



# 2023-24 High School Mock Trial

## Civil Case

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

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

***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**

Russell Infinger

**LRE COMMITTEE CHAIR**

Susan Hackett

**MOCK TRIAL SUB-COMMITTEE CHAIR**

Andrew N. Cole

**CASE CONTRIBUTORS**

Andrew N. Cole

Elizabeth Leverette

Susan Hackett

Jessica Saxon

Marian J. Kirk

Barbara Seymour

Donald N. Lanier

**SC BAR LRE DIVISION STAFF**

Donald N. Lanier, LRE Interim Director

Marian J. Kirk, LRE Coordinator II



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	2003 – Bob Jones Academy
1983 – Conway High	2004 – Bob Jones Academy (Nat'l Champs)
1984 – Strom Thurmond High	2005 – Berkeley High
1985 – Strom Thurmond High	2006 – Berkeley High
1986 – Myrtle Beach High	2007 – Fort Mill High
1987 – Strom Thurmond High	2008 – Berkeley High
1988 – Socastee High (Nat'l Champs)	2009 – Fort Mill High
1989 – Berkeley High	2010 – Bob Jones Academy
1990 – Irmo High	2011 – North Myrtle Beach High
1991 – Berkeley High	2012 – Strom Thurmond High
1992 – Irmo High	2013 – North Myrtle Beach High
1993 – Berkeley High	2014 – North Myrtle Beach High (2 <sup>nd</sup> Nat'l)
1994 – Middleton High	2015 – Strom Thurmond High
1995 – Bob Jones Academy	2016 – Fort Mill High
1996 – Socastee High	2017 – Strom Thurmond High
1997 – Socastee High	2018 – Heathwood Hall Episcopal School
1998 – Socastee High	2019 – Strom Thurmond High
1999 – Socastee High	2020 – Strom Thurmond High
2000 – Berkeley High	2021 – Bob Jones Academy
2001 – Bob Jones Academy	2022 – Strom Thurmond High
2002 – Berkeley 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)	2019 – Bob Jones..... (Regional)
2017 – Ben Lippen.....(Regional)	2019 – Heathwood Hall Episcopal ..... (Regional)
2017 – Bob Jones.....(Regional)	2019 – St. James – Santee ..... (Regional)
2017 – Longleaf .....(Regional)	2019 – Ten Oaks ..... (Regional)
2017 – Philip Simmons .....(Regional)	2019 – Chapin ..... (State)
2017 – Ten Oaks .....(Regional)	2020 – Chapin ..... (Regional)
2017 – Buist..... (State)	2021 – Kingstree Middle Magnet (Regional)
2018 – Cario .....(Regional)	2022 – GREEN Charter..... (Regional)
2018 – Forestbrook.....(Regional)	2022 – JET Middle..... (Regional)
2018 – Heathwood Hall Episcopal ... (Regional)	2022 – Whittemore Park Middle . (Regional)
2018 – Leavelle McBrycepbell .....(Regional)	2022 – Chapin Middle..... (State)
2018 – Pleasant Knoll .....(Regional)	
2018 – Chapin ..... (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
- 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



### **HIGH SCHOOL**

2017 – Chapin ..... (State)	2021 – W.J. Keenan ..... (Regional)
	2021 – Lexington ..... (Regional)
2018 – Dorman .....(Regional)	2021 – Ft. Dorchester ..... (Regional)
2018 – Gov. Sch. Science & Math ... (Regional)	2021 – Chas. Cty. Sch. of Arts..... (State)
2018 – Indian Land .....(Regional)	
2018 – Kingstree.....(Regional)	2022 – Chas. Cty. Sch. of Arts.... (Regional)
2018 – Spring Hill.....(Regional)	2022 – Greenwood ..... (Regional)
2018 – Wilson ..... (State)	2022 – Strom Thurmond..... (Regional)
	2022 – Governor’s School for Science & Mathematics ..... (State)
2019 – Charleston Sch. of Arts .....(Regional)	
2019 – Fort Mill .....(Regional)	2023 – Academic Magnet ..... (Regional)
2019 – Indian Land .....(Regional)	2023 – Richland Northeast ..... (Regional)
2019 – Kingstree.....(Regional)	2023 – Strom Thurmond ..... (Regional)
2019 – Socastee .....(Regional)	2023 – Spring Hill ..... (State)
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)	

## **HIGH SCHOOL MOCK TRIAL COURTROOM ARTIST AND JOURNALIST STATE WINNERS**

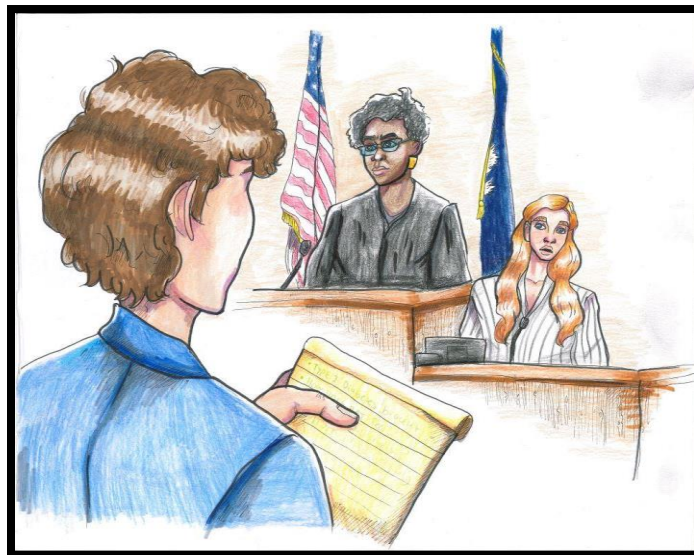
### **COURTROOM ARTIST**

- 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.sctbar.org/lre](http://www.sctbar.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.scbars.org/lre](http://www.scbars.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](mailto:dlanier@scbar.org)  
Marian Kirk, LRE Coordinator II..... [mkirk@scbar.org](mailto:mkirk@scbar.org)

**2023/24**

**Mock Trial Case**

## 2023-24 High School Mock Trial Case:

<b>Introduction</b> .....	<b>1</b>
<b>Pleadings</b> .....	<b>2</b>
Complaint and Answer .....	3
Complaint .....	4
Answer .....	7
Pre-Trial Order .....	9
Stipulations of the Parties .....	9
Preliminary Jury Instructions .....	11
Appendix A: Jury Verdict Form .....	20
<b>Witnesses and Affidavits</b> .....	<b>22</b>
Witnesses Listing .....	23
Plaintiff's Witnesses	
Affidavit, Jo Harrelson – Plaintiff .....	24
Affidavit, Jaden Holley – Computer Engineering Professor .....	30
Affidavit, Fisher Street – NTSB Investigator .....	35
Defense's Witnesses	
Affidavit, Lake Gambell – Defendant .....	41
Affidavit, Costa Jackson – Cardinal Airlines Software Developer .....	47
Affidavit, River Lynch – Accident Reconstruction Expert .....	54
<b>Exhibits</b> .....	<b>60</b>
Exhibits Listing .....	61
Exhibit 1 .....	62
Exhibit 2 .....	63
Exhibit 3 .....	64
Exhibit 4 .....	67
Exhibit 5 .....	69
Exhibit 6 .....	70
Exhibit 7 .....	71
Exhibit 8 .....	73
Exhibit 9 .....	74
Exhibit 10 .....	77

# 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.<sup>1</sup> And they do it safely. In fact, flying is statistically the safest mode of transportation in the United States and abroad.<sup>2</sup>

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.

<sup>1</sup> <https://www.travelandleisure.com/airlines-airports/number-of-planes-in-air>.

<sup>2</sup> <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 led 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.	)	
	)	<b>STIPULATIONS</b>
	)	
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.<sup>[1]</sup>
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

---

<sup>[1]</sup> 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. Sandy Kay and Shell Alonso 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,	)	<b>JURY INSTRUCTIONS</b>
a North Carolina Corporation	)	
Defendant.	)	
	)	

**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,	)	<b>JURY VERDICT FORM (1 of 2)</b>
a North Carolina Corporation	)	
Defendant.	)	
	)	

---

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,	)	<b>JURY VERDICT FORM (2 of 2)</b>
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	_____	%
<b>Total Negligence</b>	<b>100</b>	<b>%</b>

**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
Jaden Holley	Computer Engineering Professor
Fisher Street, Ph.D.	NTSB Investigator

DEFENSE	
Lake Gambell	Defendant / CEO
Costa Jackson	Software Developer
River Lynch, Ph.D.	Accident Expert

Affidavit of

**Jo Harrelson**

(Plaintiff / Spouse of Deceased)

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

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

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



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

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

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

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

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

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

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

94 9. I will never forget April 16, 2021. Bryce was scheduled to fly a pretty normal  
95 schedule from Greenville-Spartanburg International Airport (GSP) to Dallas to New Orleans. For  
96 the last flight, Bryce was going to fly to John F. Kennedy Airport in New York (JFK), instead of  
97 back home. I also arranged my schedule to end the day at JFK. Both Emily and Ivy were out of  
98 town on school trips and we had decided we needed a weekend getaway. I dropped Bryce off  
99 at the GSP terminal and parked in the employee lot. From there I caught the shuttle bus into  
100 the main terminal. I stopped off at the café for breakfast and to waste some time before  
101 checking with my airline. After breakfast, I had gone through my pre-check process with my  
102 own airline, picked up the paperwork for the day of flights on my CRJ 900, and was heading to  
103 my gate. I stopped to watch some of the other aircraft taking off and landing that morning.  
104 Cardinal is a relatively small airline, so there is usually only one or two Cardinal planes taking off  
105 each hour. Bryce was flying a Forrester FFC 500 Super that day and there was only one of those  
106 planes in the Cardinal fleet flying out of GSP. It was a distinctly recognizable aircraft. I assumed  
107 Shell was flying with Bryce because they were nearly inseparable. It wasn’t until later I found  
108 out Shell had a migraine and had called in sick, when NTSB Investigators told me. Shell’s  
109 replacement was one of Cardinal’s newest co-pilots, Dale Hamilton.

110 10. As I stood in the concourse by the windows watching Bryce’s plane taxi, I  
111 remember thinking how sleek the Forrester FFC 500 Super looked. I remember from training  
112 the EZ-Flight was not mandatory to engage, but I assume Bryce had decided to use it because  
113 Bryce was so obsessed with learning about the system when Forrester released it. It might  
114 sound cliché to say a pilot’s spouse never stops worrying about them, but it’s true, even when

115 you are a pilot as well. Statistically, flying is so much safer than driving. Something about the  
116 power and size of an airplane just makes it a little scary to think about, not to mention the  
117 survivability rate if something does go wrong. Bryce's plane moved to the end of the taxiway,  
118 turned onto the runway, and soared into the air. The FFC 500 Super made a sweeping left turn  
119 for the ascending part of Bryce's flight path.

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

135           12. Several days later, when I was interviewed by Senior Investigator Fisher Street,  
136 of the National Transportation Safety Board (NTSB), I could not share much beyond the  
137 knowledge Bryce was well-rested and in good spirits at the airport prior to boarding. I was able  
138 to share what I saw of the take-off and the crash. I learned from Investigator Fisher that the  
139 Cockpit Voice Recorder had been damaged beyond use, but the data stored on the Flight Data  
140 Recorder Report, marked as Exhibit #10, caused the investigators to believe no one overrode  
141 the EZ-Flight setting during the flight. Bryce was a meticulous pilot. I can't even begin to count  
142 the number of times I laughed at Bryce for making flight schedules run late because of taking  
143 too much time with the pre-flight checklist and making sure everything was safe to fly. I know

144 the problem must have been with Forrester’s flight software. Bryce would have checked every  
145 mechanical aspect of the Cardinal aircraft. As soon as it was released, I read the NTSB report,  
146 marked as Exhibit #7, and the photograph of the crash location taken by NTSB, marked as  
147 Exhibit #8, documenting the death of Bryce and everyone on Flight X1027.

148 13. Nothing will ever make up for my loss. Emily and Ivy deserve to have both  
149 parents who can love and care for them as they get ready for college. I can’t imagine how I am  
150 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  
**Jaden Holley**

(Computer Engineering Professor)

1           1.       My name is Jaden Holley. I am 71 years old and I live at 81 Eaglecrest Court, in  
2 Ann Arbor, Michigan. I am a tenured professor in the Computer Engineering Department of the  
3 University of Michigan. I hold a B.S. in Computer Engineering from Massachusetts Institute of  
4 Technology, commonly called MIT. I received both my Master’s and Ph.D. from Princeton  
5 University. I have been at the University of Michigan for 19 years now. I am married and have  
6 three children, all of whom went to Ohio State University, much to my chagrin.

7           2.       I grew up in Missouri, in the Lake of the Ozarks area. I spent most of my youth  
8 outdoors, but I remember the space race and all the work to put a man on the moon. I was  
9 amazed at what our country could do, and how technology evolved to do it. I wanted to be a  
10 part of it all. Math always came easy to me in school, so going into the new and emerging field  
11 of computer engineering was a great adaptation of skills that came naturally to me. When I was  
12 starting out, everyone was driven by a sense of purpose for moving technology forward for the  
13 betterment of mankind. Most kids who come into computer engineering or software  
14 development now do so with the idea of either designing games or working on digitally  
15 animated motion pictures. To say those are two niche areas of computer engineering and  
16 software development is an understatement. True, they are the flashy markets, but most  
17 students in my program and field go on to do other things.

18          3.       My specialty is computer programming regarding higher order systems including  
19 the implementation of Artificial Intelligence, or AI as it is more commonly known. Things you  
20 hear about ChatGPT and others, are scratching the surface of what truly can be done in the  
21 field. Most every type of computer assistance uses a level of AI function. Whether autopilot for  
22 planes, the EZ-Flight system produced by Forrester Flight Company, or the Full Self Driving (FSD)  
23 mode in Tesla cars. Computers must take the data available to them and make the best possible  
24 choice based on the information available. Some of the calculations require huge databases of  
25 information points.

26          4.       For the purposes of this lawsuit, I was engaged by the Plaintiff to render an  
27 opinion as to the effectiveness, efficiency, and dangers of EZ-Flight, and to determine whether  
28 Forrester Flight Company was negligent in the implementation of EZ Flight in the FFC 500 Super,

29 resulting in the crash of Flight X1027. I have often consulted on cases involving computerized  
30 systems to establish responsibility. I have testified in over 30 trials including 5 lawsuits against  
31 Tesla and deaths related to its Full Self-Driving mode. I have never been asked to testify in  
32 relation to an aircraft. I charge a flat consulting fee of \$10,000 to evaluate and research  
33 software-related problems. To appear in court, I charge an additional \$2,500, plus travel  
34 expenses of course.

35           5.       To best evaluate this case, I have reviewed the National Transportation Safety  
36 Board (NTSB) report marked as Exhibit #7, the preflight checklist marked as Exhibit #5, the  
37 Flight Data Recorder (FDR) report marked as Exhibit #10, the training slides of Cardinal Airlines  
38 marked as Exhibit #3, the test results from Bryce Harrelson marked as Exhibit #4, and the  
39 weather report marked as Exhibit #1.

40           6.       To begin my examination of Flight X1027 in relation to EZ-Flight, I first  
41 investigated how the system operated and how those using the program were trained. Not just  
42 car accidents, but industrial accidents with machinery, injuries with aircraft, and the like may be  
43 attributed to operator error. Operator errors come from a lack of training. Both pilot and co-  
44 pilot had been trained on the safe operation of EZ-Flight. The pilot and co-pilot had not, from  
45 any records I saw ever flown together before April 16, 2021. Bryce Harrelson was trained on EZ-  
46 Flight in September 2019. The training was considered successful, and Harrelson passed with  
47 the required score, as was noted in the training test results. Per records from Cardinal Airlines,  
48 all requirements for certification on EZ-Flight were met, and authorization to use the system  
49 and user PIN were issued. I cannot speculate as to the reason why the pilot often chose not to  
50 use EZ-Flight. Harrelson properly notified their intent to use EZ-Flight on the morning of April  
51 16, 2021 to the Air Traffic Control (ATC) at Greenville-Spartanburg International Airport (GSP).

52           7.       The weather report was of little use, other than to remove a variable from the  
53 equation of why Flight X1027 crashed. As noted in the weather report, the skies were clear,  
54 with good temperatures and light winds. The NTSB report and, in particular, the FDR report  
55 provide a wealth of information as to the mechanics of what happened. Within the NTSB  
56 report, the flight was documented as the first of the day, for both pilot Bryce Harrelson and co-  
57 pilot Dale Hamilton. Fatigue was not known to be a factor with either. This was the “home”

58 airport for both pilot and co-pilot, making both familiar and confident of the airport, runways,  
59 and surrounding airspace. The pre-flight checklist was properly completed and submitted  
60 electronically prior to the aircraft leaving the gate. The FFC 500 Super made a normal taxi to the  
61 runway and EZ-Flight was engaged. Upon initial takeoff, the aircraft made a gradual left turn  
62 and gained altitude. EZ-Flight made an abrupt change in the trajectory of the aircraft when an  
63 alarm went off. This caused a nose-up attitude of the aircraft. Per eyewitness reports including  
64 Plaintiff Harrelson, the aircraft then took a nose-down, followed by nose-up, and then another  
65 nose-down attitude, resulting in the crash of Flight X1027 and the deaths of all aboard. The  
66 behavior of the aircraft in this situation is a textbook example of the glitch referred to by  
67 Forrester Flight Company in the notice sent out to all the airlines for EZ-Flight.

68           8.       These last actions of the aircraft and the telemetry provided in the FDR are most  
69 important in determining what went wrong. It is also important to assess how EZ-Flight  
70 behaved in these moments. Forrester Air Company produced EZ-Flight as a software solution to  
71 remove operator error from take-off and landing in aircraft, as well as control the ascent to  
72 10,000 feet, and descent from 10,000 feet. The program utilizes many data inputs from various  
73 sensors in the aircraft, as well as known data points for navigation, airport start and end points  
74 to name a few. For example, EZ-Flight makes judgments based on data to increase or decrease  
75 throttle and change the trajectory of the aircraft, among others to keep the aircraft in the skies  
76 and moving safely to its destination. Clearly, and as noted in the FDR report, EZ-Flight made  
77 multiple adjustments responding to bad data. Multiple attempts were made to override the  
78 system and safely take manual control of the aircraft. FDR data supports, these efforts were  
79 unsuccessful.

80           9.       Why were the attempts to override EZ-Flight unsuccessful? This goes to  
81 complications programmed into the system, making it hard for pilots to disengage and take  
82 manual control of the plane. The stated reason for this is to prevent terrorist activity and  
83 interference with the system while take-offs or landings are occurring. In the post-9/11 world  
84 we live in, all aircraft have multiple measures taken to impede potential terrorist access to the  
85 cabin. Examples include reinforced and tamper-proof doors to the cockpit which only have a  
86 knob and lock from the inside. Indeed, many pilots are certified and authorized to carry



87 firearms in the cockpit if they pass federal background checks and training. Why would you add  
88 a complication to a system inside the cockpit when it is already secured? That position makes  
89 no sense and adds to stressful situations. There are no other systems within common  
90 commercial aircraft that I have seen requiring a PIN before accessing. This is a failure of EZ-  
91 Flight and Forrester Air Company. It is an unnecessary hindrance to operating the aircraft  
92 safely. Second, why is the co-pilot PIN locked out of the system for disengaging EZ-Flight? This is  
93 another unnecessary complication, and a danger to passengers and crew. Should something go  
94 wrong, as it most certainly did in the case of Flight X1027, additional steps of inputting a PIN  
95 and hitting override are a dangerous distraction. Forcing the pilot to remind the co-pilot of  
96 what their PIN is and then thinking they would remember it in times of stress is foolish. As  
97 indicated in the FDR report, Hamilton tried multiple times to enter a PIN to disengage EZ-Flight.

98       10. Forrester Air Company's software developer, their own expert, and their CEO  
99 have admitted to a 1 percent rate of false alarms within EZ-Flight requiring manual control of  
100 the aircraft. With 90 planes in the air and 1,500 cycles per aircraft means 135,000 flights. A  
101 cycle consists of take-off and landing. A 1 percent failure rate is still 1,350 flights in which EZ-  
102 Flight did not work properly and put lives at risk. Many would say a 1 percent failure rate is  
103 minuscule. I would say with an aircraft full of people, it is catastrophic. This is not like a car  
104 navigation program failing, where you simply pull off the road. You cannot do that several  
105 thousand feet in the air. The failure threshold of 1 percent for EZ-Flight is simply too high.  
106 Forrester Air Company should have voluntarily decertified the software immediately after the  
107 first incident or even the first 10 flights in which it occurred. Instead, they sent a notice to the  
108 airlines telling their pilots to override EZ-Flight to compensate for failings in Forrester Flight  
109 Company's software. If anything, this increases the risks in the air, which is the opposite of what  
110 this program was designed to do. I know this is a civil trial, but it should be criminal for the  
111 company to deprioritize the rollout of a patch in favor of pushing the software out to different  
112 models of aircraft. This conscious choice put lives in danger, and ultimately it caught up to  
113 Forrester Flight Company. The blood of everyone who perished on Flight X1027 is on the hands  
114 of Forrester Flight Company.

**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,

Jaden Holley

Jaden Holley

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

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

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

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

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

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

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

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

72           8.       My team investigated Forrester Flight Company’s EZ-Flight software system and  
73 identified several potential causes of the crash. The EZ-Flight system has emergency alarms that  
74 are triggered if sensors are loose or send extremely abnormal readings, for example, an  
75 emergency alarm is set to trigger if the airspeed registers at below 60 mph. Forrester Flight  
76 Company’s test data indicated emergency alarms sounded in error on 1 percent of flights using  
77 EZ-Flight software. The most common cause, according to Forrester’s data, was a faulty or  
78 offline data sensor. When a false emergency alarm sounds, the pilot is instructed to enter their  
79 4-digit PIN into the touchscreen and then hit the override button, which automatically switches  
80 the plane back into manual flight mode. This is indicated in the training materials published by  
81 Forrester Flight Company. Those materials were modified by Sandy Kay, marked as Exhibit #3,  
82 and used in the Cardinal Airlines training. We also reviewed the test results for Bryce Harrelson,  
83 marked as Exhibit #4.

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

85 available to a pilot during a flight. The FDR captures information such as speed, elevation,  
86 direction, and weather conditions, as well as any data fed in through a plane's electrical  
87 sensors. We were able to analyze all the FDR Report, marked as Exhibit #10, from Flight X1027.  
88 When we analyzed the FDR data from Flight X1027, we found EZ-Flight's emergency alarms had  
89 triggered due to three separate issues during Flight X1027's take-off: once at 9:44 a.m., when  
90 an airspeed alarm sounded and the plane incorrectly calculated the ascending trajectory to be  
91 25 degrees and at 5,150 ft, again at 9:45 a.m. when the plane went into the first dive at a  
92 descending trajectory of 29 degrees, then the plane took an ascending trajectory of 20 degrees.  
93 The final alarm triggered at 9:47 a.m. when the software registered a 43.5-degree descending  
94 trajectory in addition to an altimeter warning alarm for crash avoidance. I believe the first of  
95 the emergency alarms, which sounded when the software detected an airspeed warning, was in  
96 error, which is to say they sounded when the plane was experiencing a normal and perfectly  
97 safe ascent.

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

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

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

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

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

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

143           15.     In conclusion, my investigation determined the sole cause of Flight X1027’s fatal  
144 crash was a faulty software system designed by Forrester Flight Company. Despite recognizing  
145 the software contained a glitch that could trigger emergency alarms in error and required a  
146 patch, Forrester deprioritized development of the patch. The emergency alarms triggered the  
147 software into sending Flight X1027 into two dives, one of which the software corrected and the  
148 second of which proved fatal. Despite reviewing all the evidence available to and considered in  
149 the NTSB investigation as well as all the evidence available in this litigation, I was unable to  
150 conclude any actions or inactions on the part of Bryce Harrelson that contributed to the crash in  
151 any way. It is therefore my opinion that Forrester Flight Company is solely liable for the crash of  
152 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           1.       My name is Lake Gambell. I am 41 years old and I reside at 1405 Alabaster Way  
2 in Charlotte, North Carolina. I am the Chief Executive Officer (CEO) for Forrester Flight  
3 Company—the youngest CEO in the history of the company. Forrester’s headquarters are in the  
4 Piedmont Triad area of North Carolina, with manufacturing plants located throughout the  
5 United States. I guess in some ways you could say Forrester is in my blood. My family has  
6 worked at Forrester since my great-grandfather was one of the three who founded the  
7 company in 1922.

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

19           3.       Starting in January 2011, I began rotating through each of Forrester’s corporate  
20 divisions to learn the business and learn how to oversee all aspects of the company. I spent a  
21 year in each of the Contracting, Development, Product Safety, and Testing divisions. In October  
22 2015, I was promoted to Chief Operations Officer (COO). One year later, Jonah Willoughby  
23 announced his retirement, and the Forrester Board of Directors elected me as the new CEO in  
24 December 2016.

25           4.       My rotation through the Forrester corporate departments gave me a great  
26 perspective on the EZ-Flight system. I rotated into the Forrester Development department in  
27 2012, which is about the same time Costa Jackson, one of Forrester’s software design

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

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

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

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

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

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

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

86 loose, which causes inaccurate data readings.

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

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

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

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

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

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

134 16. What happened to Flight X1027 was tragic and I, along with everyone at  
135 Forrester Flight Company grieve with families who lost loved ones because of the accident. As  
136 the CEO of an aircraft manufacturer, I recognize the trust placed in our hands and we do not  
137 take that trust lightly. When Forrester designs flight systems and airplanes, we do so knowing  
138 the tools we design will be deployed by pilots. Knowing pilots are the end-users of our  
139 products, we recognize the importance of designing and providing safe products and training  
140 pilots to recognize potential pitfalls and methods for minimizing or eliminating risks. Forrester is  
141 proud of the fact we do everything we can to eliminate systems failure and to provide both our  
142 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  
**Costa Jackson**

(Software Developer)

1           11.     My name is Costa Jackson. I am 54 years old and I live at 5901 Collins Drive, in  
2 Charlotte, North Carolina. I am the lead developer in the Software Engineering Department of  
3 Forrester Flight Company. I hold a B.S. in Computer Engineering from Georgia Institute of  
4 Technology. Most everyone just calls it Georgia Tech. I grew up outside of Anderson, South  
5 Carolina. I knew I wanted to work with computers from the first time I ever saw a video game. It  
6 was an Atari 2600. I was amazed at how the cartridges plugged into the console could generate  
7 the game on the screen. I always thought I would be a game designer.

8           12.     I have worked for Forrester Flight Company my entire career. When I was at  
9 Georgia Tech, I was recruited early on by aircraft manufacturers, game companies, and even  
10 the US Department of Defense (DOD). As enticing as the gaming industry was, I thought I could  
11 do more good for society at large by developing software for commercial aircraft. Besides,  
12 there wasn't as much competition writing programs for airplanes as game development. I did  
13 an externship during my sophomore summer of college with Forrester Flight Company at their  
14 Savannah Georgia location. Forrester Flight Company is not located at the airport like most  
15 people would expect. Instead, Forrester had a four-story building on Bay Avenue. Forrester  
16 Flight Company has every high-end mainframe you could imagine. I was hooked. I did an  
17 externship during the summer of my sophomore year with Forrester Flight Company. I worked  
18 on the team developing new software for stabilizing helicopters. Some of the base code that I  
19 wrote has even been adopted in recent years to make drones easier to fly.

20           13.     After finishing college, Forrester Flight Company offered me a job that included  
21 moving expenses to Charlotte. Their corporate headquarters are just off the I-485 loop at  
22 Charlotte Douglas International Airport. This is a good set up because our test aircraft are never  
23 far from our development hub. Simulations are fine, but rolling software out to the actual  
24 aircraft is when you see the fruition of all your work. When I first started with Forrester Flight  
25 Company, I was a junior software developer. Essentially, I did spot checks and quality control on  
26 software already in process. Of course, some of the boring work was checking lines of code, but

27 it taught me diligence and attention to detail. Some of the programs were not very important in  
28 the scheme of things in an aircraft, but others were vastly important. Without this software,  
29 aircraft would be stuck in the old days of following a map from the cockpit while looking down  
30 for landmarks. Early pilots used to follow the different railroad tracks or concrete arrows when  
31 flying across America. I'm so thankful technology has advanced.

32         14.     After being promoted to a software developer position, the first program I  
33 worked on was a small team responsible for developing new software to take advantage of  
34 weather satellites in orbit for real-time use in the aircraft we built. This was a great  
35 development for the commercial airlines since it allowed pilots to avoid bad weather. To do so  
36 provides a smoother and safer flight for our passengers. The safety and comfort of our  
37 passengers are always the priority at Forrester Flight Company. From start to finish the new  
38 weather software and simulator testing took about 5 years to complete. Then we scheduled to  
39 roll out the software to all the aircraft models Forrester Flight Company manufactured at once.  
40 This was possible because the satellite receivers on aircraft have largely been standardized, and  
41 this software was simply utilizing it in a different way. Most of the time, with revolutionary  
42 projects like EZ-Flight, you pick one model of aircraft and roll out the software, and then expand  
43 and adapt from there to different model lines.

44         15.     After my success with the weather software roll out, I was promoted to a senior  
45 developer position. What this means is Forrester Flight Company trusted me and my work  
46 enough to make me responsible for a larger group of software developers. Software people can  
47 get hyper-focused or fall down rabbit holes looking at development. My job is to keep  
48 individuals and small groups focused on the tasks at hand for product development. I also get  
49 to push ideas, both mine and others, up the chain of command to the executive level. For  
50 example, EZ-Flight was one of my ideas that the executives thought was worth a shot to design  
51 and implement. We have long had different types of automation in the aircraft industry. From  
52 something as simple as automatic lighting for the aircraft while in motion, called anti-collision  
53 lighting to autopilot systems. The autopilot systems are essentially a giant version of your car's  
54 cruise control, but for an airplane. Well it is probably closer to the Tesla Full Self-Driving mode  
55 than your grandmother's station wagon. Even though computers onboard the Tesla can handle



56 all the information being fed into them, you still need a human at the controls. So I asked the  
57 question: Why can't we apply those same characteristics to the take-off and landing procedures  
58 in an airplane? Computers don't flinch or get distracted like real people can. Computers using  
59 the same flight data can determine the best slope of approach, where to finally touch down,  
60 and how to handle all the throttle adjustments needed for a landing or take-off. When so many  
61 crashes in cars and aircraft are all marked as operator error, why not take the operator out of  
62 the equation?

63         16.     EZ-Flight was my idea and software design. I assembled a good team of young  
64 software developers around me to build it from the ground up. I do remember reporting to our  
65 now CEO Lake Gambell about the development when Lake was a visiting executive in our  
66 division. The idea was to make everything safer in the air by taking out the potential for pilot  
67 error at low altitude on take-off and landing.

68         17.     EZ-Flight works by taking all the sensor data from the aircraft and applying it to  
69 the pre-programmed departure and destination airport modules. With only 503 airports in the  
70 US capable of handling commercial airlines, it is a simple matter of synchronizing the database  
71 with the flight program. Therefore, we programmed EZ-Flight to automate everything for take-  
72 off and landing. This system even assesses how much reverse thrust and braking to apply for a  
73 smooth stop on the designated runway. Again, passenger comfort and safety is key. To prevent  
74 potential terrorist acts, we implemented a PIN lockout system. Once EZ-Flight is engaged at the  
75 gate prior to take-off, the pilot can override EZ-Flight at any point. The pilot merely puts in their  
76 four-digit PIN followed by hitting "override" on the touchscreen of the multifunction display on  
77 the aircraft. In the FFC 500 Super, the touchscreen is in the center of the panel, just in front of  
78 the main throttle levers. We considered allowing the co-pilot to override EZ-Flight as well but  
79 decided to keep the PIN active for only the listed "Captain," meaning the person fully  
80 responsible for the aircraft. This was our determination based on an internal assessment of the  
81 pros and cons of this type of automated flight assistance system.

82         18.     I was so proud of our team's development of EZ-Flight. By the time we went to  
83 beta testing, there were barely any issues left to figure out. The lead tester, Evan Vaughn had  
84 fantastic things to say about EZ-Flight in the simulator. Even under emergency conditions, it

85 performed admirably. After a few weeks of testing, we were ready for the initial roll out to our  
86 test aircraft in Charlotte. Full implementation did not happen on the timetable I expected,  
87 however.

88         19.     Yes, I had heard of the Autokinesis program the U.S. military used on some of  
89 their aircraft for take-off and landing assistance. I have never been in the military, nor do I know  
90 anyone who works in the military development sector. The design, application, and  
91 implementation of EZ-Flight were all done in-house at Forrester Flight Company. The  
92 Autokinesis program just proves EZ-Flight is a proven concept. But civilian aircraft had not used  
93 anything like it before. Because it was so new, near the end of the beta testing, everything was  
94 shut down by a Department of Defense (DOD) investigation. The DOD said it wanted to make  
95 sure EZ-Flight could not be used for nefarious purposes. It was an unfortunate delay rolling out  
96 the software that could make our aircraft safer. Until the DOD shut down our program to  
97 evaluate possible national security risks, we had probably the easiest beta testing process I can  
98 remember. We completed about 4 weeks of strenuous testing with the simulators and no  
99 problems.

100         20.     After the conclusion of the DOD investigation, we went into the final phase of  
101 roll out to Forrester Flight Company's aircraft. The first aircraft model for the final roll out was  
102 the FFC 500 Super. The FFC 500 Super is a reliable, mid-sized aircraft and was already our best-  
103 selling passenger aircraft and had the most up-to-date avionics. The test aircraft we use out of  
104 Charlotte performed 600 short flight cycles, all with EZ-Flight enabled. A short flight cycle  
105 typically means a take-off, leveling out at 15,000 feet, a flight time of 1 hour, followed by a  
106 landing. A few test flights were longer, but not many. Those longer flights allowed landings at  
107 different airports a bit further away. These flights were conducted with only a test pilot and  
108 co-pilot on board, and lots of other diagnostic computers. We did take-off and landings at  
109 Greenville-Spartanburg International Airport, Columbia Metropolitan Airport, Charleston  
110 International Airport, Savannah-Hilton Head International Airport, Jacksonville International  
111 Airport, Hartsfield-Jackson Atlanta International Airport, and Ronald Reagan International  
112 Airport in Washington, DC. None of these actual flights and no time in a simulator resulted in a  
113 glitch showing up involving airspeed and trajectory of flight. The software was certified and we

114 pushed out the program to all airlines operating the FFC 500 Super in December, 2016. Even  
115 though we pushed the software out, individual pilots could not activate and operate EZ-Flight  
116 until trained by their individual airline and issued their distinctive PIN.

117         21. The development team at Forrester Flight Company was made aware of a speed  
118 sensor glitch occurring on some flights. We only learned of the glitch after the final roll out of  
119 the software to all FFC 500 Supers. Even the first time it happened, I was greatly concerned. As I  
120 said before the safety of passengers on our aircraft is paramount, regardless of which airline  
121 they fly. The first aircraft experienced the glitch and was taken out of service and I personally  
122 flew out to investigate, download the software, and all flight data to determine the cause.  
123 Thankfully, the pilot involved was well trained, keyed in the PIN, hit “override,” and safely  
124 landed the plane manually. As far as we were able to ascertain, the issue with EZ-Flight  
125 stemmed from a faulty reading from the airspeed indicator. It caused the aircraft to adjust  
126 trajectory, even though the speed had not decreased as indicated. Our immediate and  
127 thorough reaction was to notify our executive management. The executive management team  
128 sent a high-priority notice to all operators of the FFC 500 Super to remind all pilots about the  
129 override process of the EZ-Flight system if alarms went off. In our research, from January 2017  
130 through January 31, 2019, an error occurred in only 1 percent of all flight cycles. Given the  
131 number of aircraft in use as well as the number of flight cycles (both take-off and landing), this  
132 amounted to 1,350 occurrences over a two-year span. While it may sound like a big number, it  
133 is very small given the total number of flights. Most aircraft the size of the FFC 500 Super is  
134 rated for 60,000 flight cycles over the aircraft lifespan. Prior to Flight X1027, not a single  
135 instance resulted in damage to the airframe or injury to passengers and crew, when the error  
136 occurred.

137         22. Of course, everything changed with the crash of Flight X1027. Any crash involving  
138 loss of life is tragic. For us at Forrester Flight Company it is also a sense of profound failure  
139 when one of our products is involved in a crash, regardless of who is responsible. Forrester  
140 Flight Company, as the manufacturer, cannot be held responsible for problems caused by  
141 someone else. You cannot blame us any more than a car manufacturer can help when someone  
142 operates a car while intoxicated and kills someone.

143           23.     When the National Transportation Safety Board (NTSB) released its report  
144 marked as Exhibit #7, I read every word of it multiple times. The NTSB also released information  
145 from the Flight Data Recorder (FDR) report , marked as Exhibit #10 to Forrester Flight Company  
146 for review and analysis. I found it shocking that no information from the Cockpit Voice Recorder  
147 (CVR) was recovered. In this instance, the data from the CVR would have been invaluable to  
148 determining what went so horribly wrong and help determine the level of the pilot’s  
149 negligence. Instead, we got an incorrect report from the NTSB. I completely disagree with the  
150 NTSB’s conclusion that EZ-Flight was the cause of the crash. From the FDR, it is clear the  
151 override was not entered correctly. The pilot and co-pilot were fighting the computer for  
152 control of the aircraft instead of simply disengaging and manually flying the aircraft. The way in  
153 which the wrong PIN was entered, can only speak to either panicked or poorly trained pilots or  
154 a combination of the two. Forrester Flight Company does not and cannot control the way pilots  
155 are trained. We can only provide recommended training materials and expect the airlines  
156 conduct their own certifications. I asked for and was given a copy of the training materials  
157 marked as Exhibit 3 from Cardinal Airlines. I’m not in the product training area of Forrester  
158 Flight Company, but the slides I saw did not look like the same information we sent out to the  
159 airlines. Also, I was able to see the records of testing for Bryce Harrelson, marked as Exhibit #4,  
160 Bryce missed two questions. These two questions were vital to safely take manual control of  
161 the aircraft. This can only lead me to believe that the pilot and co-pilot of Flight X1027 were  
162 unqualified to operate EZ-Flight and therefore the pilot and co-pilot were the direct cause of  
163 the crash and the death of everyone on Flight X1027. It could also be the training received was  
164 inadequate to operate EZ-Flight safely, and was the fault of Cardinal Airlines, not Forrester  
165 Flight Company.

#### 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,

Costa Jackson

Costa Jackson

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

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

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

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

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

38         5.         Beginning in 1998, I began receiving calls from the Detroit police department  
39 asking me to assist their traffic division with investigations by analyzing and reconstructing  
40 serious traffic accidents in the area. This turned into a side job and, before I knew it, the police  
41 department asked me to begin creating reports and provide expert testimony at trial. Between  
42 1998 and 2000, I testified in 10 criminal trials—always on the side of the prosecution. After  
43 those trials, I decided to make accident reconstruction and expert consulting my full-time  
44 career. I moved to a New Jersey beach town and established myself as Lynch Reconstruction,  
45 LLC, and I have been working for myself ever since.

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

57 was responsible for the crash.

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

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

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

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



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

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

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

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

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

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

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

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

144 should have been sufficient to take manual control of the aircraft. There is no reason I can  
145 think of for keying the override PIN to the pilot and only the pilot. I find it troubling Forrester  
146 was aware emergency alarms could sound in error in a significant number of flights using EZ-  
147 Flight. It is true, the company did prioritize pushing the software out to every model of aircraft  
148 instead of sending an update to correct the known defect causing erratic fluctuations in flight  
149 trajectory. However, this does not override the clear pilot error and lack of sufficient training by  
150 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**

<b>National Weather Service Zone</b> <b>Forecasts, Watches, Warnings and Advisories Issued For:</b> April 16, 2021 --- Greenville-Spartanburg International Airport, South Carolina	
Date and Time Issued	<h1>Forecast – Pilot Advisory</h1>
0513, Friday <b>04/16/2021</b>	<b>TODAY</b> 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%.
	<b>0800-1200</b> Sunny and clear. Lows in the low 60s. W winds around 4 mph becoming WSW around 7 mph after 1000. Chance of rain 0%.
	<b>1200-1800</b> 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.
	<b>1800-2400</b> Periods of rain, which may be heavy at times. Lows in the mid 50's. W winds 10 to 18 mph.
0513, Saturday <b>04/17/2021</b>	<b>Saturday</b> 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%.
	<b>0800-1200</b> Areas of fog expected until 1000. Partly Cloudy. Lows in the low 50's, rising to 56 by 1200. Winds SW 5 mph.
	<b>1200-1800</b> 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
	<b>1800-2400</b> Showers with a slight chance of thunderstorms after 2100, Lows in the low 60's. NW winds 5 to 10 mph.
0513, Sunday <b>04/18/2021</b>	<b>Sunday</b> 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.
	<b>0800-1200</b> 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.
	<b>1200-1800</b> 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.
	<b>1800-2400</b> 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**

<b>Text From</b>	<b>Text To</b>	<b>Date</b>	<b>Time</b>	<b>Text</b>
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.

Cardinal Airlines - Own the Sky

# THE EZ-FLIGHT SYSTEM

*Presented by Sandy Kay*

*Produced by Forrester Flight Company  
Modified for use - Cardinal Airlines*

## WHAT IS EZ-FLIGHT?

- A groundbreaking new software application that monitors all instrument and sensor data and consolidates inputs into a single interface.
- Automatic acceleration/deceleration during takeoff and landing.
- Automatic velocity adjustment accounting for wind speed and other factors.



## USING THE EZ-FLIGHT SYSTEM

- Step 1: Certification. Train on simulators to prepare. (6 hrs)
- Step 2: Pre-Flight Visual Inspection. As part of pre-flight check, visually inspect external sensors to verify all sensors are firmly attached to the aircraft.
- Step 3: Test Software. Activate software, and verify that all external sensors are connected and functioning properly.
- Step 4: Register Intent. Always notify Air Traffic Control of intent to utilize EZ-Flight 1 hour prior to take-off software.
- Step 5: Analyze. Don't check your judgment at the door! Always make sure EZ Flight takeoffs and landings feel like manual takeoffs and landings!

## For Your Safety

- Because EZ-Flight is an automated system, the software will begin correcting flight trajectories when an emergency alarm sounds.
- If the automated flight overcorrects, immediately override EZ-Flight and execute a manual maneuver.
- Each Cardinal Pilot will be assigned an override PIN, and only the captain's PIN will override the software.
- It is the captain's responsibility to ensure that their co-pilot knows the override PIN.
  - If the co-pilot does not know the captain's override code, they must ask the captain for the PIN before takeoff.

## In Case of an Emergency

- To override the EZ-Flight software, just enter your PIN and hit the OVERRIDE button on the control panel.
- If an emergency alarm sounds, always override EZ Flight and execute a manual maneuver
- False emergency alarms are possible, especially if an external sensor comes loose.

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

**Final items**

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

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

**Exhibit #6 Text Messages Between Bryce Harrelson and Shell Alonso**

<b>Text From</b>	<b>Text To</b>	<b>Date</b>	<b>Time</b>	<b>Text</b>
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!

**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



August 5, 2022



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

## **Exhibit #9 Lynch Reconstruction report on crash of Cardinal Airlines Flight X1027 (2 of 3)**

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.

**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

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

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.