



# USABILITY STUDY REPORT

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# ACCESSIBILITY





# OVERVIEW



## Purpose of the Study

- To evaluate the accessibility of booking a flight on the Alaska Airlines website for **users who are blind or have low vision**
- To help Alaska Airlines surpass accessibility guidelines
- To find usability issues for which improvements could be made
- Recommend improvements to make the website **easy-to-use and delightful** for users who are blind or have low vision





## Screen Readers at a Glance



Screen readers allow people to access digital content non-visually. They are software programs that read the text that is displayed on a computer screen aloud. The user sends commands by pressing different combinations of keys.



## Screen Reader Demonstration

<https://www.alaskaair.com/Shopping/Flights/Shop>

Screen readers are expert tools, requiring practice and time to learn.

Commands of Relevance to This Project:

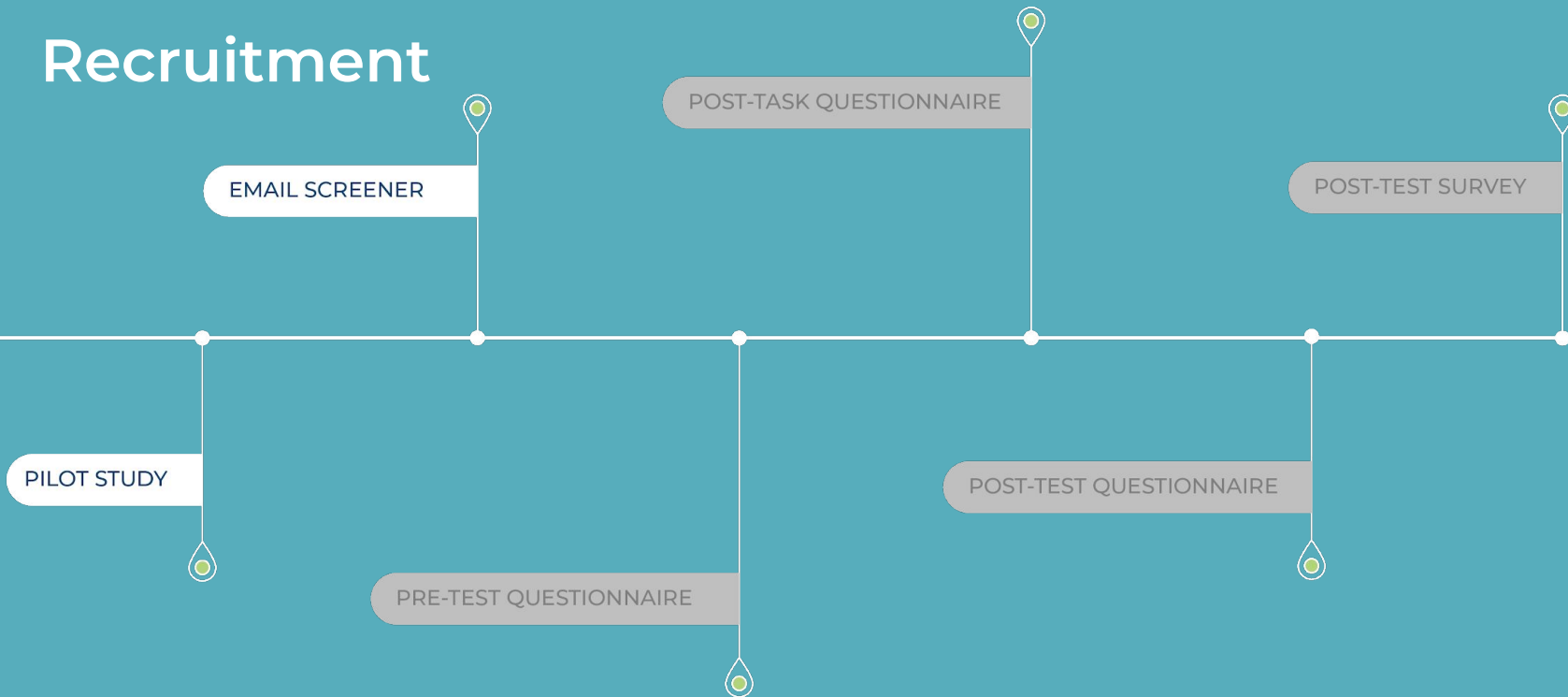
- **VO + arrow keys:** On Mac the VoiceOver keys are control and option. Used in combination with the arrow keys, this form of navigating a page reads all accessible elements
- **Tab:** Navigating by tab skips most text elements and reads headings, buttons, and other higher level elements



# METHODS



### Recruitment







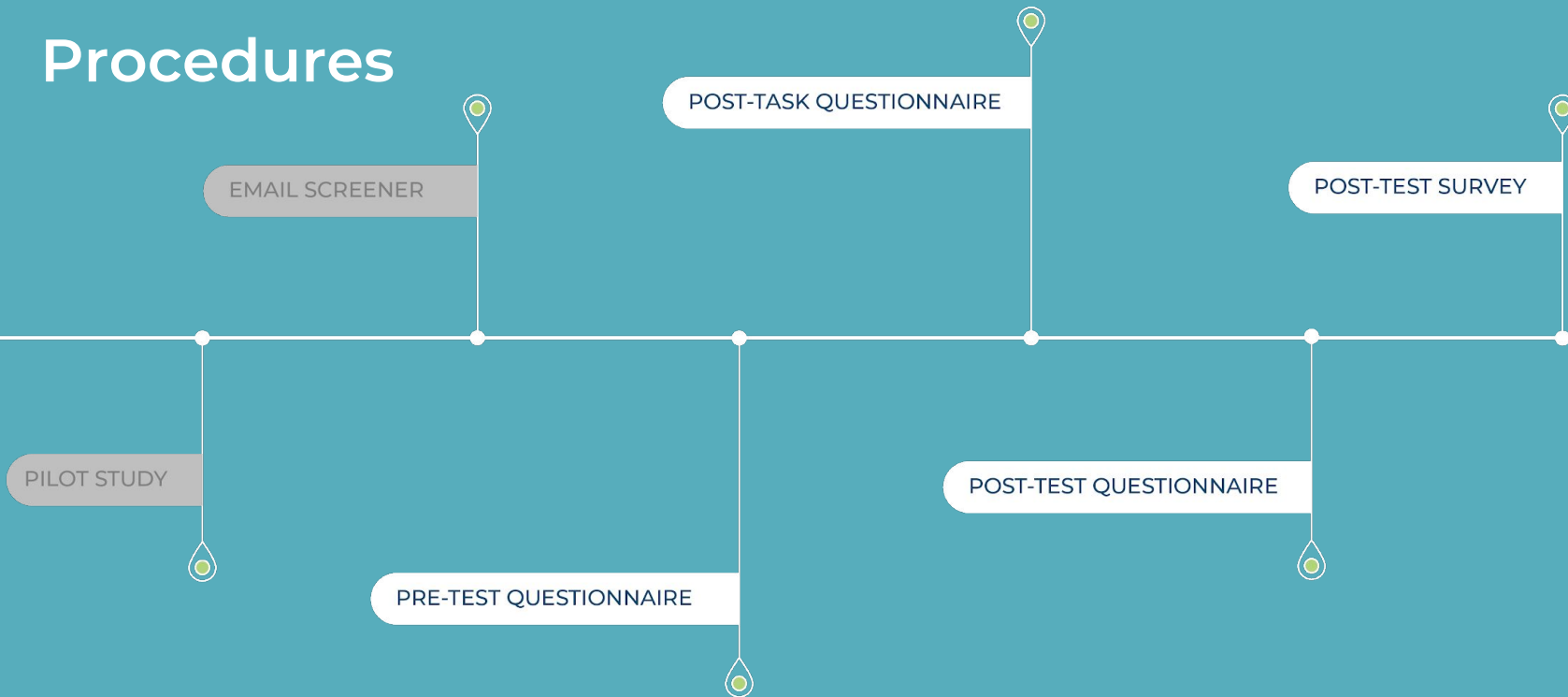
### Participant Profiles

Participant #	Screen Reader	Browser	Self-Booking	Has Used Alaska website	Vision	Age	Gender
<b>P1</b>	JAWS	Firefox	Yes	Yes	Total blindness	35	Male
<b>P2</b>	Voice Over	Safari	Yes	Yes	Near total blindness	33	Male
<b>P3</b>	JAWS	Chrome	No	No	Profound low vision	30	Female
<b>P4</b>	JAWS	Internet Explorer	Yes	Yes	Profound low vision	23	Male
<b>P5</b>	Voice Over	Safari	Yes	Yes	Severe low vision	44	Male
<b>P6</b>	JAWS	Firefox	Yes	No	Near total blindness	31	Male





### Procedures





## Modified Think Aloud

- We did not want to place too much burden on the participants to think aloud while listening to their screen reader
- Participants typically used their screen reader with headphones and a high speaking speed
- We asked participants to run their screen reader aloud at the speed they usually used
- Used concurrent think aloud protocol with care to avoid interrupting the screen reader



## Task Environment

- Four tests were conducted in the participants' homes, one in a private room on campus and one at a participant's workplace
- All participants used their own devices with their preferred screen reader pre-installed
- These environment and equipment choices were made to elicit natural behaviors in navigating through the site





## Task Scenario

- We asked each participant to imagine they were **planning a trip to Los Angeles in March**. They need to book a roundtrip flight and only have access to their computer. They heard from a friend that Alaska Airlines offers inexpensive flights to LA, so they decide to head to the site and begin their flight booking process.

# Alaska ACCESSIBILITY

## METHODS



### Tasks

#### HOME / FLIGHT SEARCH

Home Page

Flight deals \$59

Dropdown Menu

Search For A Flight

#### CREATE FLIGHT ITINERARY

Flight Search Results

Choose Departing Flight

Flight Search Results: Calendar View

Flight Search Results by Price

#### CHECKOUT AS A GUEST

Flight Summary

Sign in

Passenger Information

Seat Selection

Request Services

#### REVIEW AND COMPLETE PAYMENT

Review and Complete Payment



## Data Collected

- **Quantitative:**
  - Task completion (success/fail)
  - Errors on task
  - Satisfaction level & task difficulty level on a scale of 1 to 5
- **Qualitative:**
  - Observation of difficulties encountered
  - Participant feedback of delight & pain points
  - Improvement suggestions
- Screen recording
- Video recording







# FINDINGS



## Severity Ratings

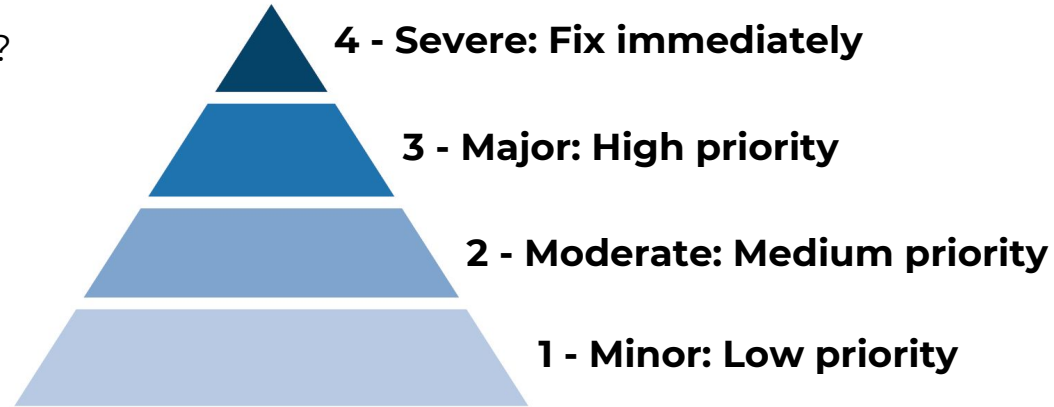
Severity was determined by considering:

**[A]** Frequency - How many users experienced the issue? How many times?

**[B]** Impact - How difficult was it for users to overcome the issue? Did the issue cause them to fail the task?

**[C]** Experience - How did the issue affect the user? Did it cause frustration, anger, confusion?

**[D]** Persistence - How avoidable was the issue? Could the user take an alternate route to avoid the issue?<sup>1</sup>



<sup>1</sup>From Professor Leah Findlater, HCDE 598E Winter 2018





**REFLECTION**



## On Screen Reader Versions

- Screen readers interacted with the website differently
  - JAWS vs VoiceOver
- Versions of the software
  - Braille/text display
- Browser and Operating System





# QUESTIONS