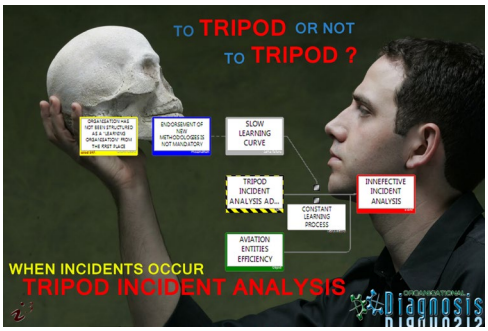
Combined Bowtie & TRIPOD Beta Course in Aviation



INSTRUCTOR INFO Cpt Dimitrios Soukeras MBA(ER)
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Training Days / Time MTWRF (Monday -Tuesday-Wednesday-Thursday-Friday

Starting on May the 5th 2025-till May the 9th 2025-(hours 0900-1700)

Classroom At the Athenaeum Luxury 5 stars Hotel in Athens (4 Vouliagmenis Avenue & Kallirois Street)

Prerequisites from Trainees: None in terms of previous knowledge, need have their own laptop Operating in Windows Evironment

Textbook and Material: Instructor Notes and files and folders in USB

Postponing the Training: Not Available

Few Words for the Instructor: Cpt Dimitrios Soukeras had been trained in both methodologies since 2011, among the first professionals globally with an

Aviation Background, and the first Greek. Dimitrios applied Tripod Beta to analysing the real accident of a known Airline back in 2018, first time that an airline paid for those services.

Description

Trainees work individually and in teams to enhance their professional skills, as they relate to safety. Bowtie Risk assessment methodology is the best practice nowadays in Aviation in understanding Risks and mitigating them. TRIPOD Beta incident and accident investigation methodology is used to providing a solid way of analyzing accidents. Trainees by working with both methodologies and with supportive software will get hands on knowledge of Safety Management Systems can be both build and enhanced after accidents occur. The training will prepare its participants to organize their thinking into dealing with complex situations and also fully apply both methodologies. They will also acquire the essential technical skills to participate in any accident investigation. Furthermore, they will be prepared to play a dynamic role in establishing a vivid safety culture in any aviation organization.

More specifically, trainees will gain essential theoretical and practical knowledge in risk assessment and additionally to accident investigation, so they maintain an energetic role in developing a safety culture in the aviation industry. This includes the familiarization with key elements of the risk management process, the accident management evolution, essential terminology for investigators, the leading role of the Swiss model in human error theory. Finally, the TRIPOD Beta concept will be analyzed to help trainees develop their first TRIPOD Beta trees.

Course Goals

1. Provide trainees with full understanding of Bowtie Methodology.
2. Submit to the participants training so they can build their own barriers, test their effectiveness within the SMS of an aviation organisation.
3. Move in from the concept of barriers not being able to operate, as they were designed by introducing the term of (escalator factors) and their relationship to the safety culture.
4. Structure several bowties by using the relevant software (BowtieXP) and realizing its basic application in an Aviation Organisation.
5. Acquire accident investigation skills via the application of the TRIPOD Beta methodology.
6. Offer students an opportunity for going beyond the acquisition of technical expertise, into people skills, as they relate to safety.
7. Develop participants creative abilities in dealing with complex situations, like aviation accidents, and learning from their own mistakes, as well as the mistakes of others.
8. Develop an appreciation of the interrelationship between organizational culture and safety.

9. Develop trainees' judgment as well as their confidence in creating TRIPOD Beta trees and reaching underlying causes of accidents, then use the new knowledge to feed back bowties.
10. Develop trainees' skills, so they can play a positive role when participating in any accident investigation team by creating more effective safety recommendations.
11. Make trainees aware of the importance of synthesis and teamwork in accident investigation and provide them with an opportunity to develop team and leadership skills.

Course Learning Objectives

By the end of the course, students should be able to:

1. Perform conceptual and preliminary design of a safety management system by endorsing the Barrier Based Thinking (Bowtie methodology).
2. Define an appropriate set of requirements and sketch the profile of a safety management system with a barrier-based approach.
3. Realize that an SMS with a barrier-based approach requires constant feedback and efficient management of change
4. Evaluate the configuration of an organizational culture for a sustainable accident prevention ratio in aviation.
5. Describe the pros and cons of the various accident causation theories and delving into Tripod Beta Incident Analysis.
6. Prepare a full accident report via the application of TRIPOD Beta accident methodology and present the findings of the accident, barriers, active failures, preconditions, and underlying causes.

Topics

Day Topics

Timetable	Training Timetable	Breaks
0900-1000	Workshop	1000-1010
1010-1110	Workshop	1110-1120
1120-1230	Workshop	1230-1240
1240-1340	Workshop	1340-1430(50 m lunch break)
1430-1530	Workshop	1530-1540
1540-1700	Workshop	

Days Schedule

Day 1

01 Organizational culture; Safety culture as predictor of safety performance.
01 BowTie methodology theory (Analysis of all the terminology of the method)
01 How to build a risk analysis diagram for Aviation operations?
01 First Acquaintance with the Software (BowtieXP)
01 Brief aviation hazard analysis as a case study

Day 2

02 Creating a Full Bowtie for the hazard Runway Incursion
02 Linking the diagram to the Safety Management System
02 Assigning metadata (accountabilities, barrier effectiveness, etc.)
02 Communicating risk: reports, case overview, presentations
02 Preparing a Full Bowtie Risk Analysis-Case Study with the use of the software at the discretion of the trainees based on their job description and role

Day 3

03 Accident causation theories.
03 The TRIPOD Beta concept
03 Building a TRIPOD Beta Tree.
03 Which TRIPOD-TRIOS to involve?
03 Identification of the right barriers in a TRIPOD Beta Tree
03 Overview of supporting software for TRIPOD investigations (IncidentXP).

Day 4

04 1st case study: Barrier analysis, on a Runway Incursion Incident
04 Creating the causation path (active failure – preconditions – latent failures)
04 Using Preconditions to creating powerful safety recommendations
04 Linking the two software and the two methodologies (BowtieXP-IncidentXP)
04 **Discussion (Workshop)** – 2nd case study:On Helios Accident (2005)
04 Creating the causation path (active failure – preconditions – latent failures)
04 Using Preconditions to creating powerful safety recommendations

Day 5

05 **Workshop** –case study Trainees form teams and prepare their Accident Analysis Creating the causation path (active failure – preconditions – latent failures – reaching underlying causes – basic risk factors).
05 Reporting of the Accident –Reaching the Underlying Causes-Understanding BRFs
05 SMS measurement with TRIPOD Beta methodology.
05 The relationship between TRIPOD Beta analysis and safety culture mapping.

POLICIES

Course materials such as syllabus, handouts, notes, assignment instructions, etc. will be delivered in person by the instructor.

Attendance

Attendance leads to certificate of Attendance. If you miss of more than 6 hours then the certificate cannot be given. A large portion of each class will be used for problem solving in small groups. All trainees are expected to participate in class discussions and problem solving.

Cell Phones

Trainees will turn their cell phones off or put them on vibrate mode while in the training room. They will not answer their phones during training.

Computer Use

In the classroom, you may use computers only for class-related activities, such as taking notes on the lecture underway, following the lecture on Web-based PowerPoint slides that the instructor has posted, and finding Web sites to which the instructor directs trainees at the time of the training.

Teamwork

- You may be required to work in teams for some assignments. Please make yourself available to meet and work with your teammates for 1 hour or 2 outside of the training
- Instructor will normally form all the teams.

Evaluation of the Course

Trainees will submit their evaluation of both the training material and additionally for the instructor.