

Human Performance in Investigations

The goal of integrating HP into investigations and the investigation process is to facilitate the “modern view of incident causation”. This means that behaviors or errors that contributed to incidents are not a root cause.

In other words, there is a shift in focus from the individual to the underlying systems. As such, the focus of this aspect of a HP Program is to identify underlying system causes which contributed to the event for targeted system learning to prevent recurrence and/or minimize consequences in the future.

Principles:

- Human error / non-compliance is not a root cause. Dig deeper to underlying causes.
- The individual most proximate to an event is not the only person who contributed.
- There is never only one root cause
- Blame and punishment have side effects and may be detrimental to learning and prevention
- Contributing factors must be targeted and changed to prevent recurrence.
- Recommendations should use the hierarchy of controls to target underlying system causes

Recommended Practice:

In order to move investigations from focusing on error and an individual's behavior as a root cause, the following is recommended:

- Clearly articulate the individual's behavior(s) which contributed to the event
- Identify Performance Shaping Factors (PSFs) that allowed for or promoted that individual's behavior. Those PSFs include the following categories:
 - Job/workspace design factors
 - Personal factors
 - Management/System Factors
 - Organizational/Culture Factors
- Develop recommendations guided by the *Hierarchy of Controls* by challenging the behavior and whether:
 - The task central to the incident can be eliminated
 - Engineering controls put in place to eliminate the opportunity for error
 - Engineering controls put in place to eliminate the consequences should the error occur
 - Administrative controls are strong and whether additional controls are required.
- Learning from incidents is applied system-wide to similar tasks.

Guidance and Development:

Level 1: WHERE TO START	
WHO: Incident Investigators and other people involved in conducting investigations, reviewing/approving reports and putting corrective actions in place.	
WHAT DO I NEED TO KNOW	WHAT DO I NEED TO DO
<ul style="list-style-type: none"> What are PSFs and organisational factors How to objectively describe behaviour Key stages of the investigation process How to incorporate HF into TOR Sources of HF evidence Types of open questions Familiarity with HF toolkit Hierarchy of controls How (not) to write HF findings and recommendations 	<p>Investigators apply the HF toolkit and the HP in investigation template</p> <p>SUPPORT MATERIAL:</p> <ul style="list-style-type: none"> Example of HF language for Terms of Reference (TOR) Examples of open questions HF in investigations toolkit including embedded HF analysis tools from HP e-learn
HOW CAN I LEARN IT	
<ol style="list-style-type: none"> HP Competency Pathway > HP e-learn Familiarity with IOGP Report 621 on HP in Investigations HF in investigations toolkit 	

Level 2: ADVANCED (Level 1 plus the following)	
WHO: Individuals: Accident Investigators, HSEQ Leaders, WHO: Management System: Safety Management System Leaders	
WHAT DO I NEED TO KNOW	WHAT DO I NEED TO DO
<p>Applicable to incident investigators and HSE Leaders:</p> <ul style="list-style-type: none"> • A range of approaches to understanding human error/non-compliance • How to analyse unfolding mindset • Cognitive interviewing techniques, funnel, TEDS questions, 4Ps, PEACE • Main types of decision making, including recognition-primed, rule-based, choice and creative decisions • Fundamental attribution error and hindsight bias • Local rationality • Familiarity with system-based investigation tools – AcciMap • Barriers for effective learning 	<p>Applicable to HSEQ Leaders and SMS Leaders</p> <p>Integrate HP investigation process and HP tools from levels 1 and 2 into your management system:</p> <ol style="list-style-type: none"> 1. Investigations policy and procedure 2. Templates, and reports 3. Training for investigators, managers and supervisors 4. Demonstrate evidence of systematic application of the advanced HP tools 5. Quality review process <p>SUPPORT MATERIAL:</p> <ul style="list-style-type: none"> • How to Integrate Checklist • Examples of wording of policy and investigation procedure • Examples of interviewing templates based on PEACE and funnel techniques • AcciMap template • Examples of incident summary templates incorporating PSFs, org. factors and systemic contributions • Investigation quality verification checklist
HOW CAN I LEARN IT	
<p>HP Competency Pathway > “HP in investigations” > Level 2</p> <p>Human Factors in Chemical and Process Industries book</p> <p>Field Guide book</p> <p>LFI report https://bit.ly/2Lj6kRi</p>	

Level 3: EXCELLENCE (Level 2 plus the following)	
WHO: Management System: HSEQ Leaders, Safety Management System Leaders, Legal Teams, HR Teams, Supply Chain and contract management teams, software procurement/management teams	
WHAT DO I NEED TO KNOW	WHAT DO I NEED TO DO
<p>Capability:</p> <ol style="list-style-type: none"> Expert resource on HP in Investigations is available centrally. Investigation Leads: <ul style="list-style-type: none"> HP Competency Pathway > “HP in investigations” > Level 3 Sites/regions possess resources at intermediate-level skill: <ul style="list-style-type: none"> HP Competency Pathway > “HP in investigations” > Level 2 All personnel, including corporate functions such as legal, HR, supply chain: <ul style="list-style-type: none"> HP Competency Pathway > HP e-learn <p>Details to follow to match L3 of the HP Pathway</p>	<p>HP in Investigations built into corporate procedures and processes:</p> <ul style="list-style-type: none"> HP competency requirements in competency management program HP knowledge and skills are part of recruitment and promotion criteria for roles involved in investigations HP requirements are included in contractual language and ToRs for multi-company investigations The incident and reporting database (software) allows for entering and tracking PSFs and organisational factors as well as hierarchy of controls of corrective actions Legal team understands the basics of HP in investigations HP view of incident causation and HP tools in investigation training. Investigation procedure sets requirements for HP tools in investigations Investigation templates and materials feature consideration of HP findings. Investigation quality assessment for quality of findings and recommendations with regard to HP. Incident tracking system allows for capturing HP-related findings and corrective actions. <p>SUPPORT MATERIAL:</p> <ul style="list-style-type: none"> HP briefing and expectations for legal team HP briefing and expectations for HR HP briefing and expectations for people involved in managing contractual relationships

Resources:

IOGP Report 621 – Demystifying Human Factors: Building confidence in human factors investigation:

<https://www.iogp.org/bookstore/product/iogp-report-621-demystifying-human-factors-building-confidence-in-human-factors-investigation/>

Eurocontrol - System Thinking for Safety: Ten Principles

<https://www.skybrary.aero/bookshelf/books/2882.pdf>