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## Free Flight and the Pilot-in-Command Concept - A Recipe for Disaster

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# FREE FLIGHT AND THE PILOT-IN-COMMAND CONCEPT—A RECIPE FOR DISASTER?

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SCOTT DAVIS\*\*

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## I. INTRODUCTION

Oh, I have slipped the surly bonds of earth  
And danced the skies on laughter-silvered wings  
Sunward I've climbed, and joined the tumbling mirth  
Of sun-split clouds—and done a hundred things  
You have not dreamed of—wheeled and soared  
and swung  
High in the sunlit silence.<sup>1</sup>

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The authors gratefully acknowledge the assistance of Michael Newman, an associate in the aviation group of Gardere & Wynne, in the preparation of this Article.

<sup>1</sup> John Gillespie Magee, Jr., *High Flight*, in FAVORITE POEMS OLD & NEW 203 (H. Ferris ed. 1957).

TO MOST PEOPLE, flying invokes visions of floating freely among the clouds with earthly bonds and restrictions left far behind. Although this was true in aviation's early years, as air traffic has increased, aviation has become burdened with strict regulations and restrictions that prevent pilots from traveling where, when, and how they desire.<sup>2</sup> Foremost among these restrictions is the Air Traffic Control (ATC) system which confines aircraft to routes and altitudes dictated by FAA air traffic controllers.<sup>3</sup>

Recently, a new concept of air traffic control has emerged, called "free flight," that will allow pilots to recoup some of the freedom they have lost over the years.<sup>4</sup> The free flight concept is a result of advances in technology that provide more precise aircraft navigation and tracking than traditional means. Under the new system, pilots will choose and alter their flight paths and altitudes with few constraints. Rather than requesting a clearance to change altitude or direction, pilots will merely advise ATC of the change. ATC will only interfere if a conflict develops. In addition, the mandatory separation distances between aircraft will be reduced.<sup>5</sup>

The transition to free flight is occurring while the skies are becoming increasingly crowded with faster, more complex aircraft. As the turn of the century approaches, international air traffic is expected to increase at a rate of over six percent per year.<sup>6</sup> By the year 2000, scheduled carriers will carry as many as 1.72 billion passengers.<sup>7</sup> This increase in air traffic, combined with the reduced separation requirements and greater flexibility that will accompany free flight, could result in an unprecedented number of aircraft accident fatalities. To prevent such a

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<sup>2</sup> See generally 14 C.F.R. ch. I. (1996) (regulations promulgated by the Federal Aviation Administration (FAA) and Department of Transportation governing aircraft, airspace, pilots, and carriers).

<sup>3</sup> The air traffic control system is operated by the FAA. Through the Federal Aviation Act, Congress has directed the FAA to develop the navigable airspace and "assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace." 49 U.S.C.A. § 40103(b)(1) (West Supp. 1996). The FAA thus has a duty to prescribe regulations for "navigating, protecting and identifying aircraft." *Id.* § 40103(b)(2)(A).

<sup>4</sup> Michael A. Dornheim, *Equipment Will Not Prevent Free Flight*, AVIATION WK. & SPACE TECH., July 31, 1995, at 46.

<sup>5</sup> See *infra* text accompanying notes 21-35.

<sup>6</sup> Pierre Sparaco, *Strong Traffic Growth Foreseen for 1996-2000*, AVIATION WK. & SPACE TECH., Dec. 2, 1996, at 35.

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

result, pilots and controllers must share responsibility for flight safety under the new system.

Courts can help ensure that pilots and ATC work together by imposing tort liability proportionate to each party's relative responsibility for aircraft accidents. This will require that courts abandon the pilot-in-command (PIC) concept in tort litigation. The pilot-in-command rule gives the pilot in charge of the flight the final authority and ultimate responsibility for the safe operation of his aircraft. To the extent that it gives the pilot final authority for the operation of the aircraft, the rule is both logical and necessary to promote flight safety. After all, only the pilot has access to the controls of his aircraft. Unfortunately, courts have extended the rule to tort litigation to impose full liability on pilots for aircraft accidents when other parties' negligence also contributed to the harm. In particular, some courts have applied the PIC concept to absolve ATC of liability in cases in which ATC could have prevented an accident by using due care.

Although the PIC concept originated fifty years ago, it has survived significant changes in technology. In fact, while technology has made it increasingly easier for ATC to protect air travelers, the FAA still tries to place full responsibility on the flight crew anytime the pilot has even limited control over his destiny. The FAA is particularly adept at avoiding liability for accidents involving aircraft operating in visual flight conditions because some courts have held that ATC is not liable to warn the pilot of dangers of which the pilot should be aware.<sup>8</sup>

This philosophy raises serious questions regarding the safety of free flight because free flight transfers additional responsibility to the pilot. Free flight is analogous to visual flight in that pilots have more information and control than they do under instrument flight rules. Utilizing new technology, pilots operating under free flight will have greater responsibility for traffic separation because they will have greater access to information.<sup>9</sup> In essence, the increase in information available to the pilot will shift a portion of the responsibility for aircraft separation from the ATC facility to the cockpit. Air traffic controllers will, to some extent, become air traffic managers. The courts should

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<sup>8</sup> See *infra* notes 65-68 and accompanying text.

<sup>9</sup> See *Free Flight? First, Free Air-Traffic Control*, COLO. SPRINGS GAZETTE TELEGRAPH, Apr. 9, 1996, at B4.

not let ATC use this shift in information and control as a way to avoid responsibility for safety.

This Article will explore the potential impact of free flight on the balance of liability between controllers and pilots. First, it will explore the transition of the ATC system from a positive control environment to the free flight concept. The Article will then review the law concerning liability of pilots and air traffic controllers under the current system and discuss the potential impact of free flight on their respective liabilities. Finally, the Article will argue that, to preserve aviation safety under the new system, courts must abandon the last vestiges of the pilot-in-command concept and require controllers to share responsibility for the safety of all flights that they control or monitor.

## II. TRANSITION FROM POSITIVE CONTROL TO FREE FLIGHT

The primary purpose of the air traffic control system is "to prevent a collision between aircraft and to organize and expedite the flow of traffic."<sup>10</sup> Air traffic control operates twenty-four hours a day, 365 days per year, handling two aircraft per second and moving 1.5 million people per day to their destinations.<sup>11</sup> Pilots rely on ATC for weather information, traffic advisories, and flight guidance. Whether they are operating under instrument flight rules (IFR) or visual flight rules (VFR), pilots are more often than not in controlled airspace and in contact with an air traffic controller.<sup>12</sup>

The current air traffic control system is based on the concept of positive control. Pilots are required to follow the clearances

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<sup>10</sup> FEDERAL AVIATION ADMIN., U.S. DEP'T OF TRANSP., ORDER NO. 7110.65J, AIR TRAFFIC CONTROL § 2-1-1 (1995) [hereinafter AIR TRAFFIC CONTROLLERS' MANUAL or ATCM].

<sup>11</sup> David Hinson, FAA Administrator, Remarks on the Nation's Air Traffic Control System (Oct. 17, 1995), *available in* 1995 WL 614511.

<sup>12</sup> VFR flight requires basic weather minimums of flight visibility and distance from clouds. *See* 14 C.F.R. § 91.155 (a) (1996). Generally, the VFR pilot must be able to readily see other aircraft and obstacles. *Id.* § 91.155.

The pilot must operate under instrument flight rules when visibility is limited by fog or clouds and whenever an airplane is in Class A airspace. *Id.* (basic VFR weather minimums); *id.* § 91.135 (flight in Class A airspace must be conducted under IFR).

Pilots operating VFR are not required to file a flight plan, and, except when they are in certain classes of controlled airspace, they do not have to maintain contact with ATC. *See id.* §§ 91.151-159. In contrast, to operate IFR, the pilot must first file an IFR flight plan and receive a clearance from ATC. *Id.* § 91.173.

issued by ATC whether they are operating under visual or instrument flight rules,<sup>13</sup> but IFR pilots are particularly restricted by ATC. A pilot on an IFR flight plan has, in essence, a contract with ATC. The pilot files a flight plan and adheres to the clearances provided by ATC. ATC, in turn, keeps the aircraft separated from other IFR traffic.<sup>14</sup> If a pilot violates a clearance limit or enters controlled airspace without authorization, even inadvertently, he risks serious consequences ranging from a fine to a revocation of his license.

The positive control system is inherently inefficient because it does not permit optimum use of the available airspace. Prior to embarking on an IFR flight, the pilot must file a flight plan in which he requests his chosen route and altitude.<sup>15</sup> The choices are limited. Altitudes are restricted based upon the direction of flight,<sup>16</sup> and routes are generally restricted to designated airways or jetways.<sup>17</sup> Moreover, ATC may not always issue the requested clearance. Rather, if traffic flow so requires, ATC may dictate that the pilot fly an alternate route or altitude, or even delay departure. Because the route and altitude chosen by ATC often are not the most efficient for the particular flight and aircraft, time and fuel are wasted.<sup>18</sup>

Until recently, technology has mandated that these restrictions remain in place despite their inefficiencies. For example, aircraft have been monitored by ATC through radar tracking, which can be limited by interference from terrain, weather, and atmospheric phenomena.<sup>19</sup> To compensate for these limitations, ATC must be able to expect the aircraft to follow a prescribed route. In addition, navigation has been based upon the

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<sup>13</sup> FEDERAL AVIATION ADMIN., U.S. DEP'T OF TRANSP., AERONAUTICAL INFORMATION MANUAL § 4-4.9 (1995) [hereinafter AIM].

<sup>14</sup> Bruce D. Nordwall, *Free Flight: ATC Model for the Next 50 Years*, AVIATION WK. & SPACE TECH., July 31, 1995, at 38.

<sup>15</sup> 14 C.F.R. § 91.173 (1996).

<sup>16</sup> See *id.* § 91.179 (IFR cruising altitude or flight level).

<sup>17</sup> "Airways" are routes designated from 1200 feet above the ground (agl) up to but not including 18,000 feet above sea level (msl). AIM, *supra* note 13, § 5-3-4. Jetways, or jet routes, consist of those routes from 18,000 feet to flight level 450. 14 C.F.R. § 5-3-4 (2). Airways are depicted on Low Altitude Enroute Charts, and jetways are shown on High Altitude Enroute Charts. *Id.*

<sup>18</sup> For example, turbine-engine aircraft burn substantially less fuel at higher altitudes, and wind speed and direction change significantly with altitude. Pilots consider both of these factors in choosing the optimum altitude for a given flight, but ATC requirements may dictate using a different altitude or flight level. *Id.* § 91.179.

<sup>19</sup> AIM, *supra* note 13, § 1-2-1 b(a).

use of ground based navigational aids, such as VHF omni-directional ranges (VOR) and nondirectional radio beacons (NDB). These facilities have limited range and are subject to interference.<sup>20</sup> Consequently, pilots must transition from station to station along a designated route rather than fly directly from their departure point to the destination airport.

Recent developments in aviation technology, however, have significantly improved the precision and reliability of air navigation. For example, the Global Positioning System (GPS), a satellite system which provides highly accurate aircraft position and velocity information, allows pilots to fly direct routes because the system is not restricted by range.<sup>21</sup> Another development, the Automatic Dependent Surveillance-Broadcast (ADS-B) system will enhance the accuracy of tracking aircraft flight paths. The ADS-B depends on input from another navigation system, such as a GPS, to monitor aircraft positions and transmit the information to controllers and pilots.<sup>22</sup> This system provides much more accurate and reliable information about aircraft location than does the traditional radar system.<sup>23</sup>

These technological advances have led to the development of "free flight."<sup>24</sup> Free flight is premised upon the use of modern technology to transfer control of aviation from ground-based personnel to the aviation user. Aircraft separation under free flight is based on the concept of two airspace zones, protected and alert, the size of which depend on the aircraft's speed, performance characteristics, and communications, navigation, and surveillance equipment.<sup>25</sup> The smaller zone closest to the aircraft, referred to as the protected zone, can never meet the pro-

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<sup>20</sup> *Id.* §§ 1-1-2, 1-1-3. VORs are subject to line-of-sight and range restrictions. *Id.* § 1-1-3. NDBs are subject to disturbances from such factors as lightning and precipitation static, and are also range limited. *Id.* § 1-1-2 d.

<sup>21</sup> *Id.* § 1-1-22.

<sup>22</sup> Bruce D. Nordwall, *Free Flight Could Stall Without Key Data Link*, AVIATION WK. & SPACE TECH., June 3, 1996, at 28.

<sup>23</sup> *Id.*

<sup>24</sup> See *Free Flight or Free-for-All?*, L.A. TIMES, Sept. 25, 1995, at 4 (discussing concept of free flight as shifting responsibility from ATC to pilots); Matthew L. Wald, *FAA Putting Pilots in the Driver's Seat; Technology Will Enable Crews Instead of Controllers to Determine Routes*, AUSTIN AMERICAN-STATESMAN, Mar. 16, 1996, at A1 (referring to free flight as "radically different concept of air traffic control"); David Hughes, *Free Flight Sparks International Debate*, AVIATION WK. & SPACE TECH., July 31, 1995, at 44 (discussing international potential for free flight).

<sup>25</sup> RTCA, INC., REPORT OF THE RTCA BOARD OF DIRECTORS' SELECT COMMITTEE ON FREE FLIGHT 7 (1995) [hereinafter RTCA TASK FORCE REPORT].

tected zone of another aircraft.<sup>26</sup> The alert zone extends well beyond the protected zone. Aircraft that free fly will be equipped with a receiver that automatically signals a conflict with another aircraft's protected zone.<sup>27</sup> ATC will rely on a software package, called a "conflict probe," to detect potential contacts between aircraft alert zones.<sup>28</sup> If an aircraft's alert zone contacts that of another, the pilot and/or air traffic controller will determine if a course or altitude correction is required. Ultimately, free flight will enable the reduction of separation distances between IFR aircraft.<sup>29</sup>

Although air traffic controllers will be essential to the safety of the free flight system, their responsibilities will eventually shift from controlling to monitoring flights, intervening only as necessary to head off a potential problem.<sup>30</sup> With free flight, more reliance will be placed on pilots and navigation aids.<sup>31</sup> Pilots will have access to more information and more freedom to maneuver than they have under the current system, particularly in IFR conditions. Although ATC will have the final say in issues of traffic separation, pilots or carrier dispatchers will choose the route, speed, and altitude for the flight. This flexibility will only be restricted as necessary to ensure traffic separation, when traffic density at busy airports or in congested airspace requires, to

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

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

<sup>28</sup> Bill Sweetman, *Accelerating the ATC Revolution; Air Traffic Control*, AIR TRANSP. WORLD, May 1995, at 57.

<sup>29</sup> Currently, aircraft are separated by one to two thousand feet vertically and five miles horizontally. J. Lynn Lunsford, *FAA Plan May Extend Pilot Control; But Routing Proposal Raises Safety Question*, DALLAS MORNING NEWS, Sept. 24, 1995, at 1A.

One of the goals of free flight is to reduce separation distances. Ultimately, the RTCA task force envisions a reduction in separation to one nautical mile horizontally and one thousand feet vertically. RTCA TASK FORCE REPORT, *supra* note 25, at 34.

<sup>30</sup> Nordwall, *supra* note 14, at 38.

<sup>31</sup> *Free Flight? First, Free Air-traffic Control*, *supra* note 9.

prevent unauthorized entry into special use airspace,<sup>32</sup> and to ensure safety.<sup>33</sup>

Proponents of free flight assert that this increased freedom will allow airlines to save time and fuel without sacrificing safety.<sup>34</sup> Others argue that "any benefits gained will be lost when an airplane reaches its destination."<sup>35</sup> Regardless of its other implications, the advent of free flight will change the relationship between ATC and IFR pilots. For the new system to work, the courts must clarify the rules governing liability of pilots and air traffic controllers.

### III. TRADITIONAL RULES GOVERNING LIABILITY OF PILOTS AND ATC FOR AIRCRAFT ACCIDENTS

Although liability for aircraft accidents is "determined by the ordinary rules of negligence and due care,"<sup>36</sup> the specific duties of both controllers and pilots are dictated by federal law.<sup>37</sup> The FAA has set forth the duties and responsibilities of pilots in the Federal Aviation Administration regulations (FARs),<sup>38</sup> which have the force and effect of law.<sup>39</sup> In addition, the FAA publishes safety information in the Aeronautical Information Man-

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<sup>32</sup> Special Use Airspace is "airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both." AIM, *supra* note 13, § 3-4-1(a). It includes Prohibited Areas (established for security purposes), Restricted Areas (may contain hazards such as artillery firing, aerial gunnery, or guided missiles), Warning Areas (areas in international airspace which may contain potentially hazardous activities), Military Operations Areas (military training areas), and Alert Areas (contain a high volume of training or unusual type of aerial activity). *Id.* §§ 3-4-3 to -6.

<sup>33</sup> RTCA TASK FORCE REPORT, *supra* note 25, at 7.

<sup>34</sup> Proponents of free flight say that it will increase safety and save airlines billions of dollars a year. See Jeffrey Leib, *Pilot Works to Update Air Traffic Control*, DENVER POST, Aug. 25, 1996, at 8 (interview of Michael Baiada, United Airlines Pilot).

<sup>35</sup> Craig A. Burzych, *Traffic Jam in the Skies*, CHICAGO SUN-TIMES, Mar. 26, 1996, at 26. There are, of course, a limited number of airports with a limited number of runways. Unless the airlines are willing to adjust and coordinate their schedules, aircraft will reach the same destinations at the same time, and any fuel and time savings will be lost in holding patterns. *Id.*

<sup>36</sup> *United States v. Schultetus*, 277 F.2d 322, 325 (5th Cir.), *cert. denied*, 364 U.S. 828 (1960).

<sup>37</sup> *Rodriguez v. United States*, 823 F.2d 735, 739 (3d Cir. 1987).

<sup>38</sup> 14 C.F.R. §§ 61.1-201, 91.1-193 (1996).

<sup>39</sup> *Tilley v. United States*, 375 F.2d 678, 680 (4th Cir. 1967). Some courts have held that a violation of these regulations is negligence per se. *E.g.*, *Gatenby v. Altoona Aviation Corp.*, 407 F.2d 443, 446 (3d Cir. 1968).

ual and in Advisory Circulars.<sup>40</sup> These publications provide evidence of the standard of care among pilots.<sup>41</sup> The duties of controllers are delineated in FAA regulations and the FAA's Air Traffic Control Manual.<sup>42</sup>

The pilot is ultimately responsible for the safety of his aircraft because only he has access to the flight controls.<sup>43</sup> Like other professionals, pilots are held to the standard of care of ordinary competent persons acting in the same profession.<sup>44</sup> With professional pilots, the standard of care is demanding because even a slight breach of the pilot's duty can result in disastrous consequences.<sup>45</sup> Of course, before a pilot is legally responsible for the operation of his aircraft, he must have known, or be held to

<sup>40</sup> *In re N-500L Cases*, 517 F. Supp. 825, 833 (D.P.R. 1981).

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

<sup>42</sup> *Dyer v. United States*, 551 F. Supp. 1266, 1275 (W.D. Mich. 1982); 14 C.F.R. § 65.45(a) (1996) ("An air traffic control tower operator shall perform his duties in accordance with . . . the procedures and practices prescribed in air traffic control manuals of the FAA . . .").

The Federal Tort Claims Act (FTCA) provides the means to overcome the traditional sovereign immunity extended to the government. *Eastern Air Lines, Inc. v. Union Trust Co.*, 221 F.2d 62 (D.C. Cir.), *aff'd sub nom. United States v. Union Trust Co.*, 350 U.S. 907 (1955).

<sup>43</sup> *E.g.*, *American Airlines, Inc. v. United States*, 418 F.2d 180, 192 (5th Cir. 1969); *United States v. Miller*, 303 F.2d 703, 710 (9th Cir. 1962), *cert. denied*, 371 U.S. 955 (1963); *First of Am. Bank-Cent. v. United States*, 639 F. Supp. 446, 454 (W.D. Mich. 1986).

This rule is predicated on international and domestic regulations. *See* Convention on International Civil Aviation, Dec. 7, 1944, Annex 6, ¶ 3.2 (4th ed. 1990) ("The pilot-in-command shall be responsible for the operation and safety of the aeroplane and for the safety of all persons on board, during flight time"); 14 C.F.R. § 91.3(a) (1996) ("The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.").

<sup>44</sup> The pilot's responsibility arises from his or her special expertise and access to information. R.I.R. Abeyratne, *Negligence of the Aircraft Commander and Bad Airmanship—New Frontiers*, 12 AIR LAW 3, 5 (1987).

<sup>45</sup> As one court noted:

[T]here are activities in which the degree of professional skill which must be required is so high and the potential consequences of the smallest departure from that high standard are so serious that one failure to perform in accordance with those standards is enough to justify dismissal. The passenger-carrying airline pilot, the scientist operating the nuclear reactor, the chemist in charge of research into the possible effect of, for example, thalidomide, the driver of the Manchester to London express, the driver of an articulated lorry full of sulphuric acid, are all in the situation in which one failure to maintain the proper standard of professional skill can bring about a major disaster . . . .

*Taylor v. Alidair Ltd.*, 1976 Indus. Rel. L. Rep. 420, 423, *quoted in* Abeyratne, *supra* note 44, at 6.

have known, the facts that were material to the aircraft's safe operation.<sup>46</sup> He is charged with that knowledge which in the exercise of the highest degree of care he should have known.<sup>47</sup> This includes knowledge of the FARs, the AIM, weather conditions along his route of flight, the terrain over which he will fly, and the procedures for and limitations of his particular aircraft.<sup>48</sup> Further, the pilot must constantly remain aware of dangers that are discernible with his eyes and/or instruments.<sup>49</sup>

Air traffic controllers are responsible for providing separation to IFR aircraft carrying hundreds of passengers at speeds approaching the sound barrier. Consequently, the obligations imposed on controllers are exacting.<sup>50</sup> The specific duties of air traffic controllers are set forth in ATC manuals, which require controllers<sup>51</sup> to separate aircraft and issue safety alerts as needed.<sup>52</sup> The Air Traffic Controllers' Manual (ATCM) instructs the controller that "[t]he issuance of a safety alert is a first priority . . . once the controller observes and recognizes a situation of unsafe aircraft proximity to terrain, obstacles, or other aircraft."<sup>53</sup> ATC duties are not, however, outlined exclusively in the ATCM. Rather, controllers have responsibilities that arise from the reliance pilots place on ATC.<sup>54</sup> This reliance requires ATC to warn pilots of dangers apparent to the controller that are not, in the exercise of due care, apparent to the pilot.<sup>55</sup>

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<sup>46</sup> *American Airlines*, 418 F.2d at 193.

<sup>47</sup> *Redhead v. United States*, 686 F.2d 178, 182 (3d Cir. 1982), *cert. denied*, 459 U.S. 1203 (1983).

<sup>48</sup> *In re Air Crash at Dallas/Fort Worth Airport on Aug. 2, 1985*, 720 F. Supp. 1258, 1280 (N.D. Tex. 1989) (weather conditions), *cert. denied sub nom. Connors v. United States*, 502 U.S. 899 (1991); *First of Am. Bank-Cent. v. United States*, 639 F. Supp. 446, 453 (W.D. Mich. 1986) (advisory circulars and AIM); *McDaniel v. United States*, 553 F. Supp. 910, 915 (N.D. Cal. 1982) (terrain).

<sup>49</sup> *See, e.g., Spaulding v. United States*, 455 F.2d 222, 226-27 (9th Cir. 1972).

<sup>50</sup> *Himmler v. United States*, 474 F. Supp. 914, 928 (E.D. Pa. 1979) (noting that in an air traffic control room it is always possible that a tragic accident may occur "in a matter of seconds if controllers who assume a high responsibility, relax from constantly overseeing an aircraft to promote its safety in flight").

<sup>51</sup> *E.g., Rodriguez v. United States*, 823 F.2d 735, 740 (3d Cir. 1989) (holding violation of ATCM provision is evidence of negligence); *Springer v. United States*, 641 F. Supp. 913, 936 (D.S.C. 1986) (holding FAA had duty to conform conduct to its manuals); *Himmler*, 474 F. Supp. at 941.

<sup>52</sup> ATCM, *supra* note 10, § 2-1-2.

<sup>53</sup> *Id.* § 2-1-6 n.1.

<sup>54</sup> *Webb v. United States*, 840 F. Supp. 1484, 1514-15 (D. Utah 1994).

<sup>55</sup> *Id.* at 1515.

Cases dealing with the respective duties of pilots and air traffic controllers "are frequently plagued with what seems to be a paradox."<sup>56</sup> Although the pilot is ultimately responsible for the safety of his aircraft and passengers, air traffic controllers also must perform certain duties to ensure aviation safety.<sup>57</sup> In fact, "[t]he responsibilities of the pilot and the controller intentionally overlap in many areas providing a degree of redundancy."<sup>58</sup> A majority of courts recognize that the duties of pilots and controllers are concurrent, and impose liability accordingly. A minority of courts, however, ignore the legal duties imposed upon air traffic controllers and rely on the pilot-in-command concept to place sole responsibility on the pilot anytime the danger that caused the accident was one of which the pilot should have been aware.<sup>59</sup> Further, even courts that do recognize that the duties are concurrent sometimes place full responsibility on the pilot for accidents that occur in visual conditions.<sup>60</sup>

#### A. THE "PILOT-IN-COMMAND" CONCEPT

The "pilot-in-command concept originated in the military and served as the foundation for [the] responsibility assumed by military pilots."<sup>61</sup> Based on the premise that only the pilot-in-command of an aircraft knows his responsibilities and limitations, it places primary responsibility for the operation of the aircraft on the pilot in charge of the flight.<sup>62</sup>

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<sup>56</sup> *Richardson v. United States*, 372 F. Supp. 921, 925 (N.D. Cal. 1974).

<sup>57</sup> *Id.*

<sup>58</sup> AIM, *supra* note 13, § 5-5-1e.

<sup>59</sup> See Andrew J. Dilk, *Aviation Tort Litigation Against the United States—Judicial Inroads on the Pilot-In-Command Concept*, 52 J. AIR L. & COM. 797, 805 (1987).

<sup>60</sup> E.g., *Hamilton v. United States*, 497 F.2d 370, 376-77 (9th Cir. 1974).

<sup>61</sup> Dilk, *supra* note 59, at 800.

<sup>62</sup> *Id.* at 797, 800. Dilk argues that the pilot-in-command concept is "historically at the backbone of the pilot/air traffic control navigation system." *Id.* at 797. However, it should be noted that since Dilk is counsel for the FAA, Dilk has a definite interest in promoting the pilot-in-command concept. The PIC concept is one of several methods the FAA uses to avoid liability. The United States has also argued that, under the discretionary functions exception of the Federal Tort Claims Act (FTCA), controllers cannot be held liable for their failure to issue a traffic advisory. *Frutin v. Dryvit Sys., Inc.*, 760 F. Supp. 234, 236 (D. Mass. 1991). However, as the court in *Frutin* noted, ATC's primary duty is traffic separation. *Id.* at 238. Thus, once an aircraft makes radio contact with the controller, the government's role rises to an operational level and the controller must issue traffic advisories. *Id.* at 236-37.

Another way the FAA tries to avoid liability is by drafting the rules by which they are judged. See Kevin N. Courtois, "Standards and Practices": *The Judiciary's Role in Promoting Safety in the Air Traffic Control System*, 55 J. AIR L. & COM. 1117,

Traditionally, courts relied on the pilot-in-command concept to place sole liability for aircraft accidents on the pilot, regardless of the actions of ATC.<sup>63</sup> Courts reasoned that the ATC system relies on the assumption that pilots will always know and follow the FARs, and that ATC is not required to foresee pilot negligence.<sup>64</sup> Thus, the courts essentially allowed controllers to assume that pilots would not make mistakes. If a pilot failed to see another aircraft, flew into hazardous weather, or failed to maintain terrain clearance, only the pilot was held legally liable for the consequences.<sup>65</sup> Controllers were absolved of liability simply because the pilot did not follow the regulations, even in cases where prompt attention and warning by ATC might have prevented the accident.

Some courts still follow the traditional pilot-in-command concept and hold that the controller has no obligation to warn the pilot of any danger of which the pilot should be aware.<sup>66</sup> For

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1151 (1990) (noting that "[t]he problem with using FAA procedures as the standard of care is that the agency then becomes both the source and the object of regulation.").

<sup>63</sup> See, e.g., *Redhead v. United States*, 686 F.2d 178, 183 (3d Cir. 1982) (stating ATC has no duty to warn pilot of situations of which pilot should be aware based on his training, experience, and personal observations), *cert. denied*, 459 U.S. 1203 (1983); *Hamilton*, 497 F.2d at 376 (holding ATC had no duty to inform two aircraft of other's position in VFR conditions); *United Air Lines, Inc. v. Wiener*, 335 F.2d 379, 389 (9th Cir.) (holding crew of aircraft was responsible for separation of aircraft in visual conditions), *cert. dismissed*, 379 U.S. 951 (1964).

<sup>64</sup> E.g., *Colorado Flying Academy, Inc. v. United States*, 724 F.2d 871, 878 (10th Cir. 1984) (stating that ATC has right to assume that pilots know and follow FARs), *cert. denied*, 476 U.S. 1182 (1986); *Pierce v. United States*, 718 F.2d 825, 830 (6th Cir. 1983) (stating that ATC is not required to foresee negligent acts of pilots); *Webb v. United States*, 840 F. Supp. 1484, 1514 (D. Utah 1994).

<sup>65</sup> See, e.g., *Somlo v. United States*, 416 F.2d 640, 645 (7th Cir. 1969) (holding ATC's failure to give pilot warning of local icing was not proximate cause of accident because pilot was negligent in bringing aircraft into area of known icing), *cert. denied*, 397 U.S. 989 (1970); *Baker v. United States*, 417 F. Supp. 471, 486 (W.D. Wash. 1975) (finding ATC not liable for failure to warn pilot of presence of terrain); *Neff v. United States*, 420 F.2d 115, 120 (D.C. Cir. 1969) (holding clearance for takeoff into thunderstorm did not warrant pilot's disregard of apparent signs of danger), *cert. denied*, 397 U.S. 1066 (1970).

<sup>66</sup> See, e.g., *Schuler v. United States*, 868 F.2d 195, 197 (6th Cir. 1989) (holding controller was not negligent for failing to keep pilot, who was operating with one engine, informed of status of runway because in VFR conditions primary responsibility for safe operation of aircraft remains with pilot); *Kack v. United States*, 570 F.2d 754, 756 (8th Cir. 1978) (holding controller was not liable for crash caused by wake turbulence because pilot was primarily responsible for safe operation of aircraft under VFR, regardless of traffic clearance); *Thurston v. United States*, 888 F. Supp. 1100, 1111 (D. Utah 1995) (holding controllers were not negligent in assisting VFR pilot who crashed into mountainous terrain because

example, courts have held that a pilot flying in VFR conditions cannot expect ATC to advise him of terrain clearance because the VFR pilot is able to see the ground while the controller cannot determine the airplane's height above the ground without some difficulty.<sup>67</sup> Likewise, some courts put the sole responsibility for traffic separation in VFR conditions on the pilot under the "see and be seen" concept.<sup>68</sup> The "see and be seen" rule is based upon the reasoning that, in VFR conditions, the pilot is able to see and avoid other aircraft, and if he is not on an IFR flight plan, he is free to maneuver at will.<sup>69</sup>

## B. PROBLEMS WITH THE PIC CONCEPT

Application of the pilot-in-command concept in tort litigation is inimical to safety because it destroys one of ATC's incentives to use due care.<sup>70</sup> In addition, the premise is inconsistent with the realities of modern aviation. The pilot-in-command concept assumes that only the pilot is responsible for all of the factors that ensure the safety of flight, such as preflight planning and evaluation of the weather.<sup>71</sup> This view might have been realistic when Orville and Wilbur Wright first flew at Kitty Hawk, but in today's environment it is simply not logical. In the early days of aviation, the pilot was responsible for planning the flight, loading the airplane, checking the weather, and even maintaining

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controllers had no duty to warn pilot of condition of which pilot should already have been aware).

<sup>67</sup> See *Cappello v. Duncan Aircraft Sales of Fla., Inc.*, 79 F.3d 1465, 1470 (6th Cir.), cert. denied, 117 S. Ct. 432 (1996); *McDaniel v. United States*, 553 F. Supp. 910, 913-16 (N.D. Cal. 1982).

In *Cappello*, the airplane crashed into a mountain shortly after takeoff while the pilot was waiting for his IFR flight plan. The airplane was visible on ATC radar, but the controller turned his back to the radar scope to perform a secondary duty. Although the controller could have issued a warning that would have prevented the accident if he had monitored his radar, the Sixth Circuit held that ATC was not negligent because the aircraft was in visual conditions and not "under the control" of ATC at the time of impact. *Cappello*, 79 F.3d at 1474.

<sup>68</sup> E.g., *Coatney v. Berkshire*, 500 F.2d 290, 292 (8th Cir. 1974) (holding controller not negligent for failing to observe and warn of impending mid-air collision).

<sup>69</sup> *Id.* Courts find support for this position in the federal aviation regulations which require that, when weather conditions permit, the pilot must see and avoid other aircraft. 14 C.F.R. § 91.113(b) (1996).

<sup>70</sup> See *Courtois*, *supra* note 62, at 1117-20. *Courtois* explains that the judiciary can affect the safety of the system because judicial decisions influence the conduct of members of society. *Id.* at 1120.

<sup>71</sup> *Dilk*, *supra* note 59, at 800.

the aircraft. Air traffic control (to the extent that it existed at all) was not necessary because all flights were visual.

Today, "[t]he interrelationship existing between [a] pilot and ground personnel can best be characterized as one requiring extensive cooperation."<sup>72</sup> The modern pilot relies on a great many other people to assist in ensuring the safety of his passengers. Highly trained technicians maintain the airplane; licensed dispatchers plan the flight; certified load-planners determine the weight and balance; aviation weather reporting stations analyze and report the weather; and ATC provides clearances, instructions, and traffic separation. A division of responsibility also exists inside the cockpit. The days are long gone that the captain of the airplane acted alone and unassisted. Modern cockpits are governed through crew resource management, with a division of responsibilities and input from each crew member.<sup>73</sup> The pilot in command is thus dependent on other members of his crew, just as the crew generally is dependent upon the performance of other participants in the air transport system, including the ATC.

Rigid application of the pilot-in-command concept in cases involving ATC and pilots ignores these modern realities. Pilots rely on ATC for traffic separation, weather information, and warnings of dangerous conditions. This reliance is justified because air traffic controllers have access to radar, computers, and radio communications with which to monitor the position of the aircraft relative to other traffic, terrain, and hazardous weather. While the pilot's view is restricted to what he can ascertain from his instruments and his limited view from the cockpit, the controller is able to determine the airplane's exact location and distance from other aircraft and terrain. Moreover, ATC is usually much more familiar with local conditions than is the pilot.

### C. RECOGNITION OF CONCURRENT RESPONSIBILITY

Because either the air traffic controller's negligence, the pilot's negligence, or the negligence of both may be the proximate cause of an accident, a trier of fact should be allowed to apportion fault if state law otherwise allows. The majority of courts recognize this and hold that air traffic controllers and pilots have concurrent obligations to prevent harm, whether the

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<sup>72</sup> *Richardson v. United States*, 372 F. Supp. 921, 925 (N.D. Cal. 1974).

<sup>73</sup> See CAPTAIN ROBERT N. BUCK, *THE PILOT'S BURDEN: FLIGHT SAFETY AND THE ROOTS OF PILOT ERROR* 205 (1994).

aircraft is operating in VFR or IFR conditions.<sup>74</sup> This shared burden requires controllers to remain vigilant for signs of danger, perform the duties set forth in the Air Traffic Control Manual, and, in some cases, to go beyond the duties delineated by the manual. This is consistent with traditional doctrines of negligence which require that even when an individual has no legal duty to act, once he undertakes to do so, he must exercise reasonable care.<sup>75</sup> Thus, where danger is obvious to a controller communicating with a pilot, although the danger should also be apparent to the pilot, the controller must act to prevent harm.<sup>76</sup>

If the responsibility of pilots and ATC is concurrent, the allocation of liability should be—and often is—determined by their respective access to information.<sup>77</sup> Where the controller is in the best position to observe danger, he should be held liable for harm caused by his failure to warn the pilot.<sup>78</sup> On the other hand, where the information is more readily accessible to the

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<sup>74</sup> See *In re Greenwood Air Crash*, 924 F. Supp. 1518, 1538 (S.D. Ind. 1995) (stating “the more reasoned and prevailing view is that the ATC and the pilot have concurrent duties to maintain separation of aircraft”); see also *Mattschei v. United States*, 600 F.2d 205, 208 (9th Cir. 1979) (holding “duty to exercise due care to avoid accidents is a concurrent one”).

<sup>75</sup> See, e.g., *Gill v. United States*, 429 F.2d 1072, 1075 (5th Cir. 1970) (noting that “government’s duty to provide services with due care to airline pilots . . . may rest upon general pilot reliance on government” for those services); *Ingham v. Eastern Air Lines, Inc.*, 373 F.2d 227, 236 (2d Cir.) (stating “when the government undertakes to perform services, which in the absence of specific legislation would not be required, it will, nevertheless, be liable if these activities are performed negligently”), *cert. denied*, 389 U.S. 931 (1967).

<sup>76</sup> E.g., *Stork v. United States*, 430 F.2d 1104, 1108 (9th Cir. 1970) (holding controller was negligent for granting clearance for takeoff where visibility was 0 to 165 feet despite fact that pilot was completely aware of weather situation); *United States v. Furumizo*, 381 F.2d 965, 968 (9th Cir. 1967) (holding that although controller had already issued one wake turbulence warning, he was negligent for failing to issue second warning when controller saw pilot begin takeoff roll); *Rudelson v. United States*, 431 F. Supp. 1101, 1107-08 (C.D. Cal. 1977) (holding ATC liable for failure to scan VFR traffic pattern, and warn aircraft of presence of another, despite fact that pilots should have seen each other).

<sup>77</sup> See *Gill*, 429 F.2d at 1077; *Richardson v. United States*, 372 F. Supp. 921, 926 (N.D. Cal. 1974) (stating “the respective duties of pilot and ATC relates to the ability of the former to perceive a potential danger without assistance from the latter”); see also *First of Am. Bank-Cent. v. United States*, 639 F. Supp. 446, 454 (W.D. Mich. 1986) (noting that the “see and avoid” responsibility logically rests with the pilot . . . because he is generally in a superior position to see other aircraft”).

<sup>78</sup> For example, controllers have been found negligent for failing to warn aircraft of wake turbulence because the controller is in a better physical position for observation. See *Gill*, 429 F.2d at 1077 (discussing *Hartz v. United States*, 387 F.2d 870 (5th Cir. 1968)).

pilot, greater responsibility should be placed on the airman. As technology provides one or the other with greater information, the balance of responsibility should shift toward the party with more information.

Development of new weather reporting systems provides one example of such a shift in responsibility. FAA personnel, both air traffic controllers and flight service station personnel, have a duty to advise pilots of hazardous weather conditions.<sup>79</sup> The controller should not, however, be held liable for failing to relay information already known to the pilot.<sup>80</sup> Until recently, pilots and controllers generally had equal access to data indicating the presence of windshear and microbursts. Recent changes in technology have altered the balance of information. Through Terminal Doppler Radar Weather Radar Systems (TDWR), tower personnel now have access to real-time low altitude windshear information. This information is available to the pilot only if it is relayed by air traffic control.<sup>81</sup> Thus, a controller who negligently fails to forward a windshear advisory to a pilot, or worse yet, conveys inaccurate information, should be held liable for an accident caused by a windshear encounter.<sup>82</sup>

Similarly, responsibility for traffic separation depends on the relative information available to ATC and the pilot. The information available to the pilot and his duties depend, in part, on whether he is operating in instrument or visual conditions. When in IFR conditions, the pilot must rely on air traffic control to provide traffic separation, and his responsibility for avoiding collisions is generally limited to compliance with the clearances and instructions of ATC.<sup>83</sup> Unlike the controller, the IFR pilot does not know the exact position of other aircraft relative to his own. Further, except where an emergency requires otherwise,

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<sup>79</sup> LaDawn M. Conway, *Microbursts: Will Technology Ever Catch Up?*, 56 J. AIR L. & COM. 263, 295 (1990).

<sup>80</sup> *In re Air Crash at Dallas/Fort Worth Airport on Aug. 2, 1985*, 919 F.2d 1079, 1085 (5th Cir.) (affirming district court's holding that "failure of the air traffic controllers to warn a pilot of the presence of a storm . . . cannot be regarded as a continuing proximate cause [of the accident] after the pilot himself discovered its presence"), *cert. denied*, 502 U.S. 899 (1991).

<sup>81</sup> This may change to some extent, because many aircraft are now equipped with windshear alert or avoidance systems.

<sup>82</sup> See *Springer v. United States*, 641 F. Supp. 913, 926 (D.S.C. 1986) (holding ATC had duty to relay information to the pilot regarding weather reports of unusually high winds); see also Conway, *supra* note 79, at 296-97 (discussing impact of TDWR System on liability).

<sup>83</sup> See Dilk, *supra* note 59, at 814 (noting that "ATC has an absolute duty to separate aircraft on IFR flight plans").

the pilot must adhere to the clearances issued by ATC.<sup>84</sup> Thus, the air traffic controller has a great deal of "control" over the aircraft despite the fact that he does not have access to the flight controls. Consequently, it would be illogical and unfair to hold the pilot solely responsible for flight safety in IFR conditions.

When the controller and the pilot both have access to information regarding safety, most courts will hold that their responsibilities are concurrent.<sup>85</sup> When an aircraft is operating in VFR conditions, however, some courts place primary responsibility for safety on the pilot, even though the controller may be in a better position to foresee danger. The law dealing with pilots' responsibility for wake turbulence avoidance provides a prime example.<sup>86</sup> The FAA has determined the minimum separation distances behind large and heavy aircraft to minimize the effects of wake turbulence.<sup>87</sup> Unfortunately, it is virtually impossible for a pilot to visually determine his exact distance behind another aircraft. ATC, on the other hand, is able to determine the exact distance between aircraft on approach and provide the requisite separation. ATC provides the necessary separation for IFR traffic. Once a pilot accepts clearance for a visual approach, however, he then becomes responsible for wake turbulence avoidance, even though ATC is still able to provide the required separation.<sup>88</sup> As a result, an important safety factor is eliminated when the pilot accepts a visual approach.

#### IV. THE EFFECT OF FREE FLIGHT ON ATC AND PILOT LIABILITY

In one respect, free flight will have only a limited impact on liability because it will affect only the enroute portion of the

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<sup>84</sup> 14 C.F.R. § 91.123 (a),(b) (1996); see also Captain Henk Geut, *The Law: The Pilot and the Air Traffic Controller—Division of Responsibilities*, 13 AIR LAW 256, 262 (1988).

<sup>85</sup> E.g., *Daley v. United States*, 792 F.2d 1081, 1085 (11th Cir. 1986) (holding ATC was negligent for failure to ascertain position of aircraft and warn of collision with antennae); *Rudelson v. United States*, 602 F.2d 1326, 1328 (9th Cir. 1979) (holding ATC had duty to monitor position of VFR aircraft in traffic pattern and warn of impending mid-air collision).

<sup>86</sup> "Wake turbulence" refers to the turbulence generated by an aircraft's wing-tip vortices. The intensity of the turbulence is a factor of the weight and speed of the aircraft and the shape of the airfoil. The vortices drift downwind behind and below the airplane's flight path. An encounter with the wake turbulence of a large aircraft can result in an unrecoverable upset. See AIM, *supra* note 13, § 7.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.* § 5-5-12(a)(3).

flight. At least initially, aircraft will still be under positive control during takeoff and when they reach the destination airport. This is significant because only a small percentage of aircraft accidents occur during the enroute phase of the flight.<sup>89</sup> These accidents are often caused by factors outside of ATC's control, such as hazardous weather and equipment malfunction.<sup>90</sup> Thus, the respective responsibilities and liabilities of pilots and controllers for most accidents should not be altered by the free flight system, but in air crash cases that occur during free flight where ATC is a factor, the courts must clarify the rules of liability to ensure safety under the new system.

Although the technology and regulations of the free flight program will both be new, there are some situations that exist today which are analogous. These scenarios can provide some insight into how the courts may treat collisions that occur in free flight. For example, through the use of Traffic Collision Avoidance Systems (TCAS) and similar equipment pilots can determine the relative position of other aircraft.<sup>91</sup> Suppose a pilot flying in IFR conditions receives information of an impending collision in the form of a TCAS alert. If the pilot should ignore the warning, or make an improper correction, he will obviously be at least partially responsible for a resulting accident. However, if the aircraft is in contact with ATC, the controller also has access to information regarding the potential collision. The controller could recommend a course of action to the pilot to avoid the collision and, indeed, has an express duty to do so under the ATC manual which classifies a duty to warn as a "first priority."<sup>92</sup>

Under present law, in a majority of courts, both the controller and the pilot would be found negligent in this scenario if the

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<sup>89</sup> According to one report, the enroute portion of flight accounted for only 5.7% of aircraft accidents between 1959 and 1995. Carole A. Shifrin, *Toward Safer Skies*, 145 AVIATION WK. & SPACE TECH., Nov. 4, 1996, at 46 (citing report of Boeing Commercial Airplane Group).

<sup>90</sup> See, e.g., *Close-Up: In-Flight Icing Encounter and Loss of Control American Eagle Flight 4184 ATR-72-21 Roselawn, Indiana*, NTSB REP., Nov. 1996, at 2, 11 (stating NTSB determined probable cause of crash of ATR-72 in holding pattern was icing).

<sup>91</sup> The Traffic Collision Avoidance System (TCAS) became available in the 1980s. Through this system pilots are able to monitor the position of other aircraft. TCAS monitors the space of each aircraft and determines whether each aircraft is climbing or descending. If it senses a potential conflict, TCAS issues an alert. If the conflict increases, TCAS commands the pilot to either climb or descend, depending on the conflicting aircraft's actions.

<sup>92</sup> ATCM, *supra* note 10, § 2-1-6 n.1.

controller failed to issue timely warnings to both aircraft and the pilot failed to properly respond to the TCAS alert. This result is warranted because both the pilot and the controller had the duty and the opportunity to prevent the collision from occurring.

Courts considering accidents which occur under free flight should apply a similar analysis rather than revert to the traditional PIC rule. As discussed above, courts that strictly apply the PIC rule reason that ATC should not be held liable for failing to warn a pilot of a dangerous condition of which he knows or, through the exercise of reasonable care, should know. With free flight's technology, pilots will be able to "see" other aircraft, even in IFR conditions. Thus, a court that applied the PIC rule might not hold the controller accountable for the accident in the hypothetical above because the pilot should have been aware of the traffic.<sup>93</sup>

This approach threatens aviation safety in several respects. First, it places an unacceptable burden on the pilot whose workload has already been increased by advanced technology. The technology encompassed by free flight may ultimately make it easier for both pilots and controllers to avoid accidents.<sup>94</sup> However, new technologies also create new opportunities for mistakes. Regardless of the quality of their training, users will make mistakes until they become familiar with the intricacies of new equipment.<sup>95</sup> Moreover, recent studies indicate that advances in technology may actually impair aviation safety by causing confusion and complacency.<sup>96</sup>

Second, and more importantly, to relieve air traffic controllers of all liability for their negligence would both remove an

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<sup>93</sup> Courts may analogize the situation to that of VFR flight and require pilots to be primarily responsible to "see and avoid" other traffic. Of course, there is a vast difference between being able to see actual aircraft in a three dimensional world and seeing an image on a radar screen. Therefore, unlike with VFR flight, the pilot's view of the situation will not be any clearer than ATC's view.

<sup>94</sup> GPS will provide pilots and ATC with more precise information on the aircraft's position. ATC will also have access to software packages that detect potential contact between aircraft alert zones and propose a course of action. Bill Sweetman, *Accelerating the ATC Revolution*; *Air Traffic Control*, 32 *AIR TRANSPORT WORLD*, May 1, 1995, at 57.

<sup>95</sup> See, e.g., Michael A. Dornheim, *Safety; Recovered FMC Memory Puts New Spin on Cali Accident*, *AVIATION WK. & SPACE TECH.*, Sept. 9, 1996, at 58 (stating one cause of the B757 crash may have been crew's confusion regarding naming of waypoints in flight management system).

<sup>96</sup> David Learmount, *Unwanted Demands*, *FLIGHT INT'L*, Oct. 9, 1996, at 26.

important incentive that enhances air traffic safety and undermine public confidence in the air transport system. Holding that a controller had no responsibility for an accident that he watched occur and could have prevented would also be contrary to the fundamental tenets of negligence jurisprudence. A person is negligent when he fails "to do an act which is necessary for the protection or assistance of another and which the actor is under a duty to do."<sup>97</sup> The duty of an air traffic controller to act arises not just from the FARs, but also from the necessarily dependent relationship between the pilot and controller and the foreseeability of harm which may result from the controller's conduct.<sup>98</sup>

The promotion of aviation safety is also the first and primary responsibility of the FAA,<sup>99</sup> which includes ATC. Simply relying upon a pilot to avoid an accident neither satisfies a controller's common law duty nor discharges his employer's statutory responsibility. As one commentator has noted: "[W]here the risk is unduly great, it is not reasonable care to rely upon the responsibility of others."<sup>100</sup> That the risks inherent in aviation are "unduly great" is a matter beyond any reasonable dispute.

## V. CONCLUSION

As the turn of the century approaches, aviation is moving into a new era. The days of the pilot clad in leather jacket and silk scarf while flying solo between grass fields are long gone. Today, flying generally involves two or more cockpit crew members operating sophisticated aircraft equipped with complicated software systems. The pilot must rely on many other people and entities to accomplish his mission; foremost among these is the air traffic control system.

With free flight, the pilot's increased responsibility for aircraft separation will be added to the mounting tasks of monitoring increasingly complicated software and a deluge of new information.<sup>101</sup> To prevent accidents, it is imperative that all of those

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<sup>97</sup> RESTATEMENT (SECOND) OF TORTS § 284 (1965); *Indian Towing Co. v. United States*, 350 U.S. 61, 64-65 (1955); *Pierce v. United States*, 679 F.2d 617, 621 (6th Cir. 1982).

<sup>98</sup> See *Yates v. United States*, 497 F.2d 878, 882-83 (10th Cir. 1974).

<sup>99</sup> 49 U.S.C. § 44701 (1994); see also FAA Order 1000.1A.

<sup>100</sup> W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 204 (5th ed. 1984).

<sup>101</sup> J. Lynn Lunsford, *FAA Plan May Extend Pilot Control; But Routing Proposal Raises Safety Question*, DALLAS MORNING NEWS, Sept. 24, 1995, at 1A.

who can influence safety fulfill their duties. Advanced technology should not be used as an excuse by ATC to ignore an aircraft in potential danger, but rather as a method to more closely monitor the aircraft's progress. Any party with access to information that could prevent an accident must be held responsible to air travelers. To ensure that they are, courts should abandon the outdated PIC concept in aviation tort litigation generally; most certainly they should not extend it to the uncharted skies of free flight.

