Human Error Defined

Something didn’t go as planned!
Human Error Has a Bad Reputation!

- Someone messed up—
  - There were negative consequences
    - Incident, occurrence, or accident
  - Mistake is quickly ascribed to the individual’s carelessness, incompetence, etc.
  - The individual is reprimanded
    - Warned never to make that mistake again?
    - Three days off without pay?
    - Fired?
- Back to business as usual…
- Sound familiar?
How/Why Errors Happen
• This can be a very lengthy discussion! We will keep it very simple here…

• Errors happen because an intention, or a plan, was not properly executed

• Can be due to such things as-
  • Time pressure
  • Fatigue
  • Poor/no procedures
  • Poor/no policies
  • Rule-breaking
  • Distractions
  • Complacency
  • Lack of Resources

See the Human Factors Dirty Dozen
• The Swiss Cheese model

• Errors can be the result of latent organizational failures

• These latent failures can penetrate the holes (defenses) in the Swiss Cheese slices
  • *It may take months or years for this to happen*

• If all the holes line up, you have the trajectory for an accident (failed defenses)

• The “Trigger Puller”
  • Is the individual that enables the accident to happen (active failure)
  • *But may not be the root cause of the accident*
• But…errors aren’t always the result of upstream organizational failures

• There can be “one-offs” (isolated events)

• An employee might-  
  • Have a “better” way of performing a procedure
  • Sign off work that hasn’t actually been done
  • Show up to work impaired
  • Not follow rules
  • Not use safety equipment
  • Etc., etc., etc.

• Not the same as a “Trigger Puller” (enabler)  
  • This person may be wholly responsible for the accident to have happened
  • Although this is usually not the case
Errors can be broadly categorized as:

- **Non-Intentional**
  - No intent to commit an error
  - Not aware that an error has been committed
  - May be a trigger puller because of latent upstream failures

- **Intentional**
  - Intent to commit an error
  - Aware that an error has been committed
  - This is called a *violation*
### Three Scenarios: Same error

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario A</strong></td>
<td>AE gets work stand and lights. Checks rivets but misses a crack.</td>
</tr>
<tr>
<td><strong>Scenario B</strong></td>
<td>AE doesn't bother with work stand and lights. Walks under fuselage with flashlight. Misses a crack.</td>
</tr>
<tr>
<td><strong>Scenario C</strong></td>
<td>AE goes to fetch the work stand and lights, but finds them missing or broken. Walks under fuselage with flashlight. Misses a crack.</td>
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</tbody>
</table>

*Courtesy James Reason*

This is where we can go into disciplinary policies, but that’s a different presentation!
Learning From Errors
As Part of Your SMS
(ICAO 9859)

Implementation strategy

5.3.92 The service provider should communicate the organization’s SMS objectives and procedures to all operational personnel. The safety manager should regularly communicate information regarding the safety performance trends and specific safety issues through bulletins and briefings. The safety manager should also ensure that lessons learned from investigations and case histories or experiences, both internally and from other organizations, are distributed widely. Safety performance will be more efficient if operational personnel are actively encouraged to identify and report hazards. Safety communication therefore aims to:

a) ensure that staff are fully aware of the SMS;
b) convey safety-critical information;
c) raise awareness of corrective actions; and
d) provide information regarding new or amended safety procedures.

5.3.93 Examples of organizational communication initiatives include:
a) dissemination of the SMS manual;
b) safety processes and procedures;
c) safety newsletters, notices and bulletins; and
d) websites or email.
• Errors are not your enemy!
  • They are learning tools

• They let us-
  • Determine what went wrong
  • Fix the problem
  • Prevent the same errors from happening again

• But-
  • You need to know what errors are happening-
    • Mandatory reports (easy)
    • Voluntary reports (not as easy)
• Errors teach us-
  • What were the circumstances (precursors) for what went wrong
    • Something didn’t go as planned
    • Why?

• Was it a broad organizational failure or a one-off?
  • Corrective actions for each can be quite different

• Are errors intentional or non-intentional?
  • Intentional errors (violations) will be treated differently than non-intentional errors
• There will always be errors
  • We will never eliminate human error
  • To err is human!

• Errors teach us things about the underlying system
  • Errors can be symptoms of deeper problems

• Variable (random) errors indicate more “spread out” problems
  • More difficult to address

• Constant (repetitive) errors indicate a systemic problem
  • Easier to address
• In order to reduce errors, we-
  1. Need to gather data
     • Know what errors are being committed (including the ones at the bottom of the iceberg)
  2. Conduct investigations
     • To determine root cause(s)
  3. Employ Corrective/Preventive Actions (CPAs)
     • Address the problems
  4. Monitor/follow-up on the CPAs
     • Are they working?

• We also need to-
  ✓ Plug the holes in the Swiss Cheese
  ✓ Encourage non-jeopardy error reporting
  ✓ Pay attention to what’s going on!
Thank You

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