2023 Middle School Mock Trial

Civil Case

COURT OF COMMON PLEAS
SEVENTEENTH JUDICIAL CIRCUIT
COUNTY OF TAYLOR
STATE OF SOUTH CAROLINA

	)	
State of South Carolina	)	
County of Taylor	)	
	)	
Jo Harrelson,	)	**Civil Action No.**
as Personal Representative on	)	
behalf of the Estate of Bryce	)	
Harrelson,	)	**2023–CP–17–1055**
Plaintiff,	)	
vs.	)	
Forrester Flight Company,	)	
A North Carolina Company	)	
Defendant.	)	

NOTE: All characters, names, events, places, and circumstances in this Mock Trial case are fictitious.

A PROJECT OF THE
SOUTH CAROLINA BAR
LAW RELATED EDUCATION COMMITTEE
AND THE MOCK TRIAL SUB-COMMITTEE

2023/24 SC BAR PRESIDENT
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Mock Trial is made possible with the support of the South Carolina Bar Foundation's IOLTA grant and the South Carolina Bar.

This case was adopted and adapted with permission from the Virginia Law Related Education Institute.

MIDDLE SCHOOL MOCK TRIAL PAST STATE CHAMPIONS

2002 – Sneed Middle
2003 – Myrtle Beach Middle ..... (Coastal Region)
2003 – Lady's Island Middle .....(Midlands Region)
2003 – Riverside Middle …….. (Piedmont Region)
2004 – Johnsonville Middle
2005 – Johnsonville Middle
2006 – Hand Middle
2007 – Springfield Middle
2008 – Springfield Middle
2009 – Forestbrook Middle
2010 – Forestbrook Middle
2011 – Johnsonville Middle
2012 – Forestbrook Middle
2013 – Forestbrook Middle ……. (BOC Champions)
2014 – Forestbrook Middle ..... (BOC Champions)
2015 – n/a – no state competition
2016 – Moultrie Middle
2017 – Fort Mill Middle
2018 – Heathwood Hall Episcopal
2019 – Buist Academy
2020 – N/A – No State Competition
2021 – N/A – No State Competition
2022 – JET Middle

2022 State Winner – JET Middle School

HIGH SCHOOL MOCK TRIAL PAST STATE CHAMPIONS

1982 – Dreher High
1983 – Conway High
1984 – Strom Thurmond High
1985 – Strom Thurmond High
1986 – Myrtle Beach High
1987 – Strom Thurmond High
1988 – Socastee High (Nat'l Champs)
1989 – Berkeley High
1990 – Irmo High
1991 – Berkeley High
1992 – Irmo High
1993 – Berkeley High
1994 – Middleton High
1995 – Bob Jones Academy
1996 – Socastee High
1997 – Socastee High
1998 – Socastee High
1999 – Socastee High
2000 – Berkeley High
2001 – Bob Jones Academy
2002 – Berkeley High
2003 – Bob Jones Academy
2004 – Bob Jones Academy (Nat'l Champs)
2005 – Berkeley High
2006 – Berkeley High
2007 – Fort Mill High
2008 – Berkeley High
2009 – Fort Mill High
2010 – Bob Jones Academy
2011 – North Myrtle Beach High
2012 – Strom Thurmond High
2013 – North Myrtle Beach High
2014 – North Myrtle Beach High (2nd Nat'l)
2015 – Strom Thurmond High
2016 – Fort Mill High
2017 – Strom Thurmond High
2018 – Heathwood Hall Episcopal School
2019 – Strom Thurmond High
2020 – Strom Thurmond High
2021 – Bob Jones Academy
2022 – Strom Thurmond High
2023 – Bob Jones Academy

2023 State High School Mock Trial Champions

Bob Jones Academy

PROFESSIONALISM AND CIVILITY AWARD WINNERS
MIDDLE SCHOOL

The first Professionalism and Civility Awards were presented to one Middle School and High School team at their state competition. The competing teams nominated a team that demonstrated the following qualities inside and outside the courtroom:

- Professional demeanor
- Civility
- Integrity
- Honesty
- Fair play
- Respect for the competition
- Respect for fellow competitors
- Respect for volunteers and all associated with the program inside and outside the courtroom throughout the competition
- Respect for courthouse staff and facilities

MIDDLE SCHOOL

2016 – Heathwood Hall Episcopal ..... (State)

2017 – Ben Lippen ..... (Regional)
2017 – Bob Jones ..... (Regional)
2017 – Longleaf..... (Regional)
2017 – Philip Simmons ..... (Regional)
2017 – Ten Oaks..... (Regional)
2017 – Buist..... (State)

2018 – Cario ..... (Regional)
2018 – Forestbrook ..... (Regional)
2018 – Heathwood Hall Episcopal... (Regional)
2018 – Leavelle McBrycepbell..... (Regional)
2018 – Pleasant Knoll ..... (Regional)
2018 – Chapin ..... (State)

2019 – Bob Jones..... (Regional)
2019 – Heathwood Hall Episcopal ..... (Regional)
2019 – St. James – Santee..... (Regional)
2019 – Ten Oaks ..... (Regional)
2019 – Chapin..... (State)

2020 – Chapin..... (Regional)

2021 – Kingstree Middle Magnet (Regional)

2022 – GREEN Charter..... (Regional)
2022 – JET Middle..... (Regional)
2022 – Whittemore Park Middle.. (Regional)
2022 – Chapin Middle..... (State)

PROFESSIONALISM AND CIVILITY AWARD WINNERS
HIGH SCHOOL

The first Professionalism and Civility Awards were presented to one Middle School and High School team at their state competition. The competing teams nominated a team that demonstrated the following qualities inside and outside the courtroom:

- Professional demeanor
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- Respect for courthouse staff and facilities

HIGH SCHOOL

2017 – Chapin ..... (State)

2018 – Dorman..... (Regional)
2018 – Gov. Sch. Science & Math... (Regional)
2018 – Indian Land..... (Regional)
2018 – Kingstree ..... (Regional)
2018 – Spring Hill ..... (Regional)
2018 – Wilson..... (State)

2019 – Charleston Sch. of Arts..... (Regional)
2019 – Fort Mill..... (Regional)
2019 – Indian Land..... (Regional)
2019 – Kingstree ..... (Regional)
2019 – Socastee ..... (Regional)
2019 – Spring Hill ..... (Regional)
2019 – Ft. Dorchester ..... (State)

2020 – Dutch Fork..... (Regional)
2020 – Heathwood Hall Episcopal... (Regional)
2020 – Kingstree ..... (Regional)
2020 – May River ..... (Regional)
2020 – Wade Hampton ..... (Regional)
2020 – Carolina Forest..... (State)

2021 – W.J. Keenan ..... (Regional)
2021 – Lexington ..... (Regional)
2021 – Ft. Dorchester ..... (Regional)
2021 – Chas. Cty. Sch. of Arts ..... (State)

2022 – Chas. Cty. Sch. of Arts .... (Regional)
2022 – Greenwood ..... (Regional)
2022 – Strom Thurmond..... (Regional)
2022 – Governor's School for Science & Mathematics..... (State)

2023 – Academic Magnet ..... (Regional)
2023 – Richland Northeast..... (Regional)
2023 – Strom Thurmond ..... (Regional)
2023 – Spring Hill..... (State)

HIGH SCHOOL MOCK TRIAL
COURTROOM ARTIST AND JOURNALIST STATE WINNERS

COURTROOM ARTIST

2011 – Jane Xu, Dreher High
2012 – Megan Greer, Montessori School of Anderson
2013 – Elissa Na, Bob Jones Academy
2014 – Ezekiel King, Wade Hampton High
2015 – Ezekiel King, Wade Hampton High
2016 – Natalie Fanello, Montessori School of Anderson
2017 – Marina Ataalla, Carolina Forest High
2018 – Ruby Dozier, Manning High
2019 – Grace Wood, NEXT High
2020 – Morela Taffe, Indian Land High
2021 – (no competition due to virtual)
2022 – (no competition due to virtual)
2023 – Mariagustina "Nina" Rodriguez, Indian Land High

COURTROOM JOURNALIST

2011 – Caylyn Bird, Spring Valley High
2012 – Kayla Fenstermaker, Bob Jones Academy
2013 – Ya Fang, Governor's School for Science and Mathematics
2014 – Ana Kate Barker, Bob Jones Academy
2015 – Jacqueline Tobin, Gov School for Science and Mathematics
2016 – Kristal L. Herrin, Strom Thurmond High
2017 – Rachel Black, York Preparatory Academy
2018 – Maggie May, Dorman High
2019 – Rachel Black, York Preparatory Academy
2020 – Ariel Burrow, Dorman High
2021 – (no competition due to virtual)
2022 – (no competition due to virtual)
2023 – Jacob Mijalli, Scholar's Academy

Samples of previous sketch entries can be viewed online. (click here)

Sample Entry by Morella Taffe (Indian Land High School)

INTRODUCTION TO THE MOCK TRIAL COMPETITION

The Mock Trial program is sponsored by the South Carolina Bar Law Related Education (LRE) Division. South Carolina public schools, private schools, and homeschooled students throughout the state are invited to participate in this competitive program in one of two categories: middle school or high school. Each participating school enters a team ideally composed of 16 or more students (and a minimum of 6 students middle school and 7 students high school) and requires a teacher coach sponsor. The SC Bar LRE Division assists in locating attorney coaches to help teams prepare for the competition and provides the team with the Case Materials, the Competition Handbook, and other competition materials on the LRE website at www.scbar.org/lre.

The Mock Trial competitions are divided into regional competitions with a culminating state competition at both the middle and high school levels. A total of twelve teams advance from regional competitions to participate in their respective state competitions using the same case. A state competition takes place if 20 or more teams participate in the regional competitions. For high school, the state champion represents South Carolina in the National High School Mock Trial competition using a new national case.

Teams are officially assigned to a region after the drop date assigned for each level. Once a team is assigned to a region, the team cannot switch regions without the approval of the State Mock Trial Coordinator. *(Regions are subject to be split based on courthouse capacity.)*

Competition Schedule for Middle and High Schools:

Middle School Mock Trial Competition Schedule

- Regionals ..... Saturday, October 28, 2023
- State ..... Friday and Saturday, December 1 - 2, 2023

High School Mock Trial Competition Schedule

- Regionals ..... Saturday, February 24, 2024
- State ..... Friday and Saturday, March 8 - 9, 2024
- HS Nationals (hosted in Wilmington, Delaware) ..... May 2 - 4, 2024

GOALS

The goals of this program are, first and foremost, to educate South Carolina students about the basis of our American judicial system and the mechanics of litigation. The program also serves to build bridges of cooperation, respect, and support between the community and the legal profession. Through participation in the Mock Trial program; students increase important skills such as listening, speaking, writing, reading, and analyzing. All participants are encouraged to keep in mind that the goal of the Mock Trial program is not to win for the sake of winning, but to learn and understand the meaning of good citizenship in a democratic republic through participation in our system of law and justice. All who participate in the Mock Trial program are winners in this sense.

Students – Your participation in Mock Trial will allow you to experience what it is like to prepare for and present a case before a presiding judge and scoring judges. Working with your team and coaches in a safe and fun learning environment provided by your school, you will learn to evaluate information and to respond quickly. As you prepare, you will sharpen your public speaking and presentation skills. The greatest benefit is the opportunity to learn how the legal system works. By studying and understanding courtroom procedure, you should become more comfortable with federal and state laws as part of the legal system. Your interaction with some of South Carolina's finest attorneys and judges in a professional setting will give you a glimpse of the different interpretations of trial procedures and the different litigation styles of individual members in the legal arena.

Teacher Coaches, Attorney Coaches, and/or Judges – We strongly encourage you to focus on the goal of student participation rather than placing an emphasis on winning while preparing for the competition. Your contribution of time and talent make many experiential educational opportunities available annually to South Carolina students. Your participation is a key element to the success of this program. You can be proud of the impact you will make on the lives of these students. All coaches, teacher, and attorney, should obtain and follow their school's policy on adult/children interaction for in-person and virtual interaction. An attorney is a volunteer for the school and not the SC Bar.

CASE RELEASE INFORMATION

The case is available on the Internet in the LRE section of the South Carolina Bar's Web site, located at www.scbar.org/lre and by clicking on either the Middle or High School Mock Trial section. The new Case Materials will be released August 8, 2023, no later than 5 p.m.

DISCUSSION FORUM

The Mock Trial Discussion Forum is a place to post questions concerning the content of the Case Materials, the Competition Rules, and the competition. The Discussion Forum is located on the LRE website.

Click Here for Discussion Forum

The links above take you to a registration page for the Discussion Forum. It can take up to 48 hours to gain access to the Discussion Forum once registered. The Discussion Forum should be checked often for postings. Responses posted to the questions could change Competition Rules, the Case Materials, and/or the competition specifics that will apply on competition day. The Discussion Forum closes ten business days prior to a competition.

HAVE MOCK TRIAL QUESTIONS?

Attorney Coach Needed ..... Donald N. Lanier
Case ..... Ask on Forum Discussion
Competition ..... Ask on Forum Discussion or Contact Donald N. Lanier
Concerns ..... Donald N. Lanier
Credit Card Payment Portal ..... Online Here
Downloading Materials ..... Donald N. Lanier
Forms ..... Marian Kirk
Forum Registration ..... Donald N. Lanier
General Questions ..... Donald N. Lanier
Purchase Orders ..... Marian Kirk
Registration ..... Marian Kirk
Training ..... Marian Kirk
Webinar Registration ..... Donald N. Lanier

LAW RELATED EDUCATION DIVISION ..... (803) 252-5139

Donald N. Lanier, LRE Interim Director ..... dlanier@scbar.org
Marian Kirk, LRE Coordinator II ..... mkirk@scbar.org

2023/24

Mock Trial Case

2023 Middle School Mock Trial Case:

INTRODUCTION

It is possible to fly without motors, but not without knowledge and skill.
- Wilbur Wright

Modern airliners are a marvel of engineering. On an average day over a million people fly across the globe in over 9,500 aircraft.[1] And they do it safely. In fact, flying is statistically the safest mode of transportation in the United States and abroad.[2]

But accidents occur, and the crash of Cardinal Airlines Flight X1027 from Greenville-Spartanburg International Airport haunts the grieving spouse of the pilot flying that day. But what caused the pilot's Forrester Flight Company FFC 500 Super to crash? Was pilot error to blame? Or was it the airliner itself?

The introduction is background material for informational purposes only.
It is not to be considered part of the case materials.

Note to Coaches:

This case is very similar for middle school and high school this year, but different at the same time. The difference is each level has two different witnesses.
If working with both teams, please download each case separately.

[1] https://www.travelandleisure.com/airlines-airports/number-of-planes-in-air.
[2] https://www.tripsavvy.com/the-safest-mode-of-transportation-4082220.

PLEADINGS

COMPLAINT

(A Complaint is the document the Plaintiff files with the court to start a lawsuit. It contains the Plaintiff's version of the facts of the case. The Plaintiff must prove the facts in the case. It is up to the jury to decide the facts.)

AND

ANSWER

(An Answer is the document the Defendant files in response to the Complaint. The Defendant must address each of the points in the Complaint and give his/her version of the facts.)

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson,	)	
as Personal Representative of the Estate	)	
of Bryce Harrelson,	)	
	)	
Plaintiff,	)	COMPLAINT
vs.	)	(NEGLIGENCE, WRONGFUL DEATH &
	)	SURVIVORSHIP)
Forrester Flight Company,	)	
a North Carolina Corporation	)	
Defendant.	)	JURY TRIAL REQUESTED
	)	

Comes now the Plaintiff, Jo Harrelson (hereinafter "Plaintiff"), as Personal Representative of the Estate of Bryce Harrelson, and states as follows:

1. Plaintiff is the spouse and duly qualified, appointed, and acting personal representative of the Estate of Bryce Harrelson, (hereinafter "Decedent").
2. Decedent was a resident of Piedmont Lakes in Taylor County, South Carolina.
3. On information and belief, Forrester Flight Company, LLC (hereinafter "Defendant") is a corporation established in Mecklenburg County, North Carolina.
4. On April 16, 2021, Decedent was the pilot of a Forrester Flight Company FFC 500 Super passenger jet which crashed shortly after take-off, killing all aboard.

FOR A FIRST CAUSE OF ACTION

(Negligence)

5. Plaintiff hereby adopts and incorporates by reference paragraphs 1 through 5.
6. Defendant was responsible for and had the duty to repair and maintain the FFC 500 Super passenger jet, including all hardware, electronics, and software.
7. Defendant breached its duty to Plaintiff by negligently, recklessly, and intentionally:
   a. Failing to implement landing and take-off software free of glitches;
   b. Failing to patch glitches in take-off and landing software;
   c. Failing to properly inform pilots of the danger of take-off and landing software; and
   d. Failing to communicate reasonable safety overrides.
8. As a direct result of Defendants failure to properly maintain software components of the aircraft, Plaintiff's Decedent suffered injuries and death in one or more of the following particulars:
   a. Severe bodily injuries;
   b. Conscious pain and suffering; and
   c. Funeral expenses.
9. All of which were the direct and proximate cause of the injuries and damages suffered by

Decedent, for which Plaintiff is entitled to relief in the form of a judgment against Defendant in an amount to be determined by the jury.

FOR A SECOND CAUSE OF ACTION

(Wrongful Death)

10. Plaintiff hereby adopts and incorporates by reference paragraphs 1 through 9.
11. Defendant was required to protect all users of the equipment from foreseeable harm.
12. Defendant breached its duty, which lead to the death of Decedent.
13. By reason of Decedent's death, Plaintiff, by and through the Personal Representative, Jo Harrelson, has been deprived of all benefits of society and companionship and experienced great mental shock and suffering. Plaintiff has suffered, and will continue to suffer, damages that are natural and proximate consequence of the wrongful acts of Defendant, including:

    a. Financial loss;
    b. Mental shock and suffering;
    c. Wounded feelings;
    d. Grief and sorrow;
    e. Loss of companionship; and
    f. Deprivation of use and comfort of Decedent's society.

14. The amount and extent of Plaintiff's damages will be determined by the jury.
15. Plaintiff is further informed and believes that because of Defendant's grossly negligent and willful conduct, Plaintiff is also entitled to a judgment for punitive damages in an amount to be determined by the jury in accordance with the law and evidence presented.

FOR A THIRD CAUSE OF ACTION

(Survival Action)

16. Plaintiff hereby adopts and incorporates by reference paragraphs 1 through 15.
17. Defendant built the aircraft and implemented the software system used by Decedent leading to the death.
18. Defendant owed a duty to Decedent to maintain the systems in a glitch-free condition.
19. As a direct and proximate result of the negligence, carelessness, willfulness, wantonness, and recklessness by Defendant as set forth above, Decedent sustained injuries including:
    a. Medical, surgical, and hospital bills;
    b. Conscious pain and suffering; and
    c. Mental distress suffered at the injury up to Decedent's untimely and premature death.
20. The amount and extent of the Plaintiff's damages will be determined by the jury.
21. Plaintiff prays for judgment against Defendant for actual damages in an amount as determined by the jury; damages for pain, suffering, and premature death, punitive damages; and, for any other relief as the Court deems just and proper.

Sanders and Associates, PA

Sara R. Sanders

Sara Renee Sanders
S.C. Bar Number: 123A456C
Attorney for the Plaintiff
Post Office Box 3423
Piedmont Lakes, S.C. 29200

July 30, 2021

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson,	)	
as Personal Representative of the Estate	)	
of Bryce Harrelson,	)	
	)	
Plaintiff,	)	ANSWER
vs.	)	
	)	
Forrester Flight Company,	)	JURY TRIAL REQUESTED
a North Carolina Corporation	)	
Defendant.	)	

Now comes Defendant, Forrester Flight Company, LLC, responding to the allegations of Plaintiff's complaint as follows:

FOR A FIRST DEFENSE

1. Each and every allegation in the Complaint, unless specifically admitted, modified, or explained is expressly denied.
2. Upon information and belief, Defendant admits the allegations of Paragraphs 1 and 2.
3. Defendant admits the allegations of Paragraph 3.
4. In response to Paragraph 4, Defendant admits only that Decedent operated the Forrester FFC 500 Super on April 16, 2021, Defendant denies all other allegations of paragraph 4.
5. Paragraph 5 does not contain allegations or assertions, and therefore, requires no reply.
6. Defendant admits so much of Paragraph 6 that alleges that Defendant was the manufacturer of the FFC 500 Super passenger jet but denies all other allegations of Paragraph 6.
7. Defendant denies the allegations of Paragraph 7, including sub-parts (a) through (d).
8. Defendant denies any allegations of carelessness and recklessness contained in Paragraph 8, including sub-parts (a) through (c).
9. Defendant denies the allegations contained in Paragraph 9.
10. Paragraph 10, does not contain allegations or assertions, and therefore, requires no reply.
11. In response to Paragraph 11, Defendant asserts that its duties are established by law.
12. Defendant denies the allegations of Paragraph 12.
13. Defendant denies the allegations in Paragraph 13, including sub-parts (a) through (f).
14. Defendant denies the allegations of Paragraph 14.
15. Defendant denies the allegations of Paragraph 15.
16. Paragraph 16 does not contain allegations or assertions, and therefore, requires no reply.
17. In response to Paragraph 17, Defendant admits only that it built and implemented the software used by Decedent, and denies the remaining allegations in Paragraph 17.
18. Defendant denies the allegations of Paragraph 18, and demands strict proof thereof.

19. Defendant denies the allegations contained in Paragraph 19, including the sub-parts (a) through (c).
20. Defendant denies the allegations of Paragraph 20.
21. Defendant denies Plaintiff is entitled to the requested relief in Paragraph 21.

FOR A SECOND DEFENSE

(Sole Negligence of the Plaintiff)

22. Defendant alleges that any injuries or damages sustained by Decedent were due to the negligence of Decedent. Defendant pleads the sole negligence and sole recklessness of the Decedent as a complete bar to this action.

FOR A THIRD DEFENSE

(Comparative Negligence – More than 50%)

23. Defendant alleges that any injury or damage sustained by Decedent was caused by the negligence or willfulness of Decedent combining, concurring, and contributing with the negligence or willfulness, if any, on the part of the Defendant. Because Decedent's negligence or willfulness was greater than the alleged negligence or willfulness of Defendant, Plaintiff is barred from recovery against Defendant.

FOR A FOURTH DEFENSE

(Comparative Negligence – Less than 50%)

24. Defendant alleges any injury damages sustained by Decedent were caused by the negligence or willfulness of Decedent combining, concurring, and contributing with the negligence or willfulness, if any, on the part of Defendant. Therefore, any recovery awarded to Plaintiff should be reduced based upon the percentage of negligence or willfulness attributed to Decedent.

WHEREFORE, having fully answered Plaintiff's Complaint, Defendant prays that the Complaint be dismissed with costs awarded to Defendant and for any other relief as the Court may deem just and proper.

Defendant demands a jury trial.

Mitchell and McAbee, LLC

Allison Mitchell

Allison Mitchell
S.C. Bar Number: 547G621F
Attorney for the Defendant
Post Office Box 5143
Piedmont Lakes, S.C. 29200

August 18, 2021

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson,	)	
as Personal Representative of the Estate	)	
of Bryce Harrelson,	)	
	)	
Plaintiff,	)	
vs.	)	
	)	**STIPULATIONS**
	)	
Forrester Flight Company,	)	
a North Carolina Corporation	)	
Defendant.	)	

The parties agree and stipulate to the following:

1. This case is governed by the laws of the state of South Carolina.
2. This case has been remanded from federal court and will only be heard in South Carolina.
3. The parties acknowledge that specific claims against Cardinal Airlines are being addressed in a separate action and, therefore, Cardinal Airlines is not a party to the current action.
4. There are no defects in the pleadings. The Defendant has properly appeared and answered. The Court has jurisdiction over the parties. All questions of fact are being submitted to the jury. Questions of law will be decided by the Court. No law may be argued other than what is contained in the Jury Charges in the case materials.[1]
5. This case has been bifurcated (separated). The only matter to be decided in this trial is liability. Damages, if any, will be decided at a later proceeding. *[i.e. not part of Mock Trial]*
6. All exhibits included in the case materials are authentic and accurate copies of the originals. No objections to the authenticity of the exhibits will be entertained. Both parties retain the right to make objections to the exhibits other than to an exhibit's authenticity. The only exhibits to be used at the trial are those included in the case materials provided by the South Carolina Bar.
7. The signatures on the witness statements and all other documents are authentic and the statements were signed under oath by each witness.
8. No witness may be examined or cross-examined as to the contents of anything not included in the case materials. This includes, but is not limited to, information found

[1] This means no additional legal research may be presented at the Mock Trial proceedings.

on the Internet, social media, books, magazines, and/or other publications.

9. The charge of the Court is accurate in all respects and no objections to the charge will be entertained.
10. Witnesses who reference an exhibit in their affidavits are familiar with the contents of the entire referenced exhibit.
11. Costa Jackson and Jaden Holley are not available as witnesses. References about them in other affidavits are not in question and are factually correct.

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson, as Personal Representative of the Estate of Bryce Harrelson, Plaintiff, vs.	)	
Forrester Flight Company, a North Carolina Corporation Defendant.	)	**JURY INSTRUCTIONS**

Note:

Jury instructions are NOT to be read to the jury on the day of the Mock Trial Competition.

The following jury instructions have been approved by the Court.

A. Bifurcated Trial

The parties agree the only issue to be decided is liability. If liability is found, the parties agree to have a separate hearing to decide damages. This means you will decide only the liability in this trial and you are not to consider the amount awarded, if any.

B. The Jury: Finders of the Facts

Under our Constitution and Code of Laws, only you-the jury-can make the findings of fact in this case. I am not permitted to tell you how I feel about the evidence presented. And, throughout this trial, I have intended to be fair and impartial toward each of the parties involved.

To determine the facts in this case, you will have to evaluate the credibility-or believability-of the witnesses. You are the sole judges of the credibility of the witnesses. In considering their credibility, you may take into consideration many things, such as:

1. Your impression of the appearance and manner of the witness on the stand, sometimes referred to as the demeanor of the witness.
2. Was the witness forthright or hesitant?
3. Was the witness's testimony consistent or did it contain discrepancies?

4. How did the witness come to know the facts about which he or she testified?
5. Did the witness have a cause or a reason to be biased and prejudiced in favor of the testimony he or she gave?
6. Was the testimony of the witness corroborated or made stronger by other testimony and evidence or was it made weaker or impeached by such testimony and evidence?

You can believe as much or little of each witness's testimony as you think proper. You may believe the testimony of a single witness against that of many witnesses- or just the opposite.

Of course, you do not determine your verdict merely by counting the number of witnesses presented by each side.

C. Expert Testimony

You have also heard the testimony of witnesses who have special knowledge, skill, experience, training, or education in the field of a particular profession or occupation who gave their opinions as experts about matters in which they are skilled. In determining the weight to be given such an opinion, you should consider the qualifications and credibility of the experts and the reasons given for their opinions. You are not bound by such opinions. Give them the weight, if any, to which you deem them to be entitled.

D. Circumstantial Evidence

There are two types of evidence generally presented during a trial-direct evidence and circumstantial evidence. Direct evidence is the testimony of a person who asserts or claims to have actual knowledge of a fact, such as an eyewitness. Circumstantial evidence is proof of a chain of facts and circumstances indicating the existence of a fact in issue. The law makes absolutely no distinction between the weight or value to be given to either direct or circumstantial evidence. Nor is a greater degree of certainty required of circumstantial evidence than of direct evidence.

You should weigh all the evidence in the case when arriving at a verdict.

E. The Judge: Instructor of the Law

The same constitution and laws that make you the finders of the facts also make me the instructor of the law. You must accept the law as I give it to you. If I am wrong, there is another place and time for that error to be corrected. But for now, you must accept the law as I give it to you-I caution you that it does not mean what you think the law should be, but what I tell you it is. *[For Mock Trial, there is no appeal.]*

F. Elements of a Cause of Action

To state a cause of action against a Defendant, the law requires a Plaintiff to set out in the Complaint the essential claims that make up the Cause of Action. The causes of action in this Complaint are Negligence, Wrongful Death, and Survivorship. In the Complaint, the Plaintiff in this action has set forth the essential elements of each cause of action, each of which is denied by the Defendant.

G. Defenses

In its Answer to the Plaintiff's Complaint, the Defendant has set forth various defenses.

The Defendant admits the truthfulness of certain claims-such as date of the occurrence-but denies each and every claim that would make Defendant responsible for the Plaintiff's injuries.

By doing this, the Defendant placed upon the Plaintiff the burden of proving those necessary elements.

In addition to this general defense, the Defendant put forth affirmative defenses to the particular Causes of Action. The burden is on the Defendant to prove those affirmative defenses.

H. Burden of Proof

Plaintiff has the burden of proof. Plaintiff must meet this burden by proving the claims by the preponderance-or the greater weight-of the evidence. So, what do we mean by the greater weight of the evidence? Simply this, imagine a traditional set of scales. When the case begins, the scales are even. After all the evidence has been presented, if the scales should remain even or if they should tip – ever so slightly – in favor of the Defendant, then the Plaintiff will have failed to meet the burden of proof, and your verdict should be for the Defendant.

If, on the other hand, those scales tip-no matter how slightly-in favor of the Plaintiff, then the Plaintiff will have met the burden of proof, and your verdict would be for the Plaintiff.

The Defendant has the burden to prove its affirmative defenses by the preponderance of the evidence.

Of course, there is no way to weigh evidence, except through the exercise of your good common sense and judgment. It is entirely a mental process. The evidence you should give the most weight to is that which convinces you of its truth, regardless of the source from which it comes.

I. Impartial Jury

You have been sworn to give both parties in this case a fair and impartial trial. When you have done so, you will have complied with your oath and no one will have a right to criticize your verdict. You must not be influenced by opinions or expressions of opinion you might have heard outside of this courtroom, but must base your verdict only on the testimony of the sworn witnesses who took the stand, along with the other evidence introduced during the trial.

You must not be swayed by caprice, passion, prejudice, or improper sympathy for or against either party in this case. Remember, you have no friends to reward or enemies to punish. Both parties are entitled to a fair and impartial trial at your hands.

J. Negligence

This is an action in which the Plaintiff claims to have suffered injuries to his/her person for which the Defendant is responsible in damages.

There are three essential elements of the Plaintiff's cause of action. They are denied by the Defendant's answer. Since the Plaintiff has initiated and brought this lawsuit against the Defendant, the burden of proof is upon the Plaintiff to establish all three by the greater weight or preponderance of the evidence:

(1) That the Defendant was negligent or careless and/or reckless, willful or wanton, in one or more of the particulars of wrongful conduct alleged in the complaint;
(2) That the Plaintiff was injured or damaged on his/her person or property or both;
(3) That the Defendant's negligence or carelessness and/or recklessness, willfulness, and wantonness, in one or more of the particulars as alleged in the complaint, was the proximate cause of the Plaintiff's injuries.

What is negligence? Negligence is defined in the law as the absence of due (or ordinary) care. The word carelessness conveys the same idea as negligence. Negligence is the breach of a duty of care owed to the Plaintiff by the Defendant. Negligence is the failure, by omission or commission, to exercise due care as a person of ordinary reason and prudence would exercise in the same circumstances. It is the doing of some act that a person of ordinary prudence would not have done under similar circumstances or failure to do what a person of ordinary prudence would have done under similar circumstances.

In determining whether a particular act is negligent, the test you apply is what would a person of ordinary reason and prudence do under those circumstances at that time and place.

It is the Plaintiff's responsibility to prove the Defendant was negligent in one or more of the particulars as alleged in the Complaint. It is not required that the Plaintiff prove them all, but it is absolutely essential that the Plaintiff prove at least one. Otherwise, you would be required to find a verdict for the Defendant.

Negligence is a fact that, like any other fact in the case, must be proved. The mere happening of an accident, or the filing of a complaint, or the fact that damages have been sustained, raises no presumption of negligence. A surmise or conjecture (an opinion without evidence) that the Defendant was negligent is not evidence thereof. The bare fact that an innocent party sustained injury or damage does not place any responsibility on another party unless you find that there was some act of negligence on the part of that party that caused the injury or damage.

If you find the Plaintiff proved the Defendant was negligent (and/or reckless, willful, and wanton), then your next inquiry would be whether the Plaintiff proved such negligence was the proximate cause of the injury or damage. Negligence is not actionable unless it proximately causes the Plaintiff's injuries. A Plaintiff may only recover for injuries proximately caused by the Defendant's negligence.

Even if you should find the Plaintiff proved the Defendant was negligent (or reckless, willful, and wanton), but failed to prove such negligence (or recklessness, willfulness, and wantonness) was a proximate cause of the injury, the Plaintiff would have failed to make out his/her case and you would be required to find for the Defendant. However, if the Plaintiff proved these two propositions, then it would be necessary for him/her to prove his/her damages.

K. Negligence – Proximate Cause

Negligence is not actionable unless it proximately caused the Plaintiff's injuries. Proximate cause is the efficient or direct cause of an injury.

Proximate cause requires proof of both causation in fact and legal cause. Causation-in-fact is proved by establishing the Plaintiff's injury would not have occurred "but for" the Defendant's negligence. Legal cause is proven by establishing foreseeability.

The touchstone of proximate cause in South Carolina is foreseeability. That is, foreseeability of some injury from a negligent act or omission is a prerequisite to its being a proximate cause of the injury for which recovery is sought. The test of foreseeability is whether some injury to another is the natural and probable consequence of the complained of act. The Defendant may be held liable for anything that appears to have been a natural and probable consequence of his/her negligence.

Foreseeability is not determined from hindsight, but rather from the Defendant's perspective at the time of the incident.

The law requires only reasonable foresight. When the injury complained of is not reasonably foreseeable in the exercise of due care, there is no liability. It is not necessary for the Plaintiff to demonstrate the Defendant should have foreseen the particular event that occurred but merely that the Defendant should have foreseen his or her negligence would probably cause injury to someone. Negligent conduct is the proximate cause of injury if that injury is within the scope of the foreseeable risks of the negligence.

While it is not necessary that the Defendant must have contemplated or could have anticipated the particular event which occurred, liability cannot rest on mere possibilities. The Defendant cannot be charged for that which is unpredictable or that which could not be expected to happen. The Plaintiff, therefore, proves legal cause by establishing the injury in question occurred as a natural and probable consequence of the Defendant's negligence. In determining whether a consequence is natural and probable, the Defendant's conduct must be viewed in the light of the attendant circumstances.

Proximate cause does not mean the sole cause. The Defendant's conduct can be a proximate cause if it was at least one of the direct, concurring causes of the injury.

The law defines proximate cause of an injury to be something that produces a natural chain of events which, in the end, brings about the injury. In other words, proximate cause is the direct cause, without which the injury would not have occurred. If the accident would have happened as a natural and probable consequence, even in the absence of the alleged breach, then the Plaintiff has failed to demonstrate proximate cause.

Further, where the cause of the Plaintiff's injury may be as reasonably attributed to an act for which the Defendant is not liable as to one for which the Defendant is liable, the Plaintiff has failed to carry the burden of establishing that his/her injuries were the proximate result of the Defendant's negligence.

L. Wrongful Death

A wrongful death claim must be brought and initiated by the personal representative of the decedent's estate for the benefit of those the decedent's heirs.

There are three essential elements of the Plaintiff's cause of action. They are denied by the Defendant's answer. Since the Plaintiff has made these charges the foundation of his or her claimed right of damages against the Defendant, the

burden of proof is upon the Plaintiff to establish all three by the preponderance or greater weight of the evidence.

First, that the Defendant was negligent and/or reckless, willful, or wanton in one or more of those specifications of wrongful conduct as alleged in the complaint.

Second, that the decedent went to their untimely death as a consequence of that alleged wrongful conduct.

Third, that the Defendant's negligence and/or recklessness, willfulness, and wantonness, in one or more of the specifications of wrongful conduct as alleged in the complaint, was the proximate cause of the death.

Because this is a bifurcated trial, you will not decide the damages in this phase of the case. However, merely as information for this phase in the case, the damages that a plaintiff seeks in a wrongful death case may include:

(1) Pecuniary loss or economic loss, "pecuniary loss" is a loss of money, or of something by which money or something of money value may be acquired;
(2) Mental shock and suffering;
(3) Wounded feelings;
(4) Grief and sorrow;
(5) Loss of companionship;
(6) Deprivation of the use and comfort of the deceased's society, including the loss of decedent's experience, knowledge, and judgment in managing the affairs of his/her beneficiaries;
(7) Loss of Decedent's ability to earn money for the support, maintenance, care and protection of the beneficiaries; and
(8) Reasonable funeral expenses.

M. Survival Action

A survival action is brought by the representatives of the deceased person for the injuries and damages suffered after the tortious injury. The Supreme Court of South Carolina explains that any claim that could have been brought by the deceased during their life can be brought on behalf of the surviving beneficiaries. Generally, the jury applies the same negligence elements and can apply certain damages allowable in survival actions. Appropriate damages in survival actions include those for medical, surgical, and hospital bills, conscious pain, suffering, and mental distress of the deceased.

N. Concurring Causes

There may be more than one cause of harm and more than one person may be responsible for that harm. If the negligence of two or more persons combines to

cause harm, each person involved may be held responsible as if that person alone caused the injury. Causes are concurrent if the individual acts of negligence combine to cause the harm. If harm occurs through the concurrent negligence of two or more persons and would not have happened without the negligence of either person, the negligence is the proximate cause of the harm and both people are responsible.

If the acts happened one after the other but were not related to each other, they would not be concurring causes. In that case, only the person whose negligence actually caused the harm would be responsible.

O. Comparative Negligence

The Defendant claims the Plaintiff's decedent's own negligence proximately caused the Plaintiff's damages. If you find the Defendant was negligent, you must then decide whether the Plaintiff's decedent was also negligent. The Defendant must prove by a preponderance, or greater weight, of the evidence that the Plaintiff's decedent breached a duty of care and that breach proximately caused the Plaintiff's damages. The same law I told you to use in deciding whether the Defendant was negligent should be used in deciding whether the Plaintiff's decedent also was negligent.

If you find the negligence of both the Plaintiff's decedent and the Defendant proximately caused the Plaintiff's damages, you must then decide how much the Plaintiff's negligence contributed to the Plaintiff's damages and how much the Defendant's negligence contributed to the Plaintiff's damages. In deciding the percentages of negligence of the Plaintiff and the Defendant, you may consider, among other things, the following factors:

1. Whether each party's conduct was only inadvertent or whether it was engaged in with an awareness of the danger involved;
2. The magnitude of the risk created by each party's conduct, including the number of persons endangered and the possible severity of the harm;
3. The significance of the goal that each party was trying to reach and the need to achieve the goal in that manner;
4. Each party's capabilities and abilities to realize and eliminate the risk involved;
5. The particular circumstances confronting each party at the time the conduct occurred, such as the existence of an emergency requiring a quick decision;
6. The relative closeness of the causal relationship of the negligent conduct of the Defendant and the harm to the Plaintiff; and
7. Whether the conduct of either party involved a violation of a safety statute or regulation.

P. Verdict Form

Now, your possible verdicts in this case will be as those outlined in the jury verdict form. On each of these questions, your decision must be unanimous-that is, it must be agreed to by all of you.

Again, since the trial of this case has been bifurcated, you, the jury, are only asked at this time to render a verdict regarding the liability alleged in this case. You are asked to fill out the verdict form completely. Do not deliberate or concern yourself about the amount of damages that may be awarded as the damages question will be addressed separately, later.

Q. Verdict

The foreperson will preside over the deliberations of the jury. When you have reached a verdict, you may knock on the door and we will take the verdict. Of course, if you have any questions before that, also knock on the door and we will take your questions-whether verbally or in writing.

Please retire now to the jury room; however, do not begin deliberations until you are instructed to do so. There are some matters I must first take up with the attorneys.

IT IS SO ORDERED, this day of this round of the Mock Trial competition.

/s/ Presiding Judge

The Honorable Presiding Judge

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson, as Personal Representative on Behalf of the estate of Bryce Harrelson.	)	
Plaintiff, vs.	)	
Forrester Flight Company, a North Carolina Corporation Defendant.	)	**JURY VERDICT FORM (1 of 2)**

We, the jury, unanimously find-

1-A. Did the Plaintiff prove by a preponderance of the evidence that the Defendant breached its duty of care?

YES NO

If you answered NO; please stop your deliberations, sign the Jury Verdict Form, and notify the bailiff.

If you answered YES, proceed to Question 1-B.

1-B. Was the Defendant's negligence the proximate cause of the Plaintiff's decedent's injuries and death?

YES NO

If you answered NO; please stop your deliberations, sign the Jury Verdict Form, and notify the bailiff.

If you answered YES, proceed to Question 2.

2. Did the Defendant prove by a preponderance of the evidence that the Plaintiff's decedent was negligent (comparatively negligent) and that this negligence was the proximate cause of the injuries and death?

YES NO

If you answered NO; please stop your deliberations on this point and go to Question 4. If you answered YES, proceed to Question 3.

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	
COUNTY OF TAYLOR	)	Case No. 2023–CP–17–1055
	)	
Jo Harrelson,	)	
as Personal Representative on Behalf	)	
of the estate of Bryce Harrelson.	)	
	)	
Plaintiff,	)	
vs.	)	
	)	
Forrester Flight Company,	)	**JURY VERDICT FORM (2 of 2)**
a North Carolina Corporation	)	
Defendant.	)	
	)	

3. **If you indicated YES to either question above, indicate the percentage of each party's negligence that proximately caused the Plaintiff's decedent's injuries. (The percentages must add up to one hundred percent.)**

Defendant's Negligence		%
Plaintiff's Decedent's Negligence		%
Total Negligence	**100**	**%**

4. **Based on a preponderance of the evidence, does the jury find that the Plaintiff's decedent suffered any conscious pain and suffering prior to the Plaintiff's decedent's death?**

YES **NO**

5. **Do you find that the Defendant acted in a willful, wanton, or reckless manner?**

YES **NO**

_____

Jury Foreperson

WITNESSES

and

AFFIDAVITS

WITNESS LIST

PLAINTIFF	
Jo Harrelson	Spouse of Deceased
Sandy Kay	Company Trainer
Fisher Street, Ph.D.	NTSB Investigator

DEFENSE	
Lake Gambell	Defendant / CEO
Shell Alonso	Co-Pilot and friend of Deceased
River Lynch, Ph.D.	Accident Expert

Affidavit of

Jo Harrelson (Plaintiff / Spouse of Deceased)

1. My name is Jo Harrelson. I am 59 years old, and a widow/er before my time. Forrester Flight Company is responsible for the death of my spouse, Bryce Harrelson. You never think you might see your spouse die a tragic death, but here we are, all because Forrester Flight Company couldn't be bothered to test one of their in-flight systems. But I am getting ahead of myself; I will start at the beginning.

2. Bryce and I met on our first day at work at Cardinal Airlines in 2001, during employee orientation. We had just been hired as pilots. We both retired from active service and happened to join Cardinal at the same time. It was a good post-service career. Bryce had trained in the Air Force and flown the A-10 Thunderbolt II. To most people, it is known as the Warthog. In the Navy, I flew the E-2C Hawkeye as a command pilot. We were known as the eye in the sky for aircraft carriers. The E-2C has a large radar rotodome on top of the plane, for electronic surveillance. It was also far larger than the A-10 aircraft Bryce flew. This gave me an initial advantage in the transition to civilian aviation. I already had over 2,000 hours of flight time in an aircraft roughly similar to the CRJ 200 from Bombardier, or the Forrester Flight Company FFC 500 Super. Both are commercial regional jets designed for small to medium airports.

3. Shortly after our first day at Cardinal, Bryce asked me out, and a year and a half later, we were married. Almost immediately after getting married, we decided I would leave Cardinal and go to work flying for another regional airline. After just two years at Cardinal Airlines, I left and went to work for Outreach Airlines. Cardinal Airlines would not have been as accommodating for married couple's schedules as they would be for one. Besides, there is no way they would allow spouses to fly together. By changing airlines, we were both able to have family-oriented flight schedules. Both airlines had wonderful parental leave for when our daughters were born. Emily was first, born in 2003, and then Ivy two years later. Bryce and I would take our girls to daycare, and then off to work. Kind of like an office job, only my office was 20,000 feet in the air. At the end of the workday, one of us would pick the girls up and head home.

4. Bryce was such a great parent. No one could have loved Emily and Ivy more than we did. Bryce made such an effort to be there for the girls as they grew older and took on more activities. Even with Bryce's seniority at Cardinal and the right to choose the best flight paths, we each chose to fly the flights that allowed us to be home for all of Emily and Ivy's activities and for dinner most nights. Most pilots like to fly routes to exotic locations like the Bahamas or Puerto Rico or Jamaica because they're great places to have a layover and recharge before flying a return flight back to the U.S. Other pilots prioritize flying a few long flights each week so they can have four or five days off at a time. Obviously, both options are great if you don't have kids, but both can be really tough if you want to be home for a dance recital or a soccer game. We both really cared about being home for Emily and Ivy, so we would fly the less fancy local commuter routes.

5. Most of the time, starting in 2016, Bryce would fly routes with Shell Alonso. Shell and Bryce were pretty much best friends. They tried to fly as many routes together as they could. We saw Shell on so many occasions outside of work, they could finish each other's sentences and everything. Honestly, it was one of the things that put my mind at ease with so many daily flights. I knew no matter what, they had each other's back. Bryce told me flying with Shell was a breeze because the two of them were in total sync with each other. If anything strange ever happened with the automatic flight equipment, they could easily fly the plane manually and make a safe landing. It is so important to have a co-pilot you can trust. With my company, you are assigned one co-pilot for long terms together, so you can build the same relationship and anticipate each other in the cockpit.

6. Most airlines have a rigorous training regime for their pilots, and Cardinal was no different in that regard, perhaps even more than Outreach Airlines. I remember we had to attend two full months of training as a Cardinal Pilot. The average for most airlines, including Outreach Airlines, is about a month. Even though Bryce had been an Air Force pilot and held an active commercial pilot's license, Cardinal required its pilots complete 50 hours in the flight simulator each year and take an annual diagnostic exam. The diagnostic exam was administered in the flight simulator. Cardinal captured the flight data for every flight irregularity occurring during Cardinal flights in the preceding year, loaded it into the flight simulator, and a pilot had

to successfully execute a safe landing for 100% of the scenarios. Bryce also had to complete training any time Cardinal rolled out a new software feature associated with the fleet's in-flight navigational or autopilot features. I couldn't say how frequently Cardinal updated the software, but I would guess training happened a couple of times a year for each type rating. It is important to know a pilot must be rated for an aircraft even after you are a certified pilot. Type-rated means you are checked out for an aircraft, because believe it or not, the controls are not always in the same place on every aircraft. Bryce stuck to flying the Forrester Flight Company FFC 500 Super because of the extra simulator time Cardinal required per aircraft. I am type-rated on the Forrester Flight Company FFC 500 Super, CRJ 200, and CRJ 900. We only have a few of the Forrester FFC 500 Super in our inventory, so I do not fly it often.

7. I know on September 27, 2019 Bryce had to take a training related to EZ-Flight, an automatic take-off and landing feature Cardinal had just installed on the fleet. I specifically remember Bryce attending the EZ-Flight training because it was a last-minute class which made Bryce late for Emily's big soccer game. Emily is very good. Every team Emily had played on since fourth grade won their championship, and college coaches were starting to take notice. In the fall of 2019, several college scouts attended Emily's games, and we began to hope she would earn a full-ride scholarship to college. There was one game in the fall of 2019 where coaches from Duke, Alabama, Notre Dame, and UVA were going to be in town to see Emily play. It was the same day as the EZ-Flight training. I know Cardinal gave late notification and made Bryce take the training immediately after landing. I think Bryce had missed four or five training dates for EZ-Flight, and this was the last training for the year. I got a text, marked as Exhibit #2, from Bryce on the way into the training to apologize for running late, saying the training was only supposed to last for 3 hours there was a chance to still be on time for the game. Bryce missed the first 20 minutes of Emily's game but told me the training was a piece of cake, kind of boring, and the exam was a joke as usual.

8. We rarely discussed the specific EZ-Flight training after that day. In hindsight, it is kind of surprising because when Forrester Flight Company first began introducing the feature, Bryce was obsessed with learning about it. I think most pilots were skeptical of EZ-Flight because taking off and landing were the main aspects of commercial flying that require a pilot's

touch. The one time I remember talking about it after the EZ-Flight training, Bryce told me it seemed like a good idea because it minimized the risk of human error. I went through the same training with my airline since I am type-rated on the Forrester FFC 500 Super. Bryce was excited because flight data using Forrester's EZ-Flight software showed it to be 225% safer than manual take-offs and landings. At least the training materials I was shown by Bryce and marked as Exhibit #3 said so. The training my company conducted on EZ-Flight did not include that claim. I was less than impressed with the EZ-Flight system, as I believe there are too many other real-time variables that a pilot has a better touch to handle than extra circuit boards can anticipate.

9. I will never forget April 16, 2021. Bryce was scheduled to fly a pretty normal schedule from Greenville-Spartanburg International Airport (GSP) to Dallas to New Orleans. For the last flight, Bryce was going to fly to John F. Kennedy Airport in New York (JFK), instead of back home. I also arranged my schedule to end the day at JFK. Both Emily and Ivy were out of town on school trips and we had decided we needed a weekend getaway. I dropped Bryce off at the GSP terminal and parked in the employee lot. From there I caught the shuttle bus into the main terminal. I stopped off at the café for breakfast and to waste some time before checking with my airline. After breakfast, I had gone through my pre-check process with my own airline, picked up the paperwork for the day of flights on my CRJ 900, and was heading to my gate. I stopped to watch some of the other aircraft taking off and landing that morning. Cardinal is a relatively small airline, so there is usually only one or two Cardinal planes taking off each hour. Bryce was flying a Forrester FFC 500 Super that day and there was only one of those planes in the Cardinal fleet flying out of GSP. It was a distinctly recognizable aircraft. I assumed Shell was flying with Bryce because they were nearly inseparable. It wasn't until later I found out Shell had a migraine and had called in sick. I didn't know, and Bryce didn't mention, Shell had texted to call in sick. Later, when I saw all of Bryce's phone records turned over to the NTSB, I saw the texts between Bryce and Shell, which were marked as Exhibit#6. Shell's replacement was one of Cardinal's newest co-pilots, Dale Hamilton.

10. As I stood in the concourse by the windows watching Bryce's plane taxi, I remember thinking how sleek the Forrester FFC 500 Super looked. I remember from training the EZ-Flight was not mandatory to engage, but I assume Bryce had decided to use it because

Bryce was so obsessed with learning about the system when Forrester released it. It might sound cliché to say a pilot's spouse never stops worrying about them, but it's true, even when you are a pilot as well. Statistically, flying is so much safer than driving. Something about the power and size of an airplane just makes it a little scary to think about, not to mention the survivability rate if something does go wrong. Bryce's plane moved to the end of the taxiway, turned onto the runway, and soared into the air. The FFC 500 Super made a sweeping left turn for the ascending part of Bryce's flight path.

11. I was about to walk to my gate when I noticed Bryce's airplane was flying oddly. The flight trajectory looked steeper than usual. A steep trajectory has been ordered by Air Traffic Control (ATC) if there was a storm in the area, but my weather briefing papers showed nothing but clear skies for the morning, as marked in Exhibit #1. Shortly after take-off, and while still in my view at the window, the nose of Bryce's plane started alternating between pointing up at the sky, and pointing down at the ground, almost like there was extreme turbulence. I've never seen a plane fly that way. After bouncing up and down a couple of times, I saw the plane's nose start to point downward and the angle did not correct. I stared in horror as Bryce's plane disappeared behind the tree line to the northeast of the GSP runways and toward the BMW properties. The cloud of smoke was immediately visible from the impact. I ran back toward the ATC side of the terminal. One of the GSP police officers took me to the emergency medic room off beside the ATC tower. There was no way I would have been allowed up in the tower after my spouse was in a crash. The next thing I remember clearly was when the GSP Fire Chief told me officially there were no survivors from the crash. I knew that, even without the confirmation from what I saw.

12. Several days later, when I was interviewed by Senior Investigator Fisher Street, of the National Transportation Safety Board (NTSB), I could not share much beyond the knowledge Bryce was well-rested and in good spirits at the airport prior to boarding. I was able to share what I saw of the take-off and the crash. I learned from Investigator Fisher that the Cockpit Voice Recorder had been damaged beyond use, but the data stored on the Flight Data Recorder Report, marked as Exhibit #10, caused the investigators to believe no one overrode the EZ-Flight setting during the flight. Bryce was a meticulous pilot. I can't even begin to count

the number of times I laughed at Bryce for making flight schedules run late because of taking too much time with the pre-flight checklist and making sure everything was safe to fly. I know the problem must have been with Forrester's flight software. Bryce would have checked every mechanical aspect of the Cardinal aircraft. As soon as it was released, I read the NTSB report, marked as Exhibit #7, and the photograph of the crash location taken by NTSB, marked as Exhibit #8, documenting the death of Bryce and everyone on Flight X1027.

13. Nothing will ever make up for my loss. Emily and Ivy deserve to have both parents who can love and care for them as they get ready for college. I can't imagine how I am supposed to raise them alone. The day of the crash was the day a part of my soul died.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

Jo Harrelson

Jo Harrelson

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

Affidavit of
Sandy Kay (Software Trainer for Cardinal)

1. My name is Sandy Kay. I am 35 years old. I reside at 204 King James Street in Moore, South Carolina with my spouse, our two beagles Daisy and Duke, and our herd of alpacas. I know you're probably wondering what someone who lives in upstate South Carolina is doing with a herd of alpacas, and frankly, it's our hobby that turned into a side hustle for us. My spouse spent some time studying abroad in South America during college, and developed a love of alpacas. It turns out an alpaca's fur is incredibly soft and people love to buy it to make into clothes and blankets and things. We moved away from a large metropolitan city so we could have alpacas and sell wool on the side in addition to our day jobs.

2. I graduated from Coastal Carolina with my B.S. in Computer Science and a minor in Interpersonal Communications in 2010. Then I attended Auburn University, where I earned a M.S. in Computational Engineering in 2012. I was attracted to computer science-related degrees because of the increasingly data-driven world we live in. I figured if we were going to keep expanding the applications of computer technology, the best way to lock down job security was to be the person who could teach other people how to use newly developed software applications. For that reason, I took classes to learn how to operate new software programs quickly and develop training modules.

3. Shortly after I graduated from Auburn, I was hired as a Junior Software Trainer by Cardinal Airlines. Since I started working for Cardinal, I have been responsible for training all of Cardinal's employees on any software applications and updates they may need for their jobs, and I provide supplemental training any time Cardinal gets a new software system or update. Most of the training I provide takes place in the context of Chirp, which is Cardinal's company-specific software for processing reservations, check-ins, and baggage tracking. The rest of my trainings were for the Microsoft Office suite of applications (Word, Outlook, Excel, and PowerPoint) and other software they may need for their desk jobs. After working for Cardinal for about 18 months, I was promoted to Software Trainer.

4. In 2015, the VP for Technology at Cardinal approached me and asked if I would be interested in attending some training courses from airline manufacturers to learn about the

in-flight software used by the airplanes in Cardinal's fleets and develop training programs for the company's pilots. I jumped at the opportunity because I recognized the job as one with the potential for a lot of growth and because it was exactly the kind of project I loved. Learning a whole new system well enough to teach people how to use it safely and effectively was exciting. Cardinal has airplanes from two different manufacturers: AirTaxi and Forrester. You would have to get someone from Cardinal corporate to confirm this, but I think Cardinal's fleet is close to 50% AirTaxi's and 50% Forrester airplanes. I ended up spending about three months each at AirTaxi and Forrester's headquarters, getting trained on all the software installed in their airplanes, and making sure I understood how it was supposed to work. I'm by no means trained to be a pilot, but after all the time I spent in the AirTaxi and Forrester flight simulators, I bet it would be a piece of cake to fly any airplane in Cardinal's fleet! Of my training time, more than 200 hours with each company was spent in simulators learning every contingency with the in-flight software. After I completed the six months of specific application training at AirTaxi and Forrester, including comprehensive exams with each company, I was awarded an In-Flight Software Operation certification from each company. Upon my return, Cardinal promoted me to Senior Software Trainer and changed my work schedule so 75% of my time is spent training the company's pilots on the in-flight systems and only about 25% is spent on Chirp.

5. Training pilots is definitely a more-high pressure job than training corporate employees. After all, if someone incorrectly tags a customer's piece of luggage in Chirp and sends it to the wrong destination or if someone enters an invalid formula into Excel, no one's life is in danger. But making sure I understand in-flight software well enough to train the pilots to safely transport up to 350 people at a time can be stressful. I spent a lot of time developing training programs to train the pilots on how the software was supposed to work in ideal circumstances, but also to deal with anything that could possibly go wrong.

6. My typical training sessions were 45 minutes to a full day, depending on complexity. The 45-minute sessions were about things pilots already knew. Obviously, these were items pilots should have already known, but I had to make sure Cardinal pilots were familiar with the electronic displays on Cardinal's fleet, and how to override the automatic software controls if they needed to switch to manual mode. Full-day training sessions were for

new programs or applications installed on the Cardinal fleet from the manufacturer. For example, when AirTaxi installed in-flight WiFi on its fleet, I did 20 training sessions of one hour each to train all pilots type-rated on AirTaxi aircraft. I covered how to enable the feature for the passengers (which honestly, was pressing an on/off button), how to recognize when the WiFi was interfering with other flight instruments, and to correct if needed.

7. Around the time I was doing my software training at Forrester, I remember hearing Forrester employees talking about a new software application that would allow for automatic take-off and landing. When I was training, taking off and landing were one of the few aspects of commercial flight that had not been automated. The thought was weather and mechanical conditions can vary greatly and a pilot's "feel" of the aircraft allowed for micro-adjustments and corrections that software couldn't account for. Well, in 2016, Forrester figured out how software could take all the different conditions into account and released its automatic take-off and landing software. The software was called EZ-Flight and was only operational during the first 10,000 feet of elevation during take-off, and the last 10,000 feet of elevation during landing.

8. When Forrester made EZ-Flight available to airline companies in January 2019, I went right to work developing a training program for Cardinal's pilots. I spent several weeks working with the software in simulators to learn the purpose and design of the software, as well as working through the sample scenarios. The Forrester scenarios covered everything from ideal take-offs and landings using the software to handling problems as they arose. Forrester also provided simulations associated with common landing complications, including malfunctioning landing gear, high crosswinds, and adverse weather conditions such as rain and snow. Although each of the flight simulations worked perfectly, I was still a little skeptical of EZ-Flight even after becoming certified.

9. EZ-Flight is a software application loaded into an airplane's computer that monitors all data coming in from the plane's sensors and adjusts to guarantee a smooth take-off and landing. The software is automatically engaged when the EZ-Flight function is selected but can be overridden by a pilot. All the pilot must do to override the system is input the pilot's four-digit PIN and tap the "override" button. The pilot is responsible for the system. Cardinal

Airline pilots are not required to use EZ-Flight. The Federal Aviation Administration (FAA) requires pilots to notify Air Traffic Control (ATC) of their intent to use EZ-Flight before they engage the system for take-off or landing. Forrester built several emergency notifications into EZ-Flight. For one thing, if the flight system executes an increase in flight trajectory followed by a decrease in flight trajectory (or vice versa) within five seconds, an emergency alarm will sound. From the ground, this will look like the plane is trying to do waves in the air. Inside the airplane, this would feel like being on a rollercoaster. Emergency alarms can also be triggered if the sensors are loose or send abnormal readings to the cockpit. During the flight simulator scenario I tested, the alarms would go off when the sensor registered wind speeds of 150 mph, which is almost a Category 5 hurricane and would not occur under ordinary flight circumstances. If the emergency alarm is triggered, pilots are required to immediately override EZ-Flight. According to the data we received from Forrester, the EZ-Flight system had experienced emergency alarms in error on 1 percent of flights. I have not heard of any Cardinal pilots complaining they experienced a false alarm during flights in which the EZ-Flight software was engaged.

10. I was surprised at how disgruntled the pilots were when they came through training on EZ-Flight. Even though the statistics from Forrester said using EZ-Flight was 225% safer than manual take-off and landing, the pilots were very resistant to letting a computer take over their flying judgment. I distinctly remember one pilot saying it was not possible EZ-Flight was a safe automatic mechanism. Only a human pilot can simultaneously feel the bumps in the air, have a line of sight to the runway, read the cockpit instruments, and adjust to ensure the take-off or landing occurs safely.

11. The training program I developed included three hours of classroom training, with lectures and a PowerPoint, marked as Exhibit #3, displaying screenshots of the different things that can display on the EZ-Flight screen. An additional series of simulator training dates were set to follow the initial rollout. Simulator training would take six hours per pilot and co-pilot pairings. I started training pilots in March 2019, with the goal of training the whole fleet of pilots by September. Cardinal employs about 400 pilots. The software materials Cardinal received from Forrester included a training presentation for pilots, but after my work

processing EZ-Flight, I used the Forrester presentation as the base, but adding additional slides with other things I observed during my testing and evaluation of the software. As far as I know, the FAA and most airlines don't require pilots be tested on new software, but Cardinal has always tested employees after training programs to make sure they learned the required material. I developed a ten-question quiz I administered to all pilots at the end of the EZ-Flight training lecture, marked as Exhibit #4. For a pilot to pass the quiz and be certified to advance to in-flight simulator training, the pilot must score 80% or better. Since I train so many pilots, I administer the test electronically, which gives pilots the results of the quiz right away. This means Cardinal's fleet of pilots can be trained in new software as quickly as possible and the pilot's progress does not get bottlenecked waiting for me to grade each individual quiz.

12. It's somewhat unusual for me to remember training an individual pilot on new software, but I do remember training Bryce Harrelson on the EZ-Flight system. I remember the training for a couple of reasons. Bryce liked the Auto-Kinesis option in the military but wasn't convinced the public-sector applications (EZ-Flight for Forrester and Foresight for AirTaxi) were beneficial. After working through the Forrester simulation scenarios using the software, Bryce was all aboard with the program and told me repeatedly how easy it made a pilot's job. I also remember the training because Bryce was a late addition to the very last training session I offered on EZ-Flight. I really didn't think Bryce would be trained on EZ-Flight by the end of September except Erik Wells, the CEO of Cardinal Airlines, issued an ultimatum: any pilot who failed to complete the training by the deadline would lose flight-selection privileges and would be stuck flying any routes left over after trained pilots had picked the flights they wanted in the coming month. Bryce had a great degree of seniority, so it would have been difficult for Bryce to fly something other than the usual 9-5 weekday kind of schedule.

13. Anyway, Bryce joined the training I did on September 27, 2019. Shell Alonso was also in the same training. The training was scheduled for 1 p.m. Bryce was irritated about joining the training after having already worked several days in a row and wanted to get home for a daughter's soccer game at 4 p.m. Bryce also said something about a good pilot being worth fifteen computer programs. I wouldn't say Bryce was normally super engaged in Cardinal trainings but did seem even less interested in the material than usual. I could have sworn a

couple of times Bryce was texting during portions of the training. If I had been certain, it would be a disqualifier for attending a training and an automatic fail. Bryce looked zoned out. At the end of the training, Bryce completed the quiz and passed. After the accident, I went back into my records and saw Bryce had scored an 80% on the quiz. Lower than usual because Bryce usually scored 100% on my quizzes, but since it was a passing grade, nothing would have stood out as a red flag.

14. After completing my training, Bryce was authorized to complete the 6-hour flight simulator portion of training for EZ-Flight. Since this is an automated system pilots register for via the internet, I don't have anything to do with that phase of training and I don't review the results of simulator sessions. Another person in the training department would be notified electronically if the pilot failed a session in the simulator. I guess Bryce must have done well, as a certification from Cardinal Airlines was approved on the EZ-Flight. I do not know whether Bryce routinely utilized the EZ-Flight, or disengaged the system prior to the flight. All I know is, after the training on EZ-Flight on September 27, 2019, Bryce thanked me for the helpful lecture. I didn't have any other opportunities to train Bryce before the plane crash on April 16, 2021.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

Sandy Kay

Sandy Kay

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

Affidavit of
Fisher Street, Ph.D. (NTSB Investigator)

1. My name is Fisher Street. I am 43 years old, and I live at 37th and Reservoir in Northwest Washington, D.C. I serve as a Regional Lead Investigator for the National Transportation Safety Board (NTSB). In this capacity, I am responsible for aircraft and railway accidents for Florida, Georgia, Alabama, South Carolina, North Carolina, and Virginia. Marine incidents and large-scale motor carrier accidents for the same area falls to another Regional Lead Investigator.

2. I am a third-generation licensed pilot. Family legend says we are distant relatives of Orville and Wilbur Wright. I earned my initial pilot's license under the supervision of my grandfather when I was 17 years old. I earned entry to a dual degree program at the Massachusetts Institute of Technology, where I earned my Bachelor of Science in Aerospace Engineering, with a minor in Computer Science in 2002 and my Master of Science in Aeronautics and Astronautics in 2003. Immediately after graduation, I began working toward my Ph.D. in Aviation with an emphasis in Aviation Safety & Human Factors from Embry-Riddle Aeronautical University, a program which I completed in 2006.

3. After earning my Ph.D., I was hired as a Vice President for Fleet Safety by AirTaxi, the world's largest aircraft manufacturer, where I was responsible for evaluating proposed aircraft designs, inspecting design models, and signing off on the safety and integrity of each plane sold by the manufacturer. In late October 2013, I joined the NTSB as an Investigator. My service is multifaceted but primarily includes drafting safety standards for any motorized vehicle in America. My background is in aviation, but the laws of physics apply equally to planes, trains, and automobiles. By July 2018, I had been promoted to Regional Lead Investigator.

4. Approximately 20% of my job at the NTSB involves investigating accidents involving aircraft. In addition to investigating every airplane accident in the Southeastern United States (there are approximately 100 accidents reported each year in this region), I am sometimes brought in to consult on accidents that occur in other countries. Flight X1027

accident was the fourth commercial airliner crash that has occurred in the United States since I joined the NTSB. My investigation of Cardinal Airlines Flight X1027 proceeded in two parts. The first part of the investigation was completed by my team at the NTSB. My report is marked as Exhibit #7. During investigations, the NTSB does not decide who was at fault for a crash, but rather determine the causes of the crash. The second part of my investigation was completed after I was contacted by attorneys for the Plaintiff and asked to provide an expert opinion on the case. As I am testifying in my capacity as a federal employee, I am not allowed to charge for my evaluation, but the NTSB does bill the Plaintiff for my salary rate while I am testifying.

5. On the day of the accident, my investigation team and I visited the crash site which we photographed and marked as Exhibit #8. The crash site was roughly two miles to the northeast of the Greenville-Spartanburg International Airport (GSP) in a wooded area owned by BMW. The aircraft was destroyed upon impact, but we were able to locate portions of the airplane, which we collected and took back to our office for analysis. Emergency responders located the plane's Flight Data Recorder (FDR). NTSB analysts were able to access all data from the FDR. Although my team did review the Cockpit Voice Recorder (CVR), the data file was damaged beyond use and we were unable to collect or analyze any data from this device. NTSB interviewed eyewitnesses, every Cardinal Airlines employee who had been associated with the aircraft in the week prior to its crash, Forrester Flight Company's EZ-Flight developers, quality assurance testers, and the Vice President for Passenger Safety. This included witnesses Lake Gambell, Shell Alonso, Costa Jackson, Sandy Kay, and the plaintiff, Jo Harrelson.

6. Our goal was to determine the cause of Flight X1027's crash. Specifically, our task was to determine whether the cause of the crash was due to a mechanical defect, software, weather, human error, or some combination of these factors. We were able to rule out weather as a contributing factor, as it was a clear day with mild winds of less than 10mph, as was indicated on the weather report, marked as Exhibit #1. All pre-flight checks marked as Exhibit #5, were verified. The pre-flight check was submitted electronically prior to the flight. Flight X1027 was the first flight of the day for both the pilot and the co-pilot, and there was no reason to believe human error introduced by exhaustion played a role in the plane's crash. This was also confirmed by the interview with Jo Harrelson, the pilot's spouse.

7. The plane assigned to Flight X1027 was a Forrester Flight Company FFC 500 Super and was equipped with all the most up-to-date mechanical and electrical features, including EZ-Flight. It is a software program operating in conjunction with a plane's autopilot feature and allows a plane to initiate automatic take-offs and landings. A similar application has been used in the military for a number of years but has only recently been released for commercial carriers. EZ-Flight operates by collecting flight data from all the plane's sensors and monitors, adjusting for unanticipated conditions (storms, wind, birds, etc.) to secure a safer and smoother take-off and landing. If a pilot wants to engage EZ-Flight during take-off or landing instead of executing a manual landing, the FAA requires the pilot to notify air traffic control (ATC). GSP ATC records indicate Bryce Harrelson notified ATC of the intent to engage EZ-Flight approximately thirty minutes prior to Flight X1027's take-off. Although air traffic controllers prefer to receive notifications an hour in advance, most pilots register their intent to use EZ-Flight 30 to 45 minutes prior to take-off. My investigation did not uncover any anomalies in the pre-flight checks and procedures that would have contributed to Flight X1027's crash. To the contrary, both the pilot and co-pilot were up-to-date on all training, certifications, and registrations.

8. My team investigated Forrester Flight Company's EZ-Flight software system and identified several potential causes of the crash. The EZ-Flight system has emergency alarms that are triggered if sensors are loose or send extremely abnormal readings, for example, an emergency alarm is set to trigger if the airspeed registers at below 60 mph. Forrester Flight Company's test data indicated emergency alarms sounded in error on 1 percent of flights using EZ-Flight software. The most common cause, according to Forrester's data, was a faulty or offline data sensor. When a false emergency alarm sounds, the pilot is instructed to enter their 4-digit PIN into the touchscreen and then hit the override button, which automatically switches the plane back into manual flight mode. This is indicated in the training materials published by Forrester Flight Company. Those materials were modified by Sandy Kay, marked as Exhibit #3, and used in the Cardinal Airlines training. We also reviewed the test results for Bryce Harrelson, marked as Exhibit #4.

9. The purpose of the FDR is to create a digital file capturing all the data points

available to a pilot during a flight. The FDR captures information such as speed, elevation, direction, and weather conditions, as well as any data fed in through a plane's electrical sensors. We were able to analyze all the FDR Report, marked as Exhibit #10, from Flight X1027. When we analyzed the FDR data from Flight X1027, we found EZ-Flight's emergency alarms had triggered due to three separate issues during Flight X1027's take-off: once at 9:44 a.m., when an airspeed alarm sounded and the plane incorrectly calculated the ascending trajectory to be 25 degrees and at 5,150 ft, again at 9:45 a.m. when the plane went into the first dive at a descending trajectory of 29 degrees, then the plane took an ascending trajectory of 20 degrees. The final alarm triggered at 9:47 a.m. when the software registered a 43.5-degree descending trajectory in addition to an altimeter warning alarm for crash avoidance. I believe the first of the emergency alarms, which sounded when the software detected an airspeed warning, was in error, which is to say they sounded when the plane was experiencing a normal and perfectly safe ascent.

10. We were not able to definitively determine what caused the erroneous emergency alarms to sound. No data we collected from the FDR indicated a manual defect fault with any of the plane's sensors. Similarly, the pre-flight checklist filed by the pilot prior to take-off, marked as Exhibit #5, indicated all the plane's mechanical components were in good working order.

11. NTSB concluded the known defect with the EZ-Flight software reacting to bad sensor data and drastically changing aircraft trajectory was the most likely cause of the crash. When my team spoke with the software developers at Forrester Flight Company, the developers acknowledged the existence of a glitch in the EZ-Flight software and disclosed the company was working on a patch to fix the glitch. The software developers also told us they were short-staffed, and rolling out a patch was a secondary priority. The top priority was to develop the EZ-Flight software for each model of Forrester airplane. When the emergency alarms sounded, the Flight X1027 pilots attempted to override the EZ-Flight software, but their attempts were unsuccessful. Because the pilots were not able to override the EZ-Flight system, they were unable to regain manual control of the aircraft and escape from the fatal descent.

12. The second phase of my investigation began when I was contacted by attorneys

for the Plaintiff. I was asked to provide an opinion on the narrow question of whether the EZ-Flight software was the sole cause of Flight X1027's crash, or whether any actions or omissions, on the part of the pilot Bryce Harrelson contributed to the cause of Flight X1027's crash. Two things stood out to me during this phase of my investigation.

13. The FDR report indicated the pilots of Flight X1027 tried to override EZ-Flight, but the efforts were unsuccessful. To override the system, the pilot enters their PIN into the touchscreen and hits an override button. Only the pilot's PIN will shut down the EZ-Flight system. Bryce Harrelson's PIN was 7679. The data we collected from the FDR indicated there were two attempts to override EZ-Flight. The first attempted PIN was 1027. The second attempt was 1812, which was the PIN registered to co-pilot Dale Hamilton. Because we were not able to analyze information from the CVR, I was not able to form an opinion about who entered the two incorrect PIN entries or why the correct PIN belonging to Bryce Harrelson was not entered. The CVR would have been most helpful establishing pilot interactions in the cockpit. Entering the flight number instead of the PIN could have been an innocent mistake on the part of either Harrelson or Hamilton. I believe the second incorrect PIN was entered by Dale Hamilton. Hamilton may have believed either his PIN or the PIN assigned to Harrelson would have overridden the EZ-Flight system and it probably should have.

14. Harrelson did everything by the book in preparing to pilot Flight X1027. Harrelson had a perfect flight history and a perfect employment file at Cardinal. Harrelson never missed any mandatory trainings and obtained all required certifications or re-certifications within the required period. All of Harrelson's employment records indicated passing grades on all training exercises and flight skills were consistently rated as exemplary. The pre-flight paperwork indicates Harrelson completed a thorough pre-flight check and noted the plane was mechanically sound. The same paperwork indicated all the in-flight electronic systems started properly. ATC was notified of Harrelson's intent to use the EZ-Flight software both during take-off from GSP and when landing at Dallas Fort Worth (DFW). In short, I cannot point to a single action taken by Harrelson leading up to or during Flight X1027 in any way contributed to the plane's crash. Likewise, I cannot point to a single action Harrelson failed to take that would have in any way contributed to Flight X1027's crash.

15. In conclusion, my investigation determined the sole cause of Flight X1027's fatal crash was a faulty software system designed by Forrester Flight Company. Despite recognizing the software contained a glitch that could trigger emergency alarms in error and required a patch, Forrester deprioritized development of the patch. The emergency alarms triggered the software into sending Flight X1027 into two dives, one of which the software corrected and the second of which proved fatal. Despite reviewing all the evidence available to and considered in the NTSB investigation as well as all the evidence available in this litigation, I was unable to conclude any actions or inactions on the part of Bryce Harrelson that contributed to the crash in any way. It is therefore my opinion that Forrester Flight Company is solely liable for the crash of Flight X1027.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

Fisher Street

Fisher Street

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

Affidavit of

Lake Gambell (CEO, Defendant)

1. My name is Lake Gambell. I am 41 years old and I reside at 1405 Alabaster Way in Charlotte, North Carolina. I am the Chief Executive Officer (CEO) for Forrester Flight Company—the youngest CEO in the history of the company. Forrester's headquarters are in the Piedmont Triad area of North Carolina, with manufacturing plants located throughout the United States. I guess in some ways you could say Forrester is in my blood. My family has worked at Forrester since my great-grandfather was one of the three who founded the company in 1922.

2. There was never really any discussion about where my career would go. I worked part-time jobs at Forrester starting in high school, and worked at Forrester full-time every summer once I started college. I attended NC State University for undergrad, where I earned my B.A. in Accounting, with a minor in Executive Leadership. I graduated from NC State in 2006, and then attended Harvard Business School, where I earned an MBA in 2008. After graduating, I joined Forrester full-time as a Vice President of Accounting. I don't know if it was my family's 100-year history with the company, but my mentor and CEO, Jonah Willoughby, taught me everything you don't learn in school. AirTaxi likes to tout itself as the country's largest aircraft manufacturer, but the truth is planes are all they do. When you think about the range of products Forrester produces include aircraft, helicopters, and drones, there's no question Forrester is the clear leader.

3. Starting in January 2011, I began rotating through each of Forrester's corporate divisions to learn the business and learn how to oversee all aspects of the company. I spent a year in each of the Contracting, Development, Product Safety, and Testing divisions. In October 2015, I was promoted to Chief Operations Officer (COO). One year later, Jonah Willoughby announced his retirement, and the Forrester Board of Directors elected me as the new CEO in December 2016.

4. My rotation through the Forrester corporate departments gave me a great perspective on the EZ-Flight system. I rotated into the Forrester Development department in 2012, which is about the same time Costa Jackson, one of Forrester's software design

engineers, had the idea of creating an automated take-off and landing software program. Costa, and her team of mathematicians and engineers, began working on what types of data the software would need to collect, how it would analyze the data, and how a computer system could process the data and translate it into mechanical operations. I am neither an engineer nor a software guru, so my role with the initial development of EZ-Flight was to monitor the status of the team addressing the conceptual design of the software. It was a neat opportunity because one of the challenges the group faced was designing the software in a manner compatible with each of the types of aircraft in Forrester's fleet.

5. The development team worked closely with the lead engineers of each model of airplane produced by Forrester to ensure the product could be adapted for use in each plane. I specifically remember feedback on the early software design because one of the new software programmers assumed the software would be able to run utilizing the airplane's Wifi. It was pointed out that none of Forrester's aircraft were equipped with Wifi functionality until 2009, and for planes produced prior to 2009, the aircraft owner would have been responsible for retrofitting the aircraft to include Wifi capabilities. Of course, Wifi capability is not necessary for traditional, hands-on take-off and landing procedures. Think how many years of flight occurred before the internet was even invented. We sent the design team back to adjust the proof of concept so the software would be fully self-contained and only relied on information available from the airplane's instruments.

6. In 2013, I rotated into Forrester's Product Safety Department. About two months into my rotation, the EZ-Flight software design was sent to Product Safety for analysis. The first thing done when receiving a new product is an end-to-end blind analysis of the product's target objective, and the decision paths incorporated into the product design. A blind analysis means the team runs its analysis without looking at the work done by the development team. We've found this is a good way to double check and catch assumptions or errors baked into the initial product design. It is not uncommon for a design concept to make several rotations through Design and Product Safety before a beta version is sent for testing. When regulatory or legal compliance is required, a team of lawyers and design specialists work with the Federal Aviation Administration (FAA) to obtain regulatory approval.

7. In the case of EZ-Flight, the software design was assigned to Costa Jackson, one of Forrester's most senior software programmers. Costa's team worked through the software code and identified a few glitches. I recall Costa identifying a glitch that caused emergency alarms to sound when an aircraft took off while executing a noise abatement procedure, like those required at John Wayne Airport in California. The same error could be found when navigating the more complex landing maneuvers, like those required at Reagan National Airport.

8. My involvement with the progress of EZ-Flight through the Product Safety department was to monitor the safety team's analysis. I received periodic updates and monitored the progress from a work flow position. I do not have any specialized expertise in product design or safety analysis. EZ-Flight received the final green light from the Product Safety department in late 2013, which sent the software into beta phase.

9. In 2014, my Forrester rotation placed me in the Testing Department. The job of the Testing Department is to take prototypes of each product Forrester wants to produce, ensure it works as it is intended, and it is capable of withstanding the strain placed on the product by virtue of commercial air travel. Testing Department is a fun place to work because it is where all of Forrester's flight simulators are located, and it also houses the lab data relating to unusual conditions pilots have experienced while flying. I'm lucky to say each of my most harrowing flight experiences occurred within flight simulators.

10. The type of testing undertaken by the Testing Department varies greatly depending on the product. In the case of mechanical products, the testing team tests the product's ability to perform in extreme weather conditions (i.e., high and low temperatures, turbulence, high winds, lightning storms, etc.) or in mechanically stressful conditions (e.g., stalled landing gear or sub-engine landings). In the case of electrical components, the department works through the software code, and the product's capacity to plug into the aircraft and receive accurate data readings under flight conditions. One error that can be difficult for the team to diagnose is external sensors feeding accurate information back to the cockpit. For some reason, increased G-force can sometimes slow the rate at which electronic data is fed back to the cockpit. Experiencing turbulence can also cause sensors to be shaken

loose, which causes inaccurate data readings.

11. In June 2014, EZ-Flight beta was sent over for testing. A product testing team led by Evan Vaughn oversaw the software's testing and reported back to executives in the department. As I recall, EZ-Flight's beta testing was the most seamless part of the product's development. The beta versions of a software program is the testing phase before a final rollout so the bugs and glitches can be worked out before a final product goes to the end user. The reports I saw indicated, as a result of the collaborative work done the beta version of EZ-Flight was almost ready for rollout within a few weeks of testing. The software was well programmed to plug into the various data feeds flowing into the cockpit and to execute automated take-off or landing functions at any commercial airport in the United States. Additionally, the design, which incorporated a user-authenticating PIN before authorizing a software override, was sound because it would prevent tampering with the aircraft's ascent or descent.

12. I hoped EZ-Flight would be sent into production before I rotated out of the Testing Department, but that proved overly optimistic. In November 2014, we received word from the regulatory lawyers that, because EZ-Flight was like a classified flight system used by the military. Production would be delayed until the Department of Defense (DOD) completed a review to ensure no national security risk existed. The DOD eventually determined there was no national security risk because Forrester developers had independently designed the system without any knowledge of the military flight system. Like anything involving the federal government, the DOD review greatly delayed the rollout of EZ-Flight. The software was still hung up with regulatory compliance when I transitioned out of the Testing Department.

13. I wish I could say I continued to specifically track the development of EZ-Flight after I transitioned into my role as CEO of Forrester but, unfortunately, I didn't. Since the Flight X1027 accident, I have reviewed the National Transportation Safety Board (NTSB) report, marked as Exhibit #7, filed by Fisher Street of the NTSB. I was made aware sometime after the EZ-Flight product went to market that a product tester determined a glitch in the software could cause emergency alarms to sound and trigger unnecessary flight trajectory adjustments if an external sensor on the aircraft was loose or disconnected. I understand one of our software

developers was working on building a patch for the EZ-Flight, but the patch had not been rolled out to aircraft already utilizing EZ-Flight.

14. Instead, the Forrester Vice President for Product Safety, Compliance, and Marketing pushed a notice to all purchasers of the EZ-Flight software warning of the existence of the glitch. The notice advised aircraft owners to train their flight crew to counter the glitch, and exercise judgment in the operation of the aircraft. Specifically, the notice told aircraft owners if emergency alarms sounded, but all other manual readings were normal, pilots should override the EZ-Flight system and execute a manual take-off or landing.

15. Our hearts go out to those people whose lives were shattered by the Flight X1027 accident, but nothing Forrester could have done would have changed what happened. EZ-Flight is a safe product and every pilot can override the system if they feel the product is operating in an unsafe manner. I don't know why the pilot of Flight X1027 did not override EZ-Flight when the plane began experiencing such dramatic fluctuations in flight trajectory, but it was absolutely the pilot's responsibility to do so. I saw both the Cardinal Airlines training materials, Exhibit #3, and Byrce Harrelson's quiz results marked as Exhibit #4. I was disappointed to see Sandy Kay had chosen to modify our training materials. I was surprised that a quiz of only 10 questions was used to determine content knowledge. I don't believe any of our training materials have a quiz of less than 25 questions with a score of 92% required for a passing score.

16. What happened to Flight X1027 was tragic and I, along with everyone at Forrester Flight Company grieve with families who lost loved ones because of the accident. As the CEO of an aircraft manufacturer, I recognize the trust placed in our hands and we do not take that trust lightly. When Forrester designs flight systems and airplanes, we do so knowing the tools we design will be deployed by pilots. Knowing pilots are the end-users of our products, we recognize the importance of designing and providing safe products and training pilots to recognize potential pitfalls and methods for minimizing or eliminating risks. Forrester is proud of the fact we do everything we can to eliminate systems failure and to provide both our pilots and our passengers the best aviation experience possible.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

Lake Gambell

Lake Gambell

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

Affidavit of
Shell Alonso (Co-Pilot)

1. My name is Shell Alonso. I am 29 years old and I live at 529 Crest Avenue, Apartment #102 in Greenville, SC. I am a co-pilot for Cardinal Airlines, where I have worked for the last seven years. I hold a B.S. in Engineering from Clemson University, but frankly, my pilot's license has always meant far more to me than a degree. Education was a big deal in my family because both of my parents are professors at Florida State, but I hated studying for tests and writing papers only my professors were ever going to read. I went to college because my family expected me to, but all I've ever wanted to do is fly airplanes.

2. All it takes to become an airline pilot is to meet the age requirements of the airline, 20/20 eyesight (either naturally or corrected with glasses or contacts), a valid commercial pilot's license (which I earned when I was 22), and 1,500 flight hours. I started applying to airlines during my junior year of college, but no one would hire me before I turned 23. As soon as I hit that milestone though, Cardinal offered me a job as a second officer. Within a year I was promoted to first officer. People commonly refer to the first officer as the co-pilot. Cardinal won't make anyone a full pilot until they are 30 something about mental maturity or something. But frankly, I didn't mind working as a co-pilot. We fly with captains, who would be the pilot in command. Once the pilots got to know me, a lot of them would hand over control of the plane once we were on route, especially on some of the longer flights, although the autopilot systems do most of the work.

3. I started flying with Bryce Harrelson in August 2016. By then, Bryce had already been with Cardinal Airlines for 15 years. Before flying commercial, Bryce flew for the Air Force. Military pilots have a reputation of being a little arrogant. Bryce was obviously super-competent, super-smart, super-devoted to balancing family and work, but never arrogant. I admired the family life they had built so much and hoped my life would turn out the same one day. In a very short period of time, we became good friends at work. Before the crash, we flew together as a team almost exclusively for 4 and a half years.

4. Bryce made a point of flying routes similar to a nine to five workday. The

Harrelson girls were both into sports, and I think they were actually good. Bryce invited me to some of their family events, where I met Jo and their two daughters. I attended a couple of Emily's soccer games with the family, and she was going places! Bryce told me Emily was playing so well NCAA Division I college representatives had begun scouting her.

5. On September 27, 2019, college scouts were attending one of Emily's games. Bryce and I had just come off a week-long string of flights it was one of those rare occasions where Bryce had set up a destination flight schedule. Occasionally, if Bryce needed to have a bigger block of days off for a family vacation or something, we would stack the flight schedule to fly longer routes for a week or two. Destination trips are exhilarating because you might end up in two or three different major cities around the country in the space of a day with an overnight at the final destination each day. They can also be extremely exhausting because it is usually a run of four 12-hour days flying longer routes. I loved flying destination flights when they came up, but by the end of this trip, we were exhausted. Usually, we stuck to daily flights so we could start and end the day at the Greenville-Spartanburg International Airport (GSP) and be home every night.

6. As soon as we landed from the last flight of the trip, we both received emails from Sandy Kay saying if we didn't attend the EZ-Flight training session scheduled for 1 p.m., we would lose route scheduling privileges until we got ourselves trained. Sandy included in the email that this was the last EZ-Flight training for the calendar year. This upset Bryce because the entire week's schedule had been designed to be back early for the soccer game, where scouts would be watching Emily play. The training was going to derail that plan. Bryce called Sandy's supervisor and asked for a special exemption from the training because of prior training on a military system called "Auto Kinesis" that did the same thing as EZ-Flight. I don't know what Auto Kinesis is, but whatever it was, it wasn't good enough for Cardinal. Bryce texted to let Jo know about the training interfering with getting to Emily's game. Based on how Bryce reacted, Jo seemed upset. Bryce showed me the texts, marked as Exhibit #2. The response text was after the training, Bryce would "fly through the test because they're never hard and still make it within 10 minutes of kickoff." I know Bryce was referring to the quiz administered after Cardinal trainings. Those are a lot like the anti-phishing computer safety quizzes I had to take in school

and they're generally easy if you pay attention during the training.

7. Even though we regularly flew together, that was the first time I had ever attended a Cardinal training with Bryce. Honestly, it was kind of distracting. It was obvious Bryce was upset that Sandy's supervisor didn't grant a waiver for the training. Bryce kept leaning over to whisper things to me during the training. I do remember Bryce texting "I should be excused because I already learned all of this in the military." My texts with Bryce have been marked as Exhibit #6. About halfway through the class, it looked like Bryce had fallen asleep, which was not surprising considering the four-day flight schedule we had just finished, so I shook Bryce awake. Bryce looked annoyed but texted me a few minutes later to say thanks. As you can see from the slides, marked as Exhibit #3, it was boring. Sandy Kay probably spent more time talking about the safety of the system than the easy way to override the system should a problem occur. The training did say emergency alarms could trigger problems in EZ-Flight.

8. At the end of the training, Sandy passed out iPads to everyone in the training and told us how to complete the post-training quiz. I logged in and completed the quiz with a perfect score. I did not see what score Bryce got on the quiz, but before we left, Bryce told me the quiz was easy. I guess the experience with Auto Kinesis in the military really paid off because if I had been as zoned out during the training as Bryce looked, I would have failed the quiz. It is important to get good quiz scores because, depending on the training topic, failure to get at least an 80% score on the quiz could result in the suspension of flying privileges.

9. I flew hundreds of flights with Bryce after the EZ-Flight training. I recall that Bryce only filed an intent to engage EZ-Flight with Air Traffic Control (ATC) on two occasions. One important aspect of the EZ-Flight program was only one pilot's PIN could override the EZ-Flight system. Since Bryce was the pilot, it was important I memorized Bryce's PIN just in case anything went wrong. Bryce's PIN was 7679, it was a little unsettling, but the first time we ever flew using EZ-Flight, Bryce asked me for a reminder of what the PIN was. Maybe Bryce was testing me to see if I still remembered the override PIN, but it didn't come across that way to me.

10. On the two occasions we used EZ-Flight for take-offs and landings, everything went completely smoothly and there were no issues. I do not know what made Bryce decide to

use EZ-Flight those two times. One was a flight to Dallas Fort Worth (DFW) in Dallas and the other was a quick flight up to Washington Reagon National Airport (DCA) in Washington, D.C. Both flights were smooth and Bryce didn't seem tired, so I couldn't say why Bryce decided to use EZ-Flight for those two trips. During one of the flights, Bryce did comment "This EZ-Flight system is great." Bryce said "I'm glad you are the co-pilot because I wouldn't trust anyone else to have my back in case anything goes sideways." That seemed like bravado to me because any other Cardinal co-pilot is just as competent as I am. That said, we were good friends. As a rule, I think it is better to not be friends with co-workers, but Bryce was definitely an exception and someone I looked up to as a mentor.

11. There were times, when Bryce was off work for family trips, or I wanted to work on a couple of destination flights to see friends across the country, we didn't fly together. This probably amounted to 50 flights in almost five years. Without fail, in every one of those flights without Bryce, the pilot I would fly with used EZ-Flight for take-off and landing. Each of these pilots in our in-flight conversations spoke about the ease, reliability, and safety of EZ-Flight. I was impressed to say the least. I have never experienced an emergency alarm related to EZ-Flight, whether real or in error.

12. I always wondered why, although Bryce and I went through the training and had the availability, we never implemented EZ-Flight on our normal routes. Maybe Bryce simply liked the manual operation of the aircraft on take-off and landing. I admit it gave me more time with the actual operation of the aircraft when Bryce would give me the opportunity to handle a landing or take-off. The other thing these other pilots I flew with would do is hand a slip of paper or their airline business card to me with their PIN written on it. This way I could look at it, slip it into my shirt pocket, or clip it onto the small space in the center of the yoke. The yoke is what nonpilots call the stick. The reason for having the PIN is tied to terrorism or air piracy prevention, keeping unauthorized people from messing with the system. With the way the cockpit doors are reinforced and locked, I have never worried about security or if someone could have seen the PIN. Honestly it feels kind of foolish.

13. It devastates me that I am here today and Bryce is not. Although we didn't fly every shift together, I still feel like it was my fault Bryce isn't here. I was supposed to fly on

Flight X1027 the morning of April 16, 2021. I woke up at 3:00 a.m. that morning with a debilitating migraine and nothing I did helped at all. I tried checking my work email to get the daily weather report, marked as Exhibit #1, for GSP as usual, but looking at the screen just made my head hurt more. Three hours before the flight, I texted Bryce, then called Cardinal and filed a sick leave and replacement request. Cardinal is usually pretty good about having pilots and co-pilots on standby in case anything comes up. The pilot scheduler said it was no problem and they had a couple of co-pilots at GSP that day.

14. As near as I can tell, Bryce engaged the EZ-Flight system before take-off, but some sort of malfunction occurred. I don't know if Bryce forgot the override PIN or if something happened and the co-pilot just didn't remember Bryce's PIN but based on my reading of the NTSB Accident report, marked as Exhibit #7, I know something went wrong with entering Bryce's PIN and overriding the EZ-Flight system. I did not look at the crash site photo, marked as Exhibit #8, because it felt gruesome to look at where my friend died. Not to mention, flying out of GSP, I have flown over the crash site itself many times. I will spend the rest of my life feeling guilty. I should have powered through the migraine and gotten on the flight because if I had, I believe everything would have turned out differently. It makes me wonder why Bryce used EZ-Flight that day when we rarely ever did. Could Dale have talked Bryce into using EZ-Flight? Bryce did not know Dale, likely didn't trust him, and maybe even forgot to share the EZ-Flight PIN. Any of those three things by themselves could have caused a fatal crash. Definitely, all three would be a big problem together.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

Shell Alonso

Shell Alonso

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

Affidavit of
River Lynch (Accident Reconstruction Expert)

1. My name is River Lynch. I am 62 years old. I reside at 85 Asbury Avenue, in Ocean Grove, New Jersey. I was hired by the attorneys for Forrester Flight Company to review the evidence related to Flight X1027's crash and provide my expert opinion regarding the cause of the crash.

2. I grew up outside of Amarillo, Texas, near the Amarillo Speedway. During high school I got a part-time job sweeping up debris at the racetrack. I loved to watch the races, dirt track cars, diesel trucks, monster trucks, you name it. If it had four wheels, it probably raced on the speedway. It was a little concerning to my family at the time, but my favorite part of the job was piecing through crashes at the track and trying to figure out what had gone wrong. I would say most of the time I could figure out which driver was at fault by watching the tape replaying footage of the accident. My high school job is absolutely what propelled me toward a career in accident reconstruction.

3. I received my Bachelor of Science in Manufacturing Engineering Technology from Ferris State University in 1983. I went on to Arizona State University, where I earned a Master of Science in Analytical Chemistry in 1987. I then enrolled at Stanford University, graduating with my Ph.D. in Applied Physics in 1992. Both my Master's and Ph.D. coursework were geared toward preparing me for a career in accident reconstruction. My coursework and research at Arizona State emphasized the use of chemical measurement tools to evaluate the qualitative and quantitative properties of matter. This means using technology to look at the trace evidence left behind in serious vehicular accidents to determine whether natural factors played a role in the crash. At Stanford, my coursework emphasized the applications of physics to accident reconstruction. We worked with state-of-the-art computer programs designed to incorporate the physical evidence left at a crash and build visuals of how the crash occurred in real time. Obviously, computers in the early 90's were nothing like we have today, but at the time, it was cutting-edge work.

4. After graduating with my Ph.D., I went to work at Chrysler's Jefferson North Assembly Factory in Detroit, Michigan. I oversaw all the factory's safety testing teams for the

Jeep Grand Cherokee. You've probably seen videos of the controlled crashes car manufacturers put their vehicles through, to test them for internal quality control and to obtain a crash safety rating. I am sure everyone has seen the crash test mannequins to represent people in car safety commercials. Well, manipulating those dummies, and the data that comes from them is one of the things my team did. We were responsible for designing the controlled testing environments; everything from the velocity of impact, ensuring cameras captured the controlled crash, analyzing the crash results, and identifying areas where manufacturing tweaks would make the vehicle safer. I worked at Chrysler for seven years. I secured a 1.2-point increase for the Jeep Grand Cherokee Vehicle Safety Rating, bringing the model's safety rating up from a 3.4 to a 4.6 on a 5-point scale.

5. Beginning in 1998, I began receiving calls from the Detroit police department asking me to assist their traffic division with investigations by analyzing and reconstructing serious traffic accidents in the area. This turned into a side job and, before I knew it, the police department asked me to begin creating reports and provide expert testimony at trial. Between 1998 and 2000, I testified in 10 criminal trials—always on the side of the prosecution. After those trials, I decided to make accident reconstruction and expert consulting my full-time career. I moved to a New Jersey beach town and established myself as Lynch Reconstruction, LLC, and I have been working for myself ever since.

6. I have been hired as an expert in over 250 cases in which I have either testified at trial or given a deposition. I have consulted on at least 500 other cases without creating a report or giving testimony. I have testified in both federal and state courts throughout the country. In criminal cases, which are probably 35% of my consulting engagements, I primarily testify for the prosecution. I can only think of three instances where I testified on behalf of the defendant. In civil cases, most of my work is defense-side work because most plaintiffs use the expert who completed the government's investigation. I have testified in cases where the plaintiff's expert was a member of the National Transportation Safety Board (NTSB) or a member of the National Highway Traffic Safety Administration. I have turned down four cases in my career, two because I felt the attorneys trying to hire me as their expert had concealed evidence, and two defense cases where my analysis showed the defendant, not the plaintiff,

was responsible for the crash.

7. I was first contacted by the attorneys for Forrester Flight Company about providing an expert opinion in this case on July 8, 2022. Forrester's attorneys told me their prior expert had passed away unexpectedly and they were up against a tight deadline to name an expert. After reviewing the NTSB investigation report, marked as Exhibit #7, prepared by Dr. Fisher Street, I agreed to provide expert testimony on behalf of Forrester. My standard hourly rate is $300, with an additional $5,000 flat fee if I am called to testify at trial. I spent 15 hours reviewing the evidence provided by the Forrester attorneys and another five hours preparing the report. Due to the rushed nature of the contract request, there was an additional $3,000 availability fee. This offset the inconvenience of rescheduling other clients.

8. I have previously investigated and provided expert testimony at trial in relation to two airplane accidents. The first was the 2009 landing of US Airways Flight 1549 in the Hudson River shortly after take-off. In that case, I consulted with the NTSB and helped them reach the finding that the cause of engine failure was the flock of geese the plane struck during take-off, and no fault lay with the pilot. The second was the 2010 Alaska DHC-3 Otter crash, which killed several people including a former U.S. Senator. After thoroughly investigating the accident, the court ultimately accepted the cause of the crash was inconclusive, and the pilot's estate could not be held liable to the victim's families.

9. The attorneys for Forrester Flight Company specifically asked me to analyze all evidence that could be presented at trial and provide an opinion about the question of whether the pilot of Flight X1027, Bryce Harrelson, bore any responsibility for Flight X1027's crash. After reviewing the evidence, I concluded that Bryce Harrelson and Cardinal Airlines, and not Forrester Flight Company were negligent in the crash of Flight X1027.

10. Reviewing the NTSB Report also meant I needed to examine weather-related issues. The weather report marked as Exhibit #1, showed there were none. I reviewed the accident site photo, marked as Exhibit #8, and other than showing the scorched earth and location where so many people died, it was of no investigatory value. The pre-flight checklist of Flight X1027, marked as Exhibit #5, was of value both to my investigation as well as the NTSB's. The pre-flight checklist indicates that the pilot correctly checked all items prior to flight and

conducted everything properly. Interestingly, Cardinal Airlines does not include an item on the checklist to ensure the co-pilot is aware of the pilot's PIN should EZ-Flight need to be disengaged. For something as vital as this, it would be imperative to be certain that information had been conveyed. For Cardinal Airlines not to have done so was negligent.

11. Plaintiff's attorneys provided the Defense with the EZ-Flight training materials, marked as Exhibit #3, as well as the exam results for Bryce Harrelson, marked as Exhibit #4. Cardinal Airlines require pilots to be certified on the EZ-Flight software before being permitted to engage the feature during take-offs and landings. It is my expert opinion pilot Bryce Harrelson was not sufficiently trained.

12. To reach this conclusion, I reviewed the text messages between Bryce and Shell Alonso, marked as Exhibit #6, and as were turned over to the NTSB by Plaintiff Jo Harrelson. This corroborates the statement of Bryce sleeping in class and indicates, even while awake during the mandatory EZ-Flight training, Bryce was not attentive. I also reviewed the text messages between Bryce and Jo Harrelson, marked as Exhibit #2, and concluded Bryce was inattentive in the training and rushed through the quiz.

13. Both issues speak to the training standards or lack thereof within Cardinal Airlines, and trainer in particular. A trainer with this level of seniority and responsibility should have been aware of the room and the temperament of those involved in training. Certainly, a pilot texting and falling asleep in a class should be noticed, removed, and forced to repeat the course of study. I am aware Bryce received a passing grade on the EZ-Flight Training Quiz administered by Sandy Kay at the end of the EZ-Flight training. Cardinal Airlines, unlike most other air carriers in the United States, has an abnormally low acceptable pass rate for post-training quizzes. Industry best practices would require pilots to score 100% on a post-flight quiz. A test in the range of 25 questions would be more efficient at rating knowledge and retention than a simple 10-question quiz. Even the Bryce Harrelson and Shell Alonso noted this was too simple to be taken seriously. The two questions Bryce missed on the quiz were both implicated in the crash. The Flight Data Recorder (FDR) Report, marked as Exhibit #10, indicates someone pressed the EZ-Flight override button before entering the flight number and then Hamilton's PIN. Both of those responses were incorrect to disengage EZ-Flight. Had Bryce been fully

trained on the EZ-Flight software, Bryce would have been recognized as a system error, and would have remembered the override sequence, required the pilot to enter a PIN first before pressing override. A loose external sensor likely triggered an emergency alarm, and as noted in the training materials, issued by Forrester to all airlines utilizing the EZ-Flight, the entering of Bryce's PIN would have been necessary to override EZ-Flight, but it was never entered. This left the pilot and co-pilot fighting the computers for control of the aircraft, which was impossible.

14. Relatedly, there is significant evidence as a result of having failed to pay attention during the EZ-Flight training, Bryce was not prepared to operate EZ-Flight in general or on the day of the Flight X1027 crash. Why would a pilot so interested in safety and automated flight control systems rush through training? Perhaps because safety and the automated systems were not on that pilot's mind. Why would a pilot so interested in EZ-Flight then only use the system twice out of several hundred flights after becoming authorized to use the system? Is it a result of the pilot's preference to control the aircraft manually or fear of engaging a system without proper training?

15. Because the co-pilot Bryce normally flew with called in sick, Dale Hamilton flew as co-pilot the day of the crash. Again, speaking to training, it brings into question if Hamilton also did not know the proper procedures or sequences related to the operation of EZ-Flight. There is no evidence to suggest Bryce Harrelson experienced a medical emergency sometime between the initiation of take-off and Flight X1027's crash. As Dr. Fisher Street notes, the Cockpit Voice Recorder was rendered inoperable and no voice recordings are available. But, even if Bryce did experience a medical emergency and was rendered incapable of overriding the EZ-Flight System once the emergency alarms sounded, there is no evidence Hamilton was equipped with the PIN to override and take control of the plane. I must admit it is possible Bryce communicated the correct PIN to Dale Hamilton, suffered an incapacitating medical emergency, and Hamilton forgot the override PIN in the heat of the moment. It would be pure conjecture for which there is no available evidentiary support.

16. None of this is to say there were not some serious issues with the EZ-Flight system. For one thing, I would have designed the override system to override immediately upon hitting override, and not requiring a pilot's PIN. If a PIN was necessary, then either PIN

should have been sufficient to take manual control of the aircraft. There is no reason I can think of for keying the override PIN to the pilot and only the pilot. I find it troubling Forrester was aware emergency alarms could sound in error in a significant number of flights using EZ-Flight. It is true, the company did prioritize pushing the software out to every model of aircraft instead of sending an update to correct the known defect causing erratic fluctuations in flight trajectory. However, this does not override the clear pilot error and lack of sufficient training by the pilot's employer being the cause of the crash of Flight X1027.

WITNESS ADDENDUM

I have reviewed this statement, and I have nothing of significance to add at this time. The material facts are true and correct.

Signed,

River Lynch

River Lynch

SIGNED AND SWORN to me before 8:00 a.m. on the day of this round of the 2023/2024 Mock Trial Competition.

Anthony Roberts

Anthony Roberts, Notary Public
State of South Carolina
My Commission Expires: 10/24/27

EXHIBITS

EXHIBITS AVAILABLE TO BOTH PARTIES

The parties have stipulated the authenticity of the trial exhibits listed below. The Court will, therefore, not entertain objections to authenticity of these trial exhibits. The parties have reserved any objections to the admissibility of any of these exhibits until the trial of the above-captioned matter. The trial exhibits may be introduced by either party, subject to the Rules of Evidence and the stipulations of the parties contained in the materials.

EXHIBIT #	EXHIBIT DESCRIPTION
1	Weather forecast from National Weather Service
2	Text messages between Bryce and Jo Harrelson
3	EZ-Flight Training Materials From Cardinal Airlines
4	Bryce Harrelson EZ-Flight Competency Quiz Results
5	Flight X1027 Pre-Flight Checklist
6	Text messages between Bryce Harrelson and Shell Alonso
7	NTSB Report and findings on the crash of Cardinal Airlines flight X1027
8	Photograph of Flight X1027 crash location taken from NTSB helicopter
9	Dr. River Lynch Expert Report of Lynch Reconstruction on Flight X1027 crash
10	Flight Data Recorder Report issued by NTSB

EXHIBIT #1 Weather Report for Greenville-Spartanburg International Airport, April 16, 2021

National Weather Service Zone

Forecasts, Watches, Warnings and Advisories Issued For:

April 16, 2021 --- Greenville-Spartanburg International Airport, South Carolina

Date and Time Issued	Forecast – Pilot Advisory	
0513, Friday **04/16/2021**	**TODAY**	Sunny and clear in the AM, then partly cloudy with a chance of showers and thunderstorms after 1700. Highs in the upper 70s. SW winds 5 to 10 mph. Chance of rain < 5%.
	0800-1200	Sunny and clear. Lows in the low 60s. W winds around 4 mph becoming WSW around 7 mph after 1000. Chance of rain 0%.
	1200-1800	Mostly clear, scattered showers with chance of thunderstorms after 1700. Highs in low 80s. Winds variable with NW winds around 5 mph, becoming SW around 5 mph in afternoon.
	1800-2400	Periods of rain, which may be heavy at times. Lows in the mid 50's. W winds 10 to 18 mph.
0513, Saturday **04/17/2021**	**Saturday**	Showers and thunderstorms possible. Some thunderstorms may have gusty winds, heavy rainfall and hail. Lows in the low 50's. SW winds 5 to 10 mph, becoming NW after Midnight. Chance of rain 70%.
	0800-1200	Areas of fog expected until 1000. Partly Cloudy. Lows in the low 50's, rising to 56 by 1200. Winds SW 5 mph.
	1200-1800	Partly cloudy. Scattered showers expected after 1630. Chance of rain 50%. Highs in the mid 60's. SW winds around 7 mph. Highs in the mid 60's
	1800-2400	Showers with a slight chance of thunderstorms after 2100, Lows in the low 60's. NW winds 5 to 10 mph.
0513, Sunday **04/18/2021**	**Sunday**	Mostly cloudy with showers likely. Possible thunderstorms. Chance of rain 90%. Local heavy rainfall possible. Lows in the high 50's. Highs in the mid 60's Variable winds from 5 mph to 15 mph.
	0800-1200	Mostly cloudy with showers. Possible thunderstorms. Chance of rain 70%Local heavy rainfall possible. Highs in the mid 60's. NW winds around 5 mph.
	1200-1800	Mostly cloudy with showers. Thunderstorms likely after 1400. Chance of rain 90%. Local heavy rainfall possible. Highs in the mid 60's. NW winds around 5 mph.
	1800-2400	Showers with possible thunderstorms. Local heavy rainfall possible. Lows in the high 50's. W winds 5 to 10 mph.

Exhibit #2 Text Messages between Bryce and Jo Harrelson

Text From	Text To	Date	Time	Text
Bryce Harrelson 864-555-7018	Jo Harrelson 864-555-7019	09/27/19	12:08 pm	Just landed. What time is Emily's game? Wouldn't miss it for the world! Who would have thought that we would raise a soccer star?
Jo Harrelson 864-555-7019	Bryce Harrelson 864-555-7018	09/27/19	12:10 pm	4pm. We might get to meet the scouts before the game so get here soon!
Bryce Harrelson 864-555-7018	Jo Harrelson 864-555-7019	09/27/19	12:36 pm	Cardinal is making me attend training for a new flight system called EZ Flight. I will fly through the test because they're never hard and still make it within 10 minutes of kickoff.
Bryce Harrelson 864-555-7018	Jo Harrelson 864-555-7019	09/27/19	1:42 pm	Can't believe I have to attend this 😠 The flight systems I flew in the military were more complicated than this on/off button. I should be excused because I already learned all of this in the military.
Bryce Harrelson 864-555-7018	Jo Harrelson 864-555-7019	09/27/19	2:23 pm	Wow, training after a long flight is ridiculous – I'm so tired. Can you bring me a mainline of caffeine to Emily's game? Or a recliner to take a nap?
Jo Harrelson 864-555-7019	Bryce Harrelson 864-555-7018	09/27/19	2:34 pm	Haha, as if. If it's something you already know, you can doze off? We're leaving for Em's game. See your peppy self there! 😘
Jo Harrelson 864-555-7019	Bryce Harrelson 864-555-7018	09/27/19	3:32 pm	Scouts were great – UVA and Duke seemed especially interested. Hurry – game starts in 30 minutes!
Bryce Harrelson 864-555-7018	Jo Harrelson 864-555-7019	09/27/19	3:53 pm	That EZ Flight exam was a piece of cake! Sorry I'm late, On my way – should be there 15 minutes after kickoff.

EXHIBIT #3 EZ-Flight System Training Slides (1 of 3)

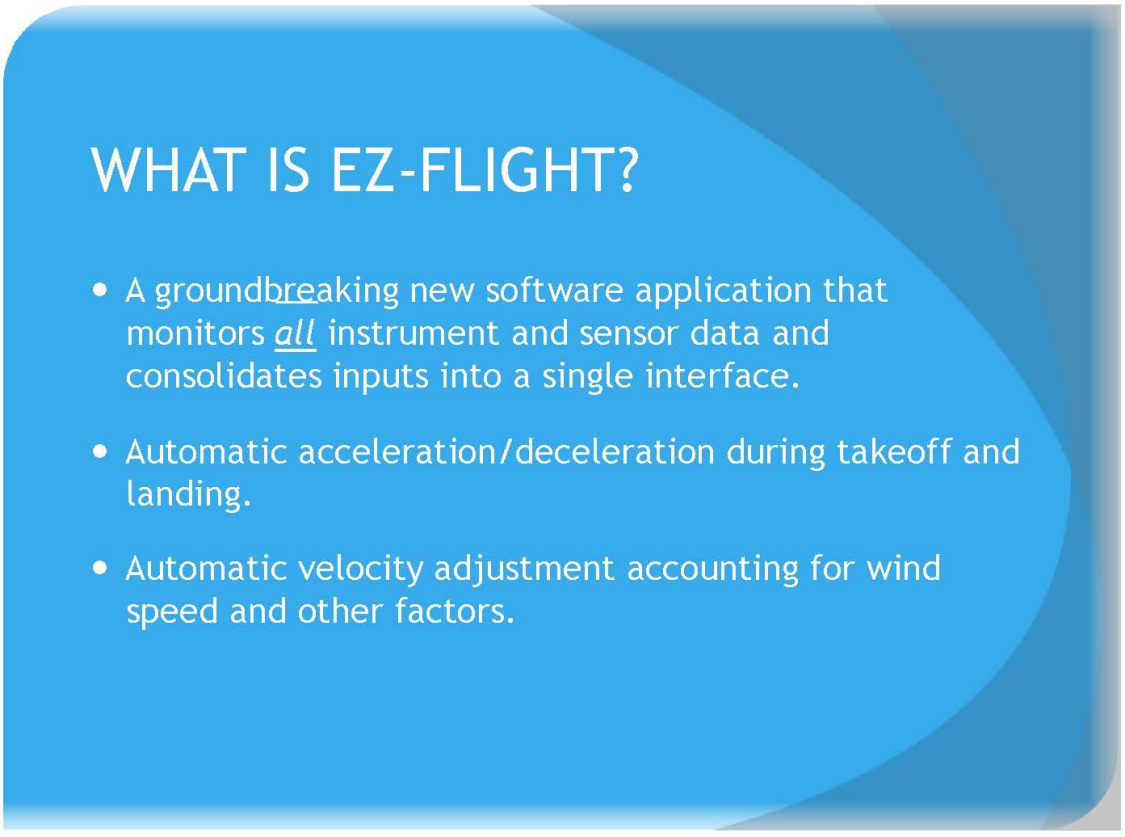
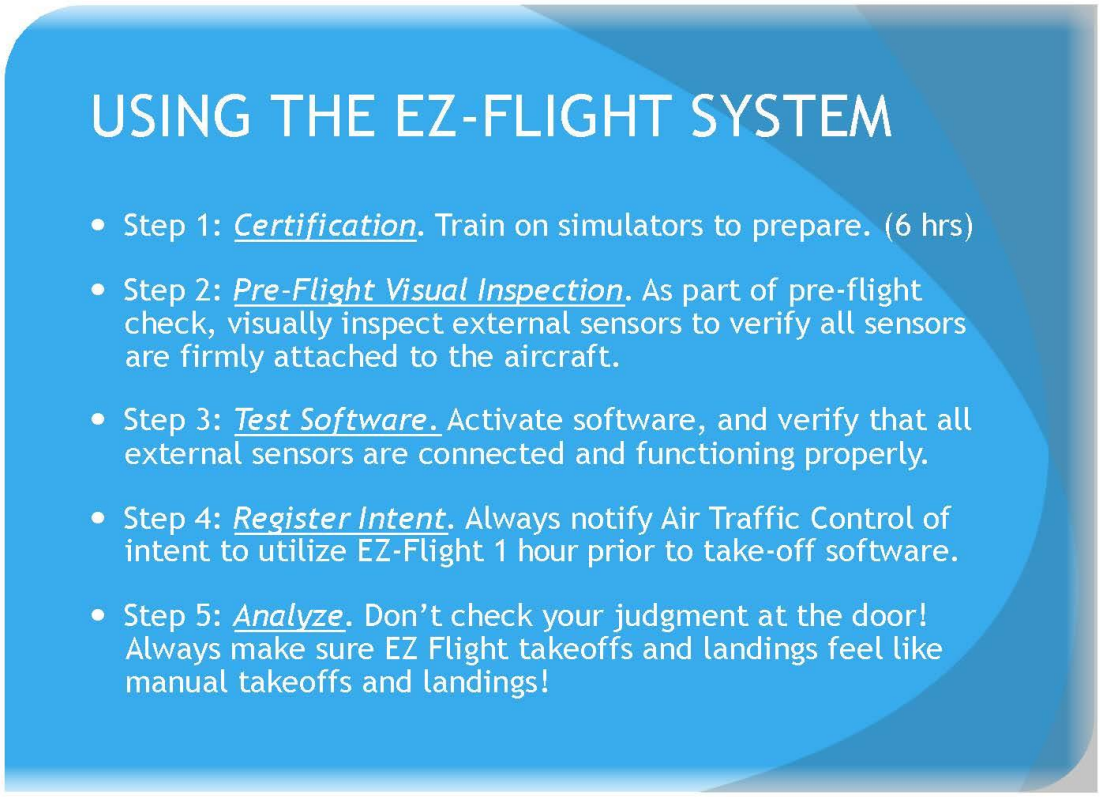


EXHIBIT #3 EZ-Flight System Training Slides (2 of 3)



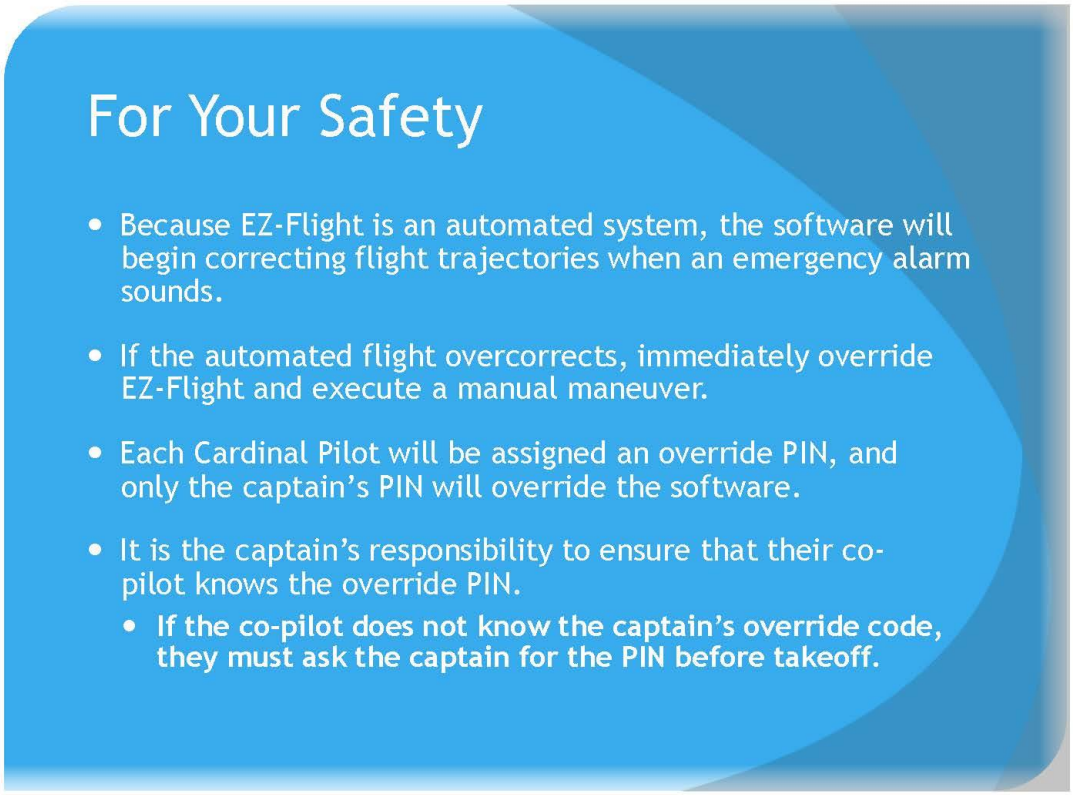


EXHIBIT #3 EZ-Flight System Training Slides (3 of 3)

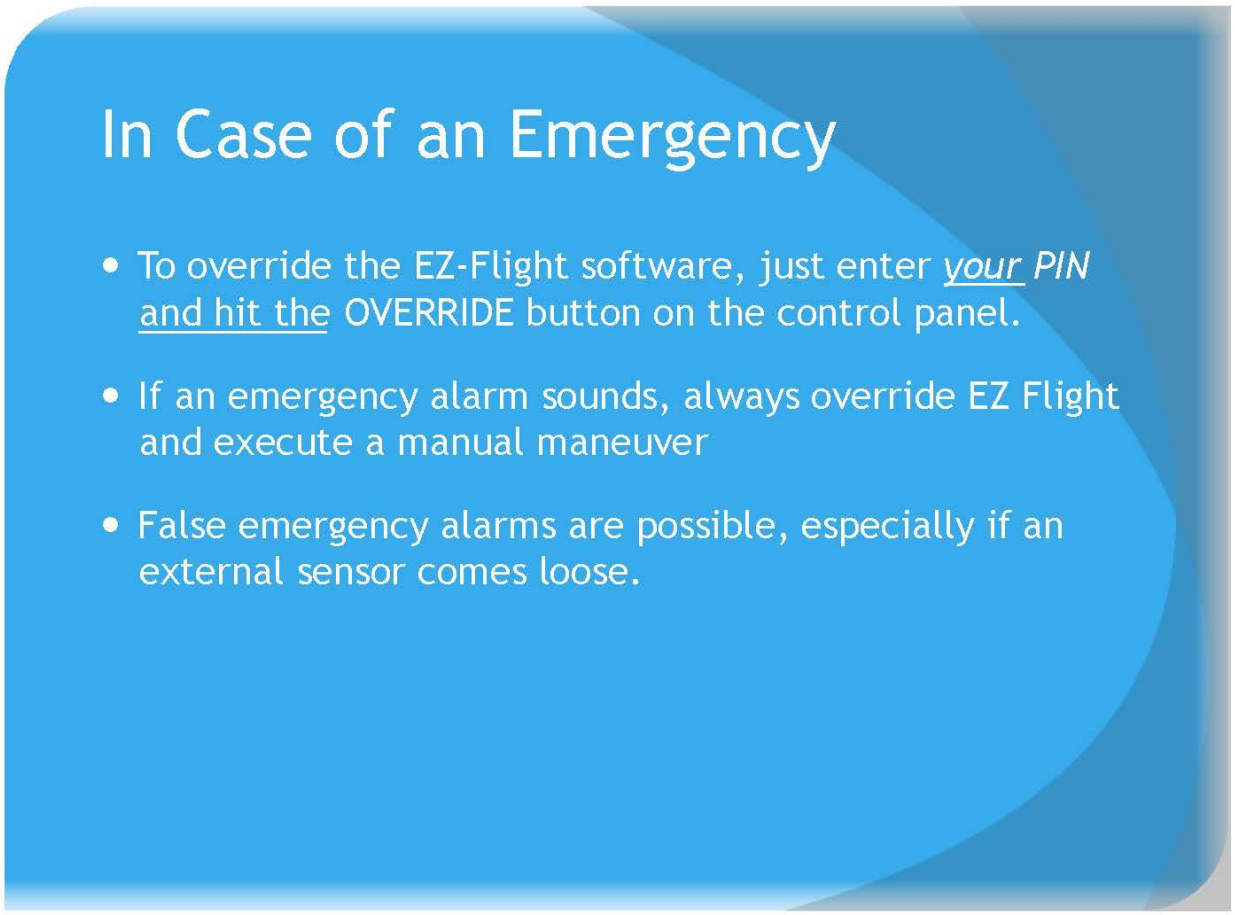


EXHIBIT #4 EZ-Flight Competency Quiz (1 of 2)

Cardinal Airlines:
EZ-Flight Competency Quiz

Cardinal Employee: **Bryce Harrelson**
Title: **Captain**
Quiz Administered by: **Sandy Kay**
Date: **September 27, 2019**

1. Pilots must register their intent to engage EZ-Flight with Air Traffic Control before take-off **and** landing.

   ✓ True False

2. Take-offs and landings using EZ-Flight should feel the same as manual take-offs and landings.

   - True
   - ✓ False – should feel smoother
   - False – could feel greater turbulence due to software's micro-adjustments

3. To override EZ-Flight software, the pilot must enter their PIN before hitting the OVERRIDE button.

   True ✗ False

4. Cardinal Airlines requires pilots to engage the EZ-Flight software whenever the plane is equipped with the feature.

   True ✓ False

5. FAA regulations prohibit the use of EZ-Flight feature unless both the pilot and the co-pilot are certified to operate automatic take-offs and landings.

   ✓ True False

EXHIBIT #4 EZ-Flight Competency Quiz (2 of 2)

Cardinal Airlines:
EZ-Flight Competency Quiz

6. When using EZ-Flight, the pre-flight checklist requires pilots to visually inspect external sensors, and verify the software connection to external sensors is functioning properly.

✓ True False

7. A loose external sensor could incorrectly interpret a flight trajectory correction as a "dive."

True ✗ False

8. Pilots must renew their certification on EZ-Flight every 2 years.

✓ True False

9. EZ-Flight test data indicates false emergency alarms could trigger on 1 percent of flights, and a pilot should always exercise judgment to override the software in cases of a false alarm.

✓ True False

10. If an emergency alarm is triggered during a take-off or landing, the pilot **must** override EZ-Flight and execute the maneuver manually.

✓ True False

EXHIBIT #5 Cardinal Airlines Flight X1027 Preflight Checklist

Pre-Flight Checklist – Cardinal Airlines

Flt: X1027 Pilot: Bryce Harrelson

Date: April 16, 2021 Co-Pilot: Dale Hamilton

Before Take-off Checklist

Auxiliary fuel pump — Off	Bryce Harrelson
Flight controls — Free and correct	Bryce Harrelson
Instruments and radios — Checked and set	Bryce Harrelson
EZ-Flight – Engaged and active	BH
EZ-Flight – Greenlight external sensors	Bryce Harrelson
EZ-Flight – Notify ATC of intent to activate	Bryce Harrelson
Landing gear position lights — Checked	Bryce Harrelson
Altimeter — Set	Bryce Harrelson
Directional gyro — Set	Bryce Harrelson
Fuel gauges — Checked	Bryce Harrelson
Trim — Set	Bryce Harrelson
Propeller — Exercise	N/A
Engine idle — checked	Bryce Harrelson
Flaps — As required	B. Harrelson
Seat belts/shoulder harnesses — Fastened	Bryce Harrelson
Parking brake — Off	Bryce Harrelson

Final items

Doors and windows — Locked	Bryce Harrelson
Flight Plan – Filed with ATC	Bryce Harrelson
Lights — Landing, taxi, strobes on	BH
Bryceera — Transponder on	BH
Action — Engine instruments checked	BH
CVR – Engaged and active	BH
FDR – Recording	BH

Electronic submission received by GSP ATC @ 9:39:25 4/16/2021

Exhibit #6 Text Messages Between Bryce Harrelson and Shell Alonso

Text From	Text To	Date	Time	Text
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	12:25 p.m.	Did you get this email about a mandatory training for EZ-Flight this afternoon?
Shell Alonso 864-555-6043	Bryce Harrelson 864-555-7018	09/27/19	12:37 p.m.	Yeah. Guess you aren't done with me for the day yet. C u @ 1.
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	1:12 p.m.	Can't believe they're making us sit through a training after the flight schedule we just flew! So ridiculous.
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	1:23 p.m.	This is stupid. I used tech in the military, and it was more complicated than this!
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	2:47 p.m.	Thanks for reminding me to keep my eyes open…Kay's trainings are so 😴😴😴
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	3:34 p.m.	How are you staying awake through this?? I need a mainline of whatever caffeine you're on
Bryce Harrelson 864-555-7018	Shell Alonso 864-555-6043	09/27/19	3:52 p.m.	Sorry to blow up your phone during the training – just trying to keep myself awake. Enjoy the days off and see ya in a few.
Shell Alonso 864-555-6043	Bryce Harrelson 864-555-7018	09/27/19	4:21 p.m.	Haha, all cool – keeping you awake is literally in my job description. Good luck to Emily!

Exhibit #7 NTSB Report and findings on the crash of Cardinal Airlines Flight X1027 (1 of 2)

NATIONAL TRANSPORTATION SAFETY BOARD
Aircraft and Railway Division
Washington, D.C. 20594
November 19, 2021

Accident Investigation Report and Findings

Regional Lead Investigator, Fisher Street, Ph.D.

1. Factual Information

On April 16, 2021, at 0947:55 Eastern Daylight Time (EDT), Cardinal Airlines Flight X1027, Forrester Flight Company FFC 500 Super, registration NN19761, crashed northeast of the Greenville-Spartanburg International Airport (GSP) shortly after take-off. On board were the captain, the first officer, two flight attendants, and 54 passengers. All died on impact, and the airplane was destroyed. The regularly scheduled domestic passenger flight was operating under the provisions of 14 Code of Federal Regulations Part 121 from GSP, Greer, South Carolina.

1.1 Personnel Information

The captain was the Pilot Flying, and the first officer was the Pilot Monitoring during the flight from GSP. The crew opted to utilize EZ-Flight for take-off and was recorded with GSP ATC

1.2 Airplane Information

The plane assigned to Flight X1027 was a Forrester Flight Company FFC 500 Super and was equipped with all the most up to date mechanical and electrical features, including EZ-Flight. EZ-Flight operates by collecting flight data from all the plane's sensors and monitors, and adjusts for unanticipated conditions (storms, wind, birds, etc.) to secure a safer and smoother take-off and landing. GSP ATC records indicate Bryce Harrelson notified ATC of the intent to engage EZ-Flight approximately thirty minutes prior to Flight X1027's take-off.

1.3 Meteorological Information

Weather was ruled out as a contributing factor to Flight X1027's crash. At the time of the crash, it was a clear, sunny day, with mild winds. At the time of take-off, the winds at GSP registered at 4 mph. Other aircraft taking off and landing at GSP in the 30 minutes prior to and following Flight X1027's crash did not report any anomalous weather conditions.

1.4.1 Flight Data Recorders (FDR)

The FDR data indicated at 0942:11 EDT, the aircraft began its take-off procedure from GSP. During this evolution, the aircraft rotated to a nose up position at 0943:33 EDT to a minimum pressure altitude of 1,750 ft before a left turn was executed. The indicated ascending angle was 8 degrees.

At 0944:07 EDT while at a pressure altitude of approximately 5,150 ft, the aircraft took an ascending trajectory of 25 degrees. This was accompanied by an airspeed warning alarm. At 0945:02 EDT systems indicate a correction to a 29-degree descending trajectory. This was accompanied by an airspeed warning alarm. At 0945:21 EDT, an ascending trajectory of 20

Exhibit #7 NTSB Report and findings on the crash of Cardinal Airlines Flight X1027 (2 of 2)

degrees was registered. This was accompanied by an airspeed warning alarm. At 0947:00 EDT, a final descent of 43.5 degrees was registered. This was accompanied by an altimeter warning alarm. At 0947:55 EDT all data transmitted to FDR ceased. This is the moment of impact. Entire flight time from 942:11 EDT to 0947:55 EDT.

1.4.2 FDR Pilot Inputs

At 0942:11 EDT, EZ-Flight registered Flying Pilot releasing the brakes at the end of runway 4/22. Automated take-off procedure followed. At 0944:09 EDT, manual inputs to the yoke were registered from the Pilot Flying position. These inputs were to push the plane to a descending trajectory. At the same time the override button on the multifunction touchscreen was pressed followed by a PIN input of 1027. A second press of the override button followed by PIN input of 1812 was registered at 0945:22 EDT. Finally manual inputs to the yoke were registered from the Flying Pilot's position at 0947:02 EDT. These inputs were attempting an ascending trajectory but were unsuccessful in changing the angle of the aircraft.

1.4.3 Cockpit Voice Recorder

The Cockpit Voice Recorder (CVR) was damaged beyond use.

1.5 Wreckage and Impact Information

Shortly after the crash, an NTSB investigation team visited the crash site which was photographed. The crash site was less than two miles to the northeast of GSP in a wooded area owned by BMW. The aircraft was destroyed upon impact, but the team was able to locate and collect portions of the airplane. Emergency responders located the plane's Flight Data Recorder and the Cockpit Voice Recorder.

1.6 Interviews

NTSB interviewed eyewitnesses; every Cardinal Airlines employee who had been associated with the aircraft in the week prior to its crash. NTSB Investigators spoke with the software developers at Forrester Flight Company, and the developers acknowledged the existence of a glitch in the EZ-Flight software. The company was working on a patch to fix the glitch but were short-staffed. Rolling out a patch was a secondary priority. The top priority was to get the EZ-Flight software in each model of Forrester airplanes.

2.0 Conclusion

It was not possible to definitively determine what caused the erroneous emergency alarms to sound. No data collected from the FDR indicated a manual defect with any of the sensors.

The investigation determined the sole cause of Flight X1027's fatal crash was a faulty software system designed by Forrester Flight Company. Despite recognizing the software contained a glitch which could trigger emergency alarms in error, Forrester deprioritized development of the patch. The emergency alarms triggered the software into sending Flight X1027 into two dives, one of which the software corrected, and the second proved fatal. The complexity of the override procedure for EZ-Flight was unnecessary. The NTSB investigation was unable to conclude any actions or inactions on the part of Bryce Harrelson contributing to the crash in any way.

Exhibit #8 Photograph of crash site taken from NTSB helicopter

Exhibit #9 Lynch Reconstruction report on crash of Cardinal Airlines Flight X1027 (1 of 3)

August 5, 2022

LR

Lynch Reconstruction LLC
85 Asbury Ave, Ocean Grove, NJ

Engagement Parameters
Lynch Reconstruction LLC was retained by counsel from Frontier Flight Company to provide opinion as to the cause and liability of the crash of Cardinal Airlines Flight X1027. The information to follow represents the exhaustive review of all pertinent information available at the time. All conclusions are based solely upon the information as provided to Lynch Reconstruction LLC. Any omissions or withheld information could not be evaluated.

Data used in Evaluation of Crash
The National Transportation Safety Board (NTSB) Report, Crash site Photograph, NTSB Flight Data Recorder (FDR) Report, Pre-Flight Checklist, EZ-Flight Cardinal Airlines training materials, EZ-Flight Competency Quiz Results for Bryce Harrelson, and Texts between Bryce and Jo Harrelson were used in order to formulate the opinions given.

Overview of Incident
On April 16, 2021, at 0947:55 Eastern Daylight Time (EDT), Cardinal Airlines Flight X1027, Forrester Flight Company FFC 500 Super, registration NN19761, crashed northeast of the Greenville-Spartanburg International Airport (GSP) shortly after take-off. On board were the captain, the first officer, two flight attendants, and 54 passengers. All died on impact, and the airplane was destroyed.

Causes of Incident

Pilot Training

Cardinal Airlines requires pilots to be certified on the EZ-Flight software before the pilots may engage the feature during take-offs and landings. It is my expert opinion pilot Bryce Harrelson was not sufficiently trained.

To reach this conclusion, I reviewed the text messages between Bryce Harrelson and Shell Alonso. This corroborates the statement Harrelson was sleeping in class. Text messages between Bryce and Jo Harrelson were reviewed and concluded Harrelson was inattentive in the training and rushed through the quiz.

Both issues speak to the training standards within Cardinal Airlines, and the trainer. Certainly, a pilot texting and falling asleep in a class should be noticed, removed, and forced to repeat the course of study. Harrelson received a passing grade on the EZ-Flight Training Quiz administered by Sandy Kay at the end of the EZ-Flight training. Cardinal Airlines, unlike most other air carriers in the United States, has an abnormally low acceptable pass-rate of 80% for post-training quizzes. Industry best practices would require pilots to score 100% on the quiz. A test in the range of 25 questions would be more efficient at rating knowledge and retention

than a simple 10 question quiz. Even the pilot in question and co-pilot noted this was too simple to be taken seriously.

The two questions Harrelson missed on the quiz were both implicated in the crash. The Flight Data Recorder (FDR) Report indicates someone pressed the EZ-Flight override button before entering the flight number and then Hamilton's PIN. All of those responses were incorrect to disengage EZ-Flight. Had Harrelson been fully trained on the EZ-Flight software, this would have been recognized as a system error. They would have remembered the override sequence, required the pilot to enter a PIN first before pressing override. A loose external sensor likely triggered an emergency alarm, and as noted in the training materials, issued by Forrester to all airlines utilizing the EZ-Flight. Entering Harrelson's PIN would have been necessary to override EZ-Flight, but it was never entered. This left the pilot and co-pilot fighting the computers for control of the aircraft, which was impossible.

Relatedly, there is significant evidence because of Harrelson's failure to pay attention during the training, Harrelson was not prepared to operate EZ-Flight in general, or on the day of the crash. Why would a pilot properly trained on EZ-Flight then only use the system twice out of several hundred flights? Is it a result of the pilot's preference to control the aircraft manually, or fear of engaging a system they were not properly trained on?

Because the co-pilot Harrelson normally flew with called in sick, Dale Hamilton flew as co-pilot the day of the crash. Again, speaking to training, it brings into question if Hamilton also did not know the proper procedures or sequences related to the operation of EZ-Flight. There is no evidence to suggest Bryce Harrelson experienced a medical emergency in the seconds between the initiation of take-off and Flight X1027's crash. As Dr. Fisher Street notes, the Cockpit Voice Recorder had no voice recordings available. But, even if Harrelson did experience a medical emergency and was rendered incapable of overriding the EZ-Flight System once the emergency alarms sounded, there is no evidence Hamilton was equipped with the PIN to override and take control of the plane. I must admit it is possible Harrelson communicated the correct PIN to Dale Hamilton, suffered an incapacitating medical emergency, and Hamilton forgot the override PIN in the heat of the moment. It would be pure conjecture for which there is no available evidentiary support.

Weather

Weather forecast showed there were no weather-related hazards or conditions to affect the crash of Flight X1027.

Pre-Flight Conditions

The pre-flight checklist of Flight X1027 was of value to the investigation. The pre-flight checklist indicates that the pilot correctly checked all items prior to flight and conducted everything properly. Interestingly, Cardinal Airlines does not include an item on the checklist to ensure the co-pilot is aware of the pilot's PIN should EZ-Flight need to be disengaged. For something as vital as this, it would be imperative to be certain that information had been conveyed. For Cardinal Airlines not to have done so was negligent.

Exhibit #9 Lynch Reconstruction report on crash of Cardinal Airlines Flight X1027 (3 of 3)

Conclusions

There were some serious issues with the EZ-Flight system. For one thing, a better design would be to allow override immediately upon hitting override, and not requiring a pilot's PIN. If a PIN was necessary, then either PIN should have been sufficient to take manual control of the aircraft. There is no reason I can think of for keying the override PIN to the pilot and only the pilot. It is troubling Forrester was aware emergency alarms could sound in error in a significant number of flights using EZ-Flight. It is true, the company did prioritize pushing the software out to every model of aircraft instead of sending an update to correct the known defect causing erratic fluctuations in flight trajectory. A notice was sent to all airlines operating the FFC 500 Super advising of the potential glitch and reminding of the override procedure. However, this does not override the clear pilot error and lack of sufficient training by the pilot's employer being the cause of the crash of Flight X1027.

Exhibit #10 National Transportation Safety Board Flight Data Recorder (FDR) Report (1 of 2)

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594
November 19, 2021

Flight Data Recorder (FDR)

Specialist's Factual Report
By Joseph Hudson

1. EVENT SUMMARY

Location:	Greer, South Carolina
Date:	April 16, 2021
Aircraft:	Forrester Flight Company FFC 500 Super
Registration:	NN19761
Operator:	Cardinal Airlines
NTSB Number:	DCA21FX109

On April 16, 2021, at 0947:55 Eastern Daylight Time (EDT), Cardinal Airlines Flight X1027, Forrester Flight Company FFC 500 Super, registration NN19761, crashed northeast of the Greenville-Spartanburg International Airport (GSP) shortly after take-off. On board were the captain, the first officer, two flight attendants, and 54 passengers. All died on impact, and the airplane was destroyed. The regularly scheduled domestic passenger flight was operating under the provisions of 14 Code of Federal Regulations Part 121 from GSP, Greer, South Carolina.

The captain was the Pilot Flying, and the first officer was the Pilot Monitoring during the flight from GSP. The crew opted to utilize EZ-Flight for take-off and was recorded with GSP ATC and in FDR.

2. FDR CARRIAGE REQUIREMENTS

The event aircraft, NN19761, was manufactured in 2012, and was operating such that it was required to be equipped with an FDR that recorded, at a minimum, 88 parameters, as cited in 14 CFR Part 121.344(f).

3. DETAILS OF FDR INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following FDR:

Recorder Manufacturer/Model: Honeywell 4700
Recorder Serial Number: XXFDR-71908

3.1.1. Recorder Condition

The recorder was in good condition and the data were extracted normally from the recorder.

3.1.2. Recording Description

The FDR recording contained approximately 27 hours of data. Timing of the FDR data is measured in subframe reference number (SRN), where each SRN equals one elapsed second. The event flight was the last flight of the recording and its duration was approximately 5 minutes, 44 seconds. The

parameters evaluated for the purpose of this report appeared to be in accordance with federal FDR carriage requirements. used in this report.

3.1.3. Non-Computed Data Pattern

Some parameters recorded a non-computed data (NCD) pattern. An NCD pattern is indicative that the raw data is no longer reliable or not available. An NCD pattern is typically recorded when the aircraft is on the ground.

Due to the severity of the event, the following 4 parameters recorded an NCD pattern at impact:

- Inboard Wheel Speed - 1 (Wheel Spd Inbd-1)
- Inboard Wheel Speed - 2 (Wheel Spd Inbd-2)
- Outboard Wheel Speed - 1 (Wheel Spd Outbd-1)
- Outboard Wheel Speed - 2 (Wheel Spd Outbd-2)

3.1.4. Radio Altitude - 2

Due to the severity of the event, Radio Altitude - 2 (Altitude Radio-2) recorded 2,550 feet (ft) at impact.

3.2. Time Correlation

Correlation of the FDR data from SRN to the event local time, EDT, was established by using the recorded GMT Hours, GMT Minutes, and GMT Seconds and then applying an additional 4 hours offset to change GMT to EDT.

3.3. FDR Corresponding Data

The FDR data indicated at 0942:11 EDT, the aircraft began its take-off procedure from GSP. During this evolution, the aircraft rotated to a nose up position at 0943:33 to a minimum pressure altitude of 1,750 ft before a left turn was executed. The indicated ascending angle was 8 degrees.

At 0944:07 EDT while at a pressure altitude of approximately 5,150 ft, the aircraft took an ascending trajectory of 25 degrees. This was accompanied by an airspeed warning alarm. At 0945:02 EDT systems indicate a correction to a 29-degree descending trajectory. This was accompanied by an airspeed warning alarm. At 0945:21 EDT, an ascending trajectory of 20 degrees was registered. This was accompanied by an airspeed warning alarm. At 0947:00, a final descent of 43.5 degrees was registered. This was accompanied by an altimeter warning alarm. At 0947:55 all data transmitted to FDR ceased. This is the moment of impact. Entire flight time from 942:11 EDT to 0947:55 EDT.

3.3. FDR Pilot inputs

At 0942:11 EDT, EZ-Flight registered Flying Pilot releasing the brakes at the end of runway 4/22. Automated take-off procedure followed. At 0944:09 EDT, manual inputs to the yoke were registered from the Pilot Flying position. These inputs were to push the plane to a descending trajectory. At the same time the override button on the multifunction touchscreen was pressed followed by a PIN input of 1027. A second press of the override button followed by PIN input of 1812 was registered at 0945:22 EDT. Finally manual inputs to the yoke were registered from the Flying Pilot's position at 0947:02. These inputs were attempting an ascending trajectory but were unsuccessful in changing the angle of the aircraft.