

SSA[©]

Human Factors Training



What are human factors?

HF Online Training

Example SSA Report

Reading the SSA Report

psyfactors

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SSA HUMAN FACTORS TRAINING



Human Factors Online Training for workers V1.1a

The SSA Training course for operators is an untimed and approximate 120 – 180 minute and 100 page program of identification, exploration and assessment of key human factors concepts with interactive and video examples. It is designed to be

combined with the SSA test as a training extension. The SSA training addresses the perspective, behaviours and human limitations that affect the ability to maintain attention, function with coordinated and reasoned action and to generally remain vigilant of situations and circumstances impacting safe performance. Recommended for recruiters and inductees who need to expand their understanding of human factors in assessment of risk.



Human Factors Online Training for Supervisors V2.0A

The SSA Training course for Supervisors is an untimed and approximate 180+ minutes covering a 120 page program of identification, exploration and assessment of key human factors concepts with interactive and video examples.

Designed to address

'Achieving Safety Through Others'

In addition to the human factors content of the operator course, the supervisor course improves the ability for supervisors to detect signs of early warning in breakdown of SA in the team. The training also provides a template for interaction using personality and communication styles. Recommended for supervisors in safety critical industries who need to expand their understanding and potential actions in managing risk.



SSA HUMAN FACTORS INTRODUCTION FOR (RECRUITERS) V1.0

The assessment of key human factors that influence performance has become of significant concern in recruitment. The course is designed to be combined with the SSA test as a training extension. The SSA HF training addresses the perspective, behaviours and human limitations that affect the ability of the person

to maintain attention, function with coordinated and reasoned action and remain vigilant of situations and circumstances impacting safe performance.

SSA HUMAN FACTORS TRAINING V1.1a

UNDERSTANDING HUMAN FACTORS

Topics:

1. Understanding Human Error
2. Identification of human factors
3. Reviewing a case
4. Perceived Work Load
5. Effect of Fatigue, Age & Drugs
6. Safety behaviours checklist

HUMAN FACTORS (SUPERVISORS) V2

Topics:

- 1 What is this about?
- 2 What hazards?
- 3 Common human factors?
- 4 You are the investigator
- 5 Identifying loss of SSA
- 6 Getting the message across
- 7 How do I keep them safe?

SSA HUMAN FACTORS (RECRUITERS) V1.0

UNDERSTANDING HUMAN FACTORS

Topics:

1. Understanding HF Performance
2. Identification of human factors
3. Effect of Fatigue, Age & Drugs
4. Reviewing a report
6. Verifying behaviours with the probes

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Building personal safety skills with

**Situational Safety
Awareness Training**
for

Mining & Construction



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Contents



SSA Human Factors Online Training for operators

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Note:
In the following course, if your videos don't play automatically, right click with your mouse and select play.

3

SSA Training Topics

Click on the topics to navigate to the section

- 1 What is this about?
- 2 What hazards?
- 3 What are human factors?
- 4 You are the investigator
- 5 How to lose your SSA
- 6 How do I to stay safe?

◀ Contents ▶

2. What do you think is happening to him here?



00:27 ▶ ◀ 00:28

Show Bad Ending Show Good Ending

View the video and select the human factor that you think is happening

- Complacency (What's it matter, no one cares?) ▾ ?
- Select Answer--
- Distraction (Attention called away)
 - Preoccupation (Fixation on something else)
 - Expediency (This is easier and faster)
 - Complacency (What's it matter, no one cares?)
 - Fatigue (Accumulation of shifts or little sleep)
 - Macho (I can do it no matter how hard)
 - Impulsive (Do something, anything)
 - Invulnerable (It won't happen to me)
 - Resigned (What's the use?!)
 - Antiauthority (Don't tell me!)

3. What do you think is happening to him here?



00:14 ▶ ◀ 00:23

Show bad end Show good end

View the video and select the human factor that you think is happening

--Select Answer-- ▾ ?

◀ Contents ▶

The story begins. . . .

The name is Bond, Jim Bond. Incident Investigator. (No, the other one).

I get all the work the others don't want, like figuring out why a sane, healthy, generally happy guy ends up on a slab after an incident at work.

Of course no-one believes they will get hurt. If we did we would probably not get out of bed in the morning. But it is a fact.

Even trained conscientious people make mistakes and get hurt.



I was kicking back in my mobile home, illegally parked on the foreshore, just like in the movie, 'Lethal Weapon'.

I had started to sip my third Napoleon brandy, feeling good and dreaming of far away places, deciding whether to read the warning notice about the expected high tide when I felt a tingle under my butt. I was sitting on my phone.

Funny how it seemed to ring with extra urgency, after the two large brandies it sounded like it was inside my head. I reached for it and cleared my throat, without waiting the caller rattled off a terse demand.

"Get here fast, we have had an epidemic of incidents today and we need to find out why".

The caller hung up without saying 'Goodbye', typical! I knew who it was. Jack Stone from Magnatron Mining.



2. continues. . . .

I thought "well, there goes my downtime".

I slipped on my cleanest dirty shirt, slung my laptop with the hardened battlefield class 'ruggedised' memory over my shoulder, slipped a couple of spare USB's into my pocket, reached for my old slouch hat and headed for the door, in a hurry.



The Landcruiser had seen better days, I gave it the gun hoping the rust would hold the body parts together for a little longer.

I was already thinking of the problems seen on that site over the last six months.

"Was this going to be more of the same?"



Thirty minutes later I was standing at the gate getting the once over by the security guy. The permanent scowl on his face, looked like he had eaten something unpleasant.

Ahead of me was an ambulance trying to get past the parked construction machinery. I hit the brake hard in the loose dust and skidded into the back of another cruiser.



Mental state determines alertness

Mental State



Out of your head

Alert, attentive, calm,
(problem solving orientation)

In your head

Preoccupied, unseeing, slow,
(emotion centered style).

(Lazarus, 1976)

When are we most at risk?



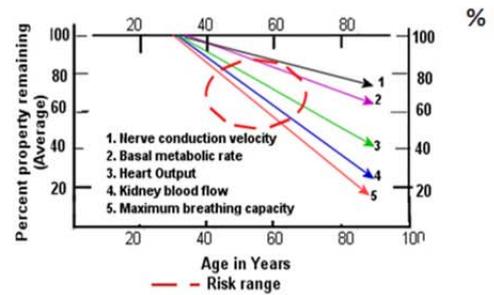
When are you at most risk?

We mostly think nothing has changed



Still looking good

But physical capacity reduces with age



Note that oxygen to the brain is most affected.

(Often results in less inclination to any mental effort, a poorer memory and slower responsiveness).

Tell us what you know so far

Despite better equipment and procedures, I find that people are still at risk of lapses in attention to the task as the workload increases.

--Select Answer-- ?

An analysis of all kinds of incidents involving moving machinery would likely show that in most cases the responsible element would be?

--Select Answer-- ?

The most serious effect of Interruptions, distractions, or preoccupations is likely to be?

--Select Answer-- ?

Error can be eliminated if people are sufficiently vigilant, conscientious, and proficient.

--Select Answer-- ?

Which of these distractions would you say, would be the most common thing that could lead to your forgetting your intentions and in missing steps in a procedure?

--Select Answer-- ?

Given that error is inevitable, the best defense is anticipation.

--Select Answer-- ?

...continued

When under stress and need to do something suddenly, we tend to...

--Select Answer-- ?

Interruptions, distractions, or preoccupation with one task to the detriment of another are found in?

--Select Answer-- ?

At what point would you say that a hazard becomes a danger?

--Select Answer-- ?

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SSA TRAINING (MINING & CONSTRUCTION) V1.1a Training Course Result

Client 2: PSYFACTORS PTY LTD (1111)

Respondent 54483: Brian Supervisor #1 example

Date of Birth: 02-07-1976

Telephone: 999-999-999

Email: brian@zmail.com

Address: 41 Short St Longville 6000 Australia

Assessment Date: 10 / 09 / 2015 10:04:06 AM

TRAINING COURSE DESCRIPTION

The SSA Training course for mining and construction is a 90 minute and 100 page program of identification, exploration and assessment of key human factors concepts and video examples. It is designed to be combined with the SSA test as an extension and as a means for recruiters and supervisors to better comprehend the meaning of SSA results. The SSA training addresses the perspective, behaviours and human limitations that affect the ability to maintain attention, function with coordinated and reasoned action and to generally remain vigilant of situations and circumstances that impact performance.



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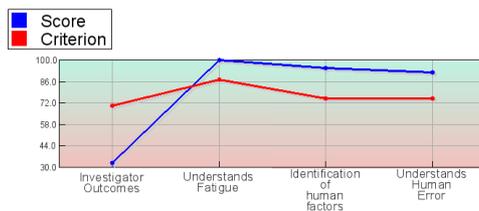
Report on: **Brian Supervisor #1 example** 10 / 09 / 2015 10:04 AM

RESULTS - COURSE INDEX 74/100

Responses on this online training course indicate an average perception and understanding of safety indicating a lower level of risk.

Brian's Perceptions of the demand made on him in the role, indicated at the (49%) level is focused on Performance with respect to the likelihood of achieving the goals given the layout and organisation of the role in accomplishing these goals., should be considered and compared to Brian's behavioural preferences and the extent of his possible vulnerability in the role, if any.

Brian's report of his present state with respect to the elements of the 'Im Safe' checklist indicates the potential for some level of risk to full and effective functioning due to the effects and combinations of one or more medical, fatigue or drug issues impacting his performance.



KEY STRENGTHS & FURTHER NEEDS

Brian reports a greater competency in

- Ability to see the potential for breakdown of safety awareness in self and others.
- Understanding the problems of sleep debt and generalised fatigue on the self
- Measuring the ability to identify human factors confounds in common daily scenarios.

Brian's results indicate that caution should be exercised with respect to tasks requiring competent skills in

- Ability to analyse and identify the logical connections of events that contribute to incidents

OVERALL CHARACTERISTICS Thumbsketch of possible behaviours (Note: descriptive only)(B)

Keywords: Spontaneous, Practical, Friendly and Harmonious.

- Brian's personality tends to reflect his basic curiosity and openness to experience. A natural adaptiveness and flexibility underlie a spontaneous, and practical, person.
- Brian is likely to be effective at communicating with a good-natured realism coupled with an open and perceptive nature suggests a role as a diplomat or negotiator or mediator, with the ability to encourage agreement, compromise and suggest solutions, without imposing pet ideas or opinions on others.
- As a keen observer, Brian may display an ability to deal effectively with large quantities of data, if the subject has to do with the personal realm.
- A basically optimistic, here-and-now temperament suggests a practical, spontaneous individual, happiest living life as it comes along rather than walking the straight and narrow path defined by schedules, commitments, obligations, duties, rules, regulations and others' expectations of what should be done. Nevertheless, happiness is being absorbed in some project, with the capacity to work long hours, displaying tenaciousness, patience and perseverance while the passion lives. When that wanes, completing things may get less effort.
- Brian is likely to thrive on action, and show up good in a crisis. Dealing with the unknown may simply seem a challenge to the ability to apply well-practiced skills to solve problems. On the other hand when challenge disappears there may be a tendency to look for greener pastures and another opportunity to become engaged.

POSSIBLE SAFETY RELATED ISSUES

- Brian's possible reluctance to organise time and develop plans, create do-able schedules to achieve reasonable goals may be interpreted as instability and potential unreliability by others.
- A commitment to being tactful and attentive to other people's needs and expectations may divert energy and application from the main activity.
- A tendency to ignore bad news, together with a need to only have a positive impact on others, makes it difficult to exert discipline on others to ensure safety compliance and attentiveness to hazards.
- Brian prefers companionship to being alone. The need to please others can have the effect of suppressing timely questions or objections, resulting in acquiescence, going along even though a thing may be wrong or unsafe.
- Brian may hesitate to express own opinions, to avoid antagonising others.
- Brian's natural generosity and need to 'go-along' may be exploited by others to thwart the rules and constraints that ensure group safety.

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SSA INV (SUPERVISORS) V3.1 CLIENT REPORT

Client 2: PSYFACTORS PTY LTD (473)

Respondent 72213: Bob Miner

Date of Birth: 31-05-1985

Telephone: 0396459800

Email: pnr@psyfactors.com

Address: Suite 615, 370 St Kilda Rd Melbourne
3004 VIC Australia

Assessment Date: 15 / 07 / 2016 12:40:33 AM

SURVEY DESCRIPTION

SSA Inv (Supervisors) v3.0 test is a 121 question test of abilities and perceptions relative to the performance required of a fully functioning supervisor with responsibility for teams and assets. This instrument is used primarily for assessing the capacity for positive self-regulation and management of the safe behaviour of others.

The SSA test addresses the person's non technical safety skills through their ability to see and understand external risks, maintain attention of surrounding events, function with coordinated and reasoned action and to generally remain vigilant of any human factors anticipating the reduction of performance in self and others.



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Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Test information at a glance

Overview and scale definitions of the SSA INV (SUPERVISORS) V3.1

SSA Inv (Supervisors) v3.0 test is a 121 question test of abilities and perceptions relative to the performance required of a fully functioning supervisor with responsibility for teams and assets. This instrument is used primarily for assessing the capacity for positive self-regulation and management of the safe behaviour of others.

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Graphical template indicates the risk according to the final score

The respondent's risk of loss of situational awareness (SA) can be determined by transferring the AI score to the 'risk probability curve' on the graph. A score of less than 55 would suggest a greater or growing risk of loss of SA with stress, fatigue and other disruptive factors. A score at or greater than 60 provides for increasing certainty of sustained safe behaviour.

SELF-REGULATION

Manages Fatigue

Extent of self management to avoid safety risks due to unrelieved stress or sleep loss.

Mental Alertness

Measures the extent of every day slips in perception, memory and coordination that indicate a loss of situational awareness.

Positive Recovery Skills

Involves the capacity to maintain and recover a balanced unpreoccupied emotional state due to adverse circumstances.

FUNCTIONAL ABILITIES

Perception & Projection

Measures the individual's mental and visual sharpness in detecting potential hazards.

Working Memory

Assesses the ability to retain and recall information in the short term as a defense to potential errors of omission and distraction.

THREAT AND ERROR MANAGEMENT SKILLS

Anticipates & Defends

Assesses the understanding of the need to anticipate, monitor and test for the potential of adverse events.

Understands Human Error

Assesses the awareness and impact that various human factors have on the performance of others.

TEAM RESOURCES MANAGEMENT SKILLS

Emotional Intelligence

Measures the ability to know and utilise the emotions and intentions of others so as to achieve safety objectives.

Participative Style

Assesses the ability to develop cooperation within the team, through encouragement and participation.

Team Safety Orientation

Involves the individual's capacity to care for the safety of team members.

SAFETY PERSPECTIVE

Responsible for Safety

Involves the individual's belief in their ability to influence their own safety.

Risk Sensitivity

Considers the individual's tendency to seek out or tolerate risky situations.

Safety Conscientiousness

Involves the capacity of the individual to display diligent and conscientious behaviour.

The structure of the test is grouped by factors for easier understanding

Scale title and definitions are shown in brief

Proof of ability to read and understand the test questions

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Final score adjusted for scale balancing and time

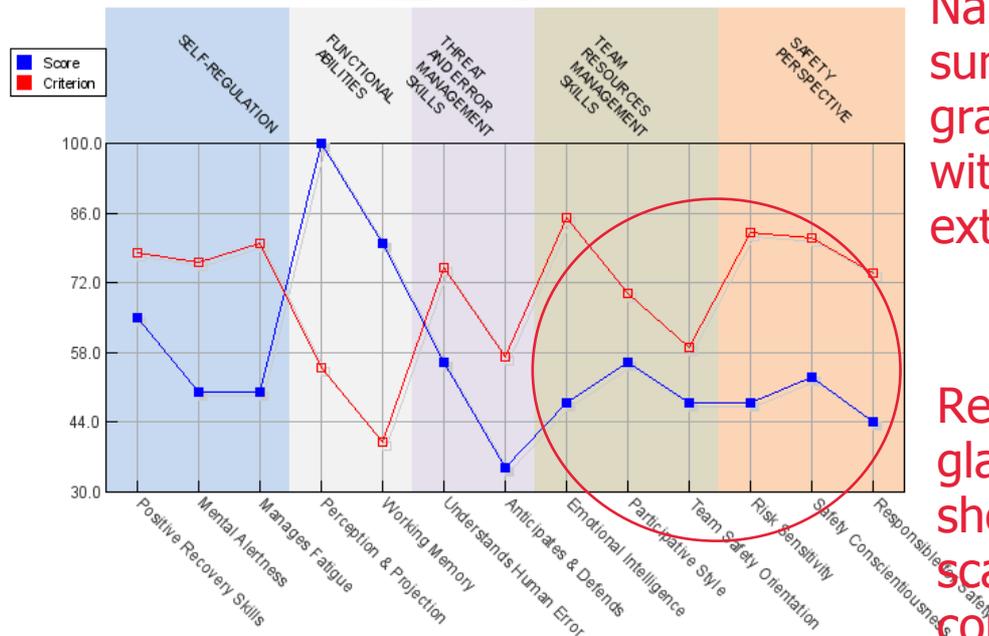
SUMMARY OF RESULTS

Respondent Final Score (Assessment Index): 41 Time taken: 17 minutes Expected: 40 minutes

Survey comprehension level:

Bob's preliminary results indicate that his comprehension of the text was adequate to successfully complete the survey.

Bob's results indicate a below average capacity with respect to the benchmark for safety minded persons, to maintain his situational awareness and master or cope with the safety needs of the role, with a special cautionary significance to his capacity to maintain a balanced emotional state with increased exposure to adverse circumstances.



Narrative summary of graded results with cautionary extract

Results at a glance, graph showing mean scale score compared to the criteria

Bob reports a greater competency in

- Ability to think ahead, detect errors, avoid pitfalls and infer developing hazards in a situation
- Ability to remember and recall 'short term' information when needed

Strengths

Bob's results indicate that caution should be exercised with respect to tasks requiring competent skills in

- Capacity to maintain a balanced emotional state with increased exposure to adverse circumstances
- Present capacity to avoid loss of perception and vigilance, generally cope with fatigue, illness or overload
- Effectiveness in managing the self to avoid the cumulative or compounding effects of unrelieved fatigue.
- Anticipating the effect of distractions, fatigue and variable diligence in self and others
- Ability to see the potential for breakdown of safety awareness in self and others.
- Develop cooperation and teamwork, seek and encourage participation with others
- Maintaining respect and care for the safety of the crew and other personnel
- Ability to perceive and appraise the emotions of self and others to further safe behaviour and avoid wasteful conflict.
- Seeing the self as being actively responsible for the safety of self and others
- Identifying and avoiding risky situations that are beyond own skills
- Avoiding expedient deviation from rules and procedures

Weaknesses in the result

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

INTERVIEW GUIDE & ALERTS

OVERALL CHARACTERISTICS Thumbsketch of possible behaviours (Note: descriptive only)

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- Bob may hesitate to express own opinions, to avoid antagonising others.
- Bob's natural generosity and need to 'go-along' may be exploited by others to thwart the rules and constraints that ensure group safety.

Vulnerability for this profile

Thumbsketch of self description. This item is not graded for the final score, descriptive only

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Critical Results

The probes check for inconsistencies, key triggered elements, response patterns.

Tendency to Complacency

Bob's responses indicate he is likely to accept and expect that the actions of others will be compliant and that the working environment will be inherently safe. This behaviour is often a consequence of the complacency that can develop when a person has little or no direct experience of workplace events that deviate from safety, compliance or procedural requirements.

This creates a routine expectation that things will always be as they should and that verification is not necessary. This complacency results in reduced vigilance, and hence, lesser ability to respond when necessary, i.e. during an emerging risk or other hazardous situation. It is recommended that you verify the extent this could impact Bob's safety, hazard identification and compliance behaviour on the job.

Summary of possible indicators

- likely to daydream and not listen to people
- is easily distracted from their primary task
- fails to hear or ignores what is going on nearby
- avoids difficult or demanding tasks
- shows signs of fatigue
- has an incomplete mental picture of the situation
- not alert or mind goes blank when stressed
- failure to check leads to completion of wrong task
- will tolerate ambiguity and ignore uncertainty
- makes decisions based on incomplete facts
- is unlikely to recognise or challenge a visible problem
- tends not to inform others of important issues

Possible Impacts on performance

In general, people with a tendency to complacency (a form of mental laziness) have few checking or confirmatory behaviours that ensure they remain safe or compliant with any degree of certainty or precision. They typically show an easy acceptance for and reliance upon the words or actions of others and which is characteristic of people who perceive they have a low level of personal responsibility for outcomes. Their lack of any effective monitoring of what is going on around them, or the behaviour of others suggests a greater likelihood they will ignore the signs of a progressive buildup of risk in operations and a likelihood they will react with ineffective actions to emergencies.

How has this arisen in the past for Bob, how did he respond and what did he learn?

Example exploratory questions:

1. How do you keep people informed of your status, intentions, expectations and standards?
2. What sort of things do you often do to make sure everything is operating as it should?
3. How much time do you normally spend checking on what people tell you on each shift?
4. In what circumstances would you not follow instructions?
5. What do you do if you are given information by a more senior person that is different from what it usually is?
6. What should happen to someone who falls asleep while on duty?

Risk Tolerant

Bob reports a slightly greater tendency to be comfortable with more risk. Consider whether this behaviour could impact safety in this job or environment. Also, if the person's risk tolerance is higher consider the possible effect of prolonged fatigue, which could increase the tendency to expediency and ignore caution at times, or project this acceptance of risk to others by ignoring their limitations.

Summary of possible indicators

- tends not to anticipate forward events
- tends to ignore signs of sleepiness and fatigue
- tends to tolerate being stressed
- doesn't challenge, submits to group pressure
- operates out of habit
- tends not to be mentally alert
- has an incomplete mental picture of situations
- is unlikely to monitor others or the situation
- ignores hazardous potential (i.e. drives in fog)
- inability to challenge, check or test information

Possible impacts on performance

People who may be risk tolerant can sometimes be impulsive with an immediate need for gratification and are typically at risk of extending that risk to others if they are in a supervisory role. They tend to avoid making the extra effort required to check or alter what they are doing. The inability to provide the mental effort may also on occasions result in a rebellious and non-compliant person with regard to the rules and protocols of the tasks and workplace. It should be noted that this characteristic is different from the behaviours of the person trained to manage various risks and hazards in their workplace (i.e., aviation, public safety roles etc).

How has this arisen in the past for Bob, how did he respond and what did he learn?

Example exploratory questions:

1. What do you do to ensure you correctly understand the workplace rules and the limitations of others?
2. When you notice others around you getting 'stressed out' what do you do?
3. When you notice that you are becoming 'stressed out' at work what do you do?
4. How do you balance the need to get things done with following the rules and SOPS in the workplace?
5. When you have competing demands to 'get something done on time' but you have to follow a SOP which prevents you from doing that - how do you decide what is the 'right thing to do'?
6. When you have urgent need to 'get something done immediately' but you have to be mindful of the limitations of others capacity to work safely - how do you decide what is the 'right thing to do'?

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Poorer Safety Attitudes

Bob's results indicate a complacent attitude and lack of involvement with safety concerns or issues. Bob sees others as being responsible for ensuring safety and for responding to emerging risks. It is strongly recommended that you explore this with Bob to identify the extent that he is likely to avoid responsibility for his own safety and that of others.

Summary of possible indicators

- more accident prone
- unlikely to monitor the safety of others
- unlikely to double check safety information
- considers that the 'ends' justifies the 'means'
- believes everyone cheats on safety rules
- has unrealistic expectations regarding safety
- frequently reports feeling overstressed
- likely to give in to group pressure
- considers that people injured at work are just less lucky
- overlooking things due to pressure of work
- doesn't believe that paying attention affects safety
- thinks 'you need a real instinct for it to be safe at work'
- has attitude that personal safety is the responsibility of the organisation

Possible impacts on performance

People with a 'poor safety attitude' tend to show up as inattentive and careless with a low appreciation of the risks to them in the workplace. They will justify that view with how ineffective or unworthy everything is of their personal contribution and commitment. Their discontent can come from a more physical source that resembles chronic fatigue or medical conditions where the person is affected by prescribed or illicit drugs. They can sometimes withhold personal effort or contribution due to suppressed frustration with a situation.

How has this arisen in the past for Bob, how did he respond and what did he learn?

Example exploratory questions:

1. How often have you found yourself doing whatever is necessary to get the work done no matter how irritating?
 2. How do you deal with people who push you to do things?
 3. How do you manage getting things done when it seems impossible to meet both the time and quality standard set for you?
 4. What sort of situations can you think of where corners can be cut so that you can get things done more quickly?
 5. Have you found that there were circumstances where you have not reported a safety risk? Why didn't you report it?
 6. Do you have a special way to deal with your fatigue or in letting your feelings (frustrations) go?
-

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Fails to Think Ahead

Bob seems to experience some difficulty in maintaining mental alertness, or questioning the available information in a situation. This reduces the likelihood that Bob will think ahead about how a situation might evolve, the possible outcomes that may result and the defensive action that he needs to take to prevent hazards and risks from escalating. Because of this, Bob may be caught unaware by new or emerging hazards and exposed to avoidable risk. It is recommended that Bob's typical behaviour be discussed with him.

Summary of possible indicators

- fails to anticipate events
- rarely considers probable outcomes
- seldom confirms understanding
- unlikely to detect converging vehicles on roads
- tendency to go along with 'group think'
- unlikely to have a full mental picture of surroundings
- unlikely to be described as 'mentally alert'
- fails to adequately monitor the capability of an event/machine
- tendency not to be mentally present and aware
- unlikely to question information given to them
- unlikely to want to improve their personal status

Possible Impacts on performance

People with a poor tendency to look or think ahead typically become unaware of what is going on around them. Their perception and responses to sudden changes or demands risk being reactive, confused, indecisive, inappropriate or too late to apply the correct solution to a problem. In short, everything is a surprise to them (with the typical excuse that 'no one told me!').

At a lesser level, this characteristic may also affect their relationships with others through lack of understanding of the impact of their behaviour and communication. This type of person also tends to fail to ensure they are adequately rested and prepared for their work.

How has this arisen in the past for Bob, how did he respond and what did he learn?

Example exploratory questions:

1. How much time would you normally spend familiarising yourself with things like procedures or safety manuals?
2. What do you do to stay in touch with the changing circumstances and actions of others around you?
3. When are you most relaxed in your job and what is the task you find easiest to do without effort?
4. How do you ensure that you stay alert and/or recover your attention so as to be able to do the job to the required standard?
5. What do you do if you notice that it is hard for you to maintain full awareness of your surroundings?
6. ***How hard do you find it to anticipate guess what someone will do after speaking to them. How do you rate yourself?
7. What specifically do you do to prevent yourself from 'zoning out' when faced with boring tasks?
8. What would you say the key attribute of 'Sherlock Holmes' is in those stories about the mythical investigator?

Report on: **Bob Miner** 15 / 07 / 2016 12:40 AM

Factor definition with grouped scales

SELF-REGULATION

The capacity to maintain and recover attention is critical to safety and depends on adequate self-regulation. Poor attention and task performance can result from diminished presence of mind due to fixation and preoccupation or from a wandering mind due to fatigue a medical context, inadequate or disrupted personal habits. A lesser state may also result in an inability to switch rapidly between tasks and manage distractions. The component measures in this factor identify the particular vulnerability for this person. The factor measures present mental state enabling an external awareness, characteristic speed of recovery and fatigue management.

Manages Fatigue

Contribution to Safety & Productivity

Extent of the accumulated fatigue on personal performance with the potential for breakdown in safe behaviour and vigilance. Considers fatigue inducing behaviours which may prevent good recovery in sleep, otherwise necessary for the maintenance of a positive alert mental state, so as to be able to pay attention to events and surroundings, control emotions, reduce errors of judgement or inadvertent rule breaking.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob's further results in this area tended to confirm the possibility of breakdown due to cumulative fatigue effects on the person which could impact performance suggesting a lesser degree of self management sleep, diet, exercise and relaxation habits, which could be improved to maintain or improve on the job performance. Bob may increasingly show decreases in attention, concentration, and some increase in emotional reactivity.

Scale purpose

Graded scale results

Mental Alertness

Contribution to Safety & Productivity

The cognitive capacity scale measures the individuals prevalence of failure in mental functioning as evidenced by every day slips in perception, memory and physical functions. The person subject to cognitive failure shows up as easily distracted with poor short term memory and a tendency to clumsy uncoordinated behaviour. Cognitive failure can be seen to make the person vulnerable to errors of omission and through frustration to expedient behaviour resulting in safety violations.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob reports a significant level of stress, operating at the slightly below average level with respect to full and alert functioning as evidenced by every day slips in perception, memory and physical functions. Bob will likely show up as more easily distracted, displaying poor short term memory and a tendency to clumsy uncoordinated behaviour increasing his vulnerability to errors of omission and through frustration to expediency and safety violations.

Positive Recovery Skills

Contribution to Safety & Productivity

Involves the stability of mood and affect of the person as it impacts safety oriented behaviour by way of their diligence, alertness and situational awareness, energy and responsiveness in addition to the adequacy of interaction with others.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob's coping skills appear to be very marginal at a slightly below average level suggesting a tendency to some emotional instability and possibly signs of anxiety or even depression when under stress. Typical behaviour of individuals with lesser coping skills is a loss of a sense of humour, sensitivity and tendency to project their dissatisfaction by being critical of others and to complain about the things that prevent them from full performance. A difficulty in relaxing and possibly slower recovery when under load would likely show up as growing fatigue affecting both vigilance and responsiveness.

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FUNCTIONAL ABILITIES

The functional group of items are cognitive abilities that support the primary or most important attention measures in the test and demonstrate an unencumbered mind capable of mental flexibility, avoidance of fixation and relatively sound logic in decision making. A lesser result is generally experienced when the person is subject to an overwhelming emotional, medical or fatigue experience blocking adequate perception and resultant decision making.

Perception & Projection

Contribution to Safety & Productivity

Perceptual functioning involves the mental and visual ability to discern the outcomes in both practical and abstract contexts. The level of perceptual functioning indicates the person's capacity for accurate performance in identifying and projecting the hazards in any context.

Effect on Performance

(Rated as Above Average in range of 111-200)

Bob indicates an above average ability to project outcomes and discern a logical sequence in both practical and abstract tasks. Contributing significantly to Bob's safety mindfulness and capacity to avoid risk.

Working Memory

Contribution to Safety & Productivity

Considers the ability to maintain a level of memory functioning involving short term situationally specific or episodic retrieval, indicating the timely capacity to retrieve and manipulate interrupted processes and data necessary for the safe execution of a task.

Effect on Performance

(Rated as Above Average in range of 101-300)

Bob's results indicated an average to well above average ability to maintain a level of memory functioning involving short term situationally specific or episodic retrieval, indicating a competent capacity to resume interrupted intentions, retrieve and manipulate data necessary for the safe execution of a task.

THREAT AND ERROR MANAGEMENT SKILLS

The 'TEM' measure indicates the extent to which the respondent is forward looking, aware of issues and vigilant with respect to self and others. A good result requires an understanding of risk and an appreciation of the limits of others together with the development of self protective habits gained from experience to counter normal human fallibility. A lesser result with respect to the measures would tend to indicate a lack of anticipation and a tendency to reactive management.

Anticipates & Defends

Contribution to Safety & Productivity

Defensive safety habits refers to the person's perception and understanding of themselves and the environment. Involves monitoring developments resources, weather, fatigue, personality conflicts, etc.. Anticipates required actions. Asks the right questions. Tests assumptions, confirms understanding. Monitors workload distribution. Reports fatigue, stress and overload in self and others. Generally, has 'presence of mind' such that most events seem to be expected

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob's results indicate a below average ability to maintain situational awareness by monitoring developments, to anticipate required actions, ask the right questions, check assumptions and confirm understanding. Monitor workload distribution, report fatigue, stress and overload in self and others.

Understands Human Error

Contribution to Safety & Productivity

The Understands Human Errors scale identifies the extent of awareness of the way that various human factors are able to impact an individuals perception, memory and coordination and the inevitability of error.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob's results on the extent of appreciation of the impact that various disruptive human factors can have on full and alert functioning was at the slightly below average level suggesting a need for greater insight in planning for potential threats which may turn an actual hazard into a danger.

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TEAM RESOURCES MANAGEMENT SKILLS

The team management skills measure the key supervisory attributes of the respondent and their ability to achieve a safety cohesive team by operating out of concern for others. The factor measures the inclination and awareness to anticipate, identify and present according to the needs of others. A lesser result on this dimension would tend to result in 'light switch' compliance and poorer overall cooperation by members.

Emotional Intelligence

Contribution to Safety & Productivity

The emotional intelligence scale measures the person's capacity to perceive and appraise the emotions of self and others, the ability to manage those to achieve interpersonal objectives and utilise these for more effective planning, creativity, growth and significantly, the avoidance of non-productive conflict to improve safety at work.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

● Bob responses, relative to competent managers, indicate a lesser and slightly below average awareness of others feelings and sensitivity to their needs. Bob may have difficulty engaging them and in managing conflict and will likely want to avoid, withdraw or attempt to dominate them. Furthermore, Bob indicates a lesser capacity to perceive and understand the way others feel and their motivation, so as to or to more effectively plan and direct their safety at work.

Participative Style

Contribution to Safety & Productivity

Ability to develop cooperation and teamwork, seek and encourage participation, deal equitably and warmly with others, keeps people informed

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob appears to indicate a lesser ability, relative to competent managers, to work cooperatively in a team, seek and encourage participation, deal equitably and warmly with others

Team Safety Orientation

Contribution to Safety & Productivity

Addresses the readiness and capacity for the individual to respect and care for the safety of other crew members and nearby aircraft, display patience and encourage safety.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

Bob seems to have a below average degree of positive-ness in attitude to others, with a moderate or inconsistent level of interest in their safety needs and with a slightly casual or reluctant respect and care for the other members of the team, would be unlikely to display patience and encourage safety by example.

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SAFETY PERSPECTIVE

The safety perspective factor measures the respondent's proactive mindset and sense of personal responsibility in managing safety together with the tendency to avoid circumstances that are beyond personal limitations. A lesser result on the measures would tend to impulsive and potentially rash decisions and an avoidance of responsibility for safety. The factor is an important dimension of safety compliance.

Responsible for Safety

Contribution to Safety & Productivity

Involves the perception and belief the individual has in their ability to guide and influence what happens to them and others in the context of safety. Behaviour range is from the passive to the proactive with regards to safety.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

● Bob reports a slightly below average level of belief in his ability to control or influence what happens to him and others and would generally tend to be passive and reactive with regards to own or others safety.

Risk Sensitivity

Contribution to Safety & Productivity

Considers the tendency for the individual to purposefully seek out, respond to or avoid situations that are uncontrollable, require considerable skill, represent 'quick and dirty' approach to work or may result in punitive action. Higher scorers indicate the capacity to observe the rules, follow procedures and maintain a consistent degree of integrity in their approach to the work.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

● Bob reports a slightly below average tendency avoid risk with a tendency to respond to personally challenging situations that may be uncontrollable or unsafe. Bob may occasionally tend to ignore the rules and procedures or direct instructions when motivated by a challenge.

Safety Conscientiousness

Contribution to Safety & Productivity

Involves the extent to which the individual is likely to display diligent and conscientious behaviour, avoiding rule breaking, expediency, group pressure and careless acceptance of others work to ensure consistently safe outcomes for themselves.

Effect on Performance

(Rated as Slightly Below Average in range of 51-90)

● Bob indicates a slightly below average capacity for diligent and conscientious behaviour, to avoid rule breaking, expediency, group pressure and careless acceptance of others work, as a way to ensure consistently safe outcomes.