

**(Aircraft) CASE STUDY**

**TITLE:**

**FOCUS SKILL:**                      **Mission Analysis**

**SOURCE:**

**TERMINAL OBJECTIVE:** Upon completion of this case study the aircrew will understand the importance of Mission Analysis in aircraft operations.

**ENABLING OBJECTIVES:** 1.  
2.

## **DESCRIPTION:**

### **INTRODUCTORY TEACHING POINTS:**

#### **What is Mission Analysis?**

Mission analysis refers to the ability to make short-term, long-term, and contingency plans and to coordinate, allocate, and monitor crew and aircraft resources. This includes:

- Organizing and planning for what will occur during the mission.
- Monitoring the current situation.
- Reviewing and providing feedback on what has occurred.

Failure to develop a good plan, or to revise a plan when the situation changes, can result in a failed mission or a mishap.

#### **The three stages of mission analysis:**

Mission analysis occurs before, during, and after a mission and consists of:

- Pre-mission organizing and planning.
- In-flight monitoring and updating.
- Post-mission review.

#### **Preflight and debrief characteristics**

##### **A good preflight brief:**

- Is comprehensive
- Sets expectations for all crew members
- Is interactive
- Is valued by all crew members

##### **A good debrief:**

- Is interactive
- Is valuable to all crew members
- Is a selective review
- Is timely

#### **Pre-mission analysis:**

- Establishes mission requirements and constraints.
- Specifies both long term and short term plans.
- Advises the crew of what to expect.

**In-flight analysis:**

- Critiques and updates existing plans
- Evaluates results of previous decisions
- Informs the crew of changes to flight concept

**Post-mission analysis:**

- Critiques entire mission.
- Determines areas of future improvement.

**Remember:**

- Mission analysis is a crew effort - how well you coordinate actions can make a difference!
- Each stage of mission analysis has an impact on the overall mission.
- Failure to develop a good plan, or to revise a plan when the situation changes, can result in a failed mission or a mishap

**INSTRUCTOR DIRECTIONS:** Divide the class into seven small groups to discuss the case study. 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 or the focus questions.
2. Allow time to read and discuss the case study 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 MA to Repair the Errors?
3. What Undesired Aircraft State was achieved and how did the crew use MA 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 a 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

## MISSION ANALYSIS

- The ability to make short-term, long-term, and contingency plans and to coordinate, allocate, and monitor crew and aircraft resources

# Mission Analysis Includes

- Organizing and planning for what will occur during the mission
- Monitoring the current situation
- Reviewing and providing feedback on what has occurred

# Three stages of Mission Analysis

- Pre-mission organizing and planning
- In-flight monitoring and updating
- Post-mission review

# Pre-mission analysis

- Establishes mission requirements and constraints
- Specifies both long and short term plans
- Advises the crew of what to expect

# In-flight analysis

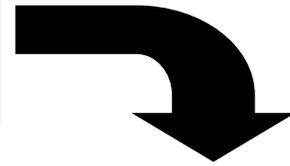
- Critiques and updates existing plans
- Evaluates results of previous decisions
- Informs the crew of changes to flight concept

# Post-mission analysis

- Critiques entire mission
- Determines areas of future improvement

# Synopsis

# MISSION EFFECTIVENESS



## Safe Operations

Threats

Prepare

Strategies

Errors

Repair

Resist /  
Resolve

Undesired

Aircraft  
State

Recover

CRM/TEM

## Incident/Accident

### CRM 7 Critical Skills

Decision Making

Assertiveness

Mission Analysis

Communication

Leadership

Adaptability / Flexibility

Situational Awareness

### Identify:

- Threats
- Strategies
- Errors
- Resist/Resolve

# Focus Questions

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 MA to Repair the Errors?
3. What Undesired Aircraft State was achieved and how did the crew Recover?
4. What could have been done to avoid this situation?

# Focus Question #1

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



Identify and PREPARE

## Strategies to Prepare:

- CRM
- ORM
- TEM
- Clearly defined roles of aircrew members
- Complete briefing and effective communication
- NATOPS / System Knowledge

# Focus Question #2

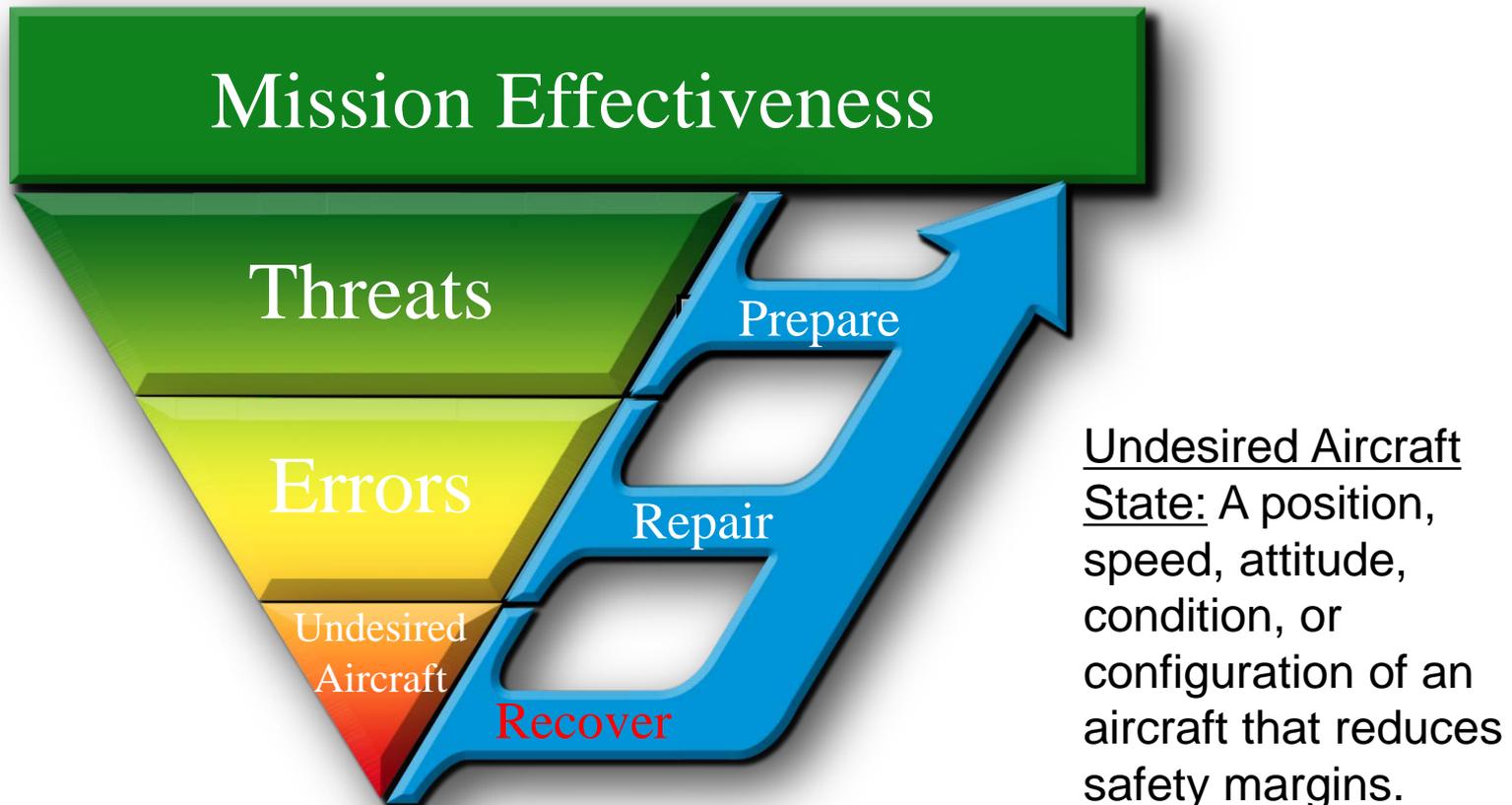
- What ERRORS came “from” the crew and how did they use MA to Repair the Errors?

↓ Errors ↓



# Focus Question #3

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



Identify and **RECOVER**

# Focus Question #4

- What could have been done to avoid this situation?

# Remember

- Mission analysis is a crew effort – how well you coordinate actions can make a difference
- Each stage of mission analysis has an impact on the overall mission.
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Questions?