdependent, building on mutual interests in achieving the highest level of safety.”<sup>88</sup>

The many orders and directives that the FAA issues to guide the work of its employees and designees take a great deal of discretion out of their hands. They work with standards, best practices, and a well-defined set of minimum safety requirements.

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<sup>85</sup> DER HANDBOOK, *supra* note 28.

<sup>86</sup> *Id.* pmbl. (over the signature of Michael J. Kaszycki, Acting Director, Policy & Innovation Division, Aircraft Certification Service).

<sup>87</sup> *Id.* at 6-1 (Administrative Information).

<sup>88</sup> *Id.* at 2-2.

But discretion in particular situations is always a factor. Does the item or product meet the regulatory requirement? Does it meet the intent of the requirement, if not specifically in compliance? And is that good enough? Those may be discretionary calls on the part of the regulators and their designees. For example, 14 C.F.R. § 27.603 states:

The suitability and durability of materials used for parts, the failure of which could adversely affect safety, must—

(a) Be established on the basis of experience or tests;

(b) Meet approved specifications that ensure their having the strength and other properties assumed in the data; and

(c) Take into account the effects of environmental conditions, such as temperature and humidity, expected in service.<sup>89</sup>

An FAA inspector or a DER could conceivably approve a particular material for a particular part, without having any experience with that material or having access to any tests, which would be a discretionary act at a very fundamental operational level, but it could violate the specific regulatory requirement, and could be considered negligent if the part or material failed and caused an accident. Certainly such a decision would violate the FAA's published policies, as well as Congress' safety mandates, and would thus not be protected from liability under the FTCA.

In the Boeing 737 MAX 8 cases, it can be presumed that just this sort of decision-making process was involved (or so the claims will allege), and that the DERs (or the FAA) who authorized the software change without requiring more of the manufacturer to alert its customers to the change would be charged with actionable negligence and the claim would not be jurisdictionally barred by discretionary function exception of the FTCA.

### ***B. Is the Policy any Different for Unmanned Aircraft?***

Are the rules for unmanned aircraft more relaxed, and if so, is this consistent with congressional mandate? By bypassing the

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<sup>89</sup> 14 C.F.R. § 27.603 (Materials).

type certification and production certificate process, Congress has in some respects eroded the historical mandates placed upon the FAA in its oversight role over commercial and general aviation. Recent legislation has allowed the FAA to approve flights for aircraft without type and airworthiness certificates, flown by remote pilots who may have little or no experience in operating a manned aircraft, who may only have a rudimentary understanding of the dynamics and challenges of flying an airplane. The written test for the Part 107 Remote Pilot's License<sup>90</sup> covers the same broad categories as those required for a private pilot, and the FAA publishes a guide for applicants to refer to, making it nearly impossible to fail. Remote Pilot candidates are only required to pass the written test and meet the minimal medical requirements of 14 C.F.R. § 107.17, but do not have to demonstrate their skills to a Designated Pilot Examiner, certified by the FAA to assess whether the pilot has the knowledge, skills, and attitude to be a safe participant in the NAS. In these areas of regulatory treatment, Congress has imposed a broad mandate to the FAA to facilitate the integration of unmanned aircraft into the NAS, with specific requirements for outcomes, but little direction on how the FAA should go about the task. And, there is no language in the three statutes discussed *supra* that provides for exceptions to the hundreds of regulations that affect manned aviation.

Thus, the role of the regulator is to carry out the policies enumerated by Congress, using their best judgment and discretion in implementing regulations and policies mandated by the enabling statutes. But, because there is no requirement to do so, the FAA does not issue type or airworthiness certificates for unmanned aircraft, except under special circumstances that are entirely voluntary for the manufacturer or operator. Title 14 C.F.R. Part 21 sets forth certification requirements for aircraft (design approvals, production approvals, airworthiness certificates, and airworthiness approvals), but specifically exempts aircraft subject to Part 107, which is the section devoted to unmanned aircraft. 14 C.F.R. § 45.21 states that no person may operate a U.S.-registered aircraft unless that aircraft displays nationality and registration marks in accordance with the requirements of §§ 45.23 through 45.33.<sup>91</sup> 14 C.F.R. § 47.3 requires that all aircraft operated in the

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<sup>90</sup> *Id.* § 107.12.

<sup>91</sup> *Id.* § 45.21.

United States be registered.<sup>92</sup> Yet, until 2015, unmanned aircraft were not required to be registered,<sup>93</sup> nor were they required to display markings indicating registration.

The FAA has slowly responded to the sweeping congressional mandate to hasten the integration of unmanned aircraft systems into the National Airspace as a reflection of a national policy enunciated by Congress. The agency has approved thousands of waivers of the requirements of Part 107, has registered over one million drones, and has certified over 100,000 Part 107 remote pilots, far outnumbering most categories in manned aviation.

It can be safely argued that there are few decisions made by FAA employees involved in the unmanned aircraft arena that are not policy-driven and an exercise of discretionary functions. The difficult question is determining the standards with which the FAA is supposed to comply: All sections of Title 49 of the U.S. Code, or all sections of Title 14 of the Code of Federal Regulations, or only those that the FAA thinks may apply to unmanned aircraft systems and their operators?

## VII. *Conclusion*

It remains to be seen where the U.S. Supreme Court may take the debate on the discretionary function exception, considering they haven't heard a case on that narrow issue since 1991.<sup>94</sup> *Varig*, *Berkovitz*, and *Gaubert* are still good law. The *Varig* case comes closest to the Boeing 747MAX 8 situation on its facts, but the litigants have a long way to go to get their case before the high court. While the facts have not been fully developed, it can be safely assumed that the government, if sued under the FTCA, will claim immunity under the statute, and the district court will be guided by those three Supreme Court decisions, as well as the dozens of district court and circuit court opinions that have been published since 1991 in which the discretionary function exemption was considered.

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<sup>92</sup> *Id.* § 47.3.

<sup>93</sup> *Id.* § 107.13.

<sup>94</sup> Although there was a more recent case involving the unique situation with the Tennessee Valley Authority, which is treated differently than other government entities under the FTCA. *See Thacker v. Tenn. Valley Auth.*, 587 U.S. \_\_\_, 139 S. Ct. 1435 (2019).



If the government is immune from suit, what is the impact on the UAS industry? Will the FAA be motivated to approve unproven technology? Will users and clients of unmanned systems be less inclined to assume more risk, and perhaps require more insurance? Will the insurance market be willing to bear the higher risk if there is no government deep pocket to share the liability? Since Congress has given so much flexibility to the FAA to promulgate rules and standards for unmanned systems, there will be no specific directives or requirements that a litigant can point at to make the argument that a non-discretionary standard or rule has been violated. Negligence cases against the FAA will be extremely difficult to get past the jurisdictional barrier of the discretionary function exception.

If a drone meets the minimum standards set by the FAA, and FAA is immune from suit, will tort claims become a rarity if the only target defendant is an individual pilot or a drone service company? On the other hand, if the exception does not apply, the FAA may simply stop approving operations until unmanned aviation standards of airworthiness equivalent to manned aviation can be implemented and certified, bringing that category of aircraft under the regulatory umbrella of all of Title 14 C.F.R.

One of the greatest fears expressed across the spectrum of the unmanned aircraft world is a rogue operator or pilot either intentionally or inadvertently allowing his or her aircraft to strike another airplane with people on board and causing injury or death. Many feel that such an event will shut the industry down for several years until the technology can be brought under tighter controls, much like what happened to nuclear power plants after the Chernobyl disaster in 1986.

What chance does anyone have in a suit against the FAA for negligence in certifying or authorizing a drone or drone operation that goes wrong? The answer is probably “not much.” The FAA will argue that it was exercising its best judgment, followed the rules and regulations, and the operator or manufacturer (who is ultimately responsible for compliance with the regulations) was at fault. Does it matter if the injured party is not a user (passenger/crew/etc.), but an innocent third party? Is there any decision or action by a government employee that isn’t discretionary (even driving a government automobile in a reckless manner)? The Supreme Court has left little room for anything other than ordinary

state law negligence suits to overcome the discretionary function barrier.

While the pending litigation against Boeing and the FAA works its way through the court system, hardly a day goes by in which some new opportunity or concept of operations by a drone service company doesn't make the news cycle. As this journal goes to press, the nation and the world are facing the chaos and uncertainty of a global pandemic, and enterprising drone service companies – some working in partnership with large, multinational corporations and the FAA – propose to deliver critical medical supplies to house-bound, medically at-risk individuals, one of many potential applications of unmanned systems.<sup>95</sup> The FAA's capacity to oversee and monitor such activities, to inspect and approve operating systems, and to ensure the pilots and operators are qualified to conduct the missions, remains limited by finite resources. How the FAA goes about fulfilling its statutory mandate through policy and guidance will be closely scrutinized through the lens of the FTCA and discretionary function exception if something goes wrong and harm results.

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<sup>95</sup> Jessica Bursztynsky, *CVS and UPS Will Use Drones to Deliver Prescriptions in a Retirement Community amid Coronavirus Outbreak*, CNBC.COM (Apr. 27, 2020, 10:42 AM), <https://www.cnbc.com/2020/04/27/coronavirus-cvs-ups-delivering-prescriptions-with-drones.html>.

# Change Is in the Air in the U.S. and Canada . . . but what about Brazil?

by Delphine Defossez\*

## 1. *Introduction*

Tom Bingham, the preeminent English jurist and scholar, once stated, “cross-border problems call for cross-border solutions.”<sup>1</sup> This might be true, but in the aviation industry, national and bilateral solutions are kings. Interestingly, while airline passengers in Europe have enjoyed the protection of Regulation 261/2004<sup>2</sup> for well over a decade, across the Atlantic passengers have had to fight a good fight for their rights to be recognized and enforced. However, everything began to change in 2019, with the Federal Government of Canada implementing new air passenger protection regulations and a bill introduced in the U.S. Congress proposing an Airline Passengers’ Bill of Rights. Meanwhile, in Brazil, a 2010 Bill to modernize the nation’s passenger rights scheme has languished, and the government’s most recent Resolution is silent on delays and cancellations, leaving these situations to be resolved by the courts. While the Brazilian system offers one of the highest levels of passenger protection, its approach is detrimental to both airlines and passengers because of its lack of legal certainty.

The trend toward a greater balance between passengers’ rights and airlines’ needs seems to have increased. The Canadian regulations and the U.S. proposal both reflect lessons learned from the deficiencies in the EU Regulation. Having a fixed amount of

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<sup>1</sup> TOM BINGHAM, *THE RULE OF LAW* 115 (2010).

<sup>2</sup> Council Regulation 261/2004, Common Rules on Compensation and Assistance to Passengers in the Event of Denied Boarding and of Cancellation or Long Delay of Flights, and Repealing Regulation (EEC) No. 295/91 (Text with EEA relevance), 2004 O.J. (L 46) 1 [hereinafter EU Regulation 261/2004].

compensation increases legal certainty for airlines and passengers.<sup>3</sup> Even the U.S. proposal includes fixed amounts for delays and cancellations, in stark contrast to the current scheme, which has never had any legal requirement obliging airlines to compensate. Brazil could learn from these models and introduce its own legislation, instead of leaving the judiciary to decide on the amount of compensation. Indeed, the current situation regarding the amount of compensation for passengers is extremely fragmented in Brazil and largely depends on the court and the judge. In that sense, the Canadian approach, although it is too soon to know its real-life effects, seems to better balance the rights of passengers and the needs of airlines.

This article first analyzes Brazilian passenger rights legislation. Then it will focus on both the Canadian and U.S. regulations.

## 2. *Brazil: ANAC Resolution 400 of 2016*

The Brazilian system governing passengers' rights changed following a 2017 decision of the Brazilian Supreme Federal Tribunal (STF).<sup>4</sup> Indeed, until this ruling, Brazil did not rely on the Montreal Convention,<sup>5</sup> even though it had ratified it. Instead, judges applied the *Código de Proteção e Defesa do Consumidor* (CDC), the country's consumer protection statute.<sup>6</sup> In 2018, the *Terceira Turma do Superior Tribunal de Justiça* (STJ) reaffirmed the applicability of the Montreal Convention in passenger rights cases.<sup>7</sup>

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<sup>3</sup> Contrary to the arguments of some opponents, the cost of the EU Regulation is not so disproportionate. The EU Commission's impact assessment of the Regulation established that the "average cost of the Regulation . . . was €1.63 per passenger." See STEER DAVIES GLEAVE, EXPLORATORY STUDY ON THE APPLICATION AND POSSIBLE REVISION OF REGULATION 261/2004, FINAL REPORT (July 2012), <https://ec.europa.eu/transport/sites/transport/files/themes/passengers/studies/doc/2012-07-exploratory-study-on-the-application-and-possible-revision-of-regulation-261-2004.pdf>.

<sup>4</sup> *Rosolem v. Société Air France, S.T.F.*, Ap. Civ. No. RE 636.331/RJ, Relator: Gilmar Mendes, 25.05.2017.

<sup>5</sup> Convention for the Unification of Certain Rules for International Carriage by Air, May 28, 1999, T.I.A.S. No. 13,038, 2242 U.N.T.S. 350 [hereinafter Montreal Convention].

<sup>6</sup> Lei No. 8.078, de 11 de Setembro de 1990, D.O.U. de 12.09.1990 (Braz.) [hereinafter CDC].

<sup>7</sup> *UPS do Brasil Remessas Expressas Ltda. v. SMA Technologies Ltda.*, S.T.J., Ap. Civ. No. Re No. 1.615.981 – SP, 2014/0247524-7, Relator: Paulo de Tarso Sanseverino, 24.04.2018. See Press Release, STJ, Convenção de Montreal é Aplicável a Contrato de Transporte Aéreo mesmo após Descarregamento (May 17, 2018), <http://www.stj.jus.br/sites/STJ/default/>

The decision is, however, not a complete victory for the Convention, as the eleven ministers unanimously ruled that moral damages should not be subject to any limit. This means that moral damages, which are regarded as a fundamental right in Brazil, can be granted on top of the damages awarded under the Convention.

The current system, therefore, leaves much discretion to judges in the awarding of damages. This also results in the problem of inconsistency of damages, and the significant variation in the amounts granted by different tribunals – even in the same city. Indeed, Brazilian courts seem not to differentiate between non-economic damages that are inherent to air travel and unreasonable losses. As Macara and Lima noted:

In claims against airlines, the situation was exacerbated by the view (often held by the Brazilian judiciary) that air travel is a special experience for most people, often connected with an important business or family event, or a well-earned holiday. This resulted in moral damages habitually being awarded for all types of claims by passengers, including even minor delays.<sup>8</sup>

The reason for maintaining the status quo on moral damages seems to flow from the fact that the Warsaw and Montreal Conventions do not provide any right to moral damages, while such right is enshrined in Brazil's Federal Constitution.<sup>9</sup> However, a case decided in September 2019 by the STJ established that delays or cancellations do not constitute *in re ipsa* moral damages.<sup>10</sup> The judgment made it clear that compensation will only be allowed if it is proven that the passenger actually suffered from a form of psychological injury as a result of the delay or cancellation. It is hoped that Brazilian lower courts will embrace this

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pt\_BR/Comunica%C3%A7%C3%A3o/noticias/Not%C3%ADcias/Conven%C3%A7%C3%A3o-de-Montreal-%C3%A9-aplic%C3%A1vel-a-contrato-de-transporte-a%C3%A9reo-mesmo-ap%C3%B3s-descarregamento.

<sup>8</sup> Peter Macara & Alexandre Lima, *The Brazilian Supreme Court Upholds the Application of the Warsaw and Montreal Conventions*, 43 AIR & SPACE L. 505, 507 (2018).

<sup>9</sup> CONSTITUIÇÃO FEDERAL [C.F.] [Constitution] art. 5(X) (1988).

<sup>10</sup> Robson da Silva Balbe v. Gol Linhas Aéreas Inteligentes S/A, S.T.J., Ap. Civ. R. Esp. No. 1.796.716, Relator: Nancy Andrighi, 27.8.2019.

new approach to moral damages, which could result in great changes in the manner in which these cases are resolved.

The fight against moral damages in aviation is not new, with some members of the Brazilian parliament having suggested in 2010 some amendments to the aeronautic law<sup>11</sup> to offer a more uniform protection to passengers. As a result, a Bill was introduced (*Projeto de Lei* or PL 6960 of 2010) which applies to any cancelled or delayed flights departing Brazil, as long as the delay exceeds two hours, as well as to denial of boarding.<sup>12</sup>

The Bill would amend the aeronautic law to establish the various alternatives airlines could propose to passengers. For instance, one provision refers to the obligation of reimbursement,<sup>13</sup> while another relates to the possibility of using an alternative mode of transportation with reimbursement for the possible difference in price.<sup>14</sup> If a flight is cancelled or delayed, or if boarding is denied at a connecting airport, the passenger can decide to return to the initial departure point at no cost and can request reimbursement of the ticket.<sup>15</sup> In addition to the refund of the ticket price, the passenger is also entitled to compensation of 50 percent of the value of the ticket if the delay or cancellation is greater than two hours.<sup>16</sup> Even if the passenger chooses another option, s/he is still eligible for the compensation of 50 percent of the value of the ticket, if the new flight departs more than two hours before the initial departure time or arrives more than two hours after the original arrival time.<sup>17</sup> The airline may limit its compensation if it proves: (I) the passenger knew about the cancellation at least seven days in advance; (II) the cancellation, delay, or denial was caused by *force majeure*, Act of God, or regular exercise of policy power; or (III) if the passenger arrived at the final destination not later than two hours after the initially contracted arrival time.<sup>18</sup> This provision is equivalent to Article 5(1)(c) of EU Regulation 261/2004. Additionally, a passenger has

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<sup>11</sup> Lei No. 7.565, de 19 Dezembro de 1986, D.O.U. de 20.12.1986.

<sup>12</sup> Código Brasileiro de Aeronáutica alterado, 07.12.2009, art. 229.

<sup>13</sup> PL 6960/2010, Draft law to amend and add provisions to Law No. 7,565 of December 19, 1986, and to provide for the protection and defense of the rights of users of public air transport services, and other provisions, art. 229, para. IV.

<sup>14</sup> *Id.* para. III.

<sup>15</sup> *Id.* art. 229(3).

<sup>16</sup> *Id.* art. 230.

<sup>17</sup> *Id.* art. 230(1)(III).

<sup>18</sup> *Id.* art. 230(1).

the right to snacks, telephone calls, Internet access (or other communication means), proportional to the waiting time, only for cancelled flights or in the case of denial of boarding for those with confirmed reservations.<sup>19</sup> Carriers must also provide accommodations and means of transportation to and from the airport or to the passenger's home address if the passenger lives close to the departure place, in cases of cancellation or denial of boarding for those with confirmed reservations.<sup>20</sup>

However, if another carrier partially or entirely caused the delay or cancellation, the latter is obligated to reimburse the carrier that compensates the passenger.<sup>21</sup> If the authority in charge of the airport or airplane services partially or entirely caused the delay or cancellation, the carrier could offset the amount compensated from the fees it owes to that authority.<sup>22</sup> Finally, the carrier is required to inform affected passengers of their rights.<sup>23</sup>

Obviously, this proposal, which regulates both passenger assistance and air carrier obligations, is greatly influenced by the EU Regulation. However, the PL is more rigid and grants more rights to passengers. For instance, the minimum time before a passenger could rely on the PL is shorter than under EU law and, unlike in the EU, the proposed law takes into consideration the delay at departure and not the delay upon arrival. Consequently, flights that leave on schedule but arrive late would not result in any compensation to the passengers. The Brazilian proposal further establishes a category of delay that excludes several other situations leading to waste of time, inconvenience, and damages to passengers. However, no fixed compensation amounts were included in the proposal.

Brazil's National Agency of Civil Aviation (ANAC) recently enacted Resolution 400/2016, a soft law instrument, which provides a robust framework for consumer protections while increasing the legal certainty for airlines regarding the possible compensation costs. Similar to its predecessor,<sup>24</sup> this Resolution

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<sup>19</sup> *Id.* art. 230-B I.

<sup>20</sup> *Id.* art. 230-B II.

<sup>21</sup> *Id.* art. 230-A I.

<sup>22</sup> *Id.* art. 230-A II.

<sup>23</sup> *Id.* art. 230-D.

<sup>24</sup> ANAC Resolution No. 141/2010, Mar. 9, 2010, D.O.U. de 15.03.2010. For a discussion of Resolution 141/2010, see Delphine Defosse, *I Wish My Mum Was Brazilian: The Regulation of Passenger Liability in the EU and Brazil*, 18 ISSUES AVIATION L. & POL'Y. 333, 358 (2019).

obliges airlines to provide means of communication, such as Internet, telephone access, or others to the passengers after one hour of delay, cancellation, or denial of boarding.<sup>25</sup> After two hours, catering should be offered, which needs to involve at least water and snacks, or a voucher for same.<sup>26</sup> After four hours, passengers should be taken to another facility or even provided accommodations.<sup>27</sup> Transportation to and from the site of the accommodations is at the airline's expense after four hours. If the passenger resides in the airport city, the airline may merely offer transportation between the airport and the residence. Also after four hours, passengers have the right to choose between a full refund or an alternative travel plan with that carrier or with another airline. The new Resolution also obliges airlines to inform affected passengers every 30 minutes about the new estimated departure time.<sup>28</sup>

In cases of denied boarding, the Resolution requires airlines to compensate the passengers up to 250 Special Drawing Rights (SDRs) for domestic flights and 500 SDRs for international flights.<sup>29</sup> However, the Resolution is silent regarding compensation for delays or cancellations. The amount of compensation is, therefore, left to the judge's or airline's discretion, which can lead to significant disparities. Indeed, there is no national consensus as to the amount that should be compensated. Thus, similar situations could lead to different damages depending on the judge or city in which the judgment is rendered.

For instance, in January 2018, the STJ 2<sup>a</sup> Turma rendered a decision obliging Gol to compensate two passengers for moral damages from a delay that resulted in problems affecting their work.<sup>30</sup> At first instance, Gol was required to pay R\$6000 per passenger (roughly 1500 euros). Gol appealed the decision, arguing that assistance was given and that the delay was caused by

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<sup>25</sup> ANAC Resolution No. 400/2016, art. 27 I, Dec. 13, 2016, D.O.U. de 14.12.2016, [https://www.anac.gov.br/assuntos/legislacao/legislacao-1/resolucoes/resolucoes-2016/resolucao-no-400-13-12-2016/%40%40display-file/arquivo\\_norma/RA2016-0400%2520-%2520Retificada.pdf&prev=search](https://www.anac.gov.br/assuntos/legislacao/legislacao-1/resolucoes/resolucoes-2016/resolucao-no-400-13-12-2016/%40%40display-file/arquivo_norma/RA2016-0400%2520-%2520Retificada.pdf&prev=search).

<sup>26</sup> *Id.* art. 27 II.

<sup>27</sup> *Id.* art. 27 III.

<sup>28</sup> *Id.* art. 20 (1).

<sup>29</sup> *Id.* art. 24. See Montreal Convention, *supra* note 5, art. 23 (defining Special Drawing Rights).

<sup>30</sup> *Correa v. VRG Linhas Aéreas S.A.*, S.T.J., Ap. Civ. R. Esp. No. 1.616.079, Relator: Herman Benjamin, 22.8.2017.



network restructuring by ANAC or Infraero and, therefore, it should not be held responsible. Curiously, the court held that network restructuring was an “internal circumstance,” even though it is clearly outside the airlines’ control.<sup>31</sup> A similar case was adjudicated in 2014 by the 5<sup>a</sup> Câmara Cível do Tribunal de Justiça do Maranhão, which reaffirmed the judgment of the 10<sup>a</sup> Vara Cível de São Luís, fining Gol R\$10,000 for an eight-hour delay. In this case, the passenger was unable to sit for a scheduled examination at the Universidade de Brasília due to the delay.

In 2018, LATAM was ordered to compensate a couple who missed a New Year’s Eve celebration with their family because of a 19-hour delay. They were granted R\$20,000 (roughly 4600 euros) by the 24 Chamber of the SP first instance tribunal.<sup>32</sup> Once again, the compensation seems unreasonable in light of the facts. This compensation is, however, much higher than that granted in another case, decided in Rio at the end of 2017, where a family of four received the same amount – R\$20,000 in total – after suffering a much longer delay of 61 hours.<sup>33</sup>

In 2016, Delta Air Lines was required to pay R\$15,000 in moral damages to a man who, because of a delay, missed a Valentine’s Day date with his girlfriend.<sup>34</sup> The man bought a ticket to arrive at 5:00 AM on February 14 to see his girlfriend, who was in New York and had booked a romantic lunch. However, the flight was delayed by eight hours, rendering the lunch date impossible. Delta argued that the delay was caused by verification and repair of a failure of the airplane. However, the tribunal in Rio did not recognize this circumstance as exonerating the airline from its liability. The man, in fact, arrived in New York at 12:56 PM, mean-

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<sup>31</sup> Guzzi da Luz v. LATAM, T.J.S.P., Ap. Civ. No. 1009640-14.2017.8.26.002, Relator: Jonize Sacchi De Oliveira, 14.12.2017 (“Não poderia a apelante eximir-se de sua responsabilidade civil, pois eventual reestruturação da malha aérea, noticiada nos autos, caracteriza-se como fortuito interno, inerente ao risco da atividade profissional, inapto, portanto, a romper o nexo causal ensejador do dever de indenizar os danos suportados pelos autores.”).

<sup>32</sup> *Id.*

<sup>33</sup> Alexandre Chalita Braz v. Aerolineas Argentinas SA, T.J.R.J., Ap. Civ. No. 0079396-62.2016.8.19.0001, Relator: Marisa Simões Mattos Passos, 13.12.2017.

<sup>34</sup> Ferreira v. Delta Air Lines Inc., T.J.R.J., Ap. Civ. No. 0247949-09.2015.8.19.0001, Relator: Antonio Carlos Dos Santos Bitencourt, 15.04.2016.

ing that he still could have had lunch with his girlfriend. In the decision, the appellate judge even referred to “human dignity” as a reason for such high damages, without explaining in which sense this passenger’s “dignity” had been violated.<sup>35</sup> This case demonstrates an abuse in compensation, especially when compared with a case where two sisters who missed their father’s funeral because of a delay received the same amount, R\$15,000 each.<sup>36</sup>

In 2014, a tribunal in Rio Grande do Sul ordered Emirates to compensate R\$15,000 in moral damages and R\$2,803.42 in material damages to an athlete who lost her opportunity to compete in the Aquathlon World Championships in New Zealand.<sup>37</sup> Due to a 6-hour delay in Porto Alegre, the athlete missed her connecting flight in Rio and was informed that all of the next flights to New Zealand were fully booked. Emirates only proposed to buy a ticket in business class which, as such, was not an alternative. The athlete then decided to fly back to Porto Alegre with a ticket which she had to buy on her own.

In 2016, the 3<sup>a</sup> câmara de Direito Público do TJ, Santa Catarina upheld a judgment against Gol for a four-and-one-half hour delay, which resulted in a grandmother missing her granddaughter’s first birthday.<sup>38</sup> The passenger, who also alleged that she was not even offered a meal during the delay, received R\$5,000, later reduced to R\$4,000.<sup>39</sup> Also in 2016, a passenger who lost part of her honeymoon due to the cancellation of her initial flight caused by meteorological conditions, was rebooked after a 28-hour delay on a flight to her final destination. Although she lost more than a full day of her seven-day honeymoon, she was only awarded R\$5,000 in moral damages and R\$671.28

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<sup>35</sup> Desembargador Antonio Carlos Dos Santos Bitencourt (“Referida indenização pretende compensar a dor do lesado e constitui um exemplo didático para a sociedade de que o Direito repugna a conduta violadora, porque é incumbência do Estado defender e resguardar a dignidade humana. Ao mesmo tempo, objetiva sancionar a lesante, inibindo-a em relação a novas condutas, e por isso, deve corresponder a um valor de desestímulo, que não pode ensejar enriquecimento sem causa, nem pode ser ínfimo, a ponto de não coibir a reincidência em conduta negligente.”).

<sup>36</sup> *Frazão de Oliveira v. Azul Lines Aéreas Brasileiras SA*, Ap. Civ. No. 1022153-03.2016.8.26.0114, Relator: Pedro Kodama, 17.07.2014.

<sup>37</sup> *X v. Gol SA*, T.J.R.S., Ap. Civ. No. 70060060670, Relator: Antônio Maria Rodrigues de Freitas Iserhard, 07.04.2015.

<sup>38</sup> *Demarque v. Gol Linhas Aéreas Inteligentes S/A*, T.J.S.C., Ap. Civ. No. 001661751.2012.8-24.0008, Relator: Ronei Danielli, 29.03.2016.

<sup>39</sup> *Id.*

in material damages, reaffirmed by the 1<sup>a</sup> Turma Recursal dos Juizados Especiais do Distrito Federal.<sup>40</sup>

Contrary to these “iconic” cases, there are others where the damages awarded seem ridiculous. For instance, in 2010, a family that suffered a 40-hour delay was granted only R\$6,000 by the tribunal in Rio.<sup>41</sup> They were only taken to a hotel 30 hours after being informed of the delay. A passenger who suffered a 20-hour delay on an international flight to Lisbon and who was offered neither hotel nor vouchers for food received R\$8,000.<sup>42</sup> In another case, in 2011, a passenger received only R\$4,000 for a 12-hour delay on her way to New York, and was offered neither hotel nor vouchers for food.<sup>43</sup>

Comparing these cases, there seems to be no logic in the damages awarded; missing a romantic lunch is valued at the same level as missing a funeral or an opportunity for a world championship, while missing a granddaughter’s first birthday does not even bring half the amount of the other two situations. However, looking objectively, the missing of a funeral, championship, a day of a honeymoon, and a first birthday are events that cannot be replaced, while a romantic lunch with a girlfriend on February 14 can.

Finally, there is an understanding that delays of less than four hours are not compensable;<sup>44</sup> airlines are only required to rebook the passengers on a later flight.<sup>45</sup> The judge in a 2019 case decided in Guar, reflecting the passive understanding of the tribu-

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<sup>40</sup> Matos v. VRG Airlines S/A, T.J.D.F., Ap. Civ. No. 0700077-95.2016.8.07.0014, Relator: Robson Barbosa de Azevedo, 28.07.2016.

<sup>41</sup> Ana Lcia de S v. Aerolineas Argentinas, T.J.R.J., Ap. Civ. No. 0283028-59.2009.8.19.0001, Relator: Alexandre Freitas Cmara, 31.10.2010.

<sup>42</sup> X v. X, T.J.R.S., Ap. Civ. No.70055293542, Relator: Ana Lucia Carvalho Pinto Vieira Rebut, 19.03.2015.

<sup>43</sup> Luiz Mauricio da Silva v. American Airlines, Inc., D.J.P.E., Ap. Civ. No. 0185692-21.2010.8.19.0001, Relator: Karina Albuquerque Arago de Amorim, 27.03.2015.

<sup>44</sup> ANAC Resolution 141/2010, art. 3, reaffirmed by ANAC Resolution 400/2016, *supra* note 25, art. 21(IV).

<sup>45</sup> Pedro Mello e Cross v. Gol Linhas Areas Inteligentes S/A, T.J.S.C., Ap. Civ. No. 0303994-53.2014.8.24.0090, Relator: Marcelo Pizolati, 23.08.2018; Daniel Duarte Abiorana v. Gol Linhas Areas Inteligentes S/A, T.J.D.F.T., Ap. Civ. No. 0706283-57.2018.8.07.0014, Relator: Paulo Cerqueira Campos, 02.06.2019. See Tadeu Rover, *Atraso de At 4 Horas em Voo  Tolervel e No Gera Dever de Indenizar*, CONSULTOR JURDICO, Feb. 19, 2019, <https://www.conjur.com.br/2019-fev-19/atraso-horas-voos-toleravel-nao-gera-indenizacao>.

nal, found that delays of up to four hours are tolerated and do not trigger a right to moral damages.<sup>46</sup> The Brazilian system is less generous than the European system in this regard, as under the EU system passengers can be compensated after delays of three hours or more.<sup>47</sup>

Finally, the fines laid down in Resolution 141/2010, R\$4,000 and R\$10,000 for noncompliance by airlines, have been drastically increased under Resolution 400/2016 to as much as R\$50,000, and the assistance to passengers under the new Resolution is more extensive than that granted under EU law, as it starts after only one hour.

### 3. *Canada: Air Passenger Protection Regulations (APPRs)*<sup>48</sup>

As of July 15, 2019, airlines were required to meet certain obligations under Canada's new Air Passenger Protection Regulations (APPRs), while the balance of these obligations became applicable on December 15, 2019. Before the enactment of the APPRs, Canada had experienced a 950 percent increase in air passenger complaints since 2012. "The rise in complaints began during the fall of 2016, when the CTA [Canadian Transportation Agency] began modest public information efforts to help make Canadians aware of their rights as air passengers and ability to seek recourse through the CTA for issues that cannot be resolved directly with an airline."<sup>49</sup>

The APPRs apply to all flights within, from, or to Canada, whether operated by a Canadian or foreign airline. They impose obligations on carriers in cases of tarmac delays, denial of boarding, and delayed or cancelled flights, and require that the carriers inform passengers of their rights in a timely, clear, and accessible way.

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<sup>46</sup> *Abiorana v. Gol Linhas Aéreas Inteligentes S/A*, *supra* note 45 ("O atraso de até quatro horas, em decorrência de reestruturação da malha aérea ou impossibilidade de decolagem do voo, configura atraso tolerável e mero aborrecimento, em razão da complexidade da vida moderna e das impreviões das relações cotidianas, não sendo apto para caracterizar danos morais.").

<sup>47</sup> See EU Regulation 261/2004, *supra* note 2, art. 7.

<sup>48</sup> Air Passenger Protection Regulations (Transportation Act), SOR/2019-150 (Can.).

<sup>49</sup> CANADIAN TRANSP. AGENCY, ANNUAL REPORT 2017–2018, at 23 (2018), [https://otc-cta.gc.ca/sites/default/files/annual\\_report\\_2017-2018\\_en.pdf](https://otc-cta.gc.ca/sites/default/files/annual_report_2017-2018_en.pdf).

Regarding tarmac delays, the APPRs create certain specific obligations. However, they do not set a minimum amount of time to define a “tarmac delay,” stipulating instead that: “If a flight is delayed on the tarmac after the doors of the aircraft are closed for take-off or after the flight has landed.”<sup>50</sup> If there is no possibility to disembark the passengers, airlines must allow access to lavatories,<sup>51</sup> provide proper cooling or heating of the aircraft,<sup>52</sup> food and drink “in reasonable quantities, taking into account the length of the delay, the time of day and the location of the airport,”<sup>53</sup> and the means to communicate with people outside the aircraft free of charge, if feasible.<sup>54</sup>

If the tarmac delay occurs at a Canadian airport, passengers have the right to disembark three hours after the aircraft doors have been closed for takeoff or three hours after landing “or at any earlier time if it is feasible.”<sup>55</sup> This obligation will not be imposed if it is likely that takeoff will occur fewer than three hours and 45 minutes after the doors are closed, or after landing, provided that the airline can maintain the standard of treatment discussed in the previous paragraph.<sup>56</sup> Airlines are not obliged to comply if disembarking would not be safe or for reasons relating “to air traffic or customs control.”<sup>57</sup>

Such provisions regarding tarmac delays are included in neither the EU Regulation nor the Brazilian bill. Another main difference from EU and Brazilian legislation is that the APPRs distinguish between small and large carriers regarding denial of boarding, delays, or cancellations. The idea behind this distinction is to avoid overburdening smaller airlines that operate less popular routes and fly to less populated parts of Canada. Accordingly, a “large carrier” is defined as one that “has transported a worldwide total of two million passengers or more during each of the two preceding calendar years,”<sup>58</sup> while a “small carrier” is one that has transported fewer than two million passengers in the previous two years. However, if a small carrier is carrying pas-

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<sup>50</sup> *Id.* sec. 8(1).

<sup>51</sup> *Id.* sec. 8(1)(a).

<sup>52</sup> *Id.* sec. 8(1)(b).

<sup>53</sup> *Id.* sec. 8(1)(d).

<sup>54</sup> *Id.* sec. 8(1)(c).

<sup>55</sup> *Id.* sec. 9.

<sup>56</sup> *Id.* sec. 9(2).

<sup>57</sup> *Id.* sec. 9(4).

<sup>58</sup> *Id.* sec. 1(2).

sengers “on behalf of a large carrier under a commercial agreement,” through codesharing for instance, then it will have the same obligations as a large carrier.<sup>59</sup>

More importantly, the APPR scheme seeks to avoid falling into the same traps as EU Regulation 261/2004 and the concept of “extraordinary circumstances.”<sup>60</sup> It therefore defines in detail which circumstances will result in which obligations and rights. It also distinguishes among three types of situations: those outside the carrier’s control; those within the carrier’s control but required for safety purposes; and those within the carrier’s control. One APPR section provides a non-exhaustive list of situations deemed to be outside the carrier’s control, such as war or political instability, weather conditions or natural disasters “that make the safe operation of the aircraft impossible,” instructions from air traffic control, airport operation issues, a bird strike or other collision with wildlife, labor disruptions “within the carrier or within an essential service provider,” and a manufacturing defect in an aircraft that reduces passenger safety, as identified by the manufacturer or a competent authority.<sup>61</sup> Airlines are required to provide passengers with certain information and, in cases of delay, denial of boarding, or cancellation of three hours or more, passengers are entitled to alternate travel arrangements.<sup>62</sup> Interestingly, some of these situations also fall within the exception under EU law but are not recognized by Brazilian courts. Indeed, in Brazil, carriers are responsible even if there are airport issues or network restructuring,<sup>63</sup> and even in cases of bad weather.<sup>64</sup> As in Europe, the inclusion of bad weather and mechanical problems could lead to abuses, with airlines classifying problems under these categories to avoid compensation. The CTA will have to closely monitor the situation to make sure airlines play by the rules and avoid some of the situations occurring in Europe.

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<sup>59</sup> *Id.* sec. 1(4).

<sup>60</sup> For an extensive discussion of EU Regulation 261/2004 and the concept of “extraordinary circumstances,” see Vincent Correia, *Air Passengers’ Rights, “Extraordinary Circumstances,” and General Principles of EU Law: Some Comments After the McDonagh Case*, 13 ISSUES AVIATION L. & POL’Y 245 (2014).

<sup>61</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 10.

<sup>62</sup> *Id.* sec. 10(3).

<sup>63</sup> *Correa v. VRG Linhas Aéreas S.A.*, *supra* note 30.

<sup>64</sup> *Guzzi da Luz v. LATAM*, *supra* note 31.

The second major type of situation – within a carrier’s control but required for safety purposes – is dealt with in another section, which defines “required for safety purposes” as anything “required by law in order to reduce risk to passenger safety.”<sup>65</sup> The definition specifically refers to “safety decisions made within the authority of the pilot or any decision made in accordance with the safety management system.”<sup>66</sup> The definition explicitly excludes “scheduled maintenance in compliance with legal requirements.”<sup>67</sup> In this category, the airline has the same communication obligations as in cases of flight disruptions that are outside its control, and nearly the same obligation to “provide alternate travel arrangements,” except that this provision also includes the possibility of a refund.<sup>68</sup> Furthermore, the carrier may have an obligation of care, such as the provision of food, drinks, means of communication, accommodations, and transport,<sup>69</sup> if the passengers were informed less than 12 hours before the original departure time in cases of delay or cancellation. This obligation also applies to denial of boarding, but without a minimum time period before the obligation kicks in. These obligations differ from those in the EU. Indeed, mechanical or technical issues preventing the safe operation of the aircraft, which are discovered other than in the course of scheduled maintenance checks, will not result in an obligation to compensate passengers whose flights are delayed or cancelled. This means that a case like *van der Lans v. KLM*<sup>70</sup> would have a totally different outcome in Canada.<sup>71</sup>

Another section regulates situations within the carrier’s control. Airlines have the same obligations as under the previous section but may also be required to pay compensation to passengers suffering denial of boarding, delays, or cancellation if they were not informed at least 14 days prior to the original departure time.<sup>72</sup> Passengers are entitled to compensation based on the length of delay at arrival at their final destination. For delay or cancellation between three and six hours, a large carrier is liable

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<sup>65</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 11. *See id.* sec. 1(1).

<sup>66</sup> *Id.* sec. 11.

<sup>67</sup> *Id.*

<sup>68</sup> *Id.* sec. 11(3)(c), (4)(c) & (5)(c).

<sup>69</sup> As explained in *id.* sec. 14.

<sup>70</sup> Case C-257/14, *van der Lans v. KLM NV*, 2015 EU:C:2015:618.

<sup>71</sup> But not in Brazil, where airlines have extremely restricted defenses. *See Ferreira v. Delta Air Lines Inc.*, *supra* note 34.

<sup>72</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 12(2)(d) & (3)(d).

to pay \$400 while a small carrier is liable for \$125 in compensation.<sup>73</sup> For delay or cancellation between six and nine hours, a large carrier will have to pay \$700 in compensation while a smaller carrier must pay only \$250.<sup>74</sup> Finally, for delays at arrival destination of more than nine hours, passengers on a large carrier will receive \$1000 while passengers on a smaller carrier get \$500.<sup>75</sup> However, if the passenger on the delayed or cancelled flight accepts a refund,<sup>76</sup> large airlines are only liable for \$400 in compensation and small carriers for \$125.<sup>77</sup> Passengers have one year to make a compensation claim with the airline that operated the disrupted flight,<sup>78</sup> and the airline has 30 days to respond by issuing a payment or indicating why it believes compensation is not owed.<sup>79</sup> Finally, the Canada Transportation Act prohibits receipt of compensation under the APPRs if the claimant has already been compensated for the same event under a different regime.<sup>80</sup> However, the APPRs provide that carriers may not refuse compensation on the grounds that the passenger is also eligible for compensation for the same event under a different regime. Compared to the EU Regulation, the amounts are much higher, but the delay is much longer.<sup>81</sup> Interestingly, the APPRs also use the “delay upon arrival” approach, which seems more appropriate than the “delay at departure” approach used in the Brazilian bill.

### *Canadian APPRs: Cancellation/Delay Compensation*

<b>Length of Delay</b> (cancellation and delay)	<b>Compensation Amount (CAD)</b> Large Airlines	<b>Compensation Amount (CAD)</b> Small Airlines
3-6 hours	\$400	\$125
6-9 hours	\$700	\$250
9+ hours	\$1000	\$500

<sup>73</sup> *Id.* sec. 19(1)(a)(i) & (b)(i).

<sup>74</sup> *Id.* sec. 19(1)(a)(ii) & (b)(ii).

<sup>75</sup> *Id.* sec. 19(1)(a)(iii) & (b)(iii).

<sup>76</sup> *See id.* sec. 12(2)(c) or (3)(c).

<sup>77</sup> *Id.* sec. 19(2).

<sup>78</sup> *Id.* sec. 19(3).

<sup>79</sup> *Id.* sec. 19(4).

<sup>80</sup> Canada Transportation Act, 1996 S.C., ch. 10, sec. 86.11(3).

<sup>81</sup> *Compare* Air Passenger Protection Regulations, *supra* note 48, sec. 19(1), *with* EU Regulation 261/2004, *supra* note 2, sec. 7(1).



Previously, any airline could deny boarding to a passenger in cases of overbooking or for safety reasons. However, the APPRs now set out a procedure that airlines must follow in cases of overbooking. A carrier cannot deny boarding to any passenger unless it has first asked all passengers if any of them are willing to give up their seats.<sup>82</sup> If the airline offers a benefit in order to encourage volunteers, such benefit must be put in writing before the departure of the flight. To avoid cases as in the United States,<sup>83</sup> the APPRs make it clear that airlines cannot deny boarding to anyone who has already boarded the plane.<sup>84</sup> Additionally, airlines are obliged to provide passengers who are denied boarding with information, alternate travel arrangements, care or treatment, and monetary compensation, depending on the circumstances.<sup>85</sup> If the arrival time at the destination is delayed less than six hours, the passengers have a right to \$900, while if the arrival time is delayed by between six and nine hours, the compensation rises to \$1800. Finally, if the arrival time is delayed by more than nine hours, the compensation is \$2400. Where the APPRs anticipate an almost immediate payment of compensation in cases of denied boarding, passengers must file a request for compensation in cases of delayed and cancelled flights.

### *Canadian APPRs: Denied Boarding Compensation*

Length of Delay (denial of boarding)	Compensation Amount (CAD)
0-6 hours	\$900
6-9 hours	\$1800
9+ hours	\$2400

Similar to the EU situation, any kind of flight disruption obliges airlines to provide specified information to the affected passengers, such as the reason for the disruption, the compensation that passengers may be entitled to receive, the standard of treatment for passengers, and the recourse available against the

<sup>82</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 15(1).

<sup>83</sup> See, e.g., Daniel Victor & Matt Stevens, *Man Is Dragged from a Full Jet, Stirring a Furor*, N.Y. TIMES, Apr. 10, 2017, at A1.

<sup>84</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 15(2).

<sup>85</sup> *Id.* sec. 15(3).

airline.<sup>86</sup> This last obligation is not found in the EU legislation, but it appears in the ANAC Resolutions in Brazil. Interestingly, the obligation to update passengers every 30 minutes in cases of delay,<sup>87</sup> or as soon as the airline obtains new information,<sup>88</sup> is also found in Resolution 400/2016 in Brazil. Carriers are required to inform passengers via the “communication method that they have indicated that they prefer,”<sup>89</sup> and must display notices stating passengers’ rights in cases of denial of boarding or lost or damaged luggage.<sup>90</sup> This requirement can be found in both the EU Regulation and Brazilian Resolution.

While the “standards of treatment” are similar among these three jurisdictions, Brazilian law offers greater protection, as the obligations of the carrier commence after one hour. Interestingly, only in Brazilian law is there a minimum waiting time in the airport before passengers must be taken to a hotel or are taken back home at the expense of the airline. Under both EU and Canadian law, this obligation exists, but there is no timeframe regarding its application. In Canada, this obligation will not be implemented if it will cause further delay.<sup>91</sup>

There is another interesting aspect to Canada’s APPRs: the obligation to provide alternate travel arrangements partially depends on whether the flight disruption is within, or entirely outside, the carrier’s control. Indeed, if the disruption is within the airline’s control and the airline is a large carrier, then it must provide a confirmed reservation on the next available flight to each affected passenger, whether the flight is operated by it or by a carrier with which it has a commercial agreement.<sup>92</sup> If the carrier cannot provide such confirmed reservation, it is requested to provide a confirmed reservation for a flight that is operated by any carrier and which “departs within 48 hours of the departure time that is indicated on [the] original ticket.”<sup>93</sup> The final alternative is that the carrier transports the passenger to another airport “within a reasonable distance of the airport at which the passen-

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<sup>86</sup> Compare EU Regulation 261/2004, *supra* note 2, sec. 14, with Air Passenger Protection Regulations, *supra* note 48, sec. 13(1)(a)–(d).

<sup>87</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 13(2).

<sup>88</sup> *Id.* sec. 13(3).

<sup>89</sup> *Id.* sec. 13(5).

<sup>90</sup> *Id.* secs. 5 & 7.

<sup>91</sup> *Id.* secs. 14(3) & 16(3) (for denial of boarding).

<sup>92</sup> *Id.* sec. 17(1)(a)(i).

<sup>93</sup> *Id.* sec. 17(1)(a)(ii).

ger is located” and provides a confirmed reservation for a flight operated by any carrier.<sup>94</sup> In the case of a small carrier, a confirmed reservation on the next available flight, whether the flight is operated by it or by a carrier with which it has a commercial agreement, must be provided.<sup>95</sup> If the passenger does not agree with the alternate travel arrangement and the passenger is in transit but does not wish to continue the journey due to the delay, the airline must refund the ticket, provide a confirmed reservation for a flight to the original departure point, and accommodate the passenger’s needs.<sup>96</sup> In any other circumstances, the airline is required to refund the unused portion of the ticket.<sup>97</sup> The alternate travel arrangements must, as much as possible, be comparable to those of the original ticket.<sup>98</sup> If the alternative flight does not include additional services purchased by the passenger for the original flight, the airline must reimburse the amount paid for these services.<sup>99</sup> Similarly, if the passenger paid twice for these services, the excess must be reimbursed.<sup>100</sup> If the alternate travel arrangements provide for a lower class of service, the airline must refund the difference in fare; however, if the alternative arrangements are of a higher class of service, the airline cannot request supplementary payment.<sup>101</sup> While the EU Regulation and the Brazilian Resolution also require reimbursement, the EU Regulation is silent regarding the obligation to reimburse additional services.<sup>102</sup> Notably, under the EU Regulation, airlines are not required to pay the actual difference in cases of downgrading, but rather, the difference is calculated according to distance.<sup>103</sup>

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<sup>94</sup> *Id.* sec. 17(1)(a)(iii).

<sup>95</sup> *Id.* sec. 17(1)(b).

<sup>96</sup> *Id.* sec. 17(2)(a).

<sup>97</sup> *Id.* sec. 17(2)(b).

<sup>98</sup> *Id.* sec. 17(3).

<sup>99</sup> *Id.* sec. 17(4)(a).

<sup>100</sup> *Id.* sec. 17(4)(b).

<sup>101</sup> *Id.* sec. 17(5)–(6).

<sup>102</sup> *Id.* art. 10. See EU Regulation 261/2004, *supra* note 2, art. 8.

<sup>103</sup>

- (a) 30 % of the price of the ticket for all flights of 1500 kilometres or less, or
- (b) 50 % of the price of the ticket for all intra-Community flights of more than 1500 kilometres, except flights between the European territory of the Member States and the French overseas departments, and for all other flights between 1500 and 3500 kilometres, or
- (c) 75 % of the price of the ticket for all flights not falling under (a) or (b), including flights between the

The obligation to provide alternate travel arrangements is slightly different where the flight disruption is entirely outside the carrier's control. A large carrier must provide a confirmed reservation on the next available flight operated by it or a carrier with which it has a commercial agreement that "departs within 48 hours of the end of the event that caused the delay, cancellation or denial of boarding."<sup>104</sup> If this is not possible, alternate travel arrangements on any carrier must be provided.<sup>105</sup> A small carrier must provide a confirmed reservation on the next available flight operated by it or by a carrier with which it has a commercial agreement. The main difference between this type of flight disruption and the previous one is that no mention is made regarding the refund of any downgrading or additional services.

Penalties range up to \$25,000 per violation per carrier. This amount is much higher than under the Brazilian approach and might lead to greater implementation of the rules than in Europe, for instance. Indeed, the EU Regulation only stipulates that the penalties must be "effective, proportionate and dissuasive"<sup>106</sup> and are left to Member States to decide. Given the growing number of claim management agencies and the number of cases that are dismissed, it seems that the EU penalties are not that effective.<sup>107</sup>

#### 4. *Senate Bill 2341*

In the United States, air passenger rights are derived from recently adopted regulations and legislation, including three Department of Transportation (DOT) final rules<sup>108</sup> and the FAA

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European territory of the Member States and the  
French overseas departments.

EU Regulation 261/2004, *supra* note 2, art. 10.

<sup>104</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 18(1)(a)(i).

<sup>105</sup> *Id.* sec. 18(1)(a)(ii).

<sup>106</sup> EU Regulation 261/2004, *supra* note 2, art. 16(3).

<sup>107</sup> For a fascinating discussion of claim agencies and their impact, see Charlotte Thijssen & Lisa Williams, *U.K. Court of Appeal Confirms Airlines May Compensate Passengers Directly – The Beginning of the End of Ambulance-Chasing over Passenger Rights Claims in the EU?*, 18 ISSUES AVIATION L. & POL'Y 275 (2019).

<sup>108</sup> Enhancing Airline Passenger Protections, 74 Fed. Reg. 68,983 (Dec. 30, 2009) (codified at 14 C.F.R. pts. 234, 253, 259 & 399); Enhancing Airline Passenger Protections [II], 76 Fed. Reg. 23,110 (Apr. 25, 2011) (codified at 14 C.F.R. pts. 244, 250, 253, 259 & 399); Enhancing Airline Passenger Protections III, 81 Fed. Reg. 76,800 (Nov. 3, 2016) (codified at 14 C.F.R. pts. 234, 244, 250, 255, 256, 257, 259 & 399).

Extension, Safety, and Security Act of 2016.<sup>109</sup> July 2019 marked the introduction of the Airline Passengers' Bill of Rights<sup>110</sup> in the U.S. Senate, which would make sweeping changes if it were to be enacted. Unfortunately, current U.S. regulations do not protect passenger rights the same way as Europe, especially in cases of flight delays or cancellations. However, the laws in place are beneficial to passengers facing denial of boarding, luggage problems, or tarmac delays. When passengers are entitled to compensation, the amount is often much higher than under EU law.

In 2009, after repeated media attention regarding long tarmac delays, DOT promulgated the first of three "Enhancing Airline Passenger Protections" final rules. Much like the new Canadian rule, it stipulates that airlines must disembark passengers after more than three hours on the tarmac for domestic flights and four hours for international flights. This rule only applies to tarmac delays occurring at U.S. airports and does not apply where the safety or security of the passengers is in jeopardy or if air traffic control instructs the carrier not to return to the gate.<sup>111</sup> This rule only applies to a "covered carrier," meaning airlines operating flights to, from, or within the United States, with a minimum capacity of 30 passengers.<sup>112</sup> Interestingly, if passengers decide to exit the plane during a tarmac delay, the airline is not required to allow them back in, nor is it obliged to disembark the passengers' luggage before the plane takes off to the original destination.<sup>113</sup> Airlines are required by DOT to provide access to water, bathrooms, and necessary medical care while passengers are on the tarmac for more than two hours, unless serving food is not deemed safe by the pilot. Airlines are not obliged to serve a full meal, even during lengthy delays, but they must have enough food and water to serve all passengers.<sup>114</sup> This rule decreased the number of tarmac delays, but because the exceptions for safety and security are relatively vague, some delays still occurred. Jet-Blue and American Eagle were heavily fined under this rule for

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<sup>109</sup> Pub. L. No. 114-190, §§ 2305, 2308, 2309, 130 Stat. 615, 640, 648-49.

<sup>110</sup> S. 2341, 116th Cong. (2019).

<sup>111</sup> U.S. DEP'T OF TRANSP., *Tarmac Delays*, <https://www.transportation.gov/individuals/aviation-consumer-protection/tarmac-delays> (last visited Dec. 27, 2019).

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Id.* See *infra* text accompanying notes 143-45.

keeping passengers on the tarmac longer than three hours without informing them of their rights.<sup>115</sup>

DOT permits airlines to oversell tickets; however, passengers who are involuntarily denied boarding have a right to compensation.<sup>116</sup> To be eligible for compensation, the passenger must have a confirmed reservation, check-in for the flight, and arrive at the gate on time, and the airline cannot get them to their destination within an hour of their flight's original arrival time.<sup>117</sup> The airline must first seek passengers who are willing to give up their seats for compensation.<sup>118</sup> The compensation might consist of vouchers, money, and/or reduced-rate tickets for another flight.<sup>119</sup> If there are not enough volunteers, airlines can select passengers and book them on an alternative flight.<sup>120</sup> This obligation is similar in Europe, Brazil, and Canada.<sup>121</sup> Airlines must give the unlucky passengers a written statement outlining the criteria and the passengers' rights.<sup>122</sup> Finally, DOT may initiate enforcement actions against airlines which improperly deny passenger boarding.<sup>123</sup>

The amount of compensation to which passengers are entitled in cases of denied boarding depends on the arrival time at the destination and the price of the ticket. A refund equivalent to double the price of a one-way fare, up to \$675, applies if the passenger arrives at the final destination within two hours, rising up to four times the price of a one-way fare, up to \$1,350, if it takes longer.<sup>124</sup> However, there are many situations where the passen-

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<sup>115</sup> Mary Forgione, *American Eagle Airlines to Pay \$900,000 in First Tarmac Delay Fine*, LATIMES.COM (Nov. 14, 2011, 12:00 AM), <https://www.latimes.com/travel/la-xpm-2011-nov-14-la-trb-tarmac-rule-fine-20111114-story.html>; Chris Isidore, *JetBlue Fined \$90K for Violating Passenger Rights*, CNN.COM (Aug. 20, 2012, 6:57 PM), <https://money.cnn.com/2012/08/20/news/companies/jetblue-passenger-rights/index.html>.

<sup>116</sup> 14 C.F.R. § 250.5.

<sup>117</sup> 14 C.F.R. § 250.6.

<sup>118</sup> 14 C.F.R. § 250.2b(a).

<sup>119</sup> *Id.*

<sup>120</sup> 14 C.F.R. § 250.3.

<sup>121</sup> See EU Regulation 261/2004, *supra* note 2, art. 4; ANAC Resolution 400/2016, *supra* note 25, art. 23; Air Passenger Protection Regulations, *supra* note 48, sec. 13.

<sup>122</sup> 14 C.F.R. § 250.9.

<sup>123</sup> Under 14 C.F.R. part 250 and 49 U.S.C. § 41712.

<sup>124</sup> U.S. DEP'T OF TRANSP., *Bumping & Oversales*, <https://www.transportation.gov/individuals/aviation-consumer-protection/bumping-oversales> (last visited Dec. 27, 2019).

ger is not entitled to compensation, such as in cases of aircraft change from a larger plane to a smaller plane due to safety reasons, or if safety-related weight and balance restrictions are necessary on planes seating up to 60 passengers.<sup>125</sup> Charter flights and small aircraft up to 30 passengers are not covered by the obligation to compensate. If the denial of boarding occurs on an international flight to the United States, passengers are not covered under U.S. compensation rules. Finally, if the passenger is downgraded, s/he is entitled to a refund only for the difference in price.<sup>126</sup> Under the proposed Senate Bill, the minimum compensation would be \$1,350 for passengers who have been involuntarily denied boarding.<sup>127</sup> It also stipulates that it, and any other new laws, would not preempt or supplant any actions for civil damages.<sup>128</sup>

One of the main differences between EU and U.S. law is that U.S. law does not provide for the payment of compensation in the case of delayed flights, no matter the reason. Indeed, DOT notes that “there are no federal laws requiring airlines to provide passengers with money or other compensation when their flights are delayed.”<sup>129</sup> For “significant delays,” passengers “may be entitled to a refund, including a refund for all optional fees associated with the purchase of your ticket.”<sup>130</sup> However, the term “significant delay” has never been defined. For domestic flights, airlines are not required to compensate passengers for the distress created by the delay or cancellation. For international flights, the Montreal Convention applies.<sup>131</sup> In the case of cancellations, airlines are expected to rebook passengers, at no charge, on the next available flight. If a passenger cancels his or her trip because of a cancelled flight, DOT notes that the passenger is “entitled to a refund for the unused transportation – even for non-refundable tickets.”<sup>132</sup> The argument behind this lack of compensation is

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<sup>125</sup> 14 C.F.R. § 250.6(b).

<sup>126</sup> U.S. DEP’T OF TRANSP., *Bumping & Oversales*, *supra* note 124.

<sup>127</sup> S. 2341, § 102.

<sup>128</sup> *Id.* § 211.

<sup>129</sup> U.S. DEP’T OF TRANSP., *Flight Delays & Cancellations*, <https://www.transportation.gov/individuals/aviation-consumer-protection/flight-delays-cancellations> (last visited Dec. 27, 2019).

<sup>130</sup> *Id.*

<sup>131</sup> Montreal Convention, *supra* note 5, arts. 19, 22(1).

<sup>132</sup> *Id.*

that “airlines don’t guarantee their schedules.”<sup>133</sup> Some of the problems that DOT considers beyond the airlines’ control are “bad weather, air traffic delays, and mechanical issues.”<sup>134</sup> Therefore, it recommends that passengers flying for important reasons book early flights in case of delay or cancellation. Compared with Brazilian case law, under which courts grant compensation to passengers planning to arrive on the day of an important event, in the United States the outcome is much harsher.<sup>135</sup> Nevertheless, DOT can initiate enforcement actions against airlines for unrealistic scheduling of flights which might result in a “chronically delayed flight”<sup>136</sup> to be deemed unfair and deceptive and in violation of 49 U.S.C. § 41712.

Senate Bill 2341 would change this approach and stipulate the rights of the passengers. For delays longer than one hour and less than four hours that are within the control of the airline, the measure requires the airline to refund the amount of the ticket automatically and accommodate the passengers on another flight or any means of transportation that would arrive no more than four hours after the original scheduled arrival time.<sup>137</sup> If the delay is greater than four hours, the passenger has the additional right to \$1,350 cash compensation and an “amount equal to the cost of a meal.”<sup>138</sup> If the departure is delayed until the next day, the airline is liable for the above, plus an “amount equal to the cost of hotel lodging.”<sup>139</sup> If enacted, this measure would likely be one of the most extensive compensation regimes in the world. In cases of delay or cancellation within their control, airlines would face hefty compensation claims. This approach might be even more protective than that found in Brazil.

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<sup>133</sup> U.S. DEP’T OF TRANSP., *Fly Rights: A Consumer Guide to Air Travel*, <https://www.transportation.gov/airconsumer/fly-rights> (last visited Dec. 27, 2019).

<sup>134</sup> *Id.*

<sup>135</sup> *See, e.g., Guzzi da Luz v. LATAM*, *supra* note 31 (couple had suffered a 19-hour delay and was granted R\$20,000 (roughly 4600 euros) by the 24th Chamber of the São Paulo first instance tribunal). *See also Ferreira v. Delta Air Lines Inc.*, *supra* note 34 (passenger received R\$15,000 for missing a Valentine’s Day lunch).

<sup>136</sup> This refers to any domestic flight operated at least 10 times a month that arrives at least 30 minutes late more than 50 percent of the time.

<sup>137</sup> S. 2341, § 103(1).

<sup>138</sup> *Id.* § 103(2).

<sup>139</sup> *Id.* § 103(3).



To avoid the problems plaguing the EU Regulation,<sup>140</sup> the Senate Bill contains a specific section entitled “unfair and deceptive attribution of delays and cancellations to force majeure events.”<sup>141</sup> This section specifies that it is unfair or deceptive to attribute a delay or cancellation to *force majeure* unless the event is caused by a situation outside the control of the airline. A non-exhaustive list is provided and includes weather, Act of God, war, or other hostilities. This list is much more restricted than that found in the APPRs, for instance, or under the EU Regulation. In Brazil’s Projeto de Lei, a similar restrictive list is found which includes *force majeure*, Act of God, or normal exercise of policy power.<sup>142</sup> Even though these defenses exist, however, they are rarely successful in Brazilian courts. Therefore, consumers in Brazil are almost certain to be compensated.

The rule applicable to tarmac delays for flights departing from a U.S. airport states that airlines must “begin to move the airplane to a location where passengers can safely get off before three hours for domestic flights and four hours for international flights.”<sup>143</sup> A similar requirement applies for flights arriving at a U.S. airport. There are exceptions to these time limits for reasons of safety, security, or air traffic control. Airlines are required to provide passengers with a snack and drinking water after two hours of delay, and must also provide passengers with working toilets, comfortable cabin temperatures, and adequate medical attention if necessary. These obligations are similar to the ones found in the Canadian APPRs.<sup>144</sup> Carriers can be substantially fined for failure to comply.<sup>145</sup>

Interestingly, and contrary to the new trend, Senate Bill 2341 would require the enactment of a regulation “prohibiting an air carrier from imposing fees . . . that are unreasonable or disproportional to the costs incurred by the air carrier.”<sup>146</sup> These fees include “any fee for a change or cancellation of a reservation for a flight in air transportation; any fee relating to checked baggage or

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<sup>140</sup> See *supra* note 60.

<sup>141</sup> S. 2341, § 104.

<sup>142</sup> Código Brasileiro de Aeronáutica alterado, 07.12.2009, art. 230(1)(II).

<sup>143</sup> 14 C.F.R. § 259.4; U.S. DEP’T OF TRANSP., *Tarmac Delays*, <https://www.transportation.gov/individuals/aviation-consumer-protection/tarmac-delays> (last visited Dec. 27, 2019).

<sup>144</sup> Air Passenger Protection Regulations, *supra* note 48, sec. 8.

<sup>145</sup> Pursuant to 49 U.S.C. §§ 42301, 41712 & 46301.

<sup>146</sup> S. 2341, § 201(a)(1).

carry-on baggage to be transported on a flight; any fee relating to seat selection or reservations on a flight.”<sup>147</sup> This prohibition, especially the last one, goes against the current trend where airlines attempt to force passengers to pay to select their seats. The measure offers an even greater protection regarding checked bags: if the baggage arrives damaged, the airline is obliged to refund the amount of the ancillary fee charged automatically.<sup>148</sup>

The measure requires training on passengers’ rights every 180 days for employees and representatives who directly interact with passengers.<sup>149</sup> It also contains various sections concerning the disclosure of information, such as transparency in pricing.<sup>150</sup> Passengers must be clearly informed of their rights as is required in the other jurisdictions. Other areas covered by the Airline Passengers’ Bill of Rights include rules about informing passengers of delays and cancellations promptly and of their rights thereunder. The Senate Bill also would remove the cap on the civil penalty for violations of passenger protection laws.<sup>151</sup>

As of this writing, Senate Bill 2341 is in committee.

## 5. Conclusion

Brazil likely has the most protective laws regarding airline passengers, with minimal defenses available to carriers. Except for denial of boarding, no provisions in Brazilian law enumerate the amount of compensation for delays or cancellations. It is therefore left to the courts to decide, leading to great disparities in the amounts awarded, even within the same local jurisdictions. As clearly demonstrated by the cases cited *supra*, there is no logic in compensating someone who suffered a 61-hour delay less than someone who suffered an 8-hour delay. This approach is also unfair to similarly situated passengers, as they are most probably compensated differently depending on the judge in charge of the case. These cases also highlight the difficulty airlines face in relying on any defenses. In other words, airlines know that they will have to compensate, but they do not know the amount.

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<sup>147</sup> *Id.* § 201(b)(1)–(3).

<sup>148</sup> *Id.* § 206(a)(1).

<sup>149</sup> *Id.* § 109.

<sup>150</sup> *Id.* § 202–207.

<sup>151</sup> *Id.* tit. III.

On paper, the Canadian regulations seem the most appropriate by reaching the “fairest” balance between airlines’ needs and passengers’ protection. The regulations might be a bit difficult to apply in practice at first, due to the divisions between situations within or outside the control of the airlines. The new regulations put Canadian law more in line with the regulatory framework in the EU and, to a certain extent, the United States.

The Canadian regulations seem the most interesting model for Brazil to follow, as they give some defenses to airlines, yet still protect passengers. Significantly, this trend toward fixed compensation amounts gives a glimpse of hope that Brazil could follow this path and, therefore, increase legal certainty for both passengers and airlines.



# A Comparative Law, Economics, and Technology Perspective on Aviation Energy and Carbon Policy

by Matthew G. Andersson\*

The challenge of carbon management and global climate economics is a special case in the aviation sector, for several reasons unique to the particular incumbent technologies that define aviation flight operations. In addition to the technical constraints

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that reinforce consolidation and longevity of existing aircraft and engine designs, the pressure for continual administrative interaction, financial subsidy of one sort or another, and regulatory relief among the private or commercial sectors and the public or government segment, also poses a unique challenge in how aviation companies may or may not remain financially and operationally robust, or even viable.<sup>1</sup>

The current political and public policy responses to the propagation of a public health narrative is having two interesting effects on the aviation sector generally, and in an even more fascinating way, several aspects of the aviation industry's energy and pollution profile. First, at an operational level, the sudden shift in large-scale and mass public transportation – but especially air transportation – once again is underscoring the extreme sensitivity the airline market exhibits from macroeconomic factors that impinge upon it. Factors of the larger national and global economy include, especially, those that destabilize the core operational logic of a mass air transportation network; that is, direct human interconnectivity, and a separate but related logistic function involving the full spectrum of supply chain procurement in categories ranging from industrial goods to consumer products. The airline industry may be the most network-intensive of businesses across all industrial categories, second only to electronic network versions such as telecommunications and related applications in banking, and the full panoply of other data-transfer activities.

Second, stemming from aviation's unique sensitivity to macroeconomic events, the market structure of aviation is once again displaying its problematic nature.<sup>2</sup> This goes back to the

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<sup>1</sup> The recent state loan made to Alitalia is an example. See Matt Andersson, Letter, *All Airlines Receive State Aid in Some Form*, FIN. TIMES, Mar. 3, 2020, at 8 (commenting on Javier Espinoza & Miles Johnson, *EU Opens Probe into Italian Government's €400M Loan to Alitalia*, FIN. TIMES, Feb. 28, 2020).

<sup>2</sup> This is not to suggest that aviation, per se, enjoys a special relationship with macroeconomic factors, but rather that the inherent nature of the business is exaggerated greatly by very small changes in external influences, in ways few other vital (as opposed to discretionary) businesses are. The inherent nature of the industry is unusually fixed-cost intensive, combined with unusual operational complexity that together create extreme variations in adaptation: either the sector is functional, or non-functional. No business executive in the airline sector says, "Well, things are slow but we'll be OK." It's either humming along in the full or near-full realization of its particular network scope, or it's within some spectrum of a failing

perennial question as to whether or not aviation is a competitive business, a public utility, or some version of a hybrid enterprise. Even within the context of traditional competitive economics, the air transport sector functions in a highly volatile manner, ranging from robust and profitable at one extreme, to bankrupt at the other. This explains, in part, why in the last decade especially, merger and acquisition activity has been robust, and seldom challenged under antitrust law.<sup>3</sup> Now, as of April 2020, the industry

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business. See Matt Andersson, Op-Ed., *It's Time to Re-Regulate Airlines*, DALLAS MORNING NEWS, Sept. 8, 2019, <https://www.dallasnews.com/opinion/commentary/2019/09/08/it-s-time-to-re-regulate-airlines/> (“In the airline industry, it’s just one thing after another. If it isn’t an act of God delaying flights, like weather, any number of other complicated variables can disrupt the smooth flow of operations. A maintenance problem, an air traffic control computer glitch, a crew scheduling snafu, a grounded airplane (like the 737MAX), or a simple but disruptive problem like a broken passenger jet bridge, or one unruly passenger who has to be escorted off the plane by law enforcement, or a medical emergency that requires a diversion or special handling after landing. One problem can cascade across an airline’s network, delaying flights and stranding passengers. And few industries are so perfectly correlated to the macro economy as airlines. Recession, trade disputes, fuel costs, monetary policy and wars all can do immediate and long-term damage to an airline’s revenue, customer satisfaction rankings and stock price. The airline industry may be among the most complex operational ballets to choreograph, and it never stops, never takes a break, and just barely slows down. And the stakes are unforgiving: There is an unrelenting obligation for absolute safety. The economic stakes are also large, both in national economic impact including employment and careers, and in investor and supplier risk in airline equity, debt, equipment leasing and a hundred other vital manufacturing and service businesses that make it all come together.”).

<sup>3</sup> Like many acts of legislation, antitrust is “negative” policy: it seeks to circumscribe and financially penalize rather than incent and reward. Since policy is often, if not nearly always, devoid of both specific, tailored economic theory and facts, combined with economic history, its ability to represent incentives to more productive behavior is limited or counterproductive. Carbon tax is another example. See DOMINICK ARMENTANO, *ANTITRUST AND MONOPOLY: ANATOMY OF A POLICY FAILURE* (1981); DOMINICK ARMENTANO, *THE MYTHS OF ANTITRUST: ECONOMIC THEORY AND LEGAL CASES* (1982); ROBERT BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978). An earlier and arguably more balanced treatment includes JOEL B. DIRLAM & ALFRED E. KAHN, *FAIR COMPETITION: THE LAW AND ECONOMICS OF ANTITRUST POLICY* (1954). Kahn was one of the primary advocates of airline deregulation and the 1978 Act, which in some regards may be seen through his philosophy, rather than a strict “deregulation,” as instead an effective antitrust intervention or “trust busting” that viewed regulated airlines and their government support as a kind of collusion or effective trust. See generally *Conversations with Aviation Leaders: A Conversation with Alfred E. Kahn*, 11 ISSUES AVIATION L. & POL’Y 215 (2012). Concerning carbon

is in an interesting state that is rather different than it might otherwise be from a cyclical recession, per se war, oil shocks of various kinds, or even excessive competition and discounting (recent pricing has been stable from robust demand and consolidation, on top of flat or decreasing oil cost, an absence of labor contention, high corporate profits and equity appreciation, and generally stable operating conditions).<sup>4</sup> It is in this context that I

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tax, see Matt Andersson, Letter, *'Sin Tax' Won't Lower Aviation Pollution*, FIN. TIMES, June 16, 2015, at 10 (commenting on Ed Crooks, *US Backs International Regulations on Aircraft Emissions*, FIN. TIMES, June 11, 2015); Matt Andersson, Letter, *China is Right: Carbon Tax Is Just a Trade Barrier*, FIN. TIMES, Feb. 8, 2012, at 8 (commenting on *China Bars Airlines from Paying EU Carbon Tax*, FIN. TIMES, Feb. 6, 2012); Matt Andersson, Letter, *Better Aircraft, Not Pollution Permits*, FIN. TIMES, June 24, 2011, at 8. As the current administration is in its last months, previously postponed revenue levies are especially subject to irrational economic judgment and counterproductive policy. See Editorial, *Jets Will No Longer Get a Free Ride on Carbon*, N.Y. TIMES, Feb. 14, 2016, at SR8. Such expected levies will merely be passed on to passengers as a carbon ticket tax, along with over a dozen other charges already present. It is another example of state intervention as presumed consumer and public protection, that neither incents suppliers to invest as it is a pass-through charge (similarly for private aviation), nor dampens demand, but merely inflates consumer costs.

- <sup>4</sup> It is this broad hypersensitivity to the macroeconomy, magnified by unusually high fixed and operating costs, that also impairs fundamental technology development. There is an intriguing question, as an example per technology development, as to why supersonic travel was discontinued by commercial carriers. An accident, and macroeconomic impacts from 2001, certainly were contributory, but there are perhaps more central reasons. Among them were the serial financial difficulties of the world's airlines, especially from deregulation. Even in Russia, which possessed the technical means to manufacture and operate supersonic passenger aircraft, the financial effects of the 1990s' "shock therapy" utterly destabilized its aviation sector, among others. It is only since consolidation and restructuring of major carriers that they are currently able to make more reliable commitments to traditional new aircraft, let alone supersonic ones. See Matt Andersson, Letter, *Transportation Science's Missed Possibilities*, FIN. TIMES, Dec. 5, 2016, at 12 (commenting on Michael Skapinker, *Supersonic Jets Promise a Revival of Concorde's Heyday*, FIN. TIMES, Dec. 2, 2016). The underlying economic and regulatory format of commercial aviation is arguably the most causal variable in its ability to perform reliably as a public transportation service, but also to extend itself into future planning and investment. Consolidation and cooperation in a relaxed antitrust regime appear to be optimal, even for low-cost regional carriers that are not (yet) logical operators of supersonic technology. As for why devices in the "C & C" (computing and communicating) universe have so extraordinarily outperformed other durable goods, it remains somewhat perplexing given the fascinating possibilities in transportation science, along with its profound rate of return in public,



would like to launch a discussion of energy policy as it applies, and is applied, to the air transportation sector. This has two dimensions. One involves the application of carbon or emissions tax to aviation; the other concerns, in a related way, the development of new aviation technologies that make a measurable contribution to cleaner energy across traditional industrial sectors that face the retirement and replacement of technology, versus the introduction of “clean sheet” products and services.<sup>5</sup>

### *Some Unfortunate Consequences of Aviation Carbon Tax*<sup>6</sup>

*The very considerations which the courts most rarely mention, and always with an apology, are the secret root from which the law draws all the juices of life. We mean, of course, considerations of what is expedient for the community concerned. Every important principle which is developed by litigation is in fact and at bottom the result of more or less definitely understood views of public policy.*<sup>7</sup>

*Because it had a wide currency in non-legal thought, the idea of administrative expertise was a convenient device for justifying [a] court orientation. By blocking off the heart of the administrative process as something not strictly legal, expertise limited the extent to which the legal scholar had to incorporate administrative materials into the general structure of Anglo-American law.*<sup>8</sup>

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business, and national welfare. As economist Robert Gordon stated in 1990: “If the auto industry had done what the computer had done in the last 30 years, a Rolls-Royce would cost \$2.50 and get 2,000,000 miles to the gallon.” ROBERT J. GORDON, *THE MEASUREMENT OF DURABLE GOODS PRICES* 188 (1990).

<sup>5</sup> Although I will touch on this as well, especially in urban personal mobility applications.

<sup>6</sup> I gratefully acknowledge University of Chicago (UChicago) Booth School of Business economics professor Robert H. Topel for his 2018 report, *Some Dismal Economics of Carbon Pricing*, <https://bfi.uchicago.edu/insight/multimedia/becker-brown-bag-some-dismal-economics-of-climate-policy/>.

<sup>7</sup> Oliver Wendell Holmes, Jr., *Common Carriers and the Common Law*, 13 AM. L. REV. 630, 630–31 (1879).

<sup>8</sup> WILLIAM C. CHASE, *THE AMERICAN LAW SCHOOL AND THE RISE OF ADMINISTRATIVE GOVERNMENT* 17 (1982) (quoting letter from Felix Frankfurter to William D. Guthrie, Dec. 22, 1922).

*Government's view of the economy could be summed up in a few short phrases: If it moves, tax it. If it keeps moving, regulate it. And if it stops moving, subsidize it.*<sup>9</sup>

Aviation, along with a number of other carbon-intensive industries, is, not surprisingly, a target of broad, top-down macroeconomic (versus bottom-up microeconomic) convention involving the levying of fees based on estimated carbon emissions profiles, that will purportedly accomplish two things. One, they will compensate society for the “social cost” element of carbon and, two, they will motivate companies to either develop new technology, lower the use of current technology, abandon certain trade practices, or seek other efficiencies through industrial cooperation.<sup>10</sup> This particular concept has either been broadly em-

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<sup>9</sup> President Ronald Reagan, Remarks to the White House Conference on Small Business (Aug. 15, 1986).

<sup>10</sup> A group of UChicago economists, including former White House economics advisor Austan Goolsbee and Nobel laureates Richard Thaler and Eugene Fama, tried to “sweeten” the tax package by advocating for a “carbon dividend” that would be paid to the public, as a kind of “stock” dividend. In a reply commentary, I noted the following: Certain public, student, and alumni confusion over the university’s participation in a recent mass campaign letter concerning carbon tax policy, is a sentiment quite correct: it is effectively ratified in economic analysis, by UChicago Booth’s own Professor Topel (among others). One may appreciate the cogent and professional (though in its implications, institutionally awkward) analysis that he presented on campus in 2019, *Some Dismal Facts of Carbon Tax*, which addressed government efficiency complications (which he may perhaps too diplomatically invoke). In some related scenarios of government inefficiency (that is, in its actual current state, which he, unfortunately, left open to “opinion” rather than publicly available forensic accounting data), it could feasibly take over \$250.00 of tax to create \$1.00 in carbon reduction. In modern finance, that would make carbon tax not only an obviously incoherent policy, but with an implied discount rate in junk and an obvious negative net present value (NPV) proposition for taxpayers. Put another way, one is better off investing one’s own money in actual, tangible energy efficiencies such as electric vehicles (as in Norway’s world-leading program), or directly in distributed clean energy such as nuclear power equity. That demands lower, not higher, taxes, and higher, not lower, consumer free cash flow.

Otherwise, tax and wealth redistribution is a somewhat reflexive construct for academic economists trained in macroeconomic general equilibrium, which is often overly-centered in welfare and social cost abstractions, versus bottom-up microeconomic business and financial logic, which is almost exclusively absent among such university professionals (or as Peter J. Boettke said, “Nothing, perhaps, is so dangerous intellectually in the policy sciences as an economist who knows only economics, except, I would add, a moral philosopher who knows no econom-

braced or aggressively championed, especially by an intellectual elite that generally perceives carbon as a social phenomenon, and one that incurs a social cost.<sup>11</sup> By assuming this position, many macroeconomic traditions are activated, especially concerning the effect that a tax will have on solving for so-called “deadweight loss.”<sup>12</sup> That particular tax is usually known by economists as a “Pigovian tax” which seeks to “correct” perceived market failures.<sup>13</sup> These failures, or outcomes judged to be unfair, normatively suboptimal, or resulting in various waste, can justify, in Pigou’s view, a negative tax (e.g., pollution) or a positive one (e.g., a therapeutic drug).

Economists generally regard anthropogenic climate change effects as a classic general economics problem of a so-called “externality”: Current users of fossil fuels do not recognize the full costs of their actions. “Too much” is used relative to an efficient out-

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ics at all.” See Boettke, *infra* note 21). See Matt Andersson, Letter, *Central Bankers’ Environmental Input Should Focus on Saving*, FIN. TIMES, Jan. 21, 2020, at 8 (discussing this issue in some additional detail. It otherwise makes a carbon tax an effective involuntary “war bond.”). See also Matt Andersson, Letter, *Climate Change and the Military*, N.Y. TIMES, June 1, 2015 (commenting on Kevin Rudd, Op-Ed., *Paris Can’t Be Another Copenhagen*, N.Y. TIMES, May 26, 2015).

<sup>11</sup> See THOMAS SOWELL, *INTELLECTUALS AND SOCIETY* (2012).

<sup>12</sup> A deadweight loss is a cost to society created by market inefficiency, which occurs when supply and demand are out of equilibrium. Mainly used in economics, deadweight loss can be applied to any deficiency caused by an inefficient allocation of resources. Alicia Tuovila, *Deadweight Loss*, INVESTOPEDIA.COM (Sept. 24, 2019), <https://www.investopedia.com/terms/d/deadweightloss.asp>.

<sup>13</sup> Named after British economist Arthur Pigou, a Pigovian tax (also spelled “Pigouvian tax”) is a tax on any market activity that generates negative externalities (costs not included in the market price). The tax is intended to correct an undesirable or inefficient market outcome (a market failure), and does so by being set equal to the social cost of the negative externalities. In the presence of negative externalities, the social cost of a market activity is not covered by the private cost of the activity. In such a case, the market outcome is not efficient and may lead to over-consumption of the product. Often-cited examples of such externalities are environmental pollution and increased public healthcare costs associated with tobacco and sugary drink consumption. In the presence of positive externalities, i.e., public benefits from market activity, those who receive the benefit do not pay for it and the market may under-supply the product. Similar [purported] logic suggests the creation of a Pigovian subsidy to help consumers pay for socially-beneficial products and encourage increased production. An example sometimes cited is a subsidy for provision of flu vaccine. *Pigovian Tax*, WIKIPEDIA.ORG, [https://en.wikipedia.org/wiki/Pigovian\\_tax](https://en.wikipedia.org/wiki/Pigovian_tax).

come. One response is to introduce a tax or surcharge on fossil fuel use, equal to a calculated external cost borne by current and future generations (for example, a town that suffers downstream airborne pollution and waste from a coal-fired electrical generating plant, or much more broad social costs in decreased life expectancy or reduced enjoyment of natural resources). By paying such a tax, current consumers or producers are forced to bear some pro rata share of future burden, and the “full costs” of their choices (telecommute or drive, for example).

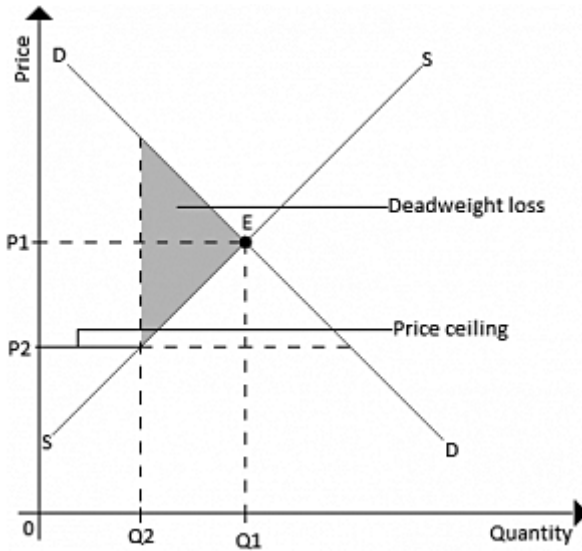
The expected change in energy consumption will approximate a decision that consumers (including industrial) will only burn a unit of fossil fuel today if its current value is greater than the full costs, inclusive of future harm. The outcome in that case would therefore be “efficient.” As so used, “efficient” is a vague, or vaguely used, concept in economics, or is at least vaguely understood.<sup>14</sup> It is traditionally thought by economists to mean<sup>15</sup> that in considering allocation, nothing can be made better without making something (or someone) worse off.<sup>16</sup> Below is a classic graphic portrayal of the deadweight loss concept:

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<sup>14</sup> There is production, allocation, and distribution efficiency. Economic efficiency is achieved when all goods and factors of production in an economy are distributed or allocated to their most valuable uses and waste is eliminated or minimized. Economic efficiency is achieved when every scarce resource in an economy is used and distributed among producers and consumers in a way that produces the most economic output and benefit to consumers. Economic efficiency can involve efficient production decisions within firms and industries, efficient consumption decisions by individual consumers, and efficient distribution of consumer and producer goods across individual consumers and firms. Pareto efficiency is achieved when every economic good is optimally allocated across production and consumption so that no change to the arrangement can be made to make anyone better off without making someone else worse off. Jim Chappelow, *Economic Efficiency*, INVESTOPEDIA.COM (Feb. 28, 2020), [https://www.investopedia.com/terms/e/economic\\_efficiency.asp](https://www.investopedia.com/terms/e/economic_efficiency.asp).

<sup>15</sup> Attributed to Italian social scientist Vilfredo Pareto. See *Vilfredo Pareto*, ECONLIB.ORG, <https://www.econlib.org/library/Enc/bios/Pareto.html>.

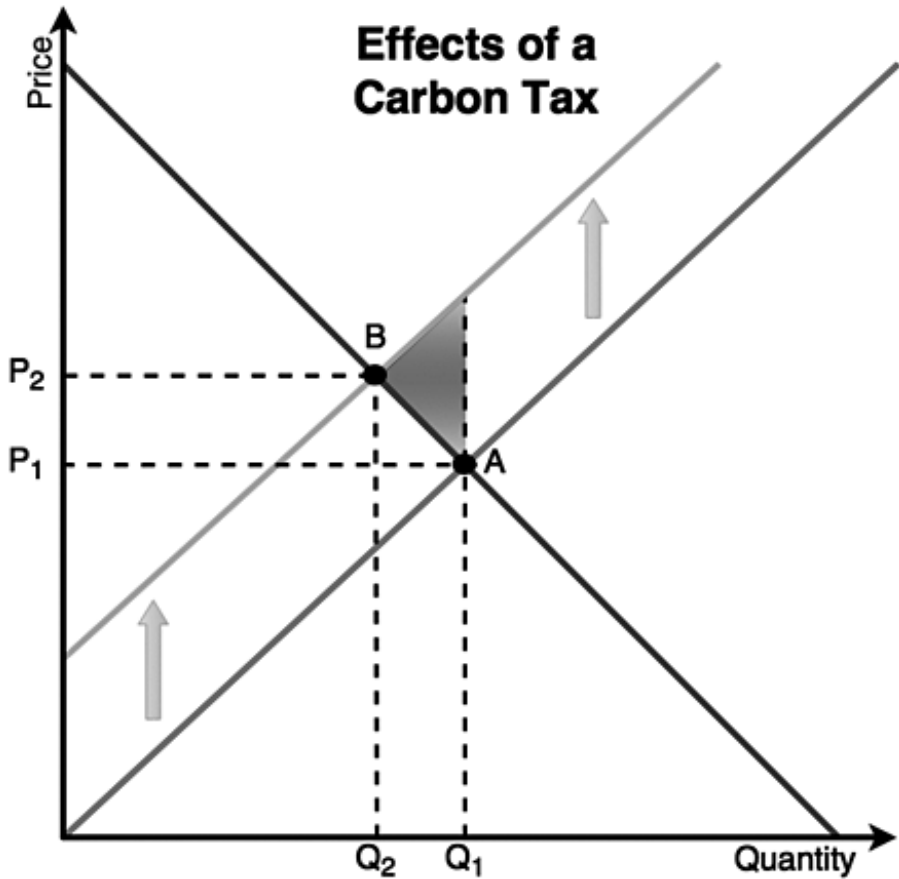
<sup>16</sup> This is a paraphrase of Professor Topel’s analysis.

*Exhibit 1*

In other words, if pricing is set such that total costs – including “external” effects such as pollution – are not incorporated into consumer decision-making, then an excess energy amount can be produced, or in this case, excess carbon emission from fossil fuel use that doesn’t incur a larger “social cost” or burden. The carbon tax is thought to either lower demand, shift supply, or create incentives for switching to alternatives or substitutes. In many sectors of the economy, such switching behavior may be reasonable because there are alternatives either inherent to continued use of the same technology (for example, switching from a gasoline to an electric automobile), or readily available as an alternative that does not incur a structural disruption to the underlying utility or need (for example, using a commuter train versus driving). In aviation, however, there are no structural alternatives.<sup>17</sup>

By contrast, a tax introduced into the pricing component will change the supply and demand relationship.

<sup>17</sup> There are modal ones that can be reasonable substitutes, depending on geographic location, and especially, across different countries. Japan and China come to mind with high-speed rail, which does not exist in the United States at the same level of technology, performance, or network breadth.

*Exhibit 2*

A carbon tax is a charge levied against the carbon content in fossil fuels (another complication given refining advances). Even though the tax is designed to address the problem caused by the  $\text{CO}_2$  emissions, the tax is based on the carbon content, because most carbon is converted into  $\text{CO}_2$  from the combustion process. A carbon tax is intended to have the price of a fuel reflect the true cost, and seeks to incorporate environmental consequences from specific uses of fuels, for example. In economic terms, a carbon tax tries to “internalize” the externality created by carbon emissions, and is an attempt to change the behavior that creates the externality (a so-called Pigovian tax). A carbon tax differs from an emissions trading (carbon cap and trade) system in that it establishes a price (or cost) on carbon dioxide emissions, instead of restricting or dampening the amount of carbon dioxide released from human activities. In the above chart, by taxing the activities of fossil-fuel consumption, and thereby raising the price, a

previous “over-consumption” or an over-supply (or both) due to a previously lower price, or a “mis-pricing” that results in mis-signalling to suppliers, is at least, in theory, solved. The new tax purportedly establishes the “true cost.” The true cost theoretically causes a re-consideration by consumers of the product’s utility, or its priority in a household or corporate budget. It creates a switching or substitution effect. This is an old assumption in “sin taxes” on alcohol and tobacco, for example, that have no discernable effect on consumption; indeed, in some cases it creates incentives for “black market” solutions, or the tax is cleverly positioned in pricing strategy such that its effect is made less transparent (call it the “Happy Meal” or packaged or bulk pricing effect, among others, which causes consumers to make complex, often erroneous, decisions in choice). An example in airline ticketing would be the complexity of calculating and comparing base fares plus added fees for items such as baggage, versus flat fares that bundle services, but may have various upgrade incentives.<sup>18</sup>

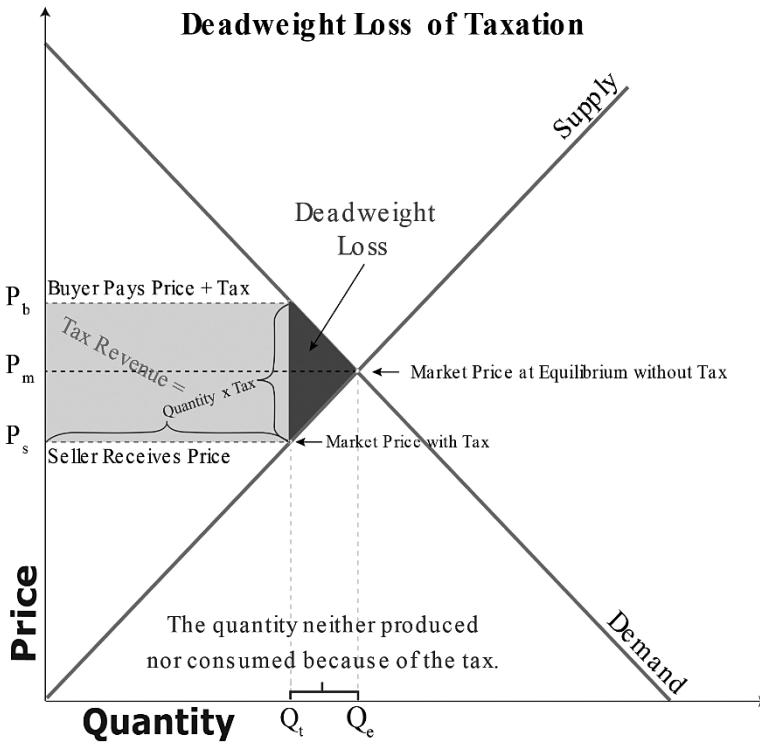
A carbon tax raises the price per unit of fossil fuel, which theoretically changes consumption patterns. In addition to modifying behavior that is thought to carry harmful environmental side-effects, the carbon tax generates government revenue which is purported to subsidize, or even directly finance, a low- or zero-carbon energy alternative, or to even reduce or eliminate calculated damages previously inflicted on the environment. Moreover, the revenue raised from a carbon tax is thought to provide government discretion to lower or minimize other bases of taxes,

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<sup>18</sup> See WILLIAM SPAULDING, *ECONOMICS: AN ILLUSTRATED INTRODUCTION TO MICROECONOMICS, MACROECONOMICS, INTERNATIONAL ECONOMICS, AND BEHAVIORAL ECONOMICS* (2018) (“The largest amount of revenue raised by governments comes from taxation of market transactions, especially the taxation of labor. Taxes obviously lower the value of transactions to both buyers and sellers, in that the buyer pays somewhat more for the product and the supplier receives less. Some of that loss of value goes to the government, which, of course, is why it collects taxes. However, it has long been recognized that the loss of value to the market participants exceeds the gain to the government. Therefore, the economy as a whole loses some value from taxation, and this complete loss is referred to as the *deadweight loss of taxation*. Specifically, *deadweight loss* consists of the loss of consumer surplus for buyers plus the loss of producer surplus for sellers who do not participate in the market for reasons other than the price of the product or service, resulting in a loss of total surplus for the economy. For instance, a deadweight loss can be created by taxes or by artificial barriers, such as occupational licensing requirements, or from the artificial restriction of supply by monopolists or oligopolists.”).

that are thought to distort market demand or supply, and thereby make it less efficient. Ergo, by implementing a carbon tax, general emissions are reduced and general tax revenue is increased, while certain other taxes can be lowered or even eliminated. When such an externality is internalized, prices reflect the true cost of emitting carbon, while certain other sectors and markets could be made more efficient, in a kind of “trickle-down” philosophy, sometimes referred to as an economic double-dividend.<sup>19</sup>

**Exhibit 3**<sup>20</sup>



<sup>19</sup> In British Columbia, for the fiscal year 2013–14 under the Carbon Tax Act, the province raised CAD\$1.2 billion and at the same time was able to reduce corporate income taxes by CAD\$440 million, personal income tax by CAD\$237 million, and was able to offer CAD\$194 million worth of low-income tax credits. From 2008–13, the institution of the carbon tax decreased per capita use of fossil fuels in the province by 16.1 percent. See Jason M.K.C. Donev et al., *Energy Education – Carbon Tax*, ENERGYEDUCATION.CA (Sept. 17, 2016), [https://energyeducation.ca/encyclopedia/Carbon\\_tax](https://energyeducation.ca/encyclopedia/Carbon_tax).

<sup>20</sup> See SPAULDING, *supra* note 18 (“When a market transaction is taxed, the buyer pays a higher price and the seller receives a lower price. This lowers demand, which shifts the buyer’s equilibrium from the market price ( $P_m$ ) to a higher price ( $P_b$ ) at lower quantities; likewise, because the



## *The Economics of Carbon Policy*

*Nothing, perhaps, is so dangerous intellectually in the policy sciences as an economist who knows only economics, except, I would add, a moral philosopher who knows no economics at all.*<sup>21</sup>

*[Law] must be judged by the results it achieves, not by the niceties of its internal structure.*<sup>22</sup>

So far, so good, right? Well, not so fast. Taxing carbon, irrespective of the industry, but especially in aviation applications, has some expensive “unintended consequences.” Starting from a very general descriptive level, a carbon tax can be seen as nothing more than a “sin tax.”<sup>23</sup> That is, such a tax functions as a state

seller receives a lower price ( $P_s$ ) for his product, less of it is supplied, which moves the seller's equilibrium down the supply curve, to a lower price and quantity. The amount the government receives equals the tax, which equals the buyer's price minus the seller's price, times the quantity of the transaction, whether for goods or services.”)

<sup>21</sup> Peter J. Boettke, *The Significance of Mises's Socialism*, LAISSEZ FAIRE (Sept. 20, 2012), <https://lfb.org/the-significance-of-mises-socialism/#sthash.z5ZNW6Lh.dpuf>.

<sup>22</sup> Roscoe Pound, *Mechanical Jurisprudence*, 8 COLUM. L. REV. 605, 605 (1908).

<sup>23</sup> See Matt Andersson, Letter, ‘Sin Tax’ Won’t Lower Aviation Pollution, *supra* note 3 (“[I]t is perhaps telling that the US Environmental Protection Agency is deferring to the UN on this matter and merely condemning aviation emissions as ‘endangering public health and welfare,’ but with no substantive technical expectations to actually lower aviation pollution. Levying fines, fees or carbon taxes will probably only result in either additional pass-through consumer costs (there are already a dozen various fees and taxes embedded in your airline ticket) and/or general government revenue. It will have little, if anything, to do with actually lowering carbon and is merely a ‘sin tax.’ More directly causal to lowering emissions is a mix of specific aviation policy and technology measures that include: continued airport modernisation that helps lower congestion and speeds up departures and arrivals; Congressional and other government commitment to fully funding ‘Nextgen’ air traffic control systems that allow for more direct, efficient flight routings; financial incentives (rather than penalties) that promote regular investment in new aircraft with better fuel efficiency (including the use of cleaner synthetic fuels) and the relaxation of antitrust restrictions such that airlines are better able to co-ordinate schedules and lower duplication and waste. Interestingly, the world's various aviation military branches (that together form one of the world's largest ‘airlines,’ while the US Department of Defense is the world's single largest consumer of fossil fuels) are altogether exempt from emissions standards and generally operate older, less efficient models (some dating back to the 1950s). Their explicit participation in civil technical and oper-

revenue opportunity<sup>24</sup> and has little if anything to do with actually lowering pollution, curbing emissions, or, especially, creating necessary incentives for investment in science and technology. Aviation carbon taxes can also have distortions at a “trade” dimension, where trade also includes that form of commerce created by different airlines, for example, flying into and out of different countries and economic centers, whether they are Chicago, Illinois; Montreal, Canada; Moscow, Russia; or the EU generally. Such taxes, or areas where there are none, affect business decisions concerning route planning, or even essential service.<sup>25</sup>

At a level of analysis involving the mathematics of carbon tax, the negative effects are made fairly clear. They have two primary dimensions. One involves the opportunity cost of imposing yet more fees on aviation operators, which could be used instead for basic technology development (R&D), or even for faster fleet replacement with more modern, efficient aircraft and supporting infrastructure. The other concerns the actual uses of the collected carbon tax revenue, and the irrational expectation that it could

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ational emissions solutions is an important step to realising net improvements in total aviation carbon management.”).

<sup>24</sup> To be discussed *infra*, in relation to deadweight loss.

<sup>25</sup> See Matt Andersson, Letter, *China is Right: Carbon Tax Is Just a Trade Barrier*, *supra* note 3 (“China [was] right to refuse to participate in the European Union emissions trading system. It is indeed merely a trade barrier in the name of the environment, but it is also much less than that: it has nothing to do with lowering pollution and everything to do with subsidising Brussels – and China knows it. A true emissions reduction programme has perhaps four levers at its disposal. One, it could introduce incentives to accelerate industry consolidation, for example, through anti-trust relaxation, foreign ownership and merger and acquisition rules, thereby reducing flight duplication and emissions. The effect would be significant not only in rationalising redundant global air traffic and reducing gridlock at airports, but in creating a financially stronger industry, able to reinvest in itself. Two, it could go back to the source – fossil fuel – and provide incentives, such as an investment tax credit, to accelerate synthetic and modified fuel development. Three, it can address the next causal source, engine technology, by introducing tax credits for faster engine replacement. The majority of the world’s airline fleet is powered by engines designed in the 1970s. Finally, the way aircraft are routed and processed is based on a 1950s system of ‘highways’ that can resemble rush hour in Los Angeles. So called ‘NextGen’ air-traffic management promises to liberate aircraft routing into a more direct, efficient manner. But plans remain largely on paper as the airline industry is unable to pay for it, and what fees and taxes have been collected for its development have been appropriated for other uses. As former US president Ronald Reagan stated: ‘Governments tend not to solve problems, only to rearrange them.’”).

survive distribution through state treasuries intact, or even fractionally recognizable.<sup>26</sup> However, such an assertion rests on a judgment over relative levels of government efficiency, that is, the likelihood that inefficiencies of most collecting agencies (and more broadly the entire state apparatus) would deplete or divert most or all carbon tax revenues levied and collected. Even if they were to “make it out the other end” of the proverbial government sausage machine, there is an additional uncertainty as to the likelihood of net carbon tax proceeds finding their way into actual energy modernization projects, and, of such projects, the additional uncertainty as to the quality, impact, and management integrity of their scope. This is among the reasons why airlines have in many cases adopted an internal carbon “offset” pledge strategy, which gives them, notionally at least, more direct control. This tactic, however, also has an unlikely, if naively assumed, benefit concerning either actual reductions in net carbon (however measured), or any tangible improvement in aviation energy efficiency.<sup>27</sup>

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<sup>26</sup> The United Nations previously ratified an aviation carbon pact which highlights the business distortions I mention. See Matt Andersson, Letter, *Pact Is More Like a Ritual Oath than a Business Plan*, FIN. TIMES, Oct. 17, 2016, at 10 (discussing Pilita Clark, *Aviation Global Warming Pact Wins Go-Ahead*, FIN. TIMES, Oct. 7, 2016) (“[I]t may be difficult to account rationally for what tangible contribution this pact could possibly make to pollution reduction. Reasons include the fact that it is indeed merely a pact: more akin to a ritual oath than a technical business plan. Moreover, it rests fundamentally on a false premise: that various global temperatures can be reliably used as a proxy for carbon, or in the case of jet engine exhaust, to measure the presence of other jet fuel pollutants. From a strict financial perspective, it is especially unclear as to how taxing airline emissions (\$24bn by 2035, according to UN estimates) – and moreover assuming those funds will efficiently find their way from government accounts to alternative energy investment – can improve the efficiency of jet engine technology. The UN’s plan to make “offset” allocations (wealth transfers) from airlines to wind or solar is like asserting that crime can be reduced by building parks. It is merely a bureaucratic canard, but one arguably symptomatic of UN culture. Airlines can lower their “carbon footprint” through better engine technology. That technology can be financed by internal investment, a capability greatly enhanced by lowering, not raising, taxes. The economist Nicholas Kaldor acknowledged this fundamental link in *The Relation of Economic Growth and Cyclical Fluctuations* (1954): ‘The reinvestment of the profits of business enterprise always has been, and still is, the main source of industrial capital accumulation.’”).

<sup>27</sup> An “offset” neither directly reduces carbon, nor improves an airline’s fuel efficiency, nor leads to new technology. It provides neither a corporate cost benefit nor a direct return on invested capital. It is a charitable ac-

It isn't difficult to show that a carbon tax can create its own "deadweight loss." That is, it produces too much government.<sup>28</sup> How is too much government produced? The fundamental contention concerning carbon tax is that the tax, or levy, except in a very few limited instances, acts as a source of government revenue that is merely absorbed by government itself. But worse, it is not merely "absorbed;" it magnifies, strengthens, and feeds the institutional waistline of the entity that is supposed to be simply transferring it, and re-directing the tax revenue into new energy investment capital. However, even that doesn't paint the entire picture. Because the carbon tax, merely by functioning as a penalty, thereby fulfills a mix of satisfactions by economists – who assume their job in neatly solving for a market inefficiency is now complete – and of course by the state apparatus that enjoys more revenue.<sup>29</sup> The entity without any tangible benefit is the aviation

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counting contribution, usually to government. Shareholders would be better served if offset expenses were directly invested into aircraft science and technology developments that define aviation economics. Of course, it is understandable that publicly traded enterprises will seek to assuage the thematic concerns of institutional investors who do not want to be caught in various controversies, including environmental commitment, or challenged by activist shareholders or government to divest. Unfortunately, a fund that seeks to satisfy sustainable investment allocation policy by using company offset gestures as a proxy is not reducing carbon, or advancing clean energy development, but simply responding to public opinion it deems important to its reputation, and its assumed impact on market returns, valuation, and risk.

<sup>28</sup> Interestingly, although perhaps not surprisingly, the world's defense and military organizations are utterly exempt from all climate agreements, protocols, regulations, and, of course, taxes (This brings up a provocative question: would taxing military activity lower its use?). One of the single biggest consumers of fossil fuels and emitters of carbon is the U.S. Department of Defense. And yet it is exempt from any climate treaty, legislation, protocol, or plan. China, India, and Russia operate similarly. To seek large-scale, global environmental coordination without explicit participation and accountability from the world's militaries otherwise makes the entire climate change and global warming agenda an operational futility, although its ideological agenda does not necessarily rest on such performance.

<sup>29</sup> My view, and Topel's to some extent, is that the whole carbon tax argument boils down to how efficient one thinks government is. My view is that it is inefficient, at least in how it handles the transfer function. It may very well be able to successfully take carbon tax revenue and deploy it, or invest it, in clean energy projects; however, the larger notion of such a tax is that it *compensates* one party for the emissions made by another party. There is little if any explicit re-investment rule, or legislation or contract, that clearly guides such taxes into other presumed more efficient energy programs, or even pollution reduction efforts.

company – including its passengers and other customers to whom emissions taxes are passed through in the form of surcharges. Fundamental to the problem of even successfully converting the collection of a carbon tax into an alternative energy investment (or even any other kind of tangible benefit that could be regarded as net positive) is the level of efficiency one has to assume vis-à-vis government administration. That is, in relation to the private sector and other relevant comparables, such as other governments (for example, Norway versus the U.K.), how efficient is government at allocating resources? One hundred-twenty percent? (more efficient) One hundred percent? (equally efficient – no government waste) Or less?<sup>30</sup>

***Deadweight Loss, Tax, and Law: Different Outcomes in Different Economies. The U.S. Is Not Sweden; Brussels Is Not Moscow.***

*It is not possible to comprehend the full scope of [Marx's] critique of political economy, if one ignores its ecological dimension.*<sup>31</sup>

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<sup>30</sup> I would argue that relative government efficiency can also be negative; that is, not merely half as efficient, say as the private sector generally, but 150 percent less efficient, for example, or more. Indeed, in many functions, its inherent utility may be negative. Professor Topel provides two case examples, shown below: one is a globally coordinated tax, and another limited to the United States. In each case, the negative economic returns are startling: it could take over \$200 in carbon tax collections to result in \$1 of lower carbon benefit.

Case 1: Harmonized tax in all countries:  $dT_{US} = dT$ .

$$\frac{-dT_{US}^{\text{Harmonized}}}{dG_{US}} = \frac{\theta_{US}}{k_{US}} cE = .0216 \quad (\theta_{US} = .16, k_{US} = .20, E = .15)$$

Collect \$100 from U.S. tax payers to generate \$2.16 of benefits from reduced carbon damage. This is the effect of a small tax,  $dT_{US} > 0$ . A larger tax of  $T = C$  gives even smaller benefits/dollar, because DWL is a triangle. Roughly half, so about \$1 of benefit for every \$100 of government revenue.

Case 2: Unilateral tax of  $dT_{US}$  by the US acting alone

$$\frac{-dT_{US}^{\text{Unilateral}}}{dG_{US}} = \theta_{US} cE = .0043$$

Would have to collect \$231 in tax revenue in order to yield \$1 in benefits from reduced carbon.

Source: Robert H. Topel, *Some Dismal Economics of Carbon Pricing*, 2018.

<sup>31</sup> KOHEI SAITO, KARL MARX'S ECOSOCIALISM: CAPITAL, NATURE, AND THE UNFINISHED CRITIQUE OF POLITICAL ECONOMY 14 (2017).

*The American people are not undertaxed, the government in Washington is overfed.*<sup>32</sup>

Applied economics, political economy, economic theory, and economic history all bear on the possible contours of a rational aviation energy and carbon policy. These dimensions of law and policy can be organized into three basic “camps” of belief or doctrine, and at least three bases of analysis. On the far “Left” of the ideological spectrum is what might be called Marxist “ecosocialism.” The literature here is vast, and draws on larger philosophical, sociological, and political science constructions, to make its case. It is largely “anti-capitalist” and so, in that regard, necessarily comes up short on constructive ideas for liberal and even mixed economies.<sup>33</sup> It does provoke important questions concerning incentives, however, and the relative ability and success of planning, but Marxist ecosocialism typically has little to say about the investment function in energy technology modernization, for example. It rather tends toward more sweeping generalizations; for example, that capitalism inherently incorporates the seeds of its own environmental destruction, and that such effects can be addressed at the production and planning (versus investment) level. A second doctrine could be called either democratic socialism or a mixed economy. Parts, if not most, of the EU exhibit this form, as does the Middle East (even or especially Israel, along with Saudi Arabia, although they are structured rather differently). The third belief or doctrine is a pure state-based economy. China is an obvious example; however, even there it has much independent entrepreneurial activity, as does Russia, their difference vis-à-vis the U.S. or U.K. for example, being the process by which entrepreneurial activity is financed, and how it finds its way into commercial applications. North Korea and Belarus may be more extreme forms that, while seeking or tolerating individual enterprise, strictly control its latitude to operate and its freedom in ownership and administration.

Norway is a particularly good example of a hybrid economy that, despite being known as a high aggregate tax zone and mixed

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<sup>32</sup> President Ronald Reagan, Remarks at a Reagan-Bush Campaign Rally, Endicott, N.Y. (Sept. 12, 1984).

<sup>33</sup> For some current topical works forming the academic pillars of ecosocialism, see Michael Löwy, *From Marx to Ecosocialism*, 17 NEW POL. (2019), <https://newpol.org/review/from-marx-to-ecosocialism/> (reviewing new books by Kohei Saito and Victor Wallis).

economy, instituted a more transparent and “bottom-up” carbon policy (meaning it draws on voluntary consumer behavior, rather than strictly “top-down” state mandate), involving the migration from gas to electric automobiles, and it currently leads the world in electric car adoption.<sup>34</sup> This is one example of a particularly effective, and productive, response to energy modernization, combined carbon reduction, and the adoption of new technologies that also serve as a “test-bed” for further development and refinement, including in non-automotive sectors, such as aviation.<sup>35</sup>

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<sup>34</sup> There are other viewpoints concerning Norway’s program that take some of its enthusiasm to task. See Bjorn Lomborg, *Extra Emissions Are the Dirty Little Secret of Electric Cars*, THEAUSTRALIAN.COM.AU (Mar. 7, 2020) (“[A] new study from the International Energy Agency shows that an electric car with a 400km range and charged with electricity produced at the global average will have to be driven 60,000km just to pay off its higher CO<sub>2</sub> emissions in production. That means a new electric car driven the average 11,200km each year will have paid off its carbon debt only after five years. The IEA hopes the world can reach 130 million electric cars in 10 years – a breathtaking ask given we have spent decades reaching just over five million. Even if we could do that, emissions would be reduced by only 0.4 per cent of global emissions. In the words of IEA director Fatih Birol, ‘If you think you can save the climate with electric cars, you’re completely wrong’. . . . The Scandinavian nation has the world’s largest electric car market share, but this is propped up with enormous government support. Rules eliminating the costs of registration and sales tax can be worth up to \$US70,000 for a single electric car. Moreover, electric car owners save half, or about \$US1000 a year, on congestion charges in Oslo. They also get to drive in bus lanes, which is great for them but leads to increased travel times for public transport users. Additionally, the Norwegian state is investing heavily in charging infrastructure and electric grid upscaling, something Goldman Sachs puts at \$US6 trillion for the world during the coming decades. That is why in Norway a staggering 42 per cent of all cars sold last year were pure electric. But a new study for Norway shows how hard ending petrol cars will be and gives the lie to those who seek to transform the vehicle market. It finds that without Norway’s overgenerous subsidies, by 2030, only nine per cent of all car sales will be purely electric. Even maintaining all the subsidies and dramatically increasing taxes on petrol cars while setting strict emission targets would be unlikely to allow Norway to reach its goals any time before 2050.”)

<sup>35</sup> I say “aviation” because the scope of its impact is increasing as new hybrid air vehicles (“flying cars” and several product and service permutations, such as electric air taxi vehicles) enter sectors that have been considered entirely separate, such as inner-city or urban transportation (cities have tended to exploit tunnels and surface transportation systems, rather than the abundant, open “airspace” above them). See *Volocopter Air Taxi Fleet Ready by 2022 – CEO*, REUTERS.COM (Jan. 21, 2020), <https://www.reuters.com/video/watch/idRCV007QI7>. See also Press Release, Berkeley Inst. for Data Sci., NASA Berkeley Aviation Data Science Seminars: New Weekly Lecture Series Launches on January 22 (Jan. 8, 2020),

Within the larger context of energy and carbon policy, it is important to back up and see programs like Norway's as part of a solution set that is linked to an overarching strategy, or at least as a response to very abstract policy set at a sovereign and global level, such as the Paris Agreement,<sup>36</sup> or any number of similar international cooperation gestures that require very detailed responses from participating members.

The Paris Agreement is socially admirable, but structurally problematic for at least five reasons. First, aggregate temperature change is an indirect metric with unrealistic expectations of conformity (within a degree or even less) and, especially, is "contaminated" both by natural effects and by military and commercial geoengineering. Actual pollution levels and clean energy conversion rates are more honest, direct indicators, less subject to obfuscation. Second, the world's single-largest consumers of fossil fuels are variously exempted ministries and departments of defense.<sup>37</sup> They are the "climate elephant." Third, while alternatives will eventually retire oil, gas, and coal, none is poised (with the exception of fission) to replace combustion energy (especially in diesel and jet fuel applications). Bypassing an oil economy for developing nations may be feasible, but otherwise energy austerity is merely a form of anarcho-primitivism. It is a "limits to growth" ideology that is as scientifically outdated as oil. Rates of change in technology historically relax such limits. Fourth, the political economy of the 2015 United Nations Climate Change Conference (COP21) that produced the Paris Agreement is conflicted by its financial and electoral dependence on key sectors utterly reliant on petroleum, including transportation, construction, agriculture, pharmaceuticals, energy, plastic goods, defense, and trade. Accords will perforce be bent, broken, ignored, or misreported. Fifth, and finally, the fundamental economic basis of Paris is negative: its showpiece is top-down government inter-

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<https://bids.berkeley.edu/news/nasa-berkeley-aviation-data-science-seminars-new-weekly-lecture-series-launches-january-22> (discussing work being done at Berkeley's BIDS project).

<sup>36</sup> Paris Agreement to the United Nations Framework Convention on Climate Change, *opened for signature* Dec. 12, 2015, T.I.A.S. No. 16-1104, U.N. Doc FCCC/CP/2015/L.9/Rev.1, annex (entered into force Nov. 4, 2016).

<sup>37</sup> See Luke Darby, *How the U.S. Military Churns Out More Greenhouse Gas Emissions than Entire Countries*, GQ.COM (Sept. 13, 2019), <https://www.gq.com/story/military-climate-change-cycle>.



vention, rather than positive bottom-up market response by financial incentive and choice.

Even in Norway, as discussed *supra*, a tax credit is stimulating world-leading conversion to electric automobiles.<sup>38</sup> This conversion and adoption of new electric personal ground transportation is also helping to test, refine, and develop an assortment of varying technologies that are also common to aviation to some degree, and also, to the larger infrastructure that supports some of the technology commonalities. For example, battery technology is as common a consumer product as it is industrial, and moreover for applications beyond fixed or discrete battery power cycles (everything from flashlights, cell phones, and computers, to battery back-up systems like electric standby aircraft gyros) to what might be called “docking” products that require regular charging (like Tesla public charging stations), the infrastructure that is designed and installed to support a new power grid is shared in many ways – especially at a wholesale level – between consumer and industrial, just like cars are supported by a large supply chain like gas stations and parts, that are shared from a manufacturing, processing, and distribution system for trucking, rail, shipping, and aviation, including all the ancillary sub-vehicles that feed and support the “mother” ship (repair trucks, tow tractors, fueling trucks, and other break-down components).<sup>39</sup> But new

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<sup>38</sup> See Matt Andersson, Letter, *Admirable Accord with Structural Problems*, FIN. TIMES, Dec. 15, 2015, at 10 (discussing the Paris Agreement).

<sup>39</sup> An inherent economic and technical advantage of electric systems is their mechanical simplicity, lower weight, operating cost, and total cost of ownership. Their “ageing economics” are also superior compared with traditional combustion propulsion, where parts failure and replacement costs accelerate rapidly over time (worn-out metal parts and bearing surfaces). They also reduce noise pollution equally with carbon emission. Parallel electrical engineering philosophy is central to new commercial aircraft design. The so-called “electric aeroplane” concept continues to modernize older systems such as hydraulic pumps that are heavy, complicated, less reliable, and more difficult and costly to service. Cars and airplanes alike are full of last-century engineering involving mechanical, hydraulic, pneumatic, and metal-based systems, including metal-to-metal contact. Electric-based systems are increasingly replacing them all. It is true that electric cars currently have limitations concerning relative range and power, but that will advance as the propulsion technology matures, just as combustion and turbine engines and high-bypass turbofan jet engines did in airplanes. Moreover, the electric “grid” is subject to increasing sophistication and ubiquity as more systems and devices migrate and connect to it. The grid itself may be more of a limiting growth factor rather than the devices per se that are reliant on it.

clean technology, and even breakthrough transportation products (like hypersonic vehicles that travel at very high speed and at altitudes far above conventional airline aircraft) also act in energy-transformative ways by “de-leveraging” older technology and systems that are large carbon production centers.<sup>40</sup> This goes back to the far higher logic of direct investment in science and technology, and the creation of incentives and policy to do so.<sup>41</sup>

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<sup>40</sup> For example, such new aircraft are indeed allowing more direct city-pair combinations than were generally available historically. Traditional hubs and connecting flight design tend to serve airline operations more than passenger preferences. Another key friction to advanced technology adoption, however, is the airport administrative authority and operator. They have an incentive to promote hub use, as such facilities have become significant investment and economic centers (an “aerotropolis”), generating significant tax and fee income, including to government, and in the case of privatized airports, to investors. In the United States, there are more than a dozen such fees and taxes per ticket purchased, and they are multiplied by takeoffs, segments, and landings. Such airports are also significant labor centers, where the processing of flight and ground operations is an effective jobs program. Direct flights deleverage the entire hub economic model. That is, they make less use of all the fixed, and expensive and polluting assets there. As hubs are effectively big petrol stations, that includes less fuel sales and associated taxes for operators and governments (Heathrow Airport, for example, like O’Hare and other mega-hubs, alone pumps several million gallons a day). But hub airports are also big “carbonports,” so eliminating or reducing their use can lower emissions from total operations and congestion. This assumes that the underlying airport is still largely a 20th century technology center, as far as its power generation (non-nuclear), building design and HVAC, petroleum storage and distribution, intermodal access and connectivity, and other last-generation technologies. This raises an interesting question as to how large-scale energy conversion actually takes place. It may indeed follow a “stages of growth” model; however, in such discrete forward-moving advances in the technologies and systems that are adopted by a society, it is almost always led by a “leading sector” that then draws into its science and technology system, or “eco-system,” an entire complementary infrastructure. That is why the wholesale advancement of just aircraft propulsion alone – from gas turbine engines to hybrid electric, hydrogen, or more futuristic magneto-plasma thrust – is so central to carrying with it a larger new “ecosystem” of supporting clean energy infrastructure. For example, the electric car is advancing a new electric charging and maintenance infrastructure grid that transforms the old “gas station,” that sells petroleum products.

<sup>41</sup> Perhaps as an exclamation point on the counter-productive nature of carbon tax, a public letter penned by a group of former central bankers makes the same mistake in economic analysis as that made by academic economists noted earlier. See Matt Andersson, Letter, *Central Bankers’ Environmental Input Should Focus on Saving*, FIN. TIMES, Jan. 21, 2019, at 8 (discussing Leslie Hook, *Four Former Fed Chairs Call for US Carbon Tax*, FIN. TIMES, Jan. 16, 2019). It is the savings function, through higher

### *Some Final Observations*

*All political societies are composed of other, smaller societies of different types, each of which has its interests and maxims. . . . The will of these particular societies always has two relations: for the members of the association, it is a general will; for the large society, it is a private will, which is very often found to be upright in the first respect and vicious in the latter.<sup>42</sup>*

*The most natural privilege of man, next to the right of acting for himself, is that of combining his exertions with those of his fellow-creatures, and of acting in common with them. I am therefore led to*

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retained earnings channeled into direct investment, or indirectly into effective national accounting savings rates, that underlies liquidity, lending, and economic development. The former U.S. Federal Reserve chairmen demonstrate why they should perhaps focus on central banking. Their imprimatur appears broadly authoritative, but may be merely an ideological indulgence, rather than reasoned assessment. Economists generally find taxation to comport with their theoretical training concerning macroeconomic issues involving abstracted concepts of welfare, social cost, and various equilibria. But carbon and energy are inherently microeconomic problems, and are solved at a disaggregated industrial level. The energy calculus of air transport differs from agriculture or distributed electricity. One element businesses share is a vital demand for financial margin such that they can reinvest, including in more efficient capital equipment. Taxation only reduces free cash flow and can delay, weaken, or foreclose capital expenditure. If tax is deemed an energy policy lever, businesses (and consumers) will respond more positively to a tailored investment tax credit, rather than comply with assumed energy switching behavior from negative tax penalties (Norway's leading electric car tax credit program is an example). Switching and substitution, moreover, imply current alternatives. For many businesses such as aviation, there simply aren't any; they have to be developed. That takes direct investment – not carbon “offsets.” The U.S. carbon tax scheme also includes a somewhat cynical “quarterly dividend.” Assuming such payment is actually made to a fictitious equity claimant – and survives the overhead cost and conversion distortions of government redistribution – it has no reliable direct effect on consumer energy choice. Consumers would as likely buy extra petrol or plastic water bottles, or ironically use it to service their higher home heating bills from new pass-through carbon levies (double taxed of course). As for central bankers, their contribution to environmental goals more likely resides in incentives directed at saving, versus consumption.

<sup>42</sup> JEAN-JACQUES ROUSSEAU, DISCOURSE ON POLITICAL ECONOMY 212–13 (St. Martin's Press 1978) (1755).

*conclude that the right of association is almost as inalienable as the right of personal liberty. No legislator can attack it without impairing the very foundations of society.*<sup>43</sup>

*No government ever voluntarily reduces itself in size. So governments' programs, once launched, never disappear. Actually, a government bureau is the nearest thing to eternal life we'll ever see on this earth.*<sup>44</sup>

### **A. The International Comparative Law Dimension**

At least two primary legal or jurisprudential elements have an impact on aviation energy and carbon policy. At a theoretical level, one approach to law might be broadly categorized as legal positivism and regulation, with a deeply consolidated reliance on antitrust guidelines. The other approach is one that may be generally framed in the “legal constructivism” camp, or even a “natural law constructivism,” and for a couple of reasons. In that regard, constructivism is a western law model, but it struggles still to capture the legal frameworks and philosophies of other state domains and cultures that subscribe to different standards of jurisprudence (and politics).<sup>45</sup> Ackerman’s constructivism, for example, addresses “social” issues; not industrial ones per se.<sup>46</sup> Part of the challenge in an aviation context is the lack of a global

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<sup>43</sup> ALEXIS DE TOCQUEVILLE, *DEMOCRACY IN AMERICA* 228 (Outlook Verlag GmbH 2018) (1835).

<sup>44</sup> Ronald Reagan, *A Time for Choosing*, Television Address for Goldwater Presidential Campaign (Oct. 27, 1964).

<sup>45</sup> The law constructivism concept is fairly open to interpretation but, at least as promulgated by Rawls in his well-known lecture series, generally may be described as a framework that appeals to an ultimate rationalism. I would argue that the “level playing field” concept in western economics is not necessarily rational, if by rational one means pragmatic, especially given the scope of non-western industrial economic practices that can provide a transformational level of financial durability for air carriers that are “competing” in an unregulated or liberalized air market, but are configured institutionally in utterly different ways than most western, arm’s-length commercial, private sector airlines or private alternatives. See Phillip A. Karber, “*Constructivism*” as a *Method in International Law*, 94 *PROC. ANN. MEETING AM. SOC. INT’L L.* 189 (2000); Thomas E. Hill, Jr., *Kantian Constructivism in Ethics*, 99 *ETHICS* 752 (1989).

<sup>46</sup> BRUCE A. ACKERMAN, *RECONSTRUCTING AMERICAN LAW* (1983). See also CHASE, *supra* note 8.

or even a more traditional international multilateral aviation law regime that addresses a number of interrelated factors including harmonized competition law, planning, and coordination.<sup>47</sup> So, for example, there are impositions of labor law in one country, noise abatement rules in another, and training protocols from western aircraft manufacturers, with interpretations and applications in non-western regions.<sup>48</sup> Only in rare and extreme cases of global political agendas are certain regulatory actions harmonized or more closely pressed into operational standards. The current public health narrative is an example, but its impacts will be interpreted and applied differently within domestic markets.

### **B. *A Public Philosophy of Energy, Pollution, and Modernization and the Carbon Sequestration Concept***

The concept of philosophical and legal pragmatism also applies to pragmatic industrial policy vis-à-vis airlines and aviation, for example. Antitrust also reflects an assumption of pragmatism. For example, that consumer welfare is based on “outcomes” in service, total cost, and value, and not just nominal price.<sup>49</sup> Moreover, environmental management presses on the competitive model, or competition law and economics (while natural law constructivism must abandon monopoly and natural monopoly misunderstandings). I include “carbon sequestration” as it has taken a fascinating form during the so-called pandemic, which has acted as an effective social engineering experiment in regards to an-

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<sup>47</sup> Part of the challenge involves regulatory and technical harmonization, while another part involves financial and budgetary coordination among civil and defense sectors. It is currently a sporadic mix of market finance and government funding such that the world’s air traffic control systems, for example, are a patchwork of wildly varying standards, or none at all.

<sup>48</sup> The 737MAX events are an example based on socio-cultural pilot training, experience, and demonstrated performance expectations.

<sup>49</sup> See, e.g., RICHARD A. POSNER, *ANTITRUST LAW* x (2d ed. 2001) (“The antitrust laws are here to stay, and the practical question is how to administer them better – more rationally, more accurately, more expeditiously, more efficiently.”). See also RICHARD A. POSNER, *LAW, PRAGMATISM, AND DEMOCRACY* (2001). I cite Posner in part because I do not agree fully with his jurisprudence, which, in my view, tends toward excessive abstraction, and is generally not informed by actual industrial applications that generate exception interpretation of collusion theory, including natural monopoly. *But cf.* RICHARD A. POSNER, *NATURAL MONOPOLY AND ITS REGULATION* (1999). This may stand somewhat in contradistinction to ALFRED E. KAHN, *LESSONS FROM DEREGULATION* (2003).

thropogenic climate mechanics (among others). The new data emerging from social and industrial idling is rather fascinating in the implications for market capitalism, if by that term one means an “invisible hand” economic philosophy generally, regarding open markets coordinated only by the price mechanism (hence “price theory,” or modern microeconomics).<sup>50</sup> This has several intriguing implications regarding theories of competition, versus cooperation (I say “versus” because there are few good examples of a truly hybrid or mixed arrangement<sup>51</sup>). A central ideological

<sup>50</sup> Media public relations over carbon levels has bloomed in concert with the current “distancing” and “self-quarantine” memetics. *See, e.g.*, Beth Gardiner, *Coronavirus Holds Key Lessons on How to Fight Climate Change*, YALE ENV'T 360 (Mar. 23, 2020), <https://e360.yale.edu/features/coronavirus-holds-key-lessons-on-how-to-fight-climate-change>; *Analysis: Coronavirus Temporarily Reduced China's CO<sub>2</sub> Emissions by a Quarter*, CARBONBRIEF.ORG (Feb. 19, 2020, 12:01 AM), <https://www.carbonbrief.org/analysis-coronavirus-has-temporarily-reduced-chinas-co2-emissions-by-a-quarter>; John Schwartz, *Social Distancing? You Might Be Fighting Climate Change, Too*, NYTIMES.COM (Mar. 13, 2020), <https://www.nytimes.com/2020/03/13/climate/coronavirus-habits-carbon-footprint.html>.

In aviation applications, a bizarre logic is applied to carbon reduction by claiming that airlines will lobby for tax relief, which will “slow” efforts to reduce carbon. *See, e.g.*, Brad Plumer & Hiroko Tabuchi, *Coronavirus Could Slow Efforts to Cut Airlines' Greenhouse Gas Emissions*, NYTIMES.COM (Mar. 6, 2020), <https://www.nytimes.com/2020/03/06/climate/covid-19-climate-change.html>.

<sup>51</sup> *See* MATT ANDERSSON, *THE NEW AIRLINE CODE: WHY THE INDUSTRY MUST BE PROGRAMMED TO A PUBLIC-PRIVATE INTEGRATION* (2005); DAVID MILLER, *MARKET, STATE AND COMMUNITY: THEORETICAL FOUNDATIONS OF MARKET SOCIALISM* (1990). It is instructive to observe that government generally asserts an inherent justification, or even right, in undertaking measures to correct what it perceives as market failures. There is an unfortunate resistance, however, among prevailing economic orthodoxy, to the idea that government has such a purpose, let alone a productive, regular role to play as part of a market economy. It is notable that among the finest and highest-value industrial and scientific sectors in the U.K. and U.S. – aviation and aerospace – they remain largely outside of any state policy organization, and therefore have been subject to broad competitive market disruption, including divestiture and outsourcing, and, of course, as previously discussed, an extreme sensitivity to macroeconomic irregularities. Government, as U.S./U.K. economic histories convincingly model, not only provided market incentives, but undertook an active enterprise or co-venturing role in those sectors. Through such cooperation, investment and innovation were accelerated and, thereby, positive externalities (broad economic advancement) resulted. As for initial market incentives that promote home territory industry, they are probably most effective in the domains of tax policy (lower corporate rates and investment tax credit), labor law (ways to soften union friction in work rules and dispute resolution), and antitrust (encouraging, rather than penalizing, cooperation). But it is also direct government enterpris-

constraint is the very committed political economy boundaries that are (artificially) maintained among the private and public concepts: each has its committed advocates but few appreciate that there is either little effective difference from a financial perspective, or that there exists very deep and complex cooperative arrangements among them, despite each side fiercely defending its independence or superiority.<sup>52</sup> There is also a friction to cooperation in the form of global trade rules policed by the WTO. In aircraft manufacturing, Boeing and Airbus are subject to a continuous contention, partly self-inflicted, partly imposed from outside by respective home governments eager to make a “national economy” claim over respective state competition, market share, employment, and exports.<sup>53</sup> The final structural friction to

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ing with business that remains a central way to re-establish or incubate manufacturing, especially in precision, high technology, and experimental applications that create future domestic leading sectors. This has certainly been the case in aviation and aerospace.

- <sup>52</sup> EU regulators are to assess whether a €400m loan to Alitalia by the Italian government constitutes state aid. All airlines receive state aid in some form, however; direct loans are only a more visible form of an inherent public-private cooperation that continues to be generally denied. Aid covers nearly the entire panoply of resources that make up an air transportation system, of which an airline is only a part. It includes state-financed airports, federal air traffic control, and government-subsidized aircraft manufacturing, including export and sales finance incentives. In the United States, certain airlines receive federal payments for “essential air service” where it is not sufficiently provided by the market alone (Alitalia may provide some elements of such service). Moreover, China, Russia, and the UAE are unabashed state aviation regimes through either direct ownership in airline capital structures or monopolized infrastructure. China, especially, completely subsidizes operating losses resulting from excess capacity and below-market pricing. From a national competitive perspective alone, the EU might take a less regulatory and more constructivist approach to its aviation marketplace: the “level playing field” concept is appealing in the western law and economics tradition, but irrelevant to the larger playing field outside the EU, where public and private cooperation is inherent and explicit. That Rome has otherwise ratified and codified its own legal interpretation of “state aid” might invoke whether Brussels can ultimately assert a superior legal forum, including even the extent of its law and policy legitimacy.
- <sup>53</sup> The World Trade Organization is probably among the least qualified bodies to ascertain aircraft manufacturing dispute claims. That is because the disputes, while appearing centered in trade terms, are actually over development capital demands. It also can’t seem to make up its mind: over a decade ago it ruled against Boeing over “illegal” subsidies it deemed in excess of \$5 billion. In both cases, the WTO may be making a *prima facie* case against the very premise of its own trade and subsidy rulings: new aircraft would not come to market but for state support (especially the

more cooperation in the aviation sector – and thereby a number of built-in solutions to problems, including technology modernization, higher retained earnings, public finance, and more efficient environmental characteristics – may be the direct regulatory framework that controls for U.S. and EU aviation market structures. In both legal regimes it rests on a traditional “consumer sovereignty” framework that looks to competition as a solution to nearly the entire panoply of possible market, operational, service, or even environmental challenges.<sup>54</sup>

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case today in China aerospace programs). The notion that such research and development investment is somehow “illegal” or unfair stems from a misunderstanding of aerospace hardware economics. The financial and other capital necessary is of such magnitude, and often of such uncertainty, that private capital markets, or internal corporate finance sources, either decline to invest over risk and rate-of-return criteria (and public equity trading pressure) or simply cannot syndicate or close traditional sources of debt and equity at such levels. That is where the government comes in, as it does in military and space hardware, which share similar hurdles. Building modern commercial aircraft is not like designing cars, consumer goods, or software, and primary aircraft trading markets are not really markets in the traditional sense, but low-volume, episodic, and inherently irreversible financial commitments for long-life assets. Boeing and Airbus (and their customers especially, including passengers) would be better served to collaborate on R&D projects – as today’s airliners are still fundamentally resting on decades-old design principles. The history of aerospace development shows its greatest achievements when companies, and government, worked together on a project basis, versus per se commercial terms.

<sup>54</sup> The U.S. 1978 Airline Deregulation Act (and its EU equivalent), was silent or vague concerning service, network, and security standards; financial or managerial fitness; consumer protections; and especially, incentives for broad industry modernization. One of the Act’s architects, Professor Alfred Kahn of Cornell University, erroneously asserted that airlines were merely “marginal costs with wings,” and that a form of economic shock therapy (“letting go”) would somehow strengthen the industry. It is still difficult to appreciate that duplicative competition does not work universally or uniformly across all industries, and that traditional airlines are now public transportation, no different in utility than a subway or commuter train, but for three deficiencies that can be cured by public utility regulation: seat comfort, pricing, and consumer protection. Real (structural) competition otherwise exists in abundance, from regional specialty carriers, long-distance luxury airlines, to private air services and products, to modal alternatives. Moreover, new aviation science and technology promise revolutionary advances in speed and cost (super- and hypersonic), comfort (blended wing design), and control (personal air vehicles, especially in vertical flight modes), none of which is advanced by merely encouraging yet more carriers to fly the same planes with the same seats from the same airports in the same airspace to the same destinations.



### C. *Distributed Electric Propulsion*

I would be remiss if an example of promising new clean aviation propulsion were not briefly described and elaborated. Among several very active aerospace engineering projects in the United States, a collaboration between NASA's Armstrong Flight Research Center and the University of Illinois at Urbana-Champaign involves the construction of electrically-driven propulsors.<sup>55</sup> The larger historical context of the project is well-understood by the science and engineering team working on it, and it has clear motivations in energy policy.<sup>56</sup> The electric propulsor concept also has applications both in a replacement function for gas turbines, and in new vehicle designs, including urban V/TOL (vertical takeoff and landing) aircraft:

The emergence of distributed electric propulsion (DEP) concepts for aircraft systems has enabled new capabilities in the overall efficiency, capabilities, and robustness of future air vehicles. Distributed electric propulsion systems feature the novel

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<sup>55</sup> See Hyun D. Kim et al., A Review of Distributed Electric Propulsion Concepts for Air Vehicle Technology, Presented at the AIAA/IEEE Electric Aircraft Technologies Symposium (EATS), Cincinnati, Ohio (July 13, 2018), <https://ntrs.nasa.gov/search.jsp?R=20180004729>.

<sup>56</sup> *Id.* at 2 (“From the Wright Brothers’ Wright Flyer to the British-French supersonic Concorde, civil aviation in the 20th century was rarely marked by disruptive advancement in propulsion technologies. One clear exception to this observation was the development of the jet engine and the resulting derivatives, such as turbofan or turboshaft engines. The continuous, yet incremental performance gains in high-efficiency gas turbine engines over the last eight decades has enabled passengers to travel, not only long distances, but at high speeds. Modern commercial transport by jet aircraft is so common today that most passengers traveling by air now take this technology for granted. However, the ever increasing demands for travel in the 21st century has also brought an increased awareness of the energy and environmental concerns associated with aviation. The need for environmentally-responsible solutions in aircraft technology has now come to the forefront of global challenges due to the limited supply of traditional petroleum fuel sources and the potential global hazards associated with emissions produced by traditional aircraft propulsion systems. Recognizing these challenges, the Advanced Air Vehicles Program at [NASA] has initiated a number of projects, including research into highly advanced subsonic aircraft concepts to drastically reduce energy or fuel usage, community noise, and emissions associated with large passenger aircraft. One of the proposed propulsion concepts that seeks to meet these aggressive goals is now called distributed electric propulsion (DEP) which is currently being studied across various government, industry, and academic organizations.”).

approach of utilizing electrically-driven propulsors which are only connected electrically to energy sources or power-generating devices. As a result, propulsors can be placed, sized, and operated with greater flexibility to leverage the synergistic benefits of aero-propulsive coupling and provide improved performance over more traditional designs. A number of conventional aircraft concepts that utilize distributed electric propulsion have been developed, along with various short and vertical take-off and landing platforms. Careful integration of electrically-driven propulsors for boundary-layer ingestion can allow for improved propulsive efficiency and wake-filling benefits. The placement and configuration of propulsors can also be used to mitigate the trailing vortex system of a lifting surface or leverage increases in dynamic pressure across blown surfaces for increased lift performance. Additionally, the thrust stream of distributed electric propulsors can be utilized to enable new capabilities in vehicle control, including reducing requirements for traditional control surfaces and increasing tolerance of the vehicle control system to engine-out or propulsor-out scenarios. If one or more turboelectric generators and multiple electric fans are used, the increased effective bypass ratio of the whole propulsion system can also enable lower community noise during takeoff and landing segments of flight and higher propulsive efficiency at all conditions. Furthermore, the small propulsors of a DEP system can be installed to leverage an acoustic shielding effect by the airframe, which can further reduce noise signatures. The rapid growth in flight-weight electrical systems and power architectures has provided new enabling technologies for future DEP concepts, which provide flexible operational capabilities far beyond those of current systems. While a number of integration challenges exist, DEP is a disruptive concept that can lead to

unprecedented improvements in future aircraft designs.<sup>57</sup>

#### **D. *Theories of Market Failure, Government Failure, and Market-State Integration***

The carbon tax debate takes place in the context of a larger one concerning the relative merits of neoclassical economics, especially regarding the nature of markets.<sup>58</sup> This is in contradistinction to what is almost always regarded as the correct and otherwise appropriate response to markets that are deemed to be failing, have already failed due to firm idling or exit from the market, or have created an inefficiency or social cost deemed ungovernable without government intervention. Such intervention usually takes the form of some kind of rescue, bailout, emergency loan, subsidy, or even temporary or effective permanent takeover. Political parties of one sort or another are usually rallied around either philosophy, but in recent history, both Democrats and Republicans have embraced both approaches, some considered excessive, or even extreme.<sup>59</sup> One approach that rarely receives much deliberation (at least in the United States) as a more regular solution, especially for industries where market failure is more prone (due to high fixed costs and competitive sensitivity, for example) is an integrated or shared private and public corporate organization.<sup>60</sup>

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<sup>57</sup> *Id.* at 1.

<sup>58</sup> Economists North and Telser have important insights into the larger implications of market theory. *See* LESTER G. TELSER, *COMPETITION, COLLUSION AND GAME THEORY xiii–xiv* (1972) (“Why is it that economists paid so little attention to the foundation of their discipline? One can find much attention given to questions of monopoly, cartel, and competition, but virtually all of this literature takes for granted some of the intrinsic properties of markets and competition without properly understanding them.”); Douglass C. North, Economic Performance through Time, Nobel Prize Lecture (Dec. 9, 1993) (“Neo-classical theory is simply an inappropriate tool to analyze and prescribe policies that will induce development. It is concerned with the operation of markets, not with how markets develop. How can one prescribe policies when one doesn’t understand how economies develop?”).

<sup>59</sup> Examples include the S&L bailout; the 2001 measures including bailouts, forced banking mergers, and special interest legislation; the 2008 “financial crisis” bailouts; and the recent “corona-finance,” of over \$2 trillion in undisclosed allocations.

<sup>60</sup> For further reading that represent these three economic theories, see WILLIAM J. BAUMOL, *THE FREE-MARKET INNOVATION MACHINE: ANALYZ-*

### E. *Transport to Teleport*

Regardless of the perspectives concerning the current complicated virology phenomenon, its effect on the transport sector underscores, again, its unusual sensitivity to macroeconomic events. In their more extreme manifestations, such external shocks may lay bare the inherent nature of the passenger airline sector as being more a public transportation or even public utility service than a purely competitive one. This is a construct and policy convention squarely in state and local government consensus, concerning surface transportation,<sup>61</sup> but air transportation is still thought of as somehow uniquely privileged in competition law and economics, such that even serial “bailouts” from government have few, if any, strings attached.<sup>62</sup> John Thornhill advances several compelling scenarios of behavioral changes due to technology,<sup>63</sup> which reflect what I have called the “C3” convergence debate (compute, communicate, connect; or the military version of C4I which predicts a technical convergence in the transportation of voice, data, and human representation) that has now been reinforced not just by the current pathogen theme, but also by more fundamental environmental problems concerning carbon emissions, climate, and warming.<sup>64</sup> The data being currently observed and collected shows significant reductions in “carbon

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ING THE GROWTH MIRACLE OF CAPITALISM (2002); MILLER, *supra* note 51; and ANDERSSON, *supra* note 51. For a related analysis, see Wilfred Dolfsma, *Government Failure – Four Types*, 45 J. ECON. ISSUES 593 (2011); Charles Wolf, Jr., *Market and Non-Market Failures: Comparison and Assessment*, 7 J. PUB. POL’Y 43 (1987); and Julian Le Grand, *The Theory of Government Failure*, 21 BRIT. J. POL. SCI. 423 (1991).

<sup>61</sup> E.g., Chicago’s “L,” the New York subway system, the CTA bus network, San Francisco’s BART, or numerous other versions across the country.

<sup>62</sup> The current airline bailout extending from the \$2 trillion “rescue package” signed by the president in March, 2020, does contain some government “stake” language for such financial consideration, but it is strictly on arm’s-length commercial terms. See Siobhan Hughes et al., *U.S. to Take Stakes in Airlines in Exchange for Grants, Mnuchin Says*, NYTIMES.COM (Mar. 26, 2020, 5:19 PM), <https://www.wsj.com/articles/mnuchin-indicates-u-s-to-take-stakes-in-airlines-in-exchange-for-grants-11585229047>.

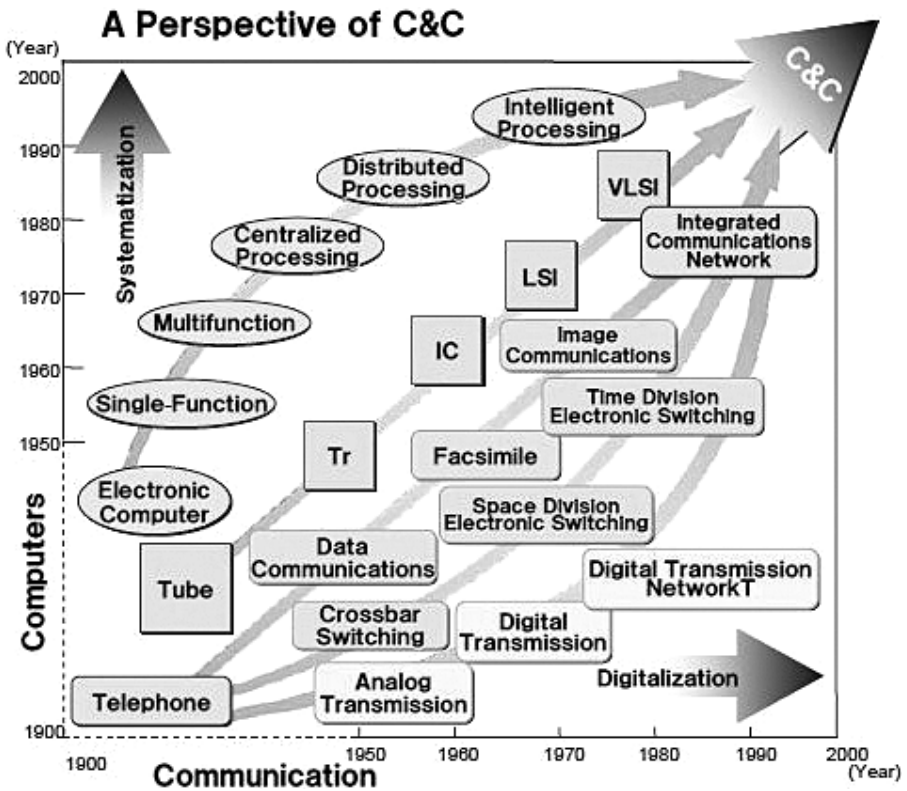
<sup>63</sup> John Thornhill, *How Covid-19 Is Accelerating the Shift from Transport to Teleport*, FIN. TIMES (Mar. 30, 2020), <https://www.ft.com/content/050ea832-7268-11ea-95fe-fcd274e920ca>.

<sup>64</sup> I presented this concept in 2006 at the “Future of Aviation” conference in Chicago, Illinois which was sponsored by the U.S. Commerce Department, the Chicagoland Chamber of Commerce; the U.S. Chamber, and a number of private aerospace firms, including Boeing.

blooms” from lowered human fossil fuel-based activities. Exhibit 4, *infra*, portrays the technical transport convergence concept.<sup>65</sup>

This raises at least two intriguing questions concerning air travel. One, should it be streamlined into a more carefully tailored public-private transportation network that reduces, or even eliminates, competitive duplication and environmental waste;<sup>66</sup> and two, given “social distancing” mass psychology and criteria, will first-class spacing, comfort, and health become the new “safe class,” and make cramped and crowded steerage and coach finally regulated in administrative law, under human health standards? That, of course, raises the nature of what consumer sovereignty really means, and whether it is captured merely by price through competitive discounting, or is something rather more sophisticated socially, technologically, and even financially.

**Exhibit 4**



<sup>65</sup> NEC, C&C Vision, presented at INTELCOM 77 (1977).

<sup>66</sup> Local alternatives like new urban electric “flying car” technology notwithstanding.



# European Court of Justice Rulings on the EU Passenger Rights Regulation: Topics and Case Studies

by Joakim Forsberg\*

## 1. *Introduction*

This paper has been written for the purpose of creating an introduction to, and overview of, air passenger rights within the European Union (EU) and European Economic Area (EEA)<sup>1</sup> in relation to, inter alia, delayed flights, cancellations, lost baggage, and other service obligations of air carriers, as governed by Regulation 261/2004, the EU Air Passenger Rights Regulation.<sup>2</sup>

The paper contains a short high-level description of the historical background for, and an introduction to, the Regulation, followed by a review of the relevant EU/EEA case law which has been developed by the EU Court of Justice. The paper's main purpose is to identify the key elements of each of the cases ad-

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<sup>1</sup> The EEA consists of all EU countries, plus Iceland, Liechtenstein, and Norway.

<sup>2</sup> Council Regulation 261/2004, Common Rules on Compensation and Assistance to Passengers in the Event of Denied Boarding and of Cancellation or Long Delay of Flights, and Repealing Regulation (EEC) No. 295/91 (Text with EEA relevance), 2004 O.J. (L 46) 1 [hereinafter EU Air Passenger Rights Regulation, Air Passenger Rights Regulation, or Regulation].

dressed. The paper will not address national case law or domestic internal rules implementing EU/EEA legislation.

The paper will not directly address other measures taken by the EU legislator in relation to air passenger rights, such as those rights granted for persons with disabilities or reduced mobility,<sup>3</sup> the rights to be implemented by the EU Member States in relation to package travel and linked travel arrangements,<sup>4</sup> or the list of air carriers that are subject to an operating ban in the EU due to their failure to meet safety requirements.<sup>5</sup>

## 2. *Legal Basis for Passenger Rights*

### 2.1 *International Treaties – Background*

During the 1920s, the French government initiated an international collaboration in order to establish common rules on law conflicts, jurisdiction, and liability for international air carriage of persons, luggage, or goods. This resulted in the Warsaw Convention.<sup>6</sup> The original wording and content of the Warsaw Convention was amended several times over the years by various agreements, additional protocols, and conventions.<sup>7</sup>

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<sup>3</sup> See Council Regulation 1107/2006, Rights of Disabled Persons and Persons with Reduced Mobility when Travelling by Air, 2006 O.J. (L 204) 1.

<sup>4</sup> See Council Directive 2015/2302, Package Travel and Linked Travel Arrangements, Amending Regulation (EC) No. 2006/2004 and Directive 2011/83/EU of the European Parliament and of the Council and repealing Council Directive 90/314/EEC, 2015 O.J. (L 326) 1.

<sup>5</sup> See Council Regulation 2111/2005, Establishment of a Community List of Air Carriers Subject to an Operating Ban within the Community and on Informing Air Transport Passengers of the Identity of the Operating Air Carrier, and Repealing Article 9 of Directive 2004/36/EC, 2005 O.J. (L 344) 15.

<sup>6</sup> Convention for the Unification of Certain Rules Relating to International Carriage by Air, *opened for signature* Oct. 12, 1929, 137 L.N.T.S. 11, 49 Stat. 3000 (entered into force Feb. 13, 1933) [hereinafter Warsaw Convention].

<sup>7</sup> Inter alia, Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, *opened for signature* Sept. 28, 1955, 478 U.N.T.S. 371 (entered into force Aug. 1, 1963) [The Hague Protocol]; Convention, Supplementary to the Warsaw Convention, for the Unification of Certain Rules Relating to International Carriage by Air Performed by a Person Other Than the Contracting Carrier, *opened for signature* Sept. 18, 1961, 500 U.N.T.S. 31 (entered into force May 1, 1964) [Guadalajara Convention]; Interim Agreement of Air Carriers, May 13, 1966, C.A.B. Order No. E-23680 [Montreal Agreement]; Protocol to Amend the Convention for the Unification of Certain Rules Relating to



As the Warsaw Convention and its supplementing documents were viewed as representing too fragmented a system for the air transport industry, they were (in practice) replaced in 1999 when representatives of more than 100 countries signed the Montreal Convention.<sup>8</sup> The EU ratified the Montreal Convention on December 9, 1999, making it applicable for all EU Member States. The EEA Member States have done the same. The Montreal Convention entered into force on November 4, 2003, and its Article 55 stipulates that it shall prevail over the Warsaw Convention, together with the adherent protocols, conventions, etc.

## 2.2 *The Montreal Convention*

In total, the Montreal Convention contains 57 articles. This paper will not describe the Montreal Convention in detail but will only introduce the reader to the provisions relating to air carrier liability.

Under Article 17(1), an air carrier is liable for injury or death of passengers on board an aircraft or in connection with embarking/dise­mbarking. Pursuant to Article 17(2), an air carrier is also liable for damage to, or loss of, checked baggage provided the event causing such damage and/or loss occurred on board the aircraft or in connection with embarking/dise­mbarking. Should the damage/loss in question, however, be caused by defects or the underlying quality of the baggage, the air carrier will not be responsible for such loss or damage. For unchecked baggage, an air carrier will only be liable to the extent that damage to, or destruction of, such baggage results from the fault of the carrier's servants or agents. Baggage that is lost for more than 21 days will entitle passengers to enforce their rights pursuant to the contract of carriage. Article 18 contains similar provisions with regard to an air

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International Carriage by Air, signed at Warsaw on 12 October 1929, as amended by the Protocol done at the Hague on 28 September 1955, *opened for signature* Mar. 8, 1971, ICAO Doc. 8932 [Guatemala City Protocol]; and the International Air Transport Association's (IATA) Intercarrier Agreement on Passenger Liability, Oct. 31, 1995 [IIA], together with the International Air Transport Association (IATA) Agreement on Measures to Implement the Intercarrier Agreement, Nov. 1, 1996 [MIA].

<sup>8</sup> Convention for the Unification of Certain Rules for International Carriage by Air, *opened for signature* May 28, 1999, T.I.A.S. No. 13,038, 224 U.N.T.S. 350 (entered into force Nov. 4, 2003) [hereinafter Montreal Convention].

carrier's liability for carried cargo, but liability may be excluded in case of a *force majeure* type of event.

Article 19 stipulates that an air carrier is liable for damages resulting from delays in the carriage by air of passengers, baggage, or cargo. Article 19 does, however, contain an exception from liability if the air carrier is able to prove that it and its servants and/or agents had taken all measures that could reasonably be required to avoid the damages, or that it was impossible to take such measures.

Air carriers may reduce their liability obligations under the Montreal Convention to the extent they are able to prove that damages for which compensation is sought had been caused by negligent acts or omissions of the person claiming compensation, or of the person on whose behalf compensation is sought, if deceased.<sup>9</sup>

Articles 21 and 22 contain limitations with regard to the amount which may be claimed in lawsuits for compensation due to damage, destruction, injuries, or death. An air carrier's maximum liability for injury/death of passengers causing per-passenger damages above 128,821 Special Drawing Rights (SDRs)<sup>10</sup> may be limited to said amount, provided the air carrier in question is able to prove that such damages were not the result of negligence or other wrongful acts or omissions on part of the carrier (including servants and agents, etc.), or solely due to the negligence or other wrongful acts of third parties. An air carrier's liability for death or injury of its passengers can thus be described as strict, and almost (in practice) without a cap.

An air carrier's liability for delay of passengers is limited to 5,346 SDRs per passenger, whereas the liability for delayed baggage (at the outset) is limited to 1,288 SDRs per passenger.<sup>11</sup> The

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<sup>9</sup> See *id.* art. 20.

<sup>10</sup> Pursuant to Article 23, "Special Drawing Rights" is a reference to the Special Drawing Rights as defined by the International Monetary Fund, and conversion into national currencies shall in connection with judicial proceedings be made on the date of the judgment for such proceedings. As of January 19, 2020 one Special Drawing Right (or SDR) is approximately 1.25 euros or 1.38 U.S. dollars. Article 21 contains special provisions for ratifying States that are not members of the International Monetary Fund.

<sup>11</sup> As implemented, the Montreal Convention's per passenger liability limits were set at 100,000 SDRs for injury/death, 4,150 SDRs for delay, and 1,000 SDRs for delay of baggage. The cargo limit was set at 17 SDRs per kilogram. Article 24 allows for periodic reviews by the "Depositary" (i.e., the International Civil Aviation Organization (ICAO)) of the aforemen-

liability limitations for delay of passengers and baggage do not apply in cases where the damage in question was caused by acts or omissions by the air carrier with the intent to cause damage or with knowledge that damage would be probable. The liability for delayed cargo is limited to 22 SDRs per kilogram.

An air carrier may undertake to accept higher limitations of liability but is barred from using provisions tending to relieve it from liability or stipulating lower limitations than those set by the Montreal Convention.<sup>12</sup>

The right to claim damages shall be forfeited unless an action is instigated within a period of two years from the date of arrival at the destination, or from the date on which the aircraft ought to have arrived, or from the date on which the carriage stopped.<sup>13</sup>

The Montreal Convention also contains provisions on, *inter alia*, cargo, bills and receipts, documentation rules, freedom of contract (of aspects other than the provisions required under the Convention), agents, notices of complaints, jurisdiction, the acceptance of arbitration for dispute resolution, insurance, and denunciation.

### 2.3 *EU Law*

As mentioned *supra*, the EU has ratified the Montreal Convention, making it superior to any subsequent Union legislation.

#### 2.3.1 **The EU Air Passenger Rights Regulation**

The most important EU legislation with regard to protection for air passengers is found within the EU Air Passenger Rights Regulation. As it is an EU regulation, it is directly applicable to all EU Member States. The Regulation has been incorporated into the EEA agreement, and all current EEA Member States (Norway, Iceland, and Lichtenstein) have implemented it into their national legislation. The Regulation was adopted for the purpose of raising the standards of protection set by its predecessor,<sup>14</sup> and its success in this regard is quite clear in light of its

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tioned limits, pinned to the inflation rate. Such reviews have occurred in 2009, 2014, and 2019. The amounts stated in the text above reflect the most recent update, which took effect on December 28, 2019.

<sup>12</sup> See Montreal Convention, *supra* note 8, arts. 25 & 26.

<sup>13</sup> See *id.* art. 35.

<sup>14</sup> See EU Air Passenger Rights Regulation, *supra* note 2, Recital 4.

interpretation by the EU Court of Justice in several cases, as further described *infra* in the case law study.

Under Article 1, the Regulation establishes minimum rights for passengers with regard to involuntary denied boarding, as well as the cancellation and/or delay of flights, when the passengers in question depart from an airport located in the territory of a Member State to which the regulation applies, as well as to passengers departing from airports located in non-Member States who travel to an airport located in a Member State.<sup>15</sup> The Regulation is not applicable to passengers traveling free of charge or at reduced fares that are not made publicly available, unless the tickets have been issued under frequent flyer or similar programs.

In the event an air carrier needs to deny boarding to passengers against their will, the consequence pursuant to Article 4 for the air carrier is to immediately compensate the affected passengers per Article 7, and to provide assistance per Articles 8 and 9.

The provisions governing cancellation of flights are found within Article 5, under which a carrier is obliged to offer affected passengers assistance per Articles 8 and 9, as well as pay compensation per Article 7, unless:

- (a) Information has been issued at least two weeks before the scheduled time of departure;
- (b) Information has been issued later – between two weeks and seven days prior to the scheduled time of departure and the passengers have been offered re-routing (with departure no more than two hours prior to the scheduled time of departure); or
- (c) Information regarding the cancellation is issued later than seven days prior to the scheduled day of departure, and the passengers are offered re-routing which allows them to depart no more than one hour before the scheduled departure time – and so that they are able to reach their final destination less than two hours after scheduled time of arrival.

An operating air carrier is not obliged to pay any compensation for cancellations (or delays as declared by the EU Court of Justice) if it is able to prove that the cancellation (or delay) was

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<sup>15</sup> See *id.* art. 3.

caused by “extraordinary circumstances” that could not have been avoided even if all reasonable measures had been taken.<sup>16</sup> In this regard, one should note Recitals 14 and 15, where examples of events that could represent such extraordinary measures are mentioned, e.g., political instability, meteorological conditions, security risks, unexpected flight safety shortcomings, and strikes affecting the operation of an air carrier. The term “extraordinary circumstances” has been further elaborated upon by the EU Court of Justice, as will be discussed *infra*.

Article 6 contains an air carrier’s obligations in relation to delay.<sup>17</sup> Passengers’ right to care under Article 9 means that they are to be offered free-of-charge meals and refreshments in reasonable relation to waiting time, hotel accommodations if necessary, and transportation between airport and accommodations, two telephone calls, telex, fax messages, or e-mails.

Article 7 of the Regulation contains further details on the compensation to which passengers may be entitled in connection with cancellations, delays, or denied boarding. The compensation is fixed at a certain amount depending upon the distance of the flight in question.<sup>18</sup> The compensation to which passengers at the outset are entitled may be reduced to the extent the air carrier in question manages to offer re-routing to the final destination, and the affected passengers are able to arrive within certain time frames compared to the scheduled time of arrival. Article 10 further clarifies that the Regulation applies without prejudice to a passenger’s right to further compensation and that compensation granted under the regulation may be deducted from any additional compensation. However, this does not apply to passengers who, by their own choice, have surrendered their reservations (in cases of denied boarding).

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<sup>16</sup> *See id.* art. 5(3).

<sup>17</sup> Should a flight of 1,500 km or less be delayed by two hours or more, an intra-community flight of more than 1,500 – or all other flights between 1,500 and 3,500 km – be delayed by three hours or more, or all other flights be delayed four hours or more, the air carrier shall offer to the passengers affected by such delays certain assistance/reimbursement/return flights as specified in Articles 8(1)(a) and 9.

<sup>18</sup> Compensation is set at 250 euros for all flights of 1,500 km or less; 400 euros for all intra-community flights of more than 1,500 km, and for all other flights between 1,500 km and 3,500 km; and 600 euros for all other flights.

An air carrier's liability to its passengers pursuant to the EU Air Passenger Rights Regulation may not be limited or waived – meaning that any provision in an agreement between the air carrier and the passenger in question will be held as not valid should the air carrier try to invoke such a limitation.<sup>19</sup>

The Regulation further contains provisions on upgrading and downgrading of ticket classes, persons with reduced mobility or special needs, the right of an air carrier to seek compensation from third parties who caused the carrier to be obliged to pay compensation to passengers, obligations to sufficiently inform passengers of their rights, obligations for each Member State to have a body in place to enforce the regulation, as well as the repeal of the prior regulation.<sup>20</sup>

As mentioned *supra*, the EU directive governing package travel, package holidays, and package tours<sup>21</sup> is beyond the scope of this paper, but it should be noted that Article 3(3) of the Air Passenger Rights Regulation stipulates that it will not affect passengers' rights granted under the predecessor to said directive, and that the Regulation does not apply in cases of package tours being cancelled for reasons other than the cancellation of a flight.

### 2.3.2 Other EU Legislation Related to Protection of Passenger Rights

Deeming the liability and other provisions of the Warsaw Convention as unsatisfactory, the Council of the EU adopted Council Regulation 2027/97 of 9 October 1997 on air carrier liability in the event of accidents. When the Montreal Convention was signed and made applicable to the EU, this regulation was subsequently amended, and is jointly referred to as the “Air Carrier Liability Regulation.”<sup>22</sup>

The biggest impact of the Air Carrier Liability Regulation at the outset was that it deleted the Warsaw Convention's monetary/financial limitations with regard to an air carrier's liability

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<sup>19</sup> See EU Air Passenger Rights Regulation, *supra* note 2, art. 15.

<sup>20</sup> Council Regulation 295/91, Establishing Common Rules for a Denied Boarding Compensation System in Scheduled Air Transport (Text with EEA Relevance), 1991 O.J. (L 36) 5.

<sup>21</sup> See Council Directive 2015/2302, *supra* note 4.

<sup>22</sup> See Council Regulation 889/2002, Amending Council Regulation (EC) No. 2027/97 on Air Carrier Liability in the Event of Accidents (Text with EEA Relevance), 2002 O.J. (L 140) 2.

for damages in relation to injury or death suffered by its passengers within the EU Member States. Furthermore, it clarified the insurance requirements for air carriers, time frames for advance payments in relation to claims, and requirements concerning the information that air carriers must provide their passengers.

The Montreal Convention does not, in practice, contain any limitations with regard to damages in relation to injury/death of passengers, and the current version of the Air Carrier Liability Regulation does not contain any wording in respect of monetary limitations of liability. Instead, it clarifies that the Montreal Convention is applicable to flights occurring within an EU Member State, and not only to international flights. It should also be noted that the regulation now contains more detailed requirements for air carriers in relation to information for passengers on how to file claims, etc., as well as the applicable time limits for actions, and also that a passenger may address a complaint/make a claim for damages against either the air carrier performing the flight or the contracting air carrier.

Several other regulations and directives affect an air carrier's operations; for instance, in respect of licensing, fares and rates for air services, safety, security, environmental protection, gas emissions, air traffic management, personnel, and social issues, as well as competition rules. These regulations and directives will not be addressed as they fall outside the scope of this paper.

### ***3. Directory of Topics Addressed in the Case Studies***

Since its adoption, the EU Air Passenger Rights Regulation has been interpreted in a number of cases by the EU Court of Justice and there seems to be a continuous need for national courts to seek preliminary rulings. These cases will naturally be relevant when national courts are presented with claims against aviation corporations/operating air carriers within the EU and/or EEA.

To sum up these preliminary rulings:

#### ***3.1 Relationship with Other Legislation and Jurisdiction***

- The EU Air Passenger Rights Regulation is not contrary to the Montreal Convention. More specifically, Articles 19, 22, and 29 of the Montreal Convention do not hinder EU Member States from implementing rules on standard compensation – such as the

EU Air Passenger Rights Regulation – for passengers of delayed flights.<sup>23</sup>

- There was no breach of the procedural rules as established by the Treaty on European Union and the Treaty of the Functioning of the European Union when the Air Passenger Rights Regulation was approved.<sup>24</sup>
- When claiming compensation under the Air Passenger Rights Regulation, the claimant may – under the Brussels I Regulation and the New Brussels I Regulation, in addition to the domicile of the defendant – choose to initiate proceedings before one of the courts having jurisdiction over either the contractual place of departure or the contractual place of arrival.<sup>25</sup>
- Local courts of a Member State of the EU/EEA do not have jurisdiction to hear disputes concerning claims for compensation sought under Article 7 of the Air Passenger Rights Regulation solely on the grounds that the air carrier in question has a branch located in the relevant country – without such branch being involved in the legal relationship between the airline and the passenger concerned.<sup>26</sup>
- Where passengers have sought standard fixed rate compensation under the Air Passenger Rights Regulation, as well as compensation for further damages under the Montreal Convention, the local courts of Member States must assess their jurisdiction for the former in light of Article 7(1) of the New Brussels I Regulation, and for the latter in light of Article 33 of the Montreal Convention.<sup>27</sup>
- Where passengers may hold a tour organizer liable for reimbursement of air tickets under EU Directive 2015/2302 on package tours (as implemented in the EU/EEA), such passengers are not entitled to seek reimbursement of ticket costs on the basis of the Air Passenger Rights Regulation. This applies even if the tour organizer is financially incapable of reimbursing the cost for

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<sup>23</sup> See *infra* Part 4.1.

<sup>24</sup> *Id.* See also *infra* Parts 4.10 & 4.14.

<sup>25</sup> See *infra* Part 4.4.

<sup>26</sup> Bearing in mind, however, that passengers may still initiate proceedings as per the point above, i.e., in the contractual place of departure or arrival, in addition to the domicile of the air carrier. See *infra* Part 4.27.

<sup>27</sup> See *infra* Part 4.33.



the tickets in question and has not taken any measure to guarantee such reimbursement.<sup>28</sup>

### ***3.2 Definition of the Term “Flight”***

- The term “flight” has been interpreted by the EU Court of Justice. A journey out and back shall not be regarded as a single flight within the meaning of Article 3(1) of the Air Passenger Rights Regulation, regardless of the method for booking said flights (for instance by a single booking).<sup>29</sup>
- Passengers may be entitled to seek compensation under the Air Passenger Rights Regulation when they are delayed on connecting flights to their final destinations outside the EU but the connecting flights formed part of a flight that departed from the EU.<sup>30</sup>
- Passengers may be entitled to seek compensation under the Air Passenger Rights Regulation from an EU-domiciled air carrier where the passengers in question make a single reservation with that carrier, but the carrier – through code-share agreements – uses non-EU community air carriers for parts of the flight and delays occur on the flights operated by the non-EU carrier.<sup>31</sup>

### ***3.3 Definition/Clarification of the Term “Extraordinary Circumstances”***

- For the purpose of clarifying when exemptions from passenger rights may be invoked by air carriers, the term “extraordinary circumstances” under Article 5(3) is to be interpreted strictly so as to not diminish the purpose of the Air Passenger Rights Regulation. The examples of events mentioned in Recital 14 of the Preamble to the Regulation (i.e., political instability, meteorological conditions, security risks, strikes, etc.) do not automatically represent extraordinary circumstances but must be assessed from time to time. Technical problems which are detected during ordinary maintenance of airplanes or which are caused by failure to carry out such ordinary maintenance cannot in themselves be regarded as an extraordinary circumstance. Such problems will

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<sup>28</sup> See *infra* Part 4.29.

<sup>29</sup> See *infra* Part 4.2.

<sup>30</sup> See *infra* Part 4.30. See also Case C-537/17, *Wegener v. Royal Air Maroc SA*, EU:C:2018:361.

<sup>31</sup> See *infra* Part 4.30.

only be regarded as grounds for exemption if they are caused by events not inherent in the normal activities of the air carrier – and which are beyond such carrier’s actual control. Compliance with minimum rules on maintenance of an airplane is not sufficient in itself to conclude that the air carrier in question has taken all reasonable measures necessary for qualifying the event as an extraordinary circumstance.<sup>32</sup>

- A reasonable air carrier must organize its resources in good time to provide for some reserve time in order to be able, if possible, to operate an affected flight once the extraordinary circumstances have come to an end. Failing to do so results in the carrier in question not having taken all reasonable measures as stipulated in Article 5(3) of the Air Passenger Rights Regulation. The reserve time required must be assessed on a case-by-case basis – and the Article is not to be interpreted to mean that air carriers must implement a general minimum reserve time in order to be viewed as having taken reasonable measures within the meaning of the Regulation.<sup>33</sup>
- Extraordinary circumstances only relate to a particular aircraft on a particular day and shall not be regarded as applicable to a passenger who has been denied boarding due to the rescheduling of flights resulting from extraordinary circumstances that had affected earlier flights.<sup>34</sup>
- Technical problems arising out of an airport’s set of mobile boarding stairs colliding with an aircraft shall be regarded as an event inherent in the normal exercise of the air carrier’s activity and hence cannot be regarded as an extraordinary circumstance.<sup>35</sup>
- Examples of extraordinary circumstances which could be used as an argument for being exempted from liability under the EU Air Passenger Rights Regulation in relation to technical problems with an aircraft would be:
  - Discovery by a competent authority or the manufacturer of the aircraft comprising the fleet of the air carrier concerned, that those aircraft already in service (note that such breakdown must relate to several aircraft) are affected by a hidden manufacturing defect that affects flight safety.

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<sup>32</sup> See *infra* Part 4.3.

<sup>33</sup> See *infra* Part 4.6.

<sup>34</sup> See *infra* Part 4.8.

<sup>35</sup> See *infra* Part 4.16.

- Damage to the aircraft caused by acts of sabotage or terrorism.<sup>36</sup>
- A collision between an aircraft and a bird falls under the concept of “extraordinary circumstances” in Article 5(3).<sup>37</sup>
- Control systems put in place to prevent the presence of birds around airports may be regarded as such reasonable measures to which the air carrier can refer in order to avoid liability to pay compensation, provided that:
  - Such measures from a technical and administrative level actually can be taken by the air carrier in question;
  - The air carrier in question has shown that those measures actually were taken in respect of the flight affected by a bird collision; and
  - Such measures do not require the air carrier to make intolerable sacrifices in proportion to its undertaking.<sup>38</sup>
- When calculating the potential compensation, total length of the delay in arrival of the flight will be reduced by that part of the delay which was caused by an event which falls under the concept of an “extraordinary circumstance,” and which could not have been avoided by appropriate and reasonable measures.<sup>39</sup>
- A “wildcat strike” shall not be regarded as an “extraordinary circumstance” when such strike has been caused by the air carrier surprisingly announcing company restructuring plans.<sup>40</sup>
- Spillage of petrol will be regarded as an “extraordinary circumstance” provided that the spillage does not derive from the air carrier suffering from the spillage, and where the carrier is prevented from doing anything about the situation, e.g., due to an airport authority decision to close down runways.<sup>41</sup>

### ***3.4 Compensation Right in the Event of Delays, Cancellations, and Denied Boarding***

- Although there is no explicit mention of passengers on delayed flights having the same rights to compensation as passengers on

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<sup>36</sup> See *infra* Part 4.17.

<sup>37</sup> See *infra* Part 4.21.

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> See *infra* Part 4.24.

<sup>41</sup> See *infra* Part 4.28.

cancelled flights, if a delay results in passengers arriving at their final destination three or more hours after the time originally scheduled by the air carrier in question, such passengers shall be entitled to claim compensation under Articles 5 to 7 of the EU Air Passenger Rights Regulation.<sup>42</sup>

- The obligation to ensure that the passenger in question is duly informed of cancellation two weeks prior to the scheduled date of departure (in order for the air carrier to avoid liability under Articles 5(1)(c) and 7) rests with the air carrier alone, despite the passenger having entered into the contract with a travel agent and the air carrier having informed that travel agent of the cancellation in due time.<sup>43</sup>
- The amount of compensation under Article 7 shall be based on the distance between the first point of departure and the final destination, excluding any connecting flights.<sup>44</sup>
- Where passengers seek compensation for long delays, air carriers cannot deny such compensation solely on the basis of the passengers in question having failed to prove they were present for check-in for that flight, in particular by means of a boarding card – unless the carrier can demonstrate that the passengers in question were not transported on the delayed flight.<sup>45</sup>
- Passengers who are entitled to standard fixed compensation under the Air Passenger Rights Regulation are not prevented from seeking additional individual compensation due to, e.g., lost income. It is up to the national courts in the Member States to decide whether or not to deduct fixed compensation awarded under the Regulation from such other claims.<sup>46</sup>

### 3.5 *Clarification of Cancelled Flights*

- If a take-off occurs, but the airplane then returns to the airport of departure without having reached the scheduled destination, the flight is to be regarded as cancelled. There is no need for an air carrier to actually classify the flight as cancelled for the flight to be regarded as such.<sup>47</sup>

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<sup>42</sup> See *infra* Part 4.5.

<sup>43</sup> See *infra* Part 4.22.

<sup>44</sup> See *infra* Part 4.23.

<sup>45</sup> See *infra* Part 4.32.

<sup>46</sup> See *infra* Part 4.31.

<sup>47</sup> See *infra* Part 4.7.

- The underlying reasons for why an airplane returns are of no relevance, although it may affect the subsequent question regarding payment of compensation under Article 5(3) of the Air Passenger Rights Regulation.<sup>48</sup>
- The fact that a flight makes an unscheduled stopover will not in itself be regarded as a “cancellation.” Compensation may, however, be sought in line with Case C-11/11, should the flight be delayed more than three hours to the final destination.<sup>49</sup>

### 3.6 Clarification of the Term “Denied Boarding”

- The definition of “denied boarding” in Article 2(j) of the EU Air Passenger Rights Regulation has been drafted broadly in order to cover all circumstances when an air carrier might refuse to carry a passenger, and the legislator has also clarified when denial of boarding shall not be regarded as a denied boarding.<sup>50</sup> An air carrier may deny boarding without thereupon following compensation/service obligations when there are reasonable grounds to deny passengers boarding, due to health, safety, or security, or due to inadequate travel documentation.<sup>51</sup>
- Operational reasons, such as rescheduling due to strikes, do not constitute a reasonable ground to refuse boarding, despite the fact that they very well may fall within the exemption in Article 5(3) of the Air Passenger Rights Regulation, i.e., events categorized as extraordinary circumstances.<sup>52</sup>
- In the event passengers are prevented from boarding a flight, not because of a failure to comply with the conditions laid out in Article 3(2) of the Air Passenger Rights Regulation (confirmed reservation, on-time check-in, etc.), but because their reservations were cancelled as a result of the delay of an earlier flight with the same carrier included/being part of the ticket, such prevention shall be included in the concept of “denied boarding” within the meaning of Article 2(j) of the Regulation.<sup>53</sup>

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<sup>48</sup> *Id.*

<sup>49</sup> *See infra* Parts 3.13, 3.20 & 3.25.

<sup>50</sup> Thereby exempting the carrier from the compensation and service obligations under Article 4(3) of the Regulation.

<sup>51</sup> *See infra* Part 4.8.

<sup>52</sup> *Id.*

<sup>53</sup> *See infra* Part 4.9.

### ***3.7 Time Limitations for Claims Compensation and Intermediary Fee Claims***

- National law in each Member State shall determine the limitation in time for when claims for compensation under Articles 5 to 7 of the Air Passenger Rights Regulation may be brought before the relevant court. The two-year time limitation under Article 29 of the Warsaw Convention, and/or Article 35 of the Montreal Convention shall not be applicable to such claims.<sup>54</sup>
- Where an air carrier is obliged to reimburse affected passengers, the fee charged by intermediaries in connection with the purchase of the ticket is to be included in the calculation, to the extent such fees had been charged with the knowledge of the air carrier.<sup>55</sup>

### ***3.8 Obligation to Provide Care and Assistance***

- There are no exemptions from an air carrier's obligation in Article 9 of the Air Passenger Rights Regulation to provide care and assistance to passengers, and the ruling to not allow for any "super extraordinary circumstances" that potentially could exempt an air carrier from said obligations.<sup>56</sup>
- There are no limitations with regard to an air carrier's obligation to provide care and assistance, as to either monetary caps or time.<sup>57</sup>
- When a passenger is awarded the right to reimbursement and re-routing under Article 8.1 (e.g., denied boarding/cancellation/delay) of the Regulation, the air carrier is obliged to inform the passenger in question of all available options in order to enable the passenger to make a sound decision.<sup>58</sup>

### ***3.9 Clarification of "Arrival Time"***

- The term "arrival" shall mean when the doors of an aircraft are opened and the passengers of the flight in question are permitted to start deplaning.<sup>59</sup>

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<sup>54</sup> See *infra* Part 4.11.

<sup>55</sup> See *infra* Part 4.26.

<sup>56</sup> See *infra* Part 4.12.

<sup>57</sup> *Id.*

<sup>58</sup> See *infra* Part 4.31.

<sup>59</sup> See *infra* Part 4.15.

### **3.10 *Clarification of Compensation Rights in Case of a Downgrade***

- The basis for the calculation of compensation under Article 10(2) in case of a downgrade on one flight where the ticket covers several flights shall primarily be calculated on the price for the relevant flight, but in the absence of individual prices on the flights covered by the relevant ticket, then the compensation shall be based upon the part of the price of the ticket corresponding to the quotient resulting from the distance of that flight and the total distance which the passenger was entitled to travel.<sup>60</sup>
- The price to be used for the calculation shall be exclusive of taxes and other charges unless the taxes and/or charges were levied as a consequence of the class ordered by the passenger and from which the passenger was downgraded.<sup>61</sup>

### **3.11 *Responsibility of Each Member State's Designated Body***

- The requirement under Article 16(1) for each Member State to appoint a designated body to be responsible for the local enforcement of the EU Air Passenger Rights Regulation does not mean that such designated body must take enforcement actions against an air carrier that refuses to pay a passenger compensation as provided under the Regulation.<sup>62</sup>

### **3.12 *General Remarks***

After having reviewed rulings of the EU Court of Justice in relation to the EU Air Passenger Rights Regulation, it becomes clear that the Court frequently tends to interpret the Regulation in favor of the passengers claiming compensation from air carriers under its terms. This is in line with the focus on increased consumer protection created over the years by various EU regulations and directives in different industries, and it is expected to continue.

The number of questions forwarded to the EU Court of Justice by various national courts throughout European Union suggests

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<sup>60</sup> See *infra* Part 4.19.

<sup>61</sup> *Id.*

<sup>62</sup> See *infra* Part 4.18.

that the rights and obligations of air carriers toward their passengers will continue to be challenged.

#### 4. *Compendium of Case Studies*

Below is a summary of the EU Court of Justice's cases that address certain questions in relation to disputes between aviation companies and passengers. The case law study is based on the preliminary rulings available to the author through EUR-lex<sup>63</sup> as of March 9, 2020.<sup>64</sup>

##### 4.1 *Case C-344/04 (IATA & ELFAA)*<sup>65</sup>

Case C-344/04 manifests an early attempt by air carriers to limit the use and liability under Articles 5, 6, and 7 of the EU Air Passenger Rights Regulation based on the wording of the Montreal Convention. In addition, current Article 267 (former Article 234), second paragraph of the Treaty on European Union and the Treaty on the Functioning of the European Union<sup>66</sup> was tested as to whether there is some sort of threshold for a national court to forward questions to the EU Court of Justice on the basis of the referred Article.

##### 4.1.1 *The Dispute*

The air carriers' associations, IATA and ELFAA,<sup>67</sup> representing members that at the time carried, and still carry, almost all scheduled international air passengers worldwide, brought before the High Court of Justice of England and Wales, Queen's Bench Division (Administrative Court) judicial review proceedings

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<sup>63</sup> EUR-lex is the EU's legal database, which includes, inter alia, the authentic Official Journal of the European Union, EU law documents, case law, treaties, EFTA documents, international agreements, and preparatory documents, in all official languages.

<sup>64</sup> Please note that preliminary rulings issued on or before March 9, 2020 may not have been published until after the cut-off date for publication of this paper.

<sup>65</sup> Case C-344/04, *IATA & ELFAA v. Dep't for Transp.*, 2006 E.C.R. I-403.

<sup>66</sup> Treaty on the Functioning of the European Union, art. 267, Sept. 5, 2008, 2008 O.J. (C 115) 47, *reprinted in consolidated form at* 2010 O.J. (C 83) 47.

<sup>67</sup> The European Low Fares Airline Association (ELFAA) was an organization that claimed to "represent[] and protect the needs of low fare airlines and their customers." It disbanded in 2016 when its principal member carriers joined Airlines for Europe, a new trade group.



against the domestic department for transport in relation to the implementation of the EU Air Passenger Rights Regulation.

The basis for the associations' claims of invalidity was that Articles 19, 22, and 29 of the Montreal Convention contain carve-outs from air carriers' liability to passengers in the event of delays and, in particular, Article 29, which sets out that actions for damages, howsoever founded, may only be pursued subject to the conditions and limits set out in the Convention.

The national court decided to stay the proceedings and forwarded to the EU Court of Justice for its preliminary ruling the question of whether the Regulation should be considered invalid due, *inter alia*, to its being contrary to the Montreal Convention, in conflict with procedural rules, out of compliance with principles of proportionality, inconsistent with principles of legal certainty, lacking supporting reasoning, and/or being discriminatory.

#### 4.1.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- With reference to previous case law,<sup>68</sup> the EU Court of Justice clarified that it alone holds the jurisdiction to declare a community act invalid, and should any national court deem well-founded any argument for a community act to be invalid – such national court would be required to stay the proceedings in question and forward questions to the EU Court of Justice for a preliminary ruling on the relevant community act's validity.
- Agreements – or conventions as the Montreal Convention – entered into by the EU community have supremacy over secondary community legislation, such as the EU Air Passenger Rights Regulation.<sup>69</sup>
- Articles 19, 22, and 29 of the Montreal Convention merely govern the conditions under which passengers in the event of delay may claim compensation for damages that on an individual basis make up for harms caused by the delay in question. The

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<sup>68</sup> See Joined Cases C-143/88 & C-92/89, *Zuckerfabrik Süderdithmarschen & Zuckerfabrik Soest*, 1991 E.C.R. I-415, para. 17; Case C-6/99, *Greenpeace France & Others*, 2000 E.C.R. I-1651, para. 54.

<sup>69</sup> See Case C-61/94, *Comm'n v. Germany*, 1996 E.C.R. I-3989, para. 52; Case C-286/02, *Bellio F.lli Srl v. Prefettura di Treviso*, 2004 E.C.R. I-3465, para. 33.

referred articles do not, however, hinder Member States from implementing rules on standardized compensation for passengers of delayed flights, so they will not have to suffer any inconvenience from going to court and initiating proceedings there. “The system prescribed in Article 6 of the EU Air Passenger Rights Regulation simply operates at an earlier stage” than the system which follows from the Montreal Convention. The rights to compensation under the EU Air Passenger Rights Regulation hence follow independently from those granted under the Convention.

- Said interpretation will lead to enhanced protection for air passengers and such a result cannot be regarded as inconsistent with the Montreal Convention.
- There was no breach of any procedural rules when approving the EU Air Passenger Rights Regulation.
- The objectives pursued with the EU Air Passenger Rights Regulation have been clearly disclosed and the articles whose validity had been questioned are neither inconsistent with the principles of legal certainty, adequate reasoning, or proportionality, nor are they discriminatory. Hence, the Regulation as a whole is not to be held invalid on the grounds argued by the two air carrier associations.

In short, the view of the air carrier associations (forming the basis of the questions assessed by the Court of Justice) was not supported by the members of the court.

The general question of whether the Air Passenger Rights Regulation may be in conflict with conventions that are recognized to be hierarchically superior to it is an interesting one, and this case illustrates that the Court of Justice is willing to go far in order to expand consumer protection, resulting in airlines carrying a higher degree of liability for their activities. Viewing the ruling critically, it could, for example, be stated that the outcome of this case mostly represents the Court of Justice’s political view rather than being based on a strict interpretation of the wording of the Air Passenger Rights Regulation, as the Regulation itself does not contain any mention of it operating at an “earlier stage than the Montreal Convention.” Further, the EU has ratified the Montreal Convention and, as such, merely represents a party to the Convention on par with other signing States. To what extent the Court of Justice actually holds jurisdiction over the interpretation of the Montreal Convention can therefore be questioned as the Court only holds judicial powers in relation to the EU Member

States on EU legislation (or EU-based/derived legislation), and not in relation to other countries being signatory parties to the Convention. The objectives pursued with the Air Passenger Rights Regulation have little to say in relation to the purposes and interpretation of the Montreal Convention, and one could argue that where the Regulation does not correspond to the Convention, the content of the Convention should override the content of any legislative measure inferior to it.

## 4.2 *Case C-173/07 (Schenkel)*<sup>70</sup>

Case C-173/07 relates to the scope and applicability of the EU Air Passenger Rights Regulation and to what extent return tickets are to be viewed as one or several flights. The relevant provision of the Regulation is Article 3(1).

### 4.2.1 The Dispute

The passenger in question booked an outward and return flight from Düsseldorf to Manila via Dubai, United Arab Emirates. The return journey from Manila was scheduled for March 12, 2006 but was cancelled due to technical problems and the passenger was unable to leave Manila until March 14, arriving at Düsseldorf on the same day.

As a consequence, the passenger initiated proceedings against the air carrier in Germany and claimed compensation for 600 euros in accordance with Articles 5(1)(c) and 7(1)(c) of the EU Air Passenger Rights Regulation. The passenger argued that outward and return flights were non-independent parts of one, single flight. Subsequently, as the point of departure of the flight was Düsseldorf, the passenger stated that he had departed from an airport within the geographical scope of the Regulation, i.e., in a Member State within the meaning of Article 3(1)(a).

The air carrier disagreed with the views of the passenger and pleaded that the outward and return flights were to be regarded as two separate flights and that the carrier therefore<sup>71</sup> was under

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<sup>70</sup> Case C-173/07, *Emirates Airlines – Direktion für Deutschland v. Schenkel*, 2008 E.C.R. I-5237.

<sup>71</sup> Together with the fact that it held no license granted by any Member State as per Article 2(c) of Council Regulation 2407/92 of 23 July 1992 on Licensing of Air Carriers, 1992 O.J. (L 240) 1.

no obligation to compensate the passenger for the cancelled flight in question.

The national court stayed the proceedings and forwarded the following question to the EU Court of Justice for its preliminary ruling:

“Is Article 3(1)(a) of the EU Air Passenger Rights Regulation to be interpreted as meaning that a flight includes the flight from the point of departure to the destination and back, at any rate where the outward and return flights are booked at the same time?”

#### 4.2.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

There is no definition of the term “flight” within the Regulation, and the extent of the usage of such term varies between the different language versions (although the majority do not use such term) in respect of Article 3(1)(a), i.e., the scope of the regulation. But as air passengers nevertheless embark on a flight, the EU Court of Justice deemed it necessary to interpret the term.

The conclusion of the Court of Justice was that a journey out and back cannot be regarded as a single flight, meaning that Article 3(1)(a) of the Regulation shall not be applicable in the case at hand when a passenger travels back from an airport outside the EU to an airport within the EU, despite having made a single booking. The method for ticket reservations is of no importance for the applicability of Article 3(1)(a).

This case represents one of the few cases where the Court of Justice actually rules in favor of the air carrier. Any passenger will naturally view this as unfortunate, but the conclusion that a return flight shall not be regarded as a single flight together with the outbound flight (despite a single booking) seems reasonable.

#### 4.3 Case C-549/07 (*Wallentin-Hermann*)<sup>72</sup>

The *Wallentin-Hermann* case relates to Articles 5(1)(c) and 5(3) of the EU Air Passenger Rights Regulation, i.e., compensation on

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<sup>72</sup> Case C-549/07, *Wallentin-Hermann v. Alitalia*, 2008 E.C.R. I-11061.

account of cancellation of a flight, and to what extent “extraordinary circumstances” could be argued in the case.

### **4.3.1 The Dispute**

The passenger booked three seats for herself and her family on a flight from Vienna to Brindisi, Italy via Rome. After having checked in, the passengers were informed that their flights had been cancelled. This occurred five minutes prior to the scheduled time for departure. The passengers were transferred to another flight, which arrived in Rome 20 minutes after the passenger and her family’s connecting flight to their final destination had left the airport.

The cancellation of the flight was alleged by the air carrier to be the result of a complex engine defect in the turbine which had been discovered the day before the flight was to take off from Vienna. The repair of the aircraft was completed weeks after the flight to Rome should have occurred.

The passenger requested compensation from the air carrier under Articles 5(1)(c) and 7(1) of the Regulation. The carrier refused, referring to the exemption in Article 5(3) from the obligation to pay compensation due to the flight in question being cancelled on account of “extraordinary circumstances.”

The national court stayed the proceedings and requested the EU Court of Justice to clarify the concept of “extraordinary circumstances” by asking whether or not technical defects should/could qualify as such. The national court also asked for some guidance on the concept of “all reasonable measures” that need to be taken in connection with the extraordinary circumstances necessary for the air carrier to avoid liability.

### **4.3.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- As the Regulation contains no definition with regard to “extraordinary circumstances,” everyday language and the context in which the events in question occur – always bearing in mind the purpose of the rules – shall be used when assessing a case at hand.

- Provisions containing exemptions (such as Article 5(3)) to consumer protection rules (such as Article 5(1)) are to be interpreted strictly so as to not reduce the purposes of the main rules in question.<sup>73</sup> Seen in light of the purposes for the Regulation, Article 5(3) is hence subject to strict interpretation.
- The examples mentioned in Recital 14 of the Preamble to the Regulation, i.e., political instability, meteorological conditions, security risks, unexpected flight safety shortcomings, and strikes, are only indicative, and they do not automatically constitute such events which are to be deemed as “extraordinary circumstances,” and it is also emphasized that not all circumstances surrounding such events are to be allowed to excuse air carriers from their obligation to pay compensation.
- Technical problems that are detected during ordinary maintenance of airplanes, or that are caused by failure to carry out such ordinary maintenance, cannot in themselves be regarded as “extraordinary circumstances” under Article 5(3) of the Regulation.
- Technical problems can, however, be regarded as such an exceptional circumstance provided they are caused by events not inherent in the normal activities of the air carrier and that are beyond the air carrier’s actual control.
- The Montreal Convention (along with other agreements concluded by the EU community) is superior to secondary EU community legislation, such as the Air Passenger Rights Regulation.<sup>74</sup>
- An air carrier’s exemption from liability under Article 19 of the Montreal Convention does not necessarily exempt it from liability under Article 5(3) of the Regulation.
- The frequency of the technical problems experienced by an air carrier is not in itself a factor from which one can determine that there has been an occurrence, or absence, of an “extraordinary circumstance.”
- Compliance with minimum rules on maintenance of an airplane is not in itself sufficient to conclude that the air carrier in question has taken all reasonable measures necessary for entitlement to the exemption from compensation liability.

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<sup>73</sup> In this respect, the EU Court of Justice refers to previous case law for a similar reasoning. *See* Case C-336/03, *easyCar (UK) Ltd. v. Office of Fair Trading*, 2005 E.C.R. I-1947, para. 21.

<sup>74</sup> Also in this respect, reference is made to previous EU case law. *See* Case C-173/07, *Emirates Airlines – Direktion für Deutschland v. Schenkel*, 2008 E.C.R. I-5237, para. 43.

Through this case, the Court of Justice limited the possibilities for air carriers to argue that situations are to be classified as “extraordinary circumstances” and thereby excuse them from liability. If critical remarks are to be raised against the outcome, it could be stated that the interpretations made by the Court mean that, in practice, it is too difficult to meet the requirement for having implemented “reasonable measures” to avoid the situation at hand. This seems to be the case, as the Court is not, for instance, making any differentiation among the various categories of technical defects that could arise on aircraft (or elsewhere for that matter) and/or is placing too high an expectation for the ordinary maintenance to be carried out on aircraft. Despite the above – that perhaps the Court of Justice’s interpretations seem harsh and unfavorable to air carriers – it is assumed that most passengers are quite happy to see that the EU Court of Justice places high expectations on air carriers’ management of potential technical issues involving their fleets.

#### 4.4 *Case C-204/08 (Rehder)*<sup>75</sup>

This case relates to where within the EU compensation may be sought under the EU Air Passenger Rights Regulation.<sup>76</sup>

##### 4.4.1 **The Dispute**

The passenger, residing in Munich, booked a flight from there to Vilnius, Lithuania, with an air carrier having its registered office in Riga, Latvia. Approximately 30 minutes prior to the scheduled time for take-off, the passenger was notified that the flight had been cancelled, resulting in the passenger taking another flight to the destination and arriving more than six hours

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<sup>75</sup> Case C-204/08, *Rehder v. Air Baltic Corp.*, 2009 E.C.R. I-6073.

<sup>76</sup> In accordance with Article 5(1)(b) of Council Regulation 44/2001 of Dec. 22, 2000, Jurisdiction and the Recognition and Enforcement of Judgments in Civil and Commercial Matters, 2001 O.J. (L 12) 1, 4 (EC) [hereinafter Brussels I Regulation]. The Brussels I Regulation was replaced by Council Regulation 1215/2012 of Dec. 12, 2012, Jurisdiction and the Recognition and Enforcement of Judgments in Civil and Commercial Matters, 2012 O.J. (L 351) 1, 7 (EU) [hereinafter New Brussels I Regulation]. Article 5(1)(b) of the Brussels I Regulation has been transformed into Article 7(1)(b) within the New Brussels I Regulation without any material changes. Therefore, the preliminary ruling in the case is still valid for interpretation in relation to the New Brussels I Regulation.

late. The passenger sought compensation under the Regulation in Germany, arguing that the place of departure was to be seen as the place of performance of the contractual obligation within the meaning of Article 5(1)(b) of the Brussels I Regulation. The national court in Germany held that it had jurisdiction to deal with the claim for compensation. The air carrier appealed the decision and argued that air transport services are provided at the place where the company operating the flight has its head office.

The national court first referred to a previous ruling by the EU Court of Justice<sup>77</sup> – in which the Court held that the place of principal delivery when having several delivery points should be determined on the basis of economic criteria – and then stayed the proceedings and asked the Court of Justice to clarify whether one single place for performance also should be determined for journeys by air and, further, what criteria should be used for such assessment.

#### 4.4.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- The question of jurisdiction in respect to claims that are based only upon the Regulation shall be determined by the Brussels I Regulation.<sup>78</sup>
- Air transportation services are to be regarded as indivisible from the place of departure to the arrival place, meaning that one cannot divide the services and find one being the “principal service.” As such, both the place of arrival and the place of departure shall be regarded as places of provision of the services under the applicable transport contract. A plaintiff who seeks compensation under the Regulation can therefore freely choose to initiate the proceedings before one of the courts having jurisdiction over either the contractual place of departure or the contractual place of arrival, in addition to the defendant’s domicile.

In other words, the passenger was entitled to initiate proceedings in Germany. The ruling is based upon the Brussels I Regulation (which stipulates that a person can be sued elsewhere than in

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<sup>77</sup> Case C-386/05, *Color Drack GmbH v. Lexx Int’l Vertriebs GmbH*, 2007 E.C.R. I-3699, para. 26.

<sup>78</sup> And subsequently by the New Brussels I Regulation going forward, taking its transitional provisions into account.



the domicile country of that defendant when, for example, the dispute relates to a contract and performance of services occurs in such other country), clarifying that there is a level of uncertainty for air carriers as to where passengers may initiate proceedings under the Regulation. The ruling could be said to encourage more forum shopping by passengers, which to a certain degree will affect air carriers negatively as they do not necessarily maintain an office/local presence in all countries in which their flights arrive/depart. Thus, carriers need to take this into consideration when opening up new routes. That being said, this case can be derived from the wording in the Brussels I Regulation and the result should not have been a total surprise.

#### **4.5 *Joined Cases C-402/07 & C-432/07 (Sturgeon)***<sup>79</sup>

The *Sturgeon* case relates to the interpretation of Articles 2(i), 5, 6, and 7, and compensation in the event of “delay” and “cancellation,” and to what extent such compensation could be exempted due to extraordinary circumstances.

##### **4.5.1 The Disputes**

The preliminary ruling by the EU Court of Justice in the *Sturgeon* case addressed two disputes:

(1) In Case C-402/07, the passengers booked a return flight between Toronto and Frankfurt am Main, which was scheduled to depart at 4:20 PM on July 9, 2005. After having checked in at the airport, the passengers received information that the flight had been cancelled, which also was indicated on the airport departure board. The passengers subsequently received their luggage back and were transported to a nearby hotel where they spent the night. The next day, the passengers were checked in to a flight with the same flight number as the booking, but at the counter of another air carrier and with different seats. Despite the same flight number, the air carrier with which the passengers had made the booking had not scheduled any flights on that day. The passengers arrived at Frankfurt am Main approximately 25 hours after the scheduled arrival time.

The passengers – in light of the delay and combined with the other circumstances – claimed compensation, as in their view the

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<sup>79</sup> Joined Cases C-402/07 & C-432/07, *Sturgeon et al.*, 2009 E.C.R. I-10923.

flight had been cancelled within the meaning of the EU Air Passenger Rights Regulation.

(2) In Case C-432/07, the passengers booked a flight with return tickets from Vienna to Mexico City via Paris. The return flight from Mexico City to Paris was scheduled for departure at 9:30 PM on March 7, 2005. When approaching check-in, they were informed that their flight had been cancelled due to a change in the flight planning which had arisen partially because of a technical problem with the aircraft and partially due to a need to comply with mandatory crew rest period regulations. In order to return to Vienna, the passengers accepted the carrier's offer to fly on another aircraft operated by a different air carrier, scheduled for departure at 12:20 PM the following day; hence their tickets with the original carrier were cancelled and new tickets were issued at the counter of the other air carrier. The passengers arrived approximately 22 hours later than the original scheduled arrival time.

The passengers thereafter claimed compensation and argued that their flight had been cancelled.

Both air carriers, in respect of the proceedings that had been initiated, argued that the flights in question had not been cancelled, but merely delayed. Additionally, they claimed that the delays had been caused by technical faults that should be deemed as "extraordinary circumstances" and resulting in their being exempted from the obligation to pay compensation per Article 5(3) of the Regulation.

The national court stayed the proceedings and asked the EU Court of Justice to elaborate on the term "cancellation" under the Regulation, and whether or not a flight should be regarded as cancelled rather than delayed if passengers are transported significantly later on another flight than the one originally scheduled.

#### **4.5.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- A delayed flight, irrespective of the duration of the delay, cannot, as a starting point, be regarded as a cancelled flight. However, if the air carrier arranges for the passengers on the original flight to be carried on another flight whose original planning deviates from that of the flight for which the booking was made,

then a “delay” may be classified as a cancellation, i.e., if the planning for the original flight is abandoned, and passengers on the original flight join with passengers on another flight, then a stated delay may classify as a cancellation. Air carriers’ messages on departure boards are of no relevance in this respect. The length of a delay in itself, however, does not mean that a delay automatically is to be regarded as a cancellation.

- A provision that confers rights to air passengers, including those which entitle passengers to the right of compensation, is to be interpreted broadly.<sup>80</sup>
- Although there is no explicit mention of passengers on delayed flights having the same right to compensation as passengers on cancelled flights, the Regulation shall not be interpreted as to exclude passengers from compensation rights under Article 7.
- If a delay results in passengers arriving at their final destination three hours or more after the originally scheduled arrival time, such passengers are entitled to claim compensation under Articles 5 to 7 of the Regulation. Loss of time constitutes an inconvenience which is covered by the Regulation.
- The possibility for air carriers to reduce their liability upon offering air passengers re-routing options shall also apply with respect to delays of more than three hours.
- Extraordinary circumstances that relate to such delays may also result in air carriers being excused from their liability to pay compensation.
- In line with *Wallentin-Herrman*, it was reiterated that technical errors or problems will only be classified as an extraordinary circumstance if the problem “stems from events which by their nature or origin, are not inherent in the normal exercise of the activity of the air carrier concerned and are beyond its actual control.”<sup>81</sup>

The result of this case is that a delay of three hours or more is to be regarded as a cancellation with the consequence that affected passengers may be entitled to seek compensation and not merely to seek assistance from the air carrier in question, as would be the case for delays. There is no wording in the Regulation that would suggest that the EU legislator has regarded long

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<sup>80</sup> Which in essence is a reminding statement from an earlier case. See *Wallentin-Herrmann*, *supra* note 72, para. 17.

<sup>81</sup> *Id.* para. 34.

delays as cancellations and it could therefore be argued that the Court of Justice went against the intent of the Regulation, which differentiates cancellations from delays. On the other hand, it appears quite reasonable to add limitations as to how long a flight can be delayed prior to the carrier facing the risk of compensation claims. Otherwise, there would be a clear risk that passengers would continuously face messages on delayed flights instead of cancellations in order for air carriers to avoid compensation claims.

#### 4.6 *Case C-294/10 (Eglītis)*<sup>82</sup>

The case concerns the interpretation of Articles 5(3) and 6(1) of the EU Air Passenger Rights Regulation regarding compensation and assistance to passengers in cases of denied boarding and long delay of flights in connection with extraordinary circumstances.

##### 4.6.1 The Dispute

A flight between Copenhagen and Riga was scheduled for departure on July 14, 2006, at 8:35 PM. Five minutes earlier, however, Swedish authorities closed down the airspace in the Malmö region (south of Sweden) due to failures in the power supply, which resulted in the breakdown of radar and air navigation systems.

Despite the closing of Swedish airspace, the passengers remained on the airplane they had boarded until 10:45 PM. At that time, they were informed that the flight had been cancelled and that they had to leave the plane.

Two passengers brought a claim against the air carrier for compensation before the Latvian Consumer Protection Office, which refused their claim, a decision subsequently confirmed by the Department of the Economy for the Republic of Latvia. The two passengers appealed this latter decision and argued in the main proceedings that the reason for the cancellation of the flight was not the closing of Swedish airspace, but instead that the crew on the airplane had reached the limits for permitted working hours at 10:45 PM.

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<sup>82</sup> Case C-294/10, *Eglītis et al. v. Latvijas Republikas Ekonomikas ministrija*, 2011 E.C.R. I-3983.

The national court decided to stay the proceedings and asked the EU Court of Justice to provide some guidance on the interpretation of Articles 5(3) and 6(3). In short, the national court sought an answer to the question of whether there is a requirement to organize resources in good time and to what extent there is a “reserve time” with which air carriers shall operate.

#### 4.6.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- Although it is recognized that occurrences of extraordinary circumstances as per Article 5(3) of the Regulation make it difficult or impossible to operate a flight at the scheduled time, it follows from said Article that an air carrier must – to avoid liability – implement all reasonable measures thereunder to take account of the risk of delay connected to the occurrence of an extraordinary circumstance.
- Subsequently, a “reasonable air carrier must organize its resources in good time to provide for some reserve time, so as to be able, if possible, to operate that flight once the extraordinary circumstances have come to an end.”<sup>83</sup> Failing to do so results in the air carrier in question not having taken all reasonable measures as stipulated in Article 5(3) of the Regulation.
- However, such obligations to provide for some reserve time will depend on the particular situation at hand. The EU Court of Justice in this regard makes reference to paragraph 42 of *Wallentin-Hermann* through which it (according to the EU Court of Justice) previously had established an individual and flexible concept of reasonable measures – to be assessed by the national courts case by case. Hence, Article 5(3) of the Regulation is not to be interpreted as to stipulate a requirement for all air carriers to implement a general minimum reserve time in order to be viewed as having taken reasonable measures within the meaning of the Regulation.
- Article 6.1 shall not be used when assessing whether or not the measures implemented by the air carrier in question for avoiding delays has been reasonable. Furthermore – the assessment of the carrier’s ability to implement reserve time in the situ-

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<sup>83</sup> *Id.* para. 28.

ation at hand shall be carried out in a manner which ensures that air carriers will not be “led to make intolerable sacrifices in the light of the capacities of its undertaking at the relevant time.”<sup>84</sup>

- Through this case, the EU Court of Justice emphasizes that the circumstances in the case at hand shall be determining for the assessment of “extraordinary circumstances” and to what extent the effect of these circumstances could have been avoided. Leaving this for the national courts to decide will, of course, represent less guidance and less coherence among the Member States, but to require a fixed minimum amount of reserve time for air carriers would not be fruitful, as sufficient time in one case may turn out to be insufficient in another.

#### 4.7 *Case C-83/10 (Sousa Rodriguez)*<sup>85</sup>

Case C-83/10 relates to the interpretation of the term “cancellation” within the meaning of Article 2(l) of the EU Air Passenger Rights Regulation and questions on further compensation as per Article 12 of the Regulation.

##### 4.7.1 The Dispute

The plaintiffs had contracted with an air carrier for transport from Paris to Vigo, Spain, scheduled for departure at 7:40 PM on September 25, 2008.

Due to a technical failure, the pilot returned the flight just a few minutes after take-off. The flight did not thereafter leave Paris to the scheduled destination in Spain and the passengers were invited to take alternative flights the subsequent day to the actual, or nearby, destinations. The carrier provided the passengers no assistance or accommodation.

Seven passengers initiated proceedings against the carrier in the Commercial Court No. 1 of Pontevedra (Spain) for breach of contract and sought compensation under Article 7 of the Regulation, as well as compensation for taxis, meals, and costs for keeping a dog at the boarding kennel for an extra day, plus compensation for non-material damage suffered.

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<sup>84</sup> *Id.* para. 35.

<sup>85</sup> Case C-83/10, *Sousa Rodriguez et al. v. Air France SA*, 2011 E.C.R. I-9469.

The national court decided to stay the proceedings and requested the EU Court of Justice to clarify whether the term “cancellation,” as defined in Article 2(1) of the Regulation, also should cover cases when a flight is forced to return to the departure airport for technical reasons. Further, the Court was asked if the term “further compensation” as used in Article 12 of the Regulation in relation to cancellations allows a national court to award compensation for any types of damages suffered, or if such compensation must solely relate to appropriately substantiated expenses incurred by passengers and not be sufficiently indemnified by the air carrier as per Articles 8 and 9 of the Regulation.

#### 4.7.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- The Court of Justice had previously dwelled upon the term “flight,”<sup>86</sup> where it had been clarified that the itinerary represents an essential element of the flight, as the flight is operated in accordance with the carrier’s pre-arranged planning. Hence, the Court held that if take-off occurs, but the airplane then returns to the airport of departure without having reached the scheduled destination appearing in the itinerary, then the flight as originally scheduled cannot be regarded as having been carried out and is thus to be regarded as cancelled.
- There is no need for the air carrier to actually classify the flight as cancelled for the flight to be regarded as such. Furthermore, the underlying reason for why the airplane returned to the airport is of no relevance for the purpose of determining whether the flight has been cancelled.<sup>87</sup>
- Article 12 of the Regulation allows national courts to award compensation under conditions provided for by the Montreal Convention or other national law, for damage – including non-material damage, due to breach of contract of carriage by air. The meaning of “further compensation” shall not, however, be interpreted to mean that national courts may use Article 12 to

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<sup>86</sup> See Case C-173/07, *Emirates Airlines – Direktion für Deutschland v. Schenkel*, 2008 E.C.R. I-5237; Joined Cases C-402 & C-432/07, *Sturgeon et al.*, 2009 E.C.R. I-10923.

<sup>87</sup> Although it may affect the subsequent question of payment of compensation under Article 5(3) of the Regulation.

order reimbursement of expenses to passengers with delayed or cancelled flights because the air carrier in question had neglected to fulfill its obligations to provide care and assistance under Articles 8 and 9 of the Regulation.

Although one could say that the EU Court of Justice in this case punished an air carrier that acted out of prudence (the pilot decided to turn around due to safety considerations), the clarifications made with respect to cancellation of flights are quite logical and ought not to have come as a major surprise for the industry. Without the Court's interpretations, air carriers may have been incentivized to stop classifying flights as cancelled simply to avoid the duty to pay compensation.

#### 4.8 *Case C-22/11 (Timy Lassooy)*<sup>88</sup>

Case C-22/11 relates to the question of whether the rescheduling of flights after cancellation due to a strike at the departure airport may entitle passengers to claim compensation.

##### 4.8.1 The Dispute

On July 28, 2006, certain staff employed by an air carrier executed a strike at the Barcelona airport in Spain. As a consequence, the carrier had to cancel its 11:40 AM flight from Barcelona to Helsinki on that day. For the purpose of avoiding an unreasonably long delay, the carrier decided to reschedule the passengers on subsequent flights, as well as arrange for special flights, resulting in the affected passengers being able to travel to Helsinki later on the same or the following day.

The use of the subsequent flights resulted in some of the passengers who had booked the 11:40 AM flight on July 29 also being forced to take either a special 9:40 PM flight or the 11:40 AM flight to Helsinki the following day, i.e., on July 30. One of the passengers who had booked the 11:40 AM flight on July 30 and had duly presented himself for boarding was forced to take the 9:40 PM flight on July 30. This passenger initiated proceedings against the carrier, claiming compensation under Article 7(i)(b) of the EU Air Passenger Rights Regulation as a result of "denied boarding" within the meaning of Article 4 of the Regulation.

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<sup>88</sup> Case C-22/11, *Finnair Oyj v. Timy Lassooy*, 1 C.M.L.R. 18 (2013).



The district court rejected the claim with the motivation that the regulation was not applicable where boarding has been denied due to overbooking for economic reasons and because the strike at the airport was to be viewed as an extraordinary circumstance – exempting any obligation to pay compensation. The court of appeals took a different view and granted compensation to the passenger, which subsequently resulted in the carrier filing an appeal to the Supreme Court of Finland. The Supreme Court resolved to stay the proceedings and asked the EU Court of Justice to clarify whether or not the Regulation is applicable when boarding has been denied due to other than economic reasons, for instance due to operational reasons. The Supreme Court further requested the Court of Justice to elaborate on the grounds for denied boarding and whether or not the exemption from paying compensation in Article 5(3) of the Regulation (extraordinary circumstances) also applies to passengers on later flights whose journey was not directly affected by the factor in question.

#### **4.8.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- The EU legislator intentionally formulated the scope of the definition “denied boarding” in Article 2(j) as broadly as possible in order to ensure that the Regulation covers all circumstances in which an air carrier might refuse to carry a passenger, regardless of whether economic, operational, or otherwise.
- Although the wording in Article 2(j) of the Regulation (“such as”) indicates that there are additional grounds for denied boarding, other than those explicitly mentioned (health, safety/security, or inadequate travel documentation), it cannot be inferred from said wording that there were reasonable grounds to refuse boarding on the basis of such an operational reason as a strike.
- Although Article 5(3) contains an exemption from an air carrier’s obligation to compensate passengers in the event of extraordinary circumstances that could not be avoided, even by taking reasonable measures, said exemption relates to denied boarding under Articles 2(j) and 4 of the Regulation.
- “Extraordinary circumstances” only relates to a particular aircraft on a particular day and hence cannot be regarded as applicable to a passenger who has been denied boarding due to the

rescheduling of flights resulting from extraordinary circumstances which had affected earlier flights.

Through this case, the EU Court of Justice puts a lot of pressure on air carriers to make sure that extraordinary circumstances affecting one flight do not indirectly affect other flights, i.e., a duty to make sure the effects do not spill over. This potentially means that air carriers going forward might be incentivized to not transfer passengers from affected flights to other flights as it might carry a risk of claims from the passengers booked on those alternate flights. As such, the ruling may have favored the affected passenger in the case at hand at least in the short term, but may lead to negative consequences for passengers in general in the long run.

#### 4.9 *Case C-321/11 (Cachafeiro)*<sup>89</sup>

Case C-321/11 also relates to the possibility of expanding the exemptions made to the definition of “denied boarding” in Article 2(j), combined with Article 3(2) of the EU Air Passenger Rights Regulation.

##### 4.9.1 The Dispute

The passengers purchased airline tickets in order to travel from Corunna, Spain to Santo Domingo, Dominican Republic. The journey consisted of two flights, scheduled for departure on the same day, December 4, 2009, namely:

- (1) Flight IB 513 from Corunna to Madrid with scheduled departure time at 1:30 PM, and arrival time at 2:40 PM, and
- (2) Flight IB 6501 from Madrid to Santo Domingo with scheduled departure at 4:05 PM, and arrival time at 7:55 PM.

The passengers checked in their luggage at the air carrier’s check-in counter at Corunna airport, directly to their final destination.

As the first flight was delayed one hour and 25 minutes, the air carrier cancelled the passengers’ boarding cards to the second flight at 3:17 PM and allocated their boarding cards/seats to other travelers. Despite the delayed first flight, the passengers man-

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<sup>89</sup> Case C-321/11, *Cachafeiro v. Iberia Líneas Aéreas de España SA*, EU:C:2012:609.

aged to present themselves at the departure gate for the final boarding call of the second flight. Due to the cancellation of boarding cards and distribution of seats to other travelers, the air carrier's gate staff did not allow them to board the airplane, resulting in the passengers being forced to wait until the following day to reach their final destination – 27 hours late.

The passengers initiated proceedings against the air carrier and claimed compensation for denied boarding with reference to Article 4(3) and 7(1)(c) of the Regulation. The carrier disputed the claims, arguing that the case was not to be viewed as a “denied boarding,” but rather as a missed connection.

The national court decided to stay the proceedings and asked the EU Court of Justice to clarify whether the concept of “denied boarding” as per Article 2(j) of the Regulation includes situations where boarding is denied because the seats of the affected passengers were distributed to other travelers.

#### **4.9.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- In the event of passengers being prevented from boarding a flight not because of a failure to comply with the conditions laid out in Article 3(2) of the Regulation (confirmed reservation, on-time check-in, etc.), but because of their reservation having been cancelled as a result of an earlier flight included/being part of the ticket with the same air carrier having been delayed, such prevention shall be included in the concept of “denied boarding” as per Article 2(j) of the Regulation.
- One must still evaluate whether there are any applicable reasonable grounds for denying boarding prior to granting compensation. The reasons referred to in this case shall not be regarded as such reasonable operational grounds for denying boarding, as there were no reasons that were attributable to the affected passengers.
- There is no link established in Article 2(j) of the Regulation between “denied boarding” and an air carrier's “overbooking” of a flight for economic reasons, i.e., overbooking is no reason for classifying the refusal to board these passengers as a “denied boarding.”

This case shed further light on the risks for air carriers in overbooking flights for economic reasons. It makes sense that the Court of Justice emphasized that overbooking is done at the carrier's risk, but it should at the same time be noted that air carriers are under pressure to always keep their flights fully booked in order to meet ever-increasing costs. Taking into consideration that passengers sometimes cancel their tickets, are delayed on connecting flights, leave seats open, or just don't show up for various reasons, it could be argued that for operational reasons it would have been proportionate to allow the air carrier in this case to prevent the affected passengers from boarding as long as it would have been reasonable to assume that the passengers (originally booked for the relevant seats) in question would be unlikely to reach the second flight in time.

#### 4.10 *Joined Cases C-581/10 & C-629/10 (Nelson)*<sup>90</sup>

Nelson reflected an attempt by air carriers to neutralize, or at least limit, the effect of the EU Court of Justice's interpretation of Articles 5 to 7 of the EU Air Passenger Rights Regulation in the *Sturgeon* case with regard to the obligation of air carriers to pay compensation to passengers in the event they reach their final destination more than three hours after their scheduled time of arrival.

##### 4.10.1 The Disputes

In Case C-581/10, the passengers booked a flight with an air carrier from Frankfurt am Main to Lagos, Nigeria, with scheduled departure on July 27, 2007, and a scheduled return flight from Lagos departing on March 27, 2008 at 10:50 PM on flight LH 565. The passengers arrived in good time at the Lagos airport, but the return flight was unable to depart at the scheduled departure time, resulting in the passengers being accommodated in a hotel. On March 29, 2008, at 1:00 AM, a replacement aircraft (brought in from Frankfurt am Main) – with the same flight number, LH 565 – transported the passengers back to Frankfurt am Main, landing more than 24 hours later than the scheduled original arrival time.

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<sup>90</sup> *Joined Cases C-581/10 & C-629/10, Nelson v. Deutsche Lufthansa, EU:C:2012:657.*

The passengers initiated proceedings against the air carrier, claiming, inter alia, compensation for delay in the amount of 600 euros plus interest, per family member, with reference to Articles 5(1) and 7 of the Regulation. The carrier disputed the claim, arguing that the flight had been delayed, not cancelled, thereby avoiding its obligation to pay compensation as no such obligation within the Regulation exists in relation to delays. After already having received clarification in this regard due to the *Sturgeon* case,<sup>91</sup> the carrier changed its view and instead argued that the Court of Justice's view taken in *Sturgeon* was either not reconcilable with the Montreal Convention, or that the Court had exceeded its jurisdiction, thereby rendering its decision void.

In Case C-629/10, an air carrier requested from the United Kingdom's Civil Aviation Authority (CAA)<sup>92</sup> a confirmation that the CAA would not interpret the EU Air Passenger Rights Regulation to include an obligation to pay compensation in the event of delays. The CAA did not provide the requested confirmation, but instead referred to the *Sturgeon* case. The carrier therefore chose to initiate proceedings against the CAA.

Each of the national courts decided to stay their proceedings and in essence requested the EU Court of Justice to clarify the relationship between the interpretation made in the *Sturgeon* case and the Montreal Convention.

In Case C-581/10, the Court of Justice was asked to: (1) give its view on whether or not the right to compensation granted by Article 7 of the Regulation represented a claim for non-compensatory damages within the meaning of second sentence of Article 29 of the Montreal Convention; (2) explain the relationship between the right to compensation due to delay, as per the *Sturgeon* case, and the right to compensation as per Article 19 of the Montreal Convention, bearing in mind the exclusion of non-compensatory damages under the second sentence of Article 29 of the Conven-

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<sup>91</sup> Joined Cases C-402/07 & C-432/07, *Sturgeon et al.*, 2009 E.C.R. I-10923. The EU Court of Justice clarified, inter alia, that if an aircraft arrives three hours or more after scheduled arrival time, the affected passengers will have the same right to compensation as if the flight had been cancelled under Article 5. See EU Air Passenger Rights Regulation, *supra* note 2, art. 5.

<sup>92</sup> The United Kingdom's independent aviation regulator being responsible for enforcing aviation regulation in the United Kingdom, with activities such as economic regulation, airspace policy, safety regulation, and consumer protection.

tion; and (3) explain how the preliminary ruling in *Sturgeon* is compatible with previous rulings where the Court of Justice has stated that the Montreal Convention has supremacy over the EU Air Passenger Regulation.<sup>93</sup>

In Case C-629/10, the Court of Justice was faced with questions as to whether or not Articles 5 and 7 (as interpreted in *Sturgeon*) are to be held invalid, due to, e.g., breach of equal treatment, principles of proportionality, and principles of legal certainty.

The president of the Court of Justice resolved on November 30, 2011 to join both cases for the purpose of the oral procedure and preliminary ruling.

#### 4.10.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- Articles 5 to 7 of the Regulation are to be interpreted to mean that passengers who are delayed to their final destination by three hours or more shall be entitled to compensation under the Regulation, but only to the extent that the air carrier cannot substantiate that the delay was caused by extraordinary circumstances beyond its control.
- Like the inconveniences referred to in *IATA & ELFAA*,<sup>94</sup> a loss of time cannot be categorized as “damage occasioned by delay” within the meaning of Article 19 of the Montreal Convention, and hence falls outside the scope of Article 29 of the Convention.
- The obligation to compensate passengers delayed to their final destination by more than three hours as interpreted from Articles 5 to 7 of the Regulation by the EU Court of Justice is compatible with Article 29 of the Montreal Convention.
- The line of argumentation that the interpretation of Articles 5 to 7 made by the Court of Justice is to be regarded as invalid on account of breach of principles of legal certainty is rejected. Furthermore, the consequences of the *Sturgeon* case for air carriers cannot be considered disproportionate to the aim of ensuring a high level of protection for air passengers.

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<sup>93</sup> See *IATA & ELFAA*, *supra* note 65.

<sup>94</sup> *Id.*

- With reference to Article 267 of the Treaty on European Union and The Treaty of the Functioning of the European Union, the interpretation of a rule of EU law given by the EU Court of Justice clarifies that rule as it must be, or ought to have been, understood and applied from the time of that rule's entry into force. The Court of Justice may make exemptions from this principle, but only in exceptional cases. In this case, there are no such exceptional grounds for limiting the temporal effects of the *Sturgeon* case.

As mentioned in relation to *Sturgeon*, one can argue that the interpretations made by the Court of Justice through that case contradict the Montreal Convention and question to what extent the Court holds jurisdiction over the Convention. These concerns were raised in *Nelson*, where the Court of Justice cemented its view on the subject matter. The legal interpretations made can still be questioned as “loss of time” by most people and would be regarded or understood as one of the damages suffered in situations where a flight has been delayed. Further, it appears as if the question of whether the Court of Justice holds jurisdiction over the Montreal Convention to a certain degree has been avoided by simply stating that it holds the ultimate power to issue rulings over EU legislation. The counterargument to the latter question may, for instance, be that the EU Court of Justice – despite not having formal judicial power over the Montreal Convention in relation to all contracting parties – nevertheless holds judicial power in relation to the Member States as part of the EU legislation, but it seems that such statements have not been made by the Court.

Again, the view in relation to delays clearly reflects a political position that one can argue falls outside the scope of Court of Justice's jurisdiction – but it is on the other hand quite normal for supreme courts in any country to develop the law in grey areas. And although one can be critical with respect to the legal arguments presented in the ruling, most individuals traveling by air are quite happy with the Court when it expands passenger rights in this manner, as delays frequently occur.

#### 4.11 *Case C-139/11 (Moré)*<sup>95</sup>

In Case C-139/11, the EU Court of Justice issued a preliminary ruling on the principles for time limitation with regard to when claims under the EU Air Passenger Rights Regulation must be brought before national courts.

##### 4.11.1 The Dispute

The passenger booked a flight scheduled to depart from Shanghai to Barcelona on December 20, 2005. However, the flight in question was cancelled and the passenger was forced to travel the next day with another air carrier via Munich.

On February 27, 2009, the passenger initiated proceedings against the carrier before the Commercial Court 7 in Barcelona claiming compensation under the Air Passenger Rights Regulation. The carrier disputed the claim and argued that the action was time-barred with reference to expiration of the two-year limitation period specified in Article 29 of the Warsaw Convention. The national court decided to stay the proceedings and asked the EU Court of Justice to clarify if the Regulation should be interpreted as to include such a time limitation as stipulated by Article 35 of the Montreal Convention (being identical with Article 29 of the Warsaw Convention, i.e., two years from the day of arrival at the final destination, calculated from the day the flight in question ought to have arrived or was interrupted) for when claims under Articles 5 and 7 must be brought before national courts.

##### 4.11.2 The Ruling of the EU Court of Justice

The EU Court of Justice quite simply resolved that the national law in each Member State shall determine the time limitation when claims are to be brought before the court with regard to compensation under Articles 5 and 7 of the Regulation. The two-year time limitation period under Article 29 of the Warsaw Convention and Article 35 of the Montreal Convention is not applicable to such claims.

As time limitations with respect to claims can differ from country to country, the position taken by the Court of Justice can therefore be said to increase the level of uncertainty – especially

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<sup>95</sup> Case C-139/11, *Moré v. KLM NV*, EU:C:2012:741.



as later cases have shown that a passenger may choose to initiate proceedings in several countries. This may increase the level of forum shopping activities by passengers.

#### **4.12 Case C-12/11 (*McDonagh*)<sup>96</sup>**

The *McDonagh* case relates to Articles 5(1)(b) and 9 of the EU Air Passenger Rights Regulation, i.e., the obligation for air carriers to offer assistance and take care of their customers.

##### **4.12.1 The Dispute**

On February 11, 2010, the passenger booked a flight from Faro, Portugal to Dublin, which was scheduled for April 17, 2010. On March 20, the Eyjafjallajökull volcano on Iceland started to erupt and later, on April 14, the eruption transcended into an explosive phase that resulted in volcanic ash being spread to the skies of Europe. The spreading of ash to European skies subsequently led to the closing down of airspace over a number of EU/EEA Member States and the passenger's flight was cancelled on April 17 as Irish airspace was among those closed. The carrier's flights between continental Europe and Ireland were resumed five days later but the passenger could not return to Ireland until April 24.

The air carrier did not offer the passenger care under Article 9 of the Regulation during the period of April 17-24 and, as a result, the passenger initiated proceedings against the carrier and claimed compensation for costs relating to meals, refreshments, accommodations, and transport. In the ensuing proceedings, the carrier argued that the volcanic eruption was not only to be seen as "extraordinary circumstances," but in fact was a "super extraordinary circumstance," which ought to result in air carriers being released from not only the obligation to pay compensation in accordance with Article 5(3) but also from the obligation to provide care pursuant to Article 9 of the Regulation. The national court decided to stay the proceedings and asked the EU Court of Justice to clarify if circumstances such as the closure of airspace in Europe due to volcanic eruption can go beyond events that are addressed by the term "extraordinary circumstances" in the Regulation and, if yes, whether the obligation to provide care

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<sup>96</sup> Case C-12/11, *McDonagh v. Ryanair Ltd.*, EU:C:2013:43.

and assistance then could be excluded. The national court further asked, if the answer to the first two questions was “no,” whether there is an implied limitation of an air carrier’s liability within Article 5 and 9 and if Articles 5 and 9 are to be deemed invalid if they violate the principles of an equitable balance of interests upon which the Montreal Convention and the Charter of Fundamental Rights of the EU are based.

#### 4.12.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- When air carriers fail to fulfill their obligations to provide assistance and care under Article 9 of the Regulation, their passengers are entitled to claim compensation on the basis of the factors set out in the relevant provisions. Such claims are not to be regarded as an attempt to seek damages on an individual basis for the harm caused.<sup>97</sup>
- Air passengers may invoke before a national court that an air carrier has failed to provide care and assistance in order to obtain compensation for such failure. Article 16 of the Regulation shall not be interpreted as to only allow air passengers to invoke such claims before the national body designated by the Member State in question in which the claim has been/will be forwarded.
- “Extraordinary circumstances” relate to circumstances that are “out of the ordinary,” i.e., something that is not in the normal exercise of the activity of the air carrier concerned, which is beyond the actual control of the air carrier due to the character and origin of the event in question. This means that all events beyond the control of an air carrier are to be regarded as an “extraordinary circumstance” and that the Regulation therefore does not allow for any “super extraordinary circumstance” that potentially could exempt an air carrier from its obligations to provide care and assistance under Article 9 of the Regulation.
- Contrary to the position taken with regard to the obligation to pay compensation, there are no exemptions from an air carrier’s obligation to provide service and assistance under Article 9 of the Regulation – even in cases of “extraordinary circumstances.”

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<sup>97</sup> The EU Court of Justice in this respect clarifies the existing position held by it and refers to *Sousa Rodriguez*, *supra* note 85, para. 38.

- No limitation with regard to an air carrier's duties to provide care and assistance has been stipulated in the Regulation, whether monetary caps or temporal. In line with this, any interpretation that seeks to recognize limits with regard to an air carrier's obligations in this respect shall not be allowed as it would run counter to the aims pursued by the legislator when adopting the Regulation. In other words, the liability of an air carrier with regard to the obligation to provide care and assistance under Article 9 of the Regulation is unlimited.
- Articles 5(1)(b) and 9 of the Regulation are not contrary to the principle of proportionality. The potential financial consequences for air carriers cannot be regarded as disproportionate to the aim of ensuring high-level protection for air passengers. However, air passengers may only recover such amounts which – seen in light of the provided specifications thereof – make up for the shortcomings of the air carrier in question.

To not allow for any limitation of liability whatsoever in respect of an air carrier's duty to provide care and services to passengers in cases of delay or cancellation can, of course, be regarded as quite harsh for air carriers and detrimental to the planning of a carrier's operations – especially in situations such as this, involving volcanic eruptions, explosions, and closed airspace. It could therefore be said that the ruling contradicts the principle of proportionality. However, as the Court of Justice points out, no limitations in relation to an air carrier's duty to provide service and care have been inserted by EU legislation in the Regulation – as opposed to the duty to pay compensation. As such, the preliminary ruling by the EU Court of Justice further strengthens passengers' rights.

#### 4.13 *Case C-11/11 (Folkerts)*<sup>98</sup>

Case C-11/11 further elaborated on the EU Court of Justice's interpretation of Articles 5 and 7 of the EU Air Passenger Rights Regulation in relation to the obligation to pay compensation for long delays as established through the *Sturgeon* case.

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<sup>98</sup> Case C-11/11, *Air France v. Folkerts*, EU:C:2013:106.

### 4.13.1 The Dispute

The passenger booked a flight from Bremen to Asunción, Paraguay, via Paris and São Paulo, scheduled for departure on May 16, 2006 at 6:30 AM, with scheduled arrival later the same day at 11:30 PM.

As the flight from Bremen to Paris was delayed and did not take off until close to 9:00 AM, the passenger arrived in Paris after the connecting flight to São Paulo had departed. The passenger was then re-booked by the air carrier on another flight to São Paulo – but the delay meant that the passenger also missed the flight to the final destination, resulting in arrival 11 hours after the originally scheduled time.

The passenger claimed compensation with reference to Article 7(1)(c) of the Regulation and was awarded compensation in the first two instances.

On appeal, the superior national court concluded that the outcome of the case was to be determined upon whether or not the length of the delay in reaching the final destination alone would be sufficient, or whether there would be an additional requirement within Article 6(1) stipulating that the departure must be delayed by the number of hours relevant to the distance in question. Having identified the question above, the national court determined to stay the proceedings and asked the EU Court of Justice to clarify if a passenger is entitled to compensation under Article 7 of the EU Air Passenger Rights Regulation when departure of said passenger's flight has been delayed below the time limits as set out in Article 6(1) of the referred regulation, but when arrival at the final destination in question occurs at least three hours later than the scheduled arrival time. If the answer is "no," the national court then asked whether reference should be made to the individual stages or to the distance to the final destination in cases of a flight consisting of several connecting flights.

### 4.13.2 The Ruling of the EU Court of Justice

The EU Court of Justice clarified that for the purposes of establishing rights to compensation under Article 7 of the Regulation for passengers who are delayed on connecting flights – as in accordance with the ruling in the *Sturgeon* case – there is no requirement to first conclude that Article 6 is applicable with re-

spect to the aforementioned time limits, provided however that the passenger in question arrives at the final destination at least three hours late. Subsequently there was no need for the Court to answer the second question.

The Court clarified that the delay at arrival is the determinant in assessing whether or not a flight has been delayed – as a continuation of *Sturgeon*, as well as *Nelson*. The outcome makes sense as it relates back to what was agreed between the passenger and the air carrier, as manifested by the tickets.

#### 4.14 Case C-413/11 (*Amend*)<sup>99</sup>

This case, published only in the German and French languages, once more addressed the question of the legitimacy of the EU Court of Justice's ruling in the *Sturgeon* case.

The underlying dispute involved passengers who had booked a flight scheduled for departure on December 21, 2009 at 8:05 PM from Dresden to Cologne. Departure was delayed until 11:30 PM and the passengers arrived in Cologne more than three hours later than originally scheduled.

When one of the passengers subsequently claimed compensation in accordance with the EU Court of Justice's interpretation of Articles 5 to 7 of the Regulation, the air carrier refused to pay and argued that the Court's interpretation was contrary to EU law. The Court of Justice disregarded the carrier's argument and clarified that its previous ruling in *Sturgeon* was indeed in accordance with EU law.

This case illustrates that the Court of Justice most likely will look at the question of whether it exceeded its powers in *Sturgeon* going forward on the basis that the matter has already been dealt with by the court. The fact that the question has been raised again after *Nelson* demonstrates that not everyone has been willing to accept the position taken by the court.

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<sup>99</sup> Case C-413/11, *Germanwings v. Amend*, EU:C:2013:246.

#### 4.15 *Case C-452/13 (Henning)*<sup>100</sup>

Through this case, the EU Court of Justice clarified the definition of “arrival time” within the meaning of Articles 2, 5, and 7 of the EU Air Passenger Rights Regulation.

##### 4.15.1 The Dispute

The passenger booked a ticket from Salzburg, Austria on May 11, 2012 with a scheduled departure time of 1:30 PM and a scheduled arrival time at Cologne/Bonn airport one hour and 10 minutes later. However, the flight was delayed and touched down on the runway at 5:38 PM. The aircraft reached its parking position at 5:43 PM and the doors opened shortly thereafter.

The passenger initiated proceedings against the air carrier and claimed compensation for the delay under Articles 5 and 7 of the Regulation in accordance with *Sturgeon*. The carrier disputed the claim and argued that the aircraft had touched down on the landing area two hours and 58 minutes after the scheduled arrival time; meanwhile, the passenger was of the opinion that one should view the time when the aircraft doors opened as the “arrival time.”

The regional court in Salzburg decided to stay the proceedings and forwarded the following questions to the EU Court of Justice:

Which one of the following is relevant for determining the term “time of arrival” as used in Articles 2, 5, and 7 of the Regulation:

- (a) The time at which the aircraft in question lands on the runway (“touchdown”);
- (b) The time at which the aircraft reaches its parking position, and brakes have been applied;
- (c) The time at which the aircraft’s doors have opened; or
- (d) Such time as defined by the parties?

##### 4.15.2 The Ruling of the EU Court of Justice

The Court of Justice clarified that the definition of “arrival time” shall not be for the parties to agree on, nor shall it be the time of touchdown or when the aircraft in question reaches its

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<sup>100</sup> Case C-452/13, *Germanwings v. Henning*, EU:C:2014:2141.

parking position. Instead, the term “arrival time” shall mean, within the meaning of Articles 2, 5, and 7, when the doors of an aircraft are opened and the passengers of the flight in question are permitted to start leaving it. As such, the EU Court of Justice ruled in favor of the passenger in this case.

The ruling of the EU Court of Justice is quite clear on opened doors being the decisive factor when determining the time for arrival, and this makes sense from a logical point of view and is probably the simplest solution to the question. However, it should be noted that adjustments to landing slots and changes to allotted parking space at the relevant airport may affect the point in time when air carriers are able to open doors, and the ruling from the Court of Justice may prevent national courts from taking such factors into consideration going forward.

#### **4.16 Case C-394/14 (*Siewert*)<sup>101</sup>**

Through this case, the EU Court of Justice further elaborated on the term “extraordinary circumstances,” which may excuse air carriers from compensating passengers under Article 5(3) of the EU Air Passenger Rights Regulation.

##### **4.16.1 The Dispute**

A family booked a flight from Antalya, Turkey to Frankfurt am Main, which was scheduled for October 3, 2011. The flight arrived six hours and 30 minutes late, which led the passengers to request compensation from the air carrier under the terms of the Regulation.

The carrier refused to pay compensation, arguing that the delay had occurred because the aircraft scheduled for the flight had been damaged the previous evening at Stuttgart Airport due to a collision with mobile boarding stairs, requiring the replacement of that aircraft, and that the incident which prevented the timely flight as such represented an “extraordinary circumstance.”

The national court decided to stay the proceedings and asked the EU Court of Justice to clarify certain issues through a preliminary ruling. The national court first asked whether “an extraordinary circumstance” within the meaning of Article 5(3) of

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<sup>101</sup> Case C-394/14, *Siewert v. Condor Flugdienst GmbH*, EU:C:2014:2377.

the Regulation must relate directly to the booked flight in question, and second – to the extent extraordinary circumstances occurring during earlier flights are relevant to a later flight – whether such reasonable measures which the operating air carrier is obliged to take per Article 5(3) of the Regulation can relate only to prevent the extraordinary circumstance or must also be aimed to avoid a long delay. The national court next asked the Court of Justice to clarify whether adverse actions by third parties – to whom certain tasks may have been entrusted as part of the operation of an air carrier – could be deemed as extraordinary circumstances within the meaning of Article 5(3) of the Regulation and, if yes, whether there is any relevance for assessing the situation to determine who entrusted the task(s) to the third party in question.

#### **4.16.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- A reminder that Article 5(3) – the exemption from an air carrier’s obligation to pay compensation – shall be interpreted in a strict and narrow way because it is an exception to the main rule.
- In respect to technical problems, the Court of Justice previously held that such problems may be categorized as extraordinary circumstances within the meaning of Article 5(3) of the Regulation – but then only to the extent such technical problems relate to an event which is not inherent in the normal exercise of the activity of the air carrier concerned and is beyond the actual control of the carrier on account of its nature or origin.
- Technical problems arising out of an airport’s set of mobile boarding stairs colliding with an aircraft shall be regarded as an event inherent in the normal exercise of the air carrier’s activity and hence cannot be regarded as an extraordinary circumstance as had been argued by the carrier.
- Under Article 13 of the Regulation, the carrier may, however, seek compensation from the third party that caused the delay.

In other words, the preliminary ruling of the Court of Justice favored the passengers. The guidance that is to be regarded as new from this case is the clarification regarding technical problems arising out of a collision with a third party’s equipment at an airport. Despite the fact that air carriers do not have control over all third parties providing services at an airport, the



Court came to the conclusion that air carriers should be liable to passengers for the wrongdoings of such third parties. The Court has, therefore, in essence allowed passengers to seek their compensation directly with their contracting party under the Regulation instead of referring them to seek compensation from a third party on a non-contractual basis. It will instead be the air carrier that must seek such compensation from the third party. Although this could be regarded as unfair for the carrier, most people would likely agree that air carriers in general have better resources and are more likely to be able to recover compensation from third parties, as compared with the average passenger.

#### **4.17 Case C-257/14 (*van der Lans*)<sup>102</sup>**

Through this case, the EU Court of Justice continued to build on its practice in *Wallentin-Hermann* and develop its viewpoint with regard to what events should be classified as “extraordinary circumstances.”

##### **4.17.1 The Dispute**

The passenger booked a flight from Quito to Amsterdam. The flight was scheduled to take off on August 13, 2009 at 9:15 AM but was delayed and arrived in Amsterdam 29 hours after its scheduled arrival time. According to the air carrier, the delay had occurred due to defects in the aircraft’s engine, resulting in a need to change certain parts, which had to be transported to Quito from Amsterdam.

The passenger initiated proceedings before national courts in Amsterdam and sought compensation for the delay. The air carrier rejected the claim and argued that the reasons for the delay represented extraordinary circumstances that would exempt it from paying compensation, in accordance with Article 5.3 of the Regulation. The carrier backed its rejection by stating that the defective parts were not older than their expected lifetimes, and that the manufacturer had not given any information that defects could occur at any particular age. Furthermore, the carrier stated that the components had not been tested before take-off during the general “pre-flight check,” but that they had been tested during the last “A-check” which had been carried out approximately

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<sup>102</sup> Case C-257/14, *van der Lans v. KLM NV*, EU:C:2015:618.

one month prior to the scheduled flight in question. The national court decided to stay the proceedings and forwarded a number of questions to the EU Court of Justice for its preliminary ruling. These questions boiled down into one, more general, question:

[W]hether Article 5(3) of [the EU Air Passenger Rights Regulation] must be interpreted as meaning that a technical problem, such as that at issue in the main proceedings, which occurred unexpectedly, which is not attributable to defective maintenance and which was not detected during regular tests, falls within the definition of “extraordinary circumstances” within the meaning of that provision and, if so, what the reasonable measures are that the air carrier must take to deal with them.<sup>103</sup>

#### 4.17.2 The Ruling of the EU Court of Justice

Besides dealing with the question raised by the French government on whether or not the request for a preliminary ruling was admissible with reference to the fact that Ecuadorian law might provide for the possibility to acquire compensation/assistance in case of refused boarding and/or cancelled flights, the following should be extracted from the preliminary ruling of the EU Court of Justice in respect of the material questions in the case:

- The operation of an aircraft inevitably gives rise to technical problems. The discovery of problems during maintenance, or due to the lack of such maintenance, should not in itself represent “extraordinary circumstances.”
- Some technical problems could, however, represent “extraordinary circumstances,” for example:
  - In case of it being discovered by a competent authority or the manufacturer of the aircraft comprising the fleet of the air carrier concerned, that those aircraft already in service (note that such error must relate to several aircraft) are affected by a hidden manufacturing defect which affects flight safety; and
  - In case of damage to an aircraft caused by acts of sabotage or terrorism.
- The defect in the engine components of the aircraft represented an unexpected event, but such breakdown is closely re-

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<sup>103</sup> *Id.* para. 33.

lated to the complex function of the aircraft and the prevention of the breakdown cannot therefore be said to have been outside the control of the air carrier. As such, the technical problems in the case at hand do not represent such extraordinary circumstances that may exempt a carrier from its liability under the Regulation.

This case illustrates that it is difficult to argue that technical problems are to be regarded as an “extraordinary circumstance.” Although some examples of such circumstances are given, the Court of Justice clearly determined that defects in components of the engine that are unexpected, but not representing an act of terrorism/sabotage, are not to be regarded as one of them. Again, it could be held that the ruling represents an unfair treatment of the industry by the court, but the reasoning behind the ruling is most likely that the Court wishes for a quite strict liability to be prescribed to air carriers when it relates to potential errors in key parts of an aircraft. This makes sense from a passenger safety perspective.

#### **4.18 *Joined Cases C-145/15 & C-146/15 (Ruijsenaars)***<sup>104</sup>

The question brought before the EU Court of Justice in these joined cases relates to the duties of each Member State’s designated body responsible for the enforcement of the EU Air Passenger Rights Regulation.

##### **4.18.1 The Disputes**

In case C-145/15, the passengers submitted a claim to the air carrier with reference to Article 7 of the Regulation due to a cancellation of the flight on which they were supposed to travel. In case C-146/15, the passenger sought compensation from the carrier due to a 26-hour delay. In both cases, the carriers refused to pay compensation.

The refusal by the air carriers to pay the claimed compensation resulted in the passengers subsequently requesting the Dutch Secretary of State for Infrastructure and the Environment (Secretary of State) to take enforcement action against the carriers. The Secretary of State rejected the requests, which then led to separate proceedings challenging the decisions by the Secretary of State.

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<sup>104</sup> *Joined Cases C-145/15 & C-146/15, Ruijsenaars v. Staatssecretaris van Infrastructuur en Milieu*, EU:C:2016:187.

The respective district courts in both cases dismissed the actions of the passengers, but following further appeals to the Council of State, the proceedings in both cases were stayed, awaiting a preliminary ruling from the EU Court of Justice. In essence, the Council of State forwarded the following question to the Court of Justice:

Does Article 16 of the Regulation mean that a designated body must take enforcement actions against an air carrier in order for that Member State to be compliant with the aforementioned article – taking into consideration that the laws of the Netherlands provide access to the civil courts in order to protect rights of passengers under the Regulation?

#### **4.18.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- Article 16(1), read in conjunction with Recital 22 of the Regulation, means that the designated body in each Member State is subject to a duty to ensure general compliance with the regulation.
- The term “sanction” in Article 16(3) shall not be interpreted to mean a duty to take administrative enforcement action in each individual case.
- Member States have discretion in the allocation of powers to their authorities and because passengers can directly refer to the Regulation in main proceedings before national courts, they are covered by “effective judicial protection.”
- The body designated by each Member State under Article 16(1) is not required to take enforcement action against an air carrier in order to force it to pay compensation under the Regulation.

Through this case, the Court of Justice emphasizes the discretion that ultimately lies with each Member State, and the various authorities of the Member State.

#### 4.19 *Case C-255/15 (Mennens)*<sup>105</sup>

This case relates to compensation for passengers who are subject to downgrading on a flight.

##### 4.19.1 The Dispute

The passenger purchased (through one booking) an all-inclusive ticket for several flights. The ticket indicated the tariff for all the flights, 2,371 euros, plus related taxes and charges, resulting in a total price of 2,471.92 euros, but did not specify the individual price for each flight.

During the first of the flights, the carrier downgraded the passenger from first class to business class, resulting in the passenger filing claims against the carrier for reimbursement of 75 percent of the total ticket price (1,853.94 euros) with reference to Article 10(2)(c) of the EU Air Passenger Rights Regulation. The carrier decided to pay the passenger 376 euros as reimbursement for the downgrading incident, but refused to pay the remaining amount, arguing that, in this event, having a ticket with several flights but only one price stated, the compensation to be paid under Article 10(2)(c) should be connected with the price to be calculated for the individual flight where the downgrade had occurred, and also exclude taxes or other charges – and not in relation to the total price (with taxes and charges) stated on the ticket, as argued by the passenger. The national court in Germany decided to stay the proceedings and forwarded a request for preliminary ruling from the EU Court of Justice on how calculate compensation in connection with downgrading.

##### 4.19.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- Article 10(2) of the Regulation, read in conjunction with Article 2(f), shall be interpreted to mean that the price to be used as calculation basis – in the event of a downgrade on one out of several flights on one ticket – primarily shall be decided by the price stated for the affected flight, and in absence of such price

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<sup>105</sup> Case C-255/15, *Mennens v. Emirates* Direktion für Deutschland, EU:C:2016:472.

stated, secondarily on the basis of the part of the price of the ticket corresponding to the quotient resulting from the distance of that flight and the total distance which the passenger is entitled to travel.

- The price to be used as calculation basis for the compensation shall be exclusive of taxes and other charges – unless the taxes and/or charges were levied as a consequence of the class ordered by the passenger and from which the passenger was downgraded.

The Court of Justice clarified through this case that an air carrier's obligation to pay compensation in the event of downgrading only relates to that part of the ticket price for the flight where the downgrading occurs.

#### **4.20 Case C-32/16 (*Wunderlich*)<sup>106</sup>**

Through this case, the EU Court of Justice clarified its view on unscheduled stopovers.

##### **4.20.1 The Dispute**

The passenger booked a flight from Burgas, Bulgaria to Dresden. The flight took off in accordance with the scheduled departure time but had to make a short stopover in Prague, resulting in a delay to the final destination of two hours and 20 minutes.

The passenger initiated proceedings before the national court in Dresden, arguing that the flight was to be regarded as cancelled and seeking compensation pursuant to Articles 5 and 7.

The national court found it necessary to interpret the concept of “cancellation” within Article 2(l) of the EU Air Passenger Rights Regulation and stayed the proceedings, awaiting a preliminary ruling to its question forwarded to the Court of Justice on whether or not an unscheduled stopover constitutes a cancellation if it results in a delay of less than three hours.

##### **4.20.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

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<sup>106</sup> Case C-32/16, *Wunderlich v. Bulgarian Air Charter Ltd.*, EU:C:2016:753.

- The fact that a flight makes an unscheduled stopover will not in itself be regarded as a cancellation and will as such not in itself allow for compensation to be sought under Articles 5 and 7, as interpreted by the EU Court of Justice in Case C-11/11,<sup>107</sup> unless the flight making such stopover reaches the final destination more than three hours later than its scheduled arrival time.

In other words, this case represents one of the few where the outcome favored the air carrier, and is the logical outcome in light of the previous case on the calculation of time of delay where the time of the opening of doors was held as determining for the assessment.

#### 4.21 Case C-315/15 (*Pešková*)<sup>108</sup>

Through this case, the EU Court of Justice provided further guidance regarding the exemption from the obligation to pay compensation due to “extraordinary circumstances.”

##### 4.21.1 The Dispute

Two passengers booked a flight from Burgas, Bulgaria to Ostrava, Czech Republic, which formed part of the following scheduled circuit: Prague – Burgas – Brno – Burgas – Ostrava. The flight occurred on August 10, 2013 but with a total delay of five hours and 20 minutes, caused by: (1) the discovery of a technical failure in a valve and the associated repair time, which amounted to one hour and 45 minutes; and (2) A collision of the aircraft with a bird upon landing in Brno, which made control checks necessary in order to determine whether or not any damage had occurred.

The initial control checks were carried out by a technician present at Brno, but the owner of the air carrier had not pre-approved the company for which said technician worked and therefore demanded and had one of the carrier’s own technicians fly with a private aircraft from Slany, Czech Republic to Brno in order to make the control checks. No damage was found by the second technician. The incident with the bird and subsequent control checks of the aircraft represented three hours and 35 minutes of the delay.

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<sup>107</sup> See *supra* Part 4.13.

<sup>108</sup> Case C-315/15, *Pešková v. Travel Service a.s.*, EU:C:2017:342.

The passengers brought before the relevant district court in Prague a claim for compensation from the air carrier due to delay, with reference to Article 7(1)(a) of the Regulation, and was granted such compensation. The carrier appealed the decision to the Prague Municipal Court, but the appeal was dismissed. The carrier then filed an appeal to the Constitutional Court of Czech Republic with regard to the district court's decision. This appeal was approved and the district court's decision was set aside due to the district court not having provided for a "fair hearing and the fundamental right to a hearing before the proper statutory court since, as a court of last instance, it was required to refer a question for a preliminary ruling by the EU Court of Justice, due to the fact that it was not clear from the regulation or case law whether or not a collision with a bird and other technical difficulties should be regarded as an "extraordinary circumstance" and thereby exempt the air carrier from obligation to pay compensation. The case was referred back to the district court, which then stayed the proceedings and forwarded the following questions to the EU Court of Justice for its preliminary ruling on whether: (1) a bird collision should be regarded as a "extraordinary circumstance;" and (2) if yes, do preventative control systems established in particular around airports (such as sonic bird deterrents, cooperation with ornithologists, elimination of spaces where birds typically gather or fly, using light as deterrent, etc.) count as reasonable measures to be taken by the air carrier to avoid such collision?

Further, the national court asked: (3) whether an air carrier, in connection with a bird collision, as reasonable measures required in order to avoid paying compensation must have planned for sufficient reserve time for safety checks; and (4) in case of the aircraft being more than three hours late, should the total length of the delay be reduced by the amount of time attributable to "extraordinary circumstances?"

#### **4.21.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- A collision between an aircraft and a bird is to be regarded as falling under the category of "extraordinary circumstances" in Article 5(3).



- Cancellation or delay as the result of an air carrier demanding its appointed expert carry out additional safety checks although such checks previously were carried out by personnel with sufficient authorizations under the applicable rules does not fall under the category of “extraordinary circumstances” in Article 5(3).
- Control systems put in place in order to prevent the presence of birds around airports may be regarded as such reasonable measures to which the air carrier can refer to in order to avoid liability to pay compensation, provided that:
  - Such measures from a technical and administrative level actually can be taken by the air carrier in question;
  - That the air carrier in question has shown that those measures actually were taken in respect of the flight affected by the bird collision; and
  - That such measures do not require the air carrier to make intolerable sacrifices in proportion to its undertaking.
- Total length of the delay in arrival of the flight shall be reduced by that portion of the delay which is caused by such an event which falls under the concept of an “extraordinary circumstance” (which could not have been avoided by appropriate and reasonable measures).

The EU Court of Justice chose not to provide a response with regard to the question of the necessity for planning of reserve time, as it viewed the question to address a purely hypothetical problem and/or due to the fact that the Court did not have access to the necessary factual material.

The guidance from the Court of Justice that follows from this case appears quite balanced and should not in isolation raise concerns from either the aviation industry or representatives of passengers.

#### **4.22 Case C-302/16 (*Krijgsman*)<sup>109</sup>**

Through this case, the EU Court of Justice clarified the responsibility of the operating air carrier toward a passenger who has entered into a contractual arrangement with a travel agent.

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<sup>109</sup> Case C-302/16, *Krijgsman v. Surinaamse Luchtvaart Maatschappij NV*, EU:C:2017:359.

### 4.22.1 The Dispute

The passenger booked a return flight from Amsterdam Schiphol to Paramaribo, Surinam through the website of a travel agent. The departure date was set for November 14, 2014. On October 9, the air carrier informed the travel agent that the flight in question had been cancelled. The travel agent forwarded the same information to the passenger on November 4, i.e., less than two weeks prior to date for scheduled departure.

The passenger filed a claim for compensation with the carrier, which refused to accept liability on the basis that it had informed the travel agent and that the passenger had entered into the contract with the travel agent, not with the air carrier. The travel agent also refused liability on the basis that it only facilitated the contract between the passenger and the air carrier. The passenger subsequently brought proceedings before the district court and sought a 600 euro compensation under Articles 5(1)(c) and 7(1)(c) of the Regulation. As the carrier contested the claims, the district court decided to stay the proceedings and ask for a preliminary ruling from the EU Court of Justice on what kinds of requirements (procedural and substantive) must be fulfilled in order to meet the duty to provide information to passengers under Article 5(1)(c) in situations where the contract for air carriage has been entered into through a travel agent or the booking has been made via a website.

### 4.22.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- Article 5(1)(c) stipulates that the passenger is entitled to compensation from the operating air carrier as per Article 7, unless the passenger in question received information regarding the cancellation at least two weeks prior to the scheduled time of departure. It follows from Article 5(4) that the burden of proof concerning whether or not the passenger has been duly informed rests with the operating air carrier.
- Article 5, together with Recitals 7 and 12, stipulates that the air carrier alone is liable to compensate passengers for failure to fulfill the obligations of Regulation.

- Where a flight has been cancelled and the affected passengers have not been duly informed of the cancellation at least two weeks prior to the scheduled date of departure, the carrier is liable for compensation regardless of whether it informed the travel agent (through/with which the passenger entered into the contract for carriage) in due time.
- The carrier may then in turn seek reimbursement from the travel agent for its losses incurred due to the travel agent.

One could state that the outcome is unfair in the sense that the fault giving rise to the grounds for compensation did not originate with the air carrier, but rather from the travel agent who neglected to forward the notice of cancellation in due time. On the other hand, the ruling is in line with previous rulings where the Court of Justice has allowed passengers to seek compensation directly from the air carrier instead of forcing them to seek compensation on a non-contractual basis from third parties. Although it makes sense from a consumer protection perspective, it could be argued that there have to be some acts or omissions on part of the air carrier, too, in order for it to be viewed as proportionate to allow for passengers to seek compensation directly from the carrier – at least with respect to breach of notification duties prior to take-off.

#### **4.23 Case C-559/16 (*Bossen*)<sup>110</sup>**

Through this case, the EU Court of Justice clarified how the distance between the location for departure and final destination is to be computed in connection with the calculation of compensation for delays.

##### **4.23.1 The Dispute**

Three passengers booked a trip from Rome to Hamburg, with a connecting flight from Brussels. The first flight was delayed, which resulted in the passengers' missing their connecting flight, resulting in a total delay of three hours and 50 minutes after the passengers were transported on the next available flight.

The distance between Rome and Hamburg is 1,326 km, which, according to the “great circle method,” is regarded as the distance

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<sup>110</sup> Case C-559/16, *Bossen v. Brussels Airlines SA/NV*, EU:C:2017:644.

between the location of departure and the destination. The air carrier agreed to pay compensation in the amount of 250 euros per person for the delay on the basis of that distance, but the passengers claimed an additional sum of 150 euros per person on the basis that the distance should be viewed as the sum of the distance between Rome and Brussels (1,173 km) and Brussels and Hamburg (483 km), i.e., 1,656 km in total, instead of the 1,326 km as per the “great circle method.” As the right to compensation under Article 7 varies depending on the distance of the flight, the local court stayed the proceedings and asked the EU Court of Justice to clarify whether the calculation of distance under the second sentence of Article 7 should be interpreted to mean the distance between the place of departure and final destination or the distance actually flown.

#### 4.23.2 The Ruling of the EU Court of Justice

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- When determining the amount of compensation, the calculation of distance should be made on the basis of the distance between the first point of departure and the final destination, excluding any connecting flights, i.e., by using the “great circle method.”

Through this case, the Court of Justice allows for some limitation of air carrier liability when it relates to the amount of compensation. This should be deemed as one of the less controversial rulings.

#### 4.24 *Joined Cases C-195/17, C-197/17–C-203/17, C-226/17, C-228/17, C-254/17, C-274/17, C-275/17, C-278/17–C-286/17 & C-290/17–C-292/17 (Krüsemann et al.)*<sup>111</sup>

In these joined cases, the EU Court of Justice addressed the question of whether or not a “wildcat strike” should be regarded as an “extraordinary circumstance” and thereby excuse the air carrier in question from liability to pay compensation.

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<sup>111</sup> *Joined Cases C-195/17, C-197/17–C-203/17, C-226/17, C-228/17, C-254/17, C-274/17, C-275/17, C-278/17–C-286/17 & C-290/17–C-292/17, Krüsemann et al. v. TUIfly GmbH, EU:C:2018:258.*

### **4.24.1 The Dispute**

Several individuals had booked various flights scheduled during the period between October 3-8, 2016. All of the flights in question were either delayed by more than three hours or cancelled by the air carrier on account of an exceptionally high number of staff absences reportedly due to illness. These absences followed the carrier's notification to staff of its plans to restructure. An agreement with the staff representatives was reached on the evening of October 7, putting an end to the wildcat strike.

When the affected passengers later applied for compensation under Article 5(1)(c)(iii) and Article 7 of the EU Air Passenger Rights Regulation, the carrier refused to pay as it classified the situation as "extraordinary circumstances," which led many of the passengers to seek compensation through local courts. The local courts independently decided to stay the various proceedings and asked the EU Court of Justice to clarify certain issues. The key questions to which the national courts sought an answer were: (1) whether the sick leave of an air carrier's staff could qualify as an "extraordinary circumstance," and – if yes – how high the rate of absenteeism would have to be; (2) whether a carrier in such case could establish a new flight plan pursuant to economic considerations; (3) if the question of whether the situation was avoidable related to its qualification as "extraordinary" or if it was the consequence of the occurrence of those circumstances; (4) whether a flight cancellation may be regarded as having been caused by extraordinary circumstance when the circumstance (in this case a wildcat strike/wave of illnesses) only affects the flight in question indirectly; and (5) if an air carrier may excuse itself from liability to pay compensation with reference to an extraordinary circumstance when the flight in question could have been carried out if the crew that would have operated it hadn't been assigned to other flights through rescheduling?

### **4.24.2 The Ruling of the EU Court of Justice**

In short, the following should be extracted from the preliminary ruling of the EU Court of Justice:

- A situation where staff is absent due to a wildcat strike caused by the air carrier in question announcing surprising company restructuring processes shall not be viewed as an "extraordinary cir-

cumstance,” as the Court of Justice viewed the wildcat strike in the case to not be beyond the actual control of the air carrier concerned (seen in light of the surprising announcement of the reorganizational process as well as the fact that the carrier was able to solve the issue by entering into an agreement with employee representatives).

- The label of an event under local social legislation (in this case a “wildcat strike”) shall not be decisive as to whether or not compensation shall be awarded to passengers.

As strikes typically exempt a contracting party from fulfilling its contractual duties toward its contracting party (normally included in the definition and/or concept of *force majeure*), the ruling of this case probably surprised many within the aviation industry. This is especially true since Recital 12 of the Regulation explicitly lists strikes as an “extraordinary circumstance” which ought to exempt the carrier from liability to pay compensation, and due to the fact that the Regulation does not stipulate that strikes need to be initiated in any specific manner or for any particular reasons. It could be argued that the Court sided with the employees of the carrier with its ruling and statements, rather than applying the Regulation as it reads in the relationship between the air carrier and its passengers. It thereby punishes the carrier for exercising its right to steer its workforce in line with general employment law principles, or its duty toward its shareholders to ensure that their investment is profitable. Air carriers need to consider this prior to making quick organizational decisions going forward.

Despite the ruling, it is still assumed that normal strikes not caused by any surprising restructuring process or the like will still be viewed as an “extraordinary circumstance.”

#### 4.25 *Case C-537/17 (Wegener)*<sup>112</sup>

Through this case, the EU Court of Justice further clarified the scope of application of the EU Air Passenger Rights Regulation.

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<sup>112</sup> Case C-537/17, *Wegener v. Royal Air Maroc SA*, EU:C:2018:361.

### 4.25.1 The Dispute

The passenger had booked a flight from Berlin to Agadir, Morocco with a scheduled stopover and change of aircraft at Casablanca, Morocco. The aircraft arrived late at the stopover location, which resulted in the air carrier refusing to allow the passenger to board the subsequent flight as the carrier had re-assigned the passenger's seat to another passenger. The affected passenger was able to board another flight and arrived at the final destination four hours after the scheduled arrival time.

The passenger subsequently filed for compensation under the Regulation, but the air carrier refused payment and argued that the regulation was not applicable because the second flight occurred outside the EU. The local court decided to stay the proceedings and asked the EU Court of Justice to clarify whether a flight within the meaning of Article 3(1)(a) of the Regulation also should cover transports that include scheduled stopovers with a change of aircraft outside the EU.

### 4.25.2 The Ruling of the EU Court of Justice

The Court of Justice referred to previous Case C-11/11<sup>113</sup> where it already had been concluded that the trigger of the right to compensation is the delay at the final destination. Final destination was, in this case, clarified to mean the destination of the ticket presented at the check-in counter or, in a case of directly connecting flights, the destination of the last flight taken by the affected passenger. "Connecting flight" is to be understood as two or more flights constituting a whole, which is the case when two or more flights have been booked as a single unit.

The Court viewed the flight in this case as a connecting flight and clarified that the fact that there had been a change of aircraft did not impact the application of the Regulation. Subsequently, the Court held that the flight fell within the scope of the Regulation, despite the fact that the stopover and change of aircraft destination was located outside the EU.

The outcome of this case is in line with previous rulings, and it makes sense to count the entire flight as a whole where this has

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<sup>113</sup> Case C-11/11, *Air France v. Folkerts*, EU:C:2013:106. See *supra* Part 4.13.

been the understanding of the parties when the tickets were booked.

#### **4.26 Case C-601/17 (*Harms*)<sup>114</sup>**

Through this case, the EU Court of Justice further clarified to what extent fees to intermediaries should be included in the reimbursement owed by the air carrier to passengers who have suffered from denied boarding, cancellations, or delay of flights.

##### **4.26.1 The Dispute**

The affected passenger purchased airline tickets online from an intermediary for himself and his family to fly from Hamburg to Faro, Portugal via Barcelona. The intermediary invoiced the passenger 1108.88 euros, of which 1031.88 euros were transferred to the air carrier. The flight was not carried out in accordance with the travel plan and was, for the purposes of the EU Air Passenger Rights Regulation, viewed as cancelled. Faced with a claim for compensation, the carrier agreed to pay to the passenger 1031.88 euros but refused to pay the additional amount charged by the intermediary and argued that the difference of 77 euros did not form part of the price for the ticket.

The local court decided to stay the proceedings and asked the EU Court of Justice to clarify whether amounts charged by intermediaries should be included when calculating the price for the relevant ticket, in particular for the purposes of Article 8(1)(a).

##### **4.26.2 The Ruling of the EU Court of Justice**

The EU Court of Justice ruled that a commission collected by an intermediary from a passenger when purchasing a ticket in principle is to be regarded as a component of the ticket price. However, the Court also clarified that such inclusion must be subject to certain limits. In this regard, the Court clarified that components set without the knowledge of the air carrier are not to form part of the ticket price.

In this particular case, the Court held that the air carrier had knowledge of the fee taken by the intermediary, and that it thus

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<sup>114</sup> Case C-601/17, *Harms v. Vueling Airlines SA*, EU:C:2018:702.



should be included in the ticket price for the purpose of calculating the reimbursement to the affected passenger.

The ruling in this case further illustrates that the Court of Justice holds air carriers accountable to passengers for the use of intermediaries, or for third-party faults. The fairness of this view can be disputed, especially in cases where the air carrier has no control over any potential commissions charged by the intermediary. Although the Court of Justice established actual knowledge as a threshold, one could argue that it goes beyond what is proportionate to require an air carrier to repay commissions where the carrier has not received any such amount and/or where the decision is taken by someone outside the carrier's control.

#### **4.27 Case C-464/18<sup>115</sup>**

Through this case, the EU Court of Justice shed further light on the legal venue to be used for resolving disputes regarding compensation.

##### **4.27.1 The Dispute**

The affected passenger purchased a ticket online for a flight between Porto, Portugal and Barcelona from an air carrier with its registered offices in Ireland and a branch in Girona, Spain. The passenger sought 250 euros as compensation from the carrier due to a delay of the flight under Article 7 of the EU Air Passenger Regulation. The carrier refused to pay, and the passenger brought the claim before the courts of Girona.

As the court was uncertain regarding its jurisdiction to hear the dispute in the main proceedings, it resolved to stay the proceedings and asked the EU Court of Justice to clarify whether: (1) Article 26(1) of the New Brussels I Regulation could be interpreted to mean that international jurisdiction can be declared by a local court by virtue of lack of opposition to such effect; and (2) whether a branch office would suffice to confer legal venue in connection with compensation claims under the EU Air Passenger Regulation with reference to Article 7(5) of the New Brussels I Regulation.

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<sup>115</sup> Case C-464/18, *ZX v. Ryanair DAC*, EU:C:2019:311.

### 4.27.2 The Ruling of the EU Court of Justice

The Court of Justice ruled that “absence of observations cannot constitute the entering of an appearance within the meaning of Article 26” of the New Brussels I Regulation. Further, it held that:

[A] court of a Member State does not have jurisdiction to hear a dispute concerning a claim for compensation brought under Article 7 of [the Regulation] against an airline established in the territory of another Member State, on the ground that that company has a branch within the territorial jurisdiction of the court [where the proceedings have been initiated], without that branch having been involved in the legal relationship between the airline and the passenger concerned.<sup>116</sup>

In other words, the presence of a branch office (without involvement in the relationship between the air carrier and passenger) in a country, or lack of opposition in a proceeding, does not automatically lead to the court hearing the proceedings in question having jurisdiction in relation to claims under the Regulation. With reference to previous case law, passengers are, however, still entitled to initiate claims in local courts that hold jurisdiction over the place for take-off or landing, apart from the domicile of the air carrier in question. The limitation of potential areas where air carriers may prepare themselves to face proceedings issued by the EU Court of Justice through this case is therefore itself somewhat limited.

### 4.28 *Case C-159/18 (Moens)*<sup>117</sup>

Through this case, the EU Court of Justice shed further light on the concept of “extraordinary circumstances” in relation to delays.

#### 4.28.1 The Dispute

The affected passenger had booked a flight from Treviso, Italy to Charleroi, Belgium, which flew on December 21, 2015 with a

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<sup>116</sup> *Id.* para. 36.

<sup>117</sup> Case C-159/18, *Moens v. Ryanair Ltd.*, EU:C:2019:535.

delay at arrival of four hours and 23 minutes. The delay was caused by petrol on a runway at Treviso Airport, which resulted in closure of the runway for more than two hours and postponement of the flight's take-off. The passenger sought compensation from the air carrier because the flight was delayed more than three hours, as interpreted by the EU Court of Justice.<sup>118</sup>

The carrier refused to pay the compensation and argued that the delay was caused by an "extraordinary circumstance" within the meaning of Article 5(3) of the EU Air Passenger Rights Regulation. The passenger therefore brought the case before the local court in order to obtain the compensation. The court decided to stay the proceedings and asked the EU Court of Justice to clarify whether petrol spillage could represent an "extraordinary circumstance" for which an air carrier can be excused, or if spillage of petrol should be regarded as an event inherent in the normal exercise of the activities of the air carrier, which it should be able to control and therefore be liable for in relation to compensation rights under the Regulation.

#### 4.28.2 The Ruling of the EU Court of Justice

As the Court of Justice did not receive information on the source of the petrol spillage, it assumed that the petrol in the case at hand did not come from an aircraft of the carrier that operated the flight. Based on that assumption, it came to the conclusion that the spillage of petrol in the case at hand was to be classified as "extraordinary circumstances" within the meaning of Article 5(3) of the EU Air Passenger Regulation. The Court further concluded that the carrier did not have the option to take any reasonable measures to avoid the "extraordinary circumstance" in question as it was bound to adhere to the airport authority's decision to close down the runway.

In other words, the Court of Justice favored the air carrier in this case, and, as such, contradicted previous case law where it had been quite clear that the carrier typically is responsible for issues occurring due to the fault or omission of third parties. It will be interesting to see if this case represents a modification of the general approach developed through previous years, to the benefit of the aviation industry, or if it represents an exception.

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<sup>118</sup> See EU Air Passenger Rights Regulation, *supra* note 2, arts. 5(1)(c) & 7(1)(a).

## 4.29 *Case C-163/18*<sup>119</sup>

Through this case, the EU Court of Justice provided further guidance regarding the applicability of the EU Air Passenger Rights Regulation in the event of a package tour as defined in EU Directive 2015/2302,<sup>120</sup> as locally implemented by each of the EU/EEA countries.

### 4.29.1 The Dispute

An air carrier entered into an agreement with a charter company through which the carrier agreed to make a certain number of seats available to the charter company in return for the payment of fees. The charter company thereafter entered into agreements with third parties through which the seats were resold.

The affected passenger in the case booked a “package tour” within the meaning of EU Directive 2015/2302 with one of these third parties in which one of the flights was scheduled with the above-referenced air carrier. Prior to departure, the travel company with which the passenger had placed the booking informed the passenger that the tour was cancelled and the air carrier had decided to not operate the flight. The reason was that the travel company no longer could pay the air carrier. About two weeks after the cancellation notice to the passengers, the travel company was declared insolvent and did not reimburse the affected passengers for the cost of their air tickets.

The passengers initiated proceedings against the carrier with reference to Article 5(1)(c) and Article 8(1)(a) of the Air Passenger Regulation (i.e., compensation due to cancellation and reimbursement of ticket costs). The carrier declined to pay compensation and reimburse the ticket cost, arguing that the Regulation was not applicable, in particular in light of Article 3(6), which states that the Regulation shall not apply where the EU directive on package tours applies. The local court held that the air carrier should pay compensation because the decision to cancel the flight had been made by the carrier and because the carrier had not demonstrated that the cancellation of the package tour by the travel company occurred for reasons other than the decision by the carrier.

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<sup>119</sup> Case C-163/18, HQ et al. v. Aegean Airlines SA, EU:C:2019:585.

<sup>120</sup> Subject to Council Directive 2015/2302. See *supra* note 4.

The local court did not, however, rule on the question of whether or not the air carrier should reimburse the passengers the costs for the air tickets. Instead, it decided – for this matter – to stay the proceeding and asked the EU Court of Justice to clarify whether the Air Passenger Rights Regulation allows passengers to hold air carriers liable for reimbursement of the air ticket cost when the package tour organizer no longer is financially capable of reimbursing said costs.

#### **4.29.2 The Ruling of the EU Court of Justice**

The EU Court of Justice held that passengers who are entitled to seek reimbursement of air tickets from their tour organizer under Directive 2015/2302 are not allowed to seek reimbursement from the air carrier on the basis of the Regulation – even when the tour organizer is financially incapable of reimbursing the cost of the ticket in question.

In other words, the Court of Justice ruled in favor of the air carrier. It could, of course, be stated that the ruling may lead to a weakening of consumer protection as passengers in situations involving tour organizers becoming insolvent will not in practice be able to receive compensation from either the tour organizer or the carrier, but it is a correct outcome as the Regulation states that it is not applicable where Directive 2015/2302 applies.

### **4.30 Case C-502/18<sup>121</sup>**

Through this case, the EU Court of Justice shed further light on the possibilities for passengers to seek compensation from air carriers using non-community carriers to perform their flights.

#### **4.30.1 The Dispute**

The affected passengers made a reservation with an air carrier domiciled in the EU for flights from Prague to Bangkok via Abu Dhabi, United Arab Emirates. The first flight to Abu Dhabi was operated directly by the air carrier, but the second was operated by an air carrier domiciled outside the EU, on the basis of a code-share agreement with the EU-domiciled carrier with which the reservation had been made. The second flight arrived 488 min-

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<sup>121</sup> Case C-502/18, CS et al. v. České aerolinie a.s., EU:C:2019:604.

utes late to its destination, leading the passengers to seek compensation from the EU-domiciled carrier in accordance with Article 7(1)(c) of the Air Passenger Rights Regulation. The local court in the Czech Republic resolved to stay the proceedings and asked the EU Court of Justice to clarify whether passengers are allowed to seek compensation from the EU-domiciled air carrier, even though the delay occurred during the second flight, which was operated by the non-EU-domiciled carrier.

### **4.30.2 The Ruling of the EU Court of Justice**

The Court of Justice resolved that passengers may seek compensation under the Air Passenger Rights Regulation from a community air carrier where there have been two flights subject to a single reservation with the community carrier, but the delay occurred during the second flight which – under a code-share agreement with the community carrier – was operated by an air carrier domiciled outside the EU.

Looking at the wording of Article 3 of the Air Passenger Rights Regulation, the situation at hand ought to have fallen outside the scope of the Regulation, and the ruling could therefore be deemed erroneous. It is, on the other hand, a necessary interpretation, as the flights had been operated under a code-share agreement and had been subject to a single reservation. As such, the outcome is in line with previous rulings.

### **4.31 Case C-354/18 (*Rusu*)<sup>122</sup>**

Through this case, the EU Court of Justice provided guidance on the kinds of losses covered under the EU Air Passenger Rights Regulation's standard fixed rate compensation scheme, and on the possibility to claim compensation for further damages.

#### **4.31.1 The Dispute**

Two passengers booked a flight from Bacău, Romania to London – where both passengers were domiciled and worked – scheduled for departure on September 6, 2016. When seeking to board the airplane, they were informed that the carrier had to use

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<sup>122</sup> Case C-354/18, *Rusu v. SC Blue Air – Airline Mgmt. Sols. SRL.*, EU:C:2019:637.

a different plane, with fewer seats, resulting in the two passengers in question not being allowed to embark on the flight. The affected passengers were re-booked on another flight and did not arrive in London until September 11. In order to compensate the passengers, the carrier offered them free extra tickets, as well as the standard compensation of 400 euros each. The affected passengers rejected the offer of free extra tickets and claimed additional compensation from the carrier, partly for financial losses (reduction in salary due to being absent from work) and for non-financial losses (employer had initiated process to terminate their employment, ending with a reprimand). The carrier rejected the claims and stated that it was not obliged to pay any additional compensation other than that prescribed under the EU Air Passenger Rights Regulation. The local district court in Romania partly agreed with the passengers, resulting in both parties appealing the ruling. The appeals court decided to stay the proceedings and forwarded a number of questions to the EU Court of Justice. In essence, these sought to clarify whether: (1) the fixed amounts granted through the Regulation should be regarded as compensation for losses such as reduction in salary, or if such losses can be sought in addition to the standard fixed rates; (2) local courts in Member States are allowed, but not obliged, to deduct such additional compensation from amounts granted under the Regulation; (3) the carrier is obliged to disclose all potential options granted to the passengers under Article 8(1) of the Regulation; and (4) the air carrier must carry the burden of proof to show that re-routing occurred as soon as possible.

#### **4.31.2 The Ruling of the EU Court of Justice**

The Court of Justice clarified through this case that individual losses, such as lost income resulting from a reduction in salary, are not covered by the fixed compensation granted through the Air Passenger Rights Regulation, and that the Regulation does not hinder passengers from seeking such compensation in addition to the fixed rates.<sup>123</sup> It is up to the local courts in the Member States to grant compensation for such individual losses. The national courts may, in connection with this, deduct from such additional compensation the compensation granted through the Regulation but they are not obliged to do so.

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<sup>123</sup> Cf. EU Air Passenger Rights Regulation, *supra* note 2, art. 12(1).

The Court also confirmed that an air carrier is obliged to inform passengers rejected from a flight of all the available options under Article 8(1) of the Regulation. In addition, it confirmed that the carrier bears the burden of proof to show that it had re-routed the passengers as soon as possible.

In light of the wording of Article 12(1) of the Regulation, the preliminary ruling in this case should not be seen as surprising. It would be unreasonable to prevent passengers from seeking further compensation for additional losses arising as a consequence of air carriers not being able to fulfill their obligations, where such losses can be proven.

### **4.32 Case C-756/18<sup>124</sup>**

Through this case, the EU Court of Justice provided clarification on whether passengers who had been affected by long delays must present boarding cards/proof of their presence at check-in in order to claim compensation.

#### **4.32.1 The Dispute**

The affected passengers booked a return journey from Paris to Venice. The return flight arrived in Paris with a delay of three hours and seven minutes. The air carrier refused to pay the fixed rate compensation to the passengers on the grounds that they failed to produce boarding cards as proof of having presented themselves for check-in and referred to established case law in France where the claim was raised. The local court decided to stay the proceedings and ask for clarification from the EU Court of Justice. The Court of Justice re-formulated the questions from the local court and understood the questions to seek an answer on whether or not passengers delayed by three or more hours on arrival who held confirmed reservations on that flight can be denied compensation solely on the grounds of not having been able to prove that they were present for check-in on that flight, in particular by means of a boarding card.

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<sup>124</sup> Case C-756/18, LC & MD v. easyJet Airline Co. Ltd., EU:C:2019:902.



### 4.32.2 The Ruling of the EU Court of Justice

The Court of Justice resolved “that passengers, such as those [in the case at hand], who hold a confirmed reservation on a flight and have taken that flight, must be considered to have properly satisfied the requirement to present themselves for check-in.” In other words, passengers cannot be denied compensation in connection with long delays only on the grounds of not having presented a boarding card. It is up to the air carrier to provide evidence that passengers who claim compensation had not been transported on the delayed flight in question if the air carrier wishes to deny the passengers compensation.

It is understandable that the national courts in Member States have allowed air carriers to abide by a simple rule in order to limit the administrative work connected with the handling of claims for compensation due to long delays. As pointed out by the passengers in this particular case, however, it is nowadays very common that passengers check themselves in through other means, such as with handheld devices, and thus no boarding cards are ever printed. Therefore, it would not be in line with the technical developments to uphold the case law developed in France. One could argue against the outcome that it is always difficult to prove that someone has not done what they said they did, but such an argument is not so strong for air carriers, bearing in mind that passengers usually register themselves prior to boarding the airplane.

### 4.33 *Case C-213/18 (Guaitoli)*<sup>125</sup>

Through this case, the EU Court of Justice provided further guidance on jurisdiction in connection with lawsuits under the EU Air Passenger Rights Regulation and the Montreal Convention.

#### 4.33.1 The Dispute

The affected passengers entered into an air transport contract with an air carrier domiciled in the U.K., for a flight from Rome-Fiumicino to Korfu and back, with a scheduled departure on August 4, 2015. In connection with take-off, the carrier first an-

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<sup>125</sup> Case C-213/18, *Guaitoli et al. v. easyJet Airline Co. Ltd.*, EU:C:2019:927.

nounced that the flight was delayed, and subsequently that it was cancelled and postponed to the next day. The return flight was delayed by two to three hours. After having been denied compensation, the affected passengers – who were domiciled in Rome – initiated proceedings at the location of their local court. The affected passengers claimed fixed compensation under Articles 5, 7, and 9 of the Air Passenger Rights Regulation, and also sought further compensation for damages falling within the scope of the Montreal Convention. The carrier disagreed that the local court in Rome had jurisdiction. The local court therefore resolved to stay the proceedings and asked the EU Court of Justice to provide guidance on how it should assess the question of jurisdiction.

#### **4.33.2 The Ruling of the EU Court of Justice**

The Court of Justice clarified that jurisdiction over the claims under the Air Passenger Rights Regulation should be determined by the New Brussels I Regulation<sup>126</sup> and that jurisdiction over the claims for further damages was to be determined by Article 33 of the Montreal Convention. The Court further confirmed that Article 33(1) of the Convention also governs the allocation of territorial jurisdiction between the courts of each of the Member States. The preliminary ruling in this case should be seen as less controversial.

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<sup>126</sup> See *supra* Part 4.4 (discussing the previous EU Court of Justice ruling on this matter).



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