Business Requirements Specification (BRS)

Business Requirements Specification for Alaska Airlines

Version 1.0

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Definitions

Alaska Air Group - Owns Alaska Airlines and Horizon Air

Safety Operation Performance Metric - Quarterly goals for pilots and flight attendants to meet regarding safety.

In flight - Group that is in charge of operations that occur during flights

Safety metrics - Data on how safety is being upheld

Cost Analysis - Documents that detail the budget and how much each project will cost

Airport City Codes - Identifies each airport in a unique way

References

Jon Sites - Director of Flight Safety at Alaska Airlines

Safety Manual at Alaska Airlines - may be obtained from Alaksa Airlines

Error Report - may be obtained from Safety Group at Alaska Airlines

Procedures Document - may be obtained from Alaska Airlines

Cost Analysis Document - may be obtained from Alaska Airlines

Alaska Safety Management Sytems Manual - may be obtained from Safety Group at Alaska Airlines

Alaska Pilot Scheduling Manual - may be obtained from Alaska Airlines

ALPA Pilot Contract with Alaska Airlines - may be obtained from Alaska Airlines or ALPA union

Alaska Flight Planning and Scheduling Manual - may be obtained from Alaska Airlines scheduling department

Alaska Flight Operations Manual - may be obtained from Alaska Airlines flight operations department

FAR 119 Federal Flight Limitations Document - may be obtained from Alaska Airlines or the FAA

Operational Performance Leadership Safety Goals - may be obtained from Alaska Airlines

Acronyms and Abbreviations

CUA - continuous unstable approach

FAA CMO - Federal Aviation Administration Certificate Management Office

ALPA - pilots union

AFA - flight attendants union

TWU - transportation workers union

SMS - safety management system

EOC - emergency operation control center

FADO - flight standards district office

1. Introduction

1. Business Analysis

Alaska Air Group oversees both Alaska Airlines and Horizon Air. The safety division is a part of the Alaska Air Group and oversees both of these airlines. The safety division reports to the CEO of the Alaska Air Group in order stop potential influence from one of the airlines and report problems accurately. The role of the Director of Safety is to oversee flight operations to see what is happening. In the safety department there is the vice president of safety, 2 managing directors under the vice president, 3 directors under the managing directors, and then managers under the directors.

2. Business Scope

The business domain is Alaska Air Group Safety. Business activities under this group include overseeing all operation of divisions to maintain safety and ensure voluntary safety programs function properly which allow airline employees to report issue without being reprimanded. The safety group reports safety performance to management on a weekly basis, discusses safety on a safety review board to identify trends monthly, and reports safety performance to the board of directors quarterly. If a safety incident occurs the group also investigates the event and makes a summary of why the event occurred to prevent it from happening again. The scope of one of the safety groups systems being changed is the flight crew procedural errors tracking. This system is used to track errors and each error has been

handled on an individual basis. The system is being changed to take human factors into account. A crew error dashboard is being added so that each error is put in the dashboard along with the pilot that made the error. That pilot is then analyzed demographically to see what human factor may have influenced the error such as a new hire, being close to retirement, or being lazy. The error report is then sent to a human factor specialist to categorize why the pilot made the error. This data is then put into a report trend and used to adjust current policies and procedures.

3. Overview

Internal division of Alaksa is made up of 3 groups. The Alaksa Air Group is made up of the executive management team, legal team, human resources, marketing, and information technology. Alaksa Airlines is made up of flight operations, in flight team, Maintenace, and customer service. Horizon Air is also made up of flight operations, in flight team, maintenance, and customer service. The external division is made up of ground service vendors and catering.

4. Definitions

CUA - Continuous unstable approach. When pilots fly an approach if at 1000ft above ground lands their flaps are not set, at 500ft above ground landing the engine is idle, and/or at 300ft they still land when they shouldn't it is a continuous unstable approach.

Safety Operation Performance Metric - Each operation division (pilots, flight attendants, maintenance, ground) have safety goals every quarter based on previous safety concerns in that department. These goals change every quarter depending on current safety concerns.

5. Major stakeholders

FAA CMO (Federal Aviation Administration Certificate Management Office) - The office watches to make sure that Alaska Airlines does what it is supposed to in terms of safety

Employee Unions (ALPA, AFA, TWU) - Represent employees and make sure employees can perform their job safely

Board of Directors - The safety departments report to show safety of airline is maintained

Shareholders

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2. References

Spoke to Jon Sites - Director of Safety at Alaska Airlines

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3. Business Management Requirements

1. Business environment

Alaska Air Group is trying to reduce their carbon footprint due to laws about aerospace carbon footprints and desires from shareholders. To do this they are buying more efficient planes, teaching pilots' methods to fly more efficiently, and routing aircrafts more efficiently.

The implementation of 5G cell services allowed by the government affected radio altimeters in airplanes that are needed to land in low visibility. Alaska Airlines safety department worked with telecom industries to adjust 5G signals near airports so that the radio altimeters would work when needing to land in low visibility.

2. Mission, goals, and objectives

No accidents

Reduce employee injuries

Continue to operate safely

Improve and develop new safety metrics

Increase reporting of incidents

3. Business model

Communicating with employees about safety through in person meetings and the employee portal online.

Soar award - $550 to an employee that is reported by another employee for following exceptional safety procedures.

Work with flight operations to communicate issues through publications.

Show examples of safety mishaps and how to prevent them from occurring again in training sessions and publications.

4. Information environment

A meeting is held every week with the Vice President and directors to set priorities based on safety benefits and budget constraints. If there is a budget constraint but the proposal will improve safety the department either asks for more money or waits for the next budget cycle.

4. Business Operational Requirements

1. Business processes

Procedure for business activities at Alaska Airlines Safety Department includes running software programs to gain data, building a business case while taking into account cost analysis, the idea is then taken to the company, and a vendor is searched for if a change is being made.

2. Business operational policies and rules

Safety Manual - outlines SMS (safety management systems) which describe how safety data is taken, and what its risks are. When risks are found meeting are required to be held about reducing these risks.

3. Business operational constraints

Time commitments for each task are determined from estimates on employee current workload and the complication of the task.

4. Business operational modes

When there is bad weather the EOC (emergency operation control center) is implemented to determine how many airplanes can safely operate at that time. Then data is used to determine which flights are best to cancel. When this is happening the safety group has to make sure any decisions made do not affect the safety margin.

5. Business operational quality

Processes are always followed even when something urgent occurs. For example, if something abnormal occur on a flight the pilots contact FADO. FADO will then look at manuals for prewritten procedures that match the incident. If a procedure is not written for the incident, then FADO will consult with leadership at Alaska Airline so that a procedure can be written.

6. Business structure

For the Safety Group there is a safety leadership team which is made up of the vice president and 2 managing directors which are all based in Seattle. Under the safety leadership team are the directors of safety. There is a director for maintenance, ground, and in flight which are all based in Seattle but travel when needed. Under the directors are manger that are also based in Seattle but travel for audits.

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5. Preliminary operational concept

5.1 Preliminary operational concept

a) operational policies and constraints

Cost of building pilot schedules. Using only the Anchorage pilot base to fly to airports in Alaska would increase hotel costs, per diem, and would lower the efficiency of scheduling.

Employee preferences of where they want to fly would be prevented causing pilots to be upset and have a lower moral.

Union wants pilots to be able to fly where they want to.

b) description of the proposed system

At Alaska Airlines one of the main safety concerns at the moment is that safety issues have been more prevalent when flying to or from small cities in Alaska than when flying in the lower 48 states in the US. Currently, there are 1,600 pilots based in Seattle and 300 pilots based in Anchorage Alaska that are allowed to fly to these remote airports in Alaska. It would be safer to only have pilots from Anchorage fly to these airports in Alaksa because there is a smaller group of them which would allow them to have more experience and be more comfortable flying to those airports. This would likely reduce the safety issues that are occurring when flying to and from airports in Alaska. The reason this solution has not been implemented is that pilot scheduling would cost more, and it would be hard to properly allocate a smaller group of pilots to these flights. The proposed system would update the scheduling software algorithms at Alaska Airlines to make trips out of Alaksa more efficient and reduce costs to the company while being safer.

c) modes of system operation

The schedule planning group would use the system to build pilot trips appropriately, add new trips, and edit trips.

Pilots would use the system to look at available trips and pick trips.

Flight attendant would use the system to look at available trips and pick trips.

d) user classes and other involved personnel

Schedule planning group - builds scheduling software

Schedule planning team - assigns trips to pilots

Pilots

Flight attendants

Vice President of flight operations

Director of flight operations

e) support environment

Support would be needed when trips cannot be selected properly, trips are wrongly assigned, and errors occur in the system.

5.2 Preliminary operational scenarios

The schedule planning department would make tweaks to the program to improve efficiency utilizing software developers.

Pilots would use the system to pick trips and look at the schedule.

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6. Other preliminary life-cycle concepts

6.1 Preliminary acquisition concept

The managing director of crew planning would allow for changes to current software to be made. Once the software was created a system wide update would be needed to utilize the software.

6.2 Preliminary deployment concept

The software would need to validate by the managing director of crew planning and the scheduling team once completed. The scheduling website would then need to be updated.

6.3 Preliminary support concept

The updates to the program would need to be checked and tweaks to the program would need to be made. Software would need to be updated when schedule changes occur, or different airports are added. Training would need to be given to pilots and flight attendants on how to use the new software.

6.4 Preliminary retirement concept

Software would stop being used if it did not make flying to Alaska safer. An updated version of the scheduling software would be developed and rolled out.

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7. Project Constraints

Cost analysis would determine the budget for the software.

An implementation date would be given to the scheduling department for when the product to be finalized.

Flying to Alaska must be approved for only pilots based in Anchorage.

Crew planning must adjust their requirements.

Access to the system would only be given to those with approved credentials.

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8. Appendix

8.1 Acronyms and abbreviations

Airport City Codes must be understood

Trip credit - pay for the trip to the pilot

Block time - flight time