TRAINING BRIEF

Training Topic:

INTERNAL INVESTIGATION GUIDE

Introduction

Companies conduct internal investigations for a variety of reasons. HR may be required to conduct an investigation based on an allegation or complaint, and accounting may do the same in suspected cases of financial fraud or abuse.

It is important to realize that as an aircraft operator, inevitably circumstances will arise that demand an internal investigation in an aviation related event, and the information obtained could have significant impact. The value of uncovering who, what, and why cannot be overstated; this will usually be left entirely up to the aircraft operator as most incidents do not warrant FAA or NTSB investigation. When something goes wrong, it is critical to drill down into the root cause, and expose the problem in the hope of preventing future re-occurrences and eliminating other related potential problems. A thorough incident investigation may identify previously overlooked physical, environmental, or process hazards, the need for new or more extensive training, or unsafe work practices. The primary focus of any accident investigation should be the determination of the facts surrounding the incident and the lessons that can be learned to prevent future similar occurrences. The focus of the investigation should NEVER be to place blame. The process should be positive and thought of as an opportunity for improvement.

On the other hand internal investigations also have the potential to be disruptive, unproductive, and even damaging to an organization's safety culture. There is the potential to involve many aspects of an organization, and delve into human performance and errors. An investigation must be handled appropriately; always keep in mind the skill of the investigator improves with experience, and selecting the right person is crucial.

Bottom line:gathering complete, accurate, and objective information used to arrive at the root cause and determine effective corrective action.

Investigation Procedure

1. Prepare an outline strategy for the investigation- Establish a timeline that includes each step that will be taken and a target completion date. Be sure to consider how each phase of the investigation supports the next step. The chronology of investigative procedures can either contaminate or enhance the success of the investigation.

2. Organize investigation equipment (if applicable)- Bring everything you need: do not depend on someone else to bring the equipment for you. Be prepared to carry whatever you bring: do not depend on anyone else to carry it for you. Also keep in mind - and be prepared - for the environment at the event site (i.e. cold, wet, etc.)

3. Gather evidence and facts– Initially evaluate three general sources of data (material, personnel, and records) during the investigation. The material area includes all parts, components, and support facilities directly or indirectly involved. The personnel area includes all individuals associated with the activities immediately surrounding the event, such as the flight crew, schedulers, maintenance, supervisory personnel, and witnesses, and any associated training records and certifications. The records data, regardless of format, includes all records, telemetry, recordings, analyses, inspections, and historical data associated with the specific equipment, operations, and operating personnel.

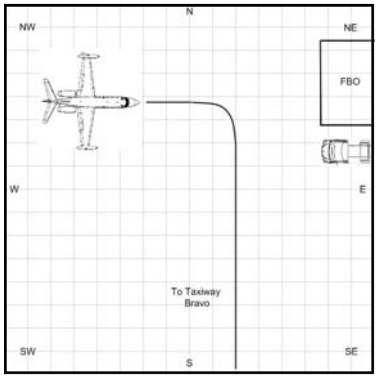
4. Document the event site- Draw a diagram of the event site and take pictures of the entire scene starting with the perimeter and working in, get the overall view first and then take any close-ups. If necessary, correlate the point of view of photos taken to points on the diagram. Be sure to document the functionality of any aircraft or maintenance equipment involved in the incident/accident.

5. Conduct interviews- Interview witnesses rather than interrogate them. The interviewer should approach the interviewee as an equal. Encouragement should be given to tell the story freely without interruption or intimidation. Let them tell the story in their words with no leading on. An interview is usually conducted informally with a voluntary or cooperative answering of questions, but keep the questions to a minimum. The potential to “nudge” someone into a direction via questioning is significant. However, the investigator(s) may also conduct more formal interviews, and elect to record the interview.

6. Analyze investigation findings, derive causal factors, and generate a corrective action plan- Evaluate all information collected during the course of the investigation, including, but not limited to, physical evidence, witness testimony, and analytical results from testing; draw conclusions concerning what happened and why it happened. Identify the root causes of the incident. All findings must be supported by facts. Address possible causal factors by looking at the five “M” s: Man, Machine, Medium, Mission, and Management. Then develop recommendations that address both the immediate cause(s) and the root cause(s) to help prevent recurrence of the event.

Investigation Techniques

Event Diagramming



Typical items in an event diagram include:

- Location references (fences, hangars, runways, etc.)
- Direction and scale reference
- Elevations / contours (depending on the level of detail)
- Location of aircraft and other equipment
- Location of separated parts and equipment
- Damage to buildings, structures, trees, etc.
- Location of eye witnesses

Diagramming methods

Grid systems

This is just what it states - a grid is transposed onto an aerial view of the event site so that each component involved falls within a certain square.

Straight Line System

This is one of the more common and simpler forms of diagramming available; select a starting point (usually the first impact point), and make a straight line marking off set intervals. Mark important information relevant to the event: dents, paint scratches, burn marks etc.

Photography Documentation

Take as many photos as necessary to accurately document damage or evidence. When taking photographs, include a form of label next to the object you are photographing. It may be difficult identifying certain parts in the photograph when reviewing the photos at a later time.

When taking photos, the investigator(s) should first consider the following questions:

What am I trying to accomplish?
Who is going to see the picture / video?
Should I take back up photo's with other media?
How should I incorporate photos / videos into my report?

Taking the Pictures

1. Photograph the site in reference to the eight points of the compass
2. Work in from the perimeter
3. Take pictures of evidence first - the nice-to know stuff can wait
4. Take pictures of the surrounding objects
5. Major aircraft structures (nose, wings, tail, fuselage, gear, etc.)
6. Cockpit / cabin / instrument panel
7. Evident damage / Separated parts
8. Fire evidence (i.e. soot)

Aircraft Systems

The following methods are commonly used when examining aircraft systems components:

- Photograph it – get pictures of what the part looked like before examining it.
- Test the part – if possible, use simple diagnostics to see if the part functions.
- Tear-down analysis – open the part (take apart) for further examination. This may be accomplished by experts who can provide a report to the investigator.
- Documentation – write down what has been done to the part as well as any derived conclusions about that part.

Instrument Investigation

When examining instruments treat them as perishable evidence; for any instrument capture readings and switch positions and try to determine if anything has changed since the event occurred.

Records

Consider reviewing the following when applicable:

- Corporate records
- Operations records
- Maintenance records
- Notams/Weather reports
- Corporate Event Reporting System (CERS)
- Flight Operations Quality Assurance (FOQA)
- Cockpit Voice Recorder/Flight Data Recorder (CVR/FDR)
- Training records
- Drug/Alcohol test results
- E-mail

Interviewing Witnesses

The importance of witnesses varies with the circumstances of the event. In some cases, they are absolutely vital. In other cases, there is plenty of factual information available and any witnesses are merely collaborative. When conducting an interview it is important to remember an interview and not an interrogation. The investigator is merely trying to establish the facts and not to incriminate anyone.

Planning the interview

- Understand the parameters. Get any necessary guidance from HR or legal resources.
- Set priorities for witness interviewing – in other words, who is more important or who will provide the most helpful information.
- Select a location for interviewing the witness.
- Prepare an outline. Allow the witness to tell the story with minimal questioning. Ask them to repeat certain important details again. Questions can lead a witness and influence recollection. If multiple individuals are interviewed, compare and contrast information.

Conducting the Interview

- Make the witness feel at ease; tell them their rights and explain the purpose of the interview– safety.
- Qualify the witness
- Encourage the witness to tell a narrative story of the events they saw.
- Repeat the story yourself to make sure you have the correct facts; the witness may also want to restate something after hearing their statement repeated to themselves.
- Ask any remaining questions and thank the witness.

A witness interview can be affected by several factors including:

- Witness background in aviation/ IQ
- Perception of the witness
- Emotion / excitements
- Interpretation of the ambiguous
- Agreement with other witnesses

Other reasons for inaccurate statements:

- Environmental
- Physiological
- Psychological

Human Factors

Throughout the entire investigation monitor any psychological or physiological factors perceived to have contributed to the event. Document any difficulties personnel have working with liveware (other personnel), hardware (equipment/tools), software (checklists/computer programs), or environment (heat/cold/pressurization). Place special emphasize on the stress and fatigue levels of those involved in the event and be delicate when investigating the following:

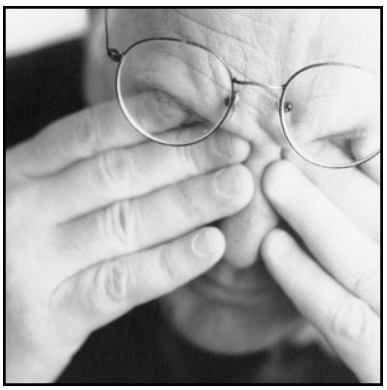
Stress & Fatigue

- Work load / duties & responsibilities
- Schedule / circadian rhythm

Physical appearance / diet

Prominent recent life changing events

- Separation from a spouse
- Illness or death in the family
- The gain of a new family member
- Change in financial state



Conclusion

When an unwanted occurrence takes place, no matter how small, people commence form conclusions instinctively. Whether it be simple troubleshooting, the quick verification of a record, or the questioning of a co-worker, we all naturally seek to eradicate problems when they occur.

The objective of a well organized internal investigation process is not only to find and fix the immediate problem at hand, but also to address the underlying root causes. Analyzing root cause by addressing the 5 “M” s; Man, Machine, Mission, Medium, and Management has been a long standing method for investigators. Thoroughly evaluating all the underlying causes of an event or potential hazard, including management processes, is always a challenge for every organization.

A healthy SMS is organized so the safety manager may report directly to the accountable executive of the organization when necessary. Investigation findings and recommendations made in this fashion are done so objectively and without fear of recourse. In this environment a proper corrective action plan can be developed and executed.

Once implemented, the corrective action plan must be monitored for effectiveness to minimize the potential for an undesirable reoccurrence. After all, this is essentially the underlying philosophy of every SMS, “Treat the disease, not just the symptoms.”