

United States Court of Appeals For the First Circuit

No. 08-2454

CAROL WOJCIECHOWICZ,
Individually and in Her Capacity as Executrix of the Estate of
Alexander Wojciechowicz and on behalf of the Conjugal Partnership
with Decedent Alexander Wojciechowicz; ET AL.,

Plaintiffs, Appellants,

v.

UNITED STATES,

Defendant, Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF PUERTO RICO

[Hon. Raymond L. Acosta, U.S. District Judge]

Before

Lynch, Chief Judge,
Ebel* and Lipez, Circuit Judges.

Louis R. Martinez with whom Richard Ritorto, Martinez & Ritorto, PC, Jaime E. Morales, Morales-Morales Law Offices, Franklin F. Bass, Locke Lord Bissell & Liddell LLP, Doris Quinones Tridas, and Quinones Tridas Law Office, PSC were on brief for appellants.

Henry B. Goddard, Jr., Trial Attorney, U.S. Department of Justice, Torts Branch, with whom Michael F. Hertz, Acting Assistant Attorney General, Rosa Emilia Rodriguez-Velez, United States Attorney, Andrew M. Eschen, Trial Attorney, and Sarah S. Keast, Trial Attorney, were on brief for appellee.

* Of the Tenth Circuit, sitting by designation.

September 9, 2009

LYNCH, Chief Judge. Sadly, this court is once again addressing the legal aftermath of a small plane crash killing several people. It has been some years since we last had to decide such a case. See In re N-500L Cases, 691 F.2d 15 (1st Cir. 1982); see also Fed. Express Corp. v. Rhode Island, 664 F.2d 830 (1st Cir. 1981); Delta Air Lines, Inc. v. United States, 561 F.2d 381 (1st Cir. 1977). We affirm the entry of judgment for the United States against plaintiffs' claim of air traffic controller liability in a highly fact based tort case.

On the afternoon of January 5, 2002, a small Cessna Conquest airplane flown by Alexander Wojciechowicz crashed into high terrain in the Carribean National Forest near the El Yunque mountain peak in Puerto Rico. Wojciechowicz and his four passengers, members of his family, were killed. Plaintiffs, who include Wojciechowicz's surviving relatives, his and his daughter's estates, the aircraft's registered owner, and the aircraft's insurer, sued the United States under the Federal Tort Claims Act ("FTCA"), 28 U.S.C. §§ 1346(b), 2671, alleging the air traffic controller on duty in San Juan, Marcos Santiago, was negligent.

After a twelve-day bench trial, the district court ultimately found that Santiago could not have reasonably foreseen Wojciechowicz would take the actions he did, which were in direct violation of a pilot's duties, that Santiago's actions or inactions were not a proximate cause of the crash, and that Wojciechowicz's

own negligence was the sole cause of the crash. The court also found that the controller had not violated any duty of care; but even if the controller did violate a duty, the court found that any violation did not cause the crash. The judge apportioned no liability to the government. Wojciechowicz v. United States, 576 F. Supp. 2d 241, 278 (D.P.R. 2008).

On appeal, plaintiffs claim the district court primarily erred in finding there was no duty of care stemming from a Federal Aviation Administration ("FAA") operations manual and FAA training instructions. They say this error infected the later findings, which, they say, are clearly erroneous anyway. First, they argue, the court erroneously held that ¶ 5-5-9 of the FAA Air Traffic Control Manual ("ATCM"), FAA Order 7110.65M, which requires controllers to maintain separation of aircraft from prominent obstructions depicted on the radar screen by specified minimum distances, did not apply to Wojciechowicz's flight, which was under Visual Flight Rules ("VFR") (as opposed to Instrument Flight Rules ("IFR")), and that Santiago owed no duty to warn Wojciechowicz to change course. Second, they argue the court erred in holding that the air traffic control authority, the San Juan Combined Enroute and Radar Approach Control Facility ("CERAP"), was authorized to depart from the FAA's curriculum in training Santiago and that it trained him adequately. See FAA Air Traffic Technical Training Manual, FAA Order 3120.4J.

The record supports the district court's findings that plaintiffs nonetheless failed to meet their burden to show negligence or causation. We reject plaintiffs' arguments that these findings were clearly erroneous and affirm.

I.

We outline the facts. Greater detail may be found in the district court's opinion. Wojciechowicz, 576 F. Supp. 2d at 246-51.

Wojciechowicz owned a vacation home on Culebra Island and was an experienced pilot with nearly four thousand hours of flight experience. He had flown the route between Culebra Island and the San Juan airport over two hundred times and was familiar both with the approach to the airport and with El Yunque and the surrounding terrain. He was rated for flight under both IFR and VFR.

At approximately 2:00 p.m. that day, Wojciechowicz took off from Culebra Island, which is eighteen nautical miles east of the east coast of Puerto Rico, for a flight to San Juan International Airport. The trip can be completed in twenty to thirty minutes.

Wojciechowicz chose to fly under VFR. His choice had several consequences. Under VFR procedures, set forth in FAA regulations and the FAA-published Aeronautical Information Manual ("AIM"), a pilot navigates by observing the surroundings rather than by relying on instruments. As a pilot under VFR,

Wojciechowicz was forbidden by FAA regulations from flying into clouds or into areas of reduced visibility unless he asked the controller for permission to do so. See 14 C.F.R. § 91.155; In re N-500L Cases, 691 F.2d at 28-29; Cappello v. Duncan Aircraft Sales of Fla., Inc., 79 F.3d 1465, 1467, 1469 (6th Cir. 1996). Although he never asked for permission, the pilot did exactly that.

By contrast, pilots under IFR must file a special flight plan, must navigate by use of their instruments, and may not fly below Minimum Vectoring Altitude ("MVA"), which is generally set at two thousand feet above the elevation of the terrain. VFR pilots are not so restricted and may fly below both the MVA and the elevation of nearby terrain. See Biles v. United States, 848 F.2d 661, 663 (5th Cir. 1988). In sparsely populated areas, such as the area in which the crash occurred, there is no restriction on how low a VFR pilot may fly except that the pilot must maintain a minimum distance of five hundred feet laterally from any structure, vehicle, or person. 14 C.F.R. § 91.119(c). Wojciechowicz operated under VFR procedures throughout the flight.

Wojciechowicz contacted CERAP by radio in San Juan at 2:18 p.m., about eighteen minutes after he left Culebra, to request landing at Luis Muñoz Marin International Airport in San Juan. He was then ten miles east of Fajardo, Puerto Rico, and traveling at 190 knots, or about three miles per minute. At 2:18:30 p.m., Santiago requested that Wojciechowicz "squawk" 0477 into his

aircraft's transponder to allow Santiago's radar scope to better identify the aircraft.¹ Wojciechowicz complied. Santiago responded to Wojciechowicz's landing request at 2:19:54 p.m., providing him with an approach vector to the airport from the traffic pattern south of Plaza Carolina and weather information for San Juan. Santiago asked Wojciechowicz to state his altitude. Wojciechowicz replied that he was at 1600 feet above sea level and stated he would stay south at Plaza Carolina. During his communications with Santiago, Wojciechowicz gave no indication that he was in any distress, that he was unaware of his altitude or location, that he could not maintain his own separation from terrain, or that he was in need of navigation assistance.

This was the first and only conversation between the controller Santiago and the pilot and it took place between 2:18 and 2:20:37.

At that point, the plane was in clear air and had at least ten miles of visibility. That meant the pilot could clearly see the rising terrain to El Yunque ahead and the north coast of Puerto Rico, where the airport was, to his right. The pilot could also see there was a cloud base intersecting the rising terrain ahead.

¹ A controller gives a pilot a "squawk," or a radar identification code, for the pilot to input into the plane's transponder that identifies the flight on the radar scope. See Cappello, 79 F.3d at 1468 n.1.

After the conversation ended, the plane continued on Santiago's radar for nearly one more minute but disappeared from the radar scope shortly before the accident. In the time the aircraft remained on the radar, Wojciechowicz made no further attempts to contact Santiago by radio. The last radar data for the plane was received at 2:21:18. After radar contact was lost, the plane's data on the airport radar scope entered "coast" mode, in which the computer indicates radar contact is lost and predicts the aircraft's position.² The last coast data was displayed at 2:21:42. Within forty-three seconds, Santiago was on the radio trying to get a response, without success, from the pilot. The endpoint, the crash, occurred at approximately 2:23 p.m. at a point 1.43 miles northeast of the El Yunque peak and at an elevation of 1561 feet (El Yunque itself is 3637 feet tall).

We return to what Santiago knew from the radar. At the point the plane disappeared from the radar, the plane was approximately 4.7 miles from the peak of El Yunque. Wojciechowicz at that point had ample visibility (of approximately three nautical miles) to allow him to see the clouds he was approaching ahead and an area of clear weather and lower terrain to the north to which he could safely turn. The government's expert testified that

² Plaintiffs say that Santiago also had available to him a "vector link," a feature that, when activated by the controller, displayed the computer's prediction of where the aircraft would fly minutes into the future. This information is immaterial to the district court's findings.

Wojciechowicz could easily have avoided the crash by changing course. He testified that Wojciechowicz would have needed only seventeen to eighteen seconds to maneuver away from the accident site.

The district court made findings about what information was available to Santiago when there was radar contact. Santiago's radar scope showed Wojciechowicz's altitude above sea level and displayed MVA data for the surrounding area, but it did not display terrain features, the elevation of the terrain, or the aircraft's altitude above the ground. The scope did display prominent obstructions, including El Yunque peak, which had a communications tower located on it. It did not, however, display the elevation of the tower or of El Yunque.

II.

Plaintiffs brought three lawsuits, seeking recovery for the wrongful deaths of Wojciechowicz and one of his passengers, contribution for money the insurers had paid to settle a state court suit brought by relatives of two other passengers, and contribution for funds paid by the insurer for the destruction of the aircraft. On December 10, 2004, the district court granted the government's motion to consolidate the cases.

Plaintiffs conceded that Wojciechowicz had been negligent but argued the government was partially at fault for the crash. They claimed Santiago had negligently failed to separate the flight

from El Yunque peak by at least three miles, which they claim is required by ¶ 5-5-9 of the ATCM.³ They also claimed CERAP had failed to train and test Santiago on significant terrain areas and obstructions as required by a curriculum contained in the FAA's Air Traffic Technical Training Order, FAA Order 3120.4J.⁴ They argued that had Santiago been more familiar with the terrain, he would have issued a safety alert to Wojciechowicz, and this alert would have resulted in avoidance of the crash.

Paragraph 5-5-9 of the ATCM, titled "Separation from Obstructions," sits within Chapter 5 of the manual, titled "Radar," and Section 5 of that chapter, titled "Radar Separation." It states in relevant part:

[S]eparate aircraft from prominent obstructions depicted on the radar scope . . . by the following minima:
 1. When less than 40 miles from the antenna - 3 miles.
 2. When 40 miles or more from the antenna - 5 miles.⁵

³ The United States argued that Santiago had no duty under ¶ 5-5-9 to separate Wojciechowicz's flight from El Yunque because ¶ 5-5-9 applies only for IFR flights and that even if Santiago had a duty to separate Wojciechowicz's flight, he did not breach his duty.

⁴ The government argued that local air traffic control authorities had the authority to modify Order 3120.4J's curriculum and that Santiago had received adequate training.

⁵ The provision refers to two exceptions. It does not apply in "En Route Stage A/DARC or Stage A/EDARC." There is nothing in the record about these exceptions, but the parties agree they do not apply to this case.

ATCM ¶ 5-5-9 (emphasis in original). Here, the required separation was three miles.

While plaintiffs' case rests largely on ATCM ¶ 5-5-9 and the training order, also pertinent to the case are the FAA regulations, other provisions of the ATCM, and provisions of other FAA manuals. The FAA has promulgated regulations that govern pilots' operations. See 14 C.F.R. pt. 91. These regulations have the force and effect of law, but here the plaintiffs do not claim a violation of the C.F.R. In addition, the FAA publishes operations manuals, including the ATCM for controllers and the AIM for pilots.

The controlling law of this circuit is that the ATCM is not a statute or a regulation but an internal FAA guideline issued to FAA controllers, which governs their conduct. As such, under our case law the ATCM is merely an indication of the standard of care. Fed. Express Corp., 664 F.2d at 835. Further, we treat "substantial" failures to adhere to the ATCM guidelines as "persuasive as an indication of a lack of due care." Id. (quoting Delta Air Lines, Inc., 561 F.2d at 390).⁶

Independently of ¶ 5-5-9's separation requirement, ATCM ¶ 2-1-6 requires a controller to issue a safety alert to the pilot

⁶ In arguing that the ATCM carries the force of law, the dissent mischaracterizes the law in this circuit. This panel is bound by circuit precedent, which only an en banc court can change. United States v. Lizardo, 445 F.3d 73, 88 (1st Cir. 2006).

if the controller is "aware the aircraft is in a position/altitude which, in [the controller's] judgment, places it in unsafe proximity to terrain, obstructions, or other aircraft."

The AIM, by contrast, is an FAA publication that explains to pilots the application of FAA regulations in different circumstances. Like the ATCM, the AIM is merely indicative of the standard of care. Id.; Delta Air Lines, Inc., 561 F.2d at 390. Several of its provisions also discuss the conduct of air traffic controllers. Paragraph 5-5-8 of the AIM states that a pilot "is responsible to see and avoid other traffic, terrain, or obstacles." That provision also says that a controller will issue a safety alert "if aware the aircraft is at an altitude believed to place the aircraft in unsafe proximity to terrain, obstructions, or other aircraft."

A separate provision, ¶ 3-2-6(f), states that "no separation services are provided to VFR aircraft" in Class E airspace, the class of airspace in which Wojciechowicz was operating at all pertinent times. In addition, AIM § 4-1-17(e) provides that VFR pilots are not relieved of their responsibilities to "maintain appropriate terrain and obstruction clearance, or to remain in [VFR-appropriate] weather conditions" by the fact that they are receiving basic radar services from a terminal.

Finally, FAA Order 3120.4J is an FAA operating manual addressed to air traffic control authorities. It sets forth a

national curriculum for training controllers. Two provisions of Order 3120.4J set forth training exercises under which a trainee is required to label or draw topographical features on an unlabeled chart of the local area and to identify significant terrain areas and obstructions on an unlabeled video map.⁷

The district court entered judgment in favor of the United States. It held that ATCM ¶ 5-5-9 did not apply to VFR flights but only to IFR flights. It further found that, even assuming ATCM ¶ 5-5-9 did apply to VFR flights, Santiago did not violate the provision because the last radar information he had for the flight came well before it entered the three-mile radius around El Yunque. Wojciechowicz, 576 F. Supp. 2d at 269. Crediting the testimony of the government's expert witness, Edward Henderson, that ¶ 5-5-9 requires a "radar separation," the court held that "[w]ithout the aircraft remaining in radar contact it would have been impossible for Mr. Santiago to apply the aforementioned radar separation criteria to N441AW. Thus, the provisions of [¶] 5-5-9 could not have been implemented because the aircraft was not visible on Mr. Santiago's radar scope." Id.

⁷ Plaintiffs cite Courses 55060 and 55065. Course 55060 states, "Given an unlabeled chart of the local area . . . the individual shall label or draw the following: . . . Topographical features." Course 55065 states, "Given an unlabeled video map/overlay, the individual shall identify all items, plus . . . Significant terrain areas and obstructions."

The court also found that Santiago did not violate his separate duty under ATCM ¶ 2-1-6. It found the data available to Santiago did not provide him with information about the plane's proximity to terrain, and, because Wojciechowicz was operating as a VFR pilot, Santiago did not know his intentions as to his route. Santiago was therefore not aware that Wojciechowicz was in a position which, in Santiago's judgment, placed him in unsafe proximity to terrain. Id. at 258-60.

As to the second issue, the court held that CERAP had leeway to adapt Order 3120.4J's curriculum to local requirements and that it had adequately trained Santiago on terrain features by instructing him on local MVA information. Further, the court found, any deficiency in training did not cause plaintiffs' harm. The general terrain knowledge the training would have provided would not have given Santiago sufficient information regarding the flight's unsafe proximity to terrain to require the issuance of a safety alert. Id. at 259-60, 262.

The district court also found that "even assuming arguendo that a duty had been owed and breached by the controller . . ., plaintiffs ha[d] failed to prove that any such breach was the cause of the crash . . . or that the pilot's actions in this case were foreseeable." Id. at 277. The court found that Wojciechowicz's actions had been negligent and that his negligence was the sole cause of the accident. Plaintiffs appealed.

III.

In an appeal from a judgment following a bench trial, we review a district court's findings of fact for clear error. Janeiro v. Urological Surgery Prof'l Ass'n, 457 F.3d 130, 138 (1st Cir. 2006); Harrison v. United States, 284 F.3d 293, 297 (1st Cir. 2002). We review questions of law de novo. Janeiro, 457 F.3d at 139. "The existence and extent of a duty of care are questions of law; whether any such duty has been breached and whether proximate cause exists are questions for the factfinder, whose determination is binding on appeal unless clearly erroneous." Fed. Express Corp., 664 F.2d at 835.

We need not address the issue of whether ¶ 5-5-9 applies to controllers over VFR flights as well as over IFR flights.⁸ We assume arguendo, in plaintiffs' favor, that the provision applies to VFR flights.⁹

⁸ Paragraph 5-5-9 is itself silent on the issue; other ATCM provisions specify that they apply exclusively to one or the other type. This may show that the FAA would have specified that ¶ 5-5-9 applies only to IFR flights if that were the agency's intention. However, it may be reasonable to think, given the regulatory framework applicable to VFR pilots, that ¶ 5-5-9 does not apply to VFR flights because the pilot of the VFR aircraft is assumed to be able to see obstructions and to avoid them.

⁹ We also do not address the issue of whether plaintiffs' claim is ever cognizable under the FTCA, given AIM ¶ 3-2-6(f)'s express disclaimer that separation services are not provided to VFR aircraft in Class E airspace. Governmental liability in airline tort cases is based on the limiting principle that "[o]nce the Government undertakes to provide services otherwise not required of it," it is liable for negligent performance of those services. Delta Air Lines, Inc., 561 F.2d at 389; see also Davis v. United

The FTCA grants district courts jurisdiction over claims

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

28 U.S.C. § 1346(b)(1).

Under the FTCA, the substantive law of the state where the injury occurred governs. See In re N-500L Cases, 691 F.2d at 27. It is undisputed that Puerto Rico law applies here; for these purposes, Puerto Rico is treated as a state. Negligence law in Puerto Rico is governed by the Civil Code, which imposes liability for an "act or omission" that causes damages to another through fault or negligence." P.R. Laws Ann. tit. 31, § 5141; see also Rodríguez-Quinones v. Jiménez & Ruiz, S.E., 402 F.3d 251, 254 (1st Cir. 2005). A plaintiff must prove injury, "a negligent or intentional act or omission (the breach of duty element)," and "a sufficient causal nexus between the injury and the defendant's actions or omissions." Vázquez-Filippetti v. Banco Popular de P.R., 504 F.3d 43, 49 (1st Cir. 2007). A defendant is only liable for injuries "reasonably foreseeable to the defendant." Irvine v. Murad Skin Research Labs., Inc., 194 F.3d 313, 322 (1st Cir. 1999)

States, 824 F.2d 549, 550-51 (7th Cir. 1987). Thus, we make an assumption in plaintiffs' favor.

(applying Puerto Rico law); see also In re N-500L Cases, 691 F.2d at 27-28 (same).

Foreseeability is a central element in Puerto Rico negligence law and underlies both the issue of breach and of proximate cause. Vázquez-Filippetti, 504 F.3d at 49. To establish proximate cause, a plaintiff must prove that the accident was "foreseeable and could have been avoided if the defendant had not breached its duty of care." Grajales-Romero v. Am. Airlines, Inc., 194 F.3d 288, 296 (1st Cir. 1999). Proximate cause is not proven if the defendant can show the occurrence of an intervening cause that was not foreseeable. Id.; see also Marshall v. Perez Arzuaga, 828 F.2d 845, 847 (1st Cir. 1987) (noting that the causation requirement in Puerto Rico law "limits a party's liability for hazards flowing from its negligence to those hazards that could be 'anticipated by a prudent person'" (quoting Pacheco v. P.R. Water Res. Auth., 112 P.R. Offic. Trans. 369, 372 (1982))).

A separate issue is the duties of care owed respectively by controllers and pilots. The violation of FAA regulations, which have the force and effect of law, is negligence per se. See In re N-500L Cases, 691 F.2d at 28. The plaintiffs' case is not based on a violation of regulations. Rather, it is based on FAA manuals, such as the AIM and the ATCM, which do not have the force of law but only provide evidence of the standard of care among pilots and controllers. Id. Still, "a substantial and unjustified failure

to follow procedures made mandatory by the manual is persuasive as an indication of a lack of due care." Fed. Express Corp., 664 F.2d at 835 (quoting Delta Air Lines, Inc., 561 F.2d at 390) (emphasis added).

Pilots are assumed to have read the AIM and FAA informational circulars and to know their provisions. In re N-500L Cases, 691 F.2d at 28. A controller is ordinarily entitled to assume, absent an objective manifestation of evidence to the contrary, that a pilot is complying with his own responsibilities under FAA regulations and those manuals and circulars. In re N-500L Cases, 691 F.2d at 31; Fed. Express Corp., 664 F.2d at 836-37. This has been our rule for some time and a number of other circuits have adopted the same rule. See, e.g., Thurston v. United States, No. 95-411, 1996 WL 579929, at *3 (10th Cir. Oct. 9, 1996) (mem.); Cappello, 79 F.3d at 1468; Biles, 848 F.2d at 663; Redhead v. United States, 686 F.2d 178, 183 (3d Cir. 1982).

It is also clear, to be sure, that if the controller were negligent and if this were a proximate cause for the accident, liability could be apportioned to the controller. See Rodriguez v. United States, 823 F.2d 735, 745-46 (3d Cir. 1987). But liability may be imposed only if it is foreseeable that the controller's negligent conduct will cause injury. A plaintiff who establishes the government breached its duties must show that the negligent conduct is a legal cause of the harm. Delta Air Lines, Inc., 561

F.2d at 394. The actions of the controller must be judged against what a reasonable person, under the same or similar circumstances, would have done. See W.P. Keeton et al., Prosser and Keeton on the Law of Torts § 37, at 236-37 (5th ed. 1984).¹⁰

A. Plaintiffs' Claims under ATCM ¶ 5-5-9 (Controllers' Duties as to Separation from Obstructions)

The government argues that the standard of care under ¶ 5-5-9 of the ATCM, assuming it applies to VFR flights at all, turns on what a reasonable controller in Santiago's situation would have done given the information he had available to him, the fact that Wojciechowicz was operating as a VFR pilot, and the fact that at a point before the buffer zone the plane was no longer on the controller's radar screen.

Plaintiffs' core argument is that Santiago was in breach of the ATCM ¶ 5-5-9 and that this was negligence per se, so they need not prove causation. As required by our precedent, we reject the argument that the ATCM has the same effect as a regulation and that any violation would be negligence per se. Fed. Express Corp., 664 F.2d at 835.

Plaintiffs also argue that they have established both a violation of ¶ 5-5-9 and causation. They say that although the

¹⁰ Plaintiffs often ignore this principle by proceeding backwards from the information now known and arguing about whether Santiago's actions were reasonable given this knowledge. The appropriate inquiry focuses on what was known to the controller at the time. Kelley v. Schlumberger Tech. Corp., 849 F.2d 41, 45 (1st Cir. 1988).

last radar data Santiago received showed the flight was 4.7 miles from El Yunque peak, outside of the three-mile buffer, (a) ¶ 5-5-9 nonetheless required Santiago to issue a warning to Wojciechowicz at some point before he entered the buffer, and (b) this warning was necessary to allow the pilot adequate time to change course. The latter proposition is simply untrue on the record. We turn to the first contention.

Plaintiffs' theory is that even though Santiago could not have foreseen Wojciechowicz's actions, that is immaterial because Santiago was under a legal duty to keep a separation of three miles between the plane and the El Yunque tower marked on his radar and because the controller breached this duty by not issuing a separation order well before the plane neared the buffer zone. If Santiago had done so, they argue, Wojciechowicz would have been alerted to the danger and would have changed course.

This argument goes to when separation must be maintained. It suffers from the obvious problem that there was no violation of the plain text of ¶ 5-5-9, which states only the three-mile separation minimum. The provision contains no mandatory language stating when a controller must take action to attempt to maintain a separation. Given the lack of mandatory language in ¶ 5-5-9 on the issue of when to maintain the separation, the district court correctly understood the question posed by plaintiffs as one of

what a reasonable controller would have done on these particular facts.¹¹

Further, plaintiffs have not articulated any clear theory on when separation must be initiated. James Parham, plaintiffs' expert on air traffic control procedures, testified that a reasonable and prudent controller would have given a separation order when Wojciechowicz was seven miles away from El Yunque and four miles from the three-mile buffer zone to give the pilot time to comply and to avoid the obstruction. However, this was merely Parham's opinion; Parham did not testify about actual practice under ¶ 5-5-9.

Under our case law, actual practice under a regulation or ordinance is important to determining its meaning and may become another source of a legal obligation. See, e.g., Pelletier v. Main St. Textiles, LP, 470 F.3d 48, 55-56 (1st Cir. 2006); South Shore Hosp., Inc. v. Thompson, 308 F.3d 91, 102-03 (1st Cir. 2002); Delta Air Lines, Inc., 561 F.2d at 389-90 & n.5. No evidence of actual practice from the plaintiffs as to the interpretation of ATCM ¶ 5-5-9 was admitted. The court was not required to accept Parham's

¹¹ The dissent, contrary to our law, characterizes this question as one of law for a judge to decide and not a question of fact. The reasonableness of a controller's action is in this case a question of fact. Thus we have held that "[i]n deciding what a reasonable person could do, a jury's latitude is considerable." Rodríguez-Quiñones, 402 F.3d at 256.

view, which was inherently inconsistent with the testimony of the government's expert.

The district court found that a reasonable controller, given the facts of this case, would not have separated the flight at (or before) 4.7 miles.¹² That was because it was more reasonable for the controller at that point to rely on the VFR pilot, who, the controller could assume, was complying with his duties to see and avoid terrain and obstacles and to maintain VFR-minimum visibility. The pilot then had clear visibility. Wojciechowicz had given no indication that he was in distress or unable to comply with his obligations, and he would have had ample time to change course at four miles out.¹³

The court's finding was not clear error. Wojciechowicz was under a legal duty to know the route and to have consulted maps of the area. See Cappello, 79 F.3d at 1468. There is no serious contention that the pilot did not know where El Yunque was. In contrast, Santiago did not then know the plane's course or altitude or whether it was approaching or turning away from the obstruction, El Yunque. And of course, the plane disappeared from Santiago's

¹² The dissent advances a new theory that the controller had a duty to separate within thirty seconds after the last coast data disappeared from his radar scope; however, this was not argued by any party to the case.

¹³ Contrary to the dissent, this case does not turn on any rule that mere loss of radar contact, regardless of the surrounding circumstances, would vitiate a legal duty which had already arisen under ¶ 5-5-9.

radar and Santiago's attempts to reestablish contact with it were unsuccessful.

Moreover, the government proffered a separate defense that ¶ 5-5-9 could not apply under these circumstances. First, the court accepted the testimony from the government expert, Edward Henderson, elicited on cross-examination by plaintiffs' counsel, that even assuming ¶ 5-5-9 applied to VFR flights, there was no violation of ¶ 5-5-9 here because, flying under VFR, the pilot could have changed direction or altitude at any time and the controller would therefore not have known whether the aircraft came within three miles of El Yunque. He further testified that ¶ 5-5-9 requires "a radar separation. And [Santiago did not] have radar on the aircraft" after the plane disappeared from the radar screen. This testimony, against the background facts, is consistent with and sufficient to support the district court's conclusion that there was no breach of any standard of care under ¶ 5-5-9, even assuming it applied to VFR flights, and further, beyond duty, that there was no causal connection.¹⁴

Plaintiffs have also failed to show clear error in the court's finding that, even if Santiago had owed and breached a duty under ¶ 5-5-9, there was no causal connection between any breach by

¹⁴ There was also no evidence presented that Santiago could have reached the plane by radio contact if he had tried to do so instantaneously with losing radar contact or at any point before the crash, or that the pilot was then in control of the plane. Plaintiffs bear the burden of proof.

Santiago and the accident, or the court's findings that the accident was not foreseeable to Santiago.

Wojciechowicz was already required by FAA regulations to change course and avoid flying into the clouds. Those clouds intersected with the terrain near the crash site and obscured visibility. See 14 C.F.R. § 91.155; Cappello, 79 F.3d at 1469. The district court concluded that "[h]ad Mr. Wojciechowicz not entered the clouds he would have had ample time to see and avoid the terrain with which he ultimately collided." Wojciechowicz, 576 F. Supp. 2d at 255. The court supportably found the cause of the crash was not that the flight came closer than three miles to the radar tower on El Yunque or that it was flying in high terrain, but that the pilot flew into a cloud in violation of FAA regulations.

Further, as the district court found, Santiago could not have reasonably foreseen that Wojciechowicz would take the actions that the district court found led to the accident, specifically "fly[ing] into a cloud while traversing rugged, rising terrain at low altitude and high speed." Wojciechowicz, 576 F. Supp. 2d at 277. A VFR pilot can change course and altitude at any time and without need to obtain permission from the controller. See In re N-500L Cases, 691 F.2d at 31; Cappello, 79 F.3d at 1469. Santiago had no reason other than speculation to think that the flight was heading directly into a cloud.

B. ATCM ¶ 2-1-6 (Safety Alert)

Plaintiffs argue that Santiago was also in breach of his duty under ATCM ¶ 2-1-6 to issue a safety alert to Wojciechowicz because of his unsafe proximity to the terrain. Whether this provision is evidence giving rise to a duty in the controller to issue a safety alert turns on the information available to the controller. The duty arises when the controller is "aware that the aircraft is in a position or altitude which, in the controller's judgment, places the aircraft in unsafe proximity to terrain or obstructions."¹⁵ Wojciechowicz, 576 F. Supp. 2d at 258 (emphasis in original). Here, the district court supportably found these provisions did not apply to Santiago. Santiago only had information on the flight's altitude above sea level; he had no information about the elevation of the surrounding terrain, the aircraft's altitude over the ground, or its proximity to any terrain or obstacles (aside from its distance from the tower on El Yunque). When the flight disappeared from Santiago's radar shortly before the crash, he had even less information about the flight. Nor was there any indication from Wojciechowicz before then that he was in distress.

¹⁵ We recognize but do not resolve the issue of whether this discretionary language triggers the discretionary function exception to the FTCA. See Fothergill v. United States, 566 F.3d 248, 252 (1st Cir. 2009).

Plaintiffs argue that Santiago should have known the aircraft was in unsafe proximity to terrain because it was flying toward El Yunque peak at an altitude below the peak's elevation. The district court made a finding rejecting this argument. Wojciechowicz, 576 F. Supp. 2d at 260. There is no clear error in the district court's conclusion that the information available to Santiago, who knew Wojciechowicz was operating under VFR procedures and who received no distress calls from the pilot, was insufficient to alert Santiago to the fact that Wojciechowicz had placed himself in a dangerous position. See id. at 259-60. A VFR pilot flying in a sparsely populated area may fly close to the ground and below the altitude of surrounding terrain, so long as minimum visibility is maintained. 14 C.F.R. §§ 91.119(c), 91.155(a); see Biles, 848 F.2d at 663.

C. Plaintiffs' Claim under Courses 55060 and 55065 of the Air Traffic Technical Training Order

Plaintiffs' arguments related to alleged deficiencies in Santiago's training fail for similar reasons.¹⁶ Essentially, they argue that certain FAA training guidelines have the force of law and that CERAP's failure to follow the training led to Santiago being unfamiliar with the terrain and obstructions in his area of responsibility and that because of his unfamiliarity, he did not

¹⁶ We do not reach plaintiffs' argument that the district court erred in holding that CERAP had leeway to depart from the FAA's national training directives.

recognize the danger of Wojciechowicz's situation. They argue this led Santiago to fail to issue a safety alert as required under ATCM ¶ 2-1-6.¹⁷

The district court accepted Santiago's testimony that he was familiar with the location of El Yunque and the mountains but not with every peak and valley. The court also found that even if Santiago had been aware of the high terrain over which Wojciechowicz was flying, he would not have been aware that the aircraft was in unsafe proximity to the terrain because of the lack of terrain information on his radar scope, the fact that he only knew the aircraft's elevation above sea level rather than its elevation above the ground, and the fact that he had no reason not to presume that Wojciechowicz was complying with VFR flight procedures. Wojciechowicz, 576 F. Supp. 2d at 259-60. The court also found that general terrain knowledge would not have led Santiago to be aware that the flight was in unsafe proximity to terrain and that a safety alert was therefore required. Id. at 262.

¹⁷ Plaintiffs' argument that ¶ 2-1-6 required Santiago to issue a safety alert is distinct from an argument they made to the district court that Santiago was under a duty to issue a safety advisory because of the presence of high terrain in the area. See Wojciechowicz, 576 F. Supp. 2d at 266-67. Plaintiffs give no citation to support the notion that there is a free-standing obligation to issue a safety advisory. The district court rejected the latter argument and plaintiffs have not challenged this holding on appeal.

The bottom line is that there was no clear error in the court's finding that the purported lack of training plaintiffs rely on did not cause Santiago's inaction. In the end, the district court found that there was no foreseeability and no causal relationship between any breach by Santiago and the plaintiffs' injury. These may be mixed questions of fact and law, but they are components of negligence, so our review is for clear error. See Fed. Express Corp., 664 F.2d at 835. There was no clear error here.

Plaintiffs' only argument that the court clearly erred is, again, that because the aircraft was flying toward El Yunque at an altitude lower than the elevation of the peak, Santiago should have known the aircraft was in unsafe proximity to the terrain. For the reasons stated earlier, this argument fails.

D. Conclusion

Given the evidence and our standard of review in this fact based case, we find no reversible error.

The district court's judgment is affirmed.

-Dissenting Opinion Follows-

LIPEZ, Circuit Judge, dissenting. There is no question that the pilot bears primary responsibility for the tragic accident at issue here. Nevertheless, that is only part of the story. This case raises important questions about the scope of an air traffic controller's duty of care to a plane flown under visual flight rules ("VFR") after radar contact initiated by the pilot is then lost. The majority accepts the district court's finding that any possible breach of duty by the controller did not contribute to the crash. I do not agree. If a controller's duty to separate aircraft from terrain continues after radar contact is lost, we could not conclude that the controller's conduct had no effect on the accident. I believe that Santiago did have such a duty and that, on this record, he was required to attempt radio communication with the airplane in time to separate it from El Yunque. Because the record shows that, if Santiago had done so, the plane crash might have been prevented, I cannot conclude that Santiago's breach of duty did not contribute to the accident. I therefore respectfully dissent.

I.

Paragraph 5-5-9 of the Air Traffic Control Manual ("ATCM") requires air traffic controllers to "separate aircraft from prominent obstructions depicted on the radar scope," and specifies a minimum separation distance of three miles for aircraft

like the one flown by Wojciechowicz.¹⁸ The district court held that this provision applies only to flights operating under instrument flight rules ("IFR") and further concluded that, even if VFR flights were within the scope of ¶ 5-5-9, Santiago did not violate the provision because Wojciechowicz's plane was off radar by the time the three-mile limit was reached. The majority assumes for the sake of efficient analysis that ¶ 5-5-9 applies to VFR flights, and it holds that the district court did not commit clear error in finding no breach of duty because, even though radar contact with Wojciechowicz's plane was lost, the controller could reasonably rely on the pilot to see and avoid terrain and obstacles.

I do not understand how the majority can reach that conclusion. If ¶ 5-5-9 applies to VFR flights, it can only be construed to impose a legal obligation on controllers to take all reasonable steps to separate aircraft from obstructions without regard to the VFR pilot's separate duty to prevent accidents. As plaintiffs argue, the very point of applying ¶ 5-5-9 to VFR aircraft is to provide a second layer of protection against accidents like the one that occurred in this case. It is precisely

¹⁸ Paragraph 5-5-9, which is titled "Separation from Obstructions," states in relevant part:

[S]eparate aircraft from prominent obstructions depicted on the radar scope . . . by the following minima:

1. When less than 40 miles from the antenna - *3 miles*.

ATCM ¶ 5-5-9.

in cases of unforeseeable pilot negligence that ¶ 5-5-9 would play its most critical role for VFR flights. It thus makes no sense to say that the provision imposes a duty whose outer limit is reached when the controller reasonably could rely on the pilot's own duty of care. Such a conclusion defines the concurrent duty of the controller out of existence.

To resolve this case, therefore, we cannot avoid directly addressing two legal questions: (1) whether ¶ 5-5-9 applies to VFR aircraft, and, if so, (2) the scope of the controller's duty under that provision. I consider each of those in turn.

II.

Notwithstanding its assumption that ¶ 5-5-9 applies to VFR flights, the majority discusses the nature of that provision at some length and appears to conclude that the classic rules of statutory interpretation do not apply to it. It points out that the ATCM is neither a statute nor a regulation, but only an internal FAA guideline that does "not have the force of law." It effectively treats the provision's scope as a question of fact by endorsing the district court's reliance on the government's expert, Edward Henderson, who testified that ¶ 5-5-9 could not apply once Wojciechowicz's plane disappeared from the radar screen. Henderson also testified that he had never seen ¶ 5-5-9 used for VFR aircraft, which led the district court to conclude that the provision does not apply to VFR flights.

Paragraph 5-5-9, however, constitutes more than background guidance or advisory criteria whose applicability is left to the controller's discretion. Although this court has acknowledged the difficulty of distinguishing between law and practice - particularly where informal documents such as guidelines and handbooks are involved, see Nieves-Villanueva v. Soto-Rivera, 133 F.3d 92, 100-01 (1st Cir. 1997) - no such difficulty exists here. A Federal Aviation Regulation ("FAR"), 14 C.F.R. § 65.45(a), states that "[a]n 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, to provide for the safe, orderly, and expeditious flow of air traffic."¹⁹ Because part 65.45(a) mandates compliance with air traffic control manuals, the manuals themselves are incorporated into the regulation and acquire the force and effect of law. See Ross v. United States, 640 F.2d 511, 517 (5th Cir. 1981) (per curiam, affirming on the basis of the district court's opinion) (stating that provisions of a similar air traffic control manual have the effect of FAA regulations); see also Rodriguez v. United States, 823 F.2d 735, 739 (3d Cir. 1987) (stating that FAR's "have the

¹⁹ Although the regulation refers to "control tower operator[s]," courts have included air traffic controllers within its scope. See, e.g., Campos Viuda de Courtois v. United States, 778 F. Supp. 585, 591 (D.P.R. 1991); In re N-500L Cases, 517 F. Supp. 825, 834 (D.P.R. 1981), aff'd, 691 F.2d 15 (1st Cir. 1982).

force and effect of law"); In re N-500L Cases, 691 F.2d 15, 28 (1st Cir. 1982) (same).²⁰

Thus, ¶ 5-5-9 has the status of law and, as such, its meaning must be determined in accordance with ordinary principles of statutory construction rather than by means of expert testimony. See United States v. Lachman, 387 F.3d 42, 50-52 (1st Cir. 2004) (applying canons of statutory interpretation to federal regulations); Nieves-Villanueva, 133 F.3d at 100 ("[I]t is for the judge, not the lawyers or the witnesses, to inform the jury of the law applicable in the case and to decide any purely legal issue."). I thus begin by examining the language of the provision. See Lachman, 387 F.3d at 50 (stating that, "'if the language of a

²⁰ Contrary to the majority's assertion, evaluating the ATCM as a provision of law is not inconsistent with First Circuit precedent. The case cited by the majority, Federal Express Corp. v. Rhode Island, 664 F.2d 830, 835 (1st Cir. 1981), holds that violations of the ATCM "do not necessarily constitute negligence" - a point with which I agree - but it does not hold that manual provisions do not have the force of law. Indeed, Federal Express Corp. equates mandatory ATCM provisions with statutes and ordinances. See id. ("Although slight deviations from manual procedures do not necessarily constitute negligence, we have previously indicated that 'a substantial and unjustified failure to follow procedures made mandatory by the Manual is persuasive as an indication of a lack of due care.' The Rhode Island courts have embraced a similar position, holding that in an action based on violation of a statute or ordinance, 'evidence of injury proximately caused by the violation is prima facie evidence of defendant's liability'" (citations omitted)).

This is not to say that FAA documents that contain only advisory criteria, and not binding rules, must also be given the force and effect of law. Ross, 640 F.2d at 518 (noting that another FAA manual consisted of "advisory criteria rather than binding FAA regulations").

statute or regulation has a plain and ordinary meaning, courts need look no further and should apply the regulation as it is written'" (quoting Textron, Inc. v. Comm'r, 336 F.3d 26, 31 (1st Cir. 2003))).

The paragraph as written does not include an exception for VFR aircraft and, in the absence of such an exclusion, there is no basis for concluding that the controller lacks separation responsibility for VFR flights that are receiving radar services. See Wojciechowicz v. United States, 576 F. Supp. 2d 241, 252 (D.P.R. 2008) (stating that Wojciechowicz was receiving "basic radar service"). Although it is conceivable that VFR flights by definition would fall outside provisions requiring controllers to separate aircraft from obstructions displayed on their radar scopes, the next ¶ of the ATCM belies any such notion. Paragraph 5-5-10 addresses separation distances from "adjacent airspace" in which radar separation is also being used, and it excludes certain VFR aircraft from its dictates. See ATCM, FAA Order 7110.65M § 5-5-10 (c) ("The provisions of subpara[graph]s a and b do not apply to VFR aircraft being provided Class B, Class C or TRSA services.").²¹ This attention to VFR flights reinforces the

²¹ Like ¶ 5-5-9, ¶ 5-5-10 specifies the separation distance that controllers must maintain depending on the distance between the aircraft and the radar antenna, or sensor, that is being used by the controller. After explicitly excluding certain categories of VFR flights from its coverage, the provision continues by directing a "radar handoff" or termination of radar service for VFR flights approaching the excluded types of airspace under the

interpretation that such flights are covered by the radar separation provisions unless explicitly excluded. See § 5-5-10(d). "[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." Russello v. United States, 464 U.S. 16, 23 (1983) (quoting United States v. Wong Kim Bo, 472 F.2d 720, 722 (5th Cir. 1972)) (alteration in original); Trenkler v. United States, 268 F.3d 16, 23 (1st Cir. 2001).²² That principle has no less force in this context.

Construing ¶ 5-5-9 to apply to VFR flights does not conflict with the VFR pilot's responsibility to see and avoid obstructions. Controllers and pilots have a concurrent duty to maintain safety, see, e.g., Delta Air Lines, 561 F.2d at 392 ("[A]lthough pilots are undoubtedly responsible for the safety of their aircraft, controllers are concurrently responsible for adhering to procedures which minimize the difficulties for the

control of another air traffic control facility.

²² The majority notes that the FAA-published Aeronautical Information Manual ("AIM") expressly states that separation services are not provided to VFR aircraft in Class E airspace. The district court found that Wojciechowicz's plane entered Class G airspace one minute before the collision and flew in and out of Class G from that time until the crash, including "at least the 10 seconds prior to colliding with the terrain." Wojciechowicz, 576 F. Supp. 2d at 251.

crew."), and the FAA has acknowledged that rules relating to pilots and controllers may overlap. Section 5-5-1(e) of the AIM states:

The responsibilities of the pilot and controller intentionally overlap in many areas providing a degree of redundancy. Should one or the other fail in any manner, this overlapping responsibility is expected to compensate, in many cases, for failures that may affect safety.

Imposing the duty to separate under ¶ 5-5-9 on controllers for all flights receiving basic radar services is one obvious method to protect against unexpected "failures that may affect safety." Hence, I can only conclude that the plain, unlimited language of ¶ 5-5-9 governs and that the provision applies to VFR as well as IFR flights. I therefore must consider the scope of the duty imposed by the provision and whether it was breached in the circumstances of this case.

III.

The majority explains why the district court could properly find that Santiago did not act unreasonably in failing to contact Wojciechowicz before the plane disappeared from radar, when it was still approximately 4.7 miles from El Yunque. Paragraph 5-5-9 prescribes a mandatory minimum of three miles, and the record shows that Wojciechowicz still had plenty of time at the 4.7-mile point to change course and avoid crashing into the mountain. The majority errs, however, in deferring to the district court's conclusion that Santiago's duty ended when radar contact was lost.

Nothing in ¶ 5-5-9 suggests that the duty to separate aircraft from obstructions automatically dissolves when a plane receiving radar services suddenly disappears from the screen. Indeed, no one would suggest that the loss of radar contact with a flight operating under instrument rules terminates the controller's duty to provide separation services.

The majority holds that, in the absence of "mandatory language stating when a controller must take action to attempt to maintain a separation," the district court permissibly treated the question of duty "as one of what a reasonable controller would have done on these particular facts." I have no problem with the majority's statement of the general principle.²³ The majority goes on to conclude, however, that the district court committed no clear error in finding that it was reasonable for the controller to assume that the VFR pilot knew where he was and could see the mountain, and, on that basis, acted reasonably in failing to immediately initiate contact with the pilot when the plane disappeared from radar.

²³ The majority asserts that I have improperly treated the question of the reasonableness of the controller's actions under ¶ 5-5-9 as one of law rather than fact. This misrepresents my analysis, which is consistent with our decision in Federal Express Corp., 664 F.2d at 835. We held there that "[t]he existence and extent of a duty of care are questions of law; whether any such duty has been breached and whether proximate cause exists are questions for the factfinder, whose determination is binding on appeal unless clearly erroneous." Id. My analysis considers "[t]he existence and extent" of the controller's duty under ¶ 5-5-9 as a question of law and the issue of breach as a factual question.

As I have explained, ¶ 5-5-9 has no purpose in the VFR context unless it is to serve as backup protection against the possibility of pilot negligence. In imposing a concurrent duty on controllers to separate VFR flights from obstructions, ¶ 5-5-9 effectively incorporates an assumption that pilot negligence is foreseeable. The fact that Wojciechowicz, as a VFR pilot, should have been aware of his surroundings is thus besides the point, and the controller's duty under ¶ 5-5-9 is no different for VFR flights than for IFR flights. If a plane is no longer visible on the radar screen, the only way for the controller to be sure there is proper separation between that aircraft and prominent obstructions is to contact the pilot directly. From that perspective, it is apparent that Santiago's duty under ¶ 5-5-9 could not automatically end with the loss of radar contact. Rather, as with an IFR flight, the duty to maintain separation required him to make reasonable efforts to contact Wojciechowicz to ensure that the aircraft remained three miles away from El Yunque. It was foreseeable that, in the event of pilot negligence, Santiago's failure to take that step could be disastrous.

Santiago's own actions and testimony indicate that he was aware of his responsibility to attempt to contact Wojciechowicz. Although Santiago testified that short-term loss of radar contact with an aircraft is not unusual, he acknowledged that if an aircraft disappears from his scope, he would, "most frankly,"

inform that aircraft that radar contact was lost. He explained that he does not necessarily inform a pilot that radar contact is lost when the plane's data is in "coast" mode - the short period immediately after the loss of radar contact when the computer predicts the flight's likely path - because planes sometimes will "go into coast . . . and then they'll come back." The flight transcript shows that Santiago attempted to reach Wojciechowicz's plane by radio more than a dozen times, starting at 43 seconds after the plane's coast data disappeared from the radar scope (roughly the time of the crash).²⁴

The district court's view that Santiago's duty under ¶ 5-5-9 ended when the plane was no longer visible on radar is thus unsupportable. That legal error infected the district court's fact-finding and undermines the majority's reliance on it. Examining the record in light of the proper scope of ¶ 5-5-9, the remaining question is whether Santiago breached his duty to maintain separation by failing to contact the pilot for 43 seconds after all radar information about the flight ended. I now turn to that question.

²⁴ The district court found that the plane crashed about two seconds later, "approximately 45 seconds" after the last coast data appeared. Wojciechowicz, 576 F. Supp. 2d at 259.

IV.

In one sense, it is undisputed that Santiago failed to perform his duty to ensure three miles of separation between the plane and prominent obstructions. The aircraft was permitted to penetrate the three-mile "ring" around El Yunque and crashed 1.43 miles from the mountain's peak. Wojciechowicz, 576 F. Supp. 2d at 246. The majority is correct, however, that simple breach of the duty does not amount to negligence, and the issue before us turns on "what a reasonable controller would have done on these particular facts" to fulfill his duty under ¶ 5-5-9. Santiago did attempt to contact the pilot. Hence, the specific question to be addressed is whether his delay in doing so was reasonable.

The record shows that a reasonable factfinder would have to conclude that it was not. Santiago knew or should have known, based on the information displayed on his scope, that at the moment actual radar contact was lost, the airplane was only 1.7 miles away from the three-mile ring - the minimum distance for separation specified in ¶ 5-5-9. See Wojciechowicz, 576 F. Supp. 2d at 259. He also knew that the plane was headed toward the mountain. Even if a three-mile separation was no longer feasible, Santiago at least needed to take all reasonable steps to contact Wojciechowicz early enough to guide the plane away from the mountain in case the pilot inexplicably failed to change direction on his own.

The government's expert testified that Wojciechowicz could have maneuvered the plane away from the accident site within 17 or 18 seconds. The last coast data appeared on radar at about 45 seconds before the crash. Id. Accepting the end of all data as a reasonable trigger for the controller's concern, and even allowing for a brief delay as Santiago came to the realization that the plane had not reappeared on the radar scope, Santiago still had more than thirty seconds to attempt to turn the aircraft before the impact occurred - nearly double the time needed. He waited, however, until virtually the time of impact to initiate radio contact. On this record, that delay can only be found unreasonable.²⁵ I realize that thirty seconds is not much time.

²⁵ The majority states that reliance on a duty to separate within thirty seconds after the coast data disappeared introduces a new theory to the case. That is not so. Plaintiffs make the following argument in their brief:

[T]he district court's finding that "[t]he last 'coast' data block on the Aircraft was seen at 2:21:42 p.m., approximately 45 seconds prior to the crash," also undercuts the court's conclusion that it would have been impossible for Santiago to have complied with § 5-5-9. . . . Based upon any reasonable view of the evidence, Controller Santiago had sufficient information and time to issue a separation instruction to the Aircraft, as required by § 5-5-9. This analysis is also consistent with the testimony of the government's piloting expert who testified that Mr. Wojciechowicz, the pilot, could have climbed the Aircraft out of its predicament at a point as late as 17 or 18 seconds prior to impact.

Although the plaintiffs' timing discussion focused primarily on the contention that Santiago needed to contact the plane before it reached the three-mile minimum distance from obstructions, the underlying theory is the same whether the focus is the three-mile

In the business of air traffic control, however, split seconds matter, and the stakes are enormous. If Santiago had fulfilled his duty under ¶ 5-5-9 of the ATCM - to "separate [the] aircraft from [the] prominent obstruction[] depicted on the radar scope" - this accident may have been avoided.²⁶

The majority observes in a footnote that there was no evidence presented that Santiago could have reached the plane by radio if he had tried earlier. To the contrary, Santiago and Wojciechowicz had been communicating by radio, showing that the radio was functioning properly. There is no basis for concluding that the radio would have suddenly failed before the plane crashed.

Nor is there any reason to think that Santiago could not have guided the change of course within the 17 or 18 seconds the expert estimated would ordinarily be necessary. The record shows that, despite the lack of radar contact, Santiago had some awareness of the airplane's location. After the crash, he directed

minimum or separation from the mountain itself - i.e., that Santiago had a duty to act before it was too late.

²⁶ I do not suggest that the government bore full, or even substantial, responsibility for the crash. Under Puerto Rico law, where the relative fault of the plaintiff and defendant is taken into account, a factfinder properly could have concluded that the government was responsible for only a small percentage of the damages. See, e.g., Campos Viuda de Courtois, 778 F. Supp. at 590 ("[I]f both the plaintiff and defendant are at fault, the plaintiff can still recover, but his recovery is limited to the proportion of damages sustained by the plaintiff that were proximately caused by the defendant's negligence."); P.R. Laws Ann. tit. 31, § 5141 ("Concurrent imprudence of the party aggrieved does not exempt from liability, but entails a reduction of the indemnity.").

numerous planes and police helicopters directly to the crash site, at one point stating that "once you get close to the area I'll give you a point out." Therefore, regardless of the pilot's own disorientation, Santiago had sufficient knowledge of the plane's whereabouts to accomplish the required separation.

V.

The tragic result in this case might have been avoided if the government had performed its duty under ¶ 5-5-9 to maintain a three-mile separation between Wojciechowicz's plane and El Yunque. The plain language of the provision extends the duty to separate aircraft from obstructions to IFR and VFR flights alike, and that duty does not terminate when radar contact is lost unexpectedly. Indeed, even under VFR conditions, the unexplained loss of all radar contact when a plane is heading directly toward an obstruction and nearing the three-mile safety barrier should trigger the controller's immediate concern. To fulfill his duty under ¶ 5-5-9, the controller had to act quickly to contact Wojciechowicz so that, if necessary, he could guide the pilot in separating the plane from El Yunque. In the circumstances here, Santiago's 43-second delay before attempting such contact was unreasonable.

In concluding that the district court committed no clear error in evaluating the facts, the majority misconstrues the law and the principle of concurrent duty. The government has

undertaken to act as a safeguard to potential pilot negligence, and when it performs that function negligently, its actions cannot be insulated from review because of the pilot's errors. Sadly, it takes only a few seconds of inattention on the part of an air traffic controller for tragedy to strike. I would reverse and remand with instructions that the district court apportion responsibility for the tragedy between the pilot and the controller under Puerto Rico's tort law.