(Aircraft) CASE STUDY

TITLE:

FOCUS SKILL:  Situational Awareness

SOURCE:

TERMINAL OBJECTIVE: At the completion of this case study, the audience will be able to explain the importance of Situational Awareness in aircraft operations.

ENABLING OBJECTIVES:  
1. 
2.
DESCRIPTION:

INTRODUCTORY TEACHING POINTS:

What is Situational Awareness?

Effective situational awareness refers to the degree of accuracy by which one’s perception of the current environment mirrors reality. It includes the ability to:

- Identify the source and nature of problems
- Extract and interpret essential information
- Maintain an accurate perception of the external environment
- Detect a situation requiring action

Situational awareness requires that we know: **Who** is responsible for specific activities, **What** is happening, **When** events are supposed to occur, and **Where** the aircraft is in three-dimensional space.

Maintaining a correct image of reality:

Mission success depends on your maintaining or recovering situational awareness. Use the following techniques to maintain a correct image of flight:

- Detect and comment on deviations
- Provide information in advance
- Identify potential problems
- Demonstrate an awareness of task performance and mission status

Factors that Reduce Situational Awareness:

- Insufficient communication
- Fatigue/Stress
- Task overload/under load
- Group mindset
- "Press on Regardless" Philosophy
- Degraded operating conditions

Combat the Loss of Situational Awareness by:

- Actively questioning and evaluating your mission progress
- Using assertive behaviors when necessary
- Analyzing your situation
- Updating and revising your image of the mission
Remember:

- Situational awareness is a critical factor in our ability to respond effectively to a situation.
- Maintaining a high level of situational awareness will better prepare crews to respond to unexpected situations.

INSTRUCTOR DIRECTIONS: Divide the participants into case study discussion groups. If the class is small, each member can work on their own. Present the case study using the following steps:

1. Describe the goal of the case study exercise and present the focus questions. Ask if anyone has questions about the exercise objective or the focus questions.

2. Allow time to read and discuss the synopsis in relation to the focus questions.

3. Lead a discussion or have groups present their findings in relationship to the focus questions. Highlight key points on board or other medium as discussion develops.

DESCRIPTIVE SYNOPSIS:

1. (Synopsis with annotations)

2. Possible Synopsis Additions.
   
   a.  
   
   b.  
   
   c.  

3. List of focus and support CRM skills.
   
   a.  **Decision Making:** The ability to choose a course of action using logical and sound judgment based on the available information.

   b.  **Assertiveness:** The willingness to actively participate, state, and maintain a position until convinced by the facts that other options are better.

   c.  **Mission Analysis:** The ability to develop short-term, long-term, and contingency plans and to coordinate, allocate, and monitor crew and aircraft resources.

   d.  **Communication:** The ability to clearly and accurately send and receive information, instructions, or commands; and provide useful feedback.

   e.  **Leadership:** The ability to direct and coordinate the activities of crew members
and to encourage the crew to work together as a team.

f. **Adaptability/Flexibility:** The ability to alter a course of action based on new information, maintain constructive behavior under pressure, and adapt to internal and external environmental changes.

g. **Situational Awareness:** The degree of accuracy by which one’s perception of the current environment mirrors reality.

**FOCUS QUESTIONS AND ANSWERS**

1. What THREATS came “at” the crew and what Strategies were used to Prepare for Threats and initially deal with them?

2. What ERRORS came “from” the crew and how did they use SA to Repair the Errors?

3. What Undesired Aircraft State was achieved and how did the crew use SA to Recover?

4. What could have been done to avoid this situation?

**SUMMARY TEACHING POINTS:**

1.

2.

3.
(Aircraft) CASE STUDY

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SOURCE:

SYNOPSIS:

FOCUS QUESTIONS:

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Case Study Title

CRM CASE STUDY
Name

• Personal Info
• Etc.
Question Policy
Overview

• Objectives
• Critical Skills Review
• Case Study Focus Skill
• Synopsis
• Focus Questions
Objectives

- Terminal Objective

- Enabling Objective
Crew Resource Management

• Allows crew to interact effectively while performing mission tasks
• A program to effect behavior modifications in order to prevent human factor and crew preventable errors
• To improve mission effectiveness through increased awareness of associated behavioral skills
CRM Critical Skills Review

- Decision Making (DM)
- Assertiveness (AS)
- Mission Analysis (MA)
- Communication (CM)
- Leadership (LD)
- Adaptability/Flexibility (AF)
- Situational Awareness (SA)
Case Study Focus Skill

SITUATIONAL AWARENESS

• The degree of accuracy by which one’s perception of the current environment mirrors reality
S/A requires that we know

- Who is responsible for specific activities
- What is happening
- When events are supposed to occur
- Where the aircraft is in three-dimensional space
Factors that reduce S/A

- Insufficient communication
- Fatigue/Stress
- Task overload/underload
- Group mindset
- “Press on regardless” philosophy
- Degraded operating conditions
Synopsis
Identify:
- Threats
- Strategies
- Errors
- Resist/Resolve

MISSION EFFECTIVENESS

Safe Operations

CRM 7 Critical Skills
- Decision Making
- Assertiveness
- Mission Analysis
- Communication
- Leadership
- Adaptability / Flexibility
- Situational Awareness

Threats

Strategies

Errors

Resist / Resolve

Undesired Aircraft State

Recover

Prepare

Repair

Incident/Accident
Focus Questions

1. What THREATS came “at” the crew and what Strategies were used to Prepare for Threats and initially deal with them?

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Focus Question #1

- What THREATS came “at” the crew and what Strategies were used to Prepare for Threats and initially deal with them?

**Strategies to Prepare:**
- CRM
- ORM
- TEM
- Clearly defined roles of aircrew members
- Complete briefing and effective communication
- NATOPS / System Knowledge

Identify and **PREPARE**
Focus Question #2

• What ERRORS came “from” the crew and how did they use SA to Repair the Errors?

\[ \text{Errors} \]

TCAS
Windshear Detection
Autopilot
Professionalism
Knowledge
Health

GPWS
Warning Systems
Map Display
WX Radar

FMC
Monitoring
Challenging Systems
Experience

Hardware
What Are Your Systems Doing For You?

Human-ware
What Tools Are You Bringing To The Fight?
Focus Question #3

- What Undesired Aircraft State was achieved and how did the crew Recover?

**Undesired Aircraft State:** A position, speed, attitude, condition, or configuration of an aircraft that reduces safety margins.

Identify and **RECOVER**
Focus Question #4

- What could have been done to avoid this situation?
Remember

• Situational awareness is a critical factor in our ability to respond effectively to a situation

• Maintaining a high level of situational awareness will better prepare crews to respond to unexpected situations
Questions?