

# ***AIRCRAFT BUILDERS COUNCIL, INC. LAW REPORT***

## **BREAKING THE STRICT PRODUCT LIABILITY CHAINS OF DISTRIBUTION...OR NOT?**

*Suzanne N. McNulty, Los Angeles*

## **THE GOVERNMENT CONTRACTOR DEFENSE: ITS USE BEFORE AND DURING TRIAL**

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## **THE PUSH FOR AUTONOMOUS COMMERCIAL FLIGHTS AND ITS LEGAL IMPLICATIONS**

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**Aircraft Builders Council, Inc.**

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**Fall 2022**



The ABC Underwriters, as part of their comprehensive insurance plan, have requested Fitzpatrick & Hunt, Pagano, Aubert, LLP to prepare periodic reports on topics of interest to the members. Four articles appear in this Law Report relating to various aspects of products liability law.

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# **BREAKING THE STRICT PRODUCT LIABILITY CHAINS OF DISTRIBUTION...OR NOT?**

*By Suzanne N. McNulty*

## **Introduction**

Being in the product manufacturing business you have more than a passing familiarity with the many ways in which you can be held liable for an accident involving your product. And, more than that – product liability legal principles have likely guided and shaped your company’s operations from product design to marketing. Those who have been involved in litigation know the importance of having a robust product integrity program in place, the importance of which becomes even more clear during the rigors of litigation, when your company’s practices are viewed under the highest level of scrutiny.

However, what if you are not the manufacturer of the product that allegedly caused harm? What if your company was merely a link in the chain getting the product from designer/manufacturer to the ultimate consumer? What if you had no involvement in designing, testing, inspecting, certifying, or marketing the product? Or, what if you find yourself in a lawsuit involving a product which was never even in your possession? Under such circumstances, it may not seem fair that you should be subject to liability. In some jurisdictions, depending on certain factors, you may not be. In other jurisdictions, however, the outcome may be different.

When will those in the supply chain, who have a limited role with respect to a product, be held liable and when not? The answer to this question can vary significantly from state to state; therefore, when assessing your potential liability, you must carefully examine the laws of the governing jurisdiction. The purpose of this article is not to provide an analysis of each individual state’s laws in this area, but instead to discuss the basic principles that come into play when analyzing this issue and to set forth the factors and conduct that courts look to when determining liability. Equipped with this knowledge, you will be in a better position to appreciate, and take steps to minimize, your potential exposure.

This article also focuses on current trends with respect to the novel issues courts are facing with the proliferation of e-commerce and the way in which conducting business in the age of such giant middlemen – like Amazon – is paving a new path for similarly situated supply-chain entities.

## Product Liability Law

As a precursor, and to better understand where we are today, a primer on product liability is in order:

A product liability claim can be brought under a broad range of legal theories. Most often, these claims are brought under a theory of strict liability, but sometimes a theory of negligence (and/or breach of warranty) may be more appropriate, depending on the jurisdiction, facts, and circumstances. The difference between strict liability and negligence is that strict liability only requires a showing that a defect in the product caused harm, unlike negligence, which requires a showing that the defendant's conduct fell below a legal standard of care. Negligence focuses on the acts or omissions of the defendant, whereas strict liability focuses on the product itself, not the fault of the alleged wrongdoer. Whether strict liability, negligence or breach of warranty, the plaintiff usually will need to prove that one or more of three types of product defect caused injury: manufacturing defect, design defect, or marketing defect (failure to adequately warn or instruct).

Strict products liability, the imposition of liability regardless of the care taken by the product manufacturer, is generally easier to prove than negligence and as such has important advantages to the plaintiff over proving negligence. "The policy of strict liability evolved because it is often not feasible for a consumer to prove negligence. If the product is very complex, it may be impossible or extremely difficult for a consumer who knows little about the workings of the product to identify the source of the negligence which was responsible for the defect. Under strict liability principles, the consumer must only prove that the product was defective and, as a result, unreasonably dangerous."<sup>1</sup>

### Strict Liability's Underlying Policy Considerations and Application to Supply-Chain Defendants

Fifty years ago, the California Supreme Court in its decision of *Greenman v. Yuba Power Products, Inc.*,<sup>2</sup> was the first jurisdiction to recognize the doctrine of strict liability for defective products. Initially limited to manufacturers, the doctrine reflected judicial concern that "the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market, rather than by the injured persons who are powerless to protect themselves."<sup>3</sup> The doctrine gained

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<sup>1</sup> L. Nancy Birnbaum, *Strict Products Liability and Computer Software* (1988), 8 Computer Law Journal 135, 142.

<sup>2</sup> *Greenman v. Yuba Power Products, Inc.* (1963) 59 Cal. 2d 57.

<sup>3</sup> *Id.* at 63.



traction and was soon adopted by other jurisdictions as was the extension of its application to retailers: “Retailers like manufacturers are engaged in the business of distributing goods to the public. They are an integral part of the overall producing and marketing enterprise that should bear the cost of injuries resulting from defective products. In some cases, the retailer may be the only member of that enterprise reasonably available to the injured plaintiff. In other cases, the retailer himself may play a substantial part in insuring that the product is safe or may be in a position to exert pressure on the manufacturer to that end; the retailer's strict liability thus serves as an added incentive to safety. Strict liability on the manufacturer and retailer alike affords maximum protection to the injured plaintiff and works no injustice to the defendants, for they can adjust the costs of such protection between them in the course of their continuing business relationship.”<sup>4</sup>

The rule of strict liability has been given broad application. “Such a broad philosophy evolves naturally from the purpose of imposing strict liability. ... Essentially the paramount policy to be promoted by the rule is the protection of otherwise defenseless victims of manufacturing defects and the spreading throughout society of the cost of compensating them.”<sup>5</sup> In its first decade, the rule was made applicable to numerous businesses in the chain of distribution and was generally applied to entities “involved in the vertical distribution of consumer goods, where the policies of the doctrine support its application.”<sup>6</sup> “Although these defendants were not necessarily involved in the manufacture or design of the final product, each was responsible for passing the product down the line to the consumer. Thus, the parties were ‘able to bear the cost of compensating for injuries’ and ‘played a substantial part in insuring that the product was safe or ... were in a position to exert pressure on the manufacturer to that end.’”<sup>7</sup> “Beyond manufacturers, anyone identifiable as ‘an integral part of the overall producing and marketing enterprise’ is subject to strict liability.”<sup>8</sup>

However, while the doctrine of strict product liability was being applied broadly, courts were careful to point out that its reach was not without limits. It does not cover injuries caused by a defective product in all situations where the product is in some sense distributed or provided by the defendant.<sup>9</sup> For example, *Peterson*

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<sup>4</sup> *Bolger v. Amazon.com, LLC* (2020) 53 Cal.App.5<sup>th</sup> 431, 447-48, citing *Vandermark v. Ford Motor Co.* (1964) 61 Cal. 2d 256, 262-63.

<sup>5</sup> *Price v. Shell Oil Co.* (1970) 2 Cal. 3d 245, 251.

<sup>6</sup> *Bolger, supra*, 53 Cal. App. 5<sup>th</sup> 431, 448, citing *Bay Summit Community Assn. v. Shell Oil Co.* (1996) 51 Cal. App. 4<sup>th</sup> 762, 773.

<sup>7</sup> *Id.*

<sup>8</sup> *Arriaga v. CitiCapital Commercial Corp.* (2008) 167 Cal. App. 4<sup>th</sup> 1527, 1534.

<sup>9</sup> *Bolger, supra*, 53 Cal App. 5<sup>th</sup> 431, 448.

*v. Superior Court* rejected prior precedent extending the doctrine to hotel proprietors and residential landlords whose guests or tenants were injured by a defect in the leased premises.<sup>10</sup> And courts have repeatedly found that dealers in used products are not strictly liable for defects in those products, unless they rebuild or recondition them and thereby assume a role analogous to a manufacturer.<sup>11</sup>

To determine whether the doctrine of strict products liability should be applied in a situation that has not been considered by previous precedents, courts primarily look to the purposes of the doctrine.<sup>12</sup> “The strict liability doctrine derives from judicially perceived public policy considerations, i.e., enhancing product safety, maximizing protection to the injured plaintiff, and apportioning costs among the defendants.”<sup>13</sup> Put another way if the defendant: 1) plays a substantial part in insuring that the product is safe or may be in a position to exert pressure on the manufacturer to that end; 2) may be the only member in the distribution chain reasonably available to the injured plaintiff; and 3) is in a position to adjust the costs of compensating the injured plaintiff amongst various members in the distribution chain, the policies underlying strict liability may be sufficiently vindicated to warrant its application.<sup>14</sup>

“Where these policy justifications are not applicable, courts may refuse to hold the defendant strictly liable even if that defendant could technically be viewed as a “link in the chain” in getting the product to the consumer market. In other words, the facts must establish a sufficient causative relationship or connection between the defendant and the product so as to satisfy the policies underlying the strict liability doctrine.”<sup>15</sup> Courts have enumerated the following factors to determine whether such a causative relationship or connection exists when the defendant falls outside the vertical chain of distribution. Under this alternate approach, known as the marketing enterprise or stream of commerce theory, the plaintiff must show: “(1) the defendant received a direct financial benefit from its activities and from the sale of the product; (2) the defendant's role was integral to the business enterprise such that the defendant's conduct was a necessary factor in bringing the product to the initial consumer market; and (3) the defendant had control over, or a substantial ability to influence, the manufacturing or distribution process.”<sup>16</sup>

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<sup>10</sup> *Id.*, citing to *Peterson v. Superior Court* (1995) 10 Cal. 4th 1185.

<sup>11</sup> *Bolger, supra*, 53 Cal. App. 5th 431, 449, citing *Peterson, supra*, 10 Cal. 4th 1185, 1201-02.

<sup>12</sup> *O'Neil v. Crane* (2012) 53 Cal. 4th 335, 362.

<sup>13</sup> *Loomis v. Amazon.com LLC* (2021) 63 Cal. App. 5th 466, 477.

<sup>14</sup> *Loomis, supra*, 63 Cal. App. 5th 466, 476, citing *Vandermark, supra*, 61 Cal. 2d 256, 262-63.

<sup>15</sup> *Arriaga, supra*, 167 Cal. App. 4th 1527, 1535.

<sup>16</sup> *Loomis, supra*, 63 Cal. App. 5th 466, 477.

## The Conflict Between State Statutes Defining Strict Liability and the Policies Underlying its Application

Whether the policies underlying strict liability and "market enterprise theory" are vindicated play a critical role in the courts' willingness to hold an entity in the supply chain strictly liable. In addition, many states have enacted legislation defining strict liability to incorporate the Restatement (Second) of Torts Section 402A<sup>17</sup> (or something similar) which requires, as a prerequisite to a liability finding, that the supply-chain defendant qualify as a "seller". Courts have defined "seller" to mean one who has a legal right or holds title to the product. In jurisdictions having this requirement, courts struggle with the interplay between the application of policy considerations and the strict application of such legislation. In such a scenario, the policy reasons may favor the imposition of strict liability; yet the rigid application of the state's statute definition of "seller" may mandate a different finding.

The case of *Oberdorf vs. Amazon*<sup>18</sup> provides a good illustration of this conflict. In *Oberdorf*, plaintiff was permanently blinded in her left eye when a defective dog collar – which she purchased from a third-party vendor through Amazon – snapped and caused a retractable leash to recoil into her eye. Oberdorf was unable to recover from the third-party vendor ("The Furry Gang") because neither she nor Amazon could locate the vendor after it ceased operations on Amazon's platform after her injury.<sup>19</sup> Oberdorf therefore sued Amazon for strict liability and negligence. The Court granted summary judgment in favor of Amazon primarily on grounds that Amazon was not a "seller," as required, under Pennsylvania's strict products liability statute, which adopted the Restatement 402A. Oberdorf appealed and the federal appellate court, predicting how Pennsylvania state courts would apply the law of Pennsylvania, reversed. In so doing, the Third Circuit abandoned the lower Court's

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<sup>17</sup> Restatement (Second) of Torts Section 402A provides in relevant part:

Special Liability of Seller of Product for Physical Harm to User or Consumer

(1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property if (a) the seller is engaged in the business of selling such a product, and (b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold. (underlined added):

"In American jurisprudence, the *Restatements of the Law* are a set of treatises on legal subjects that seek to inform judges and lawyers about general principles of common law. They are published by the American Law Institute, an organization of judges, legal academics, and practitioners. Although Restatements of the Law are not binding authority in and of themselves, they are highly persuasive because they are formulated over several years with extensive input from law professors, practicing attorneys, and judges."

[https://en.wikipedia.org/wiki/Restatements\\_of\\_the\\_Law](https://en.wikipedia.org/wiki/Restatements_of_the_Law).

<sup>18</sup> *Oberdorf v. Amazon.com Inc.* (2019) 930 F.3d 136. (3<sup>rd</sup> Cir.).

<sup>19</sup> *Id.* at 142.

position that Amazon cannot be a “seller” because it did not take title to or possession of the product being sold by the third party vendor.<sup>20</sup> Instead, the Court carefully analyzed each of the factors set forth above that support marketplace/strict liability, ultimately determining, in a two to one split decision, that they supported Amazon’s status as a “seller” for purposes of holding it liable under Pennsylvania’s product liability law.

The dissent objected to this position stating that a “seller” in Pennsylvania is “almost always an actor who transfers ownership from itself to the customer, something Amazon does not do for Marketplace sellers like The Furry Gang. For similar reasons, every court to consider the question thus far has found Amazon Marketplace not a ‘seller’ for products liability or other purposes...”<sup>21</sup> With this decision, the Third Circuit became the first circuit to hold that Amazon was a seller, creating a significant division over whether Amazon is a “seller” for purposes of product liability.<sup>22</sup>

In August 2019, however, the Third Circuit granted Amazon’s motion to rehear the decision *en banc*<sup>23</sup> and vacated the panel’s decision.<sup>24</sup> In June 2020, the Third Circuit certified the question to the Pennsylvania Supreme Court for further decision, because it was “unable to predict, based on existing law, if and how the Pennsylvania Supreme Court would apply § 402A to e-commerce businesses like Amazon” and noting that this was “an issue of first impression and substantial public importance.”<sup>25</sup> Other courts with similar cases pending before them, stayed their cases until such time as the Pennsylvania Supreme Court ruled.

The *Oberdorf* Court explained that under Pennsylvania law (like other jurisdictions), strict liability can only apply to one who “sells” a product. Also, under Pennsylvania law (as well as other jurisdictions) a “seller” must transfer either ownership or some kind of legal right to possession. If, so the argument goes, you never owned or had the legal right of possession to the product – then you cannot be a “seller” and therefore cannot be held strictly liable. As Amazon – in most of the arrangements it has with its third-party vendors – does not own or take legal title to the products sold on its platform, it is not a “seller” to whom strict liability may be

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<sup>20</sup> *Id.* at 148.

<sup>21</sup> *Id.* at 154.

<sup>22</sup> Shannon Costa, *I Just Bought A Dog Collar From Amazon...Or Did I? Reassessing Whether Amazon Is A Seller Under Pennsylvania Law* (2021), 30 Widener Commw. L. Rev., 301.

<sup>23</sup> In law, an *en banc* session is a session in which a case is heard before all the judges of a court (before the entire bench) rather than by one judge or a smaller panel of judges. *En banc* review is used for unusually complex or important cases or when the court feels there is a particularly significant issue at stake. [https://en.wikipedia.org/wiki/En\\_banc](https://en.wikipedia.org/wiki/En_banc).

<sup>24</sup> *Oberdorf v. Amazon.com Inc.* (2019) 936 F.3d 182.

<sup>25</sup> *Oberdorf v. Amazon.com Inc.* (2020) 818 Fed. Appx. 138, 143.

imposed. This rule-like definition finds some support in Pennsylvania case law: almost every case imposing strict liability includes such a transfer.<sup>26</sup> Various courts outside Pennsylvania also appear to support a more bright-line approach.<sup>27</sup>

However, as the Third Circuit Court states: “Pennsylvania law does not slavishly adhere to the language of 402A. ... E-commerce businesses present a novel situation, raising several unresolved questions. “As to applying § 402A to e-commerce businesses, what is the correct test? We perceive at least two plausible options – either a one-step method based on *Francioni*<sup>28</sup> and *Musser*<sup>29</sup> or a two-step approach based on *Francioni* and/or *Cafazzo*.<sup>30</sup>”<sup>31</sup> “*Francioni* may have crafted a one-step analysis that requires a court to determine whether an e-commerce business is a § 402A seller by weighing four policy factors: 1) is the defendant the only member of the marketing chain available to the injured party for redress; 2) does imposition of strict liability serve as an incentive to safety; 3) is the defendant in a better position than the consumer to prevent circulation of the defective product; and 4) can the defendant distribute the costs of strict liability?”<sup>32</sup>

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<sup>26</sup> *Id.* at 142.

<sup>27</sup> *Id.* “See, e.g., *Fox v. Amazon.com, Inc.*, 930 F.3d 415, 422-25 (6th Cir. 2019) (interpreting ambiguously defined Tennessee statutory term “seller” to include “any individual regularly engaged in exercising sufficient control over a product in connection with its sale, lease, or bailment, for livelihood or gain” but holding Amazon did not meet this definition); *Erie Ins. Co. v. Amazon.com, Inc.*, 925 F.3d 135, 144 (4th Cir. 2019) (holding Amazon was not a “seller” of a third-party vendor’s merchandise under Maryland product liability law because it never held title); *Stiner v. Amazon.com, Inc.*, 2019- Ohio 586, 120 N.E.3d 885, 891 (Ohio Ct. App.) (concluding Amazon was not a “seller” under Ohio statutory definition encompassing a person that, in the course of business, sells or places a product in the stream of commerce), *appeal allowed*, 156 Ohio St. 3d 1480, 2019- Ohio 3170, 128 N.E.3d 247 (Ohio 2019). *Oberdorf, supra*, 18 Fed. Appx. 138, 142.

<sup>28</sup> *Francioni v. Gibsonia Truck Corp.* (1977) 472 Pa. 362. In *Francioni*, defendant who was a lessor of hauling equipment, supplied equipment that caused plaintiff’s injury. Here, the Pennsylvania Supreme Court identified the four policy factors which in other jurisdictions, had served to justify including lessors as “sellers” for product liability purposes. Because defendant was in the business of supplying products via lease, and because of the four identified policy factors, the Court held that the equipment leasing company should be considered a “seller.” *Oberdorf, supra*, 930 F.3d 136, 162-63.

<sup>29</sup> *Musser v. Vilsmeier Auction Co, Inc.* (1989) 522 Pa. 367. In *Musser*, plaintiff was injured by a tractor that his father bought at an auction house. Following his injury, plaintiff sought to hold the auction house strictly liable as a seller of the alleged defective tractor. The Pennsylvania Supreme Court, in relying on the policy considerations underlying marketplace strict liability, held that the auction house could not be considered a seller and therefore could not be held strictly liable. *Oberdorf, supra*, 930 F.3d 136, 144.

<sup>30</sup> *Cafazzo v. Cent. Med. Health Servs.* (1995) 542 Pa. 526. In *Cafazzo*, the Court held a hospital and physician were not suppliers of a medical device they provided to a patient, accompanied by a surcharge for the device, because the relationship of the hospital and/or doctor to patients – even if there is some surcharge on the price of the product - is not dictated by the distribution of such products. As *Cafazzo* makes evident, once a court has determined a defendant is too “tangential” to be considered a supplier of the product at issue, applying the *Francioni* policy factors is unnecessary. *Id.* at 523-24. Courts may nonetheless discuss them in order to demonstrate that, “even assuming that [the defendants] could reasonably be termed sellers . . . the policy reasons for strict liability are not present. *Id.* at 525.” *Oberdorf, supra*, 930 F.3d 136, 163.

<sup>31</sup> *Oberdorf, supra*, 818 Fed. Appx. 138, 141.

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

The Court further states: “On the other hand, *Francioni* can be interpreted as fashioning a two-step analysis. After discussing the four policy factors, the [*Francioni*] Court stated, ‘[e]ngagement in the business of ‘selling’ products is, of course, a basic requirement. This sentence and the surrounding paragraph suggest that a prerequisite to the application of the four policy factors is a determination of whether a defendant is in the business of selling the kind of product at issue. If a defendant does not sell that kind of product, then there is no need to consider the four *Francioni* factors because strict liability is inapplicable. Only when a defendant sells the kind of product at issue does the analysis then turn to the four policy factors. *Cafazzo* also appears to endorse a two-step approach.”<sup>33</sup>

In other words, if the four policy factors set forth above are vindicated, does that mean one is a “seller” for the purposes of imposing strict liability despite whether one is a “seller” as defined by statute (i.e., § 402A)? If such is the case, then one may not be a “seller” as defined by statute but could still be held strictly liable if the four policy factors weigh in favor of imposing strict liability. Or, must it first be shown that the supply chain entity is a “seller” as defined by statute and then, and only then, after showing that the four policy considerations are fulfilled, will strict liability be imposed. If this is the case, then one could presumably be a “seller” by definition of statute but, if the four policy considerations are not vindicated, such an entity may not be held strictly liable.

Unfortunately, before the Pennsylvania Supreme Court had the chance to hear the case, the parties settled and the case was dismissed, leaving these questions unresolved.<sup>34</sup>

## **The Trend Toward Finding Marketplace Defendants Strictly Liable**

Prior to *Oberdorf*, courts were unanimously ruling that online marketplaces were not liable for products sold by third parties on their websites. However, with *Oberdorf*, even though the Pennsylvania Supreme Court did not get the chance to resolve the “1-step vs. 2-step” conflict, the trend has shifted. In California, a series of cases have followed the Third Circuit's lead by holding that a marketplace defendant can be held liable in products cases, where it never held title or took custody of the product at issue.<sup>35</sup>

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<sup>33</sup> *Id.* at 141-42.

<sup>34</sup> Pamela R. Kaplan, *The Shifting Definition of ‘Seller’: E-Commerce Product Liability Claims in NJ* (Jan 2021), New Jersey Law Journal, p.3.

<sup>35</sup> S. Sheridan, M. Brooks and A. Schwartz, *Recent Losing Streak for Online Marketplaces Signals Developing Liability Trend* (Sept. 2021), Client Alerts, p.1.

In the California case of *Bolger vs. Amazon.com, LLC*, the plaintiff bought a replacement battery for her laptop from a third-party seller through the Amazon website. The battery allegedly exploded several months later, causing severe burns.<sup>36</sup> The trial court granted summary judgment in favor of Amazon on grounds that it did not distribute, manufacture, or sell the product in question. In reversing the lower court's decision, the Appellate Court's analysis largely mirrored the four-factor test applied in *Oberdorf*, ruling that under the principles of strict liability, Amazon was "a direct link in the chain of distribution, acting as a powerful intermediary between the third party seller and the consumer."<sup>37</sup> "As a factual and legal matter, Amazon placed itself between [the seller] and Bolger in the chain of distribution of the product at issue here. Amazon accepted possession of the product from [the seller], stored it in an Amazon warehouse, attracted Bolger to the Amazon website, provided her with a product listing for [the seller's] product, received her payment for the product, and shipped the product in Amazon packaging to her. Amazon set the terms of its relationship with [the seller], controlled the conditions of [the seller's] offer for sale on Amazon, limited [the seller's] access to Amazon's customer information, forced [the seller] to communicate with customers through Amazon, and demanded indemnification as well as substantial fees on each purchase. Whatever term we use to describe Amazon's role, be it 'retailer,' 'distributor,' or merely 'facilitator,' it was pivotal in bringing the product here to the consumer."<sup>38</sup>

Similarly, in *Loomis v. Amazon.com LLC*,<sup>39</sup> the Court reversed the trial court's summary judgment order in favor of Amazon, holding that the marketplace may be held strictly liable for the plaintiff's injuries from a defective hoverboard she purchased online. The *Loomis* Court found that "Amazon's own business practices make it a direct link in the vertical chain of distribution under California's strict liability doctrine."<sup>40</sup> The Court further states that even though Amazon did not hold title to the product and did not have physical possession of the hoverboard, that does not automatically render it solely a service provider and remove it from strict liability.<sup>41</sup> The *Loomis* Court points out that the fact that Amazon chooses to delegate the manufacture of the hoverboard to another and that it "causes the manufacturer to ship the product directly to the consumer cannot be an escape hatch

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<sup>36</sup> *Bolger*, *supra*, 53 Cal.App.5th 431, 437.

<sup>37</sup> *Id.* at 438.

<sup>38</sup> *Id.*

<sup>39</sup> *Loomis*, *supra*, 63 Cal. App. 5th 466, 470.

<sup>40</sup> *Id.* at 480.

<sup>41</sup> *Id.* at 484.

to avoid liability. ... Amazon took the order for the hoverboard, took the payment, and passed the order up the chain of distribution.”<sup>42</sup>

Accordingly, Amazon was held liable under the marketplace theory of strict liability because “(1) [it] received a direct financial benefit from its activities and from the sale of the product; (2) [its] role was integral to the business enterprise such that the [Amazon]’s conduct was a necessary factor in bringing the product to the initial consumer market; and (3) [Amazon] had control over, or a substantial ability to influence, the manufacturing or distribution process.”<sup>43</sup>

Justice Wiley, in his concurring opinion, focused on an Amazon press release in which Amazon touted that it takes significant precautions to ensure products sold on its site are safe: “The admissions confirm the obvious: Amazon can control its river. It can undertake cost-effective steps to minimize accidents from defective products sold on its website.”<sup>44</sup>

And similar to *Bolger*, where two of the defendants failed to appear, and a third could only be served in China, the Court determined that Amazon may be the only “member in the distribution chain reasonably available to the injured plaintiff” given that the manufacturer in *Loomis* failed to appear and a default was taken against it.<sup>45</sup>

Unlike the Court in *Oberdorf*, the *Bolger* and *Loomis* Courts were unencumbered by legislation defining strict liability which, in *Oberdorf*, made it more difficult for the court to impose liability. As the *Loomis* Court stated: “We are not persuaded by Amazon’s reliance on those decisions that restrict strict liability to sellers or manufacturers by applying out-of-state law. (citations omitted) We need not stray so far afield when California courts have provided extensive analysis of strict liability doctrine in California.”<sup>46</sup> Indeed, the current trend seems to be in favor of eschewing the rigid confines of terms like seller or distributor, in favor of

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<sup>42</sup> *Id.*

<sup>43</sup> Pamela R. Kaplan, *The Shifting Definition of ‘Seller’: E-Commerce Product Liability Claims in NJ* (Jan 2021), New Jersey Law Journal, p.3.

<sup>44</sup> *Loomis*, *supra*, 63 Cal. App. 5<sup>th</sup> 466, 490. The Court further states: “Whatever it is, Amazon is situated swiftly to learn of and to contain the emerging problem, thereby reducing accidental injuries. Amazon can cabin the danger by stopping sales. Amazon can alert past buyers who have yet to experience the lurking hazard: Amazon has information about its customers and their purchases. Other measures are possible. ¶ Once Amazon is convinced it will be holding the bag on these accidents, this motivation will prompt it to engineer effective ways to minimize these accident costs. Tort law will inspire Amazon to align its ingenuity with efficient customer safety. Customers will benefit.” *Id.* at 488-89.

<sup>45</sup> S. Sheridan, M. Brooks and A. Schwartz, *Recent Losing Streak for Online Marketplaces Signals Developing Liability Trend* (Sept. 2021) Client Alerts, p. 3.

<sup>46</sup> *Loomis*, *supra*, 63 Cal. App. 5<sup>th</sup> 466, 484-85.



determining liability by weighing the policy considerations that underpin strict liability.

As this trend gains momentum, it is important to be aware of the various factors that courts look at in determining whether these policy considerations are met. To assist in assessing and minimizing potential liability, the following is a compilation of such factors taken from recent cases, and the policy considerations to which each factor applies.<sup>47</sup> Some of the factors below arguably apply to one or more of the policy considerations.

### **Factors Courts Consider in Analyzing the Policy Considerations Underlying Marketplace Strict Liability**

***Policy Consideration No. 1: Whether the supply-chain Defendant plays a substantial part in insuring that the product is safe or may be in a position to exert pressure on the manufacturer to that end.***

(All references to Defendant below are to the supply-chain Defendant.)

- Whether Defendant has control over the manufacturing or distribution processes of the third-party vendor/manufacturer such that it can prohibit dangerous products from reaching consumers over its platform
- Whether Defendant is in a position to receive reports of defective products and remove them from circulation
- Whether Defendant is situated to learn of and to contain the emerging problem, thereby reducing risk of injury
- Whether Defendant can and does alert/warn past buyers who have yet to experience a known or suspected hazard
- Whether Defendant has an active and robust process to monitor for any customer complaints
- Whether Defendant makes any representations regarding the safety of the product
- Whether Defendant plays a substantial role in ensuring the products listed on its website are safe

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<sup>47</sup> The enumerated factors were derived from recent cases, including, but not limited to: *Bolger v. Amazon.com, LLC* (2020) 53 Cal.App.5<sup>th</sup> 431; *Loomis v. Amazon.com LLC* (2021) 63 Cal. App. 5<sup>th</sup> 466; *Oberdorf v. Amazon.com Inc.* (2019) 930 F.3d 136; *Stiner v. Amazon, Inc.* (2020) 162 Ohio St. 3d 128; and *State Farm Fire & Cas. Co. v. Amazon.com Servs., Inc.* (2019) 137 N.Y.S. 3d 884.

- Whether Defendant introduces and recommends the product to the consumer and otherwise uses its influence to lead the consumer to believe that the product is safe
- Whether Defendant can and does exert pressure on upstream distributors to enhance safety
- Whether Defendant accepts returns and inspects the product to determine whether it can be returned and/or resold
- Whether Defendant requires that the third-party vendor comply with all applicable laws, including consumer safety laws and regulations

**Policy Consideration No. 2: Whether supply-chain Defendant may be the only member in the distribution chain reasonably available to the injured Plaintiff.**

- Whether the third-party vendor/manufacture is reachable or available to plaintiff
- Whether Defendant is the only member of the enterprise reasonably available to the Plaintiff
- Whether Plaintiff is provided information to contact the third-party vendor/manufacture to determine return and replacement policies and any questions regarding the order
- Whether the third-party vendor/manufacture is judgment proof
- Whether the third-party vendor/manufacture is available and subject to jurisdiction

**Policy Consideration No. 3: Whether the supply-chain Defendant is in a position to adjust the costs of compensating the injured plaintiff amongst various members in the distribution chain.**

- Whether Defendant has the contractual tools to indemnify itself through third-party vendors or adjust commissions to redistribute the cost of injuries
- Whether Defendant demands indemnification from third-party vendors as well as substantial fees related to purchases
- Whether Defendant requires that it to be listed as an additional insured on the third-party vendor's insurance policy

**Policy Consideration No. 4: Whether the supply-chain Defendant received a direct financial benefit from its activities and from the sale of the product.**

- Whether Defendant receives financial benefit from the sale of the product

**Policy Consideration No. 5: *Whether the supply-chain Defendant's role was integral to the business enterprise such that the Defendant's conduct was a necessary factor in bringing the product to the initial consumer market.***

- Whether Plaintiff believes that Defendant owned the product purchased
- Whether Defendant has control over access to its own platform
- Whether third-party vendors/sellers are prohibited from communications with Defendant's customers except through the Defendant's website where such communications are anonymized
- Whether Defendant may, at any time, cease providing any services at its sole discretion without notice, including suspending, prohibiting, or removing any of its third-party vendor listings or whether Defendant can withhold payment to the third-party vendor
- Whether Defendant advertised the product
- Whether Defendant controls/restricts product pricing, customer service and communications with customers
- Whether Defendant attracted Plaintiff to its website
- Whether Defendant controls the conditions of the third-party vendor's offer for sale on Defendant's website
- Whether Defendant is pivotal in bringing the product to the consumer
- Whether Defendant controls the conditions of the third-party's selling of the product through other channels
- Whether Defendant is the only supplier or plays a dominant role in creating the market for the product

**Policy Consideration No. 6: *Whether the supply-chain Defendant had control over, or a substantial ability to influence, the manufacturing or distribution process.***

- Whether Defendant's name appears on the packaging materials and on Plaintiff's invoices/payment/credit card statements
- Whether Defendant stores, packages, delivers, ships the product
- Whether Defendant takes possession of the product
- Whether Defendant retains sole discretion to determine content, appearance and design of its website and reserves the right to alter content of the product description

- Whether Defendant plays the role of the seller by taking all customer orders, handling all payment processing, guaranteeing shipment terms and processes returns
- Whether Defendant provides a guarantee/warranty to its customers
- Whether Defendant vs. the third-party vendor approves the sale before it is made

From the above it is clear that the overlying theme here is one of control. If the supply-chain defendant has sufficient control over the product in connection with its sale versus merely putting the product into the stream of commerce, courts will be more willing to impose strict liability.

## **Conclusion**

The transition from brick-and-mortar stores to electronic retail marketplaces has forced the law to accommodate new economic and technological realities. Some would argue that online retail chains – like Amazon, Etsy, Shopify, eBay – should not be free to profit from the bursting digital economy while absorbing none of the risks imposed on buyers associated with e-commerce. Whether a supply chain defendant falls within the definition of “seller” under some state's statutes, while still important to the analysis, is becoming less important than an analysis based on a defendant's control over the product and involvement in putting the product into the hands of consumer.

As this area of the law is currently evolving, there is much uncertainty. Despite the trend toward finding behemoths like Amazon liable, mere participation in the supply chain does not necessarily mean that you will be held liable. Much will depend on weighing the above list of factors. As your ABC counsel, we recommend that you take advantage of our advice and services regarding what you can do, given this rapidly changing area of law, to minimize your exposure.

# THE GOVERNMENT CONTRACTOR DEFENSE: ITS USE BEFORE AND DURING TRIAL.

*By Christopher S. Hickey*

## INTRODUCTION

The Government Contractor Defense is an affirmative defense providing government contractors with immunity from state-based tort claims in situations where the government itself is immune. It has evolved from the principle that a contractor, acting under the authority and direction of the United States, should be protected by the same sovereign immunity that the government enjoys.

Establishing this defense often turns upon whether the contractor/manufacturer is able to provide sufficient evidence the government approved “reasonably precise specifications.”<sup>1</sup> This inquiry generally focuses on the “continuous exchange between the contractor and the government” during the design phase of the product.<sup>2</sup> However, in several jurisdictions across the United States, courts have also allowed defendants to present evidence of the “the length and breadth of the [government’s] experience” with the product post-design in order to establish governmental approval of the design feature in question.

This defense is typically brought in the pre-trial phase of litigation in the form of a motion for summary judgment. However, even if the court denies such a motion, the defense can, and should be, presented at trial. If the jury accepts this affirmative defense, then the defendant is immune from liability. However, even if not accepted, the documents and testimony needed to support this defense can help to demonstrate the government’s control over a product and/or the length and breadth of the government’s experience with the product and the continuing use of the design feature that is the basis of plaintiff’s claims. These facts can help to lessen defendant’s culpability in the eyes of the jury.

After taking a closer look at the current state of the government contractor defense, this article will then show how the defense can be utilized during the pre-trial and trial phases of a matter using as an example a case litigated in federal court in California in 2018, *Fontalvo v. Sikorsky*. In that case, while the court’s rulings throughout the litigation did not favor the defense, the jury clearly was impacted by

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<sup>1</sup> *Tozer v. LTV Corp.*, 792 F.2d 403, 408 (4th Cir. 1986).

<sup>2</sup> *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 702 (4th Cir. 1989).

the documents and witnesses discussing the government's involvement in both the design and post-design phases of the product, a Marine Corps CH-53E Super Stallion helicopter, and ultimately exonerated the manufacturer of all liability.

## THE GOVERNMENT CONTRACTOR DEFENSE

### *Boyle's Three-Part Test:*

In its 1988 decision in *Boyle*, the United States Supreme Court defined the three-part test which a manufacturer must satisfy to enjoy immunity from state tort suits.<sup>3</sup> *Boyle* arose from the death of a Marine helicopter pilot after his helicopter crashed off the coast of Virginia. It was alleged that, although the pilot survived the initial crash, he was unable to escape the wreckage due to a defectively designed emergency escape-hatch system. The Supreme Court was faced with deciding whether “a contractor providing military equipment for the Federal Government can be held liable under state law for injury caused by a design defect. The Court reasoned that when a “uniquely federal interest” is implicated, such as the procurement of equipment by the United States, pre-emption of state law is appropriate when a “significant conflict” exists between the federal interest and the operation of state law.”<sup>4</sup>

In setting the parameters of the immunity available to government contractors, the *Boyle* Court focused on the “discretionary function”<sup>5</sup> exception to government liability. Under the discretionary function, “[a]ny claim . . . 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” is exempted from suit by private citizens.<sup>6</sup> The *Boyle* Court held that it makes little sense to subject a contractor to state tort suits for building aircraft that conform to designs fashioned or approved by a federal official, where the federal official would be entitled to immunity from suits arising out of defects in those designs.

The Court formed a three-pronged test, holding that government contractors supplying equipment would be immune from state law claims when: “(1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about the dangers

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<sup>3</sup> *Boyle*, 487 U.S. at 512.

<sup>4</sup> *Id.* at 507.

<sup>5</sup> 28 U.S.C. § 2680(a).

<sup>6</sup> *Id.*

in the use of the equipment that were known to the supplier but not to the United States.”<sup>7</sup> The decision of the *Boyle* Court is predicated on the concern that state law, in certain circumstances, can frustrate an identifiable federal interest or policy, requiring that state law be pre-empted.

This inquiry generally leads courts to focus on the “continuous exchange between the contractor and the government” during the design phase of the product.<sup>8</sup> However, courts in several U.S. jurisdictions now recognize that post-design and post-production government use of a product may also be sufficient to show the government approved reasonably precise specifications required by the first prong of *Boyle*. This line of reasoning comes from the Fourth Circuit in *Dowd v. Textron*.<sup>9</sup>

*Dowd’s Length and Breadth of Experience and Continuing Use Test:*

Decided in 1986, two years prior to the Supreme Court’s decision in *Boyle*, *Dowd* followed a string of 1980s cases in which courts applied an emerging version of the government contractor defense to design defect cases involving military equipment.<sup>10</sup> *Dowd* arose from the 1981 fatal helicopter crash of two Army pilots conducting a familiarization flight at a U.S. Naval Test Pilot School in Maryland. The plaintiffs alleged that the accident was caused when the helicopter’s 540 rotor system struck and severed the helicopter’s mast, a phenomenon known as “mast bumping.” Mast bumping is caused when the helicopter’s rotor dips at an extreme angle and the hub of the rotor strikes the helicopter’s mast. When mast bumping occurs in flight, it is generally catastrophic because the separation of the rotor from the mast leaves the helicopter unable to fly, and as it did in this case, the separated rotor may cut through the cockpit of the helicopter.

The helicopter’s 540 rotor system was designed independently by the manufacturer in the early 1960s. Soon after, in 1961, it was installed on Army helicopters and was in continuous service on UH-1 and AH-1 helicopters through the 1981 incident. However, both the Army and the manufacturer were already aware of the possibility for inflight mast bumping and at least forty-six instances of mast bumping were reported between 1967 and 1972. The Army addressed this issue by educating its pilots on the phenomenon as well as requesting a redesign of the mast and the rotor from the manufacturer.

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<sup>7</sup> *Id.* at 512.

<sup>8</sup> *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 702 (4th Cir. 1989).

<sup>9</sup> *Dowd*, 792 F.2d at 412.

<sup>10</sup> See *Tozer v. LTV Corp.*, 792 F.2d 403 (4th Cir. 1986); *Tillett v. J.I. Case Co.*, 756 F.2d 591 (7th Cir. 1985); *McKay v. Rockwell Intern. Corp.*, 704 F.2d 444 (9th Cir. 1983).

The plaintiffs in the *Dowd* case, speaking to the first prong of the government contractor defense, argued that since the rotor system was originally designed in the early 1960s without any participation from the Army, the government neither set nor approved reasonably detailed specifications. The *Dowd* Court, however, looked past the fact that the Army did not participate in the original design process and instead looked to evidence of the Army's post-design and post-production involvement with the rotor system's design. When considering whether the government approved of the rotor system's design, the *Dowd* Court reasoned, "[t]he *length and breadth* of the Army's experience with the 540 rotor system - and its decision to *continue using it* - amply establish government approval of the alleged design defects."<sup>11</sup> The Army's twenty-year use of the rotor system, including the Army's decision to continue using it after becoming aware of the mast bumping incidents, provided sufficient proof that the government approved reasonably precise specifications.

The court further observed that the Army was already aware of the rotor system's mast bumping problem and that it prepared reports on the topic and discussed the problem with the manufacturer. In the court's view, the Army may have chosen to continue using the 540 rotor system for any number of reasons, to include the Army's judgment that the equipment had largely accomplished its mission or that over time it had worked well enough. The Army's judgment in this situation, stated the court, "is not up to the jury to second-guess."<sup>12</sup> "Nor was it within the power of the contractor to do so . . . . [The contractor] cannot modify th[e] design without United States approval."<sup>13</sup>

#### *Continued Use Argument Has Expanded To Courts:*

The *Boyle* Court adopted much of the Fourth Circuit's test for the government contractor defense. Thus, the door was open for future courts to apply the same length and continued use argument. Today, four circuit courts of appeals and several other jurisdictions across the United States recognize the validity of the government's length of experience and continued use when applying the government contractor defense.

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<sup>11</sup> *Id.* (emphasis added). For simplicity's sake, we will refer to this line of reasoning as "the length and continued use" argument.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*



In *Ramey*,<sup>14</sup> a Fourth Circuit case, an aircraft mechanic was injured while attempting to remove an F-18 ejection seat. The plaintiff alleged that the mishap was the result of a defectively designed drogue firing lever initiator sear assembly and that the manufacturer failed to warn the Navy of the risks in the defective design.

The *Ramey* court explained that there are “two routes by which [a government contractor] may satisfy the first prong of the *Boyle* test.”<sup>15</sup> (1) The government contractor defense may be permitted to a participating contractor “so long as government approval of a design consists of more than a mere rubber stamp,” meaning that there must be evidence of the government’s participation in the design process.<sup>16</sup> (2) A contractor may satisfy *Boyle*’s first prong through length and continued use even though the military had not developed or approved the specifications for the component at issue.<sup>17</sup>

The *Ramey* Court found that the manufacturer was able to establish the Navy’s participation in the design process through both lines of reasoning. The manufacturer was able to prove the Navy was involved in a continuous exchange with the manufacturer during the initial design phase (the Navy issued the original design specifications, it inspected the seat’s components, to include a mock-up of the seat, and it tested the components) and that the Navy *continued using the design* after it had become aware of the potential hazards associated with its use. Communications between Naval authorities indicated that there were safety concerns with the seat’s design, particularly regarding its maintenance and deficiencies in its technical manuals. One commander went so far as to recommend the termination of the seat’s current maintenance procedures altogether.

In *Lewis v. Babcock Indus., Inc.*, the Second Circuit added to the Fourth Circuit’s reasoning by holding that the government contractor defense applies where, after learning of a design defect, the government orders replacement parts

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<sup>14</sup> It is important to note that the *Ramey* court eventually used that evidence to satisfy *Boyle*’s third prong. *Id.* at 950. The manufacturer provided evidence that the Navy had become aware of possible design defects with the equipment in question and still chose to continue using it. *Id.* The *Ramey* court reasoned that this satisfied *Boyle*’s third prong, “the supplier warned the United States about dangers in the use of the equipment known to the supplier but not to the United States,” *Boyle*, 487 U.S. at 512, because the manufacturer could not have “apprised the Navy of any material circumstances not already known to it.” *Ramey*, 874 F.2d at 951. The *Ramey* court’s analysis has two important implications. First, the court recognized that length and continued use evidence can be used to satisfy the first prong of *Boyle*. *Id.* at 950. Second, the court’s reasoning here suggests that, at least in the Fourth Circuit, evidence of the government’s length and continued use of a product may be used not only to satisfy the first prong of *Boyle* but that it might also be used to satisfy any of the three *Boyle* prongs.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* (citation omitted).

<sup>17</sup> *Id.*

identical to those of the defective design.<sup>18</sup> *Lewis* arose from a mishap involving the ejection of the self-contained crew module of an Air Force F-111-F jet fighter. The aircraft malfunctioned during flight and the pilot initiated the ejection of the crew module, after which all subsequent actions relative to ejection are supposed to occur automatically. However, one of the module's forward repositioning cables, which connect the parachute to the module, severed, causing the module to land improperly. The pilot suffered spinal injuries and sued the cable manufacturer. Evidence showed that the Air Force continued to use the cable after it had already become aware of the cable's susceptibility to corrode and snap.

The *Lewis* Court grappled with the question of at what point in time the *Boyle* test should be applied. It turned to the Fourth Circuit's decisions in *Dowd* and *Ramey* for guidance and explained that although the government had previously determined that the manufacturer's cable was susceptible to corrosion, it chose to use identical cables as replacements. In fact, it was one of the replacement cables that failed and caused the subject accident. "[I]t is not [the court's] role to second-guess the Air Force's judgment" to continue using the cable.<sup>19</sup> The court held that "when the Government reordered the specific . . . cable, with knowledge of its alleged design defect, the Government approved reasonably precise specifications for that product such that the manufacturer qualifies for the military contractor defense for any defects in the design of that product."<sup>20</sup>

The Eleventh Circuit is the most recent circuit to adopt the point of view that evidence of the government's length and continued use of a product may satisfy *Boyle*'s first prong. *Brinson v. Raytheon Co.* came about as a result of the fatal crash of an Air Force training aircraft and the subsequent design defect claim against the aircraft's manufacturer.<sup>21</sup> The single-propeller training aircraft was designed to mimic the aerodynamic properties of a jet aircraft. This was accomplished through a computer run system of pushrods and bell cranks which automatically adjusted the plane's rudder to emulate the flight of a jet. The plaintiff alleged that the rudder system was defective due to its reliance on Teflon-lined pushrods. The Teflon-lined pushrods, the plaintiff claimed, were vulnerable to failure through use and exposure

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<sup>18</sup> *Lewis v. Babcock Indus., Inc.*, 985 F.2d 83 (2nd Cir. 1993).

<sup>19</sup> *Id.* at 89.

<sup>20</sup> *Id.*; see *In re Agent Orange Prod. Liab. Litig.*, 517 F.3d 76, 94-95 (2d Cir. 2008) (extending immunity to contractor where the record disclosed that the government explicitly evaluated an alleged design defect and still continued to order replacements). However, *Lewis* expressly refused to address the question of whether a contractor can invoke the military contractor defense "where the Government merely tolerates a defect through continued use of a product in the face of knowledge of a design defect acquired after the design stage ended." *Id.* n.3.

<sup>21</sup> *Brinson v. Raytheon Co.*, 571 F.3d 1348 (11th Cir. 2009).

to humidity. The plaintiff alleged that one of the pushrods fractured during takeoff, which caused the system to fail and led to the crash.

Although the rudder system was originally designed and patented by the manufacturer, the evidence showed that the Air Force reviewed and approved the system's design. Air Force engineers reviewed design documents and drawings and communicated with the manufacturer through status meetings and conferences. Importantly, it was also established that the Air Force was aware of the specific design defect at issue. Prior to the accident, the Air Force issued a Technical Compliance/ Technical Order ("TCTO") requiring the inspection and replacement of the pushrods. The TCTO ordered that the rods be replaced by new, but otherwise identical, Teflon-lined rods. The rods of the subject aircraft were among those replaced in compliance with the TCTO.

Considering the TCTO's pushrod inspection and replacement requirements, the *Brinson* Court agreed with the Second and Fourth Circuits that length and continued use evidence can be used to satisfy the first prong of the *Boyle* test. *Brinson* explained that the military, when faced with a potentially failing or defective part, may make a discretionary decision concerning how to address the problem. The court explained, "[w]e do not want to second-guess that judgment through a state law tort suit."<sup>22</sup>

In addition to the above circuit cases, there are federal district courts and state courts which have recognized the length and continued use argument when analyzing government contractor defense cases:

In *Haltiwanger v. Unisys Corp.*, the U.S. District Court for the District of Columbia used evidence of the U.S. Postal Service's continued and consistent use of a letter sorting machine to extend government immunity to the machine's manufacturer.<sup>23</sup> The Postal Service used the machine for more than 20 years without any problems or objections based on the design process. In finding that the Postal Service's long-term use of the machine constituted approval of reasonably precise specifications under *Boyle*, the court stated: "long-term use of a given design often indicates de facto acceptance of the design and thus constitutes approval for purposes of the *Boyle* test. The continued and consistent use of a product without grievances or modifications implies endorsement of the design and consent as to its production and operation."<sup>24</sup>

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<sup>22</sup> *Id.* at 1353.

<sup>23</sup> *Haltiwanger v. Unisys Corp.*, 949 F. Supp. 898, 904 (D.D.C. 1996).

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

In *Lambert v. B.P. Prods. N. Am., Inc.*, the U.S. District Court for the Southern District of Illinois cited to *Ramey*, *Lewis*, and *Haltiwanger* when it recognized that “the first element under *Boyle* may be established if long-term governmental use of a product is shown.”<sup>25</sup> The plaintiff, a former military jet engine mechanic, brought a design defect claim against a jet fuel manufacturer, alleging that he developed cancer after being exposed to the fuel. The *Lambert* Court determined that there were strong indicators that the United States approved reasonably precise specifications where, after being supplied with the jet fuel for at least seven years, it “never rejected or demanded modification of the product.”<sup>26</sup>

In *Silverstein v. Northrop Grumman Corp.*, the Appellate Division of the Superior Court of New Jersey recognized that *Boyle*’s first prong may be satisfied by the government’s continuous use of a product after it has knowledge of a potential design defect.<sup>27</sup> In *Silverstein*, a U.S. Postal Service employee sued the manufacturer of his delivery vehicle after it rolled over during a traffic accident, alleging that the vehicle’s defective design rendered it prone to rollovers. After reviewing evidence that the Postal Service had approved of the vehicle’s design through an “on-going dialogue over specifications,” the *Silverstein* Court continued, “[y]et another route may be taken to ascertain whether the first prong of the *Boyle* test is satisfied.”<sup>28</sup> The Court pointed out that the Postal Service purchased more than 150,000 of the delivery vehicles over the course of many years and concluded that “[t]his extensive experience with the vehicle . . . in the face of the USPS’s knowledge that some of the [vehicles] had been involved in rollover accidents, in itself establishes government approval of the alleged design defect.”<sup>29</sup>

California’s Courts of Appeal have recognized the government’s continued use of a product to satisfy *Boyle*.<sup>30</sup> In *Kase v. Metalclad*, a design defect claim was brought against an asbestos broker which supplied asbestos-containing insulation to submarines in the 1970s. After going into a considerable amount of detail regarding the Navy’s knowledge of the effects of asbestos exposure prior to 1970, the Court cited to *In re Agent Orange* and *Dowd* and explained:

[T]his case deals with the procurement of a product that was known to and studied by the Navy for decades and which the Navy knew carried

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<sup>25</sup> *Lambert v. B.P. Prods. N. Am., Inc.*, No. CIV 04-347-GPM, 2006 WL 924988, at \*7 (S.D. Ill. Apr. 6, 2006).

<sup>26</sup> *Id.*

<sup>27</sup> *Silverstein v. Northrop Grumman Corp.*, 367 N.J. Super. 361, 380 (N.J. Super. Ct. App. Div. 2004).

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> See *Kase*, 6 Cal. App. 5th at 641.

with it serious health risks. Yet, it nevertheless made a decision to use, and to continue using, this asbestos product in its naval vessels until the 1970's.<sup>31</sup>

Although the *Kase* Court did not explicitly say that it was considering the Navy's continuous use of asbestos as determinative in establishing *Boyle*'s first prong, it did suggest that such evidence was a factor in its ultimate decision to extend immunity to the supplier.

### USING THE GOVERNMENT CONTRACTOR DEFENSE BEFORE AND DURING TRIAL:

Whenever a case involves a product purchased by the U.S. government, the answer to the complaint needs to include the government contractor defense as an affirmative defense. This will allow the issue to be addressed in a pre-trial motion and litigated during trial if a dispositive motion is denied.

#### *Motion for Summary Judgement:*

The first opportunity for the defense to obtain immunity to plaintiff's claims is through a successful motion for summary judgment based on the government contractor defense ("GCD motion"). Timing is important when filing such a motion. With regard to certain products, such as military equipment, it might seem readily apparent early in the case that the *Boyle* court's three-part test has been met. This is because many systems and parts of almost every military vehicle are built per very detailed government, or government-approved, specifications. However, it is usually important to wait to bring such a motion until after the conclusion of discovery. Plaintiff's complaint may actually set forth the exact part or system they believe failed but that will not stop plaintiff's counsel from pivoting to a new theory once it becomes obvious that their first theory is likely to face a difficult GCD motion.

For example, in *Fontalvo v. Sikorsky*, a wrongful death case concerning an inadvertent retraction of the main landing gear of a Marine Corp CH-53E helicopter, the plaintiff's complaint set forth a very detailed claim against a type of wiring known as "Kapton." Kapton wiring likely seemed an easy target to the plaintiffs because it has a known problematic history. This type of wiring has been shown it can deteriorate in certain environmental conditions, such as the salty and moist

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<sup>31</sup> *Id.*

locations where the Marine Corps often operates. It has also been a documented concern in prior military accidents. Unfortunately for plaintiffs, as was soon discovered after a little discovery, the government (in this case, Naval Air Systems Command – “NAVAIR”) specifically required the use of Kapton wiring in the manufacture of the accident helicopter even though the manufacturer warned against its use and recommended changing to a different type of wiring. Thus, claims based upon the use of Kapton wiring would almost certainly have fallen to the three-part *Boyle* test: (1) the United States approved reasonably precise specifications – if fact, it required the use of Kapton; (2) the equipment conformed to those specifications – the helicopter was manufactured with Kapton per NAVAIR instruction; and (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States – actually, NAVAIR knew about the dangers of Kapton even before the manufacturer.

Plaintiffs needed to find a different product to blame and a different theory on how the accident occurred. They pivoted to the CH-53E’s landing gear system. Specifically, they claimed the orientation of one part of that landing gear control system was such that it did not prevent deteriorating wires from making contact. Since the part’s orientation was not expressly approved by the government, plaintiffs’ argued part one of the *Boyle* test is not met.

Putting aside the fact that this new theory cannot explain the subject accident and plaintiffs’ argument reflects a misunderstanding of the *Boyle* decision, because plaintiffs were forced to pivot to this new theory during the discovery phase of this litigation, defendant had time to produce documentary evidence demonstrating NAVAIR’s review of the CH-53E landing gear system design, including its control system, its testing of that system, and its approval. Since the CH-53E landing gear system was essentially the same as the earlier CH-53D model, defendant was also able to produce evidence supporting *Dowd*’s “length and breadth of experience and continued use” test. Essentially, NAVAIR had been using this design since the early 1970s.

The court still denied defendant’s motion. It rejected the *Dowd* test and found that there was a triable issue of fact to present to the jury: did Kapton or did the orientation of one part of the hydraulic system cause the accident? Nonetheless, by forcing plaintiffs to “reveal their hand” during discovery, defendants had the hydraulic system documents that would be needed at trial and, if needed, for an appeal of the court’s summary judgment ruling.

*The government contractor defense at trial:*

Denial of a motion for summary judgment based upon the government contractor defense is usually not immediately appealable. Thus, a defendant manufacturer will need to be prepared to litigate the defense at trial in order to (1) have the defense added to the verdict form for the jury to decide and (2) preserve the issue for appeal.

Here, again, not only must evidence be put forth supporting each of Boyle's three-part test but, if the facts support a *Dowd* "length and breadth of experience and continuing use" argument, then such evidence must be presented to the jury. This will be done through witnesses and the documents admitted into evidence.

Two of the key steps in succeeding on any affirmative defense are jury instructions and verdict form. The explanation of the defense to the jury in jury instructions and wording of the questions presented to the jury in the verdict form can help sway a jury toward or away from a particular defense. In *Fontalvo*, the parties began to debate jury instructions and the verdict form language began about a month before the trial with the parties' pre-trial submissions. With regard to the government contractor defense, defendant wanted part one of the *Boyle* test to be explained as follows:

Did the United States approve reasonably precise specifications for the CH-53E landing gear system and electrical system or did the length and breadth of the Navy's experience with the CH-53E landing gear system and electrical system, and its decision to continue using the CH-53E, establish government approval of the design Plaintiffs allege is defective?

As it did when deciding defendant's motion for summary judgment, the court rejected use of the *Dowd* "length and breadth and continuing use" test. In addition, rather than describing the product as the CH-53E or CH-53E landing gear system, it opted for "CH-53E landing gear *control* system." As a practical matter, this narrowed the jury's attention to just the orientation of the specific part of the landing gear system addressed at trial by plaintiffs' expert witnesses.

The verdict sheet language went even further. Although the court's jury instructions explained the third part of the *Boyle* test using the "landing gear control" language, the court's final verdict sheet changed the language to "landing gear *configuration*." Again, this helped to narrow the GCD issue to just the orientation argument made by plaintiffs.

Ultimately, we will never know with certainty how the jury would have answered the GCD questions on the verdict form because there was no need to resolve any affirmative defense once the jury determined Sikorsky was not negligent and that the design of the CH-53E was not a substantial factor in the cause of the accident.

*Demonstrating government liability:*

Even if immunity is not obtained through the government contractor defense, it is still very important to present documents and witness testimony to the jury supporting this defense. The facts that support the GCD also help to demonstrate to the jury the level of involvement and control the government had over the product at issue. Even if evidence admitted at trial is insufficient to prevail as an affirmative defense, that same evidence can do much to demonstrate government control in order to eliminate or lessen the overall liability of defendants.

In the *Fontalvo* case, as an example, it is clear from post-trial interviews of the jurors that the GCD evidence presented during the trial swayed their decision to find no defect in the CH-53E and no liability on the part of Sikorsky. Here are a few juror comments when asked about why Sikorsky was not found liable:

Juror Profile: A 47-year-old female

*I think the most compelling evidence for Sikorsky was the relationship with NAVAIR from the beginning and the fact that the Navy approved everything...the Navy is partnering with them at every step. They couldn't design anything that the Navy didn't approve.*

Juror Profile: A 45-year-old male

*I believe Sikorsky designed the landing gear. They are the manufacturer of the aircraft but they're following the Navy's design.*

Juror Profile: A 69-year-old Caucasian male

*NAVAIR was in charge of the design according to the Navy specs. Sikorsky is not supposed to change that. NAVAIR was in charge of the design.*



Although the court would not instruct on the length and breadth of the government's involvement with the product in question, it is clear from these post-trial comments that the jury did find the extent of the government's involvement quite compelling in its analysis of where to place responsibility for the accident.

#### OBTAINING EVIDENCE TO SUPPORT THE DEFENSE DURING DISCOVERY:

Demonstrating the facts to support this defense consists of testimony from expert and corporate employees supported by relevant documentation. Courts have found evidence of a continuous exchange where the relationship between the two parties consisted of interactions such as formal design meetings, the sharing of engineering drawings, and collaboration in the product's testing.<sup>32</sup> Because the specifications and designs for many products go back many decades, finding documents and, more importantly, witnesses to explain this history can be challenging.

Evidence establishing the "length and breadth" of the government's history with a product, on the other hand, is usually more readily available than decades-old design documents because they are generated after delivery of the product. This history can be found in documents generated to track and address various operational issues and with government witness testimony explaining the plenary control the government has over all product design changes.

#### *Start to develop the defense before trial:*

The first step toward assuring access to the documents necessary to support the GCD is to keep all records of government involvement in the contract, design and manufacturing process. In fact, seek government input and participation at all phases of development and testing. Obtain written confirmation that the product conforms to the specifications. Warn the government of any and all problems and make sure the resolution of those issue is clearly documented. Document all efforts to fix any design or manufacturing issue and document the governments acceptance or denial of those efforts and/or recommendations.

#### *Document Discovery:*

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<sup>32</sup> See *Getz v. Boeing Co.*, 654 F.3d 852 (9th Cir. 2011).

In addition to the historical design and product issue documents obtained, hopefully, from the client, a defendant should also seek documents from the government. These will include a variety of historical documents. These documents should cover all phases of a products life: development, testing, production, and product support. Some examples would be the following: the government's detailed specifications; all contracts; design review documents and meeting minutes; individual system and flight tests; production approval; in the case of military aircraft, the "DD250" form for the subject aircraft (this document is issued to the manufacturer when a product is accepted and it signifies that the government considers the product as conforming to all required specifications); and the product's inspection and maintenance manuals and records.

The government should also be asked to produce *Dowd* related documents showing the extent of the government's involvement with the design post-production and the control it has over any proposed design changes. In the context of military aircraft like in the *Fontalvo* case, these will be documents from the Army, Navy or Air Force's Systems Safety Working Groups (SSWG). A SSWG is established by the government for every aircraft platform and is comprised of various military members, civilian department of defense engineers and a representative from the manufacturer. These groups track and address problems that arise with the operation of a particular type of aircraft. They are an invaluable source of information regarding the government's decisions made with regard to product issues and also its acceptance or rejection of manufacturer proposed solutions. These materials will demonstrate the government's plenary control over all matters concerning the operation of these aircraft and the design. Other related documents will be "Risk Assessment" reports. "Risk Assessment" reports are generated to weigh the pros and cons of a particular action, or inaction, regarding a product issue. These reports are typically signed at the executive level and contain the government analysis of the risk of failure and assigns an alpha-numerical code to each problem indicating its likelihood of occurrence and the severity of loss/damage should a failure occur.

If the case is pending in federal court, obtaining documents from the government will involve issuing a subpoena to the government agency that purchased the product. Federal courts have subpoena power over all federal agencies. In most federal district courts, the subpoena must be issued and transmitted by the clerk of that court, rather than by the private litigants.<sup>33</sup> The clerk of the court will send the subpoena to the "officer ordered to perform the act." This typically is the head of the agency. For example, in the case of a request for Navy documents,

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<sup>33</sup> For example, see United States District Court for the Central District of California, Local Rule 58-9.

the subpoena would be issued to the Secretary of the Navy. Because a high-level member of the agency is ultimately responsible for complying with the subpoena, production of materials tends to be more complete and timely as compared to a FOIA request or other private litigant request for information.

If the case is pending in a state court, the process can be more challenging. State courts do not have the power to subpoena federal agencies so litigantes have no way to force the production of documents. Nonetheless, federal regulations require agencies to cooperate with requests for non-classified information from civil litigants so it is possible to obtain some materials.<sup>34</sup>

#### *Depositions of government witnesses:*

After obtaining the government's documents, defendants should attempt to depose government employees that can speak to the design history, the interaction (back and forth) with the manufacturer on design issues, the government's plenary power over all design decisions to include any proposed change to the design, the government's tracking and resolving of product issues during operation and use of the product and the significance of certain documents as they relate to government decisions and acceptance of parts.

As with document requests, due to the lack of subpoena power of state court judges, this task may be more difficult in state court. Also, while the government may allow a deposition, it is unlikely defendants will be able to compel a government witness to testify at trial unless the trial just happens to be located in the witness' locale. Thus, it is imperative that defendant's videotape every deposition so that clips can be used at trial in lieu of a live witness.

During the *Fontalvo* trial, defendant was able to present a mixture of live and videotaped government witnesses. The jurors heard all of the following from the clips:

#### NAVAIR witness:

Q: Ultimately whatever the design issue is, the final decision as to what the final design will be is up to the government?

A: Correct.

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<sup>34</sup> 32 CFR §§97 and 516; *Touhy v. Ragan*, 340 U.S. 462 (1951)

Q: Can a contractor make changes to an aircraft system without authorization from the government?

A: No.

Q: Does the government have the authority to reject design changes suggested by the contractor?

A: Yes.

CH-53 Assistant Program Officer witness:

Q: So, they understand the risks associated with continuing to operate the CH-53 Echo [with Kapton wiring]. And one of those risks is the --is that you may have an inadvertent landing gear retraction while the aircraft is on the ground, correct?

A: Yes.

Q: They understand that that's a risk and they are saying that this aircraft is going to continue to operate even with that known risk, correct?

A: Yes.

NAVAIR mechanical engineer witness:

Q: Would you read --would you read what you wrote from Mitch on down to signing it Aldo?

A: Yeah. Good morning. My thoughts, it could be that we, including myself, are so used to seeing the Kapton in that degraded condition that it looks normal to us. I have suggested a bulletin to replace that wire to the up solenoid next phase for all aircraft. This is something the fleet can implement now even without a bulletin.

Q: Did that ever happen?

A: No, I don't believe so.

This type of testimony from government witnesses conveyed to the *Fontalvo* jury the extent of the government's control over the aircraft design and the clear knowledge the government had of risk associated with continued operation of the aircraft with Kapton wiring. Other witnesses, such as an expert witness, could also discuss the role and power of NAVAIR and the CH-53 Program office, but testimony directly from government employees, themselves, is much more effective because

the jury will understand that those government witnesses have no stake in the outcome of the pending civil litigation.

## CONCLUSION

To establish immunity from state tort law under the government contractor defense both before or during a trial, contractors must demonstrate that the *Boyle* opinion's three-part test has been met. This starts with demonstrating the government approved reasonably precise specifications. This typically will require evidence of a continuous exchange between the contractor and the government during the design phase of the product (ie: formal design meetings, shared engineering drawings and specifications, collaboration in the product's testing, etc.). However, this can also be accomplished by demonstrating the government's long and continuous use of the product. This post-design, post-production evidence is recognized by a growing number of courts as a viable alternative to satisfy the first prong of the *Boyle* government contractor defense test.

However, no matter what information relevant to the government contractor defense is gathered or how it is gathered, defendants should always have an eye toward trial, as well as toward the filing of a dispositive motion. As the *Fontalvo* outcome demonstrated, all the information gathered to support a GCD motion is also extremely valuable when used at trial to demonstrate the continuous involvement of the government during the design, testing, production and post-production phases of the product's life. The documents and witness testimony obtained can demonstrate to the jury the level of control the government has over both the product's design and the risk/benefit analysis performed for any product issue. Even if immunity from suit is denied by the court and/or jury, this evidence can help reduce the defendant's overall liability.



## WHEN IT COMES TO THE NTSB, SAFETY STILL RULES THE DAY: JOBE V. NTSB - A CASE STUDY

*By Jason L. Vincent and  
James C. Stroud*

The National Transportation Safety Board (“NTSB”) has long been charged by Congress to investigate every civil aviation accident in the United States. The NTSB gathers facts to determine the probable cause of accidents, and issues safety recommendations designed to try and prevent future accidents. Critical to that process is the participation of outside parties, typically technical representatives and accident investigators from aircraft and component manufacturers, who are designated by the NTSB Investigator-in-Charge (“IIC”) to assist with gathering facts and determining the probable cause of the accident. When these outside consultants become part of the investigation, they are to be objective and support the independent investigation, rather than protect their employers from potentially adverse probable cause findings. The communications between the NTSB and these outside parties often become the subject of discovery disputes in lawsuits, and Courts must frequently choose between protecting the integrity of the NTSB investigation and making these documents that often provide great insight into the investigation process available to litigants.

Recently, in *JOBE v. NTSB*<sup>1</sup>, the United States Supreme Court declined to review the opinion and decision of the 5<sup>th</sup> Circuit Court of Appeals<sup>2</sup> reversing the lower court’s (District Court) order, which had required the NTSB to produce certain claimed confidential materials created in the course of an investigation. The appellate Court denied the plaintiffs from receiving, through a Freedom of Information Act (“FOIA”) request, communications from the manufacturers of the helicopter and engine to the IIC of the post-accident NTSB investigation. Representatives of Eurocopter and Turbomeca, the manufacturers of the helicopter and engine respectively, had been appointed “party representatives” by the NTSB, pursuant to applicable procedures. In so designating these manufacturers as parties, each operated under the direct supervision of the IIC, and their actions were at the request and control of the IIC. The intent of this designation is to obtain the assistance of “employees, functions, activities, or products [which] were involved in the accident or incident and who can provide suitable qualified technical personnel actively to assist in the investigation.”<sup>3</sup>

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<sup>1</sup> United States Supreme Court Docket: 21-469

<sup>2</sup> 1 F.4<sup>th</sup> 396 (5<sup>th</sup> Cir. 2021)

<sup>3</sup> 49 C.F.R. §831.8(b); 831(a)(2)

The underlying facts of the case involved the 2011 crash of a helicopter in Hawaii which resulted in the death of the pilot and all four passengers. Suit was filed in Federal Court in Louisiana,<sup>4</sup> and in the litigation, counsel for one of the plaintiffs filed a FOIA request, identifying certain communications between representatives of the manufacturers and investigators within the NTSB. Initially, the NTSB denied the request, but subsequently produced approximately 4,000 pages, out of a universe of 13,000 pages, contending that those not produced were protected from disclosure as they were created as part of the investigatory process. The District Court disagreed with the NTSB's position, finding that the NTSB waived any right to protection, as it provided copies of certain documents to the aircraft leasing company, and the helicopter and equipment manufacturers. A subsequent production was made, but the District Court concluded it was insufficient and required additional production of withheld documents, citing the law established in *Dept of Interior v. Klamath Water Users Protection Association*<sup>5</sup>. In that case, the Court concluded that if the non-agency parties' interests were adverse to the agency, the deliberative process privilege would not apply. Utilizing that analysis, the District Court held:

“As participants in the NTSB's investigation, Eurocopter and Turbomeca demonstrate[d] the epitome of ‘self-interested’ individuals. Although these entities were there to help the NTSB's investigation, they also were undoubtedly there to collect information to prepare for the inevitable litigation.

As seen through the analysis above, entities like the plane's manufacturer...are considered outside parties because they do not constitute “disinterested” consultants under the “consultant corollary”. Thus, by sharing its agency documents with non-agency entities ..., the NTSB waived the deliberative process privilege....”<sup>6</sup>

The District Court concluded that documents shared exclusively within an agency were protected but when produced outside the agency (here the NTSB), this privilege was waived and the documents must be produced in litigation.

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<sup>4</sup> 423 F.Supp. 3d 332 (D.C.Ed. La. 2019)

<sup>5</sup> 532 U.S. 1 (2001)

<sup>6</sup> 423 F.Supp. 3d 332, 342



A divided three judge panel of the Fifth Circuit Court of Appeals reversed and remanded<sup>7</sup>, providing a detailed analysis of the purpose of NTSB investigations, the right of the public to obtain government materials and Exemption 5 of the FOIA providing that “inter-agency or intra-agency memorandums or letters” are protected from production in civil discovery. Counsel for plaintiffs petitioned the United States Supreme Court for *Certiorari*, which was denied on January 10, 2022.

The appellate Court examined the statutory intent of establishing the NTSB to conduct certain investigations for the purpose of making travel “as safe and free from risk of injury as possible” and “to reduce the likelihood of [similar] accidents.”<sup>8</sup> The intention was to have knowledgeable individuals and entities engage in a cooperative, objective investigation and not to create evidence for subsequent use in litigation. In fact, the NTSB’s findings, opinions and report are precluded from evidence in litigation.

After reviewing the genesis of the NTSB’s responsibilities, the appellate Court discussed the role of “Party Representatives” and referenced the requirements that each execute a “Statement of Party Representative to NTSB Investigation”<sup>9</sup>, which specifically precludes actions which might constitute preparation “for litigation or the [pursuit] of other interests.” The Party Representative is to provide technical expertise under the direct supervision of NTSB personnel and the information created and derived from the investigation is under the direct control of the NTSB and cannot be provided outside the Investigation without prior consultation and approval by the IIC.<sup>10</sup>

The appellate Court then reviewed the legal basis upon which certain documents might be precluded from a FOIA request. More specifically, the opinion explored Exemption 5 of the FOIA, which established that “Intra-agency memorandums and letters”<sup>11</sup> need not be produced. The Court concluded that as “Party Representatives,” Eurocopter and Turbomeca qualified as members of the NTSB investigatory team and thus, communications among those entities with the NTSB might well constitute “intra-agency memorandums and letters” and thus, would be protected confidential communications. The Court remanded the case to the District Court for further review of the withheld materials with the production of only those documents not precluded by Exemption 5.<sup>12</sup>

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<sup>7</sup> 1 F.4th 396 (5th Cir. 2021)

<sup>8</sup> 49 C.F.R. §1116(a)(1) and 1116 (a)(2)

<sup>9</sup> 49 C.F.R. §831.11(d)

<sup>10</sup> 49 C.F.R. §831.13

<sup>11</sup> 5 U.S.C. §552(b)(5)

<sup>12</sup> 1 F.4th at 408

By denying certiorari, The United States Supreme Court provided no elaboration on the parameters of instructions submitted by the Fifth Circuit Court of Appeals to the District Court. That Court will need to reassess its review of the withheld documents and determine if any additional documents should be produced by the NTSB.

The immediate significance of the Fifth Circuit decision, and the implicit concurrence by the Supreme Court, is that it reinforces the sanctity of the efforts of manufacturers to fully and candidly assist in the statutorily mandated investigatory process. Only through such “team efforts” can the NTSB and the aviation industry accomplish the established goals of determining the cause(s) of accidents and incidents in order to provide solutions to improve aviation safety through equipment modification, maintenance procedures, Pilot Operating Handbooks, Airworthiness Directives, Service Bulletins and other FAA publications.

# **The Push for Autonomous Commercial Flights and its Legal Implications**

*By Jason L. Vincent*

*Eric J. Adler*

Imagine one day walking onto a commercial aircraft, where you are greeted by a friendly, smiling flight attendant, and you reminisce about those heady, reckless days when you entrusted your life to a human pilot. That day is probably closer than you think. Pilots do far less flying, get paid less, and are in far shorter supply than most people realize. Additionally, the use of pilots can create substantial liability for air carriers. The limits on a human pilot's abilities, and their scarcity, has spurred cross-industry investment and innovation towards autonomous flight to fill the void.

But who will be liable when an autonomous commercial flight causes harm to others? The prospect of autonomous airliners is still far from reality but the forces behind its necessity may be a lot stronger than previously thought. These forces will ascend humanity from the information age to the age of autonomy. But with all great transformations in society come many legal unknowns.

Presumably, an autonomous plane that crashes is a defective product; therefore, accidents arising from autonomous flight will expose manufacturers to liability that might otherwise be held by the air carriers. How will the law account for this shift in liability? Malfunction theory, which is often used when a product is lost or destroyed, will likely predominate in the United States. However, strict product liability which already plays a huge role in aviation accidents may take center stage. One thing seems certain: a large portion of the reputational damage created by fatal crashes will be shifted from the carriers to the manufacturers, making a venture into autonomous airliner flight inherently risky. Unfortunately, aircraft manufacturers are, by necessity, risk averse.

## **The State of the Industry and How We Got There**

To many, fully autonomous passenger flights seem like a world away, but given the current state of the airline industry it may be a lot closer than most think. The current woes of commercial aviation began on September 11<sup>th</sup>, 2001, when the U.S. airspace system landed all civilian flights. The skies above the continental U.S. were the quietest they had ever been since the first commercial airline took flight in January 1914. As detrimental to the country and the airspace system as this event was, the grounding of these flights only lasted a short period of time. Planes were positioned in airports with crews ready to operate them. The grounded aircraft were

up to date on maintenance checks and the pilots to fly them were current on their equipment. The aircraft sat for a mere day or two before they resumed regular scheduled service.

The COVID-19 global pandemic of 2020, however, decimated the commercial airline industry. For over a year, air travel was reduced to a mere fraction of pre-pandemic air travel. Airlines based in the United States over-crowded airports by parking unused aircraft on airport runways and tarmacs. Some carriers went to the extreme of parking jets in the Nevada desert, where conditions were less than ideal for furthering the life of an airplane. Passengers themselves are experiencing new levels of on-flight anxiety and provocation, with some too terrified to fly at all. Ever since the first commercial airline took flight on January 1<sup>st</sup>, 1914, air travel has been the backbone of the United States. A century of progress later, the U.S. airspace system and the commercial airline route structure now face the extreme challenge of recovering from the modern world's most significant economic, emotional, and scientific setback to date.

Even over the last twenty years, the amount of logistical improvements it took to make our system handle the increase in demand was astronomical. In 2002 there were just over 607 million passengers flown. In 2019 there were over a billion passengers flown. In less than twenty years the air travel system added over 400 million passengers to its fleet. When the pandemic hit, travel dropped to just under 400 million passengers, a relapse in numbers from decades of progress.<sup>1</sup> Needless to say, revenue plummeted.

The industry had no choice but to respond aggressively; airplanes due for expensive maintenance checks were parked, and ultimately, two-thirds of the world's passenger jets were grounded.<sup>2</sup> Pilots and cabin crews were furloughed or offered reduced wages to stay home, and thousands of pilots took early retirement. Smaller companies like Compass Airlines, Trans States Airlines, and ExpressJet Airlines were forced to cease operations.<sup>3</sup> They joined a long list of nineteen airlines worldwide that went out of business in 2020. Airlines that remained in business closed crew bases and completely redesigned their route structure in a desperate attempt to stay afloat and increase revenue. Pilots that were active on seniority lists weren't flying enough to maintain currency, which backlogged airline training facilities already struggling to adapt to a new pandemic world.

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<sup>1</sup> [https://www.transtats.bts.gov/Data\\_Elements.aspx?Data=3](https://www.transtats.bts.gov/Data_Elements.aspx?Data=3)

<sup>2</sup> <https://time.com/5823395/grounded-planes-coronavirus-storage/>

<sup>3</sup> <https://www.businessinsider.com/airlines-that-went-out-of-business-in-2020-2021-1>

While the airline industry plunging into this excruciatingly dormant state was devastating, its awakening was just as painful. With the advent of vaccines, the world shifted into its endemic phase. Suddenly, people emerged from quarantine and the demand for travel skyrocketed. In 2021, travel demand increased by 300 million passengers. The stagnant air travel system needed to arise quickly, but actions taken during the pandemic created long-term obstacles. Aircraft that were parked in the desert needed extensive and expensive maintenance overhauls to return to service. Thousands of pilots out of currency or furloughed needed to fly simulators and attend recurrent training programs to requalify. Many pilots and cabin crew members had to switch aircraft due to new fleet management and were required to attend more in-depth type certificate training programs. Because of the pandemic, airlines lost many instructor pilots who taught such training programs. Accordingly, the need to acquire and train instructor pilots was critical before the pilots and crew could receive appropriate training and become current. Additionally, airport personnel required rehiring and training. Each of these actions take immense time and money to accomplish.

Issues involving air travel are making headlines all over the world. In July of 2022 Heathrow Airport experienced a logistics breakdown due to 40 years of passenger growth in just four months.<sup>4</sup> This caused a baggage back-up when they became unable to accept any more passenger luggage. The airport asked carriers to refrain from selling tickets in efforts to reduce inbound traffic.<sup>5</sup> Known as the “baggage mound,” the industry estimated roughly \$321 million in losses in handling this issue.<sup>6</sup> This is a prime example of a failure to meet demand after the industry took extreme actions to survive the pandemic.<sup>7</sup> But the spirit of aviation is a resilient one, and airports are looking for innovative and technologically advanced solutions to these problems to make their operations less fragile and more adaptable to such catastrophic events.

## **Pilot Shortage**

One major problem that airlines must tackle is the ever-looming pilot shortage. Recently, Boeing published their personnel demand outlook and determined that 610,000 newly qualified aviators will be needed by the year 2041.<sup>8</sup> Airlines are already feeling the shortage in major ways, and are quickly offering

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<sup>4</sup> <https://www.thrillist.com/news/nation/london-heathrow-airport-capacity-passenger-limits>

<sup>5</sup> <https://thepointsguy.com/news/heathrow-baggage-mountain-15000-passengers/>

<sup>6</sup> <https://www.theguardian.com/uk-news/2022/jul/26/heathrow-loss-queues-flight-cancellations-passenger-covid>

<sup>7</sup> <https://www.bbc.com/news/uk-62169701>

<sup>8</sup> <https://www.boeing.com/commercial/market/pilot-technician-outlook/>

huge incentives to newly hired pilots. Although the shortage of pilots was a problem before the pandemic, COVID-19 certainly accelerated the demand. From as far back as 2016, regional airline pilot jobs were plentiful. If a pilot had the requirements, a regional job was waiting for them. A few years later companies were beginning to offer huge signing bonuses to attract new pilots. Today, airlines are increasing pilot pay and benefits, signing bonuses, and generally improving their working environment.<sup>9</sup>

While finally witnessing pilots receiving what they deserve for a highly skilled and even higher stakes profession that puts millions of lives in their hands, even increased wages and benefits may not be enough to meet demand. Companies like United Airlines have begun investing heavily in training programs like the Aviate program that trains pilots with zero experience to become a qualified airline pilot.<sup>10</sup> Traditionally, pilots have been required to attain their initial license on their own; but airlines are now creating programs that invest in the required preliminary education. Given that a projected 80,000 pilots are due to retire at the mandatory age of 65 over the next 20 years, these investments may still fall far short from what is actually needed.<sup>11</sup>

The pilot shortage has resulted from decades of dominos falling. In 2007, Congress raised the mandatory retirement age for pilots from 60 to 65. This resulted in less pilot hiring in 2008, and the number of aspiring pilots was reduced due to limited job opportunities.<sup>12</sup> Successively, in the aftermath of the 2008 housing crisis, airlines were forced to furlough employees because of the new economic environment. To make matters worse, even as the industry began to recover, in 2009 a Colgan Airlines flight crashed in Buffalo. The cause of the accident was deemed to be pilot fatigue after working extreme hours. As a result, Congress set minimum requirements for pilots to obtain an Airline Transport Pilot license, which is required to fly for any Part 121 carrier. Under the new regulation, a pilot must obtain 1,500 flight hours to qualify, which includes 500 hours of cross-country time (flights over 50 nautical miles), 100 hours of night flying, 75 hours of instrument flying, and 250 hours of pilot-in-command time.<sup>13</sup> For reference, most pilots complete their commercial training with roughly 250 hours of total flight time. This created many financial obstacles for pilots already battling the expensive cost of flight training.

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<sup>9</sup> <https://fortune.com/2022/07/01/american-airlines-pilot-pay-raise-labor-shortage-delta-united/>

<sup>10</sup> <https://unitedaviate.com>

<sup>11</sup> <https://atpflightschool.com/become-a-pilot/airline-career/pilot-hiring-outlook.html>

<sup>12</sup> <https://fapa.aero/hiringhistory.asp>

<sup>13</sup> <https://www.aopa.org/training-and-safety/learn-to-fly/flying-for-a-career/airline-transport-pilot>

On the regulatory side of the issue, Congress is discussing raising the mandatory retirement age again, from 65 to 67. As seen before, this would merely kick the can down the road and create more problems than it solves. One of these problems is the conflict between International Civil Aviation Organization (ICAO) mandatory retirement age and the FAA. ICAO retirement age is 65, which means pilots from ages 65 to 67 would be restricted to domestic routes only.<sup>14</sup> This adds a layer of logistical headache to any airline operation. Pilots in that age group might have to switch the aircraft they operate, which involves more training and would result in additional expenses to the airline. The switch in equipment might also come with a profit reduction, since flying wide-body international airliners comes with a higher pay tier than domestic aircraft. The scheduling of operations would also now be affected by having to restrict some pilots to domestic operations only. Finally, pilots operating in that age range pose a safety risk with the standard reduction of cognitive function that comes with age.<sup>15</sup> In the end, this change may only slow the inevitable demand outpacing the number of qualified pilots able to fulfill such demand.

## **The Solution? Pilotless Flight Decks**

The possibility that automated flight systems will someday replace pilots has been on the horizon for some time. Where and how such a transition would come to fruition has been a topic of speculation amongst the ranks of aviators for some time, but it has almost always been met with extreme denial. Ultimately, the consumer will decide if autonomous commercial flights will be accepted or not. A pilotless fleet of commercial airliners would be the next greatest technological advancement since the advent of flight itself.

To no surprise, use of pilotless flights will likely begin in the context of military applications, and testing of such has already begun. In 2020, Airbus announced the successful test flights of its A3R air-to-air automated refueling system.<sup>16</sup> When the system is engaged, it autonomously flies the A330 tanker, makes contact with the receiving aircraft, and then disconnects. This engineering accomplishment is the first step in pilotless military air refueling applications. In addition, the United States Air Force has already made public that it was able to refuel an F-35 from an unmanned drone.<sup>17</sup>

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<sup>14</sup> [https://www.insidehook.com/daily\\_brief/travel/bill-pilot-retirement-age-67](https://www.insidehook.com/daily_brief/travel/bill-pilot-retirement-age-67)

<sup>15</sup> <https://www.travelweekly.com/Travel-News/Airline-News/Unions-oppose-proposal-raise-pilot-retirement-age>

<sup>16</sup> <https://www.airbus.com/en/newsroom/press-releases/2020-04-airbus-achieves-worlds-first-fully-automatic-refuelling-contacts>

<sup>17</sup> <https://www.airforcemag.com/airbus-boeing-reveal-new-progress-on-autonomous-refueling/>

It is likely that the next realm of innovation will develop in the freight world. Cargo carriers are being hit with pilot shortages equivalent to that of the airlines. For years the cargo industry has been attempting to transition to single pilot flight decks. Making such a transition will be one step closer to a fully automated flight deck. For example, Airbus is in development of a new A350 for cargo operators that they aim to certify for single pilot operations.<sup>18</sup> The cost savings of having a single pilot flight deck presents great financial opportunities and offers logistical solutions for increased demands.

Realistically, single pilot is still a world away from fully autonomous passenger flights, even though aircraft today have a multitude of automated systems. Modern day autopilot functions can maneuver the aircraft in almost any condition including landing. In truth, the final autopilot frontier is performing the difficult task of take-off. Take-off is the most precarious phase of flight. The aircraft is low, slow, and heavy, making it less tolerant of problems. Because of this, pilots train heavily for emergency malfunctions during take-off at the most extreme points of the maneuver. This complex phase of flight requires quick decision making and sharpened skills, something an autopilot was never seen as capable of, until now. In 2020 Airbus outfitted an A350 with an auto-takeoff feature and it successfully completed eight automatic take-offs.<sup>19</sup> The aircraft, under its own control, entered the runway once cleared, lined up with the center line and performed a perfect take-off. This was another major step toward autonomous flight in the cargo industry.

## **Big Tech in Aviation**

In a heated race to bring us the next generation of global connectivity, Google and Facebook are pursuing similar ventures to populate the skies with solar-powered, lightweight “atmospheric satellites.” Because these satellites are intended to stay aloft for years, Google’s SkyBender (Solara 50) and Facebook’s Aquila programs will require remotely piloted aircraft systems (RPAS) that largely operate on autopilot. Against Facebook, Google won the bidding war for Titan Aeronautical, which manufactures the Solara 50. It weighs 350lbs, has a wingspan of 164 feet (50 meters), and will cruise at 65,000 feet for up to five years (the current record for solar-powered unmanned flight is two weeks).<sup>20</sup> Undeterred, Facebook settled for acquiring Ascenta Aerospace, a British firm, to make their atmospheric satellites. Ironically, while Google faced a recent setback with a Solara 50’s wing failing in

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<sup>18</sup> <https://www.businessinsider.com/airbus-cargo-plane-may-be-candidate-for-single-pilot-operations-2021-11>

<sup>19</sup> <https://www.cnn.com/travel/article/airbus-pilotless-commercial-jets/index.html>

<sup>20</sup> <http://www.bloomberg.com/news/articles/2016-01-29/wing-failure-blamed-for-crash-of-google-s-solar-powered-drone>



high winds,<sup>21</sup> Facebook recently announced the successful maiden flight of the full-scale Aquila.<sup>22</sup> If recent history teaches us anything, it is that tech companies like Google and Facebook have the resources and know-how to advance autonomous technology at a rapid rate.

Another company developing autonomous commercial passenger services is the China-based tech organization EHang. Their development, the EHang 184 “passenger drone,” purports to autonomously carry a single passenger in a large multirotor airframe and is currently being tested by the FAA in Nevada. EHang hopes to have the 184 flying under the remote supervision of humans, who will intervene only when necessary. Whereas this application is commuter-specific, other projects wager that our future IT infrastructure will rest under autonomous wings.

Amazon is also entering the race by attempting to replace their delivery truck drivers with drones to deliver packages to your front door. The new service offered by Amazon, called “Amazon Prime Air”, is currently operating in California and Texas. Amazon is now one of only three companies that are approved by the FAA to deliver packages via drone. As this technology continues to be developed by the world’s leading tech firms, it will likely only be a matter of time before single pilot or autonomous aircraft are in the skies for consumer purposes.

## **Regulatory Hurdles**

The increase in safety, coupled with the impending shortage of skilled pilots and cross-industry initiatives requiring autonomous flight, are all likely to generate substantial pressure on regulators to recognize and integrate the operation of autonomous commercial aircraft. How is this going to happen? First, the FAA must allow RPAS aircraft to operate within civil airspace, which is where SkyBender and Aquila need to operate. Currently, six locations throughout the U.S. are approved for this type of experimental aircraft.<sup>23</sup> Unfortunately, RPAS, which requires a licensed pilot on the ground, is merely an intermediate step to fully autonomous flight. Next, the NTSB and FAA must recognize autonomous flight system as “pilots,” just as the NTSB has recently recognized autonomous cars as “drivers.”<sup>24</sup> Once these regulatory hurdles have been cleared, the FAA will likely integrate autonomous commercial aircraft into the FAA’s Next Generation Air Transportation System (NextGen) program, which is the FAA’s overhaul of its radar and analog-

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<sup>21</sup> Id.

<sup>22</sup> <http://newsroom.fb.com/news/2016/07/aquilas-first-flight-a-big-milestone-toward-connecting-billions-of-people/>

<sup>23</sup> <https://www.gpsworld.com/faa-selects-six-sites-for-uav-research/>

<sup>24</sup> <http://www.reuters.com/article/us-alphabet-autos-selfdriving-exclusive-idUSKCN0VJ00H>

radio air traffic control (ATC) systems. NextGen utilizes GPS and communication satellites to give every plane the exact same, real-time information available to air traffic controllers (System-Wide Information Management (SWIM)), including real-time weather imaging. The FAA hopes to have full NextGen integration by 2025, but the transition must be done with all due care, as there are thousands of commercial aircraft in the air at any one time.

## **But is it safe?**

Using statistical data to analyze the safety that automation can introduce can be somewhat misleading. Data points are only charted after an incident occurs, but there is less data collection for actions taken by pilots that avoid disaster. Aviation technology has entered such an era that the final frontier of safety is to mitigate human error. Human error accounts for just over half of all fatal accidents by civil air carriers and is implicated in 70-80% of all aviation accidents.<sup>25</sup> From 1990 to 2010, 56% of fatal commercial aviation accidents were directly attributable to human error.<sup>26</sup> By comparison, sabotage accounted for just five percent.<sup>27</sup> From this data, the elimination of human error should make commercial air travel at least twice as safe, right? Not so fast.

The FAA identifies pilot errors that contribute to aviation accidents as unsafe acts. For general aviation accidents between 1991 and 2000, the agency studied unsafe acts of pilots under five major classifications: skill-based errors (79%), decision errors (30%), violations (14%), and perceptual errors (6%).<sup>28</sup> Interestingly, skill-based errors are twice as likely to lead to a fatal outcome.<sup>29</sup> Unfortunately, history has only shown us that if the day comes where pilots are no longer at the helm of commercial airliners it is unlikely that an increase in safety will translate linearly. Many near-tragedies and horrific accidents were a result of autonomous system faults.

The most recent example of automation-caused accidents is the Boeing 737 Max MCAS system. Here a flight control system that commanded the aircraft pitch trim system malfunctioned, resulting in two total hull loss accidents. This was a prime example of what can happen when the aircraft is more relied on than its pilots.

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<sup>25</sup> Shappell & Wiegmann, 1996.

<sup>26</sup> <http://www.planecrashinfo.com/cause.htm>

<sup>27</sup> Sabotage includes, but is not limited to: explosive devices, shoot-downs, & hijacking.

<sup>28</sup> Percentage of general aviation accidents caused, wholly or in part, by that type of unsafe act. See Human Error and General Aviation Accidents: A Comprehensive, Fine-Grained Analysis Using HFACS, Federal Aviation Administration, (December 2005).

<sup>29</sup> *Id.* at 6.

Through the resulting complex investigation, it was learned that pilots were never told of this MCAS system and never trained on its possible faults. For the first time, the public was able to see a rare glimpse of a completely autonomous system in action and the resulting tragedies.<sup>30</sup>

However, even before the 737 Max incidents, there were a number of occasions where automated aircraft systems led to horrific results.<sup>31</sup> In October of 2008, a Qantas Flight experienced rapid descents of one hundred to four hundred feet commanded by its autopilot. The movements were so severe that passengers were thrown to the ceiling and knocked unconscious. The pilots were able to regain control and make an emergency landing. The incident was a result of misinformation being sent to the aircraft's autopilot and resulted in 53 people hospitalized.

In May of 2011 a Dassault Falcon 7X business jet's autopilot sharply pitched the nose upwards, coming dangerously close to a stall. The quick actions of the first officer prevented tragedy when he performed a recovery maneuver. The pilot rolled the aircraft into a steep bank of 60 degrees, which caused the nose to come back down, avoiding a stall. The incident grounded all Falcon 7X's. The cause was discovered to be a fault in the electronic control unit of one of its control surfaces which gave erroneous information to the autopilot. Without quick actions from its crew, the incident would have been a horrific tragedy.<sup>32</sup>

## **Legal Implication**

Getting into the legality of autonomous flying presents a number of issues pertaining to responsibility and liability. If an airplane without a pilot crashes, who is at fault? Normally, mistakes made by a pilot or crew are the air carrier's liability; but without a pilot working for the airline, the carrier may be absolved of a large portion of its liability. Logically, it follows that without a pilot, an autonomous aircraft that crashes may be presumed to have malfunctioned or contained a defect. If an autonomous Boeing 747 crashes, which of the 6,000,000 parts caused it? What if a software glitch caused the crash? Who is responsible then? The nebulous law of product liability provides guidance, and current trends in automotive liability are informative.

For example, manufacturers of a crashed autonomous aircraft would face product liability claims under several theories of recovery, two of which will likely

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<sup>30</sup> <https://jpshawkeye.com/2019/11/08/autopilot-an-accident/>.

<sup>31</sup> <https://www.popularmechanics.com/flight/airlines/a26854898/plane-automation-crashes-incidents/>

<sup>32</sup> Id.

predominate: breach of warranty (“It was not supposed to crash, but it did.”), and strict liability (“The plane crashed, and the law says the manufacturer is responsible.”). Both are very similar, but the former poses a higher bar to bring suit in most states, and public policy favors the latter when the public is exposed to great risk, e.g., in hazardous activities.<sup>33</sup> Strict liability therefore informs our analysis.

## **Strict Product Liability**

Strict liability law will largely remain unchanged in cases where a defective part caused a crash. Liability will extend to the manufacturer and anyone who should have noticed the defect. An autonomous airliner whose autonomous flight system was the cause of the crash will likely be treated like a defective part. To make a *prima facie* case under strict product liability, plaintiffs must prove, by a preponderance of the evidence, that: (1) there was, in fact, a defect in the product manufactured and sold by the defendant; (2) such defect existed at the time the product left the hands of the defendant; and (3) the defect was the direct and proximate cause of the plaintiff's injuries or loss.<sup>34</sup>

Consequently, because strict product liability will be the governing doctrine surrounding autonomous airliner liability, the insurance implications are vast. Airlines notoriously take out immense sums of money in their insurance policies because they carry a large amount of risk. However, if that risk is greatly reduced because they are not liable for their employed pilots to operate their flights, their insurance needs may be significantly lower. On the other side of the coin, manufacturers involved in autonomous systems may need a significant increase in their insurance coverage to meet the risk taken on by this endeavor. This may lead to manufacturers passing along the cost of their increased premiums to the airlines, in the form of higher autonomous aircraft and component prices, thereby negating the savings the airlines may have enjoyed as a result of the reduction in the number of pilots employed.

## **Software Manufacturers**

When a software system causes an accident, things become more complicated. Because software is not a tangible object, courts do not always apply strict product liability to software. Most courts have held that software is not considered a

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<sup>33</sup> Restatement (Second) on Products Liability §402A (1964) See <http://www.brookings.edu/research/papers/2014/04/products-liability-driverless-cars-villasenor>.

<sup>34</sup> *Parsley v. Hamilton Beach/Proctor Silex, Inc.*, 494 F. Supp. 2d 858, 862 (S.D. Ohio 2007)

product.<sup>35</sup> Therefore it is much harder to impose liability on software manufacturers. Software is subject to negligence claims, which creates very difficult hurdles for plaintiffs to navigate and ultimately prove. However, the software written for an autonomous flight system is just one component within a larger system. Software involved with autonomous flight systems will be part of a much larger product, and ultimately the systems manufacturer will be liable.

## **The Shift of Liability**

To understand the legal implication of autonomous commercial flights, the self-driving automotive industry can give some key insights. In the automotive industry there has been a phased introduction in autonomous driving. As the technology advances and more control is given to the machine rather than the operator, the liability seems likely to shift with that control. Currently, there have only been a few fully autonomous vehicles in testing phases that carry passengers. However, there are a few products with advanced automation that are available on the market today. The Tesla car models possess an autonomous driving feature. The feature still requires the driver to be at attention and monitoring the car's movements. Tesla has stated that drivers that cause injury to others while using autonomous driving are still held liable because the system requires human input to be safe.<sup>36</sup> From Tesla's feature to fully driverless cars, a spectrum of automation has emerged which may complicate the legal conundrum.

Today, most automobiles have little to no automation beyond cruise control. Driver assistance systems have made vehicles more autonomous with adaptive cruise control and lane assistance. As automation goes deeper, partial automation which assists with speed, steering, and maintaining distance with other cars, like Tesla's Autopilot and Volvo's Pilot Assist systems, have emerged. The more advanced systems present conditional automation. This means a vehicle can drive itself under ideal conditions, such as a divided highway at a certain speed, and the driver will take over in all other conditions. An even more advanced version of this includes a vehicle that can drive itself on known routes. Lastly, full automation is the true driverless car, that can navigate all road conditions and requires no human driver.<sup>37</sup> The question remains, at what point in the depth of automation does liability shift from the driver to the manufacturer?

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<sup>35</sup> <https://incompliancemag.com/article/technology-developments-and-the-risk-of-product-liability/>

<sup>36</sup> <https://www.reuters.com/article/us-tesla-crash/tesla-driver-in-fatal-autopilot-crash-got-numerous-warnings-u-s-government-idUSKBN19A2XC>

<sup>37</sup> <http://shermanhoward.com/wp-content/uploads/2020/03/Assigning-liability-for-collisions-of-autonomous-vehicles.pdf>

In March of 2018, the first fully autonomous car, operated by Uber, struck and killed a 49-year-old woman. This is the first time a fully autonomous, driverless vehicle killed a human.<sup>38</sup> The family of the deceased sued Uber and they settled out of court, avoiding the complicated litigation that would have ensued.<sup>39</sup> This settlement can implicate that Uber felt it would be held liable for the harm caused by the vehicle. The car was manufactured by Volvo, but Uber designed the self-driving system and was actively testing it in a few cities in North America. This tracks with the standard product liability prong of proof of causation. The car's system was deemed not to have detected the pedestrian in time as she crossed the road, a situation the vehicle should have been able to detect. Additionally, while this does not absolve Uber of any criminal liability, Arizona prosecutors determined that Uber was not criminally responsible and did not pursue criminal action.<sup>40</sup> Being the first of its kind, the Uber case is a clear example of how liability may be determined in situations involving driverless vehicles.

Translating this case to aviation, the precedents set by Uber's case is telling. If an autonomous aircraft is the cause of the death of its passengers or others, the liability belongs to the product that caused the incident. Unfortunately, there are many aircraft accidents that cannot state a clear cause. Part of the hurdle of fully autonomous commercial flights is closing that gap and making the determination of causation just as technologically advanced as the aircraft itself. Not only will advancements have to be made in autonomous control of the aircraft, but also in the massive amounts of data that need to be communicated and monitored in real time. This data may aid in implicating which component is the cause of an accident and point in the direction of liability.

The assignment of liability, however, will still remain a very complicated issue. This complication exists in driverless cars today but as the machines become more complex so does the answer. If an engine fails and the aircraft crashes who is liable? Is it the engine manufacturer or the autonomous flying system? What if the legal world treated the autonomous flying system as it treats pilots today? For pilots, an engine failure on an aircraft is a situation for which they are heavily trained, and handling an engine loss is considered a standard procedure for such a situation. If the pilot fails to handle the situation, is it the engine's fault or pilot error?

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<sup>38</sup> <https://www.theatlantic.com/technology/archive/2018/03/can-you-sue-a-robocar/556007/>

<sup>39</sup> <https://arstechnica.com/tech-policy/2018/03/uber-settles-with-family-of-woman-killed-by-self-driving-car-avoids-lawsuit/>

<sup>40</sup> <https://www.npr.org/2019/03/06/700801945/uber-not-criminally-liable-in-death-of-woman-hit-by-self-driving-car-says-prosec>

Departing an airport in Taiwan, TransAsia Flight 235 lost an engine on takeoff.<sup>41</sup> This situation is one of the most dangerous scenarios pilots are trained to handle, and pilots receive extensive training on combatting these situations. The pilots of Flight 235, when attempting to secure the failed engine, mistakenly shut off the only other working engine. The aircraft crashed after it hit a bridge, killing 43 people. The cause of the accident was deemed pilot error, but what if an autonomous system made the same mistake? Human pilots in today's legal environment are evaluated on a standard of negligence where claims for defective products are under a strict liability regime. The shift to strict liability is likely inevitable, and an assessment of congruent causation will likely be made in scenarios like an autonomous TransAsia Flight 235.

In sum, there is still a long way to go before we board flights and reminisce about human pilots. There are still many technological advancements that need to be implemented and perfected, and the legal and insurance ramifications are many. But there is little doubt that the pilotless airliner is destined to become a reality.

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<sup>41</sup> <https://www.cnn.com/2015/07/02/asia/taiwan-transasia-crash-report>



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