

2010 Pilot Source Study

RESULTS

April 4, 2010

2010 Pilot Source Study

CHARTER

- COMMISSIONED: February 20, 2010 at Auburn, AL in a meeting/conference call among a consortium of educators, regional airlines, and interested parties to discuss a response to the Advance Notice of Proposed Rulemaking (ANPRM), entered into the Federal Register on February 8, 2010.
- RESEARCH QUESTION: What were the characteristics of pilots who were hired by the US regional airlines between 2005 and 2009, and how did these characteristics relate to their success in regional airline training?
- ANPRM QUESTION 2A: *Are aviation/pilot graduates from accredited aviation university degree programs likely to have a more solid academic knowledge base than other pilots hired for air carrier operations? Why or why not?* **The 2010 Pilot Source Study provides an answer to this question.**

2010 Pilot Source Study

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Mesa Air Group

ASU ARIZONA STATE UNIVERSITY

Alaska Airlines / Horizon Air

UND THE UNIVERSITY OF NORTH DAKOTA

Cape Air

NORTH SHORE COMMUNITY COLLEGE
Real Opportunities

ASA[®]
atlantic southeast
airlines

AUBURN UNIVERSITY



TSA TRANS STATES AIRLINES

American Eagle

EMBRY-RIDDLE
Aeronautical University

PURDUE UNIVERSITY

UNIVERSITY AVIATION ASSOCIATION

AAB International

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Mesa Airlines – Arizona State University

The logo for Mesa Air Group features the text "Mesa Air Group" in white, bold, sans-serif font, centered on a blue rectangular background with a subtle cloud pattern.The Arizona State University logo consists of the letters "ASU" in a large, bold, maroon font with a sunburst graphic behind the "S". To the right of "ASU", the words "ARIZONA STATE UNIVERSITY" are written in a smaller, maroon, serif font, stacked in two lines.

Captain Michael Ferwerda – Senior VP of Operations – Mesa)

Robert Gibbs (Training Records Supervisor – Mesa)

Dr. William McCurry (Professor, Aviation Programs Coordinator – ASU)

Dr. Mary Niemczyk (Assistant Professor – ASU)

Trevor J. Smith (Graduate Research Assistant – ASU)

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Horizon Air – University of North Dakota

Alaska Airlines / Horizon Air



Capt. LaMar Haugaard (Chief Pilot – Horizon)
Capt. Andrew Taylor (Assistant Chief Pilot – Horizon)
Kathie Hyatt (Executive Admin Assistant – Horizon)
Jenni Wilson (Chief Pilot's Admin Assistant – Horizon)
Caysie Duax (Training Records Specialist – Horizon)
Debbie Click (Training Records Specialist – Horizon)
Dr. Elizabeth Bjerke (Associate Professor – UND)
Andrew Leonard (Grad Research Assistant – UND)

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Cape Air – North Shore CC



Capt. Dave Bushy (Chief Operating Officer – Cape Air)

Capt. Craig Bentley (Managing Director Ops – Cape Air)

Capt. Bill Cush (Fleet Manager Cessna 402 - Cape Air)

John Bosco (Aviation Sciences Program Coord. - NSCC)

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Atlantic Southeast Airlines – Auburn University



Capt. Charles Tutt (VP-Flight Operations – ASA)

Capt. Darrin Greubel (Manager, Flight Ops & Standards – ASA)

FO Grayson Cash (Flight Operations – ASA)

Dr. Ray Hamilton (Associate Professor – Auburn)

Dale Watson (Director of Aviation Education – Auburn)

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Trans States Airlines – Southern Illinois University



David Hayes , VP & General Counsel (Trans States)

Craig M. Tompkins, VP Safety/Regulatory Compliance (Trans States)

Caren Blake, Supervisor, Crew Records (Trans States)

Jennifer Ray (Trans States)

Dr. David A. NewMyer (Professor – SIU)

John K. Voges (Asst. Professor, Chief Instructor – SIU)

Michael F. Robertson (Assistant Professor – SIU)

Dora Asingo (Grad Research Assistant – SIU)

Joseph Carlini (Grad Research Assistant – SIU)

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American Eagle – Purdue University &
Embry-Riddle Aeronautical University

EMBRY-RIDDLE
Aeronautical University



Capt. Jim Winkley (VP of Operations – AA)

Capt. Allen Hill (Director of Flight Training – AA)

Dr. Tom Carney (Professor of Aviation Technology - Purdue)

Dr. Guy M. Smith (Associate Professor – ERAU)

Professor Chris Meigs (Assistant Professor – ERAU)

Stephanie Henderson (Graduate Research Assistant ERAU)

Westley Thompson (Graduate Research Assistant ERAU)

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Dr. Tim Brady (Dean – College of Aviation)

Dr. Dan Macchiarella (Chair – Aeronautical Science Department)

Dr. Guy M. Smith (Principal Investigator – 2010 Pilot Source Study)

Professor Chris Meigs (Principal Investigator – Pilot Yield/Training Study)

Professor Antonio Cortés (Principal Investigator – 2008 Pilot Yield Study)

AABInternational



Peter Morton (President, Peter M. Morton Consulting Inc.)

Dr. Tom Carney (President, AABI)

Gary W. Kiteley (Executive Director, AABI)

Ceci Shirley (Accreditation & Meeting Services Manager, AABI)

Vic Bayens (Administrative Assistant, AABI)

Dr. David NewMyer (President, UAA)

Carolyn Williamson (Executive Director, UAA)

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Research Team

Arizona State University – Dr. Mary Niemczyk
(Assistant Professor, Air Transportation Management)

Auburn University – Dr. Raymond A. Hamilton II
(Associate Professor of Aviation Policy)

Embry-Riddle Aeronautical University – Dr.
Guy M. Smith (Associate Professor of Aeronautical Science)

Southern Illinois University – Dr. David A.
NewMyer (Professor of Aviation Management & Flight)

University of North Dakota – Dr. Elizabeth Bjerke
(Associate Professor of Aviation)

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Data Collection:



SurveyMonkey

- Six regional airlines entered data into the SurveyMonkey data collection device
- Six affiliated institutions assisted the airlines with data entry into SurveyMonkey
- 2,187 pilot records were entered into SurveyMonkey from the six airlines – pilots hired between 2005 and 2009
- 2,156 records were valid for data analysis
- Two variables were derived from the data – Aviation Degree and AABI Flight
- All identifying information for individual pilot and participating airline was removed from the data sets
- All records were combined into a single data set for independent analysis by five experienced researchers
- All five researchers agreed on the following results

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9 Predictors (Independent Variables)

- Year Hired
- College Degree
- Aviation Degree
- AABI Flight Program
- Military
- Source of Pilot Training
- Flight Instructor
- Total Flight Hours
- Previous Experience

2 Outcomes (Dependent Variables)

- Extra Training Events
- Completions

For each Outcome Variable,
we show:

1. The question
2. A description of the variable

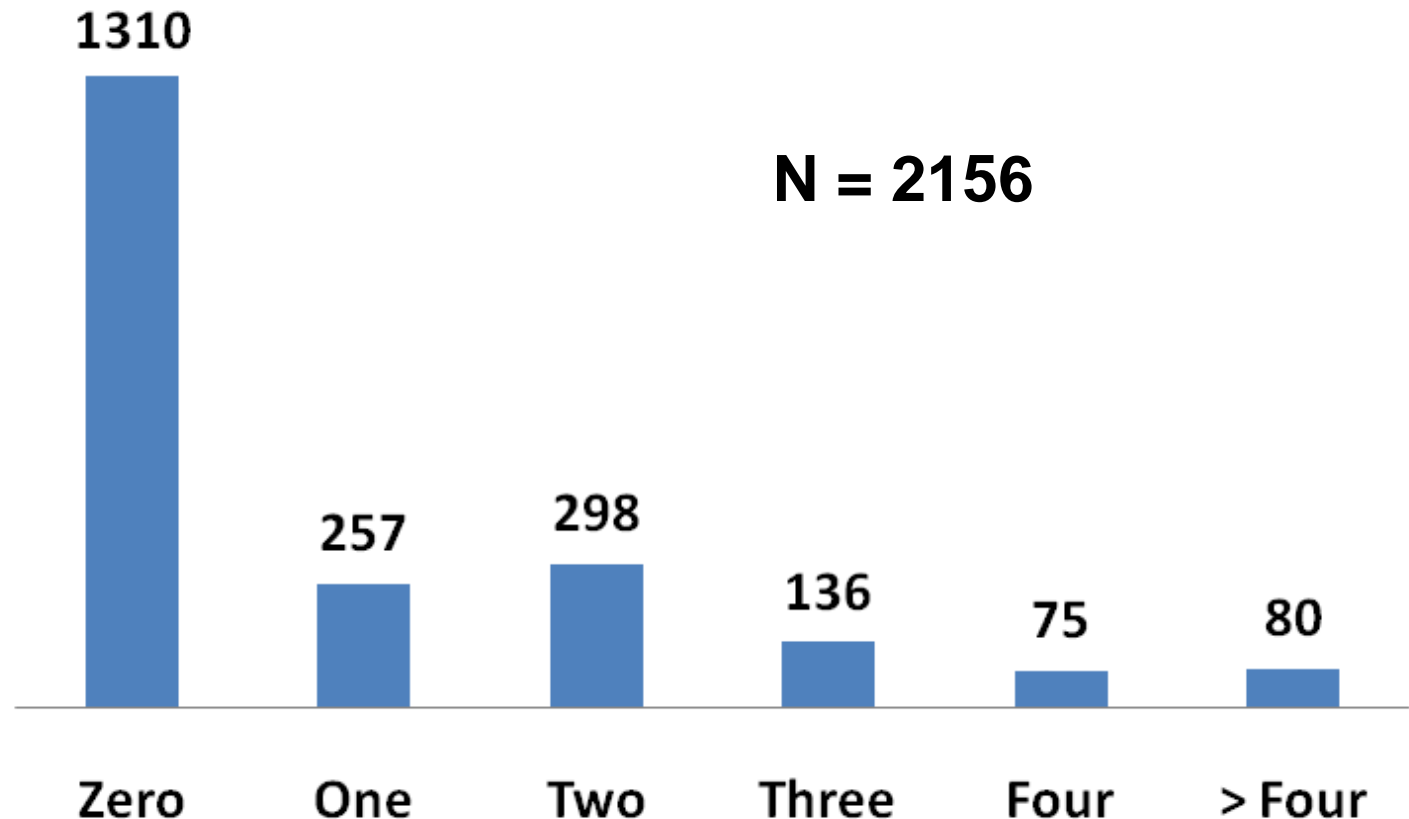
For each Predictor Variable,
we show:

1. The question
2. A description of the variable
3. The statistical test results
4. The research conclusion

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OUTCOME #1: EXTRA TRAINING EVENTS:

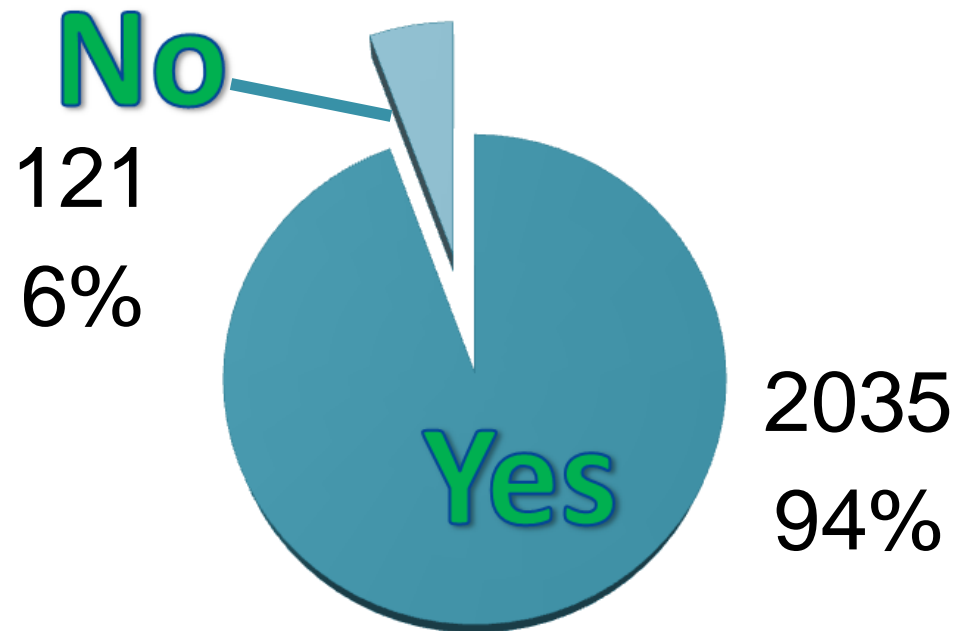
How many repeat training events at your airline did this pilot require BEFORE IOE?



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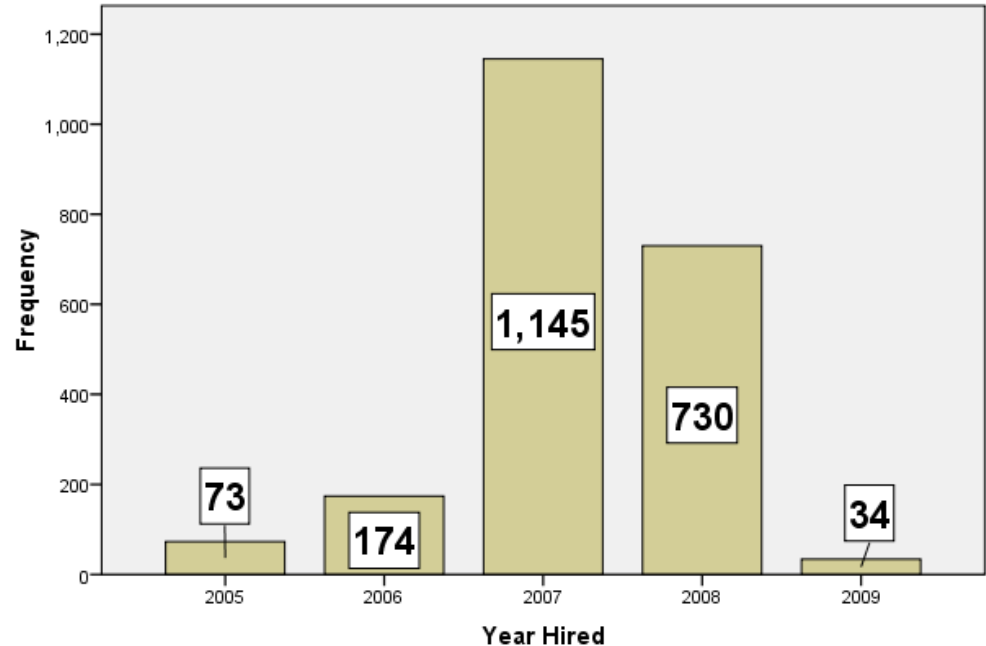
OUTCOME #2: COMPLETIONS:

Did this pilot complete the training with your airline-including IOE? (N = 2156)



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YEAR HIRED:
In what year
was this pilot
hired?
2005-2009



Did Not Analyze

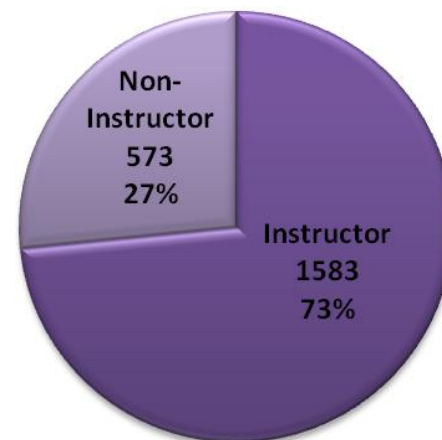
WHY? Incomplete data sets for three airlines

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INSTRUCTOR:

Was this pilot an FAA certificated flight instructor? (CFI, CFII, MEI, etc.)

N = 2156



Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Flight Instructor	Extra Training Events	t-Test	$t = 3.987^{***}$	Yes *** $p < .001$
Flight Instructor	Completions	Chi-Square	$\chi^2 = 9.884^{**}$	Yes ** $p < .01$

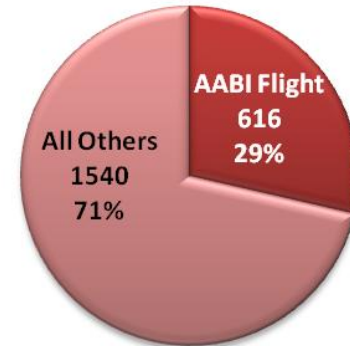
- Pilots who were flight instructors had **fewer extra training events** than pilots who were not flight instructors.
- Pilots who were flight instructors had comparatively **fewer incompletes**

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AABI Flight

Derived Variable (Only those programs in the data set that meet the AABI Program Accreditation Criteria for Flight Education)

AABI Flight Program Graduates
N = 2156



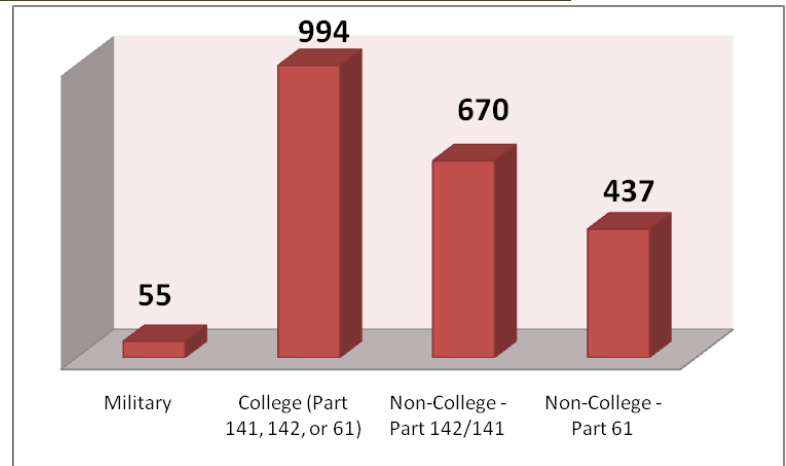
Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
AABI Flight Programs	Extra Training Events	t-Test	$t = 6.09^{***}$	Yes $***p < .001$
AABI Flight Programs	Completions	Chi-Square	$\chi^2 = 16.43^{***}$	Yes $***p < .001$

- AABI flight programs produced **fewer extra training events**
- AABI flight programs produced comparatively **fewer incompletes**

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PILOT TRAINING:

Where did this pilot get Advanced Pilot Training (beyond Private Pilot)?
(N = 2156)



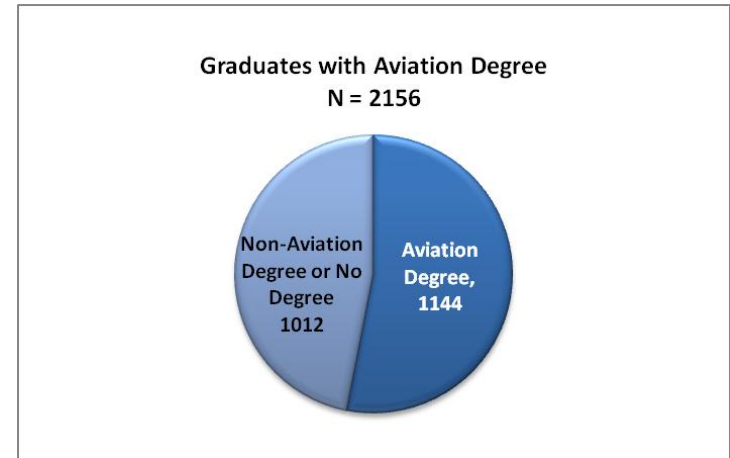
Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Source of Pilot Training	Extra Training Events	ANOVA	F = 10.39***	Yes ***p < .001
Source of Pilot Training	Completions	Chi-Square	$\chi^2 = 30.16$ ***	Yes ***p < .001

- Pilots trained in college had **fewer extra training events** than non-college pilots
- Pilots trained in college had comparatively **fewer incompletes**

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Aviation Degree:

- Derived Variable (any degree that contained words like aviation, flight, airport, pilot, etc. - these are **not all flight degrees**)



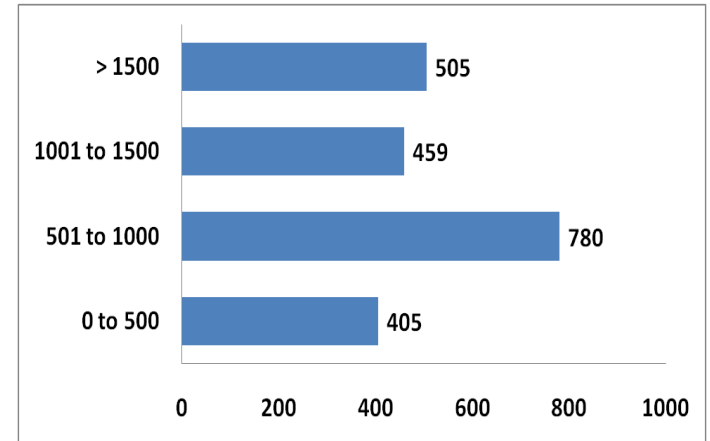
Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Aviation Degrees	Extra Training Events	<i>t</i> -Test	$t = 1.71^*$	Yes $*p < .05$
Aviation Degrees	Completions	Chi-Square	$\chi^2 = 8.13^{**}$	Yes $**p < .01$

- Aviation Degrees produced **fewer Extra Training Events**
- Aviation degrees produced comparatively **fewer incompletes.**

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TOTAL HOURS:

How many Total Hours did the pilot have at the beginning of training with your airline? (N = 2149)

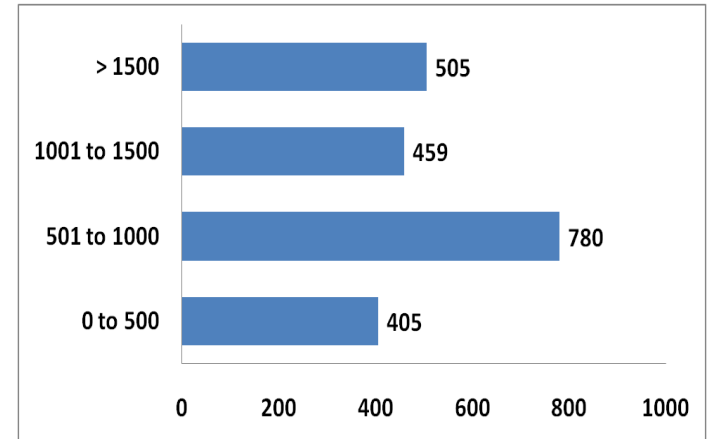


Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Total Flight Hours	Extra Training Events	ANOVA	F = 3.31*	Yes *p < .05
Total Flight Hours	Completions	Chi-Square	$\chi^2 = 17.24^{**}$	Yes **p < .01

- Pilots with **501 to 1000 hours** had the **fewest extra training events**.
- Pilots with **501 to 1000 hours** had comparatively **fewer incompletes**.

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TOTAL HOURS: (Continued)



•Effect of pre-employment total flight hours, in order of performance:

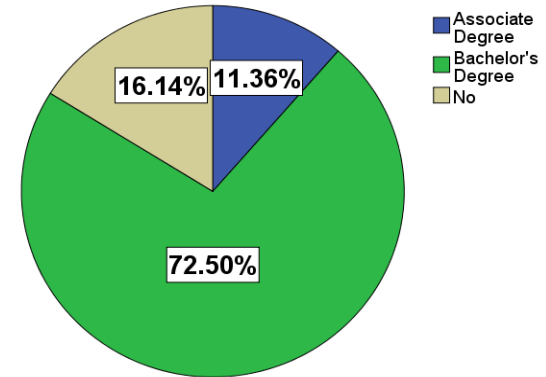
- Group 1: 501 to 1,000 hours
- Group 2: 178 to 500 hours
- Group 3: 1,001 to 1,500 hours
- Group 4: > 1,500 hours

Note: The most significant difference was between Group 1 and Group 4 for both Extra Training Events and Completions.

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COLLEGE DEGREE:

Did this pilot have a college degree (any discipline) at the beginning of training with your airline?



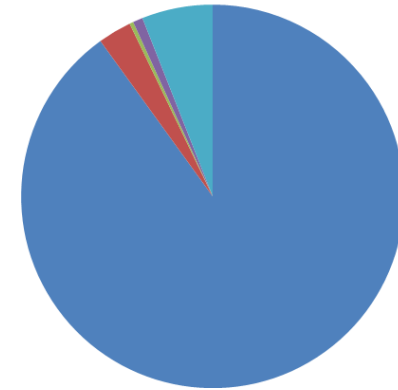
Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
College Degree	Extra Training Events	ANOVA	F = 1.16	No
College Degree	Completions	Chi-Square	$\chi^2 = 2.408$	No

- Having a college degree **did not produce a difference** in extra training events.
- There was **no relationship** between the number of incompletes and whether pilots had a college degree

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MILITARY: What prior military experience did this pilot have? (N = 2156)

Note: The small # of military pilots (68) suggests that most military pilots go directly to the major airlines



■ None (1941) ■ Military Aviator - Pilot - FW (61)
 ■ Military Aviator - Pilot - RW (7) ■ Military Aviator - Non-Pilot (18)
 ■ Military - Non-Aviator (129)

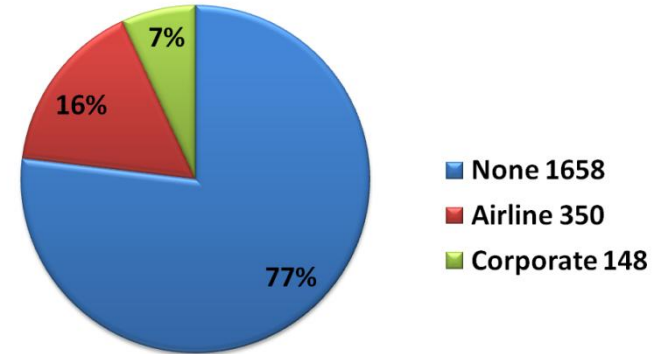
Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Military	Extra Training Events	t-Test	$t = 0.42$	No
Military	Completions	Chi-Square	$\chi^2 = 0.84$	No

- Prior military experience had **no effect** on the number of extra training events
- There was **no relationship** between the number of incompletes and prior military experience.

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PREVIOUS EXPERIENCE:

What previous corporate or airline pilot experience did this pilot have? (N = 2156)



Predictor Variable	Outcome Variable	Statistical Test	Test Statistic	Significant?
Previous Experience	Extra Training Events	ANOVA	F = 2.51	No
Previous Experience	Completions	Chi-Square	$\chi^2 = 4.76$	No

- Pilots with previous airline or corporate experience had the **same number of extra training events** as pilots with no previous experience.
- Pilots with previous airline or corporate experience had the **same proportion of incompletes** as pilots with no previous experience.

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RESULTS

April 4, 2010